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OPERABLE UNIT 1
REMEDIAL INVESTIGATION REPORT

MOUND PLANT
MIAMISBURG, OHIO

Volume II – Appendices A-O

May 1994

Final

U.S. Department of Energy
Albuquerque Operations Office

Prepared by
Roy F. Weston, Inc. for
EG&G Mound Applied Technologies

A1. SURVEY COORDINATES FOR OPERABLE UNIT 1 AND OPERABLE UNIT 9 EXPLORATORY BORINGS, MONITORING WELLS, AND PIEZOMETERS

Table A1. Survey Coordinates for Operable Unit 1 and Operable Unit 9 Exploratory Borings, Monitoring Wells, and Piezometers

LOCATION ID	GROUND SURFACE VERTICAL COORDINATE (1)	TOP OF CASING VERTICAL COORDINATE (2)	MAY 1993 HORIZONTAL COORDINATES(3)	
			NORTHING	EASTING
WELL 0005	690.74	692.36	597110.75	1494205.19
WELL 0007	692.18	694.46	597079.87	1493605.72
WELL 0020	746.69	749.18	597829.62	1495207.61
WELL 0028	784.37	786.84	598108.72	1495264.28
WELL 0033	773.51	776.74	597967.49	1496503.49
WELL 0042	761.20	762.28	597834.49	1496351.36
WELL 0046	704.48	706.84	597074.65	1495004.51
WELL 0063	703.10	705.64	596573.68	1495055.91
WELL 0071 (4)	–	702.45	596320.81	1494998.88
WELL 0076 (5)	–	702.73	595863.23	1495077.45
WELL 0106	692.18	693.86	597106.77	1493904.02
WELL 0108	685.46	688.27	597014.16	1493252.30
WELL 0111	777.54	779.02	597970.72	1496733.76
WELL 0112	772.28	773.84	597974.29	1496515.90
WELL 0113	874.04	873.30	599083.16	1495916.58
WELL 0114	872.61	872.14	598615.69	1495593.29
WELL 0115	872.73	872.30	598602.38	1495604.15
WELL 0116	872.61	871.66	598607.41	1495599.68
WELL 0117	800.62	801.82	598073.89	1495765.36
WELL 0118	705.33	704.94	600088.12	1495735.50
WELL 0119	740.20	741.41	597543.93	1495848.91
WELL 0120	819.85	821.03	598125.35	1495747.04
WELL 0121	885.73	887.50	597999.85	1497792.97
WELL 0122	740.38	742.35	597637.00	1495225.06
WELL 0123	703.58	705.10	597471.08	1494745.82
WELL 0124	703.51	705.15	597345.57	1494710.93
WELL 0125	720.03	721.47	597319.87	1495388.82
WELL 0126	704.04	705.58	597159.58	1494700.09
WELL 0127	692.16	694.12	597116.92	1493915.42
WELL 0128	691.87	693.66	597105.98	1493916.75
WELL 0129	700.13	699.49	596836.77	1494665.33
WELL 0130	692.98	692.06	596460.03	1493662.34
WELL 0137	721.50	723.66	597337.47	1495070.12
WELL 0138	698.58	697.83	599681.13	1495320.80
WELL 0151	738.10	740.61	597273.77	1495544.31
WELL 0152	702.85	704.94	596986.30	1494954.07
WELL 0153	701.85	704.10	596692.39	1494952.09
WELL 0154	701.16	702.67	596418.69	1494969.81
WELL 0156	690.79	689.91	596183.82	1494547.14
WELL 0157	690.89	690.31	596173.53	1494548.21
WELL 0158	700.28	702.06	594037.32	1495277.53
WELL 0159	689.77	689.02	594038.51	1494169.57
WELL 0160	689.84	689.40	594049.08	1494168.42
WELL 0271 (6)	–	702.82	596154.56	1495028.57
WELL 0301	692.99	692.48	597872.00	1494178.20
WELL 0302	691.85	690.96	597099.47	1493921.81
WELL 0303	695.12	694.78	597134.54	1494493.75
WELL 0304	690.72	690.08	596179.38	1494546.74
WELL 0305	707.84	709.86	596494.00	1495083.91
WELL 0306	701.94	704.13	596673.28	1494951.13

Table A1. (page 2 of 4)

LOCATION ID	GROUND SURFACE VERTICAL COORDINATE (1)	TOP OF CASING VERTICAL COORDINATE (2)	MAY 1993 HORIZONTAL COORDINATES(3)	
			NORTHING	EASTING
WELL 0307	714.62	716.16	596848.92	1495024.17
WELL 0308	747.74	750.36	596647.02	1495223.33
WELL 0309	708.27	710.26	596503.70	1495097.74
WELL 0310	701.81	703.66	596683.15	1494951.55
WELL 0311	693.42	692.98	597872.58	1494186.02
WELL 0312	729.27	731.30	597747.67	1495031.74
WELL 0313	714.03	716.12	596850.42	1495021.50
WELL 0314	741.00	742.71	597414.24	1495712.96
WELL 0315	721.81	724.03	597341.80	1495078.77
WELL 0316	722.84	725.11	597110.33	1495384.20
WELL 0317	701.73	703.60	596207.32	1495022.91
WELL 0318	808.20	810.53	598644.24	1497216.04
WELL 0319	699.67	701.44	595512.74	1495147.81
WELL 0320	702.39	704.28	595022.59	1495353.77
WELL 0322	808.07	809.84	598865.46	1497201.16
WELL 0323	784.35	783.88	597941.22	1495591.01
WELL 0324	783.10	782.92	597926.59	1495701.00
WELL 0325	795.19	797.12	597270.67	1496570.83
WELL 0326	873.75	875.81	597365.17	1497091.18
WELL 0327	696.92	696.55	601687.99	1495166.93
WELL 0328	696.88	696.80	601695.63	1495166.40
WELL 0329	706.18	705.74	601231.83	1496413.66
WELL 0330	706.20	705.66	601230.60	1496422.12
WELL 0332	792.55	792.11	599505.71	1497447.41
WELL 0333	698.57	697.78	600547.19	1494851.90
WELL 0334	698.73	698.50	600540.81	1494850.09
WELL 0335	704.15	703.66	598844.46	1494824.78
WELL 0336	708.46	708.26	600380.42	1496202.19
WELL 0337	708.33	707.97	600372.79	1496201.85
WELL 0340	704.50	704.40	597650.90	1494723.50
WELL 0341	704.63	704.22	597650.38	1494728.37
WELL 0342	690.72	690.58	596168.63	1494550.20
WELL 0343	694.93	694.80	597140.04	1494485.25
WELL 0344	699.61	701.21	595521.96	1495145.72
WELL 0345	752.03	754.32	597625.59	1496496.46
WELL 0346	743.54	742.92	597626.90	1496107.04
WELL 0347	723.12	725.22	597375.07	1495092.49
WELL 0348 (7)	874.62	874.92	599090.15	1495797.13
WELL 0349 (7)	823.26	823.20	598063.50	1496060.62
WELL 0350 (7)	885.63	886.73	596438.04	1497050.03
WELL 0351	885.12	886.51	596433.35	1497050.28
WELL 0352 (7)	736.39	736.68	596590.37	1495445.98
WELL 0353	743.18	745.30	596241.80	1495668.78
WELL 0354	766.18	769.24	595602.10	1496322.15
WELL 0355 (7)	795.22	795.04	597274.72	1496581.13
WELL 0356	702.30	704.47	595011.45	1495353.58
WELL 0370	716.46	718.51	596829.64	1495100.73
WELL 0372	753.16	754.69	596693.75	1495331.22
WELL 0373	737.00	738.73	596690.56	1495128.52
WELL 0374	704.42	706.33	596559.25	1495123.53

Table A1. (page 3 of 4)

LOCATION ID	GROUND SURFACE VERTICAL COORDINATE (1)	TOP OF CASING VERTICAL COORDINATE (2)	MAY 1993 HORIZONTAL COORDINATES(3)	
			NORTHING	EASTING
WELL 0375	703.43	705.48	597074.08	1494980.33
WELL 0376	698.42	700.12	596696.75	1494760.63
WELL 0377	697.63	699.25	596522.25	1494774.87
WELL 0378	698.29	699.84	596376.63	1494789.86
WELL 0379	714.61	716.29	597179.70	1495153.92
WELL 0380	723.25	725.33	597109.65	1495394.52
WELL 0381	723.49	726.08	596982.13	1495399.69
WELL 0382	736.48	738.73	596601.67	1495444.40
WELL 0383	694.62	694.43	597138.34	1494477.15
BORING 0384 (8)	801.25	–	598393.83	1496917.20
WELL 0385	723.84	723.11	597628.33	1494975.13
WELL 0386	725.05	724.80	597345.22	1494953.59
WELL 0387	721.05	720.93	597210.50	1494897.38
WELL 0388	698.58	701.11	596793.37	1494747.75
WELL 0389	724.89	724.67	597337.46	1494949.43
WELL 0390	724.77	724.60	597329.69	1494945.87
WELL 0392	721.02	720.88	597204.85	1494896.11
WELL 0393	705.02	706.88	596694.53	1495024.89
WELL 0394	701.61	703.31	596489.48	1495003.44
WELL 0395	801.48	801.17	598433.07	1496869.76
BORING 0396 (9)	687.80	–	596659.25	1493357.80
WELL 0397	705.68	707.50	596702.12	1495024.40
P001	715.94	717.71	596826.14	1495086.63
P002	716.36	717.70	596827.93	1495092.65
P003	705.78	707.51	596707.87	1495024.47
P004	752.53	754.54	596687.67	1495330.25
P005	737.10	738.67	596695.30	1495128.04
P006	704.10	706.01	596559.47	1495115.86
P007	703.58	705.74	597073.36	1494987.45
P008	698.68	700.52	596683.60	1494765.46
P009	697.81	699.95	596530.19	1494774.76
P013	697.72	699.87	596370.54	1494790.87
P014	714.72	717.33	597187.84	1495159.35
P015	733.22	735.75	596352.10	1495271.70
P016	687.32	687.26	597036.29	1493364.46
P017	688.72	688.71	596476.71	1493381.03
P018	690.81	690.51	596493.74	1494322.63
P019	688.70	688.54	597930.12	1493017.44
P020	689.49	689.09	597151.54	1492952.37
P021	743.66	745.74	597693.93	1496001.61
P022	728.89	728.92	597536.53	1495316.65
P023	728.62	728.64	597529.54	1495319.45
P024	739.83	742.41	597162.02	1495644.22
P025	702.00	702.00	596238.43	1494979.56
P026	704.10	703.86	597182.81	1494719.96
P027	701.62	703.95	596249.25	1495078.43
P028	707.95	710.21	596075.26	1494969.93
P029	700.44	701.98	595915.09	1494820.62
P030	699.88	702.16	595909.84	1494821.45
P031	699.20	701.58	596023.27	1495119.06

Table A1. (page 4 of 4)

LOCATION ID	GROUND SURFACE VERTICAL COORDINATE (1)	TOP OF CASING VERTICAL COORDINATE (2)	MAY 1993 HORIZONTAL COORDINATES(3)	
			NORTHING	EASTING
P032	705.83	707.78	595682.77	1495043.91
P033	699.96	702.43	595763.48	1495292.80
P034	689.45	689.23	595669.77	1494661.74
P035	686.39	686.28	597895.71	1493480.31
P036	686.37	686.58	597912.82	1493479.50
P037	686.66	686.51	597905.00	1493483.00
P038	686.11	686.10	597900.80	1493475.39
P039	687.58	687.45	595092.39	1493740.18
P040	687.64	687.24	595089.24	1493748.05
P041	687.53	687.31	595085.05	1493736.19
P042	687.38	687.36	595080.86	1493743.77

(1) – Riancho survey, May 1993, ground elevation, feet above mean sea level.
(2) – Riancho survey, May 1993, top of casing elevation, feet above mean sea level.
(3) – WESTON transformation performed 7 June 1993 on Riancho survey data to conform with Mound Plant coordinates.
(4) – Mound Plant supply well #1.
(5) – Mound Plant suplly well #3.
(6) – Mound Plant supply well #2.
(7) – Inner casing.
(8) – Pavement.
(9) – Ground.

A2. SOIL GAS SURVEY REPORT

SOIL GAS SURVEY
OF
MOUND FACILITY
OPERABLE UNIT 1
MIAMISBURG, OHIO

Submitted to

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Submitted by

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October 16,1992

HYDRO GEO CHEM, INC.
SOIL GAS DOCUMENT REVIEW SHEET

Project Code: 49000.1

Project Name: Landfill OU 1

Title: Mound Facility Operable Unit 1

Date: October 16,1992

Report Prepared By: Merita J. Clark Date: 10-16-92
Merita J. Clark, Chemist
Hydro Geo Chem, Inc.

Analytical Results Reviewed By: Patricia A. Schumann Date: 10-16-92
Patricia A. Schumann, Mgr. Soil Gas Services
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HGC Approval: Date: 10-16-92
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Hydro Geo Chem, Inc.

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INTRODUCTION

This report presents the methods and results of a soil gas investigation for volatile organic compounds performed September 11 thru September 29,1992 at the EG&G Mound facility Operable Unit 1 in Miamisburg, Ohio. The investigation was conducted by Hydro Geo Chem, Inc. under contract to Roy F. Weston, Inc. The soil gas investigation was designed to evaluate the near surface distribution of selected chlorinated hydrocarbons on the site. Selected locations were also monitored for the presence of methane, oxygen and carbon dioxide.

BACKGROUND & THEORY

Soil gas surveys consist of the sampling and analysis of the soil gases that reside in the pore space of the unsaturated zone above the water table. Because many common organic compounds and industrial solvents exhibit significant vapor pressures and are relatively insoluble in water, their introduction into subsurface soils results in vapor phase permeation and transport. Should these chemicals reach the water table and travel with the groundwater, vapors will continue to emanate from the contaminated groundwater into overlying soil. Thus organic contamination of the subsurface and, possibly, of groundwater can be detected by measuring the concentration of volatile organics in the soil gas.

The concentration of a volatile organic compound (VOC) in soil gas is a complex function of the distribution of the organic compound and its interaction with the soil. This interaction depends on a number of soil parameters including soil particle size and

mineralogy, the soil's natural and anthropogenic organic content, soil moisture, temperature, lithology, and heterogeneity.

Whatever the source of the VOC in soil gas, its concentration is representative of soils contamination at the point of measurement. Volatile organic contaminants are present in the gas phase in unsaturated pore spaces, in the water contained in the unsaturated soils, and sorbed on the soil particles. The total soils concentration is the sum of the VOCs contained in the three phases. The partitioning of the VOC between gas, liquid and solid phases is dependent on both the soil properties and the chemical properties of the organic compound. Thus, given the chemical properties of the VOC and measurements or reasonable estimates of relevant soil parameters, soil-gas data can be used to provide semi-quantitative estimates of soil contamination.

Since equilibrium between phases is generally rapid compared to the rate of gaseous diffusion, soil gas concentrations can be used to estimate the total soil concentration. The major uncertainties in estimating soil concentration from soil gas concentration data are the organic and moisture content of the soils. Chemical properties of particular organic compounds are well known, (i.e., vapor pressure, solubility), and the other relevant soil parameters (i.e., bulk density, porosity) have relatively little effect on soil concentration estimates. The following equation relates soil gas concentrations to total soil concentrations.

$$\frac{C_g}{C_T} = \left[\frac{K_D \rho_b}{H_D} + \frac{\theta_w}{H_D} + (\theta_T - \theta_w)\right]^{-1}$$

Where C_g is the concentration in the gas [M/V air]

C_T is the concentration in the soil [M/V bulk volume soil]

K_D is the water-solid distribution coefficient [M/M solid/M/V water]

ρ_b is the bulk soil density [M/V solid]

H_D is the gas-water distribution coefficient [M/V air/M/V water]

θ_w is the water filled porosity

θ_T is the total porosity

The gas-water distribution coefficient (dimensionless Henry's law constant) is

$$H_D = C_g/C_w = H/RT \simeq \rho_g/S$$

where ρ_g is the saturated vapor density [M/V]

and S is the solubility [M/V].

H is the Henry's coefficient

R is the gas constant

T is the temperature in degrees Kelvin

The water-solid distribution coefficient is approximately

$$K_D = \frac{C_s}{C_w} \simeq \frac{K_{oc} \cdot \%OC}{100}$$

where C_s is the concentration in the solid (mg/gm)

C_w is the concentration in the water (mg/ml)

K_{oc} is the water-organic carbon distribution coefficient

%OC is the percent organic carbon in the soil

Use of soil gas to infer concentrations of sources at distance (such as groundwater plumes) is necessarily much more qualitative. Soil gas data used in this manner are limited by the lack of information regarding the soil parameters interposed between the source and sampling point. It is therefore generally not possible to make quantitative estimates of groundwater concentrations from soil gas samples collected at distance from the saturated interface. Away from source areas (i.e., underground storage tanks, surface spills, etc.) where only the groundwater is providing a significant soil gas concentration, soil gas is often an excellent relative indicator of groundwater contamination. The effectiveness of soil gas surveys to delineate groundwater contamination, is, however, dependent on the depth to groundwater, contaminant concentration in the groundwater, distribution of air permeabilities in the unsaturated zone, and attenuation of the volatile organic by biodegradation or adsorption.

SCOPE OF WORK

Fifty seven soil gas samples were collected from the investigation site. In addition, 2 soil samples were also collected and analyzed on-site. Sampling locations were determined by an on-site representative of Roy F. Weston, Inc.

The volatile organic compounds that were analyzed at each of the sampling locations included the following hydrocarbons:

Tetrachloroethene (PCE)

Trichloroethene (TCE)

trans 1,2-Dichloroethene

cis 1,2-Dichloroethene

Chloroethene (Vinyl Chloride)

1,1,1-Trichloroethane (1,1,1-TCA)

Carbon tetrachloride

Chloroform

1,1,2-Trifluoro 1,2,2-Trichloroethane (Freon 113)

Methane

Methyl Ethyl Ketone (MEK)

Oxygen

Benzene

METHODS AND INSTRUMENTATION

Sampling probes consisted of 1 3/8" OD, nickel-plated EW drill rod tipped by a loosely held hardened-steel disposable point. A probe was driven into the ground at each sampling location to varying depths below land surface using a truck-mounted hydraulically-actuated drive point rig. Sampling depths were determined by the on-site

representative of Weston. The probe was then pulled up 6 inches to expose the sampling interval. A regulated vacuum pump was attached to the probe via a stainless steel adaptor. Three times the dead volume of the sampling train was purged to ensure that a representative soil gas sample would be collected. The samples were collected by withdrawing the soil gas from the probe using a Hydro Geo Chem designed, computerized mass-flow controller to regulate flow and measure volume sampled. The volatile organics were trapped and concentrated in a glass cartridge contained in a stainless steel housing. The concentrating cartridge was packed with three activated carbons, Carbotrap, Carbopak-B, and Carbosieve S-III, selected to quantitatively trap organics with widely different volatilities. After sampling, the cartridges were brought to the on-site mobile laboratory for analysis. At locations where methane, oxygen and carbon dioxide measurements were required the handheld meter was connected to the probe following collection of the soil gas sample.

Soil samples were collected using a 1¼ inch O.D. by 12 inch length ring sampler that housed three-4 inch by 1 inch diameter stainless steel sleeves. The ring sampler was driven 12 inches through the bottom of the drive hole following removal of the sampling probe and retrievable drive point. Following withdrawal of the ring sampler, the center stainless steel sleeve was removed from the sampler and immediately capped with tight fitting plastic slip caps over aluminum foil. The plastic caps were then sealed with duct tape and the sample labeled and brought to the on-site mobile lab for analysis.

Gas chromatographic techniques were used to identify and measure concentrations of the various compounds. The soil gas cartridges were desorbed at a temperature of

280°C using a thermal desorption unit. Samples were injected by the desorber into a gas chromatograph equipped with a megabore capillary column and a photoionization (PID) and Hall conductivity detector. A split from the thermal desorber was sent to an additional column and a flame ionization detector (FID) for confirmatory analysis.

Contaminants from soil samples were extracted using methanol. Approximately 5 grams of soil were removed from the sample sleeve in a manner to minimize sample losses, and placed in an air tight VOA vial containing approximately 5 ml of Purge and Trap Grade Methanol. The sample was sonicated for 10 minutes and then allowed to settle. A 100μl aliquot was placed into a sealed voa vial containing 10 mls of dionized distilled water. Using a purge and trap apparatus, helium was passed through a needle inserted to the base of the VOC vial at 100 ml/min for 10 minutes. The gas stream exiting from the vial through another needle purged the volatile components from the methanol\water solution and carried them to a carbon-packed glass trap. The cartridge was then analyzed in the same manner as the soil gas samples.

The make and model of the equipment used to perform these on-site analyses included:

Infra-Red Gas Analyzer, Geo Group Inc.

Envirochem 850 Thermal Tube Desorber

Varian 3400 Gas Chromatograph

Tracor 700A Hall Detector

Tracor 703 PID Detector

Varian Flame Ionization (FID) Detector

DB 624 30m Megabore column, J.W. Scientific

DB 1 30m Megabore column, J.W. Scientific

Spectra Physics 4400 Chrom Jet Integrator

QUALITY ASSURANCE/QUALITY CONTROL

Quality control and quality assurance were achieved through strict experimental protocol. Chain of custody procedures were observed. All parts of the collection system that come in contact with a sample were cleaned before each use. A system's blank and three calibration runs were performed at the beginning of each day; additional calibrations were performed after every 10 samples. Where retention times varied by more than 0.1 minutes compounds were identified by relative retention times based on the surrogates.

Standards were prepared from stock mixtures of neat reagent-grade chemicals. Compounds were prepared by weighing each compound addition to the mixture and weighing an aliquot volume of the final mixture to establish density (weight/volume). For preparation of daily standards, a measured volume of the standard mixture was injected into a helium-filled 1-liter glass gas bottle through a septum side port. A measured volume of the resulting gas mixture was then injected into a 100-ml/min helium stream feeding a glass, carbon-packed concentrating cartridge. After two minutes the cartridge was transferred to the thermal desorber and analyzed exactly as the soil-gas samples.

Standards for soils analyses were made up in methonal by injecting an aliquot of stock standard solution into 10 mls of methanol. A 10μl aliquot was added to 10mls of water and purged for 10 minutes onto a cartridge. The cartridge was analyzed in the same manner as the soil gas samples.

Prior to each day's sampling, atmospheric field blanks of the entire sampling apparatus were taken and analyzed to check background contamination in the sampling system and cartridges. In addition, serial duplicates from 10% of the sample locations were analyzed as a measure of reproducibility.

Detection limits were 0.01 micrograms or less per liter of soil gas for all compounds analyzed and 0.1ug/kg for soil analyzed. Analyses are reported to two significant figures; the minimum amount reported is 0.01 micrograms/liter.

RESULTS

Table 1 presents the measured soil gas concentrations from each sampling location. Concentrations are reported in micrograms per liter (μg/l) of soil gas. Conversion of soil gas concentrations from μg/l (gas) to ppmV can be achieved by the following equation.

$$C_{ppmV} = C_{\mu g/l} \times RT/M_W P$$

where C_{ppmv} = soil gas concentration in ppmV

$C_{\mu g/l}$ = soil gas concentration in μg/l (gas)

R	= 0.08205 L-Atm/deg-mole
T	= °K
M_w	= molecular wgt in grams
P	= pressure in atmospheres

If one assumes that a volatile organic compound has a molecular weight of 100 grams/mole, a typical value, C_{ppmV} would be approximately 0.25 $C_{\mu g/l}$.

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
MOUND FACILITY/OPERABLE UNIT 1
SOIL GAS CONCENTRATIONS ARE IN UG/L
SOIL CONCENTRATIONS ARE IN UG/KG

SAMPLE	DATE	VINYL CHLORIDE	1,2trans DCE	FREON 11	FREON 113	1,2cis DCE	CHLORO-FORM	111 TCA	CARBON TETRACHLORIDE	BENZENE	METHYL ETHYL KETONE	TCE	PCE	METHANE	CO2	OXYGEN
MND61-SG01-4001	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG01-3001	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG01-0001	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG01-0002	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG01-1002	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG02-0001	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG02-0002	9/11/92	0.43	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG03-0001	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG03-0002	9/11/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG04-0001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG04-0002	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG04-1002	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG04-2001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG05-4001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG05-3001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG05-0001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG05-1001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG05-0002	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG07-0001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG07-0002	9/12/92	187	4.1	4.9	42.8	19.2	0.05	<0.01	<0.01	0.54	0.46	5.9	2.4	NA	NA	NA
MND61-SG07-1002	9/12/92	181	4.6	4.2	41.1	21.3	<0.01	<0.01	<0.01	0.49	0.91	7.6	3.2	NA	NA	NA
MND61-SG06-0001	9/12/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG06-0002	9/13/92	3.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.1	<0.01	0.1	<0.01	NA	NA	NA
MND61-SG06-2001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG10-4001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG10-3001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG10-0001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG10-0002	9/13/92	59.7	0.36	2.6	12.8	3.6	<0.01	<0.01	<0.01	0.1	0.53	9.2	0.6	NA	NA	NA
MND61-SG10-1002	9/13/92	66.8	0.37	1.2	11.8	3.7	<0.01	<0.01	<0.01	0.1	0.98	11	0.7	NA	NA	NA
MND61-SG09-0001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG09-0002	9/13/92	99	0.63	1.4	20.8	5	<0.01	<0.01	<0.01	0.3	1.1	11.5	0.9	NA	NA	NA
MND61-SG08-0001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG08-0002	9/13/92	99.3	1.4	1.4	23	7.6	<0.01	<0.01	<0.01	0.13	0.32	2.8	0.12	NA	NA	NA
MND61-SG08-1002	9/13/92	103	2.7	2.7	21.3	5.5	<0.01	<0.01	<0.01	0.34	0.27	2	0.1	NA	NA	NA
MND61-SG08-2001	9/13/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
MOUND FACILITY/OPERABLE UNIT 1
SOIL GAS CONCENTRATIONS ARE IN UG/L
SOIL CONCENTRATIONS ARE IN UG/KG

SAMPLE	DATE	VINYL CHLORIDE	1,2trans DCE	FREON 11	FREON 113	1,2cis DCE	CHLORO-FORM	111 TCA	CARBON TETRACHLORIDE	BENZENE	METHYL ETHYL KETONE	TCE	PCE	METHANE	CO2	OXYGEN
MND61-SG17-4001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG17-3001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG17-0001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG18-0001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG19-0001	9/14/92	0.96	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.17	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG19-1001	9/14/92	0.88	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.2	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG20-0001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG30-0001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG31-0001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG29-0001	9/14/92	15	0.09	1.5	13.6	0.43	<0.01	<0.01	<0.01	<0.01	0.86	9.92	0.21	NA	NA	NA
MND61-SG29-1001	9/14/92	15	0.11	1.52	15.6	0.53	<0.01	<0.01	<0.01	<0.01	1.3	13.9	0.27	NA	NA	NA
MND61-SG28-0001	9/14/92	<0.01	0.3	0.13	8.4	6.4	0.6	<0.01	0.7	<0.01	<0.01	23.3	20.5	NA	NA	NA
MND61-SG24-0001	9/14/92	72.7	0.7	<0.01	30.6	15.3	2.1	0.96	<0.01	0.15	0.2	29.6	17.2	NA	NA	NA
MND61-SG24-2001	9/14/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG12-4001	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG12-3001	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG12-0001	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	NA	NA	NA
MND61-SG12-0002	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG12-1002	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG12-0003	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG13-0001	9/15/92	4.3	<0.01	0.57	0.28	0.18	<0.01	<0.01	<0.01	0.03	<0.01	0.7	0.07	NA	NA	NA
MND61-SG13-0002	9/15/92	6.1	<0.01	0.37	0.27	0.14	<0.01	<0.01	<0.01	0.08	<0.01	0.34	0.06	NA	NA	NA
MND61-SG13-0003	9/15/92	5.5	0.07	0.56	2	<0.01	<0.01	<0.01	0.15	2.2	<0.01	<0.01	0.09	NA	NA	NA
MND61-SG14-0001	9/15/92	11.3	0.5	1.4	1.6	0.72	<0.01	<0.01	<0.01	117	<0.01	7.2	<0.01	NA	NA	NA
MND61-SG14-0002	9/15/92	6.1	<0.01	<0.01	0.44	<0.01	<0.01	<0.01	<0.01	123	<0.01	0.6	<0.01	NA	NA	NA
MND61-SG14-1002	9/15/92	4.3	0.71	0.64	0.3	0.15	<0.01	<0.01	<0.01	123	<0.01	0.5	<0.01	NA	NA	NA
MND61-SG14-0003	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-0001	9/15/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-0002	9/16/92	<0.01	<0.01	<0.01	<0.01	0.23	<0.01	<0.01	<0.01	0.03	<0.01	0.03	<0.01	NA	NA	NA
MND61-SG16-0001	9/15/92	<0.01	<0.01	<0.01	<0.01	0.23	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	NA	NA	NA
MND61-SG16-0002	9/16/92	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG16-0003	9/16/92	<0.01	<0.01	<0.01	<0.01	0.36	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	NA	NA	NA
MND61-SG16-2001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG23-4001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG23-3001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
MOUND FACILITY/OPERABLE UNIT 1
SOIL GAS CONCENTRATIONS ARE IN UG/L
SOIL CONCENTRATIONS ARE IN UG/KG

SAMPLE	DATE	VINYL CHLORIDE	1,2trans DCE	FREON 11	FREON 113	1,2cis DCE	CHLORO-FORM	111 TCA	CARBON TETRACHLORIDE	BENZENE	METHYL ETHYL KETONE	TCE	PCE	METHANE	CO2	OXYGEN
MND61-SG23-0001	9/16/92	<0.01	<0.01	<0.01	50.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG25-0001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG26-0001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.1	<0.01	<0.01	NA	NA	NA
MND61-SG27-0001	9/16/92	64	1.5	<0.01	>200	>100	<0.01	<0.01	<0.01	66.8	<0.01	58.5	28.4	NA	NA	NA
MND61-SG22-0001	9/16/92	<0.01	<0.01	<0.01	<0.01	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	47	33.8	0.5
MND61-SG21-0001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.32	<0.01	<0.01	<0.01	34.4	27.9	5.7
MND61-SG21-1001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.56	<0.01	<0.01	<0.01	34.4	27.9	5.7
MND61-SG15-0013	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-2001	9/16/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-5003	9/16/92	<0.10	<0.10	<0.10	<0.10	1819	<0.10	<0.10	<0.10	42	<0.10	553	735	47	33.6	0.5
MND61-SG21-5001	9/16/92	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	8.9	94.2	<0.10	<0.10	34.4	27.9	5.7
MND61-SG15-4023	9/28/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-3023	9/28/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG15-0023	9/28/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG27-0002	9/28/92	<0.01	<0.01	<0.01	0.31	7	<0.01	<0.01	<0.01	<0.01	<0.01	0.24	0.34	NA	NA	NA
MND61-SG27-1002	9/28/92	<0.01	<0.01	<0.01	0.13	5.4	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	0.22	NA	NA	NA
MND61-SG27-0011	9/28/92	>400	>100	<0.01	>100	>200	<0.01	<0.01	<0.01	>350	<0.01	>30	>45	NA	NA	NA
MND61-SG27-2001	9/28/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG25-4001	9/29/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG25-3001	9/29/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG25-0002	9/29/92	3.9	<0.01	0.4	15.3	0.14	0.14	<0.01	0.53	0.08	<0.01	1.15	8	NA	NA	NA
MND61-SG27-0021	9/29/92	1200	30	<0.10	400	700	<0.10	<0.10	<0.10	200	<0.10	10.6	23	NA	NA	NA
MND61-SG07-0003	9/29/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG07-2001	9/29/92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA
MND61-SG27-5001	9/29/92	<0.10	<0.10	<0.10	16.5	1800	<0.10	<0.10	<0.10	19	<0.10	500	3400	NA	NA	NA
MND61-SG27-5002	9/29/92	<0.10	<0.10	<0.10	10.7	1800	<0.10	<0.10	<0.10	32	<0.10	600	4000	NA	NA	NA

A3. ANALYTES DETERMINED AND MINIMUM REPORTING LIMITS

Table A3a. Analytical Methods, Parameters, and Quantitation Limits for Surface Water/Groundwater and Soil/Sediment Samples

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
1. Volatile Organic Compounds, Soil (VOCs)	CLP SOW[b]	CLP SOW[b]		Low Soil/ Sediment[f]
Chloromethane			10	10
Bromomethane			10	10
Vinyl Chloride (chloroethene)			10	10
Chloroethane			10	10
Dichloromethane (methylene chloride)			10	10
Acetone			10	10
Carbon disulfide			10	10
1,1-Dichloroethene			10	10
1,1-Dichloroethane			10	10
1,2-Dichloroethene (total)			10	10
Trichloromethane			10	10
1,2-Dichloroethane			10	10
2-Butanone			10	10
1,1,1-Trichloroethane			10	10
Tetrachloromethane			10	10
Vinyl Acetate			10	10
Bromodichloromethane			10	10
1,2-Dichloropropane			10	10
1,3-*cis*-dichloropropene			10	10
Trichloroethene			10	10
Dibromochloromethane			10	10
1,1,2-Trichloroethane			10	10
Benzene			10	10
1,3-*trans*-dichloropropene			10	10
Tribromomethane			10	10
4-Methyl-2-pentanone			10	10
2-Hexanone			10	10
Tetrachloroethene			10	10
Toluene			10	10
1,1,2,2-Tetrachloroethane			10	10
Chlorobenzene			10	10
Ethylbenzene			10	10
Styrene			10	10
Xylenes (total)			10	10
2. Semivolatile Organic Compounds	CLP SOW[b]	CLP SOW[b]		Low Soil/Sediment[f]
Phenol			10	330

Table A3a. (page 2 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
bis(2-chloroethyl) ether			10	330
2-Chlorophenol			10	330
1,3-Dichlorobenzene			10	330
1,4-Dichlorobenzene			10	330
Benzyl alcohol			10	330
1,2-Dichlorobenzene			10	330
2-Methylphenol			10	330
2,2'-oxy*bis*(1-chloropropane)			10	330
4-Methylphenol			10	330
N-nitroso-di-n-dipropylamine			10	330
Hexachloroethane			10	330
Nitrobenzene			10	330
Isophorone			10	330
2-Nitrophenol			10	330
2,4-Dimethylphenol			10	330
Benzoic acid			50	1600
bis(2-chloroethoxy) methane			10	330
2,4-Dichlorophenol			10	330
1,2,4-Trichlorobenzene			10	330
Naphthalene			10	330
4-Chloroaniline			10	330
Hexachlorobutadiene			10	330
4-chloro-3-methylphenol (para-chloro-meta-cresol)			10	330
2-Methylnaphthalene			10	330
Hexachlorocyclopentadiene			10	330
2,4,6-Trichlorophenol			10	330
2,4,5-Trichlorophenol			25	800
2-Chloronaphthalene			10	330
2-Nitroaniline			25	800
Dimethylphthalate			10	330
Acenaphthylene			10	330
2,6-Dinitrotoluene			10	330
3-Nitroaniline			25	800
Acenaphthene			10	330
2,4-Dinitrophenol			25	800
4-Nitrophenol			25	800
Dibenzofuran			10	330

Table A3a. (page 3 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
2,4-Dinitrotoluene			10	330
Diethylphthalate			10	330
4-Chlorophenyl-phenyl ether			10	330
Fluorene			10	330
4-Nitroaniline			25	800
4,6-Dinitro-2-methylphenol			25	800
N-nitrosodiphenylamine			10	330
4-bromophenyl-phenylether			10	330
Hexachlorobenzene			10	330
Pentachlorophenol			25	800
Phenanthrene			10	330
Anthracene			10	330
Carbazole			10	330
Di-n-butylphthalate			10	330
Fluoranthene			10	330
Pyrene			10	330
Butylbenzylphthalate			10	330
3,3'-Dichlorobenzidine			10	330
Benzo(a)anthracene			10	330
Chrysene			10	330
bis(2-Ethylhexyl)phthalate			10	330
Di-n-octylphthalate			10	330
Benzo(b)fluoranthene			10	330
Benzo(k)fluoranthene			10	330
Benzo(a)pyrene			10	330
Indeno(1,2,3-cd)pyrene			10	330
Dibenz(a,h)anthracene			10	330
Benzo(g,h,i)perylene			10	330
3. *Pesticides and PCBs*	CLP SOW[b]	CLP SOW[b]		
alpha-BHC			0.05	1.7
beta-BHC			0.05	1.7
delta-BHC			0.05	1.7
gamma-BHC (Lindane)			0.05	1.7
Heptachlor			0.05	1.7
Aldrin			0.05	1.7
Heptachlor epoxide			0.05	1.7
Endosulfan I			0.05	1.7
Dieldrin			0.10	3.3

Table A3a. (page 4 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
4,4'-DDE			0.10	3.3
Endrin			0.10	3.3
Endosulfan II			0.10	3.3
4,4'-DDD			0.10	3.3
Endosulfan sulfate			0.10	3.3
4,4'-DDT			0.10	3.3
Methoxychlor			0.5	17.0
Endrin ketone			0.10	3.3
Endrin aldehyde			0.10	3.3
alpha-Chlordane			0.05	1.7
gamma-Chlordane			0.05	1.7
Toxaphene			5.0	170.0
Aroclor-1016			1.0	33.0
Aroclor-1221			2.0	67.0
Aroclor-1232			1.0	33.0
Aroclor-1242			1.0	33.0
Aroclor-1248			1.0	33.0
Aroclor-1254			1.0	33.0
Aroclor-1260			1.0	33.0
4. Metals (Target Analyte List)	CLP SOW[c] - Modification A[d]	CLP SOW[c] - Modification A[d]		(mg/kg)
Aluminum			20	4
Antimony			10	2
Arsenic			10	2
Barium			200	40
Beryllium			1	0.2
Cadmium			5	1
Calcium			5000	1000
Chromium			10	2
Cobalt			50	10
Copper			25	5
Iron			100	20
Lead			3	0.6
Magnesium			5000	1000
Manganese			15	3
Mercury			0.2	0.1
Nickel			40	8
Potassium			5000	1000

Table A3a. (page 5 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
Selenium			5	1
Silver			10	2
Sodium			5000	1000
Thallium			10	2
Vanadium			10	2
Zinc			20	4
Additional Elements:				
Bismuth			150	30
Lithium			100	10
5. Dioxin/Furans	SW8290[e]	SW8290[e]	(pg/L)	(pg/g)
2,3,7,8-TCDD			10	1.0
Total TCDD			20	2.0
2,3,7,8-PcCDD			10	1.0
Total PeCDD			20	2.0
2,3,7,8-HxCDD			25	2.5
Total HxCDD			25	2.5
1,3,7,8-HpCDD			25	2.5
Total HpCDD			25	2.5
OCDD			50	5.0
2,3,7,8-TCDF			10	1.0
Total TCDF			20	2.0
2,3,7,8-PeCDF			10	1.0
Total PeCDF			20	2.0
2,3,7,8-HxCDF			25	2.5
Total HxCDF			25	2.5
2,3,7,8-HpCDF			25	2.5
Total HpCDF			25	2.5
OCDF			50	5.0
6. Common Anions			(mg/L)	(mg/kg)
Nitrate-Nitrite	E353.2[f]	E353.2[f]	0.2	2[g]
Chloride	E325.1[f]/E325.2[f]	SW9250[e]/SW9251[e]	1.0	5[g]
Sulfate	E375.2[f]	E375.2[f]	5	50
Fluoride	E340.2[f]	E340.2[f]	0.1	2.5
7. Total Organic Carbon	E415.1/E415.2[f]	E415.1/E415.2[f]	1	25
8. Alkalinity	E310.1[f]	E310.1[f]	5	50
9. Particle Size Analysis	NA	ASTM D-422-63[h]	NA	NA
10. Moisture Content	NA	ASTM D-2216[h]	NA	NA
11. Organic Content	NA	ASTM D-2974[h]	NA	NA

Table A3a. (page 6 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)
12. Bulk Density	NA	EM-1110-2-1906[i]	NA	NA
13. Atterberg Limits	NA	ASTM D4318[h]	NA	NA
14. Triaxial Permeability	NA	SW9100[e]	NA	NA
15. Total Porosity	NA	EM-1110-2-1906[i]	NA	NA
16. Capillary Moisture	NA	ASTM D2325[h]	NA	NA
17. Bacterial Culture	NA	Standard Method 907A[j]	NA	1CFU
18. Radionuclides	Laboratory SOP[n]	Laboratory SOP[n]	(pCi/L)	(pCi/g dry)
Gamma Spectroscopy				
cobalt-60			20[k,l]	1[m]
cesium-137			20[k,l]	1[m]
bismuth-210 metastable			15[k,l]	1[m]
bismuth-207			15[k,l]	1[m]
potassium-40			350[k,l]	10[m]
radium-226 (soils)			NA	0.3[m]
americium-241 (soil)			NA	1[m]
Plutonium Isotopes			1[l]	1.0[p]
Thorium Isotopes			1[l]	1.0[p]
Radium-226 (water)			1[q]	NA
Uranium Isotopes			1	0.6
Strontium-90/Yttrium-90			5	1.0
Americum-241 (water)			1	NA
Tritium	R906.0[o]	R906.0[o]	500 pCi/L	50 pCi/g
19. Volatile Organic Compounds, Soil Gas Analysis	NA	SW8021[e] (modified)		(µg/L) (soil gas)
Trichloroethene			NA	0.01
1,2-*trans*-Dichloroethene			NA	0.01
1,1,1-Trichloroethane			NA	0.01
Tetrachloromethane			NA	0.01
Trichloromethane			NA	0.01
2-Butanone			NA	0.01
Benzene			NA	0.01
Chloroethene			NA	0.01

Table A3a. (page 7 of 7)

Parameters	Analytical Methods		Quantitation Limits[a]	
	Water	Soil/Sediment	Water (µg/L)	Soil/Sediment (µg/kg)

[a]For non-CLP analyses, these are expected method detection limits based on reagent grade water or a purified solid matrix. Actual quantitation limits may be higher depending upon the nature of the sample matrix. The limit reported on final laboratory reports will take into account the actual sample volume or weight, percent moisture (where applicable), and the dilution factor, if any. The quantitation limits for the additional nonroutine analytes may vary, depending upon the results of the method validation study.
[b]"U.S. EPA Contract Laboratory Program, Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration." Document No. OLM01.8. Quantitation limits are contract-required quantitation limits (CRQLs). The minimum quantitation limits will be reported by the laboratory.
[c]"U.S. EPA Contract Laboratory Program, Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration." Document No. ILM01.0. Quantitation limits are CRDLs except for vanadium, beryllium, antimony, aluminum and additional elements. The minimum quantitation limits will be reported by the laboratory.
[d]Modification A provides for the analysis of four additional metals. Only lithium and bismuth will be additional anlytes for this investigation.
[e]"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. EPA, November 1986.
[f]"Methods for Chemical Analysis of Water and Wastes," U.S. EPA, EPA-600/4-79-020 revised March 1983
[g]Based on a 10-gram soil sample and 100 mL volume of extractant and a soil moisture content between 0 and 10 percent (rounded). Actual quantitation limit will vary with the sample and extractant amounts and will depend upon the nature of the soil matrix.
[h]"1991 Annual Book of American Society of Testing Materials Standards," Section 4, Construction, Volume 04.08, Soil and Rock, Dimension Stone, Geosynthetics," ASTM 1991.
[i]COE. 1970. "Engineering and Design Laboratory Soils Testing." Department of the Army, U.S. Army Corps of Engineers, Engineer Manual EM 1110-2-1906, Appendix A, Washington, D.C., November 1970.
[j]"Standard Methods for the Examination of Water and Wastewater," latest edition.
[k]Assumes no interfering lines.
[l]Based on 900-mL sample size.
[m]Based on 650-gram dry sample
[n]Laboratory-developed SOP, based on either EPA methods ("Prescribed Procedures for Measurement of Radioactivity in Drinking Water," EPA-600/4-80-032, August 1980) or USDOE EML Procedures Manual (27th Edition).
[o]"Prescribed Procedures for Measurement of Radioactivity in Drinking Water," U.S. EPA, EPA-600/4-80-032, latest version.
[p]Based on 2-gram dry sample.
[q]Based on 1,000 mL sample size.
[r]Medium Soil/Sediment CRQLs are 125 times the low soil/sediment CRQLs for volatile organic compounds and 60 times the low soil/sediment CRQLs for semivolatile organic compounds. Estimated detection limits for metals in soil are based on a 1-gram sample diluted to 200 mL.

2,3,7,8-TCDD - tetrachlorodibenzo-p-dioxin
2,3,7,8-TCDF - tetrachlorodibenzofuran
CFU - colony forming unit
CLP - Contract Laboratory Program
HpCDD - heptachlorinated dibenzo-p-dioxin
HpCDF - heptachlorinated dibenzofuran
HxCDD - hexachlorinated dibenzo-p-dioxin
HxCDF - hexachlorinated dibenzofuran
NA - Not Applicable
OCDD - octachlorinated dibenzo-p-dioxin
OCDF - octachlorinated dibenzofuran
PCB - polychlorinated biphenyl
PeCDD - pentachlorinated dibenzo-p-dioxin
PeCDF - pentachlorinated dibenzofuran
SOW - Statement of Work
TCDD - tetrachlorinated dibenzo-p-dioxin
TCDF - tetrachlorinated dibenzofuran

Table A3b. Analytical Methods, Parameters, and Quantitation Limits - Groundwater Sampling

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
1. Volatile Organic Compounds (VOCs), Groundwater		
1.1. Purgeable Halocarbons	SW5030/SW8010[b]	
Vinyl chloride (chloroethene)		1.0
Trichlorofluoromethane		2.0
1,1-dichloroethene		1.3
Dichloromethane (methylene chloride)		5.0
1,1-dichloroethane		0.7
Trichloromethane (chloroform)		0.5
1,1,1-trichloroethane		0.3
Tetrachloromethane		1.2
1,2-dichloroethane		0.3
Trans-1,2-dichloroethene		1.0
Cis-1,2-dichloroethene		1.0
Trichloroethene		1.2
1,2-dichloropropane		0.4
Bromodichloromethane		1.0
Dibromomethane		2.0
2-chloroethyl vinyl ether		1.3
Cis-1,3-dichloropropene		3.4
Trans-1,3-dichloropropene		3.4
1,1,2-trichloroethane		0.2
Tetrachloroethene		0.3
Dibromochloromethane		0.9
1-chlorohexane		1.0
Chlorobenzene		2.5
1,1,1,2-tetrachloroethane		1.0
Bromoform		2.0
1,1,2,2-tetrachloroethane		0.3
1,2,3-trichloropropane		1.0
Phenyl bromide (bromobenzene)		2.0
Chlorotoluene		1.0
1,3-dichlorobenzene		3.2
1,4-dichlorobenzene		2.4
1,2-dichlorobenzene		1.5
Bis(2-chloroisopropyl)ether		20

Table A3b. (page 2 of 6)

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
Methylethyl ketone (2-butanone)		10
Methylisobutyl ketone (4-methyl-2-pentanone)		5
1.2 Purgeable Aromatic Compounds, Groundwater	SW5030/SW8020[b]	
Benzene		2.0
Chlorobenzene		2.0
1,2-Dichlorobenzene		4.0
1,3-Dichlorobenzene		4.0
1,4-Dichlorobenzene		3.0
Ethylbenzene		2.0
Toluene		2.0
Xylenes		2.0
2. Semivolatile Organic Compounds	CLP SOW[c] Modification D	
Phenol		10
bis(2-chloroethyl) ether		10
2-Chlorophenol		10
1,3-Dichlorobenzene		10
1,4-Dichlorobenzene		10
Benzyl alcohol		10
1,2-Dichlorobenzene		10
2-Methylphenol		10
bis(2-chloroisopropyl) ether		10
4-Methylphenol		10
N-nitroso-di-n-dipropylamine		10
Hexachloroethane		10
Nitrobenzene		10
Isophorone		10
2-Nitrophenol		10
2,4-Dimethylphenol		10
Benzoic acid		50
bis(2-chloroethoxy) methane		10
2,4-Dichlorophenol		10
1,2,4-Trichlorobenzene		10
Naphthalene		10
4-Chloroaniline		10

Table A3b. (page 3 of 6)

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
Hexachlorobutadiene		10
4-chloro-3-methylphenol		10
2-Methylnaphthalene		10
Hexachlorocyclopentadiene		10
2,4,6-Trichlorophenol		10
2,4,5-Trichlorophenol		50
2-Chloronaphthalene		10
2-Nitroaniline		50
Dimethylphthalate		10
Acenaphthylene		10
2,6-Dinitrotoluene		10
3-Nitroaniline		50
Acenaphthene		10
2,4-Dinitrophenol		50
4-Nitrophenol		50
Dibenzofuran		10
2,4-Dinitrotoluene		10
Diethylphthalate		10
4-Chlorophenyl-phenyl ether		10
Fluorene		10
4-Nitroaniline		50
4,6-Dinitro-2-methylphenol		50
N-nitrosodiphenylamine		10
4-bromophenyl-phenylether		10
Hexachlorobenzene		10
Pentachlorophenol		50
Phenanthrene		10
Anthracene		10
Di-n-butylphthalate		10
Fluoranthene		10
Pyrene		10
Butylbenzylphthalate		10
3,3'-Dichlorobenzidine		20
Benzo(a)anthracene		10
Chrysene		10

Table A3b. (page 4 of 6)

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
bis(2-Ethylhexyl)phthalate		10
Di-n-octylphthalate		10
Benzo(b)fluoranthene		10
Benzo(k)fluoranthene		10
Benzo(a)pyrene		10
Indeno(1,2,3-cd)pyrene		10
Dibenz(a,h)anthracene		10
Benzo(g,h,i)perylene		10
3. Pesticides and PCBs	CLP SOW[c]	
alpha-BHC		0.05
beta-BHC		0.05
delta-BHC		0.05
gamma-BHC (Lindane)		0.05
Heptachlor		0.05
Aldrin		0.05
Heptachlor epoxide		0.05
Endosulfan I		0.05
Dieldrin		0.10
4,4'-DDE		0.10
Endrin		0.10
Endosulfan II		0.10
4,4'-DDD		0.10
Endosulfan sulfate		0.10
4,4'-DDT		0.10
Methoxychlor		0.5
Endrin ketone		0.10
Endrin aldehyde		0.10
alpha-Chlordane		0.05
gamma-Chlordane		0.05
Toxaphene		5.0
Aroclor-1016		0.5
Aroclor-1221		0.5
Aroclor-1232		0.5
Aroclor-1242		0.5
Aroclor-1248		0.5

Table A3b. (page 5 of 6)

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
Aroclor-1254		0.5
Aroclor-1260		0.5
4. Metals (Target Analyte List)	CLP SOW[d] Modification A	
Aluminum		20
Antimony		10
Arsenic		10
Barium		200
Beryllium		1
Cadmium		5
Calcium		5000
Chromium		10
Cobalt		50
Copper		25
Iron		100
Lead		3
Magnesium		5000
Manganese		15
Mercury		0.2
Nickel		40
Potassium		5000
Selenium		5
Silver		10
Sodium		5000
Thallium		10
Vanadium		10
Zinc		20
5. Common Anions		
Nitrate-Nitrite	E353.2[e]	0.2
Chloride	E325.1[e]/ SW9250[b]	1.0
Sulfate	375.2[e]	5
6. Radionuclides		(pCi/L)
Gamma Spectrometry	Nuclear Data Inc., 1986[g]	
Cobalt-60		20[f]

Table A3b. (page 6 of 6)

Parameters	Analytical Methods	Quantitation Limits[a]
	Water	Water (µg/L)
Cesium-137		20[f]
Bismuth-210 metastable		15[f]
Bismuth-207		15[f]
Potassium-40		350[f]
Tritium	R906.0[h]	500 pCi/L
Plutonium Isotopes,	NAS, 1965[i]	1[f]
Thorium Isotopes,	NAS, 1960[j]	1[f]
Radium-226	ASTM D2460-70[k]	1[l]
Uranium Isotopes	NAS, 1962[m]	1
Strontium-90	NAS, 1960[n]	5
Americum-241	EML Am-01[o]	1

[a]For non-CLP analyses, these are expected method detection limits based on reagent grade water or a purified solid matrix. Actual quantitation limits may be higher depending upon the nature of the sample matrix. The limit reported on final laboratory reports will take into account the actual sample volume or weight, percent moisture (where applicable), and the dilution factor, if any. The quantitation limits for the additional nonroutine analytes may vary, depending upon the results of the method validation study.

[b]"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. EPA, November 1986.

[c]"U.S. EPA Contract Laboratory Program, Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration." Document No. OLM01.8 Quantitation limits are contract-required quantitation limits (CRQLs) with the exception of additional organic compounds. The minimum quantitation limits will be reported by the laboratory.

[d]"U.S. EPA Contract Laboratory Program, Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration." Document No. ILM01.0. Quantitation limits are CRDLs except for vanadium, beryllium, antimony, aluminum and additional elements. The minimum quantitation limits will be reported by the laboratory.

[e]"Methods for Chemical Analysis of Water and Wastes," U.S. EPA, EPA-600/4-79-020 revised March 1983

[f]Based on 900-mL sample size.

[g]ND 9900 VAX/VMS Spectroscopy Application Package User's Manual (09-0196), Nuclear Data, Inc., Schaumberg, IL. August 1986.

[h]"Prescribed Procedures for Measurement of Radioactivity in Drinking Water," U.S. EPA, EPA-600/4-80-032, latest version.

[i]"The Radiochemistry of Plutonium," G.H. Coleman, NAS-NS-3058, National Academy of Sciences, September 1965.

[j]"The Radiochemistry of Thorium," E.K. Hyde. NAS-NS-3004, National Academy of Sciences, January 1960.

[k]"Standard Test Methods for Radium in Water," ASTM, latest version.

[l]Based on 1,000-mL sample size.

[m]"The Radiochemistry of Uranium," J.E. Grindler, NAS-NS-3050, National Academy of Sciences, March 1962.

[n]"The Radiochemistry of Barium, Calcium, and Strontium," D.N. Sunderman and D.W. Townley, NAS-NS-3010, National Academy of Sciences, January 1960.

"Determination of Strontium-89 and -90 in Soil With Total Sample Decomposition," D.B. Martin, Analytical Chemistry, October 1979.

"Procedures for Determination of Stable Elements and Radionuclides in Environmental Samples," Public Health Service Publication 999-RH-10, January 1965.

[o]"EML Procedures Manual," HASL-300, Environmental Measurements Laboratory, U.S. Department of Energy 27th Edition.

Table A3c. Analytical Methods, Parameters, and Quantitation Limits - Aquifer Test

Parameters	Analytical Methods Water	Quantitation Limits Water (µg/L)
1. Volatile Organic Compounds (VOCs), Groundwater		
1.1. Purgeable Halocarbons	SW5030/SW8010[b]	
Vinyl chloride (chloroethene)		1.0
Trichlorofluoromethane		2.0
1,1-dichloroethene		1.3
Dichloromethane (methylene chloride)		5.0
1,1-dichloroethane		0.7
Trichloromethane (chloroform)		0.5
1,1,1-trichloroethane		0.3
Tetrachloromethane		1.2
1,2-dichloroethane		0.3
Trans-1,2-dichloroethene		1.0
Cis-1,2-dichloroethene		1.0
Trichloroethene		1.2
1,2-dichloropropane		0.4
Bromodichloromethane		1.0
Dibromomethane		2.0
2-chloroethyl vinyl ether		1.3
Cis-1,3-dichloropropene		3.4
Trans-1,3-dichloropropene		3.4
1,1,2-trichloroethane		0.2
Tetrachloroethene		0.3
Dibromochloromethane		0.9
1-chlorohexane		1.0
Chlorobenzene		2.5
1,1,1,2-tetrachloroethane		1.0
Bromoform		2.0
1,1,2,2-tetrachloroethane		0.3
1,2,3-trichloropropane		1.0
Phenyl bromide (bromobenzene)		2.0
2-Chlorotoluene		1.0
1,3-dichlorobenzene		3.2
1,4-dichlorobenzene		2.4
1,2-dichlorobenzene		1.5

Table A3c. (page 2 of 2)

Parameters	Analytical Methods Water	Quantitation Limits Water (µg/L)
1. Volatile Organic Compounds (VOCs), Groundwater		
Bis(2-chloroisopropyl)ether		20
Freon-113		1.0
1.2 Purgeable Aromatic Compounds, Groundwater	SW5030/SW8020[b]	
Benzene		2.0
Chlorobenzene		2.0
1,2-Dichlorobenzene		4.0
1,3-Dichlorobenzene		4.0
1,4-Dichlorobenzene		3.0
Ethylbenzene		2.0
Toluene		2.0
Xylenes		2.0
		(mg/L)
2. Total Organic Carbon	E415.1[c]	1

[a]For non-CLP analyses, these are expected method detection limits based on reagent grade water or a purified solid matrix. Actual quantitation limits may be higher depending upon the nature of the sample matrix. The limit reported on final laboratory reports will take into account the actual sample volume or weight, percent moisture (where applicable), and the dilution factor, if any. The quantitation limits for the additional nonroutine analytes may vary, depending upon the results of the method validation study.

[b]"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd edition, U.S. EPA, November 1986.

[c]"Methods for Chemical Analysis of Water and Wastes," U.S. EPA, EPA-600/4-79-020 revised March 1983.

A4. DESCRIPTION OF CHEMISTRY VALIDATION QUALIFICATIONS

Table A4a. Summary of Qualified Data for Anions

REA 37737	UJ J	Calibration out for sulfate (0.994 coeff). Holding time out for alkalinity - one day.
REA 37742	UJ J J	Calibration out for sulfate (0.994 coeff). Holding time out for alkalinity - 5 days. Calibration out for alkalinity - no info.
REA 37748	J	Field dup RPD out for alkalinity (81%) and nitrate (200% - positive/ND).
REA 37759		Sulfate in rinsate blank.
REA 37760/37763	J J J	LCS recovery slightly high (121-126%0 for fluoride, chloride, and sulfate. Calibration out for sulfate (0.994 coeff). Calibration out for alkalinity - no info.
REA 37764	J J	Calibration out for sulfate (0.994 coeff). Calibration out for alkalinity - no info.
REA 37766	J J	Calibration out for sulfate (0.994 coeff). Calibration out for alkalinity - no info. Fluoride and nitrate in field blank.
REA 37777/37778		Fluoride, nitrate, and sulfate in field blank.
REA 37784/37791		Sulfate in field blank.
REA 37792	J,UJ	Field dup RPD out for nitrite (58%), chloride (200%), and alkalinity (147%). Nitrate in field blank.
REA 37816	J,UJ	Field dup RPD out for sulfate (200%).
REA 37820	J,UJ	Field dup RPD out for chloride (200%).
REA 37821	J	Field dup RPD out for alkalinity (107%). Nitrate in field blank.
REA 37836	None	Data accepted.
REA 37892	None	Data accepted.
REA 37896	None	Data accepted.

Table A4b. Summary of Qualified Data for Dioxin/Furan Analyses

REA 37742		OCDD, OCDF, 1234678-HpCDD blank contamination.
REA 37748/37759		OCDD, OCDF, 1234678-HpCDD, and total HpCDD blank contamination.
REA 37760/37763	J	IS recovery out for OCDD, 1234678-HpCDD,123478-HxCDF, and 1234678-HpCDF in one sample (138-202%). OCDD blank contamination.
REA 37764/37766	J,UJ	MS/MSD recoveries for OCDD, OCDF, 1234678-HpCDD out. OCDD blank contamination.
REA 37777/37778/ 37784/37791	J,UJ	Holding time out for three samples (16 days). OCDD blank contamination.
REA 37792	J,UJ	Field dup RPD out for 234678-HxCDF, OCDF, 1234678-HpCDD (200%). OCDD, OCDF, 1234678-HpCDD blank contamination.

Table A4c. Summary of Qualified Data for Metals

REA 37737	J	Preparation blank out for Al
	J	Calibration blank out for Al
	R	Matrix spike out for Sb
	J	Matrix spike out for Pb,Se
	J	Lab duplicate out for Ca
	J	CRDL standard out for Hg,Se
	J	GFAA spike out for Se
REA 37742	J	Calibration blank out for Al,Se
	R	Matrix spike out for Sb
	J	Matrix spike out for As,Pb,Se
	J	Lab duplicate out for Ca
	UJ	CRDL standard out for Hg,Se
	J	GFAA spike out for Sb,Se,As
REA 37748	J	Calibration blank out for Al
	UJ	CRDL standard out for Hg
	J	Lab duplicate out for Ca
	R	Matrix spike out for Sb
	J	Matrix spike out for As,Pb,Se
	J	GFAA spike out for Sb
	U	Equipment rinsate contamination
REA 37759	R	Matrix spike out for Sb
	J,UJ	Matrix spike out for As,Pb,Se
	J	Lab duplicate out for Ca
	J	GFAA spike out for Sb
	U	Equipment rinsate contamination
REA 37760/37763	J,UJ	CRDL standard out for Cd,Cr,Pb
	J,UJ	Lab duplicate out for Cr,Cu,Fe,Pb,Zn
	R	Matrix spike out for Sb
	J,UJ	Matrix spike out for Cu,Pb,Hg,Ag
	J	GFAA spike out for Sb,Pb,Se
	U	Equipment rinsate contamination
REA 37764/37766	J,UJ	CRDL standard out for Cd,Cr,Hg,Tl
	R	Matrix spike out for Sb
	J,UJ	Matrix spike out for Cu,Pb,Mn,Ag
	UJ	GFAA spike out for Se
	R	ICS out for Cr
	J	ICS out for V
	J	Serial dilution out for Ca,Mg
	U	Equipment rinsate contamination
REA 37777/37778/ 37784/37791	R	Matrix spike out for Sb
	J,UJ	Matrix spike out for Pb,Mn,Hg,Se,Ag,Tl,Li
	J	Lab duplicate out for Pb
	R	ICS out for Cr,Co,V
	UJ	CRDL out for Hg,Bi
	U	Equipment rinsate contamination

Table A4c. (page 2 of 2)

REA 37792	J	Calibration blank out for Al
	R	Matrix spike out for Sb
	J	Matrix spike out for Pb,Bi
	UJ	CCV out for Li
	J,UJ	GFAA spike out for As,Se
	J	CRDL out for Pb
	J	MSA coefficient out for As
REA 37816	UJ	CRDL standard out for Hg,Se
	R	Matrix spike out for Sb
	J	Matrix spike out for As,Mn,Ag
	J	ICS out for Zn
REA 37820	UJ	CRDL standard out for Be,Hg,Se
	R	Matrix spike out for Sb
	J	Matrix spike out for As,Mn,Ag,Bi
	J	ICS out for Zn
	J	Field duplicate out for As
	U	Equipment rinsate contamination
REA 37821	UJ	CRDL standard out for Hg,Se
	R	Matrix spike out for Sb
	UJ	Matrix spike out for Bi
	UJ	GFAA spike out for Hg,Se
REA 37836	R	Matrix spike out for Sb
	J,UJ	Matrix spike out for Pb,Bi
REA 37892	J,UJ	CRDL out for Pb,Se
	J	Lab duplicate out for Mg
	R	Matrix spike out for Sb
	UJ	Matrix spike out for Se
REA 37896	UJ	CRDL standard out for Hg,Se
	J	Lab duplicate out for Mg
	R	Matrix spike out for Sb
	UJ	Matrix spike out for Se
	UJ	Calibration blank out for Se

Table A4d. Summary of Qualified Data for Pesticides/PCBs

REA 37737/37742	None	Data accepted
REA 37748/37759	UJ	Extraction out of holding time one day
REA 37760/37763	J	Surrogate recovery outside criteria; only Aroclor 1248 had positive value.
REA 37764/37766	J J R J	Surrogate recovery outside criteria; only Aroclor 1248 had positive value. Percent difference between two columns >25% for endosulfan sulfate, methoxychlor. Percent difference between two columns >100% for beta-BHC. Field duplicate out for Aroclor-1248.
REA 37777/37778/ 37784/37791	J,UJ J	Holding times out by two days; all compounds. Percent difference between two columns slightly >25% for Aroclor-1248.
REA 37792	None	Data accepted.
REA 37816/37820	J	Percent difference between two columns slightly >25% for Aroclor-1248.
REA 37821/37836	UJ	Surrogate recovery <50%.
REA 37892	None	Data accepted.
REA 37896	UJ	Holding time out by 21 days; all compounds.

Table A4e. Summary of Qualified Data for Radiological Analyses

REA 37737	None	Data accepted.
REA 37742	J,UJ	Low yield for thorium isotopes, but reported by lab.
REA 37748	None	Data accepted.
REA 37759	None	Data accepted.
REA 37760	J,UJ J,UJ	Low yield for thorium isotopes; use validator values. Low yield for uranium isotopes.
REA 37763	UJ J	Low yield for thorium isotopes; use validator values. Low yield for thorium isotopes, but reported by lab.
REA 37764	J	Low yield for thorium isotopes, but reported by lab.
REA 37766	J,UJ J	Low yield for thorium isotopes, but reported by lab. Duplicate out for Pu-238, iso-U, Sr-90, tritium
REA 37777	None	Data accepted.
REA 37778	None	Data accepted.
REA 37784	J	High spike recovery for tritium; positive bias.
REA 37791	None	Data accepted.
REA 37792	None	Data accepted.
REA 37808	None	Data accepted.
REA 37809	None	Data accepted.
REA 37816	J,UJ J	Low yield for thorium isotopes; use validator values. Low yield for thorium isotopes, but reported by lab.
REA 37820	J,UJ J	Low yield for thorium isotopes; use validator values. Tritium std dev out for field dup set.
REA 37821	J,UJ	Low yield for thorium isotopes; use validator values.
REA 37836	J	Low yield for thorium isotopes; use validator values.
REA 37892	None	Data accepted.
REA 37893	None	Data accepted.
REA 37896	None	Data accepted.
REA 37898	None	Data accepted.
REA 37906	J	No counter efficiency check for soil samples.
REA 37908	J	No counter efficiency check for soil samples.

Table A4f. Summary of Qualified Data for Semivolatiles

REA 37737/37742	UJ	Calibration out for benzoic acid, 4-chloroaniline, 3-nitroaniline, carbazole
REA 37748/37759	J,UJ UJ	Holding time for one sample out by 2 days. Calibration out for benzoic acid, 4-chloroaniline, 3-nitroaniline, carbazole. Bis(2-ethylhexyl)phthalate in rinsate blank.
REA 37760/37763	UJ J,UJ	Calibration out for 3-nitroaniline. Holding time for RE-extractions out by 39 days. Bis(2-ethylhexyl)phthalate in blank.
REA 37764/37766	UJ J J,UJ J	Calibration out for 4-nitroaniline, 3-nitroaniline. Field duplicate out for several PAHs. Holding time out for one sample. Orig/MS/MSD %RSD out for several PAHs.
REA 37777/37778/ 37784/37791	J,UJ UJ	Holding time for two samples out by 2 days. Calibration out for 4-nitroaniline. Phthalates in blanks.
REA 37792	UJ	Calibration out for 4-nitroaniline, carbazole. Benzoic acid, bis(2-ethylhexyl)phthalate in blank.
REA 37816	J	Calibration out for benzoic acid. Phthalates in rinsate blank.
REA 37820	UJ	Calibration out for 2,2'-oxybis(1-chloropropane). Benzoic acid, phthalates in blanks.
REA 37821/37836	UJ	Calibration out for 2,2'-oxybis(1-chloropropane), indeno(123-cd)pyrene, benzo(ghi)perylene. Benzoic acid, bis(2-ethylhexyl)phthalate in blank.
REA 37892	UJ	Calibration out for bis(2-ethylhexyl)phthalate, benzyl alcohol.
REA 37896	UJ	Calibration out for bis(2-ethylhexyl)phthalate, benzyl alcohol.

Table A4g. Summary of Qualified Data for Total Organic Carbon

REA 37737	None	Data accepted.
REA 37742	J	All samples - no calibration information.
REA 37748	J J	Field dup difference >50% (51). MSD recovery low.
REA 37759	J J	Field dup difference >50% (51). MS/MSD recovery low.
REA 37760/37763	J J	Three results greater than calibration range - no DL. Field dup RPD >50% (54,62 - two sets).
REA 37764	None	Data accepted.
REA 37766	None	Data accepted.
REA 37777	None	Data accepted.
REA 37778/37791	J	All sample holding times out by 20-21 days (except 4005).
REA 37784	J	All sample holding times out by 21 days.
REA 37792	None	Data accepted.
REA 37808	J J	MS/MSD recovery high. Field dup RPD >50% (76).
REA 37809	None	Data accepted.
REA 37816	None	Data accepted.
REA 37820	None	Data accepted.
REA 37821	J	LCS recovery low (53%); affects all samples.
REA 37836	J	All samples - data illegible.
REA 37892	J	Field dup RPD >50% (60).
REA 37893	J	MS recovery low (39.5).
REA 37896	J	Field dup RPD >50% (85).
REA 37898	J	MS recovery out for one sample (73%).
REA 37906/37908	J J	MS recovery high (131). Field dup RPD >50% (69.5).

Table A4h. Summary of Qualified Data for Volatiles

REA 37737	J,UJ	Calibration out for acetone, 4-methyl-2-pentanone, 2-hexanone. Acetone, dichloromethane (dichloromethane) in blank contamination.
REA 37742	UJ J UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone. Field dup RPD >50% for dichloromethane in one set. IS #3 out for one sample (-57.6% low) Acetone, dichloromethane in blank contamination.
REA 37748	UJ J	Calibration out for 4-methyl-2-pentanone, 2-hexanone. Calibration out for acetone in trip blank only. Acetone, dichloromethane in blank contamination.
REA 37759	J,UJ	Calibration out for acetone, 4-methyl-2-pentanone, 2-hexanone. Acetone, dichloromethane in blank contamination.
REA 37760/37763	J,UJ J J J	Calibration out for acetone. MS/MSD recoveries out for TCE, benzene, toluene. Field dup RPD out for PCE, ethylbenzene, xylenes. IS #2 and #3 out for one sample (-50%,-59%). Acetone, dichloromethane in blank contamination.
REA 37764/37766	UJ UJ R J	All IS out for one sample (-51,-56,-62%). Calibration out for acetone. 1122-TCA RRF <0.5. One sample affected. Field dup RPD >50% for 1,2-DCE, TCE, PCE - one set. Acetone, dichloromethane in blank contamination.
REA 37777	UJ	IS #3 out for two samples (-58%, -61%). Acetone, dichloromethane in blank contamination.
REA 37778	UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone. Acetone, dichloromethane in blank contamination.
REA 37784	J J,UJ	MS %RSD out for 1,2-DCE, PCE in one sample. Calibration out for 4-methyl-2-pentanone, 2-hexanone dichloromethane. Acetone, dichloromethane in blank contamination.
REA 37791	J	Calibration out for PCE affecting one sample (-26%). Acetone, dichloromethane in blank contamination.
REA 37792	UJ UJ	IS #3 out for one sample (-57%). Calibration out for 4-methyl-2-pentanone, 2-hexanone acetone. Acetone, dichloromethane in blank contamination.
REA 37808	UJ J	Calibration out for 4-methyl-2-pentanone, 2-hexanone chloroethane. Field dup RPD out for PCE (two sample sets), and TCE, tetrachloromethane (one set). Acetone, dichloromethane in blank contamination.

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REA 37809	UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone. Acetone, dichloromethane in blank contamination.
REA 37816	UJ UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone. IS #3 out for two samples (56%, 54%). Acetone, dichloromethane in blank contamination.
REA 37820	UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone, chloroethane. Acetone, dichloromethane in blank contamination.
REA 37821	UJ	Calibration out for 4-methyl-2-pentanone, 2-hexanone, chloroethane. Acetone, dichloromethane in blank contamination.
REA 37836		Acetone, dichloromethane in blank contamination.
REA 37892	UJ R J	Calibration out for chloromethane. 1122-TCA RRF <0.5. One sample affected. IS #3 out for one sample (56%). Acetone, dichloromethane, toluene, xylenes, 2-butanone in blank contamination.
REA 37893	J,UJ UJ	IS #3 out for one sample (62%). Calibration out for acetone. Acetone, dichloromethane in blank contamination.
REA 37896	UJ	Calibration out for acetone. Acetone, dichloromethane in blank contamination.
REA 37898	R UJ UJ J,UJ	1122-TCA RRF <0.5. One sample affected. Holding time of one RE out one day - all compounds. Calibration out for chloromethane. IS #3 out for two samples (60%,52%). Acetone, dichloromethane, 2-butanone in blank contamination.
REA 37906	UJ	Calibration out for acetone. Acetone, dichloromethane in blank contamination.
REA 37908	UJ	Calibration out for acetone. Acetone, dichloromethane in blank contamination.

Table A4i. Summary of Qualified Data for Volatiles

9303L051 Only RE's used.	UJ UJ UJ	Calibration out for many compounds. All samples, holding time out between 3 and 5 days. All samples, surrogate BCM out (29-52%).
9304L084	J/UJ J J/UJ	Calibration out for many compounds. DL run holding time out 1 day; affects c-DCE, PCE, TCE, trichloromethane (all other results from primary run). All samples except -0373 and -0370: surrogate BCM out (43-53%).
9304L105	UJ UJ	Calibration out for many compounds. All samples except -0374 and -0381: surrogate BCM out (46-53%).

Table A4j. Summary of Qualified Data for Semivolatiles

9303L051	UJ UJ	Cont Cal out for 2,4-dinitrophenol. Bis(2-ethylhexyl)phthalate in blank.
9304L084	UJ UJ UJ	Cal out for 4-nitroaniline, 2,4-dinitrophenol, 2,2'-oxybis(1-chloropropane), hexabutadiene, hexachlorobenzene, benzyl alcohol, di-n-octylphthalate. Di-n-butylphthalate in blank. For -0380-0001, holding time out by one day.
9304L105	UJ UJ	Calibration out for N-nitrosodiphenylamine. Bis(2-ethylhexyl)phthalate or di-n-butylphthalate in blank.

Table A4k. Summary of Qualified Data for Pesticides/PCBs

9303L051	UJ UJ	Initial cal out for d-BHC (22%), DDE (24%). For all cmpds in 2 samples, DCB out (50%,55%).
9304L084	UJ UJ	Initial cal out for d-BHC (21%), DDE (23%), DDT (21%). For all cmpds in one sample, DCB out (25%).
9304L105	UJ	Initial cal out for d-BHC (21%), DDE (23%), DDT (21%).

Table A4I. *Summary of Qualified Data for Metals*

9303L051	UJ UJ/J UJ UJ UJ	Preparation blank out for Zn,Ni,Fe,,Cr Calibration blank out for Cd,Cu,Ni,V Matrix spike out for As,Tl GFAA spike out for As,Se,Tl,Sb Lab duplicate out for Zn
9304L084	UJ UJ/J UJ UJ/J UJ/J J	Preparation blank out for Zn,V,Fe Calibration blank out for Cr,V,Mn,Al Matrix spike out for Se,Tl GFAA spike out for Sb,Pb,Se,Tl Lab duplicate out for Al,Zn ICS %D out for Ba
9304L105	UJ/J UJ/J UJ/J UJ UJ	Preparation blank out for Cd,Cr,Fe,Ni,Zn Calibration blank out for Cu,V Lab duplicate out for Zn Matrix spike out for As,Tl GFAA spike out for As,Se,Sb,Tl

Table A4m. Summary of Qualified Data for Anions

9303L051	J J	Lab dup out for NO3-NO2, all samples (29.2%). MS out for sulfate (126%), all samples.
9304L084	J	MS out for sulfate (126%), all samples.
9304L105	J	MS out for sulfate (126%), all samples.

Table A4n. Summary of Qualified Data for Volatiles

9305L468	J/UJ J	Calibration out for many compounds. RT windows out for PCE, c-12-DCE in two samples.
9305L571	UJ R J	Calibration out for several compounds. No DCV for 8 compounds in both samples. RT windows out for c-12-DCE in one sample.
9305L666	J/UJ J J/UJ	Calibration out for many compounds. RT windows out for c-12-DCE (2 samples), t-12-DCE (1),freon-113 (2),PCE (1),12-DCA (1). All in -0071-2013: surrogate BCM out (57%).
9306L955	J/UJ J J J	Calibration out for several compounds. Surrogate BCM high in 0374 and 0305. Estimate positives for TCE, freon-113, trichloromethane, CCl4, PCE, c-12-DCE. RT windows out for c-12-DCE (4 samples), CCl4 (2),freon-113 (2),TCE (1),12-DCA (1),PCE (2),trichloromethane (2). Field dup 59% for freon-113 in 0305 set.

A5. SUBSURFACE GEOCHEMICAL SAMPLE DATA

Table A5. Subsurface Geochemical Sample Data

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
0370	0036	12/07/92				X						X	X	X
0370	0040	12/15/92				X						X	X	X
0373	0054	12/15/92				X						X	X	X
0373	0058	12/05/92				X						X	X	X
0374	0022	12/05/92				X						X	X	X
0374	0022MS	12/05/92				X						X	X	
0374	0022MD	12/05/92				X						X	X	
0374	0027	12/08/92				X						X	X	X
0375	0024	12/08/92				X						X	X	X
0375	0026	12/09/92				X						X	X	X
0375	2016	03/05/93											X	
0376	0016	03/05/93				X						X	X	X
0376	0021	03/05/93				X						X	X	X
0376	2023	03/04/93											X	
0377	0017	03/04/93				X						X	X	X
0377	0017MS	03/04/93				X						X	X	
0377	0017MD	03/04/93				X						X	X	
0377	0023	03/04/93				X						X	X	X
0377	1017	03/04/93				X						X	X	X
0377	3017	03/04/93											X	
0377	4017	03/03/93				X						X	X	
0378	0017	03/03/93				X						X	X	X
0378	0022	03/03/93				X						X	X	X
0378	2022	12/04/92											X	
0379	0033	12/04/92				X						X	X	X
0379	0036	12/04/92				X						X	X	X
0379	1033	12/04/92				X						X	X	X
0379	1036	12/04/92				X						X	X	X
0379	3035	12/04/92											X	
0379	4035	12/16/92				X						X	X	
0380	0004	12/16/92	X	X		X	X	X	X	X	X	X	X	X
0380	0009	12/17/92				X						X	X	X
0380	0014	12/17/92				X						X	X	X
0380	0014MS	12/17/92				X						X	X	
0380	0014MD	12/17/92				X						X	X	
0380	0017	12/17/92				X						X	X	X
0380	0024	12/17/92				X						X	X	X
0380	0029	12/17/92				X	X		X	X	X	X	X	X
0380	0032	12/16/92				X						X	X	X
0380	1004	12/17/92	X	X		X	X	X	X	X	X	X	X	X
0380	3014	12/16/92											X	
0380	4004	01/07/93	X	X		X	X	X	X	X	X	X	X	
0381	0004	01/07/93				X	X		X	X	X	X	X	X
0381	0010	01/07/93				X						X	X	X
0381	0015	01/07/93				X						X	X	X

Table A5. (Page 2 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
0381	0020	01/07/93	X	X		X	X	X	X	X	X	X	X	X
0381	0020MS	01/07/93		X		X	X	X	X	X	X	X	X	
0381	0020MD	01/07/93	X	X		X	X	X	X	X	X	X	X	
0381	0025	01/07/93				X						X	X	X
0381	1010	01/08/93				X						X	X	X
0381	2018	01/07/93											X	
0381	4020	12/15/92				X						X	X	
0382	0005	12/15/92				X	X		X	X	X	X	X	X
0382	0010	12/15/92	X	X		X	X	X	X	X	X	X	X	X
0382	0015	12/16/92				X						X	X	X
0382	0016	12/16/92				X						X	X	X
0382	1016	12/16/92				X						X	X	X
0382	2017	12/16/92											X	
0382	4016	11/19/92				X						X	X	
0393	0005	11/19/92	X	X	X	X	X	X	X	X	X	X	X	X
0393	0014	11/19/92				X						X	X	X
0393	0016	11/19/92				X						X	X	X
0393	0021	11/19/92	X	X	X	X	X	X	X	X	X	X	X	X
0393	0021MS	11/19/92		X	X	X	X	X	X	X	X	X	X	
0393	0021MD	11/19/92	X	X	X	X	X	X	X	X	X	X	X	
0393	0027	11/19/92	X	X		X	X	X	X	X	X	X	X	X
0393	0035	11/19/92				X						X	X	X
0393	0039	11/19/92				X						X	X	X
0393	1021	11/19/92	X			X						X	X	X
0393	3005	11/19/92											X	
0394	0003	11/19/92	X	X	X	X	X	X	X	X	X	X	X	X
0394	0009	11/19/92				X						X	X	X
0394	0011	11/19/92	X	X	X	X	X	X	X	X	X	X	X	X
0394	0015	11/19/92				X						X	X	X
0394	0020	11/19/92				X						X	X	X
0394	0025	11/20/92				X						X	X	X
0394	0026	11/20/92	X	X		X	X	X	X	X	X	X	X	X
0394	0030	11/20/92				X						X	X	X
0394	0035	11/20/92				X						X	X	X
0394	0040	11/20/92				X						X	X	X
0394	0045	11/20/92				X						X	X	X
0394	0050	11/19/92				X							X	
0394	2012	11/19/92											X	
0394	2013	11/19/92											X	
0394	4005	12/06/92	X	X	X	X	X	X	X	X	X	X	X	X
0397	0024	12/06/92				X						X	X	X
0397	0028	12/07/92				X							X	
0397	2015	10/25/92											X	
0850	3001	11/03/92											X	
0850	3002	11/08/92												

Table A5. (Page 3 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
0850	3003	11/11/92											X	
0850	3004	11/19/92											X	
0850	3005	11/23/92											X	
0850	3006	12/17/92											X	
0850	3007	02/23/93											X	
0850	3008	03/03/93											X	
0850	3010	11/04/92											X	
B001	0005	11/04/92				X						X	X	X
B001	0007	11/04/92		X	X	X	X	X		X	X	X	X	X
B001	0014	11/04/92				X						X	X	X
B001	0015	11/04/92	X	X	X	X	X	X	X	X	X	X	X	X
B001	0023	11/04/92				X						X	X	X
B001	0028	11/04/92	X	X		X	X	X	X	X	X	X	X	X
B001	0028MS	11/04/92							X					
B001	0028MD	11/04/92							X					
B001	0035	11/04/92				X						X	X	X
B001	0038	11/04/92				X						X	X	X
B001	1023	11/04/92				X						X	X	X
B001	1028	11/04/92							X				X	X
B001	2006	11/04/92											X	
B001	4030	11/03/92				X			X			X	X	
B002	0005	11/03/92				X						X	X	X
B002	0010	11/03/92				X	X			X	X	X	X	X
B002	0015	11/03/92	X	X	X	X	X	X		X	X	X	X	X
B002	0018	11/03/92				X						X	X	X
B002	0023	11/03/92				X						X	X	X
B002	1018	11/03/92				X						X	X	X
B002	3020	11/03/92											X	
B002	4020	11/03/92	X	X		X	X	X	X	X	X	X	X	
B003	0026	11/03/92	X	X	X	X	X	X	X	X	X	X	X	X
B003	0026MS	11/03/92		X	X	X	X	X	X	X	X	X	X	
B003	0026MD	11/03/92	X	X	X	X	X	X	X	X	X	X	X	
B003	0035	11/03/92				X						X	X	X
B003	0036	11/03/92				X						X	X	X
B003	1026	11/03/92	X	X	X		X	X		X	X		X	X
B003	2007	11/08/92											X	
P001	0005	11/08/92				X						X	X	X
P001	0010	11/08/92				X						X	X	X
P001	0015	11/08/92	X	X		X	X	X	X	X	X	X	X	X
P001	0018	11/08/92				X						X	X	X
P001	0025	11/08/92				X						X	X	X
P001	0028	11/08/92				X			X		X	X	X	X
P001	0033	11/08/92											X	X
P001	0036	11/08/92	X	X	X	X	X	X	X	X	X	X	X	X
P001	0045	11/08/92				X						X	X	X

Table A5. (Page 4 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
P001	0047	11/08/92				X						X	X	X
P001	1036	11/09/92				X						X	X	X
P001	2009	11/08/92											X	
P001	4025	11/09/92				X						X	X	
P002	0036	11/09/92				X						X	X	X
P002	0048	11/06/92				X						X	X	X
P003	0005	11/06/92				X						X	X	X
P003	0006	11/06/92	X	X	X	X	X	X	X	X	X	X	X	X
P003	0015	11/07/92				X						X	X	X
P003	0016	11/07/92		X	X	X	X	X	X	X	X	X	X	X
P003	0016MS	11/07/92		X	X	X	X	X	X	X	X	X	X	
P003	0016MD	11/07/92		X	X	X	X	X	X	X	X	X	X	
P003	0021	11/07/92				X						X	X	X
P003	0026	11/07/92	X	X	X	X	X	X	X	X	X	X	X	X
P003	0032	11/07/92				X						X	X	X
P003	0037	11/07/92				X						X	X	X
P003	1016	11/07/92				X						X	X	X
P003	3020	11/07/92											X	
P003	4020	11/10/92	X	X	X	X	X	X	X	X	X	X	X	
P004	0005	11/10/92	X	X	X	X	X	X	X	X	X	X	X	X
P004	0010	11/10/92				X						X	X	X
P004	0011	11/10/92				X						X	X	X
P004	0020	11/10/92				X						X	X	X
P004	0025	11/10/92	X	X	X	X	X	X	X	X	X	X	X	X
P004	0025MS	11/10/92		X	X	X	X	X	X	X	X	X	X	
P004	0025MD	11/10/92	X	X	X	X	X	X	X	X	X	X	X	
P004	0030	11/10/92				X						X	X	X
P004	0031	11/17/92	X	X	X	X	X	X	X	X	X	X	X	X
P004	0035	11/17/92				X						X	X	X
P004	0038	11/17/92	X	X	X	X	X	X	X	X	X	X	X	X
P004	0040	11/17/92				X						X	X	X
P004	0045	11/17/92	X	X	X	X	X	X	X	X	X	X	X	X
P004	0050	11/10/92				X						X	X	X
P004	1025	11/11/92	X	X		X	X	X	X	X	X	X	X	X
P004	2010	11/18/92											X	
P004	2011	11/10/92											X	
P004	3025	11/10/92											X	
P004	4025	11/20/92	X	X		X	X	X	X	X	X	X	X	
P005	0003	11/20/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	0009	11/20/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	0018	11/20/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	0022	11/20/92				X						X	X	X
P005	0029	11/20/92				X						X	X	X
P005	0032	11/21/92				X						X	X	X
P005	0037	11/21/92				X						X	X	X

Table A5. (Page 5 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
P005	0043	11/21/92				X						X	X	X
P005	0045	11/21/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	0049	11/21/92				X						X	X	X
P005	0055	11/21/92				X						X	X	X
P005	0058	11/21/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	0063	11/21/92				X						X	X	X
P005	1056	11/23/92	X	X	X	X	X	X	X	X	X	X	X	X
P005	2014	11/20/92											X	
P005	4005	11/21/92				X						X	X	
P005	4065	10/25/92				X						X	X	
P006	0005	10/25/92				X						X	X	X
P006	0010	10/25/92	X	X	X	X	X	X	X	X	X	X	X	X
P006	0015	10/25/92	X	X	X	X	X	X	X	X	X	X	X	X
P006	0016	10/25/92				X						X	X	X
P006	0025	10/25/92	X	X	X	X	X	X	X	X	X	X	X	X
P006	0031	10/25/92	X	X		X	X	X	X	X	X	X	X	X
P006	0034	10/25/92				X						X	X	X
P006	1016	10/25/92				X						X	X	X
P006	2005	10/25/92											X	
P006	3016	10/25/92											X	
P006	4010	10/22/92				X						X	X	
P007	0005	10/22/92				X	X		X		X	X	X	X
P007	0013	10/23/92	X	X		X	X	X	X		X	X	X	X
P007	0020	10/23/92				X						X	X	X
P007	0025	10/23/92	X	X		X	X	X	X		X	X	X	X
P007	0026	10/23/92				X						X	X	X
P007	0030	10/23/92				X						X	X	X
P007	0031	10/23/92				X						X	X	X
P007	0033	10/23/92				X						X	X	X
P007	2001	10/23/92											X	
P007	2002	10/23/92											X	
P007	2003	02/19/93											X	
P008	0002	02/19/93				X						X	X	X
P008	0007	02/19/93				X						X	X	X
P008	0011	02/19/93	X	X		X		X				X	X	X
P008	0019	02/19/93				X						X	X	X
P008	0021	02/19/93	X	X		X		X	X		X	X	X	X
P008	0021MS	02/19/93		X		X		X	X		X	X	X	
P008	0021MD	02/20/93	X	X		X		X	X		X	X	X	
P008	0027	02/20/93				X						X	X	X
P008	0040	02/20/93				X						X	X	X
P008	0045	02/20/93				X						X	X	X
P008	0048	02/20/93				X						X	X	X
P008	0054	02/19/93				X						X	X	X
P008	1021	02/19/93	X	X		X		X	X		X	X	X	X

Table A5. (Page 6 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
P008	3015	02/19/93											X	
P008	4020	02/23/93	X	X		X		X	X		X	X	X	
P009	0005	02/23/93				X						X	X	X
P009	0010	02/23/93				X						X	X	X
P009	0015	02/23/93	X	X		X		X				X	X	X
P009	0019	02/23/93	X	X		X		X	X		X	X	X	X
P009	0025	02/23/93				X						X	X	X
P009	0030	02/23/93				X						X	X	X
P009	0035	02/23/93				X						X	X	X
P009	0040	02/23/93				X						X	X	X
P009	0045	02/23/93				X						X	X	X
P009	0045MS	02/23/93				X						X	X	
P009	0045MD	02/23/93				X						X	X	
P009	0050	02/23/93				X						X	X	X
P009	0055	02/23/93				X						X	X	X
P009	0059	02/23/93				X						X	X	X
P009	0063	02/23/93				X						X	X	X
P009	0067	02/23/93				X						X	X	X
P009	0073	02/23/93				X						X	X	X
P009	1010	02/23/93				X						X	X	X
P009	2021	02/23/93											X	
P009	3020	02/23/93											X	
P009	4045	02/21/93				X						X	X	
P013	0005	02/21/93				X						X	X	X
P013	0007	02/21/93	X	X		X		X				X	X	X
P013	0015	02/21/93				X						X	X	X
P013	0017	02/21/93	X	X		X		X	X		X	X	X	X
P013	0025	02/21/93				X						X	X	X
P013	0030	02/21/93				X						X	X	X
P013	0035	02/21/93				X						X	X	X
P013	0039	02/21/93				X						X	X	X
P013	0045	02/21/93				X						X	X	X
P013	0050	02/21/93				X						X	X	X
P013	0055	02/21/93				X						X	X	X
P013	0060	02/21/93				X						X	X	X
P013	0060MS	02/21/93				X						X	X	
P013	0060MD	02/21/93				X						X	X	
P013	0065	02/21/93				X						X	X	X
P013	0069	02/21/93				X						X	X	X
P013	0072	02/21/93				X						X	X	X
P013	0080	02/21/93				X						X	X	X
P013	0085	02/21/93				X						X	X	X
P013	0088	02/22/93				X						X	X	X
P013	0098	02/21/93				X						X	X	X
P013	1025	02/21/93				X						X	X	X

Table A5. (Page 7 of 7)

Location ID	Sample ID	Date Sampled	Alkalinity	Anions	Dioxin/ Furan	Tritium	Isotopic U, Pu, Th	TAL Metals	Pesticides/ PCBs	Radionuclides	Semi-Volatiles	TOC	VOCs	Soil pH
P013	1072	02/22/93				X						X	X	X
P013	2019	02/20/93											X	
P013	4015	02/21/93				X						X	X	
P013	4096	10/24/92				X						X	X	
P014	0003	10/24/92				X						X	X	X
P014	0010	10/24/92				X	X		X	X	X	X	X	X
P014	0015	10/24/92				X						X	X	X
P014	0020	10/24/92				X						X	X	X
P014	0025	10/24/92	X	X		X	X	X	X	X	X	X	X	X
P014	0027	10/24/92				X						X	X	X
P014	0035	10/24/92				X						X	X	X
P014	0035MS	10/24/92				X						X	X	
P014	0035MD	10/24/92				X						X	X	
P014	0036	10/24/92	X	X		X	X	X	X	X	X	X	X	X
P014	0037	10/24/92				X						X	X	X
P014	0040	10/24/92				X						X	X	X
P014	1003	10/24/92				X						X	X	X
P014	2004	10/24/92											X	
P014	4010	10/26/92				X						X	X	
P015	0005	10/26/92				X						X	X	X
P015	0010	10/26/92				X						X	X	X
P015	0010MS	10/26/92				X						X	X	
P015	0010MD	10/26/92				X						X	X	
P015	0014	10/26/92	X	X	X	X	X	X	X	X	X	X	X	X
P015	0020	10/26/92				X						X	X	X
P015	0022	10/26/92				X						X	X	X
P015	0034	10/26/92				X						X	X	X
P015	0045	10/26/92	X	X	X	X	X	X	X	X	X	X	X	X
P015	0048	10/26/92	X	X		X	X	X	X	X	X	X	X	X
P015	0055	10/26/92				X						X	X	X
P015	0056	10/26/92				X						X	X	X
P015	1014	10/26/92	X	X		X	X	X	X	X	X	X	X	X
P015	2006	10/26/92											X	
P015	4055	12/15/92				X						X	X	

0023	Environmental
0023 MS	Matrix Spike
0023 MD	Matrix Spike Duplicate
1023	Duplicate
2023	Trip blank
3023	Ambient blank / Sample bank blank
4023	Equipment blank

A6. SOIL CHEMISTRY DATA BY LOCATION

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,2-DICHLOROETHENE	12/07/92	0036	35.5- 36.0	UG/KG		240.	16.	ITA	2.00
	12/07/92	0040	39.5- 40.0	UG/KG		24.	5.	ITA	1.00
PERCENT MOISTURE	12/07/92	0036	35.5- 36.0	% MOIST		20.	-	ITA	1.00
	12/07/92	0040	39.5- 40.0	% MOIST		9.	-	ITA	1.00
TETRACHLOROETHENE	12/07/92	0036	35.5- 36.0	UG/KG		440.	16.	ITA	2.00
	12/07/92	0040	39.5- 40.0	UG/KG		350.	11.	ITA	2.00
TETRACHLOROMETHANE (CCL4)	12/07/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
TOLUENE	12/07/92	0040	39.5- 40.0	UG/KG	J	1.	5.	ITA	1.00
TOTAL ORGANIC CARBON	12/07/92	0036	35.5- 36.0	UG/G		14800.	28.6	ITA	1.00
	12/07/92	0040	39.5- 40.0	UG/G		6180.	27.5	ITA	1.00
TRICHLOROETHENE	12/07/92	0036	35.5- 36.0	UG/KG		160.	16.	ITA	2.00
	12/07/92	0040	39.5- 40.0	UG/KG		47.	5.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	12/07/92	0036	35.5- 36.0	UG/KG	J	3.	6.	ITA	1.00
	12/07/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
TRITIUM	12/07/92	0036	35.5- 36.0	PCI/G		1.02	.03	ITA	1.00
	12/07/92	0040	39.5- 40.0	PCI/G		.417	.017	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0373
NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,2-DICHLOROETHENE	12/15/92	0054	53.5- 54.0	UG/KG		7.	5.	ITA	1.00
PERCENT MOISTURE	12/15/92	0054	53.5- 54.0	% MOIST		8.	-	ITA	1.00
	12/15/92	0058	57.5- 58.0	% MOIST		6.	-	ITA	1.00
TETRACHLOROETHENE	12/15/92	0054	53.5- 54.0	UG/KG		19.	5.	ITA	1.00
	12/15/92	0058	57.5- 58.0	UG/KG		16.	5.	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0054	53.5- 54.0	MG/KG		80925.3	34.	ITA	1.00
	12/15/92	0058	57.5- 58.0	MG/KG		73370.2	30.	ITA	1.00
TRICHLOROETHENE	12/15/92	0054	53.5- 54.0	UG/KG		7.	5.	ITA	1.00
	12/15/92	0058	57.5- 58.0	UG/KG	J	4.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,2-DICHLOROETHENE	12/05/92	0022	20.5- 22.0	UG/KG		9.	6.	ITA	1.00
	12/05/92	0027	25.5- 27.0	UG/KG	J	5.	6.	ITA	1.00
PERCENT MOISTURE	12/05/92	0022	20.5- 22.0	% MOIST		18.	-	ITA	1.00
	12/05/92	0027	25.5- 27.0	% MOIST		17.	-	ITA	1.00
TETRACHLOROETHENE	12/05/92	0022	20.5- 22.0	UG/KG		37.	6.	ITA	1.00
	12/05/92	0027	25.5- 27.0	UG/KG		37.	6.	ITA	1.00
TOTAL ORGANIC CARBON	12/05/92	0022	20.5- 22.0	UG/G	J	7790.	28.8	ITA	1.00
	12/05/92	0027	25.5- 27.0	UG/G		18800.	30.	ITA	1.00
TRICHLOROETHENE	12/05/92	0022	20.5- 22.0	UG/KG		21.	6.	ITA	1.00
	12/05/92	0027	25.5- 27.0	UG/KG		11.	6.	ITA	1.00
TRITIUM	12/05/92	0022	20.5- 22.0	PCI/G		.327	.034	ITA	1.00
	12/05/92	0027	25.5- 27.0	PCI/G		1.27	.033	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	12/08/92	0024	23.5- 24.0	% MOIST		9.	-	ITA	1.00
	12/08/92	0026	25.5- 26.0	% MOIST		12.	-	ITA	1.00
TETRACHLOROETHENE	12/08/92	0024	23.5- 24.0	UG/KG		9.	5.	ITA	1.00
	12/08/92	0026	25.5- 26.0	UG/KG		23.	6.	ITA	1.00
TOLUENE	12/08/92	0026	25.5- 26.0	UG/KG	J	2.	6.	ITA	1.00
TOTAL ORGANIC CARBON	12/08/92	0024	23.5- 24.0	UG/G		14400.	27.3	ITA	1.00
	12/08/92	0026	25.5- 26.0	UG/G		2340.	27.4	ITA	1.00
TRICHLOROETHENE	12/08/92	0024	23.5- 24.0	UG/KG	J	2.	5.	ITA	1.00
	12/08/92	0026	25.5- 26.0	UG/KG	J	5.	6.	ITA	1.00
TRITIUM	12/08/92	0024	23.5- 24.0	PCI/G		.141	.017	ITA	1.00
	12/08/92	0026	25.5- 26.0	PCI/G		.795	.023	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0376
NORTH COORDINATE: 596696.75 FT
EAST COORDINATE: 1494760.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	03/05/93	0016	15.5- 16.5	MG/KG		3960.	28.	ITA	1.00
	03/05/93	0021	20.5- 21.5	MG/KG		1840.	28.	ITA	1.00
TRITIUM	03/05/93	0016	15.5- 16.5	PCI/G	J	.198	.023	ITA	1.00
	03/05/93	0021	20.5- 21.5	PCI/G	J	.325	.023	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	03/04/93	0017	16.5- 17.5	MG/KG	J	4550.	28.	ITA	1.00
	03/04/93	0023	22.5- 23.5	MG/KG		8950.	28.	ITA	1.00
	03/04/93	1017	16.5- 17.5	MG/KG	J	9400.	28.	ITA	1.00
TRITIUM	03/04/93	0017	16.5- 17.5	PCI/G	J	.299	.022	ITA	1.00
	03/04/93	0023	22.5- 23.5	PCI/G	J	.421	.02	ITA	1.00
	03/04/93	1017	16.5- 17.5	PCI/G	J	.243	.019	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0378
NORTH COORDINATE: 596376.63 FT
EAST COORDINATE: 1494789.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,1,1-TRICHLOROETHANE	03/03/93	0017	16.5- 17.5	UG/KG	J	2.	11.	ITA	1.00
	03/03/93	0022	21.5- 22.5	UG/KG	J	1.	11.	ITA	1.00
TOTAL ORGANIC CARBON	03/03/93	0017	16.5- 17.5	MG/KG		7790.	27.	ITA	1.00
	03/03/93	0022	21.5- 22.5	MG/KG		2840.	28.	ITA	1.00
TRITIUM	03/03/93	0017	16.5- 17.5	PCI/G	J	.109	.014	ITA	1.00
	03/03/93	0022	21.5- 22.5	PCI/G	J	.621	.021	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0379
NORTH COORDINATE: 597179.70 FT
EAST COORDINATE: 1495153.92 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
4-METHYL-2-PENTANONE	12/04/92	1033	30.5- 32.0	UG/KG	J	6.	13.	ITA	1.00
PERCENT MOISTURE	12/04/92	0033	30.5- 32.0	% MOIST		16.	-	ITA	1.00
	12/04/92	0036	35.0- 37.0	% MOIST		9.	-	ITA	1.00
	12/04/92	1033	30.5- 32.0	% MOIST		21.	-	ITA	1.00
	12/04/92	1036	35.0- 37.0	% MOIST		8.	-	ITA	1.00
TETRACHLOROETHENE	12/04/92	0033	30.5- 32.0	UG/KG	J	7.	6.	ITA	1.00
	12/04/92	0036	35.0- 37.0	UG/KG	J	6.	5.	ITA	1.00
	12/04/92	1033	30.5- 32.0	UG/KG	J	14.	6.	ITA	1.00
TETRACHLOROMETHANE (CCL4)	12/04/92	0033	30.5- 32.0	UG/KG	J	3.	6.	ITA	1.00
	12/04/92	1033	30.5- 32.0	UG/KG	J	8.	6.	ITA	1.00
TOTAL ORGANIC CARBON	12/04/92	0033	30.5- 32.0	UG/G	J	5380.	29.2	ITA	1.00
	12/04/92	0036	35.0- 37.0	UG/G		14800.	27.	ITA	1.00
	12/04/92	1033	30.5- 32.0	UG/G	J	12000.	25.	ITA	28.90
	12/04/92	1036	35.0- 37.0	UG/G		12300.	27.1	ITA	1.00
TRICHLOROETHENE	12/04/92	0033	30.5- 32.0	UG/KG	J	3.	6.	ITA	1.00
	12/04/92	1033	30.5- 32.0	UG/KG	J	7.	6.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	12/04/92	1033	30.5- 32.0	UG/KG	J	1.	6.	ITA	1.00
TRITIUM	12/04/92	0033	30.5- 32.0	PCI/G		.507	.03	ITA	1.00
	12/04/92	0036	35.0- 37.0	PCI/G		.65	.017	ITA	1.00
	12/04/92	1033	30.5- 32.0	PCI/G		.796	.039	ITA	1.00
	12/04/92	1036	35.0- 37.0	PCI/G		.624	.034	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0004	2.5- 4.0	% SOLIDS		91.4	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	% SOLIDS		89.6	-	ITA	1.00
ALKALINITY	12/16/92	0004	2.5- 4.0	MG/KG	J	2450.77	109.41	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	J	8035.71	111.61	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		4140.	4.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		4330.	4.	ITA	1.00
ARSENIC, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		5.4	2.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		4.3	2.2	ITA	1.00
BARIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		30.2	10.	ITA	.25
	12/16/92	1004	2.5- 4.0	MG/KG		29.4	10.	ITA	.25
CALCIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		110000.	1013.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		116000.	1060.	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		6.5	2.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		6.5	2.	ITA	1.00
COBALT, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	B	4.3	10.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	B	4.	10.	ITA	1.00
COPPER, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		10.5	5.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		10.1	5.	ITA	1.00
FLUORIDE	12/16/92	0004	2.5- 4.0	MG/KG		2.08	.55	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		2.06	.56	ITA	1.00
IRON, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		11100.	20.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		10400.	21.	ITA	1.00
LEAD, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		6.8	.58	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		4.9	.49	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		45300.	1013.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
MAGNESIUM, TOTAL	12/16/92	1004	2.5- 4.0	MG/KG		46900.	1060.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	*	245.	3.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	*	244.	3.	ITA	1.00
NICKEL, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	*	13.3	8.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	*	12.	8.	ITA	1.00
NITRATE	12/16/92	0004	2.5- 4.0	MG/KG		2.59	1.09	ITA	1.00
PERCENT MOISTURE	12/16/92	0004	2.5- 4.0	% MOIST		10.	-	ITA	1.00
	12/16/92	0004	2.5- 4.0	% MOIST		9.	-	ITA	1.00
	12/16/92	0004	2.5- 4.0	% MOIST		10.	-	ITA	1.00
	12/16/92	0009	8.5- 9.0	% MOIST		8.	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	% MOIST		10.	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	% MOIST		10.	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	% MOIST		10.	-	ITA	1.00
	12/17/92	0014	13.5- 14.0	% MOIST		9.	-	ITA	1.00
	12/17/92	0017	16.5- 17.0	% MOIST		6.	-	ITA	1.00
	12/17/92	0024	23.5- 24.0	% MOIST		5.	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	% MOIST		10.	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	% MOIST		7.	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	% MOIST		8.	-	ITA	1.00
	12/17/92	0032	32.0- 32.5	% MOIST		8.	-	ITA	1.00
PHENOL	12/17/92	0029	28.5- 29.0	UG/KG	J	90.	360.	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	B	921.	2030.	ITA	2.00
	12/16/92	1004	2.5- 4.0	MG/KG	B	1030.	2140.	ITA	2.00
POTASSIUM-40	12/16/92	0004	2.5- 4.0	PCI/G		12.3	1.1	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G		12.8	.7	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G		13.4	.9	ITA	1.00
RADIUM-226	12/16/92	0004	2.5- 4.0	PCI/G		.906	.1	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G		.922	.1	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
RADIUM-226	12/17/92	0029	28.5- 29.0	PCI/G		.83	.2	ITA	1.00
SILVER, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	*	2.5	2.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	*	2.5	2.4	ITA	1.00
SODIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG	B	141.	1013.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG	B	152.	1060.	ITA	1.00
SULFATE	12/16/92	0004	2.5- 4.0	MG/KG		75.6	21.88	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		68.86	22.32	ITA	1.00
THORIUM-228	12/16/92	0004	2.5- 4.0	PCI/G	J	.462	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G	J	.473	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G	J	.237	-	ITA	1.00
THORIUM-230	12/16/92	0004	2.5- 4.0	PCI/G	J	.819	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G	J	1.38	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G	J	.965	-	ITA	1.00
THORIUM-232	12/16/92	0004	2.5- 4.0	PCI/G	J	.403	-	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G	J	.364	-	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G	J	.492	-	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0004	2.5- 4.0	MG/KG		67977.8	38.	ITA	1.00
	12/16/92	0009	8.5- 9.0	MG/KG		70440.1	28.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		62210.4	32.	ITA	1.00
	12/17/92	0014	13.5- 14.0	MG/KG	J	81166.	32.	ITA	1.00
	12/17/92	0017	16.5- 17.0	MG/KG	J	71928.	30.	ITA	1.00
	12/17/92	0024	23.5- 24.0	MG/KG	J	92278.1	36.	ITA	1.00
	12/17/92	0029	28.5- 29.0	MG/KG	J	55176.1	35.	ITA	1.00
	12/17/92	0032	32.0- 32.5	MG/KG	J	80819.2	33.	ITA	1.00
TRITIUM	12/16/92	0004	2.5- 4.0	PCI/G		.131	-	ITC	-
	12/16/92	0009	8.5- 9.0	PCI/G		.491	-	ITC	-
	12/16/92	1004	2.5- 4.0	PCI/G		.181	-	ITC	-
	12/17/92	0014	13.5- 14.0	PCI/G		1.5	-	ITC	-

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRITIUM	12/17/92	0017	16.5- 17.0	PCI/G		.631	-	ITC	-
	12/17/92	0024	23.5- 24.0	PCI/G		.282	-	ITC	-
	12/17/92	0029	28.5- 29.0	PCI/G		.273	-	ITC	-
	12/17/92	0032	32.0- 32.5	PCI/G		.027	-	ITC	-
URANIUM-234	12/16/92	0004	2.5- 4.0	PCI/G		.549	.0553	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G		.828	.0524	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G		.738	.0194	ITA	1.00
URANIUM-235/236	12/16/92	1004	2.5- 4.0	PCI/G		.0548	.0205	ITA	1.00
URANIUM-238	12/16/92	0004	2.5- 4.0	PCI/G		.643	.0217	ITA	1.00
	12/16/92	1004	2.5- 4.0	PCI/G		.787	.0524	ITA	1.00
	12/17/92	0029	28.5- 29.0	PCI/G		.725	.0495	ITA	1.00
VANADIUM, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		11.5	2.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		11.9	2.4	ITA	1.00
ZINC, TOTAL	12/16/92	0004	2.5- 4.0	MG/KG		36.9	4.	ITA	1.00
	12/16/92	1004	2.5- 4.0	MG/KG		35.6	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	01/07/93	0020	18.5- 20.0	% SOLIDS		89.6	-	ITA	1.00
ALKALINITY	01/07/93	0020	18.5- 20.0	MG/KG		101004.46	111.61	ITA	1.00
ALUMINUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		3820.	16.	ITA	4.00
ARSENIC, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		4.7	2.	ITA	1.00
BARIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		39.3	10.	ITA	.25
CALCIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		109000.	1030.	ITA	1.00
CARBON DISULFIDE	01/07/93	0004	3.0- 5.0	UG/KG	J	3.	6.	ITA	1.00
	01/07/93	0015	14.5- 15.0	UG/KG		15.	6.	ITA	1.00
CHLORIDE	01/07/93	0020	18.5- 20.0	MG/KG		14.93	5.58	ITA	1.00
CHROMIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		6.5	2.	ITA	1.00
COBALT, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	B	4.1	10.	ITA	1.00
COPPER, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		11.	5.	ITA	1.00
FLUORIDE	01/07/93	0020	18.5- 20.0	MG/KG		4.35	.56	ITA	1.00
IRON, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		10700.	20.	ITA	1.00
LEAD, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	J	6.9	.6	ITA	1.00
LITHIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		11.8	10.	ITA	1.00
MAGNESIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		50500.	1030.	ITA	1.00
MANGANESE, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	*	201.	3.	ITA	1.00
NICKEL, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	*	9.8	8.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	01/07/93	0004	3.0- 5.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0004	3.0- 5.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0004	3.0- 5.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0010	9.0- 11.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0015	14.5- 15.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	% MOIST		9.	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	% MOIST		10.	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	% MOIST		9.	-	ITA	1.00
	01/07/93	0025	24.5- 25.0	% MOIST		10.	-	ITA	1.00
POTASSIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	B	1010.	2000.	ITA	2.00
POTASSIUM-40	01/07/93	0004	3.0- 5.0	PCI/G		11.	1.2	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G		13.7	1.1	ITA	1.00
RADIUM-226	01/07/93	0004	3.0- 5.0	PCI/G		.86	.1	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G		1.13	.2	ITA	1.00
SODIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	B	161.	1030.	ITA	1.00
SULFATE	01/07/93	0020	18.5- 20.0	MG/KG		37.4	22.32	ITA	1.00
THALLIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG	B	.47	2.	ITA	1.00
THORIUM-228	01/07/93	0004	3.0- 5.0	PCI/G	J	.405	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G	J	.893	-	ITA	1.00
THORIUM-230	01/07/93	0004	3.0- 5.0	PCI/G	J	.811	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G	J	.670	-	ITA	1.00
THORIUM-232	01/07/93	0004	3.0- 5.0	PCI/G	J	.405	-	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G	J	.391	-	ITA	1.00
TOTAL ORGANIC CARBON	01/07/93	0004	3.0- 5.0	MG/KG	J	91306.2	44.	ITA	1.00
	01/07/93	0010	9.0- 11.0	MG/KG	J	60050.3	30.	ITA	1.00
	01/07/93	0015	14.5- 15.0	MG/KG	J	61205.4	29.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	01/07/93	0020	18.5- 20.0	MG/KG	J	54348.5	26.	ITA	1.00
	01/07/93	0025	24.5- 25.0	MG/KG	J	63874.8	25.	ITA	1.00
	01/07/93	1010	9.0- 11.0	MG/KG	J	94061.8	39.	ITA	1.00
TRITIUM	01/07/93	0004	3.0- 5.0	PCI/G		.12	.031	ITA	1.00
	01/07/93	1010	9.0- 11.0	PCI/G		.046	.032	ITA	1.00
URANIUM-234	01/07/93	0004	3.0- 5.0	PCI/G		.716	.0244	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G		1.06	.065	ITA	1.00
URANIUM-235/236	01/07/93	0004	3.0- 5.0	PCI/G		.0488	.0244	ITA	1.00
URANIUM-238	01/07/93	0004	3.0- 5.0	PCI/G		.92	.0623	ITA	1.00
	01/07/93	0020	18.5- 20.0	PCI/G		1.14	.065	ITA	1.00
VANADIUM, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		12.7	2.5	ITA	1.00
ZINC, TOTAL	01/07/93	0020	18.5- 20.0	MG/KG		32.8	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB9B AREA B
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0010	9.0- 10.0	% SOLIDS		90.3	-	ITA	1.00
4-METHYLPHENOL	12/15/92	0005	4.0- 5.0	UG/KG	J	290.	330.	ITA	1.00
ALKALINITY	12/15/92	0010	9.0- 10.0	MG/KG		1517.17	110.74	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		4020.	17.	ITA	4.00
ARSENIC, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		5.8	2.	ITA	1.00
BARIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		34.4	10.5	ITA	.25
CALCIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		109000.	1055.	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		6.6	2.	ITA	1.00
COBALT, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	B	3.5	10.	ITA	1.00
COPPER, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		9.7	5.	ITA	1.00
FLUORIDE	12/15/92	0010	9.0- 10.0	MG/KG		2.21	.55	ITA	1.00
IRON, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		11400.	21.	ITA	1.00
LEAD, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		5.6	.61	ITA	1.00
LITHIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		10.9	10.5	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		39200.	1055.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	*	204.	3.	ITA	1.00
NICKEL, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	*	13.	8.	ITA	1.00
NITRATE	12/15/92	0010	9.0- 10.0	MG/KG		3.83	1.11	ITA	1.00
PERCENT MOISTURE	12/15/92	0005	4.0- 5.0	% MOIST		13.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	12/15/92	0005	4.0- 5.0	% MOIST		13.	-	ITA	1.00
	12/15/92	0005	4.0- 5.0	% MOIST		13.	-	ITA	1.00
	12/15/92	0010	9.0- 10.0	% MOIST		9.	-	ITA	1.00
	12/15/92	0010	9.0- 10.0	% MOIST		10.	-	ITA	1.00
	12/15/92	0010	9.0- 10.0	% MOIST		9.	-	ITA	1.00
	12/15/92	0015	14.5- 15.0	% MOIST		9.	-	ITA	1.00
	12/16/92	0016	15.0- 16.0	% MOIST		10.	-	ITA	1.00
	12/16/92	1016	15.0- 16.0	% MOIST		10.	-	ITA	1.00
PHENOL	12/15/92	0005	4.0- 5.0	UG/KG	J	110.	380.	ITA	1.00
	12/15/92	0010	9.0- 10.0	UG/KG	J	120.	360.	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	B	1170.	2110.	ITA	2.00
POTASSIUM-40	12/15/92	0005	4.0- 5.0	PCI/G		18.6	.8	ITA	1.00
	12/15/92	0010	9.0- 10.0	PCI/G		15.3	1.	ITA	1.00
RADIUM-226	12/15/92	0005	4.0- 5.0	PCI/G		1.08	.1	ITA	1.00
	12/15/92	0010	9.0- 10.0	PCI/G		1.01	.1	ITA	1.00
SILVER, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	*	2.5	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG	B	187.	1055.	ITA	1.00
SULFATE	12/15/92	0010	9.0- 10.0	MG/KG		123.26	22.15	ITA	1.00
THORIUM-228	12/15/92	0005	4.0- 5.0	PCI/G	J	.622	-	ITA	1.00
THORIUM-230	12/15/92	0005	4.0- 5.0	PCI/G	J	1.40	-	ITA	1.00
	12/15/92	0010	9.0- 10.0	PCI/G	J	1.57	-	ITA	1.00
THORIUM-232	12/15/92	0005	4.0- 5.0	PCI/G	J	.510	-	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0005	4.0- 5.0	MG/KG		31770.1	43.	ITA	1.00
	12/15/92	0010	9.0- 10.0	MG/KG		67568.4	32.	ITA	1.00
	12/15/92	0015	14.5- 15.0	MG/KG		84430.7	33.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	12/16/92	0016	15.0- 16.0	MG/KG		85018.8	39.	ITA	1.00
	12/16/92	1016	15.0- 16.0	MG/KG		71645.6	40.	ITA	1.00
TRITIUM	12/16/92	1016	15.0- 16.0	PCI/G		.165	-	ITC	-
URANIUM-234	12/15/92	0005	4.0- 5.0	PCI/G		.821	.058	ITA	1.00
	12/15/92	0010	9.0- 10.0	PCI/G		.559	.113	ITA	1.00
URANIUM-235/236	12/15/92	0005	4.0- 5.0	PCI/G		.0304	.022	ITA	1.00
URANIUM-238	12/15/92	0005	4.0- 5.0	PCI/G		.783	.058	ITA	1.00
	12/15/92	0010	9.0- 10.0	PCI/G		.707	.113	ITA	1.00
VANADIUM, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		11.2	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0010	9.0- 10.0	MG/KG		34.4	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/19/92	0005	3.0- 5.0	% SOLIDS		88.2	-	ITA	1.00
	11/19/92	0021	20.0- 22.0	% SOLIDS		90.5	-	ITA	1.00
	11/19/92	0027	26.0- 27.0	% SOLIDS		85.	-	ITA	1.00
1,1-DICHLOROETHENE	11/19/92	0014	13.5- 14.0	UG/KG		19.	6.	ITA	1.00
	11/19/92	0035	34.0- 35.0	UG/KG	J	4.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG	J	3.	5.	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/19/92	0005	3.0- 5.0	PG/G	J	3.3	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/19/92	0005	3.0- 5.0	PG/G	J	12.2	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	2.	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	.78	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	.96	-	ITA	1.00
1,2-DICHLOROETHENE	11/19/92	0005	3.0- 5.0	UG/KG		31.	6.	ITA	1.00
	11/19/92	0014	13.5- 14.0	UG/KG		6600.	690.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG		5200.	690.	ITA	1.00
	11/19/92	0021	20.0- 22.0	UG/KG	J	32.	5.	ITA	1.00
	11/19/92	0027	26.0- 27.0	UG/KG	J	2.	5.	ITA	1.00
	11/19/92	1021	20.0- 22.0	UG/KG		52.	6.	ITA	1.00
1,2-DICHLOROPROPANE	11/19/92	0014	13.5- 14.0	UG/KG		9.	6.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	.77	-	ITA	1.00
2,3,4,7,8-PENTACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	1.6	-	ITA	1.00
2,3,7,8-TCDD	11/19/92	0005	3.0- 5.0	PG/G	J	9.6	-	ITA	1.00
2,3,7,8-TCDF	11/19/92	0005	3.0- 5.0	PG/G	J	2.4	-	ITA	1.00
2-BUTANONE	11/19/92	1021	20.0- 22.0	UG/KG	J	1.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
4-METHYL-2-PENTANONE	11/19/92	0014	13.5- 14.0	UG/KG	J	4.	11.	ITA	1.00
ALKALINITY	11/19/92	0005	3.0- 5.0	MG/KG		4464.3	111.6	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		14644.8	109.3	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG		3053.4	109.1	ITA	1.00
	11/19/92	1021	20.0- 22.0	MG/KG		12263.1	50.	ITA	111.50
ALUMINUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG		6630.	1.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		3790.	1.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG		1880.	1.	ITA	1.00
AROCLOR-1248	11/19/92	0005	3.0- 5.0	UG/KG	J	410.	33.	ITA	10.00
ARSENIC, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG		4.4	1.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		4.3	2.	ITA	2.00
	11/19/92	0027	26.0- 27.0	MG/KG		3.1	2.	ITA	1.00
BARIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	33.5	11.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	J	23.2	11.	ITA	1.00
BENZENE	11/19/92	0014	13.5- 14.0	UG/KG		160.	6.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG		8.	6.	ITA	1.00
	11/19/92	0035	34.0- 35.0	UG/KG	J	3.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG	J	2.	5.	ITA	1.00
BENZO(A)ANTHRACENE	11/19/92	0005	3.0- 5.0	UG/KG	J	66.	370.	ITA	1.00
BENZO(A)PYRENE	11/19/92	0005	3.0- 5.0	UG/KG	J	55.	370.	ITA	1.00
BENZO(B)FLUORANTHENE	11/19/92	0005	3.0- 5.0	UG/KG	J	80.	370.	ITA	1.00
CADMIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	B	.31	.56	ITA	1.00
CALCIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG		109000.	14172.	ITA	50.00
	11/19/92	0021	20.0- 22.0	MG/KG		119000.	13858.	ITA	50.00
	11/19/92	0027	26.0- 27.0	MG/KG		262000.	14706.	ITA	50.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CARBON DISULFIDE	11/19/92	0014	13.5- 14.0	UG/KG		24.	6.	ITA	1.00
CHLORIDE	11/19/92	0005	3.0- 5.0	MG/KG		81.25	5.58	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		28.76	5.57	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG		34.46	5.45	ITA	1.00
CHLOROBENZENE	11/19/92	0035	34.0- 35.0	UG/KG	J	3.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG	J	2.	5.	ITA	1.00
CHLOROETHENE (VINYL CHLORIDE)	11/19/92	0014	13.5- 14.0	UG/KG		190.	11.	ITA	1.00
	11/19/92	0021	20.0- 22.0	UG/KG		30.	11.	ITA	1.00
	11/19/92	1021	20.0- 22.0	UG/KG		23.	11.	ITA	1.00
CHRYSENE	11/19/92	0005	3.0- 5.0	UG/KG	J	70.	370.	ITA	1.00
COPPER, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG		42.7	1.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		10.7	1.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	B	4.9	1.	ITA	1.00
ENDOSULFAN SULFATE	11/19/92	0005	3.0- 5.0	UG/KG		3.9	3.7	ITA	1.00
ETHYLBENZENE	11/19/92	0014	13.5- 14.0	UG/KG		35.	6.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG	J	3.	6.	ITA	1.00
FLUORANTHENE	11/19/92	0005	3.0- 5.0	UG/KG	J	160.	370.	ITA	1.00
FLUORIDE	11/19/92	0005	3.0- 5.0	MG/KG		1.4	.56	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG		1.07	.56	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG		1.2	.55	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/19/92	0005	3.0- 5.0	PG/G	J	24.5	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	7.	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/19/92	0005	3.0- 5.0	PG/G	J	6.5	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	8.8	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
IRON, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	11900.	6.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	J	8800.	6.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	J	4380.	6.	ITA	1.00
LEAD, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	10.2	.68	ITA	2.00
LITHIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	18.1	6.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	J	14.4	6.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	J	9.4	10.	ITA	1.00
MAGNESIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG		42900.	14172.	ITA	50.00
	11/19/92	0021	20.0- 22.0	MG/KG		53100.	13858.	ITA	50.00
	11/19/92	0027	26.0- 27.0	MG/KG		37900.	14706.	ITA	50.00
MANGANESE, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	362.	1.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	J	209.	1.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	J	372.	1.	ITA	1.00
MERCURY, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	J	.06	.11	ITA	1.00
OCTACHLORODIBENZO-P-DIOXIN	11/19/92	0005	3.0- 5.0	PG/G	J	96.	-	ITA	1.00
	11/19/92	0021	20.0- 22.0	PG/G	J	6.5	-	ITA	1.00
	11/19/92	1021	20.0- 22.0	PG/G	J	6.3	-	ITA	1.00
OCTACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	3.3	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	17.7	-	ITA	1.00
PERCENT MOISTURE	11/19/92	0005	3.0- 5.0	% MOIST		12.	-	ITA	1.00
	11/19/92	0005	3.0- 5.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0005	3.0- 5.0	% MOIST		12.	-	ITA	1.00
	11/19/92	0014	13.5- 14.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0018	17.5- 18.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0021	20.0- 22.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0021	20.0- 22.0	% MOIST		9.	-	ITA	1.00
	11/19/92	0021	20.0- 22.0	% MOIST		10.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	11/19/92	0027	26.0- 27.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0027	26.0- 27.0	% MOIST		8.	-	ITA	1.00
	11/19/92	0027	26.0- 27.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0035	34.0- 35.0	% MOIST		9.	-	ITA	1.00
	11/19/92	0039	38.0- 39.0	% MOIST		9.	-	ITA	1.00
	11/19/92	1021	20.0- 22.0	% MOIST		10.	-	ITA	1.00
PHENANTHRENE	11/19/92	0005	3.0- 5.0	UG/KG	J	110.	370.	ITA	1.00
PLUTONIUM-238	11/19/92	0005	3.0- 5.0	PCI/G		.496	.072	ITA	1.00
PLUTONIUM-239/240	11/19/92	0005	3.0- 5.0	PCI/G		.131	.028	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.0831	.031	ITA	1.00
POTASSIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	B	451.	566.	ITA	2.00
	11/19/92	0021	20.0- 22.0	MG/KG	B	523.	277.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	B	256.	294.	ITA	1.00
POTASSIUM-40	11/19/92	0005	3.0- 5.0	PCI/G		11.5	.3	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		11.2	.3	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		5.43	.2	ITA	1.00
PYRENE	11/19/92	0005	3.0- 5.0	UG/KG	J	140.	370.	ITA	1.00
RADIUM-226	11/19/92	0005	3.0- 5.0	PCI/G		.682	.1	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.841	.1	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.432	0.	ITA	1.00
SELENIUM, TOTAL	11/19/92	0021	20.0- 22.0	MG/KG	J	.92	1.	ITA	1.00
SODIUM, TOTAL	11/19/92	0005	3.0- 5.0	MG/KG	B	156.	283.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	B	205.	277.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	B	170.	294.	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/19/92	0005	3.0- 5.0	PG/G	J	8.4	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/19/92	0005	3.0- 5.0	PG/G	J	36.3	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROETHENE	11/19/92	0014	13.5- 14.0	UG/KG	J	440.	690.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG		1600.	690.	ITA	1.00
	11/19/92	0027	26.0- 27.0	UG/KG		14.	5.	ITA	1.00
	11/19/92	0035	34.0- 35.0	UG/KG		52.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG		26.	5.	ITA	1.00
THORIUM-228	11/19/92	0005	3.0- 5.0	PCI/G		.442	.0697	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.519	.106	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.223	.042	ITA	1.00
THORIUM-230	11/19/92	0005	3.0- 5.0	PCI/G		.754	.0434	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.769	.074	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.313	.016	ITA	1.00
THORIUM-232	11/19/92	0005	3.0- 5.0	PCI/G		.408	.0434	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.394	.074	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.223	.042	ITA	1.00
TOLUENE	11/19/92	0014	13.5- 14.0	UG/KG		7100.	690.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG		180.	6.	ITA	1.00
	11/19/92	0027	26.0- 27.0	UG/KG	J	2.	5.	ITA	1.00
	11/19/92	0035	34.0- 35.0	UG/KG		7.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG	J	5.	5.	ITA	1.00
	11/19/92	1021	20.0- 22.0	UG/KG	J	1.	6.	ITA	1.00
TOTAL ORGANIC CARBON	11/19/92	0005	3.0- 5.0	MG/KG	J	70966.	44.	ITA	1.00
	11/19/92	0014	13.5- 14.0	MG/KG	J	74333.8	35.	ITA	1.00
	11/19/92	0018	17.5- 18.0	MG/KG	J	101279.4	33.	ITA	1.00
	11/19/92	0021	20.0- 22.0	MG/KG	J	59849.2	21.	ITA	1.00
	11/19/92	0027	26.0- 27.0	MG/KG	J	69692.	28.	ITA	1.00
	11/19/92	0035	34.0- 35.0	MG/KG	J	97021.4	19.	ITA	1.00
	11/19/92	0039	38.0- 39.0	MG/KG	J	99627.4	35.	ITA	1.00
	11/19/92	1021	20.0- 22.0	MG/KG	J	59748.5	23.	ITA	1.00
TOTAL XYLENES	11/19/92	0014	13.5- 14.0	UG/KG		160.	6.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG	J	4.	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL XYLENES	11/19/92	0035	34.0- 35.0	UG/KG	J	1.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG	J	1.	5.	ITA	1.00
TRICHLOROETHENE	11/19/92	0005	3.0- 5.0	UG/KG		64.	6.	ITA	1.00
	11/19/92	0014	13.5- 14.0	UG/KG	J	490.	690.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG		220.	6.	ITA	1.00
	11/19/92	0021	20.0- 22.0	UG/KG	J	1.	5.	ITA	1.00
	11/19/92	0027	26.0- 27.0	UG/KG	J	3.	5.	ITA	1.00
	11/19/92	0035	34.0- 35.0	UG/KG		11.	5.	ITA	1.00
	11/19/92	0039	38.0- 39.0	UG/KG		6.	5.	ITA	1.00
	11/19/92	1021	20.0- 22.0	UG/KG	J	3.	6.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	11/19/92	0014	13.5- 14.0	UG/KG		30.	11.	ITA	1.00
	11/19/92	0018	17.5- 18.0	UG/KG	J	4.	6.	ITA	1.00
TRITIUM	11/19/92	0005	3.0- 5.0	PCI/G	J	.594	.037	ITA	1.00
	11/19/92	0014	13.5- 14.0	PCI/G	J	2.09	.037	ITA	1.00
	11/19/92	0018	17.5- 18.0	PCI/G	J	1.14	.036	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G	J	.75	.03	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G	J	.44	.029	ITA	1.00
	11/19/92	0035	34.0- 35.0	PCI/G	J	.466	.03	ITA	1.00
	11/19/92	0039	38.0- 39.0	PCI/G	J	.598	.03	ITA	1.00
	11/19/92	1021	20.0- 22.0	PCI/G	J	1.25	.036	ITA	1.00
URANIUM-234	11/19/92	0005	3.0- 5.0	PCI/G		.647	.055	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		.983	.058	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.553	.068	ITA	1.00
URANIUM-235/236	11/19/92	0027	26.0- 27.0	PCI/G		.0535	.026	ITA	1.00
URANIUM-238	11/19/92	0005	3.0- 5.0	PCI/G		.675	.022	ITA	1.00
	11/19/92	0021	20.0- 22.0	PCI/G		1.01	.058	ITA	1.00
	11/19/92	0027	26.0- 27.0	PCI/G		.375	.068	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/19/92	0003	2.0- 3.0	% SOLIDS		84.6	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	% SOLIDS		89.7	-	ITA	1.00
	11/20/92	0026	25.0- 26.0	% SOLIDS		91.9	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/19/92	0003	2.0- 3.0	PG/G		6.3	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/19/92	0003	2.0- 3.0	PG/G		30.3	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	PG/G		.52	-	ITA	1.00
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFUR	11/19/92	0003	2.0- 3.0	PG/G		.62	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIO	11/19/92	0003	2.0- 3.0	PG/G		.65	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		2.2	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		1.2	-	ITA	1.00
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIO	11/19/92	0003	2.0- 3.0	PG/G		1.7	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIO	11/19/92	0003	2.0- 3.0	PG/G		1.8	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		1.1	-	ITA	1.00
1,2-DICHLOROETHENE	11/19/92	0025	24.5- 25.0	UG/KG	J	5.	5.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		1.	-	ITA	1.00
2,3,4,7,8-PENTACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		1.5	-	ITA	1.00
2,3,7,8-TCDD	11/19/92	0003	2.0- 3.0	PG/G		3.	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	PG/G		1.8	-	ITA	1.00
2,3,7,8-TCDF	11/19/92	0003	2.0- 3.0	PG/G		2.8	-	ITA	1.00
ALKALINITY	11/19/92	0003	2.0- 3.0	MG/KG		12038.1	112.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG		84080.7	112.1	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ALKALINITY	11/20/92	0026	25.0- 26.0	MG/KG		5730.3	112.4	ITA	1.00
ALUMINUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG		4710.	4.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG		3510.	1.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG		1140.	1.	ITA	1.00
AROCLOR-1248	11/19/92	0003	2.0- 3.0	UG/KG	J	24.	39.	ITA	1.00
ARSENIC, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG		6.	2.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG		4.1	2.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG		3.	1.	ITA	1.00
BARIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	33.2	12.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	20.2	11.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	J	13.6	11.	ITA	1.00
BENZENE	11/19/92	0025	24.5- 25.0	UG/KG	J	2.	5.	ITA	1.00
BENZOIC ACID	11/19/92	0003	2.0- 3.0	UG/KG	J	270.	1900.	ITA	1.00
	11/20/92	0026	25.0- 26.0	UG/KG	J	140.	1700.	ITA	1.00
CADMIUM, TOTAL	11/20/92	0026	25.0- 26.0	MG/KG	B	.22	.27	ITA	1.00
CALCIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG		133000.	14775.	ITA	50.00
	11/19/92	0011	10.5- 11.0	MG/KG		116000.	13935.	ITA	50.00
	11/20/92	0026	25.0- 26.0	MG/KG		203000.	13602.	ITA	50.00
CARBON DISULFIDE	11/19/92	0011	10.5- 11.0	UG/KG	J	1.	6.	ITA	1.00
	11/19/92	0015	14.5- 15.0	UG/KG	J	2.	5.	ITA	1.00
	11/20/92	0045	44.5- 45.0	UG/KG	J	1.	5.	ITA	1.00
CESIUM-137	11/19/92	0003	2.0- 3.0	PCI/G		.0382	0.	ITA	1.00
CHLORIDE	11/19/92	0011	10.5- 11.0	MG/KG		23.43	5.61	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG		9.44	5.	ITA	5.62
COPPER, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG		11.	1.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
COPPER, TOTAL	11/19/92	0011	10.5- 11.0	MG/KG		11.9	1.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG		6.2	1.	ITA	1.00
ETHYLBENZENE	11/19/92	0025	24.5- 25.0	UG/KG	J	2.	5.	ITA	1.00
FLUORANTHENE	11/19/92	0003	2.0- 3.0	UG/KG	J	39.	390.	ITA	1.00
FLUORIDE	11/19/92	0003	2.0- 3.0	MG/KG		2.52	.56	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG		1.2	.56	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG		.61	.56	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/19/92	0003	2.0- 3.0	PG/G		38.7	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	PG/G		1.1	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		18.1	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/19/92	0003	2.0- 3.0	PG/G		19.6	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		17.4	-	ITA	1.00
IRON, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	9690.	6.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	9640.	6.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	J	6110.	5.	ITA	1.00
LITHIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	15.4	6.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	16.2	6.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	J	7.1	5.	ITA	1.00
MAGNESIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG		55200.	14775.	ITA	50.00
	11/19/92	0011	10.5- 11.0	MG/KG		52000.	13935.	ITA	50.00
	11/20/92	0026	25.0- 26.0	MG/KG		57900.	13602.	ITA	50.00
MANGANESE, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	289.	1.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	207.	1.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	J	361.	1.	ITA	1.00
MERCURY, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	.07	.12	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB9B AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
OCTACHLORODIBENZO-P-DIOXIN	11/19/92	0003	2.0- 3.0	PG/G		273.	-	ITA	1.00
OCTACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		10.3	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	PG/G		.28	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	11/19/92	0003	2.0- 3.0	PG/G		3.5	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		24.5	-	ITA	1.00
PERCENT MOISTURE	11/19/92	0003	2.0- 3.0	% MOIST		15.	-	ITA	1.00
	11/19/92	0003	2.0- 3.0	% MOIST		11.	-	ITA	1.00
	11/19/92	0009	8.5- 9.0	% MOIST		8.	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	% MOIST		11.	-	ITA	1.00
	11/19/92	0015	14.5- 15.0	% MOIST		9.	-	ITA	1.00
	11/19/92	0020	19.5- 20.0	% MOIST		10.	-	ITA	1.00
	11/19/92	0025	24.5- 25.0	UG/KG		8.	-	ITA	1.00
	11/20/92	0026	25.0- 26.0	% MOIST		8.	-	ITA	1.00
	11/20/92	0026	25.0- 26.0	% MOIST		11.	-	ITA	1.00
	11/20/92	0030	28.5- 30.0	% MOIST		7.	-	ITA	1.00
	11/20/92	0035	34.5- 35.0	% MOIST		9.	-	ITA	1.00
	11/20/92	0040	39.5- 40.0	% MOIST		6.	-	ITA	1.00
	11/20/92	0045	44.5- 45.0	% MOIST		9.	-	ITA	1.00
	11/20/92	0050	49.5- 50.	% MOIST		8.	-	ITA	1.00
PLUTONIUM-238	11/19/92	0003	2.0- 3.0	PCI/G		2.06	.022	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.0688	.0206	ITA	1.00
PLUTONIUM-239/240	11/19/92	0003	2.0- 3.0	PCI/G		.0895	.022	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.0619	.0206	ITA	1.00
POTASSIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	B	454.	296.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	B	541.	279.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	B	195.	272.	ITA	1.00
POTASSIUM-40	11/19/92	0003	2.0- 3.0	PCI/G		11.7	.3	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
POTASSIUM-40	11/19/92	0011	10.0- 11.0	PCI/G		12.2	.3	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		4.96	.2	ITA	1.00
RADIUM-226	11/19/92	0003	2.0- 3.0	PCI/G		.769	.1	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.897	.1	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.478	0.	ITA	1.00
SODIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	B	173.	296.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	B	205.	279.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	B	181.	272.	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/19/92	0003	2.0- 3.0	PG/G		11.8	-	ITA	1.00
	11/19/92	0011	10.5- 11.0	PG/G		1.9	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/19/92	0003	2.0- 3.0	PG/G		40.9	-	ITA	1.00
TETRACHLOROETHENE	11/19/92	0025	24.5- 25.0	UG/KG	J	36.	5.	ITA	1.00
	11/20/92	0026	25.0- 26.0	UG/KG	J	1.	6.	ITA	1.00
	11/20/92	0030	28.5- 30.0	UG/KG	J	1.	5.	ITA	1.00
	11/20/92	0035	34.5- 35.0	UG/KG	J	2.	5.	ITA	1.00
	11/20/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
TETRACHLOROMETHANE (CCL4)	11/19/92	0025	24.5- 25.0	UG/KG		14.	5.	ITA	1.00
THALLIUM, TOTAL	11/19/92	0003	2.0- 3.0	MG/KG	J	.29	2.9	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	.24	2.4	ITA	1.00
THORIUM-228	11/19/92	0003	2.0- 3.0	PCI/G		.604	.074	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.537	.0878	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.279	.047	ITA	1.00
THORIUM-230	11/19/92	0003	2.0- 3.0	PCI/G		.912	.046	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		1.05	.0501	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.741	.038	ITA	1.00
THORIUM-232	11/19/92	0003	2.0- 3.0	PCI/G		.52	.057	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THORIUM-232	11/19/92	0011	10.0- 11.0	PCI/G		.419	.0501	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.134	.038	ITA	1.00
TOLUENE	11/19/92	0011	10.5- 11.0	UG/KG	J	2.	6.	ITA	1.00
	11/19/92	0020	19.5- 20.0	UG/KG	J	3.	6.	ITA	1.00
	11/19/92	0025	24.5- 25.0	UG/KG		7.	5.	ITA	1.00
TOTAL ORGANIC CARBON	11/19/92	0003	2.0- 3.0	MG/KG	J	21383.	25.	ITA	1.00
	11/19/92	0009	8.5- 9.0	MG/KG	J	53648.	24.	ITA	1.00
	11/19/92	0011	10.5- 11.0	MG/KG	J	80039.3	30.	ITA	1.00
	11/19/92	0015	14.5- 15.0	MG/KG	J	102959.5	41.	ITA	1.00
	11/19/92	0020	19.5- 20.0	MG/KG	J	72939.8	31.	ITA	1.00
	11/19/92	0025	24.5- 25.0	MG/KG	J	85768.9	35.	ITA	1.00
	11/20/92	0026	25.0- 26.0	MG/KG	J	93622.	19.	ITA	1.00
	11/20/92	0030	28.5- 30.0	MG/KG	J	68802.6	25.	ITA	1.00
	11/20/92	0035	34.5- 35.0	MG/KG	J	92700.4	26.	ITA	1.00
	11/20/92	0040	39.5- 40.0	MG/KG	J	62513.	19.	ITA	1.00
	11/20/92	0045	44.5- 45.0	MG/KG	J	60117.4	32.	ITA	1.00
	11/20/92	0050	49.5- 50.	MG/KG	J	79060.5	30.	ITA	1.00
TRICHLOROETHENE	11/19/92	0025	24.5- 25.0	UG/KG		73.	5.	ITA	1.00
	11/20/92	0026	25.0- 26.0	UG/KG	J	1.	6.	ITA	1.00
	11/20/92	0030	28.5- 30.0	UG/KG	J	2.	5.	ITA	1.00
	11/20/92	0035	34.5- 35.0	UG/KG	J	2.	5.	ITA	1.00
	11/20/92	0040	39.5- 40.0	UG/KG	J	1.	5.	ITA	1.00
TRITIUM	11/19/92	0003	2.0- 3.0	PCI/G		.376	.02	ITA	1.00
	11/19/92	0009	8.5- 9.0	PCI/G		.022	.015	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.076	.02	ITA	1.00
	11/19/92	0015	14.5- 15.0	PCI/G		.089	.017	ITA	1.00
	11/19/92	0020	19.5- 20.0	PCI/G		.382	.018	ITA	1.00
	11/19/92	0025	24.5- 25.0	PCI/G		.318	.015	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.579	.02	ITA	1.00
	11/20/92	0030	28.5- 30.0	PCI/G		.393	.013	ITA	1.00
	11/20/92	0035	34.5- 35.0	PCI/G		.367	.017	ITA	1.00
	11/20/92	0040	39.5- 40.0	PCI/G		.315	.011	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRITIUM	11/20/92	0045	44.5- 45.0	PCI/G		.971	.017	ITA	1.00
	11/20/92	0050	49.5- 50.0	PCI/G		.815	.016	ITA	1.00
URANIUM-234	11/19/92	0003	2.0- 3.0	PCI/G		.767	.077	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.81	.119	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.501	.083	ITA	1.00
URANIUM-238	11/19/92	0003	2.0- 3.0	PCI/G		.817	.077	ITA	1.00
	11/19/92	0011	10.0- 11.0	PCI/G		.918	.083	ITA	1.00
	11/20/92	0026	25.0- 26.0	PCI/G		.49	.083	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: 0397
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	12/06/92	0024	23.5- 24.0	% MOIST		10.	-	ITA	1.00
	12/06/92	0028	27.5- 28.0	% MOIST		12.	-	ITA	1.00
TETRACHLOROETHENE	12/06/92	0024	23.5- 24.0	UG/KG		24.	6.	ITA	1.00
	12/06/92	0028	27.5- 28.0	UG/KG		14.	5.	ITA	1.00
TOLUENE	12/06/92	0024	23.5- 24.0	UG/KG	J	1.	6.	ITA	1.00
TOTAL ORGANIC CARBON	12/06/92	0024	23.5- 24.0	UG/G		10600.	28.5	ITA	1.00
	12/06/92	0028	27.5- 28.0	UG/G		17700.	28.5	ITA	1.00
TRICHLOROETHENE	12/06/92	0024	23.5- 24.0	UG/KG		13.	6.	ITA	1.00
	12/06/92	0028	27.5- 28.0	UG/KG	J	2.	6.	ITA	1.00
TRITIUM	12/06/92	0024	23.5- 24.0	PCI/G		.631	.02	ITA	1.00
	12/06/92	0028	27.5- 28.0	PCI/G		.301	.02	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/04/92	0007	5.0- 7.0	% SOLIDS		80.8	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	% SOLIDS		90.7	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	% SOLIDS		91.	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/04/92	0007	5.0- 7.0	PG/G		.45	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/04/92	0007	5.0- 7.0	PG/G		3.2	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	PG/G		.85	-	ITA	1.00
1,2-DICHLOROETHENE	11/04/92	0005	3.5- 5.0	UG/KG		37.	12.	ITA	1.00
	11/04/92	0007	5.0- 7.0	UG/KG		140.	12.	ITA	1.00
	11/04/92	0014	12.5- 14.0	UG/KG		520.	57.	ITA	5.00
	11/04/92	0015	15.0- 16.5	UG/KG		6700.	1300.	ITA	100.00
	11/04/92	0023	21.5- 23.0	UG/KG		52.	11.	ITA	1.00
	11/04/92	0028	26.0- 28.0	UG/KG	J	4.	11.	ITA	1.00
	11/04/92	1023	21.5- 23.0	UG/KG		38.	11.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		.22	-	ITA	1.00
ACETONE	11/04/92	0014	12.5- 14.0	UG/KG	J	980.	57.	ITA	5.00
ALKALINITY	11/04/92	0015	15.0- 16.5	MG/KG	J	9569.	119.6	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	53348.	113.5	ITA	1.00
ALUMINUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		6320.	4.96	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG		3100.	1.1	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG		2060.	1.1	ITA	1.00
ARSENIC, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		10.4	2.48	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG		13.5	2.21	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG		3.3	2.2	ITA	1.00
BARIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		70.5	12.4	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	B	21.6	11.	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	B	18.4	11.	ITA	1.00
BERYLLIUM	11/04/92	0007	5.0- 7.0	MG/KG		.47	.12	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
BERYLLIUM	11/04/92	0015	15.0- 16.5	MG/KG	B	.18	.06	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	B	.12	.05	ITA	1.00
CALCIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		9570.	309.	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG		110000.	5513.	ITA	20.00
	11/04/92	0028	26.0- 28.0	MG/KG		190000.	13736.	ITA	50.00
CARBON DISULFIDE	11/04/92	0023	21.5- 23.0	UG/KG	J	1.	11.	ITA	1.00
CHLORIDE	11/04/92	0007	5.0- 7.0	MG/KG	J	98.4	5.98	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG	J	120.3	5.61	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	42.8	5.68	ITA	1.00
CHLOROETHENE (VINYL CHLORIDE)	11/04/92	0005	3.5- 5.0	UG/KG	J	4.	12.	ITA	1.00
CHROMIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	6.5	.62	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	J	2.5	.55	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	1.7	.55	ITA	1.00
COBALT, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	B	5.6	6.1	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	B	4.4	2.76	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	B	3.4	2.75	ITA	1.00
COPPER, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	9.2	1.55	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	J	11.1	5.	ITA	1.38
	11/04/92	0028	26.0- 28.0	MG/KG	J	8.1	1.37	ITA	1.00
FLUORIDE	11/04/92	0007	5.0- 7.0	MG/KG	J	2.27	.6	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG	J	.58	.56	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	1.07	.57	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/04/92	0007	5.0- 7.0	PG/G		6.1	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	PG/G		1.8	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		1.1	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/04/92	0007	5.0- 7.0	PG/G		2.9	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
HEXACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		.57	-	ITA	1.00
IRON, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	9520.	6.2	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	J	8660.	.6	ITA	5.50
	11/04/92	0028	26.0- 28.0	MG/KG	J	6700.	5.5	ITA	1.00
LEAD, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	9.1	.74	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG	J	6.7	.66	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	7.5	.66	ITA	1.00
LITHIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		12.4	6.2	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG		12.7	2.21	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	B	8.2	5.5	ITA	1.00
MAGNESIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		5630.	309.	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG		50100.	5513.	ITA	20.00
	11/04/92	0028	26.0- 28.0	MG/KG		57500.	13736.	ITA	50.00
MANGANESE, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	479.	.93	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	J	222.	3.	ITA	.83
	11/04/92	0028	26.0- 28.0	MG/KG	J	345.	.82	ITA	1.00
MERCURY, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	.07	.12	ITA	1.00
NITRATE	11/04/92	0007	5.0- 7.0	MG/KG		1.86	1.2	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG		1.32	1.12	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG		1.34	1.14	ITA	1.00
OCTACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		.6	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	11/04/92	0007	5.0- 7.0	PG/G		.44	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		.99	-	ITA	1.00
PERCENT MOISTURE	11/04/92	0005	3.5- 5.0	% MOIST		18.	-	ITA	1.00
	11/04/92	0007	5.0- 7.0	% MOIST		19.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	11/04/92	0007	5.0- 7.0	% MOIST		19.	-	ITA	1.00
	11/04/92	0014	12.5- 14.0	% MOIST		12.	-	ITA	-
	11/04/92	0015	15.0- 16.5	% MOIST		9.	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	% MOIST		9.	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	% MOIST		9.	-	ITA	1.00
	11/04/92	0023	21.5- 23.0	% MOIST		11.	-	ITA	-
	11/04/92	0028	26.0- 28.0	% MOIST		9.	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	% MOIST		9.	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	% MOIST		9.	-	ITA	1.00
	11/04/92	0035	33.5- 35.0	% MOIST		16.	-	ITA	-
	11/04/92	0038	36.5- 38.0	% MOIST		8.	-	ITA	-
	11/04/92	1023	21.5- 23.0	% MOIST		10.	-	ITA	-
POTASSIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	B	823.	309.	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG	B	565.	276.	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	B	432.	275.	ITA	1.00
POTASSIUM-40	11/04/92	0007	5.0- 7.0	PCI/G		17.4	.8	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G		14.2	.09	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G		8.37	.7	ITA	1.00
RADIUM-226	11/04/92	0007	5.0- 7.0	PCI/G		1.29	.1	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G		1.05	.01	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G		.641	.1	ITA	1.00
SELENIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG	J	.29	1.24	ITA	1.00
SULFATE	11/04/92	0007	5.0- 7.0	MG/KG	J	158.7	23.92	ITA	1.00
	11/04/92	0015	15.0- 16.5	MG/KG	J	46.9	22.45	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG	J	35.8	22.7	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/04/92	0007	5.0- 7.0	PG/G		1.5	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/04/92	0007	5.0- 7.0	PG/G		3.9	-	ITA	1.00
TETRACHLOROETHENE	11/04/92	0007	5.0- 7.0	UG/KG		68.	12.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROETHENE	11/04/92	0014	12.5- 14.0	UG/KG	J	37.	57.	ITA	5.00
	11/04/92	0023	21.5- 23.0	UG/KG		13.	11.	ITA	1.00
	11/04/92	0028	26.0- 28.0	UG/KG		19.	11.	ITA	1.00
	11/04/92	0035	33.5- 35.0	UG/KG		12.	12.	ITA	1.00
	11/04/92	0038	36.5- 38.0	UG/KG	J	6.	11.	ITA	1.00
	11/04/92	1023	21.5- 23.0	UG/KG		17.	11.	ITA	1.00
THORIUM-228	11/04/92	0007	5.0- 7.0	PCI/G	J	.993	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G	J	.476	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G	J	.276	-	ITA	1.00
THORIUM-230	11/04/92	0007	5.0- 7.0	PCI/G	J	1.62	-	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G	J	1.01	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G	J	.768	-	ITA	1.00
THORIUM-232	11/04/92	0007	5.0- 7.0	PCI/G	J	.448	-	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G	J	.394	-	ITA	1.00
TOLUENE	11/04/92	0028	26.0- 28.0	UG/KG	J	2.	11.	ITA	1.00
TOTAL ORGANIC CARBON	11/04/92	0005	3.5- 5.0	UG/G		4650.	30.4	ITA	1.00
	11/04/92	0007	5.0- 7.0	UG/G		3220.	30.9	ITA	1.00
	11/04/92	0014	12.5- 14.0	UG/G		6080.	28.3	ITA	1.00
	11/04/92	0015	15.0- 16.5	UG/G	J	16600.	27.6	ITA	1.00
	11/04/92	0023	21.5- 23.0	UG/G		7020.	28.	ITA	1.00
	11/04/92	0028	26.0- 28.0	UG/G	J	6500.	27.5	ITA	1.00
	11/04/92	0035	33.5- 35.0	UG/G		7760.	29.6	ITA	1.00
	11/04/92	0038	36.5- 38.0	UG/G		6180.	27.3	ITA	1.00
	11/04/92	1023	21.5- 23.0	UG/G	J	3690.	28.8	ITA	1.00
TRICHLOROETHENE	11/04/92	0005	3.5- 5.0	UG/KG	J	3.	12.	ITA	1.00
	11/04/92	0007	5.0- 7.0	UG/KG		74.	12.	ITA	1.00
	11/04/92	0014	12.5- 14.0	UG/KG	J	38.	57.	ITA	5.00
	11/04/92	0023	21.5- 23.0	UG/KG		160.	11.	ITA	1.00
	11/04/92	0028	26.0- 28.0	UG/KG		33.	11.	ITA	1.00
	11/04/92	0035	33.5- 35.0	UG/KG	J	6.	12.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B001
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRICHLOROETHENE	11/04/92	0038	36.5- 38.0	UG/KG	J	3.	11.	ITA	1.00
	11/04/92	1023	21.5- 23.0	UG/KG		140.	11.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	11/04/92	0023	21.5- 23.0	UG/KG	J	3.	11.	ITA	1.00
	11/04/92	1023	21.5- 23.0	UG/KG	J	3.	11.	ITA	1.00
URANIUM-234	11/04/92	0007	5.0- 7.0	PCI/G		.936	.15	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G		.737	.15	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G	J	.968	.39	ITA	1.00
URANIUM-238	11/04/92	0007	5.0- 7.0	PCI/G		1.33	.15	ITA	1.00
	11/04/92	0015	15.0- 16.5	PCI/G		1.19	.15	ITA	1.00
	11/04/92	0028	26.0- 28.0	PCI/G	J	.764	.39	ITA	1.00
VANADIUM, TOTAL	11/04/92	0007	5.0- 7.0	MG/KG		14.	.62	ITA	.25
	11/04/92	0015	15.0- 16.5	MG/KG		7.5	.55	ITA	1.00
	11/04/92	0028	26.0- 28.0	MG/KG		5.6	.55	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B002
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/03/92	0015	13.0- 15.0	% SOLIDS		89.2	-	ITA	1.00
1,2-DICHLOROETHENE	11/03/92	0015	13.0- 15.0	UG/KG		25.	6.	ITA	1.00
	11/03/92	0023	21.5- 23.0	UG/KG		45.	6.	ITA	1.00
ACETONE	11/03/92	0005	3.5- 5.0	UG/KG	J	3.	12.	ITA	1.00
	11/03/92	0018	16.5- 18.0	UG/KG	J	7.	11.	ITA	1.00
	11/03/92	0023	21.5- 23.0	UG/KG	J	2.	12.	ITA	1.00
	11/03/92	1018	16.5- 18.0	UG/KG	J	7.	11.	ITA	1.00
ALKALINITY	11/03/92	0015	13.0- 15.0	MG/KG		42040.	112.	ITA	1.00
ALUMINUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		4570.	16.	ITA	4.00
ARSENIC, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	J	5.7	2.	ITA	1.00
BARIUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	B	20.	40.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	11/03/92	0010	8.0- 10.0	UG/KG	J	70.	370.	ITA	1.00
CALCIUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	J	102000.	992.	ITA	1.00
CHLORIDE	11/03/92	0015	13.0- 15.0	MG/KG		16.	5.61	ITA	1.00
CHROMIUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		7.4	2.	ITA	1.00
COBALT, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	B	3.7	10.	ITA	1.00
COPPER, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		17.1	5.	ITA	1.00
DI-N-BUTYL PHTHALATE	11/03/92	0015	13.0- 15.0	UG/KG	J	42.	370.	ITA	1.00
FLUORIDE	11/03/92	0015	13.0- 15.0	MG/KG		.56	.5	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/03/92	0015	13.0- 15.0	PG/G		7.3	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/03/92	0015	13.0- 15.0	PG/G		3.7	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B002
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
IRON, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		10600.	20.	ITA	1.00
LEAD, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	J	6.7	.6	ITA	1.00
MAGNESIUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG	*	40100.	992.	ITA	1.00
NICKEL, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		11.9	8.	ITA	1.00
NITRATE	11/03/92	0015	13.0- 15.0	MG/KG		1.45	1.12	ITA	1.00
OCTACHLORODIBENZOFURAN	11/03/92	0015	13.0- 15.0	PG/G		.22	-	ITA	1.00
PERCENT MOISTURE	11/03/92	0005	3.5- 5.0	% MOIST		14.	-	ITA	1.00
	11/03/92	0010	8.0- 10.0	% MOIST		10.	-	ITA	1.00
	11/03/92	0010	8.0- 10.0	% MOIST		10.	-	ITA	1.00
	11/03/92	0015	13.0- 15.0	% MOIST		11.	-	ITA	1.00
	11/03/92	0018	16.5- 18.0	% MOIST		12.	-	ITA	1.00
	11/03/92	0023	21.5- 23.0	% MOIST		14.	-	ITA	1.00
PLUTONIUM-238	11/03/92	0010	8.0- 10.0	PCI/G		.114	.097	ITA	1.00
PLUTONIUM-239/240	11/03/92	0010	8.0- 10.0	PCI/G		.0887	.038	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.053	.053	ITA	1.00
POTASSIUM-40	11/03/92	0010	8.0- 10.0	PCI/G		16.7	.1	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		7.27	.1	ITA	1.00
RADIUM-226	11/03/92	0010	8.0- 10.0	PCI/G		1.07	.02	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.573	.01	ITA	1.00
SILVER, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		2.3	2.	ITA	1.00
TETRACHLOROETHENE	11/03/92	0005	3.5- 5.0	UG/KG	J	3.	6.	ITA	1.00
	11/03/92	0010	8.0- 10.0	UG/KG		7.	6.	ITA	1.00
	11/03/92	0015	13.0- 15.0	UG/KG		170.	6.	ITA	1.00
	11/03/92	0023	21.5- 23.0	UG/KG		80.	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B002
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THORIUM-228	11/03/92	0010	8.0- 10.0	PCI/G		.889	.307	ITA	1.00
THORIUM-230	11/03/92	0010	8.0- 10.0	PCI/G		1.5	.085	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.972	.111	ITA	1.00
THORIUM-232	11/03/92	0010	8.0- 10.0	PCI/G		.8	.085	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.116	.111	ITA	1.00
TOTAL ORGANIC CARBON	11/03/92	0005	3.5- 5.0	MG/KG		25091.	30.	ITA	1.00
	11/03/92	0010	8.0- 10.0	MG/KG		8636.	34.	ITA	1.00
	11/03/92	0015	13.0- 15.0	MG/KG		5141.	45.	ITA	1.00
	11/03/92	0018	16.5- 18.0	MG/KG	J	11360.	28.	ITA	1.00
	11/03/92	0023	21.5- 23.0	MG/KG		7268.	18.	ITA	1.00
	11/03/92	1018	16.5- 18.0	MG/KG	J	19048.	42.	ITA	1.00
TRICHLOROETHENE	11/03/92	0015	13.0- 15.0	UG/KG		230.	7.	ITA	1.00
	11/03/92	0023	21.5- 23.0	UG/KG		140.	7.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	11/03/92	0015	13.0- 15.0	UG/KG	J	4.	6.	ITA	1.00
	11/03/92	0023	21.5- 23.0	UG/KG	J	5.	6.	ITA	1.00
TRITIUM	11/03/92	0005	3.5- 5.0	PCI/G		.0817	.024	ITA	1.00
	11/03/92	0010	8.0- 10.0	PCI/G		.056	.018	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.066	.019	ITA	1.00
	11/03/92	0018	16.5- 18.0	PCI/G		.104	.021	ITA	1.00
	11/03/92	0023	21.5- 23.0	PCI/G		.747	.025	ITA	1.00
	11/03/92	1018	16.5- 18.0	PCI/G		.086	.017	ITA	1.00
URANIUM-234	11/03/92	0010	8.0- 10.0	PCI/G		.886	.0827	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.6	.051	ITA	1.00
URANIUM-235/236	11/03/92	0015	13.0- 15.0	PCI/G		.0467	.02	ITA	1.00
URANIUM-238	11/03/92	0010	8.0- 10.0	PCI/G		.972	.0827	ITA	1.00
	11/03/92	0015	13.0- 15.0	PCI/G		.5	.051	ITA	1.00
VANADIUM, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		13.7	2.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B002
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ZINC, TOTAL	11/03/92	0015	13.0- 15.0	MG/KG		34.9	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: B003
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/03/92	0026	22.0- 26.0	% SOLIDS		89.4	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/03/92	0026	22.0- 26.0	PG/G		.22	-	ITA	1.00
1,2-DICHLOROETHENE	11/03/92	0026	22.0- 26.0	UG/KG	J	4.	6.	ITA	1.00
	11/03/92	0035	34.5- 35.0	UG/KG	J	2.	5.	ITA	1.00
ACETONE	11/03/92	0026	22.0- 26.0	UG/KG	J	5.	11.	ITA	1.00
	11/03/92	0035	34.5- 35.0	UG/KG	J	15.	11.	ITA	1.00
	11/03/92	0036	35.0- 36.5	UG/KG	J	6.	11.	ITA	1.00
ALKALINITY	11/03/92	0026	22.0- 26.0	MG/KG		15660.	112.	ITA	1.00
	11/03/92	1026	22.0- 26.0	MG/KG		13143.	114.	ITA	1.00
ALUMINUM, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG		4140.	19.	ITA	5.00
ARSENIC, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	J	11.4	4.	ITA	2.00
	11/03/92	1026	22.0- 26.0	MG/KG	*	4.6	2.	ITA	1.00
BISMUTH, TOTAL	11/03/92	1026	22.0- 26.0	MG/KG	B	1.6	32.	ITA	1.00
CALCIUM, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	J	180000.	4661.	ITA	5.00
	11/03/92	1026	22.0- 26.0	MG/KG	J	119000.	5495.	ITA	5.00
CHLORIDE	11/03/92	0026	22.0- 26.0	MG/KG		17.4	5.59	ITA	1.00
	11/03/92	1026	22.0- 26.0	MG/KG		20.8	5.71	ITA	1.00
FLUORIDE	11/03/92	0026	22.0- 26.0	MG/KG		1.01	.56	ITA	1.00
	11/03/92	1026	22.0- 26.0	MG/KG		1.09	.57	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/03/92	0026	22.0- 26.0	PG/G		1.6	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/03/92	0026	22.0- 26.0	PG/G		1.4	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/03/92	0026	22.0- 26.0	PG/G		.41	-	ITA	1.00
IRON, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG		10700.	93.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: B003
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
IRON, TOTAL	11/03/92	1026	22.0- 26.0	MG/KG		8800.	110.	ITA	5.00
LEAD, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	J	8.1	.6	ITA	1.00
	11/03/92	1026	22.0- 26.0	MG/KG	J	6.2	.65	ITA	1.00
MAGNESIUM, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	*	42600.	4661.	ITA	5.00
	11/03/92	1026	22.0- 26.0	MG/KG	*	52400.	5495.	ITA	5.00
MANGANESE, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	J	391.	14.	ITA	5.00
NITRATE	11/03/92	0026	22.0- 26.0	MG/KG		2.24	1.12	ITA	1.00
	11/03/92	1026	22.0- 26.0	MG/KG		1.76	1.14	ITA	1.00
OCTACHLORODIBENZOFURAN	11/03/92	0026	22.0- 26.0	PG/G		1.1	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/03/92	0026	22.0- 26.0	PG/G		.53	-	ITA	1.00
PERCENT MOISTURE	11/03/92	0026	22.0- 26.0	% MOIST		11.	-	ITA	1.00
	11/03/92	0026	22.0- 26.0	% MOIST		11.	-	ITA	1.00
	11/03/92	0035	34.5- 35.0	% MOIST		7.	-	ITA	1.00
	11/03/92	0036	35.0- 36.5	% MOIST		9.	-	ITA	1.00
PLUTONIUM-238	11/03/92	1026	22.0- 26.0	PCI/G		.126	.0879	ITA	1.00
PLUTONIUM-239/240	11/03/92	0026	22.0- 26.0	PCI/G		.0681	.00408	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.126	.0345	ITA	1.00
POTASSIUM-40	11/03/92	0026	22.0- 26.0	PCI/G		7.01	.1	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		6.27	.1	ITA	1.00
RADIUM-226	11/03/92	0026	22.0- 26.0	PCI/G		.561	.01	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.542	.02	ITA	1.00
TETRACHLOROETHENE	11/03/92	0026	22.0- 26.0	UG/KG		11.	6.	ITA	1.00
	11/03/92	0035	34.5- 35.0	UG/KG		10.	5.	ITA	1.00
	11/03/92	0036	35.0- 36.5	UG/KG		20.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: BD03
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THALLIUM, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	B	.39	2.	ITA	1.00
THORIUM-228	11/03/92	0026	22.0- 26.0	PCI/G		.227	.0838	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.28	.0673	ITA	1.00
THORIUM-230	11/03/92	0026	22.0- 26.0	PCI/G		.681	.0558	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.785	.0183	ITA	1.00
THORIUM-232	11/03/92	0026	22.0- 26.0	PCI/G		.239	.0445	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.329	.0183	ITA	1.00
TOLUENE	11/03/92	0036	35.0- 36.5	UG/KG	J	1.	5.	ITA	1.00
TOTAL ORGANIC CARBON	11/03/92	0026	22.0- 26.0	MG/KG	J	19499.	18.	ITA	1.00
	11/03/92	0035	34.5- 35.0	MG/KG		7048.	11.	ITA	1.00
	11/03/92	0036	35.0- 36.5	MG/KG		14436.	21.	ITA	1.00
TRICHLOROETHENE	11/03/92	0026	22.0- 26.0	UG/KG		27.	6.	ITA	1.00
	11/03/92	0035	34.5- 35.0	UG/KG		13.	5.	ITA	1.00
	11/03/92	0036	35.0- 36.5	UG/KG		10.	5.	ITA	1.00
TRITIUM	11/03/92	0026	22.0- 26.0	PCI/G		.218	.019	ITA	1.00
	11/03/92	0035	34.5- 35.0	PCI/G		.416	.012	ITA	1.00
	11/03/92	0036	35.0- 36.5	PCI/G		.514	.016	ITA	1.00
URANIUM-234	11/03/92	0026	22.0- 26.0	PCI/G		.459	.0567	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.503	.0222	ITA	1.00
URANIUM-238	11/03/92	0026	22.0- 26.0	PCI/G		.482	.0567	ITA	1.00
	11/03/92	1026	22.0- 26.0	PCI/G		.473	.0222	ITA	1.00
VANADIUM, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG	B	10.9	9.	ITA	5.00
	11/03/92	1026	22.0- 26.0	MG/KG	B	12.3	11.	ITA	5.00
ZINC, TOTAL	11/03/92	0026	22.0- 26.0	MG/KG		26.8	19.	ITA	5.00
	11/03/92	1026	22.0- 26.0	MG/KG		26.5	22.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/08/92	0015	13.5- 15.0	% SOLIDS		87.9	-	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		85.8	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/08/92	0036	34.5- 36.0	PG/G		.59	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G		.18	-	ITA	1.00
1,2-DICHLOROETHENE	11/08/92	0018	16.5- 18.0	UG/KG	J	9.	5.	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/KG	J	1100.	5.	ITA	1.00
	11/08/92	0033	31.5- 33.0	UG/KG		750.	5.	ITA	1.00
	11/08/92	0036	34.5- 36.0	UG/KG	J	92.	5.	ITA	1.00
	11/08/92	1036	34.5- 36.0	UG/KG	J	180.	5.	ITA	1.00
2,3,4,7,8-PENTACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G		.24	-	ITA	1.00
2,4-DIMETHYLPHENOL	11/08/92	0028	26.5- 28.0	UG/KG	J	49.	430.	ITA	1.00
2-METHYLNAPHTHALENE	11/08/92	0028	26.5- 28.0	UG/KG	J	120.	330.	ITA	1.00
4-METHYLPHENOL	11/08/92	0028	26.5- 28.0	UG/KG	J	69.	430.	ITA	1.00
4-NITROANILINE	11/08/92	0015	13.5- 15.0	UG/KG	J	910.	910.	ITA	1.00
ALKALINITY	11/08/92	0015	13.5- 15.0	MG/KG	J	34342.	116.	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	19782.	136.	ITA	1.00
ALUMINUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG		3480.	1.14	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		3500.	1.17	ITA	1.00
AROCLOR-1248	11/08/92	0028	26.5- 28.0	UG/KG	J	220000.	33.	ITA	500
	11/08/92	0036	34.5- 36.0	UG/KG		210.	33.	ITA	1.00
ARSENIC, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG		5.	2.28	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		3.4	2.33	ITA	1.00
BARIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	B	24.8	11.4	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
BARIUM, TOTAL	11/08/92	0036	34.5- 36.0	MG/KG	B	18.2	11.7	ITA	1.00
BENZO(A)ANTHRACENE	11/08/92	0028	26.5- 28.0	UG/KG	J	52.	430.	ITA	1.00
BERYLLIUM	11/08/92	0015	13.5- 15.0	MG/KG		.19	.06	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		.19	.06	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	11/08/92	0028	26.5- 28.0	UG/KG		450.	330.	ITA	1.00
BUTYL BENZYL PHTHALATE	11/08/92	0028	26.5- 28.0	UG/KG	J	330.	330.	ITA	1.00
CALCIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	J	140000.	14221.	ITA	50.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	145000.	14569.	ITA	50.00
CHLORIDE	11/08/92	0015	13.5- 15.0	MG/KG		9.86	5.82	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		54.1	6.82	ITA	1.00
CHLOROETHENE (VINYL CHLORIDE)	11/08/92	0018	16.5- 18.0	UG/KG		18.	10.	ITA	1.00
CHRYSENE	11/08/92	0028	26.5- 28.0	UG/KG	J	66.	330.	ITA	1.00
COBALT, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	B	4.5	2.84	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	B	3.6	2.91	ITA	1.00
DI-N-BUTYL PHTHALATE	11/08/92	0028	26.5- 28.0	UG/KG		1000.	330.	ITA	1.00
DI-N-OCTYL PHTHALATE	11/08/92	0028	26.5- 28.0	UG/KG	J	50.	430.	ITA	1.00
ETHYLBENZENE	11/08/92	0018	16.5- 18.0	UG/KG	J	1.	10.	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/KG	J	610.	10.	ITA	1.00
FLUORANTHENE	11/08/92	0028	26.5- 28.0	UG/KG	J	110.	330.	ITA	1.00
FLUORIDE	11/08/92	0015	13.5- 15.0	MG/KG		1.28	.58	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		1.43	.68	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/08/92	0036	34.5- 36.0	PG/G		1.3	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB9B AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
HEXACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G		.18	-	ITA	1.00
IRON, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG		8720.	5.7	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		6660.	5.8	ITA	1.00
LEAD, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	J	5.6	.68	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	4.5	.7	ITA	1.00
LITHIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG		14.2	5.7	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		11.1	5.8	ITA	1.00
MAGNESIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	J	48300.	14221.	ITA	50.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	49100.	14569.	ITA	50.00
MANGANESE, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	J	230.	.85	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	275.	.87	ITA	1.00
NAPHTHALENE	11/08/92	0028	26.5- 28.0	UG/KG		470.	330.	ITA	1.00
NITRATE	11/08/92	0015	13.5- 15.0	MG/KG		1.38	1.16	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG		1.57	1.36	ITA	1.00
OCTACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G	J	0.33	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G		.64	-	ITA	1.00
PERCENT MOISTURE	11/08/92	0005	3.5- 5.0	% MOIST		7.	-	ITA	1.00
	11/08/92	0010	8.5- 10.0	% MOIST		7.	-	ITA	1.00
	11/08/92	0015	13.5- 15.0	% MOIST		12.	-	ITA	1.00
	11/08/92	0015	13.5- 15.0	% MOIST		12.	-	ITA	1.00
	11/08/92	0015	13.5- 15.0	% MOIST		12.	-	ITA	1.00
	11/08/92	0018	16.5- 18.0	% MOIST		11.	-	ITA	1.00
	11/08/92	0025	23.5- 25.0	% MOIST		17.	-	ITA	1.00
	11/08/92	0028	26.5- 28.0	% MOIST		23.	-	ITA	1.00
	11/08/92	0028	26.5- 28.0	% MOIST		23.	-	ITA	1.00
	11/08/92	0036	34.5- 36.0	% MOIST		14.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	11/08/92	0036	34.5- 36.0	% MOIST		14.	-	ITA	1.00
	11/08/92	0036	34.5- 36.0	% MOIST		14.	-	ITA	1.00
	11/08/92	0045	43.5- 45.0	% MOIST		14.	-	ITA	1.00
	11/08/92	0047	45.5- 47.0	% MOIST		14.	-	ITA	1.00
	11/08/92	1036	34.5- 36.0	% MOIST		17.	-	ITA	1.00
PHENANTHRENE	11/08/92	0028	26.5- 28.0	UG/KG	J	94.	330.	ITA	1.00
PLUTONIUM-238	11/08/92	0015	13.5- 15.0	PCI/G		.413	.032	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.0865	.0315	ITA	1.00
PLUTONIUM-239/240	11/08/92	0036	34.5- 36.0	PCI/G		.0124	.012	ITA	1.00
POTASSIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	B	678.	279.	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	B	580.	291.	ITA	1.00
POTASSIUM-40	11/08/92	0015	13.5- 15.0	PCI/G		13.6	1.2	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		6.22	1.1	ITA	1.00
PYRENE	11/08/92	0028	26.5- 28.0	UG/KG	J	96.	430.	ITA	1.00
RADIUM-226	11/08/92	0015	13.5- 15.0	PCI/G		.843	.2	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.566	.1	ITA	1.00
SODIUM, TOTAL	11/08/92	0036	34.5- 36.0	MG/KG	B	197.	291.	ITA	1.00
SULFATE	11/08/92	0015	13.5- 15.0	MG/KG	J	87.9	23.3	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	28.2	27.3	ITA	1.00
TETRACHLORODIBENZOFURAN	11/08/92	0036	34.5- 36.0	PG/G		.36	-	ITA	1.00
TETRACHLOROETHENE	11/08/92	0018	16.5- 18.0	UG/KG	J	4.	5.	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/KG		24000.	5.	ITA	1.00
	11/08/92	0033	31.5- 33.0	UG/KG		1100.	5.	ITA	1.00
	11/08/92	0036	34.5- 36.0	UG/KG	J	190.	5.	ITA	1.00
	11/08/92	0045	43.5- 45.0	UG/KG		33.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROETHENE	11/08/92	0047	45.5- 47.0	UG/KG		53.	5.	ITA	1.00
	11/08/92	1036	34.5- 36.0	UG/KG	J	430.	5.	ITA	1.00
TETRACHLOROMETHANE (CCL4)	11/08/92	0047	45.5- 47.0	UG/KG	J	2.	10.	ITA	1.00
THORIUM-228	11/08/92	0015	13.5- 15.0	PCI/G	J	.532	.526	ITA	1.00
THORIUM-230	11/08/92	0015	13.5- 15.0	PCI/G	J	1.2	.285	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.547	.245	ITA	1.00
THORIUM-232	11/08/92	0015	13.5- 15.0	PCI/G	J	.694	.177	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.243	.168	ITA	1.00
TOLUENE	11/08/92	0018	16.5- 18.0	UG/KG	J	1.	10.	ITA	1.00
	11/08/92	0047	45.5- 47.0	UG/KG	J	1.	10.	ITA	1.00
TOTAL ORGANIC CARBON	11/08/92	0005	3.5- 5.0	UG/G		16800.	26.9	ITA	1.00
	11/08/92	0010	8.5- 10.0	UG/G		14400.	26.9	ITA	1.00
	11/08/92	0015	13.5- 15.0	UG/G		5600.	28.4	ITA	1.00
	11/08/92	0018	16.5- 18.0	UG/G		17400.	28.1	ITA	1.00
	11/08/92	0025	23.5- 25.0	UG/G		3950.	30.3	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/G		8520.	32.4	ITA	1.00
	11/08/92	0036	34.5- 36.0	UG/G		2340.	29.1	ITA	1.00
	11/08/92	0045	43.5- 45.0	UG/G		17900.	29.1	ITA	1.00
	11/08/92	0047	45.5- 47.0	UG/G		18100.	28.9	ITA	1.00
	11/08/92	1036	34.5- 36.0	UG/G		17800.	30.	ITA	1.00
TOTAL XYLENES	11/08/92	0018	16.5- 18.0	UG/KG	J	3.	10.	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/KG	J	240.	10.	ITA	1.00
TRICHLOROETHENE	11/08/92	0018	16.5- 18.0	UG/KG	J	11.	11.	ITA	1.00
	11/08/92	0028	26.5- 28.0	UG/KG	J	970.	5.	ITA	1.00
	11/08/92	0033	31.5- 33.0	UG/KG		310.	5.	ITA	1.00
	11/08/92	0036	34.5- 36.0	UG/KG	J	40.	5.	ITA	1.00
	11/08/92	0045	43.5- 45.0	UG/KG	J	7.	5.	ITA	1.00
	11/08/92	0047	45.5- 47.0	UG/KG	J	9.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P001 PIEZOMETER
NORTH COORDINATE: 596826.14 FT
EAST COORDINATE: 1495086.63 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRICHLOROETHENE	11/08/92	1036	34.5- 36.0	UG/KG	J	88.	5.	ITA	1.00
TRITIUM	11/08/92	0005	3.5- 5.0	PCI/G		2.05	.015	ITA	1.00
	11/08/92	0010	8.5- 10.0	PCI/G		.903	.015	ITA	1.00
	11/08/92	0015	13.5- 15.0	PCI/G		1.11	.026	ITA	1.00
	11/08/92	0025	23.5- 25.0	PCI/G		8.31	.037	ITA	1.00
	11/08/92	0028	26.5- 28.0	PCI/G		2.19	.049	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.784	.03	ITA	1.00
	11/08/92	0045	43.5- 45.0	PCI/G		.725	.053	ITA	1.00
	11/08/92	0047	45.5- 47.0	PCI/G		.098	.052	ITA	1.00
	11/08/92	1036	34.5- 36.0	PCI/G		.967	.035	ITA	1.00
URANIUM-234	11/08/92	0015	13.5- 15.0	PCI/G		.573	.204	ITA	1.00
URANIUM-235/236	11/08/92	0015	13.5- 15.0	PCI/G		.074	.055	ITA	1.00
URANIUM-238	11/08/92	0015	13.5- 15.0	PCI/G		.795	.141	ITA	1.00
	11/08/92	0036	34.5- 36.0	PCI/G		.405	.194	ITA	1.00
VANADIUM, TOTAL	11/08/92	0015	13.5- 15.0	MG/KG	J	8.0	.57	ITA	1.00
	11/08/92	0036	34.5- 36.0	MG/KG	J	7.1	.58	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P002 PIEZOMETER
NORTH COORDINATE: 596827.93 FT
EAST COORDINATE: 1495092.65 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,2-DICHLOROETHENE	11/09/92	0036	34.5- 36.0	UG/KG		250.	55.	ITA	5.00
ETHYLBENZENE	11/09/92	0048	46.5- 48.0	UG/KG	J	2.	12.	ITA	1.00
PERCENT MOISTURE	11/09/92	0036	34.5- 36.0	% MOIST		9.	-	ITA	1.00
	11/09/92	0048	46.5- 48.0	% MOIST		14.	-	ITA	1.00
TETRACHLOROETHENE	11/09/92	0036	34.5- 36.0	UG/KG		5500.	55.	ITA	5.00
	11/09/92	0048	46.5- 48.0	UG/KG		79.	12.	ITA	1.00
TETRACHLOROMETHANE (CCL4)	11/09/92	0048	46.5- 48.0	UG/KG	J	4.	12.	ITA	1.00
TOLUENE	11/09/92	0048	46.5- 48.0	UG/KG	J	4.	12.	ITA	1.00
TOTAL ORGANIC CARBON	11/09/92	0036	34.5- 36.0	MG/KG		4420.	27.4	ITA	1.00
	11/09/92	0048	46.5- 48.0	MG/KG		6300.	29.1	ITA	1.00
TOTAL XYLENES	11/09/92	0048	46.5- 48.0	UG/KG	J	2.	12.	ITA	1.00
TRICHLOROETHENE	11/09/92	0036	34.5- 36.0	UG/KG		180.	55.	ITA	5.00
	11/09/92	0048	46.5- 48.0	UG/KG		18.	12.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	11/09/92	0036	34.5- 36.0	UG/KG		99.	55.	ITA	5.00
TRITIUM	11/09/92	0036	34.5- 36.0	PCI/G		.722	.021	ITA	1.00
	11/09/92	0048	46.5- 48.0	PCI/G		.893	.034	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/06/92	0006	5.0- 6.5	% SOLIDS		89.1	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	% SOLIDS		89.2	-	ITA	1.00
	11/07/92	0026	25.0- 26.5	% SOLIDS		87.3	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/06/92	0006	5.0- 6.5	PG/G	J	56.4	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		2.8	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/06/92	0006	5.0- 6.5	PG/G	J	259.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		4.4	-	ITA	1.00
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFUR	11/06/92	0006	5.0- 6.5	PG/G		6.	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIO	11/06/92	0006	5.0- 6.5	PG/G		8.5	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G	J	41.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		1.8	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		15.6	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		.58	-	ITA	1.00
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIO	11/06/92	0006	5.0- 6.5	PG/G		11.9	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIO	11/06/92	0006	5.0- 6.5	PG/G		21.2	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		.89	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENO-P-DIOXI	11/06/92	0006	5.0- 6.5	PG/G		2.7	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		9.7	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		.42	-	ITA	1.00
1,2-DICHLOROETHENE	11/06/92	0005	3.5- 5.0	UG/KG		19.	12.	ITA	1.00
	11/06/92	0015	13.5- 15.0	UG/KG	J	1100.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	270.	56.	ITA	5.00
	11/07/92	0021	20.0- 21.5	UG/KG		79.	11.	ITA	1.00
	11/07/92	1016	15.0- 17.0	UG/KG	J	1200.	1300.	ITA	100.00
1,2-DICHLOROPROPANE	11/07/92	0016	15.0- 17.0	UG/KG	J	2.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		11.1	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		.92	-	ITA	1.00
2,3,4,7,8-PENTACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		46.2	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		1.	-	ITA	1.00
2,3,7,8-TCDD	11/07/92	0016	15.0- 17.0	PG/G		1.5	-	ITA	1.00
2,3,7,8-TCDF	11/06/92	0006	5.0- 6.5	PG/G		59.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		.39	-	ITA	1.00
4-METHYL-2-PENTANONE	11/07/92	0016	15.0- 17.0	UG/KG	J	3.	11.	ITA	1.00
4-METHYLPHENOL	11/07/92	0016	15.0- 17.0	UG/KG	J	35.	330.	ITA	1.00
ALKALINITY	11/06/92	0006	5.0- 6.5	MG/KG	J	52121.	121.2	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	7472.	124.5	ITA	1.00
ALUMINUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		9780.	1.12	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG		3310.	1.12	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG		2320.	1.15	ITA	1.00
AROCLOR-1248	11/06/92	0006	5.0- 6.5	UG/KG	J	38000.	33.	ITA	100.00
ARSENIC, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		11.5	2.24	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG		11.	2.24	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG		6.	2.29	ITA	1.00
BARIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		103.	11.2	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	B	33.9	11.2	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	B	18.7	11.5	ITA	1.00
BENZENE	11/06/92	0006	5.0- 6.5	UG/KG	J	150.	1300.	ITA	100.00
	11/06/92	0015	13.5- 15.0	UG/KG	J	150.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	44.	11.	ITA	1.00
	11/07/92	0021	20.0- 21.5	UG/KG	J	2.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
BENZENE	11/07/92	1016	15.0- 17.0	UG/KG	J	190.	1300.	ITA	100.00
BENZO(A)ANTHRACENE	11/07/92	0016	15.0- 17.0	UG/KG	J	50.	370.	ITA	1.00
BENZO(A)PYRENE	11/06/92	0006	5.0- 6.5	UG/KG	J	24.	330.	ITA	1.00
BENZOIC ACID	11/07/92	0016	15.0- 17.0	UG/KG	J	90.	1800.	ITA	1.00
BERYLLIUM	11/06/92	0006	5.0- 6.5	MG/KG		.68	.06	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	B	.2	.06	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	B	.16	.06	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	11/06/92	0006	5.0- 6.5	UG/KG	J	140.	370.	ITA	1.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	130.	370.	ITA	1.00
CADMIUM, TOTAL	11/07/92	0016	15.0- 17.0	MG/KG	J	.31	.28	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	.51	.29	ITA	1.00
CALCIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		8050.	1403.	ITA	5.00
	11/07/92	0016	15.0- 17.0	MG/KG		126000.	14013.	ITA	50.00
	11/07/92	0026	25.0- 26.5	MG/KG		176000.	14318.	ITA	50.00
CARBON DISULFIDE	11/07/92	0016	15.0- 17.0	UG/KG	J	3.	11.	ITA	1.00
CHLORIDE	11/06/92	0006	5.0- 6.5	MG/KG	J	164.6	6.06	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	31.4	5.71	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	32.4	6.23	ITA	1.00
CHLOROETHENE (VINYL CHLORIDE)	11/06/92	0005	3.5- 5.0	UG/KG	J	2.	12.	ITA	1.00
	11/07/92	0021	20.0- 21.5	UG/KG		21.	11.	ITA	1.00
CHROMIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	J	11.	.56	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	4.8	.56	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	1.7	.57	ITA	1.00
CHRYSENE	11/07/92	0016	15.0- 17.0	UG/KG	J	84.	370.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
COBALT, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		14.6	2.81	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	B	4.3	5.8	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	B	3.1	2.86	ITA	1.00
COPPER, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	J	37.8	1.4	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	21.4	1.4	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	11.4	1.43	ITA	1.00
ETHYLBENZENE	11/06/92	0006	5.0- 6.5	UG/KG	J	260.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	55.	11.	ITA	1.00
FLUORANTHENE	11/06/92	0006	5.0- 6.5	UG/KG	J	78.	370.	ITA	1.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	190.	370.	ITA	1.00
FLUORIDE	11/06/92	0006	5.0- 6.5	MG/KG	J	2.79	.61	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	.98	.57	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	1.37	.62	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/06/92	0006	5.0- 6.5	PG/G		494.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		9.2	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		123.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		4.7	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/06/92	0006	5.0- 6.5	PG/G		301.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		6.	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		151.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		6.1	-	ITA	1.00
IRON, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	J	18200.	112.2	ITA	20.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	8140.	5.6	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	6650.	5.7	ITA	1.00
LEAD, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	J	27.1	.67	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	9.	.67	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA 8
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
LEAD, TOTAL	11/07/92	0026	25.0- 26.5	MG/KG	J	10.9	.69	ITA	1.00
LITHIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		18.5	5.6	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG		12.3	5.6	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG		10.9	5.7	ITA	1.00
MAGNESIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		4650.	1403.	ITA	5.00
	11/07/92	0016	15.0- 17.0	MG/KG		53100.	14013.	ITA	50.00
	11/07/92	0026	25.0- 26.5	MG/KG		55700.	14318.	ITA	50.00
MANGANESE, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	J	422.	.84	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	J	235.	.84	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	J	418.	.86	ITA	1.00
NITRATE	11/06/92	0006	5.0- 6.5	MG/KG		1.55	1.21	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG		1.49	1.25	ITA	1.00
OCTACHLORODIBENZO-P-DIOXIN	11/06/92	0006	5.0- 6.5	PG/G	J	1780.	-	ITA	1.00
OCTACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		7.9	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		1.5	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	11/06/92	0006	5.0- 6.5	PG/G		41.8	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		2.4	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		308.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		10.7	-	ITA	1.00
PERCENT MOISTURE	11/06/92	0006	5.0- 6.5	% MOIST		11.	-	ITA	1.00
	11/06/92	0006	5.0- 6.5	% MOIST		11.	-	ITA	-
	11/07/92	0016	15.0- 17.0	% MOIST		11.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	% MOIST		11.	-	ITA	1.00
	11/07/92	0026	25.0- 26.5	% MOIST		13.	-	ITA	1.00
	11/07/92	0026	25.0- 26.5	% MOIST		13.	-	ITA	1.00
	11/07/92	1016	15.0- 17.0	% MOIST		10.	-	ITA	-
PHENANTHRENE	11/06/92	0006	5.0- 6.5	UG/KG	J	57.	370.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PHENANTHRENE	11/07/92	0016	15.0- 17.0	UG/KG	J	160.	370.	ITA	1.00
PLUTONIUM-238	11/06/92	0006	5.0- 6.5	PCI/G		.234	.032	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		.278	.018	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		.0753	.016	ITA	1.00
POTASSIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		1040.	281.	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG	B	580.	280.	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	B	392.	286.	ITA	1.00
POTASSIUM-40	11/06/92	0006	5.0- 6.5	PCI/G		18.4	1.1	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		14.8	.9	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		10.6	.8	ITA	1.00
PYRENE	11/06/92	0006	5.0- 6.5	UG/KG	J	64.	370.	ITA	1.00
RADIUM-226	11/06/92	0006	5.0- 6.5	PCI/G		1.36	.2	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		1.13	.02	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		.523	.1	ITA	1.00
SODIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG	B	232.	281.	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG	B	238.	286.	ITA	1.00
SULFATE	11/06/92	0006	5.0- 6.5	MG/KG	J	60.2	24.24	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/06/92	0006	5.0- 6.5	PG/G		24.6	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		2.5	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/06/92	0006	5.0- 6.5	PG/G		431.	-	ITA	1.00
	11/07/92	0016	15.0- 17.0	PG/G		13.5	-	ITA	1.00
TETRACHLOROETHENE	11/06/92	0015	13.5- 15.0	UG/KG	J	150.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	21.	11.	ITA	1.00
	11/07/92	0026	25.0- 26.5	UG/KG		22.	11.	ITA	1.00
	11/07/92	0032	30.5- 32.0	UG/KG		14.	12.	ITA	1.00
	11/07/92	0037	35.5- 37.0	UG/KG	J	10.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PV1	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROETHENE	11/07/92	1016	15.0- 17.0	UG/KG	J	480.	1300.	ITA	100.00
THORIUM-228	11/06/92	0006	5.0- 6.5	PCI/G		1.	.23	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G	J	.826	.27	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G	J	.638	.206	ITA	1.00
THORIUM-230	11/06/92	0006	5.0- 6.5	PCI/G		1.46	.09	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G	J	1.2	.16	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G	J	.705	.05	ITA	1.00
THORIUM-232	11/06/92	0006	5.0- 6.5	PCI/G		.884	.09	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G	J	.516	.11	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G	J	.336	.05	ITA	1.00
TOLUENE	11/06/92	0005	3.5- 5.0	UG/KG	J	1.	12.	ITA	1.00
	11/06/92	0006	5.0- 6.5	UG/KG	J	750.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	300.	56.	ITA	5.00
	11/07/92	0021	20.0- 21.5	UG/KG	J	9.	11.	ITA	1.00
	11/07/92	0026	25.0- 26.5	UG/KG	J	1.	11.	ITA	1.00
	11/07/92	0032	30.5- 32.0	UG/KG	J	1.	12.	ITA	1.00
	11/07/92	1016	15.0- 17.0	UG/KG	J	460.	1300.	ITA	100.00
TOTAL ORGANIC CARBON	11/06/92	0005	3.5- 5.0	UG/G	J	17400.	29.3	ITA	1.00
	11/06/92	0006	5.0- 6.5	UG/G		5180.	28.1	ITA	1.00
	11/06/92	0015	13.5- 15.0	UG/G		4400.	27.6	ITA	1.00
	11/07/92	0016	15.0- 17.0	UG/G	J	7950.	28.	ITA	1.00
	11/07/92	0021	20.0- 21.5	UG/G		3890.	27.7	ITA	1.00
	11/07/92	0026	25.0- 26.5	UG/G		8090.	27.4	ITA	1.00
	11/07/92	0032	30.5- 32.0	UG/G	J	17100.	29.	ITA	1.00
	11/07/92	0037	35.5- 37.0	UG/G		3270.	28.4	ITA	1.00
	11/07/92	1016	15.0- 17.0	UG/G	J	4560.	27.7	ITA	1.00
TOTAL XYLENES	11/06/92	0005	3.5- 5.0	UG/KG	J	2.	12.	ITA	1.00
	11/06/92	0006	5.0- 6.5	UG/KG		6100.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	440.	56.	ITA	5.00
	11/07/92	0032	30.5- 32.0	UG/KG	J	4.	12.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P003 PIEZOMETER
NORTH COORDINATE: 596707.87 FT
EAST COORDINATE: 1495024.47 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL XYLENES	11/07/92	0037	35.5- 37.0	UG/KG	J	1.	11.	ITA	1.00
	11/07/92	1016	15.0- 17.0	UG/KG	J	170.	1300.	ITA	100.00
TRICHLOROETHENE	11/06/92	0005	3.5- 5.0	UG/KG		21.	12.	ITA	1.00
	11/06/92	0006	5.0- 6.5	UG/KG	J	160.	1300.	ITA	100.00
	11/07/92	0016	15.0- 17.0	UG/KG	J	56.	11.	ITA	1.00
	11/07/92	0026	25.0- 26.5	UG/KG	J	4.	11.	ITA	1.00
	11/07/92	0032	30.5- 32.0	UG/KG	J	3.	12.	ITA	1.00
	11/07/92	0037	35.5- 37.0	UG/KG	J	1.	11.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	11/07/92	0016	15.0- 17.0	UG/KG	J	4.	11.	ITA	1.00
TRITIUM	11/06/92	0005	3.5- 5.0	PCI/G		2.4	.03	ITA	1.00
	11/06/92	0006	5.0- 6.5	PCI/G		1.15	.02	ITA	1.00
	11/06/92	0015	13.5- 15.0	PCI/G		.852	.02	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		1.03	.02	ITA	1.00
	11/07/92	0021	20.0- 21.5	PCI/G		.971	.01	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		.585	.03	ITA	1.00
	11/07/92	0032	30.5- 32.0	PCI/G		.34	.03	ITA	1.00
	11/07/92	0037	35.5- 37.0	PCI/G		.372	.03	ITA	1.00
	11/07/92	1016	15.0- 17.0	PCI/G		.756	.02	ITA	1.00
URANIUM-234	11/06/92	0006	5.0- 6.5	PCI/G		.862	.13	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		.833	.13	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		.353	.11	ITA	1.00
URANIUM-235/236	11/07/92	0016	15.0- 17.0	PCI/G		.051	.05	ITA	1.00
URANIUM-238	11/06/92	0006	5.0- 6.5	PCI/G		1.12	.13	ITA	1.00
	11/07/92	0016	15.0- 17.0	PCI/G		.782	.13	ITA	1.00
	11/07/92	0026	25.0- 26.5	PCI/G		.296	.042	ITA	1.00
VANADIUM, TOTAL	11/06/92	0006	5.0- 6.5	MG/KG		20.	.56	ITA	1.00
	11/07/92	0016	15.0- 17.0	MG/KG		7.5	.56	ITA	1.00
	11/07/92	0026	25.0- 26.5	MG/KG		5.8	.57	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/10/92	0005	3.5- 5.0	% SOLIDS		92.5	-	ITA	1.00
	11/10/92	0025	23.0- 25.0	% SOLIDS		87.4	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	% SOLIDS		87.2	-	ITA	1.00
	11/10/92	1025	23.0- 25.0	% SOLIDS		86.5	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	% SOLIDS		86.6	-	ITA	1.00
	11/17/92	0045	43.5- 45.0	% SOLIDS		88.4	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/10/92	0025	23.0- 25.0	PG/G		10.4	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		214.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		3.1	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	11/10/92	0025	23.0- 25.0	PG/G	J	84.6	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		230.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		9.2	-	ITA	1.00
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFUR	11/10/92	0025	23.0- 25.0	PG/G		1.8	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		41.4	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		1.7	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		209.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		1.4	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		1.3	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		63.2	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		.65	-	ITA	1.00
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIO	11/10/92	0025	23.0- 25.0	PG/G		2.1	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		28.3	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIO	11/10/92	0031	30.0- 31.5	PG/G		39.7	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	11/10/92	0031	30.0- 31.5	PG/G		4.7	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENO-P-DIOXI	11/10/92	0031	30.0- 31.5	PG/G		11.	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		.74	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
1,2,3,7,8-PENTACHLORODIBENZOFURAN	11/10/92	0031	30.0- 31.5	PG/G		43.2	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		.75	-	ITA	1.00
1,2-DICHLOROBENZENE	11/10/92	0031	30.0- 31.5	UG/KG		480.	380.	ITA	1.00
1,2-DICHLOROETHENE	11/10/92	0005	3.5- 5.0	UG/KG	J	2.	11.	ITA	1.00
	11/10/92	0010	8.5- 10.0	UG/KG	J	8.	56.	ITA	5.00
	11/10/92	0025	23.0- 25.0	UG/KG	J	2.	11.	ITA	1.00
	11/10/92	0030	28.5- 30.0	UG/KG	J	2.	12.	ITA	1.00
1,4-DICHLOROBENZENE	11/10/92	0025	23.0- 25.0	UG/KG	J	150.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	100.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	1700.	380.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		.76	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		64.1	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		.66	-	ITA	1.00
2,3,4,7,8-PENTACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		.71	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		150.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		.77	-	ITA	1.00
2,3,7,8-TCDD	11/10/92	0025	23.0- 25.0	PG/G		1.3	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		22.5	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		3.4	-	ITA	1.00
2,3,7,8-TCDF	11/10/92	0025	23.0- 25.0	PG/G		1.6	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		132.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		1.4	-	ITA	1.00
2-BUTANONE	11/10/92	0011	10.0- 11.3	UG/KG	J	2.	12.	ITA	1.00
	11/10/92	0020	18.5- 20.0	UG/KG	J	9.	11.	ITA	1.00
	11/17/92	0035	34.5- 35.0	UG/KG	J	2.	11.	ITA	1.00
	11/17/92	0038	37.0- 38.0	UG/KG	J	3.	11.	ITA	1.00
	11/17/92	0040	39.0- 40.0	UG/KG	J	10.	12.	ITA	1.00
	11/17/92	0045	43.5- 45.0	UG/KG	J	1.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
2-BUTANONE	11/17/92	0050	49.5- 50.0	UG/KG	J	3.	11.	ITA	1.00
2-METHYLNAPHTHALENE	11/10/92	0025	23.0- 25.0	UG/KG	J	310.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		560.	380.	ITA	1.00
ACENAPHTHENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1500.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		780.	380.	ITA	1.00
ACENAPHTHYLENE	11/10/92	0025	23.0- 25.0	UG/KG	J	41.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	120.	380.	ITA	1.00
ALKALINITY	11/10/92	0005	3.5- 5.0	MG/KG	J	15880.	107.	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	28761.	111.	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	29755.	117.	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	36952.	116.	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		49041.7	112.74	ITA	1.00
ALUMINUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG		3460.	1.08	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG		4050.	1.14	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		5780.	1.15	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		3940.	1.16	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		9270.	1.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		3340.	1.	ITA	1.00
AMERICIUM-241	11/10/92	0031	30.0- 31.5	PCI/G		.114	-	ITA	1.00
ANTHRACENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1700.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		860.	380.	ITA	1.00
ANTIMONY, TOTAL	11/10/92	0025	23.0- 25.0	MG/KG	J	3.8	.57	ITA	1.00
AROCLOR-1248	11/10/92	0025	23.0- 25.0	UG/KG	J	230.	38.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		13000.	1900.	ITA	50.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	410.	33.	ITA	1.00
	11/17/92	0038	37.0- 38.0	UG/KG		930.	760.	ITA	20.00
ARSENIC, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG		6.1	2.16	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ARSENIC, TOTAL	11/10/92	0025	23.0- 25.0	MG/KG		5.6	2.29	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		8.	2.29	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		5.6	2.31	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		7.4	1.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		5.5	2.26	ITA	1.00
BARIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG		55.8	10.8	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG		49.6	11.4	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		104.	11.5	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		49.2	11.6	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	J	51.9	12.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	J	56.9	11.	ITA	1.00
BENZO(A)ANTHRACENE	11/10/92	0025	23.0- 25.0	UG/KG	J	3400.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		1900.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	110.	380.	ITA	1.00
BENZO(A)PYRENE	11/10/92	0025	23.0- 25.0	UG/KG	J	2500.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		1300.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	79.	380.	ITA	1.00
BENZO(B)FLUORANTHENE	11/10/92	0025	23.0- 25.0	UG/KG	J	4000.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		1800.	760.	ITA	2.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	130.	380.	ITA	1.00
BENZO(G,H,I)PERYLENE	11/10/92	0025	23.0- 25.0	UG/KG	J	850.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		440.	380.	ITA	1.00
BENZO(K)FLUORANTHENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1500.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		780.	760.	ITA	2.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	44.	380.	ITA	1.00
BENZOIC ACID	11/10/92	0025	23.0- 25.0	UG/KG	J	82.	1800.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	110.	1900.	ITA	1.00
	11/17/92	0038	37.0- 38.0	UG/KG	J	660.	1800.	ITA	1.00
	11/17/92	0045	43.5- 45.0	UG/KG	J	110.	1800.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
BERYLLIUM	11/10/92	0005	3.5- 5.0	MG/KG		.21	.05	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG		.25	.06	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		.51	.06	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		.22	.06	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	11/10/92	0005	3.5- 5.0	UG/KG		1400.	350.	ITA	1.00
	11/10/92	0025	23.0- 25.0	UG/KG	J	430.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		1400.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	5600.	750.	ITA	2.00
BUTYL BENZYL PHTHALATE	11/10/92	0031	30.0- 31.5	UG/KG	J	98.	380.	ITA	1.00
CADMIUM, TOTAL	11/10/92	0031	30.0- 31.5	MG/KG	J	.9	.29	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	.25	.29	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	B	0.23	.28	ITA	1.00
CALCIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	J	131000.	13514.	ITA	50.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	112000.	14302.	ITA	50.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	102000.	14335.	ITA	50.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	120000.	14451.	ITA	50.00
	11/17/92	0038	37.0- 38.0	MG/KG		82400.	14434.	ITA	50.00
	11/17/92	0045	43.5- 45.0	MG/KG		128000.	14140.	ITA	50.00
CARBAZOLE	11/10/92	0025	23.0- 25.0	UG/KG	J	2300.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	580.	380.	ITA	1.00
CARBON DISULFIDE	11/10/92	0025	23.0- 25.0	UG/KG	J	5.	11.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	3.	11.	ITA	1.00
	11/17/92	0040	39.0- 40.0	UG/KG		14.	6.	ITA	1.00
	11/17/92	0045	43.5- 45.0	UG/KG	J	2.	6.	ITA	1.00
	11/17/92	0050	49.5- 50.0	UG/KG	J	2.	5.	ITA	1.00
CESIUM-137	11/10/92	0031	30.0- 31.5	PCI/G		.0623	-	ITA	1.00
CHLORIDE	11/10/92	0005	3.5- 5.0	MG/KG		10.4	5.36	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG		21.6	5.64	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PV1	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CHLORIDE	11/10/92	0031	30.0- 31.5	MG/KG		21.3	5.83	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		15.4	5.76	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		16.91	5.64	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		32.41	5.53	ITA	1.00
CHLOROBENZENE	11/10/92	0020	18.5- 20.0	UG/KG	J	4.	11.	ITA	1.00
CHLOROETHENE (VINYL CHLORIDE)	11/10/92	0031	30.0- 31.5	UG/KG	J	2.	11.	ITA	1.00
CHROMIUM, TOTAL	11/10/92	0031	30.0- 31.5	MG/KG	J	13.1	.57	ITA	1.00
CHRYSENE	11/10/92	0025	23.0- 25.0	UG/KG	J	2600.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		1500.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	120.	380.	ITA	1.00
COBALT, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	B	4.5	2.7	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	B	6.4	2.86	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	B	9.7	2.87	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	B	5.7	2.89	ITA	1.00
COPPER, TOTAL	11/10/92	0025	23.0- 25.0	MG/KG	J	55.6	1.43	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	681.	1.43	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	14.	1.45	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		14.5	1.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		8.9	1.	ITA	1.00
DIBENZOFURAN	11/10/92	0025	23.0- 25.0	UG/KG	J	670.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		550.	380.	ITA	1.00
DIETHYL PHTHALATE	11/17/92	0038	37.0- 38.0	UG/KG	J	69.	380.	ITA	1.00
ENDOSULFAN SULFATE	11/10/92	0025	23.0- 25.0	UG/KG	J	28.	3.8	ITA	1.00
ETHYLBENZENE	11/10/92	0010	8.5- 10.0	UG/KG		200.	56.	ITA	5.00
	11/10/92	0011	10.0- 11.3	UG/KG		32.	12.	ITA	1.00
	11/10/92	0020	18.5- 20.0	UG/KG		12.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ETHYLBENZENE	11/10/92	0025	23.0- 25.0	UG/KG	J	8.	11.	ITA	1.00
	11/10/92	0030	28.5- 30.0	UG/KG	J	4.	12.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		23.	11.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	4.	11.	ITA	1.00
FLUORANTHENE	11/10/92	0025	23.0- 25.0	UG/KG	J	8300.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		2600.	380.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	260.	380.	ITA	1.00
	11/17/92	0038	37.0- 38.0	UG/KG	J	43.	380.	ITA	1.00
FLUORENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1200.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		790.	380.	ITA	1.00
FLUORIDE	11/10/92	0031	30.0- 31.5	MG/KG		12.6	.58	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		2.03	.56	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		4.31	.55	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/10/92	0025	23.0- 25.0	PG/G		217.	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		463.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		20.	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		44.8	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		416.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		6.	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/10/92	0025	23.0- 25.0	PG/G		9.9	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		278.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		3.1	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		27.8	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		755.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		7.3	-	ITA	1.00
INDENO(1,2,3-CD)PYRENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1200.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		410.	380.	ITA	1.00
IRON, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG		9150.	5.4	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
IRON, TOTAL	11/10/92	0025	23.0- 25.0	MG/KG		14100.	5.7	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		42200.	5.7	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		11000.	5.8	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	J	10200.	6.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	J	7600.	6.	ITA	1.00
LEAD, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	J	7.4	.65	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	12.2	.69	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	121.	.69	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	25.6	.69	ITA	1.00
LITHIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG		11.4	5.4	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	16.6	5.7	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		12.	5.7	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	13.9	5.8	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	J	16.2	6.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	J	17.	6.	ITA	1.00
MAGNESIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	J	58700.	13514.	ITA	50.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	40500.	14302.	ITA	50.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	40000.	14335.	ITA	50.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	46400.	14451.	ITA	50.00
	11/17/92	0038	37.0- 38.0	MG/KG		32500.	14434.	ITA	50.00
	11/17/92	0045	43.5- 45.0	MG/KG		50300.	14140.	ITA	50.00
MANGANESE, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	J	221.	.81	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	303.	.86	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	470.	.86	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	261.	.87	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	J	396.	1.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	J	195.	1.	ITA	1.00
MERCURY, TOTAL	11/10/92	0025	23.0- 25.0	MG/KG	J	2.7	.11	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	2.1	.11	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	.07	.12	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	J	.13	.07	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
METHOXYCHLOR	11/10/92	0025	23.0- 25.0	UG/KG	J	74.	19.	ITA	1.00
NAPHTHALENE	11/10/92	0025	23.0- 25.0	UG/KG	J	1400.	380.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		2000.	380.	ITA	1.00
NICKEL, TOTAL	11/10/92	0031	30.0- 31.5	MG/KG	*	28.4	2.29	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	*	8.5	2.	ITA	1.00
OCTACHLORODIBENZO-P-DIOXIN	11/10/92	0025	23.0- 25.0	PG/G	J	1010.	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G	J	1660.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		86.9	-	ITA	1.00
OCTACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G	J	6.5	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G	J	163.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		1.3	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	11/10/92	0031	30.0- 31.5	PG/G		124.	-	ITA	1.00
PENTACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		20.3	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		1110.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		11.3	-	ITA	1.00
PERCENT MOISTURE	11/10/92	0005	3.5- 5.0	% MOIST		7.	-	ITA	1.00
	11/10/92	0005	3.5- 5.0	% MOIST		7.	-	ITA	1.00
	11/10/92	0010	8.5- 10.0	% MOIST		10.	-	ITA	1.00
	11/10/92	0011	10.0- 11.3	% MOIST		20.	-	ITA	1.00
	11/10/92	0020	18.5- 20.0	% MOIST		13.	-	ITA	1.00
	11/10/92	0025	23.0- 25.0	% MOIST		13.	-	ITA	1.00
	11/10/92	0025	23.0- 25.0	% MOIST		13.	-	ITA	1.00
	11/10/92	0030	28.5- 30.0	% MOIST		15.	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	% MOIST		13.	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	% MOIST		13.	-	ITA	1.00
	11/10/92	1025	23.0- 25.0	% MOIST		13.	-	ITA	1.00
	11/10/92	1025	23.0- 25.0	% MOIST		13.	-	ITA	1.00
	11/17/92	0035	34.5- 35.0	% MOIST		11.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	% MOIST		13.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	11/17/92	0038	37.0- 38.0	% MOIST		11.	-	ITA	1.00
	11/17/92	0040	39.0- 40.0	% MOIST		15.	-	ITA	1.00
	11/17/92	0045	43.5- 45.0	% MOIST		12.	-	ITA	1.00
	11/17/92	0045	43.5- 45.0	% MOIST		10.	-	ITA	1.00
	11/17/92	0050	49.5- 50.0	% MOIST		8.	-	ITA	1.00
PHENANTHRENE	11/10/92	0025	23.0- 25.0	UG/KG	J	7400.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		3300.	760.	ITA	2.00
	11/10/92	1025	23.0- 25.0	UG/KG	J	240.	380.	ITA	1.00
PLUTONIUM-238	11/10/92	0005	3.5- 5.0	PCI/G		.0461	.046	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G	J	6.27	.033	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		17.8	.0354	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	14.2	.0411	ITA	1.00
PLUTONIUM-239/240	11/10/92	0031	30.0- 31.5	PCI/G		1.2	.0354	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G		.0548	.0411	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.0871	.067	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.0761	.073	ITA	1.00
POTASSIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	B	617.	270.	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	B	593.	286.	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	B	658.	287.	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	B	738.	289.	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	B	428.	289.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	B	477.	566.	ITA	2.00
POTASSIUM-40	11/10/92	0005	3.5- 5.0	PCI/G		14.6	.8	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G		14.2	.9	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		13.4	10.	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G		15.7	1.2	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		12.8	.3	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		11.8	.3	ITA	1.00
PYRENE	11/10/92	0025	23.0- 25.0	UG/KG	J	7200.	1900.	ITA	5.00
	11/10/92	0031	30.0- 31.5	UG/KG		3000.	380.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PYRENE	11/10/92	1025	23.0- 25.0	UG/KG	J	200.	380.	ITA	1.00
RADIUM-226	11/10/92	0005	3.5- 5.0	PCI/G		1.08	.1	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G		.875	.2	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		.984	.3	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G		.945	.2	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.687	.1	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.894	.1	ITA	1.00
SODIUM, TOTAL	11/10/92	0031	30.0- 31.5	MG/KG	B	298.	287.	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG	B	112.	289.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG	B	166.	283.	ITA	1.00
STRONTIUM-90	11/10/92	0025	23.0- 25.0	PCI/G	J	.21	.21	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	1.08	.23	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.308	.301	ITA	1.00
SULFATE	11/10/92	0005	3.5- 5.0	MG/KG	J	135.1	21.5	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	23.3	22.1	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	53.8	23.	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/10/92	0025	23.0- 25.0	PG/G		1.2	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		152.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		4.9	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/10/92	0025	23.0- 25.0	PG/G		19.9	-	ITA	1.00
	11/10/92	0031	30.0- 31.5	PG/G		1420.	-	ITA	1.00
	11/17/92	0038	37.0- 38.0	PG/G		21.7	-	ITA	1.00
TETRACHLOROETHENE	11/10/92	0030	28.5- 30.0	UG/KG	J	1.	12.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	2.	11.	ITA	1.00
THALLIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	B	.36	2.16	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	B	.49	2.29	ITA	1.00
THORIUM-228	11/10/92	0025	23.0- 25.0	PCI/G	J	.613	.446	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THORIUM-228	11/10/92	0031	30.0- 31.5	PCI/G		.741	.292	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	.972	.276	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.494	.056	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.433	.064	ITA	1.00
THORIUM-230	11/10/92	0005	3.5- 5.0	PCI/G	J	.659	.427	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G	J	.584	.471	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		.778	.292	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	.922	.191	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.934	.045	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.92	.005	ITA	1.00
THORIUM-232	11/10/92	0025	23.0- 25.0	PCI/G	J	.467	.279	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		.561	.173	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	.673	.191	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.635	.079	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		.5	.002	ITA	1.00
TOLUENE	11/10/92	0005	3.5- 5.0	UG/KG	J	8.	11.	ITA	1.00
	11/10/92	0011	10.0- 11.3	UG/KG	J	2.	12.	ITA	1.00
	11/10/92	0020	18.5- 20.0	UG/KG		110.	11.	ITA	1.00
	11/10/92	0025	23.0- 25.0	UG/KG	J	9.	11.	ITA	1.00
	11/10/92	0030	28.5- 30.0	UG/KG	J	5.	12.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		15.	11.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG		14.	11.	ITA	1.00
TOTAL ORGANIC CARBON	11/10/92	0005	3.5- 5.0	MG/KG		5730.	27.	ITA	1.00
	11/10/92	0010	8.5- 10.0	MG/KG		6390.	27.9	ITA	1.00
	11/10/92	0011	10.0- 11.3	MG/KG		16000.	31.2	ITA	1.00
	11/10/92	0020	18.5- 20.0	MG/KG		5820.	28.7	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG		11300.	28.6	ITA	1.00
	11/10/92	0030	28.5- 30.0	MG/KG		6480.	29.5	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG		10300.	28.7	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG		7820.	28.9	ITA	1.00
	11/17/92	0035	34.5- 35.0	MG/KG		18907.4	38.	ITA	1.00
	11/17/92	0038	37.0- 38.0	MG/KG		12777.1	26.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	11/17/92	0040	39.0- 40.0	MG/KG		13894.9	25.	ITA	1.00
	11/17/92	0045	43.5- 45.0	MG/KG		29223.6	24.	ITA	1.00
	11/17/92	0050	49.5- 50.0	MG/KG		17308.7	30.	ITA	1.00
TOTAL XYLENES	11/10/92	0010	8.5- 10.0	UG/KG		1300.	56.	ITA	5.00
	11/10/92	0011	10.0- 11.3	UG/KG		220.	12.	ITA	1.00
	11/10/92	0020	18.5- 20.0	UG/KG		25.	11.	ITA	1.00
	11/10/92	0025	23.0- 25.0	UG/KG		16.	11.	ITA	1.00
	11/10/92	0030	28.5- 30.0	UG/KG		15.	12.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG		130.	11.	ITA	1.00
	11/10/92	1025	23.0- 25.0	UG/KG		12.	11.	ITA	1.00
	11/17/92	0035	34.5- 35.0	UG/KG	J	2.	6.	ITA	1.00
TRICHLOROETHENE	11/10/92	0030	28.5- 30.0	UG/KG	J	2.	12.	ITA	1.00
	11/10/92	0031	30.0- 31.5	UG/KG	J	3.	11.	ITA	1.00
TRITIUM	11/10/92	0005	3.5- 5.0	PCI/G		2.04	.016	ITA	1.00
	11/10/92	0010	8.5- 10.0	PCI/G		17.	.025	ITA	1.00
	11/10/92	0011	10.0- 11.3	PCI/G		29.6	.048	ITA	1.00
	11/10/92	0020	18.5- 20.0	PCI/G		27.1	.031	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G	J	17.2	.023	ITA	1.00
	11/10/92	0030	28.5- 30.0	PCI/G		15.8	.037	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		18.	.034	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	32.2 3.	.032	ITA	1.00
	11/17/92	0035	34.5- 35.0	PCI/G		5.83	.025	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		1.35	.025	ITA	1.00
	11/17/92	0040	39.0- 40.0	PCI/G		4.16	.033	ITA	1.00
URANIUM-234	11/10/92	0005	3.5- 5.0	PCI/G		.786	.0965	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G	J	.687	.159	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		.98	.131	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	1.06	.0783	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.799	.058	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		1.08	.0734	ITA	1.00
URANIUM-235/236	11/10/92	0005	3.5- 5.0	PCI/G		.0403	.0302	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P004 PIEZOMETER
NORTH COORDINATE: 596687.67 FT
EAST COORDINATE: 1495330.25 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-235/236	11/10/92	0025	23.0- 25.0	PCI/G	J	.091	.091	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	.0619	.0307	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.0384	.023	ITA	1.00
URANIUM-238	11/10/92	0005	3.5- 5.0	PCI/G		.665	.0965	ITA	1.00
	11/10/92	0025	23.0- 25.0	PCI/G	J	.947	.091	ITA	1.00
	11/10/92	0031	30.0- 31.5	PCI/G		1.42	.0815	ITA	1.00
	11/10/92	1025	23.0- 25.0	PCI/G	J	1.13	.0307	ITA	1.00
	11/17/92	0038	37.0- 38.0	PCI/G		.738	.058	ITA	1.00
	11/17/92	0045	43.5- 45.0	PCI/G		1.05	.0734	ITA	1.00
VANADIUM, TOTAL	11/10/92	0005	3.5- 5.0	MG/KG	J	8.3	.54	ITA	1.00
	11/10/92	0025	23.0- 25.0	MG/KG	J	9.3	.57	ITA	1.00
	11/10/92	0031	30.0- 31.5	MG/KG	J	23.7	.57	ITA	1.00
	11/10/92	1025	23.0- 25.0	MG/KG	J	9.3	.58	ITA	1.00
ZINC, TOTAL	11/10/92	0031	30.0- 31.5	MG/KG		1330.	1.15	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	11/20/92	0003	1.5- 3.0	% SOLIDS		93.6	-	ITA	1.00
	11/20/92	0009	7.5- 9.0	% SOLIDS		94.8	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	% SOLIDS		90.6	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	% SOLIDS		82.	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	% SOLIDS		86.	-	ITA	1.00
	11/21/92	1056	55.0- 59.0	% SOLIDS		88.4	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	11/20/92	0009	7.5- 9.0	PG/G		.36	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		1.	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		1.5	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	11/20/92	0018	16.5- 18.0	PG/G		.49	-	ITA	1.00
1,2-DICHLOROETHENE	11/20/92	0032	31.5- 32.0	UG/KG	J	2.	5.	ITA	1.00
	11/21/92	0043	42.0- 43.0	UG/KG	J	1.	6.	ITA	1.00
	11/21/92	0045	44.0- 45.0	UG/KG	J	4.	6.	ITA	1.00
	11/21/92	0049	48.5- 49.0	UG/KG		17.	6.	ITA	1.00
	11/21/92	0055	54.5- 55.0	UG/KG	J	2.	5.	ITA	1.00
	11/21/92	0056	55.0- 59.0	UG/KG	J	5.	6.	ITA	1.00
	11/21/92	1056	55.0- 59.0	UG/KG	J	4.	6.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	11/20/92	0009	7.5- 9.0	PG/G		.21	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		.41	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		.15	-	ITA	1.00
2,3,7,8-TCDD	11/20/92	0009	7.5- 9.0	PG/G		.78	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		.62	-	ITA	1.00
2-BUTANONE	11/20/92	0018	16.5- 18.0	UG/KG	J	1.	11.	ITA	1.00
	11/20/92	0029	28.5- 29.0	UG/KG	J	2.	11.	ITA	1.00
	11/21/92	0043	42.0- 43.0	UG/KG	J	4.	12.	ITA	1.00
	11/21/92	0045	44.0- 45.0	UG/KG	J	3.	12.	ITA	1.00
ALKALINITY	11/20/92	0003	1.5- 3.0	MG/KG		30128.2	106.84	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG		21413.5	105.49	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		18211.9	110.38	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ALKALINITY	11/21/92	0045	44.0- 45.0	MG/KG		11402.4	121.95	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	75581.4	116.28	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	11595.	113.12	ITA	1.00
ALUMINUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	J	4200.	79.	ITA	20.00
	11/20/92	0009	7.5- 9.0	MG/KG	J	4180.	84.	ITA	20.00
	11/20/92	0018	16.5- 18.0	MG/KG	J	4310.	87.	ITA	20.00
	11/21/92	0045	44.0- 45.0	MG/KG	J	3800.	92.	ITA	20.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	2910.	68.	ITA	20.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	3070.	61.	ITA	20.00
AROCLOR-1248	11/20/92	0009	7.5- 9.0	UG/KG		2300.	880.	ITA	25.00
ARSENIC, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		5.	2.	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG		4.2	2.	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		3.7	2.	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG	J	5.4	2.	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG		8.2	2.	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	5.7	2.	ITA	1.00
BARIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	B	31.3	40.	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG	B	30.1	42.	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG	B	40.8	43.	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG	B	29.4	46.	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG	B	21.4	171.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	B	22.6	153.	ITA	5.00
CALCIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		115000.	4946.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG		115000.	5222.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG		122000.	5411.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG		173000.	5752.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG		237000.	4275.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG		258000.	3822.	ITA	5.00
CESIUM-137	11/21/92	0045	44.0- 45.0	PCI/G		.0494	.1	ITA	1.00
CHLORIDE	11/20/92	0018	16.5- 18.0	MG/KG		9.38	5.52	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CHLORIDE	11/21/92	0045	44.0- 45.0	MG/KG		32.68	6.1	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	27.94	5.66	ITA	1.00
COPPER, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	B	11.8	25.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG	B	10.7	26.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG	B	12.7	27.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG	B	9.7	21.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	B	10.4	19.	ITA	5.00
FLUORIDE	11/20/92	0003	1.5- 3.0	MG/KG		1.73	.53	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG		1.9	.53	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		1.05	.55	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG		1.83	.61	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG		1.1	.58	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG		1.47	.57	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	11/20/92	0003	1.5- 3.0	PG/G		1.5	-	ITA	1.00
	11/20/92	0009	7.5- 9.0	PG/G		3.	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		2.8	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	PG/G		2.4	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		10.4	-	ITA	1.00
	11/21/92	1056	55.0- 59.0	PG/G		.68	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	11/20/92	0009	7.5- 9.0	PG/G		.94	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		1.7	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		9.7	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	11/20/92	0009	7.5- 9.0	PG/G		.8	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		.47	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	PG/G		3.1	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		.68	-	ITA	1.00
HEXACHLORODIBENZOFURAN	11/20/92	0009	7.5- 9.0	PG/G		.22	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		1.3	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		5.1	-	ITA	1.00
IRON, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		11100.	99.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
IRON, TOTAL	11/20/92	0009	7.5- 9.0	MG/KG		11100.	104.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG		12200.	108.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG		10900.	115.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG		12100.	85.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG		13500.	76.	ITA	5.00
LEAD, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	J	6.	.64	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG	J	7.1	.59	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG	J	6.3	.64	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG	J	6.9	.67	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	6.4	.67	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	6.2	.53	ITA	1.00
MAGNESIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		46700.	4946.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG		44000.	5222.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG		51800.	5411.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG		59900.	5752.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	38800.	4275.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	19900.	3822.	ITA	5.00
MANGANESE, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	*	232.	15.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG	*	235.	16.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG	*	297.	16.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG	*	560.	17.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	696.	13.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	1320.	11.	ITA	5.00
NITRITE AS NITROGEN	11/20/92	0009	7.5- 9.0	MG/KG		37.9	8.24	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		76.3	13.63	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG		84.	13.55	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG	J	48.	9.23	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	J	86.8	13.15	ITA	1.00
OCTACHLORODIBENZOFURAN	11/21/92	0056	55.0- 59.0	PG/G		3.	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	11/21/92	0045	44.0- 45.0	PG/G		1.8	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PENTACHLORODIBENZOFURAN	11/20/92	0009	7.5- 9.0	PG/G		.86	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		3.3	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	PG/G		.77	-	ITA	1.00
PERCENT MOISTURE	11/20/92	0003	1.5- 3.0	% MOIST		7.	-	ITA	1.00
	11/20/92	0003	1.5- 3.0	% MOIST		6.	-	ITA	1.00
	11/20/92	0003	1.5- 3.0	% MOIST		7.	-	ITA	1.00
	11/20/92	0009	7.5- 9.0	% MOIST		8.	-	ITA	1.00
	11/20/92	0009	7.5- 9.0	% MOIST		5.	-	ITA	1.00
	11/20/92	0009	7.5- 9.0	% MOIST		8.	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	% MOIST		10.	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	% MOIST		9.	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	% MOIST		10.	-	ITA	1.00
	11/20/92	0022	21.5- 22.0	% MOIST		11.	-	ITA	1.00
	11/20/92	0029	28.5- 29.0	% MOIST		10.	-	ITA	1.00
	11/20/92	0032	31.5- 32.0	% MOIST		9.	-	ITA	1.00
	11/21/92	0037	36.5- 37.0	% MOIST		31.	-	ITA	1.00
	11/21/92	0043	42.0- 43.0	% MOIST		20.	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	% MOIST		8.	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	% MOIST		18.	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	% MOIST		8.	-	ITA	1.00
	11/21/92	0049	48.5- 49.0	% MOIST		11.	-	ITA	1.00
	11/21/92	0055	54.5- 55.0	% MOIST		8.	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	% MOIST		16.	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	% MOIST		14.	-	ITA	1.00
	11/21/92	0056	55.0- 59.0	% MOIST		16.	-	ITA	1.00
	11/21/92	0063	62.5- 63.0	% MOIST		11.	-	ITA	1.00
	11/21/92	1056	55.0- 59.0	% MOIST		12.	-	ITA	1.00
	11/21/92	1056	55.0- 59.0	% MOIST		12.	-	ITA	1.00
	11/21/92	1056	55.0- 59.0	% MOIST		12.	-	ITA	1.00
PLUTONIUM-238	11/20/92	0003	1.5- 3.0	PCI/G		.0953	.061	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.0479	.018	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.245	.0605	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		2.34	.0214	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.119	.0571	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PLUTONIUM-239/240	11/20/92	0009	7.5- 9.0	PCI/G		.0359	.018	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.0427	.0214	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.0746	.0571	ITA	1.00
POTASSIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		999.	2968.	ITA	3.00
	11/20/92	0009	7.5- 9.0	MG/KG		1060.	1030.	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		1150.	1080.	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG	B	741.	1150.	ITA	1.00
	11/21/92	0056	55.0- 59.0	MG/KG	B	690.	1150.	ITA	1.00
	11/21/92	1056	55.0- 59.0	MG/KG	B	750.	1529.	ITA	2.00
POTASSIUM-40	11/20/92	0003	1.5- 3.0	PCI/G		13.4	.9	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		14.2	.7	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		12.	1.1	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		7.82	1.2	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		7.83	.8	ITA	1.00
PYRENE	11/20/92	0003	1.5- 3.0	UG/KG	J	67.	350.	ITA	1.00
	11/20/92	0009	7.5- 9.0	UG/KG	J	260.	360.	ITA	1.00
	11/20/92	0018	16.5- 18.0	UG/KG	J	100.	370.	ITA	1.00
	11/21/92	0056	55.0- 59.0	UG/KG	J	40.	390.	ITA	1.00
RADIUM-226	11/20/92	0003	1.5- 3.0	PCI/G		.848	.2	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		1.14	.1	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.795	.1	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.537	.2	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.385	.1	ITA	1.00
SODIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	B	151.	4946.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG	B	161.	5222.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG	B	181.	5411.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG	B	223.	5752.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG	B	205.	4275.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	B	294.	3822.	ITA	5.00
STRONTIUM-90	11/20/92	0003	1.5- 3.0	PCI/G		.55	.437	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
STRONTIUM-90	11/20/92	0018	16.5- 18.0	PCI/G		.606	.503	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.841	.456	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.429	.424	ITA	1.00
SULFATE	11/20/92	0003	1.5- 3.0	MG/KG		2379.3	21.37	ITA	1.00
	11/20/92	0009	7.5- 9.0	MG/KG		135.	21.1	ITA	1.00
	11/20/92	0018	16.5- 18.0	MG/KG		226.3	22.08	ITA	1.00
	11/21/92	0045	44.0- 45.0	MG/KG		35.4	24.39	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	11/20/92	0009	7.5- 9.0	PG/G		.84	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	PG/G		.42	-	ITA	1.00
TETRACHLORODIBENZOFURAN	11/20/92	0009	7.5- 9.0	PG/G		1.5	-	ITA	1.00
	11/20/92	0018	16.5- 18.0	PG/G		5.1	-	ITA	1.00
	11/21/92	0045	44.0- 45.0	PG/G		.42	-	ITA	1.00
TETRACHLOROETHENE	11/21/92	0045	44.0- 45.0	UG/KG	J	3.	6.	ITA	1.00
	11/21/92	0049	48.5- 49.0	UG/KG	J	2.	6.	ITA	1.00
	11/21/92	0055	54.5- 55.0	UG/KG		10.	5.	ITA	1.00
	11/21/92	0056	55.0- 59.0	UG/KG		10.	6.	ITA	1.00
	11/21/92	0063	62.5- 63.0	UG/KG		13.	6.	ITA	1.00
	11/21/92	1056	55.0- 59.0	UG/KG		11.	6.	ITA	1.00
THALLIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	B	0.77	2.	ITA	1.00
THORIUM-228	11/20/92	0003	1.5- 3.0	PCI/G		.661	.305	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.572	.166	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.673	.255	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.635	.207	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.43	.235	ITA	1.00
THORIUM-230	11/20/92	0003	1.5- 3.0	PCI/G		1.23	.144	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		1.23	.133	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.956	.135	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.959	.149	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.707	.147	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THORIUM-232	11/20/92	0003	1.5- 3.0	PCI/G		.415	.144	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.52	.133	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.425	.135	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.365	.129	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.277	.17	ITA	1.00
TOLUENE	11/21/92	0045	44.0- 45.0	UG/KG	J	1.	6.	ITA	1.00
	11/21/92	0055	54.5- 55.0	UG/KG	J	1.	5.	ITA	1.00
TOTAL ORGANIC CARBON	11/20/92	0003	1.5- 3.0	UG/G		6790.	25.	ITA	1.00
	11/20/92	0009	7.5- 9.0	UG/G		7100.	25.	ITA	1.00
	11/20/92	0018	16.5- 18.0	UG/G		2860.	25.	ITA	1.00
	11/20/92	0022	21.5- 22.0	UG/G		3120.	25.	ITA	1.00
	11/20/92	0029	28.5- 29.0	UG/G		3260.	25.	ITA	1.00
	11/20/92	0032	31.5- 32.0	UG/G		1940.	25.	ITA	1.00
	11/21/92	0037	36.5- 37.0	UG/G		11500.	25.	ITA	1.00
	11/21/92	0043	42.0- 43.0	UG/G		2420.	25.	ITA	1.00
	11/21/92	0045	44.0- 45.0	UG/G		1700.	25.	ITA	1.00
	11/21/92	0049	48.5- 49.0	UG/G		2660.	25.	ITA	1.00
	11/21/92	0055	54.5- 55.0	UG/G		8580.	25.	ITA	1.00
	11/21/92	0056	55.0- 59.0	UG/G		2480.	25.	ITA	1.00
	11/21/92	0063	62.5- 63.0	UG/G		1560.	25.	ITA	1.00
	11/21/92	1056	55.0- 59.0	UG/G		3930.	25.	ITA	1.00
TRICHLOROETHENE	11/20/92	0032	31.5- 32.0	UG/KG	J	1.	5.	ITA	1.00
	11/21/92	0043	42.0- 43.0	UG/KG	J	2.	6.	ITA	1.00
	11/21/92	0045	44.0- 45.0	UG/KG		12.	6.	ITA	1.00
	11/21/92	0049	48.5- 49.0	UG/KG	J	3.	6.	ITA	1.00
	11/21/92	0055	54.5- 55.0	UG/KG	J	3.	5.	ITA	1.00
	11/21/92	0056	55.0- 59.0	UG/KG	J	4.	6.	ITA	1.00
	11/21/92	0063	62.5- 63.0	UG/KG		7.	6.	ITA	1.00
	11/21/92	1056	55.0- 59.0	UG/KG	J	4.	6.	ITA	1.00
TRITIUM	11/20/92	0003	1.5- 3.0	PCI/G		.209	.016	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.294	.013	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.542	.029	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRITIUM	11/20/92	0022	21.5- 22.0	PCI/G		1.02	.029	ITA	1.00
	11/20/92	0029	28.5- 29.0	PCI/G		.529	.025	ITA	1.00
	11/20/92	0032	31.5- 32.0	PCI/G		1.74	.023	ITA	1.00
	11/21/92	0037	36.5- 37.0	PCI/G		40.3	.078	ITA	1.00
	11/21/92	0043	42.0- 43.0	PCI/G		6.84	.051	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		4.47	.046	ITA	1.00
	11/21/92	0049	48.5- 49.0	PCI/G		.63	.028	ITA	1.00
	11/21/92	0055	54.5- 55.0	PCI/G		.552	.021	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.637	.036	ITA	1.00
	11/21/92	0063	62.5- 63.0	PCI/G		.69	.028	ITA	1.00
	11/21/92	1056	55.0- 59.0	PCI/G		7.38	.029	ITA	1.00
URANIUM-234	11/20/92	0003	1.5- 3.0	PCI/G		.854	.0883	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.927	.1	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.741	.167	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.686	.107	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.279	.102	ITA	1.00
URANIUM-238	11/20/92	0003	1.5- 3.0	PCI/G		.796	.0883	ITA	1.00
	11/20/92	0009	7.5- 9.0	PCI/G		.809	.1	ITA	1.00
	11/20/92	0018	16.5- 18.0	PCI/G		.998	.116	ITA	1.00
	11/21/92	0045	44.0- 45.0	PCI/G		.826	.107	ITA	1.00
	11/21/92	0056	55.0- 59.0	PCI/G		.332	.102	ITA	1.00
VANADIUM, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG	B	14.5	10.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG	B	13.8	10.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG	B	15.2	11.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG	B	17.4	12.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG	B	11.4	9.	ITA	5.00
	11/21/92	1056	55.0- 59.0	MG/KG	B	11.4	8.	ITA	5.00
ZINC, TOTAL	11/20/92	0003	1.5- 3.0	MG/KG		31.1	20.	ITA	5.00
	11/20/92	0009	7.5- 9.0	MG/KG		33.4	21.	ITA	5.00
	11/20/92	0018	16.5- 18.0	MG/KG		34.2	22.	ITA	5.00
	11/21/92	0045	44.0- 45.0	MG/KG		49.5	23.	ITA	5.00
	11/21/92	0056	55.0- 59.0	MG/KG		26.2	17.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P005 PIEZOMETER
NORTH COORDINATE: 596695.30 FT
EAST COORDINATE: 1495128.04 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ZINC, TOTAL	11/21/92	1056	55.0- 59.0	MG/KG		21.6	15.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	10/25/92	0010	9.0- 10.0	% SOLIDS		81.5	-	ITA	1.00
	10/25/92	0015	13.0- 15.0	% SOLIDS		80.9	-	ITA	1.00
	10/25/92	0025	23.0- 25.0	% SOLIDS		84.6	-	ITA	1.00
	10/25/92	0031	30.0- 31.0	% SOLIDS		87.3	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	10/25/92	0010	9.0- 10.0	PG/G		8.	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	10/25/92	0010	9.0- 10.0	PG/G		53.4	-	ITA	1.00
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFUR	10/25/92	0010	9.0- 10.0	PG/G		.48	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		1.4	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		.75	-	ITA	1.00
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIO	10/25/92	0010	9.0- 10.0	PG/G		1.3	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIO	10/25/92	0010	9.0- 10.0	PG/G		1.5	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		.42	-	ITA	1.00
1,2-DICHLOROETHENE	10/25/92	0005	4.5- 5.0	UG/KG		9.	6.	ITA	1.00
	10/25/92	0010	9.0- 10.0	UG/KG	J	2.	6.	ITA	1.00
	10/25/92	0015	13.0- 15.0	UG/KG	J	2.	6.	ITA	1.00
	10/25/92	0016	15.0- 16.0	UG/KG	J	5.	5.	ITA	1.00
	10/25/92	0025	23.0- 25.0	UG/KG		6.	6.	ITA	1.00
	10/25/92	0034	33.0- 34.0	UG/KG	J	5.	6.	ITA	1.00
	10/25/92	1016	15.0- 16.0	UG/KG	J	2.	6.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		1.2	-	ITA	1.00
2,3,7,8-TCDF	10/25/92	0010	9.0- 10.0	PG/G		.99	-	ITA	1.00
2-BUTANONE	10/25/92	0005	4.5- 5.0	UG/KG	J	1.	12.	ITA	1.00
	10/25/92	0034	33.0- 34.0	UG/KG	J	3.	11.	ITA	1.00
ALKALINITY	10/25/92	0010	9.0- 10.0	MG/KG	J	11656.	122.7	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ALKALINITY	10/25/92	0015	13.0- 15.0	MG/KG	J	11124.	123.61	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	26004.	118.2	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	10767.	114.55	ITA	1.00
ALUMINUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	J	12400.	5.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	J	3620.	66.	ITA	20.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	2630.	21.11	ITA	20.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	2150.	65.	ITA	20.00
ARSENIC, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	J	6.2	2.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	J	7.4	1.8	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	4.9	1.89	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	3.4	1.6	ITA	1.00
BARIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		115.	47.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	B	20.6	33.	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	B	16.9	42.22	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG	B	16.7	32.	ITA	1.00
BERYLLIUM	10/25/92	0010	9.0- 10.0	MG/KG		0.45	.23	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	10/25/92	0010	9.0- 10.0	UG/KG		1200.	400.	ITA	1.00
	10/25/92	0025	23.0- 25.0	UG/KG	J	68.	380.	ITA	1.00
	10/25/92	0031	30.0- 31.0	UG/KG	J	340.	390.	ITA	1.00
BISMUTH, TOTAL	10/25/92	0015	13.0- 15.0	MG/KG	B	1.1	27.	ITA	1.00
CALCIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	J	16800.	1169.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	J	131000.	4120.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	139000.	5276.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	147000.	4062.	ITA	5.00
CHLORIDE	10/25/92	0010	9.0- 10.0	MG/KG		340.8	6.13	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG		2389.1	6.18	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG		55.4	5.91	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG		31.3	5.73	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CHROMIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		13.8	2.	ITA	1.00
COBALT, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	B	10.1	12.	ITA	1.00
COPPER, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		17.4	6.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	B	10.5	21.	ITA	5.00
DI-N-BUTYL PHTHALATE	10/25/92	0031	30.0- 31.0	UG/KG	J	39.	390.	ITA	1.00
ETHYLBENZENE	10/25/92	0034	33.0- 34.0	UG/KG	J	1.	6.	ITA	1.00
FLUORIDE	10/25/92	0015	13.0- 15.0	MG/KG		1.11	.62	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG		1.39	.59	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG		.94	.57	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	10/25/92	0010	9.0- 10.0	PG/G		97.3	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		23.7	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	10/25/92	0010	9.0- 10.0	PG/G		14.3	-	ITA	1.00
	10/25/92	0015	13.0- 15.0	PG/G		.26	-	ITA	1.00
HEXACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		12.9	-	ITA	1.00
IRON, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		21900.	23.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG		8470.	82.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG		7060.	105.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG		6980.	81.	ITA	5.00
LEAD, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	J	75.3	.69	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	J	6.	.55	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	8.1	.57	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	4.6	.46	ITA	1.00
LITHIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		14.4	11.68	ITA	1.00
MAGNESIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	*	5780.	1169.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
MAGNESIUM, TOTAL	10/25/92	0015	13.0- 15.0	MG/KG	*	56200.	4120.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG	*	73700.	5276.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG	*	62600.	4062.	ITA	5.00
MANGANESE, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		938.	4.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG		318.	12.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG		414.	16.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG		528.	12.	ITA	5.00
NICKEL, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		18.5	9.	ITA	1.00
NITRATE	10/25/92	0015	13.0- 15.0	MG/KG		3.28	1.24	ITA	1.00
OCTACHLORODIBENZO-P-DIOXIN	10/25/92	0010	9.0- 10.0	PG/G		371.	-	ITA	1.00
OCTACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		15.	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	10/25/92	0010	9.0- 10.0	PG/G		2.8	-	ITA	1.00
PENTACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		15.	-	ITA	1.00
PERCENT MOISTURE	10/25/92	0005	4.5- 5.0	% MOIST		18.	-	ITA	1.00
	10/25/92	0010	9.0- 10.0	% MOIST		18.	-	ITA	1.00
	10/25/92	0010	9.0- 10.0	% MOIST		18.	-	ITA	1.00
	10/25/92	0015	13.0- 15.0	% MOIST		15.	-	ITA	1.00
	10/25/92	0015	13.0- 15.0	% MOIST		19.	-	ITA	1.00
	10/25/92	0016	15.0- 16.0	% MOIST		8.	-	ITA	1.00
	10/25/92	0025	23.0- 25.0	% MOIST		15.	-	ITA	1.00
	10/25/92	0025	23.0- 25.0	% MOIST		15.	-	ITA	1.00
	10/25/92	0031	30.0- 31.0	% MOIST		15.	-	ITA	1.00
	10/25/92	0031	30.0- 31.0	% MOIST		13.	-	ITA	1.00
	10/25/92	0034	33.0- 34.0	% MOIST		10.	-	ITA	1.00
	10/25/92	1016	15.0- 16.0	% MOIST		10.	-	ITA	1.00
PLUTONIUM-238	10/25/92	0010	9.0- 10.0	PCI/G		.213	.0173	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		.147	.0163	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PLUTONIUM-238	10/25/92	0025	23.0- 25.0	PCI/G		.221	.017	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.112	.0502	ITA	1.00
PLUTONIUM-239/240	10/25/92	0010	9.0- 10.0	PCI/G		.178	.044	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		.147	.0416	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G		.261	.017	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.0722	.0197	ITA	1.00
POTASSIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		1270.	1169.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	B	642.	818.	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	B	663.	1055.	ITA	1.00
	10/25/92	0031	30.0- 31.0	MG/KG	B	502.	812.	ITA	1.00
POTASSIUM-40	10/25/92	0010	9.0- 10.0	PCI/G		19.3	10.	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		12.	.9	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G		6.9	1.1	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		8.26	.8	ITA	1.00
RADIUM-226	10/25/92	0010	9.0- 10.0	PCI/G		1.13	.3	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		.808	.1	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G		.638	.2	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.647	.2	ITA	1.00
SILVER, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		6.3	2.	ITA	1.00
SODIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG	B	504.	1169.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	B	204.	4120.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG	B	287.	5276.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG	B	188.	4062.	ITA	5.00
STRONTIUM-90	10/25/92	0025	23.0- 25.0	PCI/G		5.78	.111	ITA	1.00
SULFATE	10/25/92	0015	13.0- 15.0	MG/KG	J	619.4	24.72	ITA	1.00
TETRACHLORODIBENZO-P-DIOXIN	10/25/92	0010	9.0- 10.0	PG/G		2.3	-	ITA	1.00
TETRACHLORODIBENZOFURAN	10/25/92	0010	9.0- 10.0	PG/G		22.4	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROETHENE	10/25/92	0005	4.5- 5.0	UG/KG	J	5.	6.	ITA	1.00
	10/25/92	0015	13.0- 15.0	UG/KG		22.	6.	ITA	1.00
	10/25/92	0016	15.0- 16.0	UG/KG		41.	5.	ITA	1.00
	10/25/92	0025	23.0- 25.0	UG/KG		59.	6.	ITA	1.00
	10/25/92	0031	30.0- 31.0	UG/KG		24.	6.	ITA	1.00
	10/25/92	0034	33.0- 34.0	UG/KG		30.	6.	ITA	1.00
	10/25/92	1016	15.0- 16.0	UG/KG		41.	6.	ITA	1.00
THORIUM-228	10/25/92	0010	9.0- 10.0	PCI/G		1.1	.217	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G	J	.455	.21	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.29	.0773	ITA	1.00
THORIUM-230	10/25/92	0010	9.0- 10.0	PCI/G		1.24	.0838	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G	J	.853	.0569	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G	J	.95	.42	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.739	.0464	ITA	1.00
THORIUM-232	10/25/92	0010	9.0- 10.0	PCI/G		.855	.0838	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G	J	.36	.0569	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G	J	.532	.291	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.227	.0321	ITA	1.00
TOLUENE	10/25/92	0034	33.0- 34.0	UG/KG	J	3.	6.	ITA	1.00
TOTAL ORGANIC CARBON	10/25/92	0005	4.5- 5.0	MG/KG	J	16275.2	36.	ITA	1.00
	10/25/92	0010	9.0- 10.0	MG/KG	J	6895.7	44.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG	J	6531.5	20.	ITA	1.00
	10/25/92	0016	15.0- 16.0	MG/KG	J	8324.7	25.	ITA	1.00
	10/25/92	0025	23.0- 25.0	MG/KG	J	9418.3	25.	ITA	27.00
	10/25/92	0031	30.0- 31.0	MG/KG	J	4983.5	28.	ITA	1.00
	10/25/92	0034	33.0- 34.0	MG/KG	J	20883.8	25.	ITA	1.00
	10/25/92	1016	15.0- 16.0	MG/KG	J	9386.4	25.	ITA	1.00
TOTAL XYLENES	10/25/92	0034	33.0- 34.0	UG/KG	J	3.	6.	ITA	1.00
TRICHLOROETHENE	10/25/92	0005	4.5- 5.0	UG/KG		28.	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P006 PIEZOMETER
NORTH COORDINATE: 596559.47 FT
EAST COORDINATE: 1495115.86 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRICHLOROETHENE	10/25/92	0010	9.0- 10.0	UG/KG	J	2.	6.	ITA	1.00
	10/25/92	0015	13.0- 15.0	UG/KG		11.	6.	ITA	1.00
	10/25/92	0016	15.0- 16.0	UG/KG		22.	5.	ITA	1.00
	10/25/92	0025	23.0- 25.0	UG/KG		24.	6.	ITA	1.00
	10/25/92	0031	30.0- 31.0	UG/KG	J	4.	6.	ITA	1.00
	10/25/92	0034	33.0- 34.0	UG/KG		20.	6.	ITA	1.00
	10/25/92	1016	15.0- 16.0	UG/KG		14.	6.	ITA	1.00
TRICHLOROMETHANE (CHLOROFORM)	10/25/92	0025	23.0- 25.0	UG/KG	J	1.	6.	ITA	1.00
URANIUM-234	10/25/92	0010	9.0- 10.0	PCI/G		.692	.0535	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		.508	.058	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G		.556	.0567	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.609	.0911	ITA	1.00
URANIUM-235/236	10/25/92	0015	13.0- 15.0	PCI/G		.0379	.0227	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.0277	.00208	ITA	1.00
URANIUM-238	10/25/92	0010	9.0- 10.0	PCI/G		.93	.0535	ITA	1.00
	10/25/92	0015	13.0- 15.0	PCI/G		.675	.0227	ITA	1.00
	10/25/92	0025	23.0- 25.0	PCI/G		.593	.0567	ITA	1.00
	10/25/92	0031	30.0- 31.0	PCI/G		.463	.0911	ITA	1.00
VANADIUM, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		34.5	2.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG		13.2	8.	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG	B	9.6	8.1	ITA	5.00
ZINC, TOTAL	10/25/92	0010	9.0- 10.0	MG/KG		144.	5.	ITA	1.00
	10/25/92	0015	13.0- 15.0	MG/KG		27.6	16.	ITA	5.00
	10/25/92	0025	23.0- 25.0	MG/KG		21.9	21.1	ITA	5.00
	10/25/92	0031	30.0- 31.0	MG/KG		18.0	16.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P007 PIEZOMETER
NORTH COORDINATE: 597073.36 FT
EAST COORDINATE: 1494987.45 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	10/22/92	0013	11.0- 13.0	% SOLIDS		94.1	-	ITA	1.00
	10/23/92	0025	24.5- 25.0	% SOLIDS		84.5	-	ITA	1.00
2-BUTANONE	10/23/92	0030	29.0- 30.0	UG/KG		17.	10.	ITA	1.00
	10/23/92	0031	30.0- 31.0	UG/KG	J	3.	11.	ITA	1.00
ACETONE	10/23/92	0030	29.0- 30.0	UG/KG	J	66.	10.	ITA	1.00
ALKALINITY	10/22/92	0013	11.0- 13.0	MG/KG	J	60573.	106.	ITA	1.00
	10/23/92	0025	24.5- 25.0	MG/KG	J	11538.	118.	ITA	1.00
ALUMINUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	J	2480.	82.	ITA	20.00
	10/23/92	0025	24.5- 25.0	MG/KG	J	1590.	66.	ITA	20.00
ARSENIC, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG		5.6	2.08	ITA	1.00
	10/23/92	0025	24.5- 25.0	MG/KG	*	4.5	2.	ITA	1.00
BARIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	B	13.6	204.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG	B	12.2	164.	ITA	5.00
BIS(2-ETHYLHEXYL)PHTHALATE	10/23/92	0025	24.5- 25.0	UG/KG	J	64.	370.	ITA	1.00
CALCIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	J	196000.	5109.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG	J	149000.	4109.	ITA	5.00
CARBON DISULFIDE	10/23/92	0030	29.0- 30.0	UG/KG	J	4.	10.	ITA	1.00
	10/23/92	0033	32.0- 33.0	UG/KG	J	2.	6.	ITA	1.00
CHLORIDE	10/22/92	0013	11.0- 13.0	MG/KG		12.5	5.31	ITA	1.00
	10/23/92	0025	24.5- 25.0	MG/KG		419.	5.92	ITA	1.00
COPPER, TOTAL	10/23/92	0025	24.5- 25.0	MG/KG	B	8.3	21.	ITA	5.00
ETHYLBENZENE	10/23/92	0030	29.0- 30.0	UG/KG	J	2.	5.	ITA	1.00
FLUORIDE	10/22/92	0013	11.0- 13.0	MG/KG		.55	.53	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB9B AREA B
LOCATION: P007 PIEZOMETER
NORTH COORDINATE: 597073.36 FT
EAST COORDINATE: 1494987.45 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
FLUORIDE	10/23/92	0025	24.5- 25.0	MG/KG		1.24	.59	ITA	1.00
IRON, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG		9040.	102.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG		11400.	82.	ITA	5.00
LEAD, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	J	6.4	.63	ITA	1.00
	10/23/92	0025	24.5- 25.0	MG/KG	J	6.7	.52	ITA	1.00
MAGNESIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	*	42200.	5109.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG	*	49500.	4109.	ITA	5.00
MANGANESE, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG		434.	15.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG		225.	12.	ITA	5.00
NITRATE	10/23/92	0025	24.5- 25.0	MG/KG		9.42	1.18	ITA	1.00
PERCENT MOISTURE	10/22/92	0005	3.5- 5.0	% MOIST		19.	-	ITA	1.00
	10/22/92	0005	3.5- 5.0	% MOIST		19.	-	ITA	1.00
	10/22/92	0013	11.0- 13.0	% MOIST		6.	-	ITA	1.00
	10/22/92	0013	11.0- 13.0	% MOIST		6.	-	ITA	1.00
	10/23/92	0020	19.6- 20.0	% MOIST		10.	-	ITA	1.00
	10/23/92	0025	24.5- 25.0	% MOIST		12.	-	ITA	1.00
	10/23/92	0025	24.5- 25.0	% MOIST		15.	-	ITA	1.00
	10/23/92	0026	25.0- 26.0	% MOIST		12.	-	ITA	1.00
	10/23/92	0030	29.0- 30.0	% MOIST		4.	-	ITA	1.00
	10/23/92	0031	30.0- 31.0	% MOIST		8.	-	ITA	1.00
	10/23/92	0033	32.0- 33.0	% MOIST		14.	-	ITA	1.00
PLUTONIUM-238	10/22/92	0005	3.5- 5.0	PCI/G		.265	.107	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.326	.125	ITA	1.00
PLUTONIUM-239/240	10/22/92	0005	3.5- 5.0	PCI/G		.237	.107	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.179	.125	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		.116	.0386	ITA	1.00
POTASSIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	B	670.	1022.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: P007 PIEZOMETER
NORTH COORDINATE: 597073.36 FT
EAST COORDINATE: 1494987.45 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
POTASSIUM, TOTAL	10/23/92	0025	24.5- 25.0	MG/KG	B	405.	822.	ITA	1.00
SELENIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	J	.47	1.04	ITA	1.00
SODIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	B	164.	5109.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG	B	161.	4109.	ITA	5.00
SULFATE	10/23/92	0025	24.5- 25.0	MG/KG	J	309.	23.6	ITA	1.00
TETRACHLOROETHENE	10/23/92	0020	19.6- 20.0	UG/KG	J	3.	6.	ITA	1.00
	10/23/92	0025	24.5- 25.0	UG/KG		7.	6.	ITA	1.00
	10/23/92	0026	25.0- 26.0	UG/KG		7.	6.	ITA	1.00
	10/23/92	0031	30.0- 31.0	UG/KG		18.	5.	ITA	1.00
	10/23/92	0033	32.0- 33.0	UG/KG		15.	6.	ITA	1.00
THALLIUM, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG	B	0.44	2.08	ITA	1.00
THORIUM-228	10/22/92	0005	3.5- 5.0	PCI/G		1.3	.0872	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.346	.0307	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		.481	.152	ITA	1.00
THORIUM-230	10/22/92	0005	3.5- 5.0	PCI/G		1.26	.0213	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.615	.0121	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		1.	.0412	ITA	1.00
THORIUM-232	10/22/92	0005	3.5- 5.0	PCI/G		1.04	.0213	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.145	.0307	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		.453	.105	ITA	1.00
TOLUENE	10/23/92	0020	19.6- 20.0	UG/KG	J	3.	6.	ITA	1.00
	10/23/92	0026	25.0- 26.0	UG/KG	J	1.	6.	ITA	1.00
	10/23/92	0030	29.0- 30.0	UG/KG	J	4.	5.	ITA	1.00
	10/23/92	0031	30.0- 31.0	UG/KG	J	2.	5.	ITA	1.00
	10/23/92	0033	32.0- 33.0	UG/KG	J	1.	6.	ITA	1.00
TOTAL ORGANIC CARBON	10/22/92	0005	3.5- 5.0	MG/KG		11887.	20.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P007 PIEZOMETER
NORTH COORDINATE: 597073.36 FT
EAST COORDINATE: 1494987.45 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	10/22/92	0013	11.0- 13.0	MG/KG		6005.	30.	ITA	1.00
	10/23/92	0020	19.6- 20.0	MG/KG		14403.	17.	ITA	1.00
	10/23/92	0025	24.5- 25.0	MG/KG		7192.	8.	ITA	1.00
	10/23/92	0026	25.0- 26.0	MG/KG		11156.	5.	ITA	1.00
	10/23/92	0030	29.0- 30.0	MG/KG		5723.	27.	ITA	1.00
	10/23/92	0031	30.0- 31.0	MG/KG		9127.	14.	ITA	1.00
	10/23/92	0033	32.0- 33.0	MG/KG		10960.	28.	ITA	1.00
TRICHLOROETHENE	10/23/92	0025	24.5- 25.0	UG/KG	J	2.	6.	ITA	1.00
	10/23/92	0026	25.0- 26.0	UG/KG	J	2.	6.	ITA	1.00
	10/23/92	0030	29.0- 30.0	UG/KG	J	2.	5.	ITA	1.00
	10/23/92	0031	30.0- 31.0	UG/KG		11.	5.	ITA	1.00
	10/23/92	0033	32.0- 33.0	UG/KG		20.	6.	ITA	1.00
TRITIUM	10/22/92	0005	3.5- 5.0	PCI/G		2.83	2.123	ITA	1.00
	10/23/92	0026	25.0- 26.0	PCI/G		2.74	2.102	ITA	1.00
	10/23/92	0033	32.0- 33.0	PCI/G		2.19	2.112	ITA	1.00
URANIUM-234	10/22/92	0005	3.5- 5.0	PCI/G		.936	.166	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.382	.146	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		.345	.139	ITA	1.00
URANIUM-238	10/22/92	0005	3.5- 5.0	PCI/G		1.1	.128	ITA	1.00
	10/22/92	0013	11.0- 13.0	PCI/G		.458	.073	ITA	1.00
	10/23/92	0025	24.5- 25.0	PCI/G		.535	.0827	ITA	1.00
VANADIUM, TOTAL	10/23/92	0025	24.5- 25.0	MG/KG	B	10.1	8.	ITA	5.00
ZINC, TOTAL	10/22/92	0013	11.0- 13.0	MG/KG		24.3	20.	ITA	5.00
	10/23/92	0025	24.5- 25.0	MG/KG		17.7	16.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P008 PIEZOMETER
NORTH COORDINATE: 596683.60 FT
EAST COORDINATE: 1494765.46 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	02/19/93	0011	10.0- 12.0	% SOLIDS		95.6	-	ITA	-
	02/19/93	0021	20.0- 21.5	% SOLIDS		92.7	-	ITA	-
	02/19/93	1021	20.0- 21.5	% SOLIDS		92.3	-	ITA	-
ALKALINITY	02/19/93	0007	6.0- 8.0	MG/KG		20858.9	123.	ITA	1.00
	02/19/93	0011	10.0- 12.0	MG/KG		13075.31	105.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		22114.35	108.	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG		20585.05	108.	ITA	1.00
ALUMINUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		1950.	16.	ITA	4.00
	02/19/93	0021	20.0- 21.5	MG/KG		1980.	82.	ITA	20.00
	02/19/93	1021	20.0- 21.5	MG/KG		1930.	74.	ITA	20.00
ARSENIC, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		4.6	2.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		3.9	2.	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG		2.9	2.	ITA	1.00
BARIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	B	11.8	39.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	B	12.0	205.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG	B	12.4	185.	ITA	5.00
CALCIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		121000.	978.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		165000.	5137.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG		165000.	4630.	ITA	5.00
CARBON DISULFIDE	02/20/93	0054	53.0- 54.5	UG/KG	J	8.	11.	ITA	1.00
CHLORIDE	02/19/93	0011	10.0- 12.0	MG/KG		11.5	5.23	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		23.7	5.396	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG		29.3	5.42	ITA	1.00
CHROMIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		6.3	2.	ITA	1.00
COBALT, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	B	2.8	10.	ITA	1.00
COPPER, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		8.9	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P008 PIEZOMETER
NORTH COORDINATE: 596683.60 FT
EAST COORDINATE: 1494765.46 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ETHYLBENZENE	02/19/93	0019	18.0- 19.5	UG/KG	J	1.	11.	ITA	1.00
FLUORIDE	02/19/93	0011	10.0- 12.0	MG/KG		.56	.52	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		.86	.54	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG		.98	.54	ITA	1.00
IRON, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		8660.	20.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		6330.	103.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG		7500.	93.	ITA	5.00
LEAD, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	J	4.1	.58	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	J	3.9	.63	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG	J	4.4	.62	ITA	1.00
MAGNESIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	J	40500.	978.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	J	75500.	5137.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG	J	70300.	4630.	ITA	5.00
MANGANESE, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		468.	3.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG		198.	15.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG		262.	14.	ITA	5.00
NICKEL, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	B	7.3	8.	ITA	1.00
NITRATE	02/19/93	0011	10.0- 12.0	MG/KG		1.1	1.05	ITA	1.00
PERCENT MOISTURE	02/19/93	0002	1.0- 3.0	% MOIST		17.	-	ITA	-
	02/19/93	0007	6.0- 8.0	% MOIST		5.	-	ITA	-
	02/19/93	0011	10.0- 12.0	% MOIST		4.	-	ITA	-
	02/19/93	0019	18.0- 19.5	% MOIST		5.	-	ITA	-
	02/19/93	0021	20.0- 21.5	% MOIST		7.	-	ITA	-
	02/19/93	0021	20.0- 21.5	% MOIST		7.	-	ITA	-
	02/19/93	0021	20.0- 21.5	% MOIST		7.	-	ITA	-
	02/19/93	1021	20.0- 21.5	% MOIST		8.	-	ITA	-
	02/19/93	1021	20.0- 21.5	% MOIST		8.	-	ITA	-
	02/19/93	1021	20.0- 21.5	% MOIST		8.	-	ITA	-

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P008 PIEZOMETER
NORTH COORDINATE: 596683.60 FT
EAST COORDINATE: 1494765.46 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	02/20/93	0027	26.0- 27.5	% MOIST		9.	-	ITA	-
	02/20/93	0040	38.5- 40.0	% MOIST		7.	-	ITA	-
	02/20/93	0045	43.5- 45.0	% MOIST		8.	-	ITA	-
	02/20/93	0048	47.0- 48.5	% MOIST		7.	-	ITA	-
	02/20/93	0054	53.0- 54.5	% MOIST		11.	-	ITA	-
POTASSIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	B	441.	978.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	B	499.	-	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG	B	455.	926.	ITA	1.00
SILVER, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		2.	2.	ITA	1.00
SODIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG	B	137.	978.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	B	238.	5137.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG	B	220.	4630.	ITA	5.00
SULFATE	02/19/93	0021	20.0- 21.5	MG/KG		22.7	21.6	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG		23.8	21.7	ITA	1.00
TOTAL ORGANIC CARBON	02/19/93	0002	1.0- 3.0	MG/KG		30265.8	38.	ITA	1.00
	02/19/93	0007	6.0- 8.0	MG/KG		17653.2	33.	ITA	1.00
	02/19/93	0011	10.0- 12.0	MG/KG		12874.1	25.	ITA	1.00
	02/19/93	0019	18.0- 19.5	MG/KG		11841.9	33.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	J	11423.3	28.	ITA	1.00
	02/19/93	1021	20.0- 21.5	MG/KG	J	21299.9	26.	ITA	1.00
	02/20/93	0027	26.0- 27.5	MG/KG		12332.	37.	ITA	1.00
	02/20/93	0040	38.5- 40.0	MG/KG		14947.6	32.	ITA	1.00
	02/20/93	0045	43.5- 45.0	MG/KG		15805.4	38.	ITA	1.00
	02/20/93	0048	47.0- 48.5	MG/KG		16039.4	27.	ITA	1.00
	02/20/93	0054	53.0- 54.5	MG/KG		9654.2	32.	ITA	1.00
TRITIUM	02/19/93	0002	1.0- 3.0	PCI/G		.598	.048	ITA	1.00
	02/19/93	0007	6.0- 8.0	PCI/G		.014	.01	ITA	1.00
	02/19/93	0011	10.0- 12.0	PCI/G		.023	.01	ITA	1.00
	02/19/93	0019	18.0- 19.5	PCI/G		.035	.01	ITA	1.00
	02/19/93	0021	20.0- 21.5	PCI/G		.379	.02	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P008 PIEZOMETER
NORTH COORDINATE: 596683.60 FT
EAST COORDINATE: 1494765.46 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TRITIUM	02/19/93	1021	20.0- 21.5	PCI/G		.483	.02	ITA	1.00
	02/20/93	0027	26.0- 27.5	PCI/G		.253	.02	ITA	1.00
	02/20/93	0040	38.5- 40.0	PCI/G		.182	.02	ITA	1.00
	02/20/93	0045	43.5- 45.0	PCI/G		.182	.02	ITA	1.00
	02/20/93	0048	47.0- 48.5	PCI/G		.192	.02	ITA	1.00
	02/20/93	0054	53.0- 54.5	PCI/G		.67	.03	ITA	1.00
VANADIUM, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		9.9	2.	ITA	1.00
ZINC, TOTAL	02/19/93	0011	10.0- 12.0	MG/KG		23.2	4.	ITA	1.00
	02/19/93	0021	20.0- 21.5	MG/KG	B	18.6	21.	ITA	5.00
	02/19/93	1021	20.0- 21.5	MG/KG		22.6	19.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB9B AREA B
LOCATION: P009
NORTH COORDINATE: 596530.19 FT
EAST COORDINATE: 1494774.76 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	02/23/93	0015	13.5- 15.0	% SOLIDS		93.9	-	ITA	-
	02/23/93	0019	18.0- 19.5	% MOIST		89.1	-	ITA	-
ALKALINITY	02/23/93	0015	13.5- 15.0	MG/KG		59046.6	108.	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG		29633.6	108.	ITA	1.00
ALUMINUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		2750.	83.	ITA	20
	02/23/93	0019	18.0- 19.5	MG/KG		2470.	84.	ITA	20.00
ARSENIC, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		2.3	2.	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG		3.4	2.	ITA	1.00
BARIUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG	B	35.5	207.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG	B	33.1	210.	ITA	5.00
BIS(2-ETHYLHEXYL)PHTHALATE	02/23/93	0019	18.0- 19.5	UG/KG	J	39.	370.	ITA	1.00
CALCIUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		192000.	5170.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG		211000.	5245.	ITA	5.00
CARBON DISULFIDE	02/23/93	0067	66.0- 67.5	UG/KG	J	5.	11.	ITA	1.00
	02/23/93	0073	71.0- 73.0	UG/KG	J	3.	12.	ITA	1.00
CHLORIDE	02/23/93	0019	18.0- 19.5	MG/KG		29.1	5.39	ITA	1.00
CHROMIUM, TOTAL	02/23/93	0019	18.0- 19.5	MG/KG		11.8	10.	ITA	5.00
DI-N-BUTYL PHTHALATE	02/23/93	0019	18.0- 19.5	UG/KG	J	46.	370.	ITA	1.00
ETHYLBENZENE	02/23/93	0019	18.0- 19.5	UG/KG	J	1.	11.	ITA	1.00
FLUORIDE	02/23/93	0015	13.5- 15.0	MG/KG		1.35	.54	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG		1.35	.54	ITA	1.00
IRON, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		8900.	103.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG		9200.	105.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P009
NORTH COORDINATE: 596530.19 FT
EAST COORDINATE: 1494774.76 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
LEAD, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		3.9	.63	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG	J	5.9	.65	ITA	1.00
MAGNESIUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG	J	44300.	5170.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG	J	55800.	5245.	ITA	5.00
MANGANESE, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		675.	16.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG		426.	16.	ITA	5.00
NITRATE	02/23/93	0015	13.5- 15.0	MG/KG		1.61	1.08	ITA	1.00
PERCENT MOISTURE	02/23/93	0005	3.5- 5.0	% MOIST		5.	-	ITA	-
	02/23/93	0015	13.5- 15.0	% MOIST		6.	-	ITA	-
	02/23/93	0019	18.0- 19.5	% MOIST		7.	-	ITA	-
	02/23/93	0019	18.0- 19.5	% MOIST		11.	-	ITA	-
	02/23/93	0019	18.0- 19.5	% MOIST		11.	-	ITA	-
	02/23/93	0025	23.5- 25.0	% MOIST		8.	-	ITA	-
	02/23/93	0035	33.5- 35.0	% MOIST		9.	-	ITA	1.00
	02/23/93	0040	38.5- 40.0	% MOIST		8.	-	ITA	1.00
	02/23/93	0045	43.5- 45.0	% MOIST		6.	-	ITA	1.00
	02/23/93	0059	58.0- 59.5	% MOIST		9.	-	ITA	1.00
	02/23/93	0063	61.5- 63.0	% MOIST		10.	-	ITA	-
POTASSIUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG	B	758.	1034.	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG	B	686.	1049.	ITA	1.00
SODIUM, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG	B	217.	5170.	ITA	5
	02/23/93	0019	18.0- 19.5	MG/KG	B	281.	5245.	ITA	5.00
SULFATE	02/23/93	0015	13.5- 15.0	MG/KG		28.2	21.7	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG		30.2	21.5	ITA	1.00
TOLUENE	02/23/93	0019	18.0- 19.5	UG/KG	J	6.	11.	ITA	1.00
	02/23/93	0025	23.5- 25.0	UG/KG	J	4.	11.	ITA	1.00
	02/23/93	0055	53.5- 55.0	UG/KG	J	2.	11.	ITA	1.00
	02/23/93	0059	58.0- 59.5	UG/KG	J	3.	11.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P009
NORTH COORDINATE: 596530.19 FT
EAST COORDINATE: 1494774.76 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOLUENE	02/23/93	0067	66.0- 67.5	UG/KG	J	2.	11.	ITA	1.00
	02/23/93	0073	71.0- 73.0	UG/KG	J	2.	12.	ITA	1.00
TOTAL ORGANIC CARBON	02/23/93	0005	3.5- 5.0	MG/KG		10000.	26.3	ITA	1.00
	02/23/93	0010	8.5- 10.0	MG/KG	J	5970.	26.3	ITA	1.00
	02/23/93	0015	13.5- 15.0	MG/KG		6800.	26.6	ITA	1.00
	02/23/93	0019	18.0- 19.5	MG/KG		14900.	28.1	ITA	1.00
	02/23/93	0025	23.5- 25.0	MG/KG		6830.	27.2	ITA	1.00
	02/23/93	0030	28.5- 30.0	MG/KG		1850.	-	ITA	1.00
	02/23/93	0035	33.5- 35.0	MG/KG		9343.	28.	ITA	1.00
	02/23/93	0040	38.5- 40.0	MG/KG		7869.	26.	ITA	1.00
	02/23/93	0045	43.5- 45.0	MG/KG	J	12150.	33.	ITA	1.00
	02/23/93	0050	48.5- 50.0	MG/KG		8714.	32.	ITA	1.00
	02/23/93	0055	53.5- 55.0	MG/KG		19237.	34.	ITA	1.00
	02/23/93	0059	58.0- 59.5	MG/KG		22228.	34.	ITA	1.00
	02/23/93	0063	61.5- 63.0	MG/KG		6110.	27.7	ITA	1.00
	02/23/93	0067	66.0- 67.5	MG/KG		15524.	38.	ITA	1.00
	02/23/93	0073	71.0- 73.0	MG/KG		14036.	36.	ITA	1.00
	02/23/93	1010	8.5- 10.0	MG/KG	J	14800.	26.3	ITA	1.00
TOTAL XYLENES	02/23/93	0019	18.0- 19.5	UG/KG	J	3.	11.	ITA	1.00
	02/23/93	0025	23.5- 25.0	UG/KG	J	3.	11.	ITA	1.00
TRITIUM	02/23/93	0015	13.5- 15.0	PCI/G		.049	.02	ITA	1.00
	02/23/93	0019	18.0- 19.5	PCI/G		.612	.03	ITA	1.00
	02/23/93	0025	23.5- 25.0	PCI/G		.444	.02	ITA	1.00
	02/23/93	0030	28.5- 30.0	PCI/G		.209	.02	ITA	1.00
	02/23/93	0035	33.5- 35.0	PCI/G		.197	.024	ITA	1.00
	02/23/93	0040	38.5- 40.0	PCI/G		.159	.021	ITA	1.00
	02/23/93	0045	43.5- 45.0	PCI/G		.136	.017	ITA	1.00
	02/23/93	0050	48.5- 50.0	PCI/G		.227	.028	ITA	1.00
	02/23/93	0055	53.5- 55.0	PCI/G		.154	.018	ITA	1.00
	02/23/93	0059	58.0- 59.5	PCI/G		1.16	.032	ITA	1.00
	02/23/93	0063	61.5- 63.0	PCI/G		.327	.03	ITA	1.00
	02/23/93	0067	66.0- 67.5	PCI/G		.05	.038	ITA	1.00
ZINC, TOTAL	02/23/93	0015	13.5- 15.0	MG/KG		29.7	21.	ITA	5

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P009
NORTH COORDINATE: 596530.19 FT
EAST COORDINATE: 1494774.76 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ZINC, TOTAL	02/23/93	0019	18.0- 19.5	MG/KG		24.1	21.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P013 PIEZOMETER
NORTH COORDINATE: 596370.54 FT
EAST COORDINATE: 1494790.87 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	02/21/93	0007	6.0- 7.5	% SOLIDS		81.5	-	ITA	-
	02/21/93	0017	16.0- 17.5	% SOLIDS		92.4	-	ITA	-
1,1,1-TRICHLOROETHANE	02/21/93	0017	16.0- 17.5	UG/KG	J	2.	11.	ITA	1.00
	02/21/93	0025	23.5- 25.0	UG/KG	J	4.	11.	ITA	1.00
	02/21/93	0030	28.5- 30.0	UG/KG	J	5.	11.	ITA	1.00
	02/21/93	1025	23.5- 25.5	UG/KG	J	4.	11.	ITA	1.00
ALKALINITY	02/21/93	0017	16.0- 17.5	MG/KG		21645.02	108.	ITA	1.00
ALUMINUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		5660.	17.	ITA	4.00
	02/21/93	0017	16.0- 17.5	MG/KG		2640.	16.	ITA	4.00
ARSENIC, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		3.1	2.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		3.1	2.	ITA	1.00
BARIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		47.5	42.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	17.1	40.	ITA	1.00
BERYLLIUM	02/21/93	0007	6.0- 7.5	MG/KG	B	0.46	.83	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	02/21/93	0017	16.0- 17.5	UG/KG	J	130.	370.	ITA	1.00
CALCIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		84700.	1040.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		135000.	1002.	ITA	1.00
CARBON DISULFIDE	02/21/93	0015	13.5- 15.0	UG/KG	J	2.	11.	ITA	1.00
CHLORIDE	02/21/93	0007	6.0- 7.5	MG/KG		7.4	6.13	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		17.3	5.41	ITA	1.00
CHROMIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		8.2	2.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		6.1	2.	ITA	1.00
COBALT, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG	B	3.7	10.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	2.4	10.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P013 PIEZOMETER
NORTH COORDINATE: 596370.54 FT
EAST COORDINATE: 1494790.87 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
COPPER, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		10.2	5.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		8.4	5.	ITA	1.00
FLUORIDE	02/21/93	0007	6.0- 7.5	MG/KG		3.68	.61	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		.89	.54	ITA	1.00
IRON, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		11200.	21.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		7980.	20.	ITA	1.00
LEAD, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		5.6	.64	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		5.8	.56	ITA	1.00
MAGNESIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG	J	31400.	1040.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	J	33200.	1002.	ITA	1.00
MANGANESE, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		387.	3.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		242.	3.	ITA	1.00
NICKEL, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		9.6	8.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	7.0	8.	ITA	1.00
NITRATE	02/21/93	0007	6.0- 7.5	MG/KG		2.33	1.23	ITA	1.00
PERCENT MOISTURE	02/21/93	0005	3.5- 5.0	% MOIST		21.	-	ITA	-
	02/21/93	0007	6.0- 7.5	% MOIST		18.	-	ITA	-
	02/21/93	0015	13.5- 15.0	% MOIST		7.	-	ITA	-
	02/21/93	0017	16.0- 17.5	% MOIST		8.	-	ITA	-
	02/21/93	0017	16.0- 17.5	% MOIST		8.	-	ITA	-
	02/21/93	0017	16.0- 17.5	% MOIST		8.	-	ITA	-
	02/21/93	0025	23.5- 25.0	% MOIST		9.	-	ITA	-
	02/21/93	0030	28.5- 30.0	% MOIST		6.	-	ITA	-
	02/21/93	0035	33.5- 35.0	% MOIST		7.	-	ITA	-
	02/21/93	0039	38.0- 39.5	% MOIST		10.	-	ITA	-
	02/21/93	0045	43.5- 45.0	% MOIST		8.	-	ITA	-
	02/21/93	0050	48.5- 50.0	% MOIST		8.	-	ITA	-
	02/21/93	0055	53.5- 55.0	% MOIST		9.	-	ITA	-

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P013 PIEZOMETER
NORTH COORDINATE: 596370.54 FT
EAST COORDINATE: 1494790.87 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	02/21/93	0060	58.5- 60.0	% MOIST		8.	-	ITA	-
	02/21/93	0065	63.5- 65.0	% MOIST		7.	-	ITA	-
	02/21/93	0069	68.0- 69.5	% MOIST		6.	-	ITA	-
	02/21/93	0072	71.0- 72.5	% MOIST		10.	-	ITA	-
	02/21/93	0080	78.5- 80.0	% MOIST		8.	-	ITA	-
	02/21/93	0085	83.5- 85.0	% MOIST		10.	-	ITA	-
	02/21/93	0088	87.0- 88.5	% MOIST		9.	-	ITA	-
	02/21/93	1025	23.5- 25.5	% MOIST		8.	-	ITA	-
	02/21/93	1072	71.0- 72.5	% MOIST		9.	-	ITA	-
	02/22/93	0096	95.0- 96.0	% MOIST		16.	-	ITA	-
POTASSIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG	B	593.	1040.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	542.	1002.	ITA	1.00
SILVER, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		3.	2.	ITA	1.00
SODIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG	B	117.	1040.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	163.	1002.	ITA	1.00
SULFATE	02/21/93	0007	6.0- 7.5	MG/KG		45.4	24.5	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		23.8	21.6	ITA	1.00
TOLUENE	02/21/93	0088	87.0- 88.5	UG/KG	J	1.	11.	ITA	1.00
TOTAL ORGANIC CARBON	02/21/93	0005	3.5- 5.0	MG/KG		21560.3	42.	ITA	1.00
	02/21/93	0007	6.0- 7.5	MG/KG		18667.1	32.	ITA	1.00
	02/21/93	0015	13.5- 15.0	MG/KG		12243.1	40.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		9069.	27.	ITA	1.00
	02/21/93	0025	23.5- 25.0	MG/KG		9799.7	30.	ITA	1.00
	02/21/93	0030	28.5- 30.0	MG/KG		12635.3	28.	ITA	1.00
	02/21/93	0035	33.5- 35.0	MG/KG		12784.7	26.	ITA	1.00
	02/21/93	0039	38.0- 39.5	MG/KG		15700.	27.8	ITA	1.00
	02/21/93	0045	43.5- 45.0	MG/KG		14800.	27.8	ITA	1.00
	02/21/93	0050	48.5- 50.0	MG/KG		9490.	27.2	ITA	1.00
	02/21/93	0055	53.5- 55.0	MG/KG		11200.	27.8	ITA	1.00
	02/21/93	0060	58.5- 60.0	MG/KG	J	12000.	27.1	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P013 PIEZOMETER
NORTH COORDINATE: 596370.54 FT
EAST COORDINATE: 1494790.87 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	02/21/93	0065	63.5- 65.0	MG/KG		13500.	27.	ITA	1.00
	02/21/93	0069	68.0- 69.5	MG/KG		13000.	26.7	ITA	1.00
	02/21/93	0072	71.0- 72.5	MG/KG		16000.	27.8	ITA	1.00
	02/21/93	0080	78.5- 80.0	MG/KG		3030.	27.3	ITA	1.00
	02/21/93	0085	83.5- 85.0	MG/KG		7660.	27.9	ITA	1.00
	02/21/93	0088	87.0- 88.5	MG/KG		9640.	27.3	ITA	1.00
	02/21/93	1025	23.5- 25.5	MG/KG		11421.5	34.	ITA	1.00
	02/21/93	1072	71.0- 72.5	MG/KG		11600.	27.5	ITA	1.00
	02/22/93	0096	95.0- 96.0	MG/KG		2490.	29.7	ITA	1.00
TRITIUM	02/21/93	0005	3.5- 5.0	PCI/G		4.53	.06	ITA	1.00
	02/21/93	0007	6.0- 7.5	PCI/G		.487	.05	ITA	1.00
	02/21/93	0015	13.5- 15.0	PCI/G		.054	.02	ITA	1.00
	02/21/93	0017	16.0- 17.5	PCI/G		.166	.02	ITA	1.00
	02/21/93	0025	23.5- 25.0	PCI/G		.457	.03	ITA	1.00
	02/21/93	0030	28.5- 30.0	PCI/G		.562	.02	ITA	1.00
	02/21/93	0035	33.5- 35.0	PCI/G		.125	.02	ITA	1.00
	02/21/93	0039	38.0- 39.5	PCI/G		.143	.03	ITA	1.00
	02/21/93	0045	43.5- 45.0	PCI/G		.125	.02	ITA	1.00
	02/21/93	0050	48.5- 50.0	PCI/G		.109	.02	ITA	1.00
	02/21/93	0055	53.5- 55.0	PCI/G		.132	.02	ITA	1.00
	02/21/93	0060	58.5- 60.0	PCI/G		.108	.02	ITA	1.00
	02/21/93	0065	63.5- 65.0	PCI/G		.115	.02	ITA	1.00
	02/21/93	0069	68.0- 69.5	PCI/G		.167	.02	ITA	1.00
	02/21/93	0072	71.0- 72.5	PCI/G		.137	.03	ITA	1.00
	02/21/93	1025	23.5- 25.0	PCI/G		.396	.02	ITA	1.00
	02/21/93	1072	71.0- 72.5	PCI/G		.098	.02	ITA	1.00
VANADIUM, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		17.5	2.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG	B	9.2	2.	ITA	1.00
ZINC, TOTAL	02/21/93	0007	6.0- 7.5	MG/KG		27.9	4.	ITA	1.00
	02/21/93	0017	16.0- 17.5	MG/KG		28.4	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P014 PIEZOMETER
NORTH COORDINATE: 597187.84 FT
EAST COORDINATE: 1495159.35 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	10/24/92	0025	24.2- 25.0	% SOLIDS		90.4	-	ITA	1.00
	10/24/92	0036	35.0- 36.0	% SOLIDS		93.	-	ITA	1.00
2-BUTANONE	10/24/92	0015	14.5- 15.0	UG/KG	J	3.	11.	ITA	1.00
	10/24/92	0020	19.2- 20.0	UG/KG		20.	11.	ITA	1.00
	10/24/92	0025	24.2- 25.0	UG/KG	J	3.	11.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG	J	2.	11.	ITA	1.00
2-HEXANONE	10/24/92	0020	19.2- 20.0	UG/KG	J	46.	11.	ITA	1.00
	10/24/92	0025	24.2- 25.0	UG/KG	J	12.	11.	ITA	1.00
	10/24/92	0035	34.5- 35.0	UG/KG	J	2.	11.	ITA	1.00
	10/24/92	0037	36.0- 37.0	UG/KG	J	8.	11.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG	J	2.	11.	ITA	1.00
4-METHYL-2-PENTANONE	10/24/92	0020	19.2- 20.0	UG/KG		34.	11.	ITA	1.00
	10/24/92	0025	24.2- 25.0	UG/KG	J	2.	11.	ITA	1.00
	10/24/92	0037	36.0- 37.0	UG/KG	J	2.	11.	ITA	1.00
ACETONE	10/24/92	0020	19.2- 20.0	UG/KG		30.	11.	ITA	1.00
ALKALINITY	10/24/92	0025	24.2- 25.0	MG/KG	J	18805.	110.62	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	J	10215.	107.53	ITA	1.00
ALUMINUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	J	4290.	85.1	ITA	20.00
	10/24/92	0036	35.0- 36.0	MG/KG	J	1330.	20.	ITA	1.00
ARSENIC, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	J	4.8	2.	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	J	3.8	2.	ITA	1.00
BARIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG		42.6	42.5	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	B	20.1	205.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	10/24/92	0036	35.0- 36.0	UG/KG	J	71.	350.	ITA	1.00
BISMUTH, TOTAL	10/24/92	0036	35.0- 36.0	MG/KG	B	1.5	32.	ITA	1.00
CALCIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	J	109000.	5318.	ITA	5.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P014 PIEZOMETER
NORTH COORDINATE: 597187.84 FT
EAST COORDINATE: 1495159.35 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CALCIUM, TOTAL	10/24/92	0036	35.0- 36.0	MG/KG	J	208000.	5120.	ITA	1.00
CARBON DISULFIDE	10/24/92	0010	9.0- 10.0	UG/KG	J	2.	5.	ITA	1.00
	10/24/92	0015	14.5- 15.0	UG/KG	J	2.	6.	ITA	1.00
	10/24/92	0025	24.2- 25.0	UG/KG	J	2.	6.	ITA	1.00
CHLORIDE	10/24/92	0036	35.0- 36.0	MG/KG		44.7	5.38	ITA	1.00
COPPER, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	B	12.4	27.	ITA	5.00
DICHLOROMETHANE-METHYLENE CHLORIDE	10/24/92	0003	1.5- 3.0	UG/KG	J	81.	5.	ITA	1.00
	10/24/92	0020	19.2- 20.0	UG/KG		70.	6.	ITA	1.00
	10/24/92	0025	24.2- 25.0	UG/KG		71.	6.	ITA	1.00
FLUORIDE	10/24/92	0025	24.2- 25.0	MG/KG		1.33	.55	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG		1.08	.54	ITA	1.00
IRON, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG		10700.	106.	ITA	5.00
	10/24/92	0036	35.0- 36.0	MG/KG		4780.	102.	ITA	1.00
LEAD, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	J	7.9	.65	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	J	5.2	.64	ITA	1.00
MAGNESIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	*	43600.	5318.	ITA	5.00
	10/24/92	0036	35.0- 36.0	MG/KG	*	64800.	5120.	ITA	1.00
MANGANESE, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG		224.	16.	ITA	5.00
	10/24/92	0036	35.0- 36.0	MG/KG		204.	15.	ITA	1.00
PERCENT MOISTURE	10/24/92	0003	1.5- 3.0	% MOIST		6.	-	ITA	1.00
	10/24/92	0010	9.0- 10.0	% MOIST		7.	-	ITA	1.00
	10/24/92	0010	9.0- 10.0	% MOIST		7.	-	ITA	1.00
	10/24/92	0015	14.5- 15.0	% MOIST		10.	-	ITA	1.00
	10/24/92	0020	19.2- 20.0	% MOIST		11.	-	ITA	1.00
	10/24/92	0025	24.2- 25.0	% MOIST		10.	-	ITA	1.00
	10/24/92	0025	24.2- 25.0	% MOIST		10.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P014 PIEZOMETER
NORTH COORDINATE: 597187.84 FT
EAST COORDINATE: 1495159.35 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	10/24/92	0027	26.5- 27.0	% MOIST		4.	-	ITA	1.00
	10/24/92	0035	34.5- 35.0	% MOIST		5.	-	ITA	1.00
	10/24/92	0036	35.0- 36.0	% MOIST		7.	-	ITA	1.00
	10/24/92	0036	35.0- 36.0	% MOIST		7.	-	ITA	1.00
	10/24/92	0037	36.0- 37.0	% MOIST		6.	-	ITA	1.00
	10/24/92	0040	39.5- 40.0	% MOIST		5.	-	ITA	1.00
	10/24/92	1003	1.5- 3.0	% MOIST		5.	-	ITA	1.00
PLUTONIUM-238	10/24/92	0010	9.0- 10.0	PCI/G		.114	.044	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G		.112	.0167	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.124	.0155	ITA	1.00
PLUTONIUM-239/240	10/24/92	0010	9.0- 10.0	PCI/G		.109	.044	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G		.151	.0426	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.201	.0155	ITA	1.00
POTASSIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG		1070.	1063.	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	B	340.	1024.	ITA	1.00
POTASSIUM-40	10/24/92	0010	9.0- 10.0	PCI/G		13.2	.8	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G		13.7	1.	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		7.01	1.2	ITA	1.00
RADIUM-226	10/24/92	0010	9.0- 10.0	PCI/G		.846	.1	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G		.922	.2	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.576	.2	ITA	1.00
SODIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	B	123.	5318.	ITA	5.00
	10/24/92	0036	35.0- 36.0	MG/KG	B	187.	5120.	ITA	1.00
TETRACHLOROETHENE	10/24/92	0027	26.5- 27.0	UG/KG	J	2.	5.	ITA	1.00
	10/24/92	0035	34.5- 35.0	UG/KG	J	3.	5.	ITA	1.00
	10/24/92	0036	35.0- 36.0	UG/KG	J	2.	5.	ITA	1.00
	10/24/92	0037	36.0- 37.0	UG/KG		6.	5.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG		13.	5.	ITA	1.00
TETRACHLOROMETHANE (CCL4)	10/24/92	0037	36.0- 37.0	UG/KG	J	2.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P014 PIEZOMETER
NORTH COORDINATE: 597187.84 FT
EAST COORDINATE: 1495159.35 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TETRACHLOROMETHANE (CCL4)	10/24/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
THORIUM-228	10/24/92	0010	9.0- 10.0	PCI/G	J	.463	.247	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G	J	.801	.405	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.286	.172	ITA	1.00
THORIUM-230	10/24/92	0010	9.0- 10.0	PCI/G	J	.925	.164	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G	J	1.11	.12	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.692	.114	ITA	1.00
THORIUM-232	10/24/92	0010	9.0- 10.0	PCI/G	J	.36	.131	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G	J	.455	.12	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.25	.0912	ITA	1.00
TOLUENE	10/24/92	0037	36.0- 37.0	UG/KG	J	2.	5.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
TOTAL ORGANIC CARBON	10/24/92	0003	1.5- 3.0	MG/KG	J	17659.6	28.	ITA	1.00
	10/24/92	0010	9.0- 10.0	MG/KG	J	11667.7	29.	ITA	1.00
	10/24/92	0015	14.5- 15.0	MG/KG	J	8289.1	20.	ITA	1.00
	10/24/92	0020	19.2- 20.0	MG/KG	J	9777.3	22.	ITA	1.00
	10/24/92	0025	24.2- 25.0	MG/KG	J	16487.6	26.	ITA	1.00
	10/24/92	0027	26.5- 27.0	MG/KG	J	14979.	19.	ITA	1.00
	10/24/92	0035	34.5- 35.0	MG/KG	J	13382.1	18.	ITA	1.00
	10/24/92	0036	35.0- 36.0	MG/KG	J	14081.3	7.	ITA	1.00
	10/24/92	0037	36.0- 37.0	MG/KG	J	22385.	27.	ITA	1.00
	10/24/92	0040	39.5- 40.0	MG/KG	J	17886.9	24.	ITA	1.00
	10/24/92	1003	1.5- 3.0	MG/KG	J	16802.5	27.	ITA	1.00
TOTAL XYLENES	10/24/92	0020	19.2- 20.0	UG/KG	J	2.	6.	ITA	1.00
	10/24/92	0037	36.0- 37.0	UG/KG	J	2.	5.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG	J	2.	5.	ITA	1.00
TRICHLOROETHENE	10/24/92	0037	36.0- 37.0	UG/KG	J	1.	5.	ITA	1.00
	10/24/92	0040	39.5- 40.0	UG/KG	J	5.	5.	ITA	1.00
URANIUM-234	10/24/92	0010	9.0- 10.0	PCI/G		.992	.055	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P014 PIEZOMETER
NORTH COORDINATE: 597187.84 FT
EAST COORDINATE: 1495159.35 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-234	10/24/92	0025	24.2- 25.0	PCI/G		1.1	.0574	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.579	.0547	ITA	1.00
URANIUM-235/236	10/24/92	0036	35.0- 36.0	PCI/G		.0429	.0215	ITA	1.00
URANIUM-238	10/24/92	0010	9.0- 10.0	PCI/G		.978	.055	ITA	1.00
	10/24/92	0025	24.2- 25.0	PCI/G		1.09	.0574	ITA	1.00
	10/24/92	0036	35.0- 36.0	PCI/G		.644	.0215	ITA	1.00
VANADIUM, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG	B	14.0	11.	ITA	5.00
ZINC, TOTAL	10/24/92	0025	24.2- 25.0	MG/KG		31.3	21.	ITA	5.00
	10/24/92	0036	35.0- 36.0	MG/KG	B	12.5	20.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	10/26/92	0014	12.0- 14.0	% SOLIDS		86.4	-	ITA	1.00
	10/26/92	0045	43.0- 45.0	% SOLIDS		88.9	-	ITA	1.00
	10/26/92	0048	47.0- 48.0	% SOLIDS		91.7	-	ITA	1.00
	10/26/92	1014	12.0- 14.0	% SOLIDS		86.4	-	ITA	1.00
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFUR	10/26/92	0014	12.0- 14.0	PG/G		17.3	-	ITA	1.00
1,2,3,4,6,7,8-HpCDD	10/26/92	0014	12.0- 14.0	PG/G		246.	-	ITA	1.00
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFUR	10/26/92	0014	12.0- 14.0	PG/G		1.5	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIO	10/26/92	0014	12.0- 14.0	PG/G		1.9	-	ITA	1.00
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		1.3	-	ITA	1.00
1,2,3,5,7,8-HEXACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		2.5	-	ITA	1.00
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIO	10/26/92	0014	12.0- 14.0	PG/G		13.7	-	ITA	1.00
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIO	10/26/92	0014	12.0- 14.0	PG/G		4.7	-	ITA	1.00
1,2,3,7,8-PENTACHLORODIBENO-P-DIOXI	10/26/92	0014	12.0- 14.0	PG/G		.71	-	ITA	1.00
1,2-DICHLOROETHENE	10/26/92	0034	32.0- 34.0	UG/KG	J	1.	6.	ITA	1.00
	10/26/92	0048	47.0- 48.0	UG/KG		10.	6.	ITA	1.00
	10/26/92	0055	54.0- 55.0	UG/KG		9.	6.	ITA	1.00
	10/26/92	0056	55.5- 56.0	UG/KG		6.	5.	ITA	1.00
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		.99	-	ITA	1.00
2-BUTANONE	10/26/92	0010	9.5- 10.0	UG/KG		13.	11.	ITA	1.00
	10/26/92	0014	12.0- 14.0	UG/KG	J	2.	12.	ITA	1.00
	10/26/92	0020	19.5- 20.0	UG/KG	J	1.	12.	ITA	1.00
	10/26/92	0022	21.5- 22.0	UG/KG	J	11.	12.	ITA	1.00
	10/26/92	0034	32.0- 34.0	UG/KG	J	2.	12.	ITA	1.00
2-HEXANONE	10/26/92	0005	4.5- 5.0	UG/KG	J	2.	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ACETONE	10/26/92	0010	9.5- 10.0	UG/KG		130.	11.	ITA	1.00
ALKALINITY	10/26/92	0014	12.0- 14.0	MG/KG	J	13310.	115.	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		16872.	112.49	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		15267.	109.05	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	31250.	115.74	ITA	1.00
ALUMINUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	J	11100.	4.58	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	10400.	4.58	ITA	1.00
ARSENIC, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	J	5.2	2.29	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG	J	3.8	2.23	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	J	4.	1.49	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	4.5	2.31	ITA	1.00
BARIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	B	34.0	45.8	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	B	41.9	45.8	ITA	1.00
BENZENE	10/26/92	0020	19.5- 20.0	UG/KG	J	2.	2.	ITA	1.00
	10/26/92	0022	21.5- 22.0	UG/KG	J	1.	6.	ITA	1.00
BENZOIC ACID	10/26/92	1014	12.0- 14.0	UG/KG	J	49.	1600.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	10/26/92	0014	12.0- 14.0	UG/KG	J	120.	380.	ITA	1.00
	10/26/92	0045	43.0- 45.0	UG/KG	J	55.	370.	ITA	1.00
	10/26/92	0048	47.0- 48.0	UG/KG	J	56.	360.	ITA	1.00
BISMUTH, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	B	2.0	34.4	ITA	1.00
BUTYL BENZYL PHTHALATE	10/26/92	1014	12.0- 14.0	UG/KG	J	59.	330.	ITA	1.00
CALCIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	J	87200.	1146.	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG	J	165000.	4726.	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	J	166000.	4469.	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	88200.	1146.	ITA	1.00
CESIUM-137	10/26/92	1014	12.0- 14.0	PCI/G		.0238	0.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CHLORIDE	10/26/92	0014	12.0- 14.0	MG/KG		58.2	5.79	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		23.1	5.62	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		38.9	5.45	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		76.3	5.79	ITA	1.00
CHROMIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		11.8	2.29	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		12.3	2.29	ITA	1.00
COBALT, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	B	9.7	11.5	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	B	7.5	11.46	ITA	1.00
COPPER, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		18.5	5.73	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG	B	12.9	23.6	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	16.8	5.73	ITA	1.00
FLUORANTHENE	10/26/92	0014	12.0- 14.0	UG/KG	J	60.	380.	ITA	1.00
FLUORIDE	10/26/92	0014	12.0- 14.0	MG/KG		.95	.58	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		1.06	.56	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		.741	.55	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		1.45	.58	ITA	1.00
HEPTACHLORODIBENZO-P-DIOXIN	10/26/92	0014	12.0- 14.0	PG/G		435.	-	ITA	1.00
HEPTACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		69.9	-	ITA	1.00
HEXACHLORODIBENZO-P-DIOXIN	10/26/92	0014	12.0- 14.0	PG/G		51.7	-	ITA	1.00
HEXACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		73.9	-	ITA	1.00
IRON, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		21100.	22.9	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		13800.	94.5	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		6890.	89.4	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		20200.	22.9	ITA	1.00
LEAD, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	J	8.6	.91	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
LEAD, TOTAL	10/26/92	0045	43.0- 45.0	MG/KG	J	5.3	.67	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	J	6.4	.45	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	11.5	.69	ITA	1.00
LITHIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		22.4	11.46	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		19.3	11.5	ITA	1.00
MAGNESIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	*	14200.	1146.	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG	*	59800.	4726.	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	*	69900.	4469.	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	*	19100.	1146.	ITA	1.00
MANGANESE, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		650.	3.44	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		754.	14.2	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		517.	3.44	ITA	1.00
NICKEL, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		20.6	9.17	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		20.3	9.17	ITA	1.00
NITRATE	10/26/92	0048	47.0- 48.0	MG/KG		1.12	1.09	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	1.53	1.16	ITA	1.00
OCTACHLORODIBENZO-P-DIOXIN	10/26/92	0014	12.0- 14.0	PG/G		2110.	-	ITA	1.00
OCTACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		50.2	-	ITA	1.00
PENTACHLORODIBENZO-P-DIOXIN	10/26/92	0014	12.0- 14.0	PG/G		2.	-	ITA	1.00
PENTACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		35.4	-	ITA	1.00
PERCENT MOISTURE	10/26/92	0005	4.5- 5.0	% MOIST		8.	-	ITA	1.00
	10/26/92	0010	9.5- 10.0	% MOIST		8.	-	ITA	1.00
	10/26/92	0014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
	10/26/92	0014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
	10/26/92	0014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
	10/26/92	0020	19.5- 20.0	% MOIST		15.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	10/26/92	0022	21.5- 22.0	% MOIST		14.	-	ITA	1.00
	10/26/92	0034	32.0- 34.0	% MOIST		14.	-	ITA	1.00
	10/26/92	0045	43.0- 45.0	% MOIST		11.	-	ITA	1.00
	10/26/92	0045	43.0- 45.0	% MOIST		11.	-	ITA	1.00
	10/26/92	0045	43.0- 45.0	% MOIST		11.	-	ITA	1.00
	10/26/92	0048	47.0- 48.0	% MOIST		8.	-	ITA	1.00
	10/26/92	0048	47.0- 48.0	% MOIST		8.	-	ITA	1.00
	10/26/92	0048	47.0- 48.0	% MOIST		8.	-	ITA	1.00
	10/26/92	0055	54.0- 55.0	% MOIST		11.	-	ITA	1.00
	10/26/92	0056	55.5- 56.0	% MOIST		7.	-	ITA	1.00
	10/26/92	1014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
	10/26/92	1014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
	10/26/92	1014	12.0- 14.0	% MOIST		14.	-	ITA	1.00
PHENANTHRENE	10/26/92	0014	12.0- 14.0	UG/KG	J	42.	380.	ITA	1.00
	10/26/92	1014	12.0- 14.0	UG/KG	J	45.	380.	ITA	1.00
PLUTONIUM-238	10/26/92	0014	12.0- 14.0	PCI/G		.145	.0312	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		.110	.0698	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		.292	.0676	ITA	1.00
PLUTONIUM-239/240	10/26/92	0014	12.0- 14.0	PCI/G		.0727	.0312	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		.0548	.0274	ITA	1.00
POTASSIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		1950.	1146.	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	B	481.	893.9	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		1680.	1146.	ITA	1.00
POTASSIUM-40	10/26/92	0014	12.0- 14.0	PCI/G		17.3	.3	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		12.9	.3	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		6.45	.2	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		14.5	.3	ITA	1.00
PYRENE	10/26/92	0014	12.0- 14.0	UG/KG	J	49.	380.	ITA	1.00
	10/26/92	1014	12.0- 14.0	UG/KG	J	70.	380.	ITA	1.00
RADIUM-226	10/26/92	0014	12.0- 14.0	PCI/G		.919	.02	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
RADIUM-226	10/26/92	0045	43.0- 45.0	PCI/G		.808	.01	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		.557	.004	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		.865	.01	ITA	1.00
SILVER, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		5.8	2.29	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		5.3	2.29	ITA	1.00
SODIUM, TOTAL	10/26/92	0045	43.0- 45.0	MG/KG	J	225.	4726.	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	J	226.	4469.	ITA	1.00
STRONTIUM-90	10/26/92	0048	47.0- 48.0	PCI/G		.358	.354	ITA	1.00
SULFATE	10/26/92	0014	12.0- 14.0	MG/KG		242.8	23.1	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		23.3	21.81	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		267.	23.15	ITA	1.00
TETRACHLORODIBENZOFURAN	10/26/92	0014	12.0- 14.0	PG/G		11.2	-	ITA	1.00
TETRACHLOROETHENE	10/26/92	0048	47.0- 48.0	UG/KG	J	5.	6.	ITA	1.00
	10/26/92	0055	54.0- 55.0	UG/KG		8.	6.	ITA	1.00
	10/26/92	0056	55.5- 56.0	UG/KG	J	5.	5.	ITA	1.00
THORIUM-228	10/26/92	0014	12.0- 14.0	PCI/G		.895	.252	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		.501	.456	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		.829	.437	ITA	1.00
THORIUM-230	10/26/92	0014	12.0- 14.0	PCI/G		1.	.213	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		1.22	.355	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		1.37	.412	ITA	1.00
THORIUM-232	10/26/92	0014	12.0- 14.0	PCI/G		.948	.146	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		.461	.192	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		1.03	.155	ITA	1.00
TOLUENE	10/26/92	0020	19.5- 20.0	UG/KG	J	2.	6.	ITA	1.00
	10/26/92	0022	21.5- 22.0	UG/KG	J	2.	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOLUENE	10/26/92	0034	32.0- 34.0	UG/KG	J	1.	6.	ITA	1.00
	10/26/92	0055	54.0- 55.0	UG/KG	J	2.	6.	ITA	1.00
TOTAL ORGANIC CARBON	10/26/92	0005	4.5- 5.0	MG/KG		7585.	35.	ITA	1.00
	10/26/92	0010	9.5- 10.0	MG/KG	J	11315.	24.	ITA	1.00
	10/26/92	0014	12.0- 14.0	MG/KG	J	7363.	43.	ITA	1.00
	10/26/92	0020	19.5- 20.0	MG/KG		6416.	17.	ITA	1.00
	10/26/92	0022	21.5- 22.0	MG/KG		9126.	25.	ITA	1.00
	10/26/92	0034	32.0- 34.0	MG/KG		23489.	35.	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		6932.	39.	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		10906.	17.	ITA	1.00
	10/26/92	0055	54.0- 55.0	MG/KG		19274.	22.	ITA	1.00
	10/26/92	0056	55.5- 56.0	MG/KG		12624.	10.	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG	J	14889.	23.	ITA	1.00
TOTAL XYLENES	10/26/92	0055	54.0- 55.0	UG/KG	J	1.	6.	ITA	1.00
TRICHLOROETHENE	10/26/92	0005	4.5- 5.0	UG/KG		16.	5.	ITA	1.00
	10/26/92	0045	43.0- 45.0	UG/KG	J	1.	6.	ITA	1.00
	10/26/92	0048	47.0- 48.0	UG/KG		11.	6.	ITA	1.00
	10/26/92	0055	54.0- 55.0	UG/KG		16.	6.	ITA	1.00
	10/26/92	0056	55.5- 56.0	UG/KG		11.	5.	ITA	1.00
URANIUM-234	10/26/92	0014	12.0- 14.0	PCI/G		1.02	.189	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		.708	.166	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		.664	.11	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		.915	.184	ITA	1.00
URANIUM-238	10/26/92	0014	12.0- 14.0	PCI/G		1.09	.145	ITA	1.00
	10/26/92	0045	43.0- 45.0	PCI/G		.914	.0983	ITA	1.00
	10/26/92	0048	47.0- 48.0	PCI/G		.79	.11	ITA	1.00
	10/26/92	1014	12.0- 14.0	PCI/G		1.01	.0921	ITA	1.00
VANADIUM, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG	J	21.8	2.29	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG	J	14.5	9.45	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG	J	10.5	8.94	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: P015 PIEZOMETER
NORTH COORDINATE: 596352.10 FT
EAST COORDINATE: 1495271.70 FT
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
VANADIUM, TOTAL	10/26/92	1014	12.0- 14.0	MG/KG	J	22.3	2.29	ITA	1.00
ZINC, TOTAL	10/26/92	0014	12.0- 14.0	MG/KG		45.8	4.58	ITA	1.00
	10/26/92	0045	43.0- 45.0	MG/KG		36.7	18.9	ITA	1.00
	10/26/92	0048	47.0- 48.0	MG/KG		21.7	17.9	ITA	1.00
	10/26/92	1014	12.0- 14.0	MG/KG		48.	4.58	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL01
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		86.6	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		6431.87	115.47	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		5870.	18.	ITA	4.00
AROCLOR-1248	12/15/92	0001	0.5- 1.5	UG/KG		46.	38.	ITA	1.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	5.3	2.4	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	46.4	11.	ITA	.25
BENZO(A)ANTHRACENE	12/15/92	0001	0.5- 1.5	UG/KG	J	48.	380.	ITA	1.00
BENZO(A)PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	54.	380.	ITA	1.00
BENZO(B)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	77.	380.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	1500.	1800.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	12/15/92	0001	0.5- 1.5	UG/KG	J	50.	380.	ITA	1.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		89200.	1155.	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		7.9	2.	ITA	1.00
CHRYSENE	12/15/92	0001	0.5- 1.5	UG/KG	J	48.	380.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	4.9	12.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		13.6	6.	ITA	1.00
FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	52.	380.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		5.2	.58	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		12800.	23.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL01
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		8.	.69	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		36800.	1155.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	314.	3.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		12.9	9.	ITA	1.00
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		2.12	1.15	ITA	1.00
PERCENT MOISTURE	12/15/92 12/15/92	0001 0001	0.5- 1.5 0.5- 1.5	% MOIST % MOIST		14. 13.	- -	ITA ITA	1.00 1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.279	.143	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	1020.	2309.	ITA	2.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		13.1	1.1	ITA	1.00
PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	55.	380.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.78	.1	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	3.3	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	135.	1155.	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		60.85	23.09	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		78516.7	30.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.054	.042	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.67	.056	ITA	1.00
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.801	.056	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL01
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		15.4	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	39.7	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL02
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		84.9	-	ITA	1.00
	12/15/92	1001	0.5- 1.5	% SOLIDS		87.8	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		4617.2	115.47	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		5466.97	113.9	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		6400.	18.	ITA	4.00
	12/15/92	1001	0.5- 1.5	MG/KG		6590.	17.	ITA	4.00
AROCLOR-1248	12/15/92	0001	0.5- 1.5	UG/KG		46.	39.	ITA	1.00
	12/15/92	1001	0.5- 1.5	UG/KG	J	35.	38.	ITA	1.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	5.5	2.2	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	J	4.9	2.2	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	42.	12.	ITA	.25
	12/15/92	1001	0.5- 1.5	MG/KG	*	60.	15.	ITA	.25
BENZO(A)ANTHRACENE	12/15/92	1001	0.5- 1.5	UG/KG	J	90.	380.	ITA	1.00
BENZO(A)PYRENE	12/15/92	1001	0.5- 1.5	UG/KG	J	140.	380.	ITA	1.00
BENZO(B)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	47.	390.	ITA	1.00
	12/15/92	1001	0.5- 1.5	UG/KG	J	190.	380.	ITA	1.00
BENZO(G,H,I)PERYLENE	12/15/92	1001	0.5- 1.5	UG/KG	J	44.	380.	ITA	1.00
BENZO(K)FLUORANTHENE	12/15/92	1001	0.5- 1.5	UG/KG	J	64.	380.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	860.	1900.	ITA	1.00
	12/15/92	1001	0.5- 1.5	UG/KG	J	1400.	1900.	ITA	1.00
BERYLLIUM	12/15/92	0001	0.5- 1.5	MG/KG	B	.26	.44	ITA	2.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		77600.	1101.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		78800.	1074.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL02
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		7.7	2.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		8.6	2.	ITA	1.00
CHRYSENE	12/15/92	1001	0.5- 1.5	UG/KG	J	95.	380.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	4.7	11.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	B	5.6	11.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11.6	6.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		13.4	5.	ITA	1.00
FLUORANTHENE	12/15/92	1001	0.5- 1.5	UG/KG	J	120.	380.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		5.89	.59	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		5.81	.57	ITA	1.00
INDENO(1,2,3-CD)PYRENE	12/15/92	1001	0.5- 1.5	UG/KG	J	71.	380.	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		13400.	22.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		14400.	21.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11.2	.69	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		11.1	.63	ITA	1.00
LITHIUM, TOTAL	12/15/92	1001	0.5- 1.5	MG/KG	*	11.1	10.5	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		30500.	1101.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		33200.	1074.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	297.	3.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	J	390.	3.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		13.5	9.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		16.7	9.	ITA	1.00
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		1.33	1.18	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL02
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
NITRATE	12/15/92	1001	0.5- 1.5	MG/KG		1.36	1.14	ITA	1.00
PERCENT MOISTURE	12/15/92	0001	0.5- 1.5	% MOIST		15.	-	ITA	1.00
	12/15/92	0001	0.5- 1.5	% MOIST		15.	-	ITA	1.00
	12/15/92	1001	0.5- 1.5	% MOIST		14.	-	ITA	1.00
	12/15/92	1001	0.5- 1.5	% MOIST		12.	-	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.171	.0156	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		.126	.11	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.0676	.0156	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	1160.	2202.	ITA	2.00
	12/15/92	1001	0.5- 1.5	MG/KG	B	1020.	2149.	ITA	2.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		11.8	.9	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		15.4	.8	ITA	1.00
PYRENE	12/15/92	1001	0.5- 1.5	UG/KG	J	120.	380.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.757	.1	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		.809	.1	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	3.4	2.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	J	3.7	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	108.	1101.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	B	114.	1074.	ITA	1.00
SULFATE	12/15/92	1001	0.5- 1.5	MG/KG	J	23.69	22.78	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G	J	.602	.0434	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G	J	1.1	.017	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G	J	.562	.017	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL02
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		54794.6	30.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		48229.4	34.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.121	.047	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		.097	.038	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.599	.059	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		.741	.056	ITA	1.00
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.933	.059	ITA	1.00
	12/15/92	1001	0.5- 1.5	PCI/G		.763	.0218	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		16.4	2.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG		17.3	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	38.8	4.	ITA	1.00
	12/15/92	1001	0.5- 1.5	MG/KG	J	45.3	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL03
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		88.3	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		10554.93	113.25	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		4050.	18.	ITA	4.00
AROCLOR-1248	12/15/92	0001	0.5- 1.5	UG/KG	J	38.	37.	ITA	1.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	4.4	2.2	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	38.4	11.	ITA	.25
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	690.	1700.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	12/15/92	0001	0.5- 1.5	UG/KG	J	38.	370.	ITA	1.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		114000.	1133.	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		6.6	2.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	3.6	11.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		10.5	6.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		2.72	.57	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		9930.	23.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		9.1	.67	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		47900.	1133.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	260.	3.	ITA	1.00
MERCURY, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	.18	.11	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11.8	9.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL03
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		1.85	1.13	ITA	1.00
PERCENT MOISTURE	12/15/92	0001	0.5- 1.5	% MOIST		11.	-	ITA	1.00
	12/15/92	0001	0.5- 1.5	% MOIST		12.	-	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.211	.0138	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.0643	.0351	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	917.	2265.	ITA	2.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		10.2	.9	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.674	.2	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	141.	1133.	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		36.92	22.65	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G		.458	.0455	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G		1.18	.0455	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G		.375	.0569	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		58431.5	27.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.149	.037	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.751	.0563	ITA	1.00
URANIUM-235/236	12/15/92	0001	0.5- 1.5	PCI/G		.081	.022	ITA	1.00
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.876	.022	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11.4	2.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL03
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	36.5	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL04
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		83.7	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		4103.17	117.2	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		7250.	9.	ITA	2.00
AROCLOR-1248	12/15/92	0001	0.5- 1.5	UG/KG		49.	39.	ITA	1.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	8.8	2.2	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	51.9	47.	ITA	1.00
BENZO(K)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	43.	390.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	1000.	1900.	ITA	1.00
BERYLLIUM	12/15/92	0001	0.5- 1.5	MG/KG	B	.29	.47	ITA	2.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		79300.	1171.	ITA	1.00
CHLORIDE	12/15/92	0001	0.5- 1.5	MG/KG		9.34	5.86	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		9.1	2.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	5.3	12.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		14.5	6.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		4.34	.59	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		14400.	23.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		10.3	.68	ITA	1.00
LITHIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	11.1	11.	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		32000.	1171.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL04
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	389.	4.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		14.9	9.	ITA	1.00
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		3.35	1.17	ITA	1.00
PERCENT MOISTURE	12/15/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
	12/15/92	0001	0.5- 1.5	% MOIST		15.	-	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.39	.015	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.12	.015	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	1400.	2343.	ITA	2.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		14.1	1.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.823	.2	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	3.9	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	111.	1171.	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		49.59	23.45	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G		.694	.089	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G		1.01	.038	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G		.649	.038	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		39368.8	30.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.167	.046	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.693	.0217	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL04
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.628	.055	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		18.	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	44.4	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL05
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		78.2	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		5306.91	127.8	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		5270.	20.	ITA	4.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	4.6	2.6	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	55.6	17.	ITA	.25
BENZO(A)ANTHRACENE	12/15/92	0001	0.5- 1.5	UG/KG	J	230.	410.	ITA	1.00
BENZO(A)PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	230.	410.	ITA	1.00
BENZO(B)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	380.	410.	ITA	1.00
BENZO(G,H,I)PERYLENE	12/15/92	0001	0.5- 1.5	UG/KG	J	81.	410.	ITA	1.00
BENZO(K)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	140.	410.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	1700.	2000.	ITA	1.00
BIS(2-ETHYLHEXYL)PHTHALATE	12/15/92	0001	0.5- 1.5	UG/KG	J	51.	410.	ITA	1.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		131000.	1254.	ITA	1.00
CESIUM-137	12/15/92	0001	0.5- 1.5	PCI/G		.0997	.8	ITA	1.00
CHLORIDE	12/15/92	0001	0.5- 1.5	MG/KG		51.56	6.39	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		8.	3.	ITA	1.00
CHRYSENE	12/15/92	0001	0.5- 1.5	UG/KG	J	230.	410.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	4.3	13.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11.2	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL05
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	320.	410.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		3.71	.64	ITA	1.00
INDENO(1,2,3-CD)PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	94.	410.	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		11100.	25.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		14.4	.64	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		50200.	1254.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	349.	4.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		10.3	10.	ITA	1.00
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		2.28	1.28	ITA	1.00
PERCENT MOISTURE	12/15/92 12/15/92	0001 0001	0.5- 1.5 0.5- 1.5	% MOIST % MOIST		20. 22.	- -	ITA ITA	1.00 1.00
PHENANTHRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	240.	330.	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		3.56	.041	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.0861	.041	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	933.	1254.	ITA	1.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		14.4	.7	ITA	1.00
PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	280.	410.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.618	.1	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	2.6	2.55	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL05
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	398.	1254.	ITA	1.00
STRONTIUM-90	12/15/92	0001	0.5- 1.5	PCI/G		.48	.433	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		87.85	25.58	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G		.65	.109	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G		.65	.072	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G		.567	.072	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		91082.7	38.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.218	.069	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.496	.053	ITA	1.00
URANIUM-235/236	12/15/92	0001	0.5- 1.5	PCI/G		.0349	.021	ITA	1.00
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.705	.021	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		14.1	2.55	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	49.3	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL06
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		89.7	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		8673.36	111.4	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		4550.	9.	ITA	4.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	3.6	2.2	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	*	46.6	14.	ITA	.25
BENZO(B)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	39.	370.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	840.	1700.	ITA	1.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		98900.	1115.	ITA	1.00
CHLORIDE	12/15/92	0001	0.5- 1.5	MG/KG		26.74	5.57	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		6.5	2.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	4.	11.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		10.6	6.	ITA	1.00
FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	41.	370.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		1.26	.56	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		10900.	22.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		6.	.67	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		40200.	1115.	ITA	1.00
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	264.	3.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		13.	9.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL06
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		3.66	1.11	ITA	1.00
PERCENT MOISTURE	12/15/92	0001	0.5- 1.5	% MOIST		12.	-	ITA	1.00
	12/15/92	0001	0.5- 1.5	% MOIST		10.	-	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.0521	.0399	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.0729	.0399	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	964.	1115.	ITA	1.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		13.1	.8	ITA	1.00
PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	46.	370.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.717	.1	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	2.7	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	192.	1115.	ITA	1.00
STRONTIUM-90	12/15/92	0001	0.5- 1.5	PCI/G		.522	.423	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		38.8	22.3	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G		.528	.0996	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G		.951	.0568	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G		.476	.0712	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		65322.8	27.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.376	.03	ITA	1.00
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.825	.051	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL06
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.945	.051	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		12.5	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	50.1	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL07
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		66.4	-	ITA	1.00
4-METHYLPHENOL	12/16/92	0001	0.5- 1.5	UG/KG	J	260.	460.	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		2484.94	150.6	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		5500.	23.	ITA	4.00
AROCLOR-1248	12/16/92	0001	0.5- 1.5	UG/KG		64.	46.	ITA	1.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	5.1	2.8	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	58.1	15.	ITA	.25
BENZO(A)ANTHRACENE	12/16/92	0001	0.5- 1.5	UG/KG	J	66.	460.	ITA	1.00
BENZO(A)PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	80.	460.	ITA	1.00
BENZOIC ACID	12/16/92	0001	0.5- 1.5	UG/KG	J	750.	2200.	ITA	1.00
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		115000.	1421.	ITA	1.00
CHLORIDE	12/16/92	0001	0.5- 1.5	MG/KG		31.94	7.53	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		8.2	3.	ITA	1.00
CHRYSENE	12/16/92	0001	0.5- 1.5	UG/KG	J	86.	460.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	4.4	14.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		10.7	7.	ITA	1.00
FLUORANTHENE	12/16/92	0001	0.5- 1.5	UG/KG	J	160.	460.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG		1.17	.75	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11500.	28.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL07
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		75.4	.72	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		42100.	1427.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	348.	4.	ITA	1.00
MERCURY, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	.56	.14	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		12.4	11.	ITA	1.00
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		16.87	1.51	ITA	1.00
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		28.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		34.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		28.	-	ITA	1.00
PHENANTHRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	62.	460.	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		3.08	.0698	ITA	1.00
PLUTONIUM-239/240	12/16/92	0001	0.5- 1.5	PCI/G		.0365	.0274	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	1340.	2842.	ITA	2.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		13.5	.9	ITA	1.00
PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	120.	460.	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.699	.1	ITA	1.00
SILVER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	3.3	3.	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		45.93	30.12	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G	J	.750	-	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G	J	.548	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL07
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G	J	.635	-	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		120304.9	42.	ITA	1.00
TRITIUM	12/16/92	0001	0.5- 1.5	PCI/G		.178	.106	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.473	.107	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.492	.0738	ITA	1.00
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	13.9	3.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	72.4	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL08
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/15/92	0001	0.5- 1.5	% SOLIDS		87.	-	ITA	1.00
ALKALINITY	12/15/92	0001	0.5- 1.5	MG/KG		1436.8	115.	ITA	1.00
ALUMINUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		6300.	9.	ITA	2.00
AROCLOR-1248	12/15/92	0001	0.5- 1.5	UG/KG		40.	39.	ITA	1.00
ARSENIC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	5.5	2.2	ITA	1.00
BARIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	41.6	11.	ITA	.25
BENZO(A)PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	44.	390.	ITA	1.00
BENZO(B)FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	58.	390.	ITA	1.00
BENZOIC ACID	12/15/92	0001	0.5- 1.5	UG/KG	J	1100.	1900.	ITA	1.00
CALCIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		91600.	1138.	ITA	1.00
CESIUM-137	12/15/92	0001	0.5- 1.5	PCI/G		.0848	.1	ITA	1.00
CHROMIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		8.7	2.	ITA	1.00
COBALT, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	5.	11.	ITA	1.00
COPPER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		15.1	6.	ITA	1.00
FLUORANTHENE	12/15/92	0001	0.5- 1.5	UG/KG	J	48.	390.	ITA	1.00
FLUORIDE	12/15/92	0001	0.5- 1.5	MG/KG		4.94	.57	ITA	1.00
IRON, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		13800.	23.	ITA	1.00
LEAD, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		12.7	.68	ITA	1.00
MAGNESIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		39700.	1138.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL08
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
MANGANESE, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	330.	3.	ITA	1.00
NICKEL, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		17.1	9.	ITA	1.00
NITRATE	12/15/92	0001	0.5- 1.5	MG/KG		3.84	1.14	ITA	1.00
PERCENT MOISTURE	12/15/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
	12/15/92	0001	0.5- 1.5	% MOIST		13.	-	ITA	1.00
PLUTONIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.0288	.0144	ITA	1.00
PLUTONIUM-239/240	12/15/92	0001	0.5- 1.5	PCI/G		.0433	.0144	ITA	1.00
POTASSIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	1170.	2276.	ITA	2.00
POTASSIUM-40	12/15/92	0001	0.5- 1.5	PCI/G		15.4	1.1	ITA	1.00
PYRENE	12/15/92	0001	0.5- 1.5	UG/KG	J	43.	390.	ITA	1.00
RADIUM-226	12/15/92	0001	0.5- 1.5	PCI/G		.89	.2	ITA	1.00
SILVER, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	3.6	2.	ITA	1.00
SODIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	B	141.	1138.	ITA	1.00
SULFATE	12/15/92	0001	0.5- 1.5	MG/KG		29.66	22.99	ITA	1.00
THORIUM-228	12/15/92	0001	0.5- 1.5	PCI/G		.57	.0787	ITA	1.00
THORIUM-230	12/15/92	0001	0.5- 1.5	PCI/G		.915	.049	ITA	1.00
THORIUM-232	12/15/92	0001	0.5- 1.5	PCI/G		.64	.049	ITA	1.00
TOTAL ORGANIC CARBON	12/15/92	0001	0.5- 1.5	MG/KG		67151.9	34.	ITA	1.00
TRITIUM	12/15/92	0001	0.5- 1.5	PCI/G		.061	.041	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL08
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-234	12/15/92	0001	0.5- 1.5	PCI/G		.685	.056	ITA	1.00
URANIUM-238	12/15/92	0001	0.5- 1.5	PCI/G		.714	.056	ITA	1.00
VANADIUM, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG		17.1	2.	ITA	1.00
ZINC, TOTAL	12/15/92	0001	0.5- 1.5	MG/KG	J	56.7	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL09
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		81.9	-	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		2466.42	122.1	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		3970.	20.	ITA	4.00
AROCLOR-1248	12/16/92	0001	0.5- 1.5	UG/KG	J	43.	39.	ITA	1.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.1	2.4	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	25.1	10.	ITA	.25
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		102000.	1221.	ITA	1.00
CHLORIDE	12/16/92	0001	0.5- 1.5	MG/KG		19.07	6.11	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		5.6	2.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		3.7	12.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	7.4	6.	ITA	1.00
FLUORANTHENE	12/16/92	0001	0.5- 1.5	UG/KG		58.	390.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG	J	1.05	.61	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		8520.	24.	ITA	1.00
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		6.5	.71	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		36200.	1221.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	271.	4.	ITA	1.00
MERCURY, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	.48	.12	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	8.2	10.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL09
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		6.7	1.22	ITA	1.00
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		18.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
PHENOL	12/16/92	0001	0.5- 1.5	UG/KG	J	82.	390.	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		2.43	.0155	ITA	1.00
PLUTONIUM-239/240	12/16/92	0001	0.5- 1.5	PCI/G		.0674	.0397	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	870.	2442.	ITA	2.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		11.8	.9	ITA	1.00
PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	43.	390.	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.671	.1	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		39.93	24.48	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G		.415	.0574	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G		.452	.0497	ITA	1.00
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G		.338	.0156	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		77291.7	37.	ITA	1.00
TRITIUM	12/16/92	0001	0.5- 1.5	PCI/G		1.17	.057	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.54	.055	ITA	1.00
URANIUM-235/236	12/16/92	0001	0.5- 1.5	PCI/G		.0576	.0216	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.612	.0216	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL09
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	10.7	2.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	50.2	5.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL10
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		85.3	-	ITA	1.00
	12/16/92	1001	0.5- 1.5	% SOLIDS		86.2	-	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		8464.24	117.23	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		6322.51	116.01	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		4750.	19.	ITA	4.00
	12/16/92	1001	0.5- 1.5	MG/KG		4030.	17.	ITA	4.00
AROCLOR-1248	12/16/92	0001	0.5- 1.5	UG/KG	J	40.	38.	ITA	1.00
	12/16/92	1001	0.5- 1.5	UG/KG		50.	38.	ITA	1.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.4	2.4	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG	J	7.7	2.	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	44.8	12.5	ITA	.25
	12/16/92	1001	0.5- 1.5	MG/KG	*	36.7	11.	ITA	.25
BENZO(A)PYRENE	12/16/92	1001	0.5- 1.5	UG/KG	J	40.	380.	ITA	1.00
BENZO(B)FLUORANTHENE	12/16/92	0001	0.5- 1.5	UG/KG	J	47.	380.	ITA	1.00
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		95000.	1172.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		109000.	1036.	ITA	1.00
CHLORIDE	12/16/92	1001	0.5- 1.5	MG/KG	J	7.71	5.8	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		6.6	2.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		6.9	2.	ITA	1.00
CHRYSENE	12/16/92	0001	0.5- 1.5	UG/KG	J	38.	380.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	4.6	12.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG	B	3.7	10.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		15.6	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL10
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
COPPER, TOTAL	12/16/92	1001	0.5- 1.5	MG/KG		9.4	5.	ITA	1.00
FLUORANTHENE	12/16/92	0001	0.5- 1.5	UG/KG	J	56.	380.	ITA	1.00
	12/16/92	1001	0.5- 1.5	UG/KG	J	60.	330.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG		3.17	.59	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		3.25	.58	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11200.	23.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		9880.	21.	ITA	1.00
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		7.1	.63	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		8.9	.7	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		39600.	1172.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		49900.	1036.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	317.	4.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG	J	260.	3.	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11.	9.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		9.9	8.	ITA	1.00
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		2.1	1.17	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		2.7	1.16	ITA	1.00
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		13.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		15.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		13.	-	ITA	1.00
	12/16/92	1001	0.5- 1.5	% MOIST		13.	-	ITA	1.00
	12/16/92	1001	0.5- 1.5	% MOIST		14.	-	ITA	1.00
	12/16/92	1001	0.5- 1.5	% MOIST		13.	-	ITA	1.00
PHENANTHRENE	12/16/92	1001	0.5- 1.5	UG/KG	J	65.	380.	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.291	.043	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL10
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PLUTONIUM-238	12/16/92	1001	0.5- 1.5	PCI/G		.236	.095	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	1010.	2345.	ITA	2.00
	12/16/92	1001	0.5- 1.5	MG/KG	B	877.	1036.	ITA	1.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		14.3	1.1	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G		10.7	.8	ITA	1.00
PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	44.	380.	ITA	1.00
	12/16/92	1001	0.5- 1.5	UG/KG	J	44.	380.	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.817	.1	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G		.82	.1	ITA	1.00
SILVER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	2.5	2.	ITA	1.00
STRONTIUM-90	12/16/92	1001	0.5- 1.5	PCI/G		.682	.47	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		98.01	23.45	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		130.6	23.2	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G		.356	.0787	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G	J	.585	-	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G		.782	.0733	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G	J	.975	-	ITA	1.00
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G		.58	.0418	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G	J	.325	-	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		76915.8	33.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		83475.	40.	ITA	1.00
TRITIUM	12/16/92	0001	0.5- 1.5	PCI/G	J	.173	.046	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G	J	.402	.04	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.721	.02	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL10
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
URANIUM-234	12/16/92	1001	0.5- 1.5	PCI/G		.568	.0655	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.887	.02	ITA	1.00
	12/16/92	1001	0.5- 1.5	PCI/G		.828	.052	ITA	1.00
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		13.9	2.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG		12.	2.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	37.3	5.	ITA	1.00
	12/16/92	1001	0.5- 1.5	MG/KG	J	36.6	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL11
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		66.7	-	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		2923.54	149.93	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		8170.	12.	ITA	2.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.5	3.	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	53.6	14.	ITA	.25
BENZO(A)ANTHRACENE	12/16/92	0001	0.5- 1.5	UG/KG	J	53.	470.	ITA	1.00
BENZO(A)PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	62.	470.	ITA	1.00
BENZOIC ACID	12/16/92	0001	0.5- 1.5	UG/KG	J	770.	2200.	ITA	1.00
BERYLLIUM	12/16/92	0001	0.5- 1.5	MG/KG	B	.35	.59	ITA	2.00
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		84300.	1470.	ITA	1.00
CHLORIDE	12/16/92	0001	0.5- 1.5	MG/KG		30.33	7.5	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		10.2	3.	ITA	1.00
CHRYSENE	12/16/92	0001	0.5- 1.5	UG/KG	J	73.	470.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	6.5	15.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		15.3	7.	ITA	1.00
FLUORANTHENE	12/16/92	0001	0.5- 1.5	UG/KG	J	160.	470.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG		1.71	.75	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		16300.	29.	ITA	1.00
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		16.1	.82	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL11
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		29500.	1470.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	606.	4.	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		15.7	12.	ITA	1.00
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		2.56	1.5	ITA	1.00
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		30.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		33.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		30.	-	ITA	1.00
PHENANTHRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	87.	470.	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		8.75	.036	ITA	1.00
PLUTONIUM-239/240	12/16/92	0001	0.5- 1.5	PCI/G		.0575	.036	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	1750.	2980.	ITA	2.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		17.7	1.1	ITA	1.00
PYRENE	12/16/92	0001	0.5- 1.5	UG/KG	J	120.	470.	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.862	.2	ITA	1.00
SILVER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.2	3.	ITA	1.00
STRONTIUM-90	12/16/92	0001	0.5- 1.5	PCI/G		.574	.438	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		85.76	29.99	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G		1.19	.0977	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G		.737	.0406	ITA	1.00
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G		.774	.0406	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL11
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		139338.7	50.	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.556	.106	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.671	.073	ITA	1.00
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		18.8	3.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	79.4	6.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL12
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		85.6	-	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		8469.63	116.82	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		3820.	16.	ITA	4.00
AROCLOR-1248	12/16/92	0001	0.5- 1.5	UG/KG	J	11.	37.	ITA	1.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.2	2.	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	27.7	10.	ITA	.25
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		125000.	990.	ITA	1.00
CHLORIDE	12/16/92	0001	0.5- 1.5	MG/KG		38.46	5.84	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		5.8	2.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	3.8	10.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11.3	5.	ITA	1.00
DIETHYL PHTHALATE	12/16/92	0001	0.5- 1.5	UG/KG	J	110.	370.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG		2.8	.58	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		10900.	20.	ITA	1.00
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	7.8	.66	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		39700.	990.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	285.	3.	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		12.9	8.	ITA	1.00
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		3.91	1.17	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL12
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		10.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		14.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		10.	-	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.318	.097	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	780.	990.	ITA	1.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		12.	.7	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.798	.1	ITA	1.00
SILVER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	2.6	2.	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		60.16	23.36	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G	J	.597	-	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G	J	.567	-	ITA	1.00
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G	J	.269	-	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		96626.1	35.	ITA	1.00
TRITIUM	12/16/92	0001	0.5- 1.5	PCI/G		.149	.045	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.728	.0968	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.657	.0773	ITA	1.00
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		10.8	2.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	35.9	4.	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: AR898 AREA B
LOCATION: SL13
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
% SOLIDS	12/16/92	0001	0.5- 1.5	% SOLIDS		87.7	-	ITA	1.00
ALKALINITY	12/16/92	0001	0.5- 1.5	MG/KG		2451.54	114.03	ITA	1.00
ALUMINUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		4520.	14.	ITA	4.00
ARSENIC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	4.4	1.7	ITA	1.00
BARIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	*	32.	16.	ITA	.25
CALCIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		95400.	845.	ITA	1.00
CHLORIDE	12/16/92	0001	0.5- 1.5	MG/KG		7.29	5.7	ITA	1.00
CHROMIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		6.3	2.	ITA	1.00
COBALT, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	4.	8.	ITA	1.00
COPPER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11.1	4.	ITA	1.00
FLUORIDE	12/16/92	0001	0.5- 1.5	MG/KG		1.82	.57	ITA	1.00
IRON, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		10900.	17.	ITA	1.00
LEAD, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11.8	.47	ITA	1.00
MAGNESIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		34100.	845.	ITA	1.00
MANGANESE, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	354.	3.	ITA	1.00
NICKEL, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		11.2	7.	ITA	1.00
NITRATE	12/16/92	0001	0.5- 1.5	MG/KG		2.3	1.14	ITA	1.00
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
	12/16/92	0001	0.5- 1.5	% MOIST		12.	-	ITA	1.00

SOIL CHEMISTRY DATA BY LOCATION
VALIDATED RESULTS
SITE: ARB98 AREA B
LOCATION: SL13
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
10/22/92 TO 03/05/93
REPORT DATE: 02/25/94

PARAMETER NAME	LOG DATE	SAMPLE ID	DEPTH RANGE (FT)	UNITS OF MEASURE	PVI	PARAMETER VALUE	DETECTION LIMIT	LAB CODE	DILUTION FACTOR
PERCENT MOISTURE	12/16/92	0001	0.5- 1.5	% MOIST		16.	-	ITA	1.00
PLUTONIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.165	.0381	ITA	1.00
PLUTONIUM-239/240	12/16/92	0001	0.5- 1.5	PCI/G		.0449	.015	ITA	1.00
POTASSIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	B	807.	1689.	ITA	2.00
POTASSIUM-40	12/16/92	0001	0.5- 1.5	PCI/G		13.3	.9	ITA	1.00
RADIUM-226	12/16/92	0001	0.5- 1.5	PCI/G		.847	.1	ITA	1.00
SILVER, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	2.3	2.	ITA	1.00
STRONTIUM-90	12/16/92	0001	0.5- 1.5	PCI/G		.627	.465	ITA	1.00
SULFATE	12/16/92	0001	0.5- 1.5	MG/KG		84.38	22.81	ITA	1.00
THORIUM-228	12/16/92	0001	0.5- 1.5	PCI/G		.524	.0707	ITA	1.00
THORIUM-230	12/16/92	0001	0.5- 1.5	PCI/G		1.13	.0565	ITA	1.00
THORIUM-232	12/16/92	0001	0.5- 1.5	PCI/G		.509	.0707	ITA	1.00
TOTAL ORGANIC CARBON	12/16/92	0001	0.5- 1.5	MG/KG		73959.4	35.	ITA	1.00
TRITIUM	12/16/92	0001	0.5- 1.5	PCI/G		.102	.039	ITA	1.00
URANIUM-234	12/16/92	0001	0.5- 1.5	PCI/G		.722	.0898	ITA	1.00
URANIUM-238	12/16/92	0001	0.5- 1.5	PCI/G		.816	.072	ITA	1.00
VANADIUM, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG		12.3	2.	ITA	1.00
ZINC, TOTAL	12/16/92	0001	0.5- 1.5	MG/KG	J	33.1	3.	ITA	1.00

DATA FILE NAME: K:\DART\arb\ARB98\SCI10000.DAT

A7. MARCH 1993 GROUNDWATER QUALITY DATA BY LOCATION

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MWD01 OU1 VALIDATED DATA
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
1,1,1-TRICHLOROETHANE	03/31/93	0001	UG/L		1.6	J	1.6	I
	03/31/93	0001	UG/L		0.99		NA	C1*
	03/31/93	0001	UG/L	U	3.0		NA	C2*
	03/31/93	0001	UG/L	NA	15.		NA	D1
1,1,2,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
	03/31/93	0001	UG/L	U	3.0		NA	C2*
	03/31/93	0001	UG/L	NA	15.		NA	D1
1,1,2-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/31/93	0001	UG/L	U	0.20		NA	C1*
	03/31/93	0001	UG/L	U	2.0		NA	C2*
	03/31/93	0001	UG/L	NA	10.		NA	D1
1,1-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.70	U	0.70	I
	03/31/93	0001	UG/L	U	0.70		NA	C1*
	03/31/93	0001	UG/L	U	7.0		NA	C2*
	03/31/93	0001	UG/L	NA	35.		NA	D1
1,1-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
1,2,3-TRICHLOROPROPANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
1,2,4-TRICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
1,2-CIS-DICHLOROETHENE	03/31/93	0001	UG/L	E	340.		NA	I
	03/31/93	0001	UG/L	E	0.00		NA	C1*
	03/31/93	0001	UG/L		890.		NA	C2*
	03/31/93	0001	UG/L		640.	J	640.	D1
1,2-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/31/93	0001	UG/L	U	1.5		NA	C1*
	03/31/93	0001	UG/L	U	15.		NA	C2*
	03/31/93	0001	UG/L	NA	75.		NA	D1
1,2-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	U	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
	03/31/93	0001	UG/L	U	3.0		NA	C2*
	03/31/93	0001	UG/L	NA	15.		NA	D1
1,2-DICHLOROETHENE-d4	03/31/93	0001	% RECOVERY		97.		97.	I
1,2-DICHLOROPROPANE	03/31/93	0001	UG/L	U	0.40	U	0.40	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,2-DICHLOROPROPANE	03/31/93	0001	UG/L	U	0.40		NA	C1*
	03/31/93	0001	UG/L	U	4.0		NA	C2*
	03/31/93	0001	UG/L	NA	20.		NA	D1
1,2-TRANS-DICHLOROETHENE	03/31/93	0001	UG/L		2.6	J	2.6	I
	03/31/93	0001	UG/L	I	0.00		NA	C1*
	03/31/93	0001	UG/L	I	0.00		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
1,3-CIS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	U	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
	03/31/93	0001	UG/L	U	34.		NA	C2*
	03/31/93	0001	UG/L	NA	170.		NA	D1
1,3-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	3.2	U	3.2	I
	03/31/93	0001	UG/L	U	3.2		NA	C1*
	03/31/93	0001	UG/L	U	32.		NA	C2*
	03/31/93	0001	UG/L	NA	160.		NA	D1
1,3-TRANS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
	03/31/93	0001	UG/L	U	34.		NA	C2*
	03/31/93	0001	UG/L	NA	170.		NA	D1
1,4-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	2.4	U	2.4	I
	03/31/93	0001	UG/L	U	2.4		NA	C1*
	03/31/93	0001	UG/L	U	24.		NA	C2*
	03/31/93	0001	UG/L	NA	120.		NA	D1
1-CHLOROHEXANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
2,2'-OXYBIS (1-CHLOROPROPANE)	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
2,4,5-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/31/93	0001	% RECOVERY	*	133.		NA	I *
2,4,6-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2,4-DICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2,4-DIMETHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2,4-DINITROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2,6-DINITROTOLUENE	03/31/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2-CHLOROETHYLVINYLETHER	03/31/93	0001	UG/L	U	1.3	U	1.3	I
	03/31/93	0001	UG/L	U	1.3		NA	C1*
	03/31/93	0001	UG/L	U	13.		NA	C2*
	03/31/93	0001	UG/L	NA	65.		NA	D1
2-CHLORONAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL-d4	03/31/93	0001	% RECOVERY		87.		NA	I *
2-CHLOROTOLUENE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
2-FLUOROBIPHENYL	03/31/93	0001	% RECOVERY		86.		NA	I *
2-FLUOROPHENOL	03/31/93	0001	% RECOVERY		89.		NA	I *
2-METHYLNAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
3,3'-DICHLOROBENZIDINE	03/31/93	0001	UG/L	U	11.	U	11.	I
3-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/31/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLORO-3-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROANILINE	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROPHENYL-PHENYLETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
4-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
4-NITROANILINE	03/31/93	0001	UG/L	U	26.	UJ	26.	I
4-NITROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ACENAPHTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ACENAPHTHYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ALDRIN	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/31/93	0001	UG/L		36.4	J	36.4	I
	03/31/93	A001	% RECOVERY		113.		NA	I *
	03/31/93	C001	%DIFFRENCE		83.6		NA	I *
ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ANTIMONY, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	A001	% RECOVERY		110.4		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
AROCLOR-1016	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	A001	% RECOVERY		82.0		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
BARIUM, TOTAL	03/31/93	0001	UG/L		160.	J	160.	I
	03/31/93	A001	% RECOVERY		112.8		NA	I *
	03/31/93	C001	%DIFFRENCE		0.4		NA	I *
BENZENE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BENZO(A)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(A)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(B)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(G,H,I)PERYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(K)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZOIC ACID	03/31/93	0001	UG/L	U	53.	U	53.	I
BENZYL ALCOHOL	03/31/93	0001	UG/L	U	11.	U	11.	I
BERYLLIUM, TOTAL	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	A001	% RECOVERY		106.6		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
BETA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
BIS(2-CHLOROETHYL)ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/31/93	0001	UG/L	J	0.6	J	0.6	I
BISMUTH-207	03/31/93	0001	PCI/L	U	8.9		NA	I *
BISMUTH-210	03/31/93	0001	PCI/L	U	11.		NA	I *
BROMOBENZENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
BROMOCHLOROMETHANE	03/31/93	0001	% RECOVERY	*	167.		NA	I *
	03/31/93	0001	% RECOVERY		96.		NA	C1*
	03/31/93	0001	% RECOVERY		101.		NA	C2*
	03/31/93	0001	% RECOVERY	*	160.		NA	D1*
BROMODICHLOROMETHANE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
BROMOFORM	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
BUTYL BENZYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
CADMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	A001	% RECOVERY		104.		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *

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GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
CALCIUM, TOTAL	03/31/93	0001	UG/L		176000.		176000.	I
	03/31/93	A001	% RECOVERY	NR	0.0		NA	I *
	03/31/93	C001	%DIFFRENCE		0.4		NA	I *
CARBAZOLE	03/31/93	0001	UG/L	U	11.	U	11.	I
CESIUM-137	03/31/93	0001	PCI/L	U	9.7		NA	I *
CHLORIDE	03/31/93	0001	MG/L		267.		267.	I
CHLOROBENZENE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
CHLOROETHENE (VINYL CHLORIDE)	03/31/93	0001	UG/L		4.5	J	4.5	I
	03/31/93	0001	UG/L		4.0		NA	C1*
	03/31/93	0001	UG/L	U	18.		NA	C2*
	03/31/93	0001	UG/L	NA	90.		NA	D1
CHROMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	A001	% RECOVERY		110.1		NA	I *
	03/31/93	C001	%DIFFRENCE		200.0		NA	I *
CHRYSENE	03/31/93	0001	UG/L	U	11.	U	11.	I
COBALT, TOTAL	03/31/93	0001	UG/L	U	4.0	U	4.0	I
	03/31/93	A001	% RECOVERY		105.9		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
COBALT-60	03/31/93	0001	PCI/L	U	16.		NA	I *
COPPER, TOTAL	03/31/93	0001	UG/L		3.7		3.7	I
	03/31/93	A001	% RECOVERY		107.		NA	I *
	03/31/93	C001	%DIFFRENCE		17.6		NA	I *
DECACHLOROBIPHENYL	03/31/93	0001	% RECOVERY		80.		NA	I *
	03/31/93	0001	% RECOVERY		75.		NA	X1*
DELTA-BHC	03/31/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/31/93	0001	UG/L	JB	0.9	UJ	11.	I
DI-N-OCTYL PHTHALATE	03/31/93	0001	UG/L	U	11.	UJ	11.	I
DIBENZO(A,H)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
DIBENZOFURAN	03/31/93	0001	UG/L	U	11.	U	11.	I
DIBROMOCHLOROMETHANE	03/31/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/31/93	0001	UG/L	U	0.90		NA	C1*
	03/31/93	0001	UG/L	U	9.0		NA	C2*
	03/31/93	0001	UG/L	NA	45.		NA	D1
DIBROMOMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBROMOMETHANE	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
DICHLOROMETHANE-METHYLENE CHLORIDE	03/31/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/31/93	0001	UG/L	U	4.0		NA	C1*
	03/31/93	0001	UG/L	U	40.		NA	C2*
	03/31/93	0001	UG/L	NA	200.		NA	D1
DIELDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
DIMETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
ENDOSULFAN I(ALPHA)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/31/93	0001	UG/L	JB	0.091		NA	I *
	03/31/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
FLUORENE	03/31/93	0001	UG/L	U	11.	U	11.	I
GAMMA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I

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HEXACHLOROBUTADIENE	03/31/93	0001	UG/L	U	11.	U	11.	I
HEXACHLOROCYCLOPENTADIENE	03/31/93	0001	UG/L	U	11.	U	11.	I
HEXACHLOROETHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
INDENO(1,2,3-CD)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
IRON, TOTAL	03/31/93	0001	UG/L		140.	UJ	140.	I
	03/31/93	A001	% RECOVERY		107.3		NA	I *
	03/31/93	C001	%DIFFRENCE		3.5		NA	I *
ISOPHORONE	03/31/93	0001	UG/L	U	11.	U	11.	I
LEAD, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	A001	% RECOVERY		77.0		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
MAGNESIUM, TOTAL	03/31/93	0001	UG/L		63100.		63100.	I
	03/31/93	A001	% RECOVERY	NR	0.0		NA	I *
	03/31/93	C001	%DIFFRENCE		1.0		NA	I *
MANGANESE, TOTAL	03/31/93	0001	UG/L		267.		267.	I
	03/31/93	A001	% RECOVERY		107.		NA	I *
	03/31/93	C001	%DIFFRENCE		0.5		NA	I *
MERCURY, TOTAL	03/31/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I
N-NITROSODIPHENYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I
NAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
NICKEL, TOTAL	03/31/93	0001	UG/L		56.7		56.7	I
	03/31/93	A001	% RECOVERY		108.1		NA	I *
	03/31/93	C001	%DIFFRENCE		7.1		NA	I *
NITRATE NITRITE	03/31/93	0001	MG/L		1.0		1.0	I
NITROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
NITROBENZENE-D5	03/31/93	0001	% RECOVERY		87.		NA	I *
P-TERPHENYL-d14	03/31/93	0001	% RECOVERY		97.		NA	I *
PENTACHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
PHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
PHENOL-d5	03/31/93	0001	% RECOVERY		86.		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
PLUTONIUM-238	03/31/93	0001	PCI/L	U	.028		NA	I *
PLUTONIUM-239/240	03/31/93	0001	PCI/L		.145		NA	I *
POTASSIUM, TOTAL	03/31/93	0001	UG/L		5230.		5230.	I
	03/31/93	A001	% RECOVERY	NR	0.0		NA	I *
	03/31/93	C001	%DIFFRENCE		9.0		NA	I *
POTASSIUM-40	03/31/93	0001	PCI/L	U	190.		NA	I *
PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
RADIUM-226	03/31/93	0001	PCI/L		.344		NA	I *
SELENIUM, TOTAL	03/31/93	0001	UG/L		2.7	J	2.7	I
	03/31/93	A001	% RECOVERY		63.0		NA	I *
	03/31/93	C001	%DIFFRENCE		200.0		NA	I *
SILVER, TOTAL	03/31/93	0001	UG/L	U	3.0	U	3.0	I
	03/31/93	A001	% RECOVERY		105.6		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
SODIUM, TOTAL	03/31/93	0001	UG/L		123000.		123000.	I
	03/31/93	A001	% RECOVERY	NR	0.0		NA	I *
	03/31/93	C001	%DIFFRENCE		1.4		NA	I *
STRONTIUM-90	03/31/93	0001	PCI/L	U	.73		NA	I *
SULFATE	03/31/93	0001	MG/L		122.	J	122.	I
TETRACHLORO-M-XYLENE	03/31/93	0001	% RECOVERY		95.		95.	I
	03/31/93	0001	% RECOVERY		100.		NA	X1*
TETRACHLOROETHENE	03/31/93	0001	UG/L	E	14.		NA	I
	03/31/93	0001	UG/L	E	0.00		NA	C1*
	03/31/93	0001	UG/L		410.		NA	C2*
	03/31/93	0001	UG/L		270.	J	270.	D1
TETRACHLOROMETHANE (CCL4)	03/31/93	0001	UG/L		4.6		4.6	I
	03/31/93	0001	UG/L		4.2		NA	C1*
	03/31/93	0001	UG/L	U	10.		NA	C2*
	03/31/93	0001	UG/L	NA	50.		NA	D1
THALLIUM, TOTAL	03/31/93	0001	UG/L	U	50.0	UJ	50.0	I
	03/31/93	A001	% RECOVERY		41.2		NA	I *
	03/31/93	C001	%DIFFRENCE	NC	0.00		NA	I *
THORIUM-228	03/31/93	0001	PCI/L	U	.12		NA	I *
THORIUM-230	03/31/93	0001	PCI/L		.189		NA	I *
THORIUM-232	03/31/93	0001	PCI/L	U	.12		NA	I *
TOLUENE	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0370
NORTH COORDINATE: 596829.64 FT
EAST COORDINATE: 1495100.73 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TOLUENE	03/31/93	0001	UG/L	NA	100.		NA	D1
TOTAL XYLENES	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
TOXAPHENE	03/31/93	0001	UG/L	U	5.0	U	5.0	I
	03/31/93	0001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	03/31/93	0001	UG/L	E	160.		NA	I
	03/31/93	0001	UG/L	E	0.00		NA	C1*
	03/31/93	0001	UG/L		260.		NA	C2*
	03/31/93	0001	UG/L		210.	J	210.	D1
TRICHLOROFLUOROMETHANE	03/31/93	0001	UG/L		12.		12.	I
	03/31/93	0001	UG/L		9.8		NA	C1*
	03/31/93	0001	UG/L	U	20.		NA	C2*
	03/31/93	0001	UG/L	NA	100.		NA	D1
TRICHLOROMETHANE (CHLOROFORM)	03/31/93	0001	UG/L	E	82.		NA	I
	03/31/93	0001	UG/L	E	94.		NA	C1*
	03/31/93	0001	UG/L		100.		NA	C2*
	03/31/93	0001	UG/L		130.	J	130.	D1
TRIFLUOROTOLUENE	03/31/93	0001	% RECOVERY		73.		NA	I *
	03/31/93	0001	% RECOVERY		0.00		NA	C1*
	03/31/93	0001	% RECOVERY		0.00		NA	C2*
	03/31/93	0001	% RECOVERY		90.		NA	D1*
TRITIUM	03/31/93	0001	PCI/L		7610.		NA	I *
URANIUM-234	03/31/93	0001	PCI/L		1.07		NA	I *
URANIUM-235/236	03/31/93	0001	PCI/L	U	.042		NA	I *
URANIUM-238	03/31/93	0001	PCI/L		2.3		NA	I *
VANADIUM, TOTAL	03/31/93	0001	UG/L		26.1	UJ	26.1	I
	03/31/93	A001	% RECOVERY		109.6		NA	I *
	03/31/93	C001	%DIFFRENCE		1.5		NA	I *
ZINC, TOTAL	03/31/93	0001	UG/L		50.9	J	50.9	I
	03/31/93	A001	% RECOVERY		107.8		NA	I *
	03/31/93	C001	%DIFFRENCE	*	106.1		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0372
NORTH COORDINATE: 596693.75 FT
EAST COORDINATE: 1495331.22 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	03/30/93	0001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	03/30/93	0001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
1,2-CIS-DICHLOROETHENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	03/30/93	0001	% RECOVERY		81.		81.	I
1,2-DICHLOROPROPANE	03/30/93	0001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	03/30/93	0001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	03/30/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	2.4	UJ	2.4	I
1-CHLOROHEXANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	03/30/93	0001	UG/L	U	11.	UJ	11.	I
	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
2,4,5-TRICHLOROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/30/93	0001	% RECOVERY		87.		NA	I *
2,4,6-TRICHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DICHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DIMETHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DINITROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	03/30/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0372
NORTH COORDINATE: 596693.75 FT
EAST COORDINATE: 1495331.22 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,6-DINITROTOLUENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROETHYLVINYLETHER	03/30/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL-d4	03/30/93	0001	% RECOVERY		79.		NA	I *
2-CHLOROTOLUENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	03/30/93	0001	% RECOVERY		87.		NA	I *
2-FLUOROPHENOL	03/30/93	0001	% RECOVERY		85.		NA	I *
2-METHYLNAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
3,3'-DICHLOROBENZIDINE	03/30/93	0001	UG/L	U	11.	U	11.	I
3-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/30/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLORO-3-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROANILINE	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROPHENYL-PHENYLETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
4-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
4-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
ACENAPHTHYLENE	03/30/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596693.75 FT
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ALDRIN	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/30/93	0001	UG/L		1440.	J	1440.	I
ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
ANTIMONY, TOTAL	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/30/93	0001	UG/L	U	2.0	U	2.0	I
BARIUM, TOTAL	03/30/93	0001	UG/L		162.	J	162.	I
BENZENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(A)PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(B)FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(G,H,I)PERYLENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(K)FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZOIC ACID	03/30/93	0001	UG/L	U	53.	U	53.	I
BENZYL ALCOHOL	03/30/93	0001	UG/L	U	11.	UJ	11.	I
BERYLLIUM, TOTAL	03/30/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BETA-BHC	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/30/93	0001	UG/L	U	11.	U	11.	I
BIS(2-CHLOROETHYL)ETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
BISMUTH-207	03/30/93	0001	PCI/L	U	14.		NA	I *
BISMUTH-210	03/30/93	0001	PCI/L	U	15.		NA	I *
BROMOBENZENE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	03/30/93	0001	% RECOVERY		109.		NA	I *
BROMODICHLOROMETHANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
CADMIUM, TOTAL	03/30/93	0001	UG/L	U	2.0	U	2.0	I
CALCIUM, TOTAL	03/30/93	0001	UG/L		78700.		78700.	I
CARBAZOLE	03/30/93	0001	UG/L	U	11.	U	11.	I
CESIUM-137	03/30/93	0001	PCI/L	U	9.4		NA	I *
CHLORIDE	03/30/93	0001	MG/L		558.		558.	I
CHLOROBENZENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	03/30/93	0001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	03/30/93	0001	UG/L		6.0	J	6.0	I
CHRYSENE	03/30/93	0001	UG/L	U	11.	U	11.	I
COBALT, TOTAL	03/30/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/30/93	0001	PCI/L	U	18.		NA	I *
COPPER, TOTAL	03/30/93	0001	UG/L		14.1		14.1	I
DECACHLOROBIPHENYL	03/30/93	0001	% RECOVERY	*	25.		NA	I *
	03/30/93	0001	% RECOVERY	*	25.		NA	X1*
DELTA-BHC	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/30/93	0001	UG/L	JB	1.	UJ	11.	I
DI-N-OCTYL PHTHALATE	03/30/93	0001	UG/L	U	11.	UJ	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0372
NORTH COORDINATE: 596693.75 FT
EAST COORDINATE: 1495331.22 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZO(A,H)ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
DIBENZOFURAN	03/30/93	0001	UG/L	U	11.	U	11.	I
DIBROMOCHLOROMETHANE	03/30/93	0001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	03/30/93	0001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
DIMETHYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
ENDOSULFAN I(ALPHA)	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/30/93	0001	UG/L	B	0.12		NA	I *
	03/30/93	0001	UG/L	J	0.12	J	0.12	I
	03/30/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
FLUORENE	03/30/93	0001	UG/L	U	11.	U	11.	I
GAMMA CHLORDANE	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/30/93	0001	UG/L	U	11.	UJ	11.	I
HEXACHLOROBUTADIENE	03/30/93	0001	UG/L	U	11.	UJ	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0372
NORTH COORDINATE: 596693.75 FT
EAST COORDINATE: 1495331.22 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEXACHLOROCYCLOPENTADIENE	03/30/93	0001	UG/L	U	11.	U	11.	I
HEXACHLOROETHANE	03/30/93	0001	UG/L	U	11.	U	11.	I
INDENO(1,2,3-CD)PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
IRON, TOTAL	03/30/93	0001	UG/L		2900.		2900.	I
ISOPHORONE	03/30/93	0001	UG/L	U	11.	U	11.	I
LEAD, TOTAL	03/30/93	0001	UG/L		2.0	J	2.0	I
MAGNESIUM, TOTAL	03/30/93	0001	UG/L		50400.		50400.	I
MANGANESE, TOTAL	03/30/93	0001	UG/L		98.5		98.5	I
MERCURY, TOTAL	03/30/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/30/93 03/30/93	0001 0001	UG/L UG/L	U U	0.50 0.50	UJ	0.50 NA	I X1*
N-NITROSO-DI-N-PROPYLAMINE	03/30/93	0001	UG/L	U	11.	U	11.	I
N-NITROSODIPHENYLAMINE	03/30/93	0001	UG/L	U	11.	U	11.	I
NAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
NICKEL, TOTAL	03/30/93	0001	UG/L		18.1		18.1	I
NITRATE NITRITE	03/30/93	0001	MG/L		0.27		0.27	I
NITROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
NITROBENZENE-D5	03/30/93	0001	% RECOVERY		85.		NA	I *
P-TERPHENYL-d14	03/30/93	0001	% RECOVERY		96.		NA	I *
PENTACHLOROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
PHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
PHENOL-d5	03/30/93	0001	% RECOVERY		88.		NA	I *
PLUTONIUM-238	03/30/93	0001	PCI/L		.0364		NA	I *
PLUTONIUM-239/240	03/30/93	0001	PCI/L		.182		NA	I *
POTASSIUM, TOTAL	03/30/93	0001	UG/L		25400.		25400.	I
POTASSIUM-40	03/30/93	0001	PCI/L	U	310.		NA	I *
PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
RADIUM-226	03/30/93	0001	PCI/L	U	3.4		NA	I *

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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
SELENIUM, TOTAL	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/30/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/30/93	0001	UG/L		336000.		336000.	I
STRONTIUM-90	03/30/93	0001	PCI/L		1.77		NA	I *
SULFATE	03/30/93	0001	MG/L		34.3	J	34.3	I
TETRACHLORO-M-XYLENE	03/30/93 03/30/93	0001 0001	% RECOVERY % RECOVERY		90. 90.	J	90. NA	I X1*
TETRACHLOROETHENE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	03/30/93	0001	UG/L	U	50.0	UJ	50.0	I
THORIUM-228	03/30/93	0001	PCI/L		.123		NA	I *
THORIUM-230	03/30/93	0001	PCI/L		.0578		NA	I *
THORIUM-232	03/30/93	0001	PCI/L	U	.031		NA	I *
TOLUENE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	03/30/93 03/30/93	0001 0001	UG/L UG/L	U U	5.0 5.0	UJ	5.0 NA	I X1*
TRICHLOROETHENE	03/30/93	0001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	03/30/93	0001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	03/30/93	0001	% RECOVERY		87.		NA	I *
TRITIUM	03/30/93	0001	PCI/L	U	300.		NA	I *
URANIUM-234	03/30/93	0001	PCI/L		.211		NA	I *
URANIUM-235/236	03/30/93	0001	PCI/L		.0471		NA	I *
URANIUM-238	03/30/93	0001	PCI/L		.178		NA	I *
VANADIUM, TOTAL	03/30/93	0001	UG/L		17.7	UJ	17.7	I
ZINC, TOTAL	03/30/93	0001	UG/L		61.9	J	61.9	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/30/93	0001	UG/L	U	1.0	U	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
1,1,1-TRICHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	0001	UG/L	U	0.30		NA	C1*
1,1,2,2-TETRACHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	0001	UG/L	U	0.30		NA	C1*
1,1,2-TRICHLOROETHANE	03/30/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/30/93	0001	UG/L	U	0.20		NA	C1*
1,1-DICHLOROETHANE	03/30/93	0001	UG/L	U	0.70	UJ	0.70	I
	03/30/93	0001	UG/L	U	0.70		NA	C1*
1,1-DICHLOROETHENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
1,2,3-TRICHLOROPROPANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
1,2,4-TRICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
1,2-CIS-DICHLOROETHENE	03/30/93	0001	UG/L		17.	J	17.	I
	03/30/93	0001	UG/L		25.		NA	C1*
1,2-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/30/93	0001	UG/L	U	1.5		NA	C1*
1,2-DICHLOROETHANE	03/30/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	0001	UG/L	U	0.30		NA	C1*
1,2-DICHLOROETHENE-d4	03/30/93	0001	% RECOVERY		79.		79.	I
1,2-DICHLOROPROPANE	03/30/93	0001	UG/L	U	0.40	U	0.40	I
	03/30/93	0001	UG/L	U	0.40		NA	C1*
1,2-TRANS-DICHLOROETHENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
1,3-CIS-DICHLOROPROPENE	03/30/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/30/93	0001	UG/L	U	3.4		NA	C1*
1,3-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	3.2	UJ	3.2	I
	03/30/93	0001	UG/L	U	3.2		NA	C1*
1,3-TRANS-DICHLOROPROPENE	03/30/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/30/93	0001	UG/L	U	3.4		NA	C1*
1,4-DICHLOROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
	03/30/93	0001	UG/L	U	2.4	U	2.4	I
	03/30/93	0001	UG/L	U	2.4		NA	C1*
1-CHLOROHEXANE	03/30/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0373
NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1-CHLOROHEXANE	03/30/93	0001	UG/L	U	1.0		NA	C1*
2,2'-OXYBIS (1-CHLOROPROPANE)	03/30/93	0001	UG/L	U	11.	UJ	11.	I
	03/30/93	0001	UG/L	U	2.0	U	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
2,4,5-TRICHLOROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/30/93	0001	% RECOVERY		86.		NA	I *
2,4,6-TRICHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DICHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DIMETHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2,4-DINITROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2,6-DINITROTOLUENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROETHYLVINYLETHER	03/30/93	0001	UG/L	U	1.3	UJ	1.3	I
	03/30/93	0001	UG/L	U	1.3		NA	C1*
2-CHLORONAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL-d4	03/30/93	0001	% RECOVERY		77.		NA	I *
2-CHLOROTOLUENE	03/30/93	0001	UG/L	U	1.0	U	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
2-FLUOROBIPHENYL	03/30/93	0001	% RECOVERY		83.		NA	I *
2-FLUOROPHENOL	03/30/93	0001	% RECOVERY		80.		NA	I *
2-METHYLNAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
2-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
2-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
3,3'-DICHLOROBENZIDINE	03/30/93	0001	UG/L	U	11.	U	11.	I
3-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/30/93	0001	UG/L	U	0.10	UJ	0.10	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596690.56 FT
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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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4,4'-DDT	03/30/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/30/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLORO-3-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROANILINE	03/30/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROPHENYL-PHENYLETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
4-METHYLPHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
4-NITROANILINE	03/30/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
ACENAPHTHYLENE	03/30/93	0001	UG/L	U	11.	U	11.	I
ALDRIN	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/30/93	0001	UG/L		25.4	UJ	25.4	I
ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
ANTIMONY, TOTAL	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/30/93	0001	UG/L	U	0.50	U	0.50	I

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AROCLOR-1260	03/30/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/30/93	0001	UG/L	U	2.0	U	2.0	I
BARIUM, TOTAL	03/30/93	0001	UG/L		198.	J	198.	I
BENZENE	03/30/93	0001	UG/L	U	1.0	U	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
BENZO(A)ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(A)PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(B)FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(G,H,I)PERYLENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZO(K)FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
BENZOIC ACID	03/30/93	0001	UG/L	U	53.	U	53.	I
BENZYL ALCOHOL	03/30/93	0001	UG/L	U	11.	UJ	11.	I
BERYLLIUM, TOTAL	03/30/93	0001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/30/93	0001	UG/L	U	11.	U	11.	I
BIS(2-CHLOROETHYL)ETHER	03/30/93	0001	UG/L	U	11.	U	11.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
BISMUTH-207	03/30/93	0001	PCI/L	U	11.		NA	I *
BISMUTH-210	03/30/93	0001	PCI/L	U	14.		NA	I *
BROMOBENZENE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
BROMOCHLOROMETHANE	03/30/93	0001	% RECOVERY	•	158.		NA	I *
	03/30/93	0001	% RECOVERY		94.		NA	C1*
BROMODICHLOROMETHANE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
BROMOFORM	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
BUTYL BENZYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
CADMIUM, TOTAL	03/30/93	0001	UG/L	U	2.0	U	2.0	I
CALCIUM, TOTAL	03/30/93	0001	UG/L		176000.		176000.	I
CARBAZOLE	03/30/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0373
NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
CESIUM-137	03/30/93	0001	PCI/L	U	14.		NA	I *
CHLORIDE	03/30/93	0001	MG/L		284.		284.	I
CHLOROBENZENE	03/30/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
CHLOROETHENE (VINYL CHLORIDE)	03/30/93	0001	UG/L	U	1.8	UJ	1.8	I
	03/30/93	0001	UG/L	U	1.8		NA	C1*
CHROMIUM, TOTAL	03/30/93	0001	UG/L		4.9	J	4.9	I
CHRYSENE	03/30/93	0001	UG/L	U	11.	U	11.	I
COBALT, TOTAL	03/30/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/30/93	0001	PCI/L	U	19.		NA	I *
COPPER, TOTAL	03/30/93	0001	UG/L	U	2.0	U	2.0	I
DECACHLOROBIPHENYL	03/30/93	0001	% RECOVERY		85.		NA	I *
	03/30/93	0001	% RECOVERY		80.		NA	X1*
DELTA-BHC	03/30/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/30/93	0001	UG/L	JB	0.8	UJ	11.	I
DI-N-OCTYL PHTHALATE	03/30/93	0001	UG/L	U	11.	UJ	11.	I
DIBENZO(A,H)ANTHRACENE	03/30/93	0001	UG/L	U	11.	U	11.	I
DIBENZOFURAN	03/30/93	0001	UG/L	U	11.	U	11.	I
DIBROMOCHLOROMETHANE	03/30/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/30/93	0001	UG/L	U	0.90		NA	C1*
DIBROMOMETHANE	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/30/93	0001	UG/L	U	4.0	U	4.0	I
	03/30/93	0001	UG/L	U	4.0		NA	C1*
DIELDRIN	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
DIMETHYL PHTHALATE	03/30/93	0001	UG/L	U	11.	U	11.	I
ENDOSULFAN I(ALPHA)	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/30/93	0001	UG/L	B	0.10		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0373
NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ENDOSULFAN SULFATE	03/30/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/30/93	0001	UG/L	U	0.10	U	0.10	I
	03/30/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/30/93	0001	UG/L	U	1.0	U	1.0	I
	03/30/93	0001	UG/L	U	1.0		NA	C1*
FLUORANTHENE	03/30/93	0001	UG/L	U	11.	U	11.	I
FLUORENE	03/30/93	0001	UG/L	U	11.	U	11.	I
GAMMA CHLORDANE	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/30/93	0001	UG/L	U	0.050	U	0.050	I
	03/30/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/30/93	0001	UG/L	U	11.	UJ	11.	I
HEXACHLOROBUTADIENE	03/30/93	0001	UG/L	U	11.	UJ	11.	I
HEXACHLOROCYCLOPENTADIENE	03/30/93	0001	UG/L	U	11.	U	11.	I
HEXACHLOROETHANE	03/30/93	0001	UG/L	U	11.	U	11.	I
INDENO(1,2,3-CD)PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
IRON, TOTAL	03/30/93	0001	UG/L		160.	UJ	160.	I
ISOPHORONE	03/30/93	0001	UG/L	U	11.	U	11.	I
LEAD, TOTAL	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
MAGNESIUM, TOTAL	03/30/93	0001	UG/L		62800.		62800.	I
MANGANESE, TOTAL	03/30/93	0001	UG/L		156.		156.	I
MERCURY, TOTAL	03/30/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/30/93	0001	UG/L	U	0.50	U	0.50	I
	03/30/93	0001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/30/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
N-NITROSODIPHENYLAMINE	03/30/93	0001	UG/L	U	11.	U	11.	I
NAPHTHALENE	03/30/93	0001	UG/L	U	11.	U	11.	I
NICKEL, TOTAL	03/30/93	0001	UG/L		20.2		20.2	I
NITRATE NITRITE	03/30/93	0001	MG/L		1.3		1.3	I
NITROBENZENE	03/30/93	0001	UG/L	U	11.	U	11.	I
NITROBENZENE-D5	03/30/93	0001	% RECOVERY		81.		NA	I *
P-TERPHENYL-d14	03/30/93	0001	% RECOVERY		95.		NA	I *
PENTACHLOROPHENOL	03/30/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
PHENOL	03/30/93	0001	UG/L	U	11.	U	11.	I
PHENOL-d5	03/30/93	0001	% RECOVERY		86.		NA	I *
PLUTONIUM-238	03/30/93	0001	PCI/L	U	.028		NA	I *
PLUTONIUM-239/240	03/30/93	0001	PCI/L		.144		NA	I *
POTASSIUM, TOTAL	03/30/93	0001	UG/L		4010.		4010.	I
POTASSIUM-40	03/30/93	0001	PCI/L	U	250.		NA	I *
PYRENE	03/30/93	0001	UG/L	U	11.	U	11.	I
RADIUM-226	03/30/93	0001	PCI/L		.43		NA	I *
SELENIUM, TOTAL	03/30/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/30/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/30/93	0001	UG/L		123000.		123000.	I
STRONTIUM-90	03/30/93	0001	PCI/L	U	.68		NA	I *
SULFATE	03/30/93	0001	MG/L		113.	J	113.	I
TETRACHLORO-M-XYLENE	03/30/93 03/30/93	0001 0001	% RECOVERY % RECOVERY		90. 95.		90. NA	I X1*
TETRACHLOROETHENE	03/30/93 03/30/93	0001 0001	UG/L UG/L		40. 55.	J	40. NA	I C1*
TETRACHLOROMETHANE (CCL4)	03/30/93 03/30/93	0001 0001	UG/L UG/L		4.0 4.1		4.0 NA	I C1*
THALLIUM, TOTAL	03/30/93	0001	UG/L	U	50.0	UJ	50.0	I
THORIUM-228	03/30/93	0001	PCI/L	U	.17		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0373
NORTH COORDINATE: 596690.56 FT
EAST COORDINATE: 1495128.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
THORIUM-230	03/30/93	0001	PCI/L	U	.13		NA	I *
THORIUM-232	03/30/93	0001	PCI/L	U	.11		NA	I *
TOLUENE	03/30/93	0001	UG/L	U	2.0	U	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
TOTAL XYLENES	03/30/93	0001	UG/L	U	2.0	U	2.0	I
	03/30/93	0001	UG/L	U	2.0		NA	C1*
TOXAPHENE	03/30/93	0001	UG/L	U	5.0	U	5.0	I
	03/30/93	0001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	03/30/93	0001	UG/L		31.	J	31.	I
	03/30/93	0001	UG/L		43.		NA	C1*
TRICHLOROFLUOROMETHANE	03/30/93	0001	UG/L		3.3	J	3.3	I
	03/30/93	0001	UG/L		2.3		NA	C1*
TRICHLOROMETHANE (CHLOROFORM)	03/30/93	0001	UG/L		13.	J	13.	I
	03/30/93	0001	UG/L		17.		NA	C1*
TRIFLUOROTOLUENE	03/30/93	0001	% RECOVERY		75.		NA	I *
	03/30/93	0001	% RECOVERY		0.00		NA	C1*
TRITIUM	03/30/93	0001	PCI/L		6110.		NA	I *
URANIUM-234	03/30/93	0001	PCI/L		.977		NA	I *
URANIUM-235/236	03/30/93	0001	PCI/L		.0745		NA	I *
URANIUM-238	03/30/93	0001	PCI/L		.967		NA	I *
VANADIUM, TOTAL	03/30/93	0001	UG/L		26.3	UJ	26.3	I
ZINC, TOTAL	03/30/93	0001	UG/L		47.4	J	47.4	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
1,1,1-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	U	0.30	I
	04/01/93	0001	UG/L	U	0.30		NA	C1*
	04/01/93	3001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	3001	UG/L	U	0.30		NA	C1*
	04/01/93	A001	% RECOVERY		103.		NA	I *
	04/01/93	B001	% RECOVERY		93.		NA	I *
1,1,2,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	0001	UG/L	U	0.30		NA	C1*
	04/01/93	3001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	3001	UG/L	U	0.30		NA	C1*
	04/01/93	A001	UG/L	U	0.30		NA	I *
	04/01/93	B001	UG/L	U	0.30		NA	I *
1,1,2-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.20	U	0.20	I
	04/01/93	0001	UG/L	U	0.20		NA	C1*
	04/01/93	3001	UG/L	U	0.20	UJ	0.20	I
	04/01/93	3001	UG/L	U	0.20		NA	C1*
	04/01/93	A001	UG/L	U	0.20		NA	I *
	04/01/93	B001	UG/L	U	0.20		NA	I *
1,1-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.70	U	0.70	I
	04/01/93	0001	UG/L	U	0.70		NA	C1*
	04/01/93	3001	UG/L	U	0.70	UJ	0.70	I
	04/01/93	3001	UG/L	U	0.70		NA	C1*
	04/01/93	A001	UG/L	U	0.70		NA	I *
	04/01/93	B001	UG/L	U	0.70		NA	I *
1,1-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	% RECOVERY		115.		NA	I *
	04/01/93	B001	% RECOVERY		104.		NA	I *
1,2,3-TRICHLOROPROPANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
1,2,4-TRICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		50.		NA	I *
	04/01/93	B001	% RECOVERY		65.		NA	I *
1,2-CIS-DICHLOROETHENE	04/01/93	0001	UG/L		48.		48.	I
	04/01/93	0001	UG/L		63.		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,2-CIS-DICHLOROETHENE	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L		47.		NA	I *
	04/01/93	B001	UG/L		44.		NA	I *
1,2-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	1.5	UJ	1.5	I
	04/01/93	0001	UG/L	U	1.5		NA	C1*
	04/01/93	3001	UG/L	U	1.5	UJ	1.5	I
	04/01/93	3001	UG/L	U	1.5		NA	C1*
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	A001	UG/L	U	1.5		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	1.5		NA	I *
1,2-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	U	0.30	I
	04/01/93	0001	UG/L	U	0.30		NA	C1*
	04/01/93	3001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	3001	UG/L	U	0.30		NA	C1*
	04/01/93	A001	% RECOVERY		103.		NA	I *
	04/01/93	B001	% RECOVERY		96.		NA	I *
1,2-DICHLOROETHENE-d4	04/01/93	0001	% RECOVERY		64.		64.	I
	04/01/93	A001	% RECOVERY		44.		NA	I *
	04/01/93	B001	% RECOVERY		60.		NA	I *
1,2-DICHLOROPROPANE	04/01/93	0001	UG/L	U	0.40	U	0.40	I
	04/01/93	0001	UG/L	U	0.40		NA	C1*
	04/01/93	3001	UG/L	U	0.40	UJ	0.40	I
	04/01/93	3001	UG/L	U	0.40		NA	C1*
	04/01/93	A001	UG/L	U	0.40		NA	I *
	04/01/93	B001	UG/L	U	0.40		NA	I *
1,2-TRANS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
1,3-CIS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	U	3.4	I
	04/01/93	0001	UG/L	U	3.4		NA	C1*
	04/01/93	3001	UG/L	U	3.4	UJ	3.4	I
	04/01/93	3001	UG/L	U	3.4		NA	C1*
	04/01/93	A001	UG/L	U	3.4		NA	I *
	04/01/93	B001	UG/L	U	3.4		NA	I *
1,3-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	3.2	UJ	3.2	I
	04/01/93	0001	UG/L	U	3.2		NA	C1*
	04/01/93	3001	UG/L	U	3.2	UJ	3.2	I
	04/01/93	3001	UG/L	U	3.2		NA	C1*
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	A001	UG/L	U	3.2		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	3.2		NA	I *
1,3-TRANS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-TRANS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4		NA	C1*
	04/01/93	3001	UG/L	U	3.4	UJ	3.4	I
	04/01/93	3001	UG/L	U	3.4		NA	C1*
	04/01/93	A001	UG/L	U	3.4		NA	I *
	04/01/93	B001	UG/L	U	3.4		NA	I *
1,4-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.4	U	2.4	I
	04/01/93	0001	UG/L	U	2.4		NA	C1*
	04/01/93	3001	UG/L	U	2.4	UJ	2.4	I
	04/01/93	3001	UG/L	U	2.4		NA	C1*
	04/01/93	A001	% RECOVERY		42.		NA	I *
	04/01/93	A001	% RECOVERY		100.		NA	I *
	04/01/93	B001	% RECOVERY		60.		NA	I *
	04/01/93	B001	% RECOVERY		93.		NA	I *
1-CHLOROHEXANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
2,2'-OXYBIS (1-CHLOROPROPANE)	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
2,4,5-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *
2,4,6-TRIBROMOPHENOL	04/01/93	0001	% RECOVERY		78.		NA	I *
	04/01/93	A001	% RECOVERY		71.		NA	I *
	04/01/93	B001	% RECOVERY		88.		NA	I *
2,4,6-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2,4-DICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2,4-DIMETHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2,4-DINITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,4-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		74.		NA	I *
	04/01/93	B001	% RECOVERY		88.		NA	I *
2,6-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2-CHLOROETHYLVINYLETHER	04/01/93	0001	UG/L	U	1.3	UJ	1.3	I
	04/01/93	0001	UG/L	U	1.3		NA	C1*
	04/01/93	3001	UG/L	U	1.3	UJ	1.3	I
	04/01/93	3001	UG/L	U	1.3		NA	C1*
	04/01/93	A001	UG/L	U	1.3		NA	I *
	04/01/93	B001	UG/L	U	1.3		NA	I *
2-CHLORONAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2-CHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		45.		NA	I *
	04/01/93	B001	% RECOVERY		63.		NA	I *
2-CHLOROPHENOL-d4	04/01/93	0001	% RECOVERY		64.		NA	I *
	04/01/93	A001	% RECOVERY		45.		NA	I *
	04/01/93	B001	% RECOVERY		61.		NA	I *
2-CHLOROTOLUENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
2-FLUOROBIPHENYL	04/01/93	0001	% RECOVERY		60.		NA	I *
	04/01/93	A001	% RECOVERY		59.		NA	I *
	04/01/93	B001	% RECOVERY		68.		NA	I *
2-FLUOROPHENOL	04/01/93	0001	% RECOVERY		63.		NA	I *
	04/01/93	A001	% RECOVERY		44.		NA	I *
	04/01/93	B001	% RECOVERY		52.		NA	I *
2-METHYLNAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
2-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *
2-NITROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2-NITROPHENOL	04/01/93	B001	UG/L	U	10.		NA	I *
3,3'-DICHLOROBENZIDINE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
3-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *
4,4'-DDD	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	UG/L	U	0.10		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*
	04/01/93	B001	UG/L	U	0.10		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
4,4'-DDE	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	UG/L	J	0.030		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*
	04/01/93	B001	UG/L	U	0.10		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
4,4'-DDT	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	% RECOVERY	*	156.		NA	I *
	04/01/93	A001	% RECOVERY	*	140.		NA	X1*
	04/01/93	B001	% RECOVERY	*	166.		NA	I *
	04/01/93	B001	% RECOVERY	*	154.		NA	X1*
4,6-DINITRO-O-CRESOL	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *
4-BROMOPHENYL-PHENYL ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
4-CHLORO-3-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		65.		NA	I *
	04/01/93	B001	% RECOVERY		79.		NA	I *
4-CHLOROANILINE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
4-CHLOROPHENYL-PHENYLETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
4-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
4-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
4-NITROANILINE	04/01/93	A001	UG/L	U	26.		NA	I *
	04/01/93	B001	UG/L	U	26.		NA	I *
4-NITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	% RECOVERY		64.		NA	I *
	04/01/93	B001	% RECOVERY		73.		NA	I *
ACENAPHTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		62.		NA	I *
	04/01/93	B001	% RECOVERY		73.		NA	I *
ACENAPHTHYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
ALDRIN	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	% RECOVERY		78.		NA	I *
	04/01/93	A001	% RECOVERY		116.		NA	X1*
	04/01/93	B001	% RECOVERY		84.		NA	I *
	04/01/93	B001	% RECOVERY	•	132.		NA	X1*
ALPHA CHLORDANE	04/01/93	0001	UG/L		0.070		0.070	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L		0.11		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	U	0.050		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	04/01/93	0001	UG/L		33.4		33.4	I
	04/01/93	A001	% RECOVERY		99.8		NA	I *
	04/01/93	C001	%DIFFRENCE		15.2		NA	I *
ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
ANTIMONY, TOTAL	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	A001	% RECOVERY		91.2		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
AROCLOR-1016	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	04/01/93	0001	UG/L	U	0.52	U	0.52	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
AROCLOR-1221	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	04/01/93	0001	UG/L	U	0.52	U	0.52	I
	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	A001	% RECOVERY		74.8		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
BARIUM, TOTAL	04/01/93	0001	UG/L		152.		152.	I
	04/01/93	A001	% RECOVERY		94.1		NA	I *
	04/01/93	C001	%DIFFRENCE		1.4		NA	I *
BENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	% RECOVERY		99.		NA	I *
	04/01/93	B001	% RECOVERY		92.		NA	I *
BENZO(A)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BENZO(A)ANTHRACENE	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BENZO(A)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BENZO(B)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BENZO(G,H,I)PERYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BENZO(K)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BENZOIC ACID	04/01/93	0001	UG/L	U	51.	U	51.	I
	04/01/93	A001	UG/L	U	51.		NA	I *
	04/01/93	B001	UG/L	U	51.		NA	I *
BENZYL ALCOHOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BERYLLIUM, TOTAL	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	A001	% RECOVERY		95.0		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
BETA-BHC	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	J	0.030		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	J	0.040		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BIS(2-CHLOROETHYL)ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BIS(2-ETHYLHEXYL)PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
BISMUTH-207	04/01/93	0001	PCI/L	U	9.9		NA	I *
	04/01/93	C001	PCI/L	U	14.		NA	I *
BISMUTH-210	04/01/93	0001	PCI/L	U	13.		NA	I *
	04/01/93	C001	PCI/L	U	14.		NA	I *
BROMOBENZENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BROMOBENZENE	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
BROMOCHLOROMETHANE	04/01/93	0001	% RECOVERY		75.		NA	I *
	04/01/93	0001	% RECOVERY		88.		NA	C1*
	04/01/93	3001	% RECOVERY		108.		NA	I *
	04/01/93	3001	% RECOVERY		88.		NA	C1*
	04/01/93	A001	% RECOVERY		78.		NA	I *
	04/01/93	B001	% RECOVERY		72.		NA	I *
BROMODICHLOROMETHANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	% RECOVERY		81.		NA	I *
	04/01/93	B001	% RECOVERY		74.		NA	I *
BROMOFORM	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	% RECOVERY		81.		NA	I *
	04/01/93	B001	% RECOVERY		74.		NA	I *
BUTYL BENZYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
CADMIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	A001	% RECOVERY		99.4		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
CALCIUM, TOTAL	04/01/93	0001	UG/L		154000.		154000.	I
	04/01/93	A001	% RECOVERY	NR	0.0		NA	I *
	04/01/93	C001	%DIFFRENCE		1.00		NA	I *
CARBAZOLE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
CESIUM-137	04/01/93	0001	PCI/L	U	15.		NA	I *
	04/01/93	C001	PCI/L	U	12.		NA	I *
CHLORIDE	04/01/93	0001	MG/L		249.		249.	I
	04/01/93	A001	% RECOVERY		92.3		NA	I *
	04/01/93	B001	% RECOVERY		94.2		NA	I *
	04/01/93	C001	%DIFFRENCE		1.1		NA	I *
CHLOROBENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MWD01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
CHLOROBENZENE	04/01/93	B001	UG/L	U	1.0		NA	I *
CHLOROETHENE (VINYL CHLORIDE)	04/01/93	0001	UG/L	U	1.8	U	1.8	I
	04/01/93	0001	UG/L	U	1.8		NA	C1*
	04/01/93	3001	UG/L	U	1.8	UJ	1.8	I
	04/01/93	3001	UG/L	U	1.8		NA	C1*
	04/01/93	A001	% RECOVERY		92.		NA	I *
	04/01/93	B001	% RECOVERY		78.		NA	I *
CHROMIUM, TOTAL	04/01/93	0001	UG/L		4.5	UJ	4.5	I
	04/01/93	A001	% RECOVERY		91.6		NA	I *
	04/01/93	C001	%DIFFRENCE		200.0		NA	I *
CHRYSENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
COBALT, TOTAL	04/01/93	0001	UG/L	U	4.0	U	4.0	I
	04/01/93	A001	% RECOVERY		91.0		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
COBALT-60	04/01/93	0001	PCI/L	U	14.		NA	I *
	04/01/93	C001	PCI/L	U	17.		NA	I *
COPPER, TOTAL	04/01/93	0001	UG/L		3.8	J	3.8	I
	04/01/93	A001	% RECOVERY		92.1		NA	I *
	04/01/93	C001	%DIFFRENCE		41.3		NA	I *
DECACHLOROBIPHENYL	04/01/93	0001	% RECOVERY		95.		NA	I *
	04/01/93	0001	% RECOVERY		90.		NA	X1*
	04/01/93	A001	% RECOVERY		100.		NA	I *
	04/01/93	A001	% RECOVERY		95.		NA	X1*
	04/01/93	B001	% RECOVERY		100.		NA	I *
	04/01/93	B001	% RECOVERY		95.		NA	X1*
DELTA-BHC	04/01/93	0001	UG/L	U	0.052	UJ	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	U	0.050		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	04/01/93	0001	UG/L	JB	0.6	UJ	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
DI-N-OCTYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
DIBENZO(A,H)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
DIBENZOFURAN	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZOFURAN	04/01/93	B001	UG/L	U	10.		NA	I *
DIBROMOCHLOROMETHANE	04/01/93	0001	UG/L	U	0.90	U	0.90	I
	04/01/93	0001	UG/L	U	0.90		NA	C1*
	04/01/93	3001	UG/L	U	0.90	UJ	0.90	I
	04/01/93	3001	UG/L	U	0.90		NA	C1*
	04/01/93	A001	% RECOVERY		92.		NA	I *
	04/01/93	B001	% RECOVERY		85.		NA	I *
DIBROMOMETHANE	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
DICHLOROMETHANE-METHYLENE CHLORIDE	04/01/93	0001	UG/L	U	4.0	U	4.0	I
	04/01/93	0001	UG/L	U	4.0		NA	C1*
	04/01/93	3001	UG/L	U	4.0	UJ	4.0	I
	04/01/93	3001	UG/L	U	4.0		NA	C1*
	04/01/93	A001	UG/L	U	4.0		NA	I *
	04/01/93	B001	UG/L	U	4.0		NA	I *
DIELDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	% RECOVERY	*	140.		NA	I *
	04/01/93	A001	% RECOVERY	*	131.		NA	X1*
	04/01/93	B001	% RECOVERY	*	157.		NA	I *
	04/01/93	B001	% RECOVERY	*	143.		NA	X1*
DIETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
DIMETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
ENDOSULFAN I(ALPHA)	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	U	0.050		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	UG/L	U	0.10		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*
	04/01/93	B001	UG/L	U	0.10		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	04/01/93	0001	UG/L	JB	0.090		NA	I *
	04/01/93	0001	UG/L	U	0.10	U	0.10	X1
	04/01/93	A001	UG/L	JB	0.071		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*

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GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ENDOSULFAN SULFATE	04/01/93	B001	UG/L	B	0.36		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
ENDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	% RECOVERY	•	184.		NA	I *
	04/01/93	A001	% RECOVERY	•	160.		NA	X1*
	04/01/93	B001	% RECOVERY	•	203.		NA	I *
	04/01/93	B001	% RECOVERY	•	173.		NA	X1*
ENDRIN ALDEHYDE -	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	UG/L	U	0.10		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*
	04/01/93	B001	UG/L	U	0.10		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
	04/01/93	A001	UG/L	U	0.10		NA	I *
	04/01/93	A001	UG/L	U	0.10		NA	X1*
	04/01/93	B001	UG/L	U	0.10		NA	I *
	04/01/93	B001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	UG/L	U	1.0		NA	I *
	04/01/93	B001	UG/L	U	1.0		NA	I *
FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
FLUORENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
GAMMA CHLORDANE	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	U	0.050		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	% RECOVERY		116.		NA	I *
	04/01/93	A001	% RECOVERY		110.		NA	X1*
	04/01/93	B001	% RECOVERY	•	130.		NA	I *
	04/01/93	B001	% RECOVERY	•	126.		NA	X1*
HEPTACHLOR	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	% RECOVERY		114.		NA	I *

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EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEPTACHLOR	04/01/93	A001	% RECOVERY		104.		NA	X1*
	04/01/93	B001	% RECOVERY		124.		NA	I *
	04/01/93	B001	% RECOVERY		114.		NA	X1*
HEPTACHLOR EPOXIDE	04/01/93	0001	UG/L	U	0.052	U	0.052	I
	04/01/93	0001	UG/L	U	0.052		NA	X1*
	04/01/93	A001	UG/L	U	0.050		NA	I *
	04/01/93	A001	UG/L	U	0.050		NA	X1*
	04/01/93	B001	UG/L	U	0.050		NA	I *
	04/01/93	B001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
HEXACHLOROBUTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
HEXACHLOROCYCLOPENTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
HEXACHLOROETHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
INDENO(1,2,3-CD)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
IRON, TOTAL	04/01/93	0001	UG/L		277.	UJ	277.	I
	04/01/93	A001	% RECOVERY		90.9		NA	I *
	04/01/93	C001	%DIFFRENCE		7.4		NA	I *
ISOPHORONE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
LEAD, TOTAL	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	A001	% RECOVERY		97.0		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
MAGNESIUM, TOTAL	04/01/93	0001	UG/L		52100.		52100.	I
	04/01/93	A001	% RECOVERY	NR	0.0		NA	I *
	04/01/93	C001	%DIFFRENCE		1.0		NA	I *
MANGANESE, TOTAL	04/01/93	0001	UG/L		295.		295.	I
	04/01/93	A001	% RECOVERY		94.8		NA	I *
	04/01/93	C001	%DIFFRENCE		2.0		NA	I *
MERCURY, TOTAL	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	A001	% RECOVERY		101.		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
METHOXYCHLOR	04/01/93	0001	UG/L	U	0.52	U	0.52	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
METHOXYCHLOR	04/01/93	0001	UG/L	U	0.52		NA	X1*
	04/01/93	A001	UG/L	U	0.50		NA	I *
	04/01/93	A001	UG/L	U	0.50		NA	X1*
	04/01/93	B001	UG/L	U	0.50		NA	I *
	04/01/93	B001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	04/01/93	0001	UG/L	U	10.	UJ	10.	I
	04/01/93	A001	% RECOVERY		61.		NA	I *
	04/01/93	B001	% RECOVERY		70.		NA	I *
N-NITROSODIPHENYLAMINE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
NAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
NICKEL, TOTAL	04/01/93	0001	UG/L	U	8.0	UJ	8.0	I
	04/01/93	A001	% RECOVERY		91.8		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
NITRATE NITRITE	04/01/93	0001	MG/L		0.58		0.58	I
	04/01/93	A001	% RECOVERY		102.		NA	I *
	04/01/93	B001	% RECOVERY		106.		NA	I *
	04/01/93	C001	%DIFFRENCE		4.4		NA	I *
NITROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
NITROBENZENE-D5	04/01/93	0001	% RECOVERY		57.		NA	I *
	04/01/93	A001	% RECOVERY		51.		NA	I *
	04/01/93	B001	% RECOVERY		61.		NA	I *
P-TERPHENYL-d14	04/01/93	0001	% RECOVERY		85.		NA	I *
	04/01/93	A001	% RECOVERY		95.		NA	I *
	04/01/93	B001	% RECOVERY		110.		NA	I *
PENTACHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
	04/01/93	A001	% RECOVERY		65.		NA	I *
	04/01/93	B001	% RECOVERY		37.		NA	I *
PHENANTHRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	UG/L	U	10.		NA	I *
	04/01/93	B001	UG/L	U	10.		NA	I *
PHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		52.		NA	I *
	04/01/93	B001	% RECOVERY		70.		NA	I *
PHENOL-d5	04/01/93	0001	% RECOVERY		75.		NA	I *
	04/01/93	A001	% RECOVERY		49.		NA	I *
	04/01/93	B001	% RECOVERY		64.		NA	I *
PLUTONIUM-238	04/01/93	0001	PCI/L	U	.028		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
PLUTONIUM-238	04/01/93	C001	PCI/L	U	.083		NA	I *
PLUTONIUM-239	04/01/93	A001	STD DEV		-1.98		NA	I *
PLUTONIUM-239/240	04/01/93	0001	PCI/L		.196		NA	I *
	04/01/93	C001	PCI/L		.195		NA	I *
POTASSIUM, TOTAL	04/01/93	0001	UG/L		4110.		4110.	I
	04/01/93	A001	% RECOVERY	NR	0.0		NA	I *
	04/01/93	C001	%DIFFRENCE		2.5		NA	I *
POTASSIUM-40	04/01/93	0001	PCI/L	U	220.		NA	I *
	04/01/93	C001	PCI/L	U	290.		NA	I *
PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	A001	% RECOVERY		95.		NA	I *
	04/01/93	B001	% RECOVERY		113.		NA	I *
RADIUM-226	04/01/93	0001	PCI/L		.334		NA	I *
	04/01/93	A001	STD DEV		-.35		NA	I *
	04/01/93	C001	PCI/L		.77		NA	I *
SELENIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	A001	% RECOVERY		88.0		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
SILVER, TOTAL	04/01/93	0001	UG/L	U	3.0	U	3.0	I
	04/01/93	A001	% RECOVERY		90.4		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
SODIUM, TOTAL	04/01/93	0001	UG/L		103000.		103000.	I
	04/01/93	A001	% RECOVERY	NR	0.0		NA	I *
	04/01/93	C001	%DIFFRENCE		0.7		NA	I *
STRONTIUM-90	04/01/93	0001	PCI/L	U	.75		NA	I *
	04/01/93	A001	STD DEV		1.14		NA	I *
	04/01/93	C001	PCI/L	U	.66		NA	I *
SULFATE	04/01/93	0001	MG/L		113.	J	113.	I
	04/01/93	A001	% RECOVERY		126.		NA	I *
	04/01/93	B001	% RECOVERY		121.		NA	I *
	04/01/93	C001	%DIFFRENCE		2.7		NA	I *
TETRACHLORO-M-XYLENE	04/01/93	0001	% RECOVERY		115.		115.	I
	04/01/93	0001	% RECOVERY		120.		NA	X1*
	04/01/93	A001	% RECOVERY		100.		NA	I *
	04/01/93	A001	% RECOVERY		110.		NA	X1*
	04/01/93	B001	% RECOVERY		110.		NA	I *
	04/01/93	B001	% RECOVERY		120.		NA	X1*
TETRACHLOROETHENE	04/01/93	0001	UG/L		23.		23.	I
	04/01/93	0001	UG/L		37.		NA	C1*
	04/01/93	3001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	3001	UG/L	U	0.30		NA	C1*
	04/01/93	A001	UG/L		22.		NA	I *
	04/01/93	B001	UG/L		20.		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TETRACHLOROMETHANE (CCL4)	04/01/93	0001	UG/L	U	1.0	U	1.0	I
	04/01/93	0001	UG/L	U	1.0		NA	C1*
	04/01/93	3001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	3001	UG/L	U	1.0		NA	C1*
	04/01/93	A001	% RECOVERY		102.		NA	I *
	04/01/93	B001	% RECOVERY		93.		NA	I *
THALLIUM, TOTAL	04/01/93	0001	UG/L	U	50.0	UJ	50.0	I
	04/01/93	A001	% RECOVERY		34.2		NA	I *
	04/01/93	C001	%DIFFRENCE	NC	0.00		NA	I *
THORIUM-228	04/01/93	0001	PCI/L	U	.14		NA	I *
	04/01/93	C001	PCI/L	U	.12		NA	I *
THORIUM-230	04/01/93	0001	PCI/L	U	.1		NA	I *
	04/01/93	C001	PCI/L		.141		NA	I *
THORIUM-232	04/01/93	0001	PCI/L	U	.049		NA	I *
	04/01/93	A001	STD DEV		0.		NA	I *
	04/01/93	C001	PCI/L	U	.048		NA	I *
TOLUENE	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
TOTAL XYLENES	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
TOXAPHENE	04/01/93	0001	UG/L	U	5.2	U	5.2	I
	04/01/93	0001	UG/L	U	5.2		NA	X1*
	04/01/93	A001	UG/L	U	5.0		NA	I *
	04/01/93	A001	UG/L	U	5.0		NA	X1*
	04/01/93	B001	UG/L	U	5.0		NA	I *
	04/01/93	B001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	04/01/93	0001	UG/L		24.		24.	I
	04/01/93	0001	UG/L		38.		NA	C1*
	04/01/93	3001	UG/L	U	1.2	UJ	1.2	I
	04/01/93	3001	UG/L	U	1.2		NA	C1*
	04/01/93	A001	% RECOVERY		95.		NA	I *
	04/01/93	B001	% RECOVERY		75.		NA	I *
TRICHLOROFLUOROMETHANE	04/01/93	0001	UG/L	U	2.0	U	2.0	I
	04/01/93	0001	UG/L	U	2.0		NA	C1*
	04/01/93	3001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	3001	UG/L	U	2.0		NA	C1*
	04/01/93	A001	UG/L	U	2.0		NA	I *
	04/01/93	B001	UG/L	U	2.0		NA	I *
TRICHLOROMETHANE (CHLOROFORM)	04/01/93	0001	UG/L		2.6	UJ	2.6	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0374
NORTH COORDINATE: 596559.25 FT
EAST COORDINATE: 1495123.53 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TRICHLOROMETHANE (CHLOROFORM)	04/01/93	0001	UG/L		2.1		NA	C1*
	04/01/93	3001	UG/L		2.0	J	2.0	I
	04/01/93	3001	UG/L		1.1		NA	C1*
	04/01/93	A001	% RECOVERY		94.		NA	I *
	04/01/93	B001	% RECOVERY		87.		NA	I *
TRIFLUOROTOLUENE	04/01/93	0001	% RECOVERY		84.		NA	I *
	04/01/93	0001	% RECOVERY		85.		NA	C1*
	04/01/93	3001	% RECOVERY		78.		NA	I *
	04/01/93	3001	% RECOVERY		92.		NA	C1*
	04/01/93	A001	% RECOVERY		73.		NA	I *
	04/01/93	B001	% RECOVERY		68.		NA	I *
TRITIUM	04/01/93	0001	PCI/L		6540.		NA	I *
	04/01/93	A001	STD DEV		1.55		NA	I *
	04/01/93	C001	PCI/L		6080.		NA	I *
URANIUM-234	04/01/93	0001	PCI/L		1.23		NA	I *
	04/01/93	C001	PCI/L		1.57		NA	I *
URANIUM-235/236	04/01/93	0001	PCI/L	U	.08		NA	I *
	04/01/93	C001	PCI/L	U	.1		NA	I *
URANIUM-238	04/01/93	0001	PCI/L		1.26		NA	I *
	04/01/93	A001	STD DEV		.36		NA	I *
	04/01/93	C001	PCI/L		1.33		NA	I *
VANADIUM, TOTAL	04/01/93	0001	UG/L		18.2	UJ	18.2	I
	04/01/93	A001	% RECOVERY		94.5		NA	I *
	04/01/93	C001	%DIFFRENCE		0.00		NA	I *
ZINC, TOTAL	04/01/93	0001	UG/L		44.4	UJ	44.4	I
	04/01/93	A001	% RECOVERY		88.9		NA	I *
	04/01/93	C001	%DIFFRENCE	•	58.9		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
1,1,1-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
1,1,2,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
1,1,2-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/31/93	0001	UG/L	U	0.20		NA	C1*
1,1-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.70	UJ	0.70	I
	03/31/93	0001	UG/L	U	0.70		NA	C1*
1,1-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
1,2,3-TRICHLOROPROPANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
1,2,4-TRICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
1,2-CIS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
1,2-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/31/93	0001	UG/L	U	1.5		NA	C1*
1,2-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
1,2-DICHLOROETHENE-d4	03/31/93	0001	% RECOVERY		78.		78.	I
1,2-DICHLOROPROPANE	03/31/93	0001	UG/L	U	0.40	UJ	0.40	I
	03/31/93	0001	UG/L	U	0.40		NA	C1*
1,2-TRANS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
1,3-CIS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
1,3-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	3.2	UJ	3.2	I
	03/31/93	0001	UG/L	U	3.2		NA	C1*
1,3-TRANS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
1,4-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	2.4	UJ	2.4	I
	03/31/93	0001	UG/L	U	2.4		NA	C1*
1-CHLOROHEXANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1-CHLOROHEXANE	03/31/93	0001	UG/L	U	1.0		NA	C1*
2,2'-OXYBIS (1-CHLOROPROPANE)	03/31/93	0001	UG/L	U	11.	UJ	11.	I
	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
2,4,5-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/31/93	0001	% RECOVERY		82.		NA	I *
2,4,6-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2,4-DICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2,4-DIMETHYLPHENOL	03/31/93	00D1	UG/L	U	11.	U	11.	I
2,4-DINITROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2,6-DINITROTOLUENE	03/31/93	00D1	UG/L	U	11.	U	11.	I
2-CHLOROETHYLVINYLETHER	03/31/93	0001	UG/L	U	1.3	UJ	1.3	I
	03/31/93	0001	UG/L	U	1.3		NA	C1*
2-CHLORONAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL-d4	03/31/93	0001	% RECOVERY		76.		NA	I *
2-CHLOROTOLUENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
2-FLUOROBIPHENYL	03/31/93	0001	% RECOVERY		84.		NA	I *
2-FLUOROPHENOL	03/31/93	0001	% RECOVERY		79.		NA	I *
2-METHYLNAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
2-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
2-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
3,3'-DICHLOROBENZIDINE	03/31/93	0001	UG/L	U	11.	U	11.	I
3-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
4,4'-DDT	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/31/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLORO-3-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROANILINE	03/31/93	0001	UG/L	U	11.	U	11.	I
4-CHLOROPHENYL-PHENYLETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
4-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
4-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ACENAPHTHYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ALDRIN	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/31/93	0001	UG/L	U	17.0	UJ	17.0	I
ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
ANTIMONY, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/31/93	0001	UG/L	U	0.50	U	0.50	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
AROCLOR-1260	03/31/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
BARIUM, TOTAL	03/31/93	0001	UG/L		99.7	J	99.7	I
BENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
BENZO(A)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(A)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(B)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(G,H,I)PERYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZO(K)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
BENZOIC ACID	03/31/93	0001	UG/L	U	53.	U	53.	I
BENZYL ALCOHOL	03/31/93	0001	UG/L	U	11.	UJ	11.	I
BERYLLIUM, TOTAL	03/31/93	0001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
BIS(2-CHLOROETHYL)ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
BISMUTH-207	03/31/93	0001	PCI/L	U	9.6		NA	I *
BISMUTH-210	03/31/93	0001	PCI/L	U	13.		NA	I *
BROMOBENZENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
BROMOCHLOROMETHANE	03/31/93	0001	% RECOVERY		106.		NA	I *
	03/31/93	0001	% RECOVERY		82.		NA	C1*
BROMODICHLOROMETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
BROMOFORM	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
BUTYL BENZYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
CADMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
CALCIUM, TOTAL	03/31/93	0001	UG/L		167000.		167000.	I
CARBAZOLE	03/31/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
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EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
CESIUM-137	03/31/93	0001	PCI/L	U	10.		NA	I *
CHLORIDE	03/31/93	0001	MG/L		69.4		69.4	I
CHLOROBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
CHLOROETHENE (VINYL CHLORIDE)	03/31/93	0001	UG/L	U	1.8	UJ	1.8	I
	03/31/93	0001	UG/L	U	1.8		NA	C1*
CHROMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
CHRYSENE	03/31/93	0001	UG/L	U	11.	U	11.	I
COBALT, TOTAL	03/31/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/31/93	0001	PCI/L	U	15.		NA	I *
COPPER, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
DECACHLOROBIPHENYL	03/31/93	0001	% RECOVERY		90.		NA	I *
	03/31/93	0001	% RECOVERY		85.		NA	X1*
DELTA-BHC	03/31/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/31/93	0001	UG/L	JB	1.	UJ	11.	I
DI-N-OCTYL PHTHALATE	03/31/93	0001	UG/L	U	11.	UJ	11.	I
DIBENZO(A,H)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
DIBENZOFURAN	03/31/93	0001	UG/L	U	11.	U	11.	I
DIBROMOCHLOROMETHANE	03/31/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/31/93	0001	UG/L	U	0.90		NA	C1*
DIBROMOMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/31/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/31/93	0001	UG/L	U	4.0		NA	C1*
DIELDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
DIMETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
ENDOSULFAN I(ALPHA)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/31/93	0001	UG/L	B	0.14		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ENDOSULFAN SULFATE	03/31/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
FLUORENE	03/31/93	0001	UG/L	U	11.	U	11.	I
GAMMA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/31/93	0001	UG/L	U	11.	UJ	11.	I
HEXACHLOROBUTADIENE	03/31/93	0001	UG/L	U	11.	UJ	11.	I
HEXACHLOROCYCLOPENTADIENE	03/31/93	0001	UG/L	U	11.	U	11.	I
HEXACHLOROETHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
INDENO(1,2,3-CD)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
IRON, TOTAL	03/31/93	0001	UG/L		139.	UJ	139.	I
ISOPHORONE	03/31/93	0001	UG/L	U	11.	U	11.	I
LEAD, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
MAGNESIUM, TOTAL	03/31/93	0001	UG/L		49300.		49300.	I
MANGANESE, TOTAL	03/31/93	0001	UG/L		10.5	J	10.5	I
MERCURY, TOTAL	03/31/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
N-NITROSODIPHENYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I
NAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
NICKEL, TOTAL	03/31/93	0001	UG/L		47.7		47.7	I
NITRATE NITRITE	03/31/93	0001	MG/L		2.9		2.9	I
NITROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
NITROBENZENE-D5	03/31/93	0001	% RECOVERY		79.		NA	I *
P-TERPHENYL-d14	03/31/93	0001	% RECOVERY		97.		NA	I *
PENTACHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
PHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
PHENOL-d5	03/31/93	0001	% RECOVERY		86.		NA	I *
PLUTONIUM-238	03/31/93	0001	PCI/L		.196		NA	I *
PLUTONIUM-239/240	03/31/93	0001	PCI/L	U	.038		NA	I *
POTASSIUM, TOTAL	03/31/93	0001	UG/L		5760.		5760.	I
POTASSIUM-40	03/31/93	0001	PCI/L	U	140.		NA	I *
PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
RADIUM-226	03/31/93	0001	PCI/L		.454		NA	I *
SELENIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/31/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/31/93	0001	UG/L		51300.		51300.	I
STRONTIUM-90	03/31/93	0001	PCI/L	U	.69		NA	I *
SULFATE	03/31/93	0001	MG/L		153.	J	153.	I
TETRACHLORO-M-XYLENE	03/31/93 03/31/93	0001 0001	% RECOVERY % RECOVERY		85. 90.		85. NA	I X1*
TETRACHLOROETHENE	03/31/93 03/31/93	0001 0001	UG/L UG/L		5.3 5.9	J	5.3 NA	I C1*
TETRACHLOROMETHANE (CCL4)	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	1.0 1.0	UJ	1.0 NA	I C1*
THALLIUM, TOTAL	03/31/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/31/93	0001	PCI/L	U	.18		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0375
NORTH COORDINATE: 597074.08 FT
EAST COORDINATE: 1494980.33 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
THORIUM-230	03/31/93	0001	PCI/L		.163		NA	I *
THORIUM-232	03/31/93	0001	PCI/L	U	.12		NA	I *
TOLUENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
TOTAL XYLENES	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
TOXAPHENE	03/31/93	0001	UG/L	U	5.0	U	5.0	I
	03/31/93	0001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	03/31/93	0001	UG/L		3.9	J	3.9	I
	03/31/93	0001	UG/L		3.7		NA	C1*
TRICHLOROFLUOROMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
TRICHLOROMETHANE (CHLOROFORM)	03/31/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	C1*
TRIFLUOROTOLUENE	03/31/93	0001	% RECOVERY		78.		NA	I *
	03/31/93	0001	% RECOVERY		0.00		NA	C1*
TRITIUM	03/31/93	0001	PCI/L		4270.		NA	I *
URANIUM-234	03/31/93	0001	PCI/L		.327		NA	I *
URANIUM-235/236	03/31/93	0001	PCI/L	U	.1		NA	I *
URANIUM-238	03/31/93	0001	PCI/L		.438		NA	I *
VANADIUM, TOTAL	03/31/93	0001	UG/L		26.1	UJ	26.1	I
ZINC, TOTAL	03/31/93	0001	UG/L		21.6	UJ	21.6	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MWD01 OU1 VALIDATED DATA
LOCATION: 0376
NORTH COORDINATE: 596696.75 FT
EAST COORDINATE: 1494760.63 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,1,1-TRICHLOROETHANE	03/29/93	0001	UG/L		0.44	J	0.44	I
	03/29/93	0001	UG/L		1.0	J	1.0	C1
	03/29/93	0001	UG/L		0.91	J	0.91	R1
1,1,2,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
1,1,2-TRICHLOROETHANE	03/29/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/29/93	0001	UG/L	U	0.20		NA	C1*
	03/29/93	0001	UG/L	U	0.20	UJ	0.20	R1
1,1-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.70	UJ	0.70	I
	03/29/93	0001	UG/L	U	0.70		NA	C1*
	03/29/93	0001	UG/L	U	0.70	UJ	0.70	R1
1,1-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2,3-TRICHLOROPROPANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2,4-TRICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/29/93	0001	UG/L	U	1.5		NA	C1*
	03/29/93	0001	UG/L	U	1.5	UJ	1.5	R1
1,2-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
1,2-DICHLOROETHENE-d4	03/29/93	0001	% RECOVERY		58.		58.	I
1,2-DICHLOROPROPANE	03/29/93	0001	UG/L	U	0.40	UJ	0.40	I
	03/29/93	0001	UG/L	U	0.40		NA	C1*
	03/29/93	0001	UG/L	U	0.40	UJ	0.40	R1
1,2-TRANS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,3-CIS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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EAST COORDINATE: 1494760.63 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	3.2	UJ	3.2	I
	03/29/93	0001	UG/L	U	3.2		NA	C1*
	03/29/93	0001	UG/L	U	3.2	UJ	3.2	R1
1,3-TRANS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1
1,4-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.4	UJ	2.4	I
	03/29/93	0001	UG/L	U	2.4		NA	C1*
	03/29/93	0001	UG/L	U	2.4	UJ	2.4	R1
1-CHLOROHEXANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
2,2'-OXYBIS (1-CHLOROPROPANE)	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
2,4,5-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/29/93	0001	% RECOVERY		76.		NA	I *
2,4,6-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	03/29/93	0001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2,6-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	03/29/93	0001	UG/L	U	1.3	UJ	1.3	I
	03/29/93	0001	UG/L	U	1.3		NA	C1*
	03/29/93	0001	UG/L	U	1.3	UJ	1.3	R1
2-CHLORONAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	03/29/93	0001	% RECOVERY		67.		NA	I *
2-CHLOROTOLUENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
2-FLUOROBIPHENYL	03/29/93	0001	% RECOVERY		61.		NA	I *
2-FLUOROPHENOL	03/29/93	0001	% RECOVERY		67.		NA	I *

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2-METHYLNAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	03/29/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/29/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
4-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ALDRIN	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
ALPHA CHLORDANE	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
ALPHA-BHC	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
ALUMINUM, TOTAL	03/29/93	0001	UG/L		136.		136.	I
ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	03/29/93	0001	UG/L	U	2.0	U	2.0	I
AROCLOR-1016	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I

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AROCLOR-1016	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1221	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1232	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1242	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1248	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1254	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
AROCLOR-1260	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
ARSENIC, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	03/29/93	0001	UG/L		65.9		65.9	I
BENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
BENZO(A)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	03/29/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	03/29/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	03/29/93	0001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/29/93	0001	UG/L	JB	0.9	UJ	10.	I
BISMUTH-207	03/29/93	0001	PCI/L	U	11.		NA	I *
BISMUTH-210	03/29/93	0001	PCI/L	U	12.		NA	I *

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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BROMOBENZENE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
BROMOCHLOROMETHANE	03/29/93	0001	% RECOVERY		121.		NA	I *
	03/29/93	0001	% RECOVERY		88.		NA	C1*
	03/29/93	0001	% RECOVERY		113.		NA	R1*
BROMODICHLOROMETHANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
BROMOFORM	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
BUTYL BENZYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	03/29/93	0001	UG/L		115000.		115000.	I
CARBAZOLE	03/29/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	03/29/93	0001	PCI/L	U	14.		NA	I *
CHLORIDE	03/29/93	0001	MG/L		153.		153.	I
CHLOROBENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
CHLOROETHENE (VINYL CHLORIDE)	03/29/93	0001	UG/L	U	1.8	UJ	1.8	I
	03/29/93	0001	UG/L	U	1.8		NA	C1*
	03/29/93	0001	UG/L	U	1.8	UJ	1.8	R1
CHROMIUM, TOTAL	03/29/93	0001	UG/L		57.0		57.0	I
CHRYSENE	03/29/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	03/29/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/29/93	0001	PCI/L	U	13.		NA	I *
COPPER, TOTAL	03/29/93	0001	UG/L		10.8	UJ	10.8	I
DECACHLOROBIPHENYL	03/29/93	0001	% RECOVERY	*	50.		NA	I *
	03/29/93	0001	% RECOVERY	*	50.		NA	X1*
DELTA-BHC	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
DI-N-BUTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DI-N-OCTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DIBENZO(A,H)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I

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DIBENZOFURAN	03/29/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	03/29/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/29/93	0001	UG/L	U	0.90		NA	C1*
	03/29/93	0001	UG/L	U	0.90	UJ	0.90	R1
DIBROMOMETHANE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
DIBUTYLCHLORENDATE	03/29/93	0001	% RECOVERY		85.		NA	I *
	03/29/93	0001	% RECOVERY		95.		NA	X1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/29/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/29/93	0001	UG/L	U	4.0		NA	C1*
	03/29/93	0001	UG/L	U	4.0	UJ	4.0	R1
DIELDRIN	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
ENDOSULFAN II(BETA)	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/29/93	0001	UG/L		0.16		NA	I
	03/29/93	0001	UG/L	U	0.10	UJ	0.10	X1
ENDRIN	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	03/29/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
GAMMA-BHC (LINDANE)	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
HEPTACHLOR	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I

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HEPTACHLOR	03/29/93	0001	UG/L	U	0.051		NA	X1*
HEPTACHLOR EPOXIDE	03/29/93	0001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	0001	UG/L	U	0.051		NA	X1*
HEXACHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROCYCLOPENTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	03/29/93	0001	UG/L		3800.		3800.	I
ISOPHORONE	03/29/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	03/29/93	0001	UG/L		4.3		4.3	I
MAGNESIUM, TOTAL	03/29/93	0001	UG/L		33300.		33300.	I
MANGANESE, TOTAL	03/29/93	0001	UG/L		45.3		45.3	I
MERCURY, TOTAL	03/29/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/29/93	0001	UG/L	U	0.51	UJ	0.51	I
	03/29/93	0001	UG/L	U	0.51		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	03/29/93	0001	UG/L		46.4	J	46.4	I
NITRATE NITRITE	03/29/93	0001	MG/L		3.2	J	3.2	I
NITROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	03/29/93	0001	% RECOVERY		67.		NA	I •
P-TERPHENYL-d14	03/29/93	0001	% RECOVERY		82.		NA	I •
PENTACHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
PHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	03/29/93	0001	% RECOVERY		68.		NA	I *
PLUTONIUM-238	03/29/93	0001	PCI/L		.316		NA	I *
PLUTONIUM-239/240	03/29/93	0001	PCI/L	U	.033		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0376
NORTH COORDINATE: 596696.75 FT
EAST COORDINATE: 1494760.63 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
POTASSIUM, TOTAL	03/29/93	0001	UG/L		3410.		3410.	I
POTASSIUM-40	03/29/93	0001	PCI/L	U	150.		NA	I *
PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	03/29/93	0001	PCI/L	U	.25		NA	I *
SELENIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/29/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/29/93	0001	UG/L		110000.		110000.	I
STRONTIUM-90	03/29/93	0001	PCI/L	U	.66		NA	I *
SULFATE	03/29/93	0001	MG/L		65.3	J	65.3	I
TETRACHLOROETHENE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
TETRACHLOROMETHANE (CCL4)	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
THALLIUM, TOTAL	03/29/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/29/93	0001	PCI/L	U	.1		NA	I *
THORIUM-230	03/29/93	0001	PCI/L		.162		NA	I *
THORIUM-232	03/29/93	0001	PCI/L	U	.041		NA	I *
TOLUENE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
TOTAL XYLENES	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
TOXAPHENE	03/29/93	0001	UG/L	U	5.1	UJ	5.1	I
	03/29/93	0001	UG/L	U	5.1		NA	X1*
TRICHLOROETHENE	03/29/93	0001	UG/L	U	1.2	UJ	1.2	I
	03/29/93	0001	UG/L	U	1.2		NA	C1*
	03/29/93	0001	UG/L	U	1.2	UJ	1.2	R1
TRICHLOROFLUOROMETHANE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
TRICHLOROMETHANE (CHLOROFORM)	03/29/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	C1*
	03/29/93	0001	UG/L	U	0.50	UJ	0.50	R1

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TRIFLUOROTOLUENE	03/29/93	0001	% RECOVERY		89.		NA	I *
	03/29/93	0001	% RECOVERY		99.		NA	C1*
	03/29/93	0001	% RECOVERY		82.		NA	R1*
TRITIUM	03/29/93	0001	PCI/L		2630.		NA	I *
URANIUM-234	03/29/93	0001	PCI/L		.186		NA	I *
URANIUM-235/236	03/29/93	0001	PCI/L	U	.1		NA	I *
URANIUM-238	03/29/93	0001	PCI/L		.27		NA	I *
VANADIUM, TOTAL	03/29/93	0001	UG/L		13.9	UJ	13.9	I
ZINC, TOTAL	03/29/93	0001	UG/L		25.1	UJ	25.1	I

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GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
1,1,1-TRICHLOROETHANE	03/29/93	0001	UG/L		4.6	J	4.6	I
	03/29/93	0001	UG/L		9.0	J	9.0	C1
	03/29/93	0001	UG/L		6.7	J	6.7	R1
	03/29/93	1001	UG/L		4.2	J	4.2	I
	03/29/93	1001	UG/L		9.1	J	9.1	C1
	03/29/93	1001	UG/L		7.0	J	7.0	R1
1,1,2,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	1001	UG/L	U	0.30		NA	C1*
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	R1
1,1,2-TRICHLOROETHANE	03/29/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/29/93	0001	UG/L	U	0.20		NA	C1*
	03/29/93	0001	UG/L	U	0.20	UJ	0.20	R1
	03/29/93	1001	UG/L	U	0.20	UJ	0.20	I
	03/29/93	1001	UG/L	U	0.20		NA	C1*
	03/29/93	1001	UG/L	U	0.20	UJ	0.20	R1
1,1-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.70	UJ	0.70	I
	03/29/93	0001	UG/L	U	0.70		NA	C1*
	03/29/93	0001	UG/L	U	0.70	UJ	0.70	R1
	03/29/93	1001	UG/L	U	0.70	UJ	0.70	I
	03/29/93	1001	UG/L	U	0.70		NA	C1*
	03/29/93	1001	UG/L	U	0.70	UJ	0.70	R1
1,1-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
1,2,3-TRICHLOROPROPANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
1,2,4-TRICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,2-CIS-DICHLOROETHENE	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
1,2-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/29/93	0001	UG/L	U	1.5		NA	C1*
	03/29/93	0001	UG/L	U	1.5	UJ	1.5	R1
	03/29/93	1001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	1.5	UJ	1.5	I
	03/29/93	1001	UG/L	U	1.5		NA	C1*
	03/29/93	1001	UG/L	U	1.5	UJ	1.5	R1
1,2-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	1001	UG/L	U	0.30		NA	C1*
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	R1
1,2-DICHLOROETHENE-d4	03/29/93	0001	% RECOVERY		54.		54.	I
	03/29/93	1001	% RECOVERY		56.		56.	I
1,2-DICHLOROPROPANE	03/29/93	0001	UG/L	U	0.40	UJ	0.40	I
	03/29/93	0001	UG/L	U	0.40		NA	C1*
	03/29/93	0001	UG/L	U	0.40	UJ	0.40	R1
	03/29/93	1001	UG/L	U	0.40	UJ	0.40	I
	03/29/93	1001	UG/L	U	0.40		NA	C1*
	03/29/93	1001	UG/L	U	0.40	UJ	0.40	R1
1,2-TRANS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
1,3-CIS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1
	03/29/93	1001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	1001	UG/L	U	3.4		NA	C1*
	03/29/93	1001	UG/L	U	3.4	UJ	3.4	R1
1,3-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	3.2	UJ	3.2	I
	03/29/93	0001	UG/L	U	3.2		NA	C1*
	03/29/93	0001	UG/L	U	3.2	UJ	3.2	R1
	03/29/93	1001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	3.2	UJ	3.2	I
	03/29/93	1001	UG/L	U	3.2		NA	C1*
	03/29/93	1001	UG/L	U	3.2	UJ	3.2	R1
1,3-TRANS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1
	03/29/93	1001	UG/L	U	3.4	UJ	3.4	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-TRANS-DICHLOROPROPENE	03/29/93	1001	UG/L	U	3.4		NA	C1*
	03/29/93	1001	UG/L	U	3.4	UJ	3.4	R1
1,4-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.4	UJ	2.4	I
	03/29/93	0001	UG/L	U	2.4		NA	C1*
	03/29/93	0001	UG/L	U	2.4	UJ	2.4	R1
	03/29/93	1001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	2.4	UJ	2.4	I
	03/29/93	1001	UG/L	U	2.4		NA	C1*
	03/29/93	1001	UG/L	U	2.4	UJ	2.4	R1
1-CHLOROHEXANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
2,2'-OXYBIS (1-CHLOROPROPANE)	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
2,4,5-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/29/93	0001	% RECOVERY		81.		NA	I *
	03/29/93	1001	% RECOVERY		79.		NA	I *
2,4,6-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	03/29/93	0001	UG/L	U	26.	UJ	26.	I
	03/29/93	1001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2,6-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	03/29/93	0001	UG/L	U	1.3	UJ	1.3	I
	03/29/93	0001	UG/L	U	1.3		NA	C1*
	03/29/93	0001	UG/L	U	1.3	UJ	1.3	R1
	03/29/93	1001	UG/L	U	1.3	UJ	1.3	I

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2-CHLOROETHYLVINYLETHER	03/29/93	1001	UG/L	U	1.3		NA	C1*
	03/29/93	1001	UG/L	U	1.3	UJ	1.3	R1
2-CHLORONAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	03/29/93	0001	% RECOVERY		66.		NA	I *
	03/29/93	1001	% RECOVERY		70.		NA	I *
2-CHLOROTOLUENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
2-FLUOROBIPHENYL	03/29/93	0001	% RECOVERY		63.		NA	I *
	03/29/93	1001	% RECOVERY		62.		NA	I *
2-FLUOROPHENOL	03/29/93	0001	% RECOVERY		65.		NA	I *
	03/29/93	1001	% RECOVERY		69.		NA	I *
2-METHYLNAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
2-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
3-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/29/93	0001	UG/L	U	0.11	UJ	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
4,4'-DDT	03/29/93	1001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
4-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
ALDRIN	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
ALPHA CHLORDANE	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
ALPHA-BHC	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
ALUMINUM, TOTAL	03/29/93	0001	UG/L	U	17.0	U	17.0	I
	03/29/93	1001	UG/L	U	17.0	U	17.0	I
ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	03/29/93	0001	UG/L	U	0.54	U	0.54	I

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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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AROCLOR-1016	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1221	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1232	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1242	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1248	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1254	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
AROCLOR-1260	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
ARSENIC, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	03/29/93	0001	UG/L		65.9		65.9	I
	03/29/93	1001	UG/L		65.9		65.9	I
BENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
BENZO(A)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I

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03/28/93 TO 04/02/93
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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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BENZO(G,H,I)PERYLENE	03/29/93	1001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BENZOIC ACID	03/29/93	0001	UG/L	U	51.	U	51.	I
	03/29/93	1001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	1001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/29/93	0001	UG/L	JB	0.5	UJ	10.	I
	03/29/93	1001	UG/L	JB	0.9	UJ	10.	I
BISMUTH-207	03/29/93	0001	PCI/L	U	13.		NA	I *
	03/29/93	1001	PCI/L	U	9.6		NA	I *
BISMUTH-210	03/29/93	0001	PCI/L	U	15.		NA	I *
	03/29/93	1001	PCI/L	U	14.		NA	I *
BROMOBENZENE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
BROMOCHLOROMETHANE	03/29/93	0001	% RECOVERY		120.		NA	I *
	03/29/93	0001	% RECOVERY		97.		NA	C1*
	03/29/93	0001	% RECOVERY		105.		NA	R1*
	03/29/93	1001	% RECOVERY		113.		NA	I *
	03/29/93	1001	% RECOVERY		96.		NA	C1*
	03/29/93	1001	% RECOVERY		116.		NA	R1*
BROMODICHLOROMETHANE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
BROMOFORM	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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BROMOFORM	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
BUTYL BENZYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	03/29/93	0001	UG/L		100000.		100000.	I
	03/29/93	1001	UG/L		98100.		98100.	I
CARBAZOLE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
CESIUM-137	03/29/93	0001	PCI/L	U	16.		NA	I *
	03/29/93	1001	PCI/L	U	12.		NA	I *
CHLORIDE	03/29/93	0001	MG/L		194.		194.	I
	03/29/93	1001	MG/L		194.		194.	I
CHLOROBENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
CHLOROETHENE (VINYL CHLORIDE)	03/29/93	0001	UG/L	U	1.8	UJ	1.8	I
	03/29/93	0001	UG/L	U	1.8		NA	C1*
	03/29/93	0001	UG/L	U	1.8	UJ	1.8	R1
	03/29/93	1001	UG/L	U	1.8	UJ	1.8	I
	03/29/93	1001	UG/L	U	1.8		NA	C1*
	03/29/93	1001	UG/L	U	1.8	UJ	1.8	R1
CHROMIUM, TOTAL	03/29/93	0001	UG/L		5.3	UJ	5.3	I
	03/29/93	1001	UG/L		2.8	UJ	2.8	I
CHRYSENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	03/29/93	0001	UG/L	U	4.0	U	4.0	I
	03/29/93	1001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/29/93	0001	PCI/L	U	16.		NA	I *
	03/29/93	1001	PCI/L	U	18.		NA	I *
COPPER, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L		3.8	UJ	3.8	I
DECACHLOROBIPHENYL	03/29/93	0001	% RECOVERY		75.		NA	I *
	03/29/93	0001	% RECOVERY		80.		NA	X1*
	03/29/93	1001	% RECOVERY		60.		NA	I *

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DECACHLOROBIPHENYL	03/29/93	1001	% RECOVERY		60.		NA	X1*
DELTA-BHC	03/29/93	0001	UG/L	U	0.054	UJ	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	UJ	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
DI-N-BUTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
DI-N-OCTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
DIBENZO(A,H)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
DIBENZOFURAN	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	03/29/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/29/93	0001	UG/L	U	0.90		NA	C1*
	03/29/93	0001	UG/L	U	0.90	UJ	0.90	R1
	03/29/93	1001	UG/L	U	0.90	UJ	0.90	I
	03/29/93	1001	UG/L	U	0.90		NA	C1*
	03/29/93	1001	UG/L	U	0.90	UJ	0.90	R1
DIBROMOMETHANE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
DIBUTYLCHLORENDATE	03/29/93	0001	% RECOVERY		90.		NA	I *
	03/29/93	0001	% RECOVERY		95.		NA	X1*
	03/29/93	1001	% RECOVERY		75.		NA	I *
	03/29/93	1001	% RECOVERY		80.		NA	X1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/29/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/29/93	0001	UG/L	U	4.0		NA	C1*
	03/29/93	0001	UG/L	U	4.0	UJ	4.0	R1
	03/29/93	1001	UG/L	U	4.0	UJ	4.0	I
	03/29/93	1001	UG/L	U	4.0		NA	C1*
	03/29/93	1001	UG/L	U	4.0	UJ	4.0	R1
DIELDRIN	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	03/29/93	0001	UG/L	U	0.054	U	0.054	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ENDOSULFAN I(ALPHA)	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
ENDOSULFAN II(BETA)	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
ENDRIN	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/29/93	0001	UG/L	U	0.11	U	0.11	I
	03/29/93	0001	UG/L	U	0.11		NA	X1*
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
FLUORENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
GAMMA-BHC (LINDANE)	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
HEPTACHLOR	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEPTACHLOR EPOXIDE	03/29/93	0001	UG/L	U	0.054	U	0.054	I
	03/29/93	0001	UG/L	U	0.054		NA	X1*
	03/29/93	1001	UG/L	U	0.051	U	0.051	I
	03/29/93	1001	UG/L	U	0.051		NA	X1*
HEXACHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
HEXACHLOROCYCLOPENTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
IRON, TOTAL	03/29/93	0001	UG/L		140.	UJ	140.	I
	03/29/93	1001	UG/L		120.	UJ	120.	I
ISOPHORONE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	1001	UG/L	U	2.0	U	2.0	I
MAGNESIUM, TOTAL	03/29/93	0001	UG/L		28700.		28700.	I
	03/29/93	1001	UG/L		28200.		28200.	I
MANGANESE, TOTAL	03/29/93	0001	UG/L		9.1		9.1	I
	03/29/93	1001	UG/L		9.9		9.9	I
MERCURY, TOTAL	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	1001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/29/93	0001	UG/L	U	0.54	U	0.54	I
	03/29/93	0001	UG/L	U	0.54		NA	X1*
	03/29/93	1001	UG/L	U	0.51	U	0.51	I
	03/29/93	1001	UG/L	U	0.51		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
NAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	03/29/93	0001	UG/L	U	8.0	UJ	8.0	I
	03/29/93	1001	UG/L	U	8.0	UJ	8.0	I
NITRATE NITRITE	03/29/93	0001	MG/L		3.1	J	3.1	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
NITRATE NITRITE	03/29/93	1001	MG/L		2.8	J	2.8	I
NITROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	03/29/93	0001	% RECOVERY		68.		NA	I *
	03/29/93	1001	% RECOVERY		71.		NA	I *
P-TERPHENYL-d14	03/29/93	0001	% RECOVERY		90.		NA	I *
	03/29/93	1001	% RECOVERY		90.		NA	I *
PENTACHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
	03/29/93	1001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
PHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
PHENOL-d5	03/29/93	0001	% RECOVERY		70.		NA	I *
	03/29/93	1001	% RECOVERY		72.		NA	I *
PLUTONIUM-238	03/29/93	0001	PCI/L	U	.03		NA	I *
	03/29/93	1001	PCI/L	U	.47		NA	I *
PLUTONIUM-239/240	03/29/93	0001	PCI/L		.0954		NA	I *
	03/29/93	1001	PCI/L	U	.47		NA	I *
POTASSIUM, TOTAL	03/29/93	0001	UG/L		2880.		2880.	I
	03/29/93	1001	UG/L		2720.		2720.	I
POTASSIUM-40	03/29/93	0001	PCI/L	U	240.		NA	I *
	03/29/93	1001	PCI/L	U	240.		NA	I *
PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	1001	UG/L	U	10.	U	10.	I
RADIUM-226	03/29/93	0001	PCI/L		.375		NA	I *
	03/29/93	1001	PCI/L	U	.18		NA	I *
SELENIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/29/93	0001	UG/L	U	3.0	U	3.0	I
	03/29/93	1001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/29/93	0001	UG/L		151000.		151000.	I
	03/29/93	1001	UG/L		148000.		148000.	I
STRONTIUM-90	03/29/93	0001	PCI/L	U	.68		NA	I *
	03/29/93	1001	PCI/L	U	1.1		NA	I *
SULFATE	03/29/93	0001	MG/L		64.0	J	64.0	I
	03/29/93	1001	MG/L		58.6	J	58.6	I
TETRACHLOROETHENE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TETRACHLOROETHENE	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	1001	UG/L	U	0.30		NA	C1*
	03/29/93	1001	UG/L	U	0.30	UJ	0.30	R1
TETRACHLOROMETHANE (CCL4)	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	1001	UG/L	U	1.0		NA	C1*
	03/29/93	1001	UG/L	U	1.0	UJ	1.0	R1
THALLIUM, TOTAL	03/29/93	0001	UG/L	U	5.0	UJ	5.0	I
	03/29/93	1001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/29/93	0001	PCI/L	U	.11		NA	I *
	03/29/93	1001	PCI/L	U	.12		NA	I *
THORIUM-230	03/29/93	0001	PCI/L	U	.11		NA	I *
	03/29/93	1001	PCI/L	U	.16		NA	I *
THORIUM-232	03/29/93	0001	PCI/L	U	.052		NA	I *
	03/29/93	1001	PCI/L	U	.16		NA	I *
TOLUENE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
TOTAL XYLENES	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
TOXAPHENE	03/29/93	0001	UG/L	U	5.4	U	5.4	I
	03/29/93	0001	UG/L	U	5.4		NA	X1*
	03/29/93	1001	UG/L	U	5.1	U	5.1	I
	03/29/93	1001	UG/L	U	5.1		NA	X1*
TRICHLOROETHENE	03/29/93	0001	UG/L	U	1.2	UJ	1.2	I
	03/29/93	0001	UG/L	U	1.2		NA	C1*
	03/29/93	0001	UG/L	U	1.2	UJ	1.2	R1
	03/29/93	1001	UG/L	U	1.2	UJ	1.2	I
	03/29/93	1001	UG/L	U	1.2		NA	C1*
	03/29/93	1001	UG/L	U	1.2	UJ	1.2	R1
TRICHLOROFLUOROMETHANE	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/29/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	1001	UG/L	U	2.0		NA	C1*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0377
NORTH COORDINATE: 596522.25 FT
EAST COORDINATE: 1494774.87 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TRICHLOROFLUOROMETHANE	03/29/93	1001	UG/L	U	2.0	UJ	2.0	R1
TRICHLOROMETHANE (CHLOROFORM)	03/29/93	0001	UG/L	U	0.50	UJ	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	C1*
	03/29/93	0001	UG/L	U	0.50	UJ	0.50	R1
	03/29/93	1001	UG/L	U	0.50	UJ	0.50	I
	03/29/93	1001	UG/L	U	0.50		NA	C1*
	03/29/93	1001	UG/L	U	0.50	UJ	0.50	R1
TRIFLUOROTOLUENE	03/29/93	0001	% RECOVERY		90.		NA	I *
	03/29/93	0001	% RECOVERY		107.		NA	C1*
	03/29/93	0001	% RECOVERY		78.		NA	R1*
	03/29/93	1001	% RECOVERY		88.		NA	I *
	03/29/93	1001	% RECOVERY		105.		NA	C1*
	03/29/93	1001	% RECOVERY		85.		NA	R1*
TRITIUM	03/29/93	0001	PCI/L		4220.		NA	I *
	03/29/93	1001	PCI/L		3730.		NA	I *
URANIUM-234	03/29/93	0001	PCI/L		.3		NA	I *
	03/29/93	1001	PCI/L		.278		NA	I *
URANIUM-235/236	03/29/93	0001	PCI/L	U	.046		NA	I *
	03/29/93	1001	PCI/L	U	.094		NA	I *
URANIUM-238	03/29/93	0001	PCI/L		.227		NA	I *
	03/29/93	1001	PCI/L		.157		NA	I *
VANADIUM, TOTAL	03/29/93	0001	UG/L		11.2	UJ	11.2	I
	03/29/93	1001	UG/L		10.9	UJ	10.9	I
ZINC, TOTAL	03/29/93	0001	UG/L		4.0	UJ	4.0	I
	03/29/93	1001	UG/L		24.2	UJ	24.2	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0378
NORTH COORDINATE: 596376.63 FT
EAST COORDINATE: 1494789.86 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,1,1-TRICHLOROETHANE	03/28/93	0001	UG/L		13.		13.	I
	03/28/93	0001	UG/L		18.	J	18.	C1
	03/28/93	0001	UG/L		13.	J	13.	R1
1,1,2,2-TETRACHLOROETHANE	03/28/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/28/93	0001	UG/L	U	0.30		NA	C1*
	03/28/93	0001	UG/L	U	0.30	UJ	0.30	R1
1,1,2-TRICHLOROETHANE	03/28/93	0001	UG/L	U	0.20	U	0.20	I
	03/28/93	0001	UG/L	U	0.20		NA	C1*
	03/28/93	0001	UG/L	U	0.20	UJ	0.20	R1
1,1-DICHLOROETHANE	03/28/93	0001	UG/L	U	0.70	U	0.70	I
	03/28/93	0001	UG/L	U	0.70		NA	C1*
	03/28/93	0001	UG/L	U	0.70	UJ	0.70	R1
1,1-DICHLOROETHENE	03/28/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2,3-TRICHLOROPROPANE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2,4-TRICHLOROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	03/28/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,2-DICHLOROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
	03/28/93	0001	UG/L	U	1.5	U	1.5	I
	03/28/93	0001	UG/L	U	1.5		NA	C1*
	03/28/93	0001	UG/L	U	1.5	UJ	1.5	R1
1,2-DICHLOROETHANE	03/28/93	0001	UG/L	U	0.30	U	0.30	I
	03/28/93	0001	UG/L	U	0.30		NA	C1*
	03/28/93	0001	UG/L	U	0.30	UJ	0.30	R1
1,2-DICHLOROETHENE-d4	03/28/93	0001	% RECOVERY		59.		59.	I
1,2-DICHLOROPROPANE	03/28/93	0001	UG/L	U	0.40	U	0.40	I
	03/28/93	0001	UG/L	U	0.40		NA	C1*
	03/28/93	0001	UG/L	U	0.40	UJ	0.40	R1
1,2-TRANS-DICHLOROETHENE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
1,3-CIS-DICHLOROPROPENE	03/28/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/28/93	0001	UG/L	U	3.4		NA	C1*
	03/28/93	0001	UG/L	U	3.4	UJ	3.4	R1

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-DICHLOROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
	03/28/93	0001	UG/L	U	3.2	U	3.2	I
	03/28/93	0001	UG/L	U	3.2		NA	C1*
	03/28/93	0001	UG/L	U	3.2	UJ	3.2	R1
1,3-TRANS-DICHLOROPROPENE	03/28/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/28/93	0001	UG/L	U	3.4		NA	C1*
	03/28/93	0001	UG/L	U	3.4	UJ	3.4	R1
1,4-DICHLOROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
	03/28/93	0001	UG/L	U	2.4	U	2.4	I
	03/28/93	0001	UG/L	U	2.4		NA	C1*
	03/28/93	0001	UG/L	U	2.4	UJ	2.4	R1
1-CHLOROHEXANE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
2,2'-OXYBIS (1-CHLOROPROPANE)	03/28/93	0001	UG/L	U	10.	U	10.	I
	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
2,4,5-TRICHLOROPHENOL	03/28/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/28/93	0001	% RECOVERY		84.		NA	I *
2,4,6-TRICHLOROPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	03/28/93	0001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/28/93	0001	UG/L	U	10.	U	10.	I
2,6-DINITROTOLUENE	03/28/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	03/28/93	0001	UG/L	U	1.3	U	1.3	I
	03/28/93	0001	UG/L	U	1.3		NA	C1*
	03/28/93	0001	UG/L	U	1.3	UJ	1.3	R1
2-CHLORONAPHTHALENE	03/28/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	03/28/93	0001	% RECOVERY		77.		NA	I *
2-CHLOROTOLUENE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
2-FLUOROBIPHENYL	03/28/93	0001	% RECOVERY		66.		NA	I *
2-FLUOROPHENOL	03/28/93	0001	% RECOVERY		76.		NA	I *

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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2-METHYLNAPHTHALENE	03/28/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	03/28/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	03/28/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	03/28/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/28/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/28/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	03/28/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	03/28/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
4-NITROANILINE	03/28/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/28/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/28/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	03/28/93	0001	UG/L	U	10.	U	10.	I
ALDRIN	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
ALPHA CHLORDANE	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
ALPHA-BHC	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
ALUMINUM, TOTAL	03/28/93	0001	UG/L		83.8		83.8	I
ANTHRACENE	03/28/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	03/28/93	0001	UG/L	U	2.0	U	2.0	I
AROCLOR-1016	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I

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AROCLOR-1016	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1221	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1232	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1242	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1248	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1254	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1260	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
ARSENIC, TOTAL	03/28/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	03/28/93	0001	UG/L		85.1		85.1	I
BENZENE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
BENZO(A)ANTHRACENE	03/28/93	0001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	03/28/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	03/28/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	03/28/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	03/28/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	03/28/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	03/28/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	03/28/93	0001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/28/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	03/28/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/28/93	0001	UG/L	JB	0.8	UJ	10.	I
BISMUTH-207	03/28/93	0001	PCI/L	U	9.		NA	I *
BISMUTH-210	03/28/93	0001	PCI/L	U	12.		NA	I *

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BROMOBENZENE	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
BROMOCHLOROMETHANE	03/28/93	0001	% RECOVERY		63.		NA	I *
	03/28/93	0001	% RECOVERY		92.		NA	C1*
	03/28/93	0001	% RECOVERY		103.		NA	R1*
BROMODICHLOROMETHANE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
BROMOFORM	03/28/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
BUTYL BENZYL PHTHALATE	03/28/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	03/28/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	03/28/93	0001	UG/L		105000.		105000.	I
CARBAZOLE	03/28/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	03/28/93	0001	PCI/L	U	11.		NA	I *
CHLORIDE	03/28/93	0001	MG/L		153.		153.	I
CHLOROBENZENE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
CHLOROETHENE (VINYL CHLORIDE)	03/28/93	0001	UG/L	U	1.8	U	1.8	I
	03/28/93	0001	UG/L	U	1.8		NA	C1*
	03/28/93	0001	UG/L	U	1.8	UJ	1.8	R1
CHROMIUM, TOTAL	03/28/93	0001	UG/L		4.0	UJ	4.0	I
CHRYSENE	03/28/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	03/28/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/28/93	0001	PCI/L	U	12.		NA	I *
COPPER, TOTAL	03/28/93	0001	UG/L		7.6	UJ	7.6	I
DECACHLOROBIPHENYL	03/28/93	0001	% RECOVERY	*	55.		NA	I *
	03/28/93	0001	% RECOVERY	*	55.		NA	X1*
DELTA-BHC	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
DI-N-BUTYL PHTHALATE	03/28/93	0001	UG/L	U	10.	U	10.	I
DI-N-OCTYL PHTHALATE	03/28/93	0001	UG/L	U	10.	U	10.	I
DIBENZO(A,H)ANTHRACENE	03/28/93	0001	UG/L	U	10.	U	10.	I

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DIBENZOFURAN	03/28/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	03/28/93	0001	UG/L	U	0.90	U	0.90	I
	03/28/93	0001	UG/L	U	0.90		NA	C1*
	03/28/93	0001	UG/L	U	0.90	UJ	0.90	R1
DIBROMOMETHANE	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
DIBUTYLCHLORENDATE	03/28/93	0001	% RECOVERY		80.		NA	I *
	03/28/93	0001	% RECOVERY		80.		NA	X1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/28/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/28/93	0001	UG/L	U	4.0		NA	C1*
	03/28/93	0001	UG/L	U	4.0	UJ	4.0	R1
DIELDRIN	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/28/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	03/28/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
ENDOSULFAN II(BETA)	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/28/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/28/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
FLUORANTHENE	03/28/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	03/28/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
GAMMA-BHC (LINDANE)	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
HEPTACHLOR	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I

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HEPTACHLOR	03/28/93	0001	UG/L	U	0.052		NA	X1*
HEPTACHLOR EPOXIDE	03/28/93	0001	UG/L	U	0.052	UJ	0.052	I
	03/28/93	0001	UG/L	U	0.052		NA	X1*
HEXACHLOROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	03/28/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROCYCLOPENTADIENE	03/28/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	03/28/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	03/28/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	03/28/93	0001	UG/L		417.		417.	I
ISOPHORONE	03/28/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	03/28/93	0001	UG/L		5.2		5.2	I
MAGNESIUM, TOTAL	03/28/93	0001	UG/L		30400.		30400.	I
MANGANESE, TOTAL	03/28/93	0001	UG/L		34.6		34.6	I
MERCURY, TOTAL	03/28/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/28/93	0001	UG/L	U	0.52	UJ	0.52	I
	03/28/93	0001	UG/L	U	0.52		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/28/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	03/28/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	03/28/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	03/28/93	0001	UG/L	U	8.0	UJ	8.0	I
NITRATE NITRITE	03/28/93	0001	MG/L		2.8	J	2.8	I
NITROBENZENE	03/28/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	03/28/93	0001	% RECOVERY		76.		NA	I *
P-TERPHENYL-d14	03/28/93	0001	% RECOVERY		89.		NA	I *
PENTACHLOROPHENOL	03/28/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/28/93	0001	UG/L	U	10.	U	10.	I
PHENOL	03/28/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	03/28/93	0001	% RECOVERY		58.		NA	I *
PLUTONIUM-238	03/28/93	0001	PCI/L	U	.088		NA	I *
PLUTONIUM-239/240	03/28/93	0001	PCI/L		.186		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596376.63 FT
EAST COORDINATE: 1494789.86 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
POTASSIUM, TOTAL	03/28/93	0001	UG/L		2780.		2780.	I
POTASSIUM-40	03/28/93	0001	PCI/L	U	200.		NA	I *
PYRENE	03/28/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	03/28/93	0001	PCI/L	U	.22		NA	I *
SELENIUM, TOTAL	03/28/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/28/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/28/93	0001	UG/L		118000.		118000.	I
STRONTIUM-90	03/28/93	0001	PCI/L	U	.7		NA	I *
SULFATE	03/28/93	0001	MG/L		58.7	J	58.7	I
TETRACHLOROETHENE	03/28/93	0001	UG/L	U	0.30	U	0.30	I
	03/28/93	0001	UG/L	U	0.30		NA	C1*
	03/28/93	0001	UG/L	U	0.30	UJ	0.30	R1
TETRACHLOROMETHANE (CCL4)	03/28/93	0001	UG/L	U	1.0	U	1.0	I
	03/28/93	0001	UG/L	U	1.0		NA	C1*
	03/28/93	0001	UG/L	U	1.0	UJ	1.0	R1
THALLIUM, TOTAL	03/28/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/28/93	0001	PCI/L	U	.1		NA	I *
THORIUM-230	03/28/93	0001	PCI/L		.234		NA	I *
THORIUM-232	03/28/93	0001	PCI/L	U	.082		NA	I *
TOLUENE	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
TOTAL XYLENES	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
TOXAPHENE	03/28/93	0001	UG/L	U	5.2	UJ	5.2	I
	03/28/93	0001	UG/L	U	5.2		NA	X1*
TRICHLOROETHENE	03/28/93	0001	UG/L	U	1.2	U	1.2	I
	03/28/93	0001	UG/L	U	1.2		NA	C1*
	03/28/93	0001	UG/L	U	1.2	UJ	1.2	R1
TRICHLOROFLUOROMETHANE	03/28/93	0001	UG/L	U	2.0	U	2.0	I
	03/28/93	0001	UG/L	U	2.0		NA	C1*
	03/28/93	0001	UG/L	U	2.0	UJ	2.0	R1
TRICHLOROMETHANE (CHLOROFORM)	03/28/93	0001	UG/L	U	0.50	U	0.50	I
	03/28/93	0001	UG/L	U	0.50		NA	C1*
	03/28/93	0001	UG/L	U	0.50	UJ	0.50	R1

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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TRIFLUOROTOLUENE	03/28/93	0001	% RECOVERY		107.		NA	I *
	03/28/93	0001	% RECOVERY		106.		NA	C1*
	03/28/93	0001	% RECOVERY		76.		NA	R1*
TRITIUM	03/28/93	0001	PCI/L		2780.		NA	I *
URANIUM-234	03/28/93	0001	PCI/L		.374		NA	I *
URANIUM-235/236	03/28/93	0001	PCI/L	U	.093		NA	I *
URANIUM-238	03/28/93	0001	PCI/L		.306		NA	I *
VANADIUM, TOTAL	03/28/93	0001	UG/L		10.9	UJ	10.9	I
ZINC, TOTAL	03/28/93	0001	UG/L		19.7	UJ	19.7	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MXD01 OU1 VALIDATED DATA
LOCATION: 0379
NORTH COORDINATE: 597179.70 FT
EAST COORDINATE: 1495153.92 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	03/29/93	0001	UG/L	U	0.30	U	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	2001	UG/L	U	0.30		NA	C1*
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	R1
	04/02/93	2001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	03/29/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	2001	UG/L	U	0.30		NA	C1*
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	R1
	04/02/93	2001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	03/29/93	0001	UG/L	U	0.20	U	0.20	I
	03/29/93	0001	UG/L	U	0.20		NA	C1*
	03/29/93	0001	UG/L	U	0.20	UJ	0.20	R1
	03/30/93	2001	UG/L	U	0.20	UJ	0.20	I
	03/30/93	2001	UG/L	U	0.20		NA	C1*
	03/30/93	2001	UG/L	U	0.20	UJ	0.20	R1
	04/02/93	2001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.70	U	0.70	I
	03/29/93	0001	UG/L	U	0.70		NA	C1*
	03/29/93	0001	UG/L	U	0.70	UJ	0.70	R1
	03/30/93	2001	UG/L	U	0.70	UJ	0.70	I
	03/30/93	2001	UG/L	U	0.70		NA	C1*
	03/30/93	2001	UG/L	U	0.70	UJ	0.70	R1
	04/02/93	2001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I

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EAST COORDINATE: 1495153.92 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,2-CIS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	1.5	U	1.5	I
	03/29/93	0001	UG/L	U	1.5		NA	C1*
	03/29/93	0001	UG/L	U	1.5	UJ	1.5	R1
	03/30/93	2001	UG/L	U	1.5	UJ	1.5	I
	03/30/93	2001	UG/L	U	1.5		NA	C1*
	03/30/93	2001	UG/L	U	1.5	UJ	1.5	R1
	04/02/93	2001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	03/29/93	0001	UG/L	U	0.30	U	0.30	I
	03/29/93	0001	UG/L	U	0.30		NA	C1*
	03/29/93	0001	UG/L	U	0.30	UJ	0.30	R1
	03/30/93	2001	UG/L		0.54	J	0.54	I
	03/30/93	2001	UG/L		1.3		NA	C1*
	03/30/93	2001	UG/L		0.42	J	1.3	R1
	04/02/93	2001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	03/29/93	0001	% RECOVERY		66.		66.	I
1,2-DICHLOROPROPANE	03/29/93	0001	UG/L	U	0.40	U	0.40	I
	03/29/93	0001	UG/L	U	0.40		NA	C1*
	03/29/93	0001	UG/L	U	0.40	UJ	0.40	R1
	03/30/93	2001	UG/L	U	0.40	UJ	0.40	I
	03/30/93	2001	UG/L	U	0.40		NA	C1*
	03/30/93	2001	UG/L	U	0.40	UJ	0.40	R1
	04/02/93	2001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1
	03/30/93	2001	UG/L	U	3.4	UJ	3.4	I
	03/30/93	2001	UG/L	U	3.4		NA	C1*
	03/30/93	2001	UG/L	U	3.4	UJ	3.4	R1
	04/02/93	2001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	3.2	U	3.2	I
	03/29/93	0001	UG/L	U	3.2		NA	C1*
	03/29/93	0001	UG/L	U	3.2	UJ	3.2	R1
	03/30/93	2001	UG/L	U	3.2	UJ	3.2	I

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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-DICHLOROBENZENE	03/30/93	2001	UG/L	U	3.2		NA	C1*
	03/30/93	2001	UG/L	U	3.2	UJ	3.2	R1
	04/02/93	2001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	03/29/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/29/93	0001	UG/L	U	3.4		NA	C1*
	03/29/93	0001	UG/L	U	3.4	UJ	3.4	R1
	03/30/93	2001	UG/L	U	3.4	UJ	3.4	I
	03/30/93	2001	UG/L	U	3.4		NA	C1*
	03/30/93	2001	UG/L	U	3.4	UJ	3.4	R1
	04/02/93	2001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.4	U	2.4	I
	03/29/93	0001	UG/L	U	2.4		NA	C1*
	03/29/93	0001	UG/L	U	2.4	UJ	2.4	R1
	03/30/93	2001	UG/L	U	2.4	UJ	2.4	I
	03/30/93	2001	UG/L	U	2.4		NA	C1*
	03/30/93	2001	UG/L	U	2.4	UJ	2.4	R1
	04/02/93	2001	UG/L	U	2.4	UJ	2.4	I
1-CHLOROHEXANE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	03/29/93	0001	UG/L	U	10.	U	10.	I
	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
2,4,5-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/29/93	0001	% RECOVERY		96.		NA	I *
2,4,6-TRICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	03/29/93	0001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2,6-DINITROTOLUENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	03/29/93	0001	UG/L	U	1.3	U	1.3	I
	03/29/93	0001	UG/L	U	1.3		NA	C1*

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PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2-CHLOROETHYLVINYLETHER	03/29/93	0001	UG/L	U	1.3	UJ	1.3	R1
	03/30/93	2001	UG/L	U	1.3	UJ	1.3	I
	03/30/93	2001	UG/L	U	1.3		NA	C1*
	03/30/93	2001	UG/L	U	1.3	UJ	1.3	R1
	04/02/93	2001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	03/29/93	0001	% RECOVERY		91.		NA	I *
2-CHLOROTOLUENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	03/29/93	0001	% RECOVERY		79.		NA	I *
2-FLUOROPHENOL	03/29/93	0001	% RECOVERY		89.		NA	I *
2-METHYLNAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	03/29/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/29/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/29/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	03/29/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0379
NORTH COORDINATE: 597179.70 FT
EAST COORDINATE: 1495153.92 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
4-NITROANILINE	03/29/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ALDRIN	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/29/93	0001	UG/L		24.3		24.3	I
ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	03/29/93	0001	UG/L	U	2.0	U	2.0	I
AROCLOR-1016	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	03/29/93	0001	UG/L		157.		157.	I
BENZENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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BENZO(A)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	03/29/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	03/29/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	03/29/93	0001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	03/29/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/29/93	0001	UG/L	B	23.	J	23.	I
BISMUTH-207	03/29/93	0001	PCI/L	U	9.3		NA	I *
BISMUTH-210	03/29/93	0001	PCI/L	U	13.		NA	I *
BROMOBENZENE	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	03/29/93	0001	% RECOVERY		60.		NA	I *
	03/29/93	0001	% RECOVERY		93.		NA	C1*
	03/29/93	0001	% RECOVERY		117.		NA	R1*
	03/30/93	2001	% RECOVERY		125.		NA	I *
	03/30/93	2001	% RECOVERY		88.		NA	C1*
	03/30/93	2001	% RECOVERY		68.		NA	R1*
	04/02/93	2001	% RECOVERY		106.		NA	I *
BROMODICHLOROMETHANE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*

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REPORT DATE: 02/28/94

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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BROMOFORM	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	03/29/93	0001	UG/L		151000.		151000.	I
CARBAZOLE	03/29/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	03/29/93	0001	PCI/L	U	11.		NA	I *
CHLORIDE	03/29/93	0001	MG/L		409.		409.	I
CHLOROBENZENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	03/29/93	0001	UG/L	U	1.8	U	1.8	I
	03/29/93	0001	UG/L	U	1.8		NA	C1*
	03/29/93	0001	UG/L	U	1.8	UJ	1.8	R1
	03/30/93	2001	UG/L	U	1.8	UJ	1.8	I
	03/30/93	2001	UG/L	U	1.8		NA	C1*
	03/30/93	2001	UG/L	U	1.8	UJ	1.8	R1
	04/02/93	2001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	03/29/93	0001	UG/L		38.4		38.4	I
CHRYSENE	03/29/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	03/29/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/29/93	0001	PCI/L	U	15.		NA	I *
COPPER, TOTAL	03/29/93	0001	UG/L		3.8	UJ	3.8	I
DECACHLOROBIPHENYL	03/29/93	0001	% RECOVERY		70.		NA	I *
	03/29/93	0001	% RECOVERY		70.		NA	X1*
DELTA-BHC	03/29/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DI-N-OCTYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DIBENZO(A,H)ANTHRACENE	03/29/93	0001	UG/L	U	10.	U	10.	I
DIBENZOFURAN	03/29/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	03/29/93	0001	UG/L	U	0.90	U	0.90	I

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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DIBROMOCHLOROMETHANE	03/29/93	0001	UG/L	U	0.90		NA	C1*
	03/29/93	0001	UG/L	U	0.90	UJ	0.90	R1
	03/30/93	2001	UG/L	U	0.90	UJ	0.90	I
	03/30/93	2001	UG/L	U	0.90		NA	C1*
	03/30/93	2001	UG/L	U	0.90	UJ	0.90	R1
	04/02/93	2001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
DIBUTYLCHLORENDATE	03/29/93	0001	% RECOVERY		80.		NA	I *
	03/29/93	0001	% RECOVERY		85.		NA	X1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/29/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/29/93	0001	UG/L	U	4.0		NA	C1*
	03/29/93	0001	UG/L	U	4.0	UJ	4.0	R1
	03/30/93	2001	UG/L	U	4.0	UJ	4.0	I
	03/30/93	2001	UG/L	U	4.0		NA	C1*
	03/30/93	2001	UG/L	U	4.0	UJ	4.0	R1
	04/02/93	2001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	03/29/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/29/93	0001	UG/L		0.10		NA	I
	03/29/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/29/93	0001	UG/L	U	0.10	U	0.10	I
	03/29/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/29/93	0001	UG/L	U	1.0	U	1.0	I
	03/29/93	0001	UG/L	U	1.0		NA	C1*
	03/29/93	0001	UG/L	U	1.0	UJ	1.0	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*

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ETHYLBENZENE	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	03/29/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	03/29/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/29/93	0001	UG/L	U	0.050	U	0.050	I
	03/29/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROCYCLOPENTADIENE	03/29/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	03/29/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	03/29/93	0001	UG/L		570.		570.	I
ISOPHORONE	03/29/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	03/29/93	0001	UG/L		3.3		3.3	I
MAGNESIUM, TOTAL	03/29/93	0001	UG/L		59100.		59100.	I
MANGANESE, TOTAL	03/29/93	0001	UG/L		22.3		22.3	I
MERCURY, TOTAL	03/29/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	03/29/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	03/29/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	03/29/93	0001	UG/L		30.8	J	30.8	I
NITRATE NITRITE	03/29/93	0001	MG/L		0.076	J	0.076	I
	03/29/93	A001	% RECOVERY		100.		NA	I *
	03/29/93	B001	% RECOVERY		110.		NA	I *
	03/29/93	C001	%DIFFRENCE		29.2		NA	I *

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NITROBENZENE	03/29/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	03/29/93	0001	% RECOVERY		86.		NA	I *
P-TERPHENYL-d14	03/29/93	0001	% RECOVERY		100.		NA	I *
PENTACHLOROPHENOL	03/29/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
PHENOL	03/29/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	03/29/93	0001	% RECOVERY		78.		NA	I *
PLUTONIUM-238	03/29/93	0001	PCI/L	U	.029		NA	I *
PLUTONIUM-239/240	03/29/93	0001	PCI/L		.0848		NA	I *
POTASSIUM, TOTAL	03/29/93	0001	UG/L		4420.		4420.	I
POTASSIUM-40	03/29/93	0001	PCI/L	U	230.		NA	I *
PYRENE	03/29/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	03/29/93	0001	PCI/L	U	.19		NA	I *
SELENIUM, TOTAL	03/29/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/29/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/29/93	0001	UG/L		129000.		129000.	I
STRONTIUM-90	03/29/93	0001	PCI/L	U	.67		NA	I *
SULFATE	03/29/93	0001	MG/L		64.3	J	64.3	I
TETRACHLOROETHENE	03/29/93	0001	UG/L		2.7		2.7	I
	03/29/93	0001	UG/L		4.8	J	4.8	C1
	03/29/93	0001	UG/L		2.9	J	2.9	R1
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	I
	03/30/93	2001	UG/L	U	0.30		NA	C1*
	03/30/93	2001	UG/L	U	0.30	UJ	0.30	R1
	04/02/93	2001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	03/29/93	0001	UG/L		3.4		3.4	I
	03/29/93	0001	UG/L		4.6	J	4.6	C1
	03/29/93	0001	UG/L		3.7	J	3.7	R1
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	I
	03/30/93	2001	UG/L	U	1.0		NA	C1*
	03/30/93	2001	UG/L	U	1.0	UJ	1.0	R1
	04/02/93	2001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	03/29/93	0001	UG/L	U	50.0	UJ	50.0	I
THORIUM-228	03/29/93	0001	PCI/L	U	.17		NA	I *
THORIUM-230	03/29/93	0001	PCI/L	U	.18		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0379
NORTH COORDINATE: 597179.70 FT
EAST COORDINATE: 1495153.92 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
THORIUM-232	03/29/93	0001	PCI/L	U	.11		NA	I *
TOLUENE	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	03/29/93	0001	UG/L	U	5.0	U	5.0	I
	03/29/93	0001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	03/29/93	0001	UG/L		2.8		2.8	I
	03/29/93	0001	UG/L		2.2		NA	C1*
	03/29/93	0001	UG/L		2.8	J	2.8	R1
	03/30/93	2001	UG/L	U	1.2	UJ	1.2	I
	03/30/93	2001	UG/L	U	1.2		NA	C1*
	03/30/93	2001	UG/L	U	1.2	UJ	1.2	R1
	04/02/93	2001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	03/29/93	0001	UG/L	U	2.0	U	2.0	I
	03/29/93	0001	UG/L	U	2.0		NA	C1*
	03/29/93	0001	UG/L	U	2.0	UJ	2.0	R1
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	I
	03/30/93	2001	UG/L	U	2.0		NA	C1*
	03/30/93	2001	UG/L	U	2.0	UJ	2.0	R1
	04/02/93	2001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	03/29/93	0001	UG/L	U	0.50	U	0.50	I
	03/29/93	0001	UG/L	U	0.50		NA	C1*
	03/29/93	0001	UG/L	U	0.50	UJ	0.50	R1
	03/30/93	2001	UG/L	U	0.50	UJ	0.50	I
	03/30/93	2001	UG/L	U	0.50		NA	C1*
	03/30/93	2001	UG/L	U	0.50	UJ	0.50	R1
	04/02/93	2001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	03/29/93	0001	% RECOVERY		101.		NA	I *
	03/29/93	0001	% RECOVERY		102.		NA	C1*
	03/29/93	0001	% RECOVERY		82.		NA	R1*
	03/30/93	2001	% RECOVERY		92.		NA	I *
	03/30/93	2001	% RECOVERY		93.		NA	C1*
	03/30/93	2001	% RECOVERY	*	52.		NA	R1*
	04/02/93	2001	% RECOVERY		83.		NA	I *
TRITIUM	03/29/93	0001	PCI/L		6890.		NA	I *
URANIUM-234	03/29/93	0001	PCI/L		.503		NA	I *

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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
URANIUM-235/236	03/29/93	0001	PCI/L	U	.085		NA	I *
URANIUM-238	03/29/93	0001	PCI/L		.372		NA	I *
VANADIUM, TOTAL	03/29/93	0001	UG/L		18.0	UJ	18.0	I
ZINC, TOTAL	03/29/93	0001	UG/L		17.4	UJ	17.4	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
1,2-CIS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	10. 1.5	UJ UJ	10. 1.5	I I
1,2-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	03/31/93	0001	% RECOVERY		60.	J	60.	I
1,2-DICHLOROPROPANE	03/31/93	0001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	10. 3.2	UJ UJ	10. 3.2	I I
1,3-TRANS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	10. 2.4	UJ UJ	10. 2.4	I I
1-CHLOROHEXANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	10. 2.0	UJ UJ	10. 2.0	I I
2,4,5-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
2,4,6-TRIBROMOPHENOL	03/31/93	0001	% RECOVERY		69.		NA	I *
2,4,6-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2,4-DICHLOROPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2,4-DIMETHYLPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2,4-DINITROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
2,4-DINITROTOLUENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,6-DINITROTOLUENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2-CHLOROETHYLVINYLETHER	03/31/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2-CHLOROPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2-CHLOROPHENOL-d4	03/31/93	0001	% RECOVERY		61.		NA	I *
2-CHLOROTOLUENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	03/31/93	0001	% RECOVERY		65.		NA	I *
2-FLUOROPHENOL	03/31/93	0001	% RECOVERY		64.		NA	I *
2-METHYLNAPHTHALENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2-METHYLPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
2-NITROANILINE	03/31/93	0001	UG/L	U	26.	UJ	26.	I
2-NITROPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
3,3'-DICHLOROBENZIDINE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
3-NITROANILINE	03/31/93	0001	UG/L	U	26.	UJ	26.	I
4,4'-DDD	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/31/93	0001	UG/L	U	10.	UJ	10.	I
4-CHLORO-3-METHYLPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
4-CHLOROANILINE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
4-CHLOROPHENYL-PHENYLETHER	03/31/93	0001	UG/L	U	10.	UJ	10.	I
4-METHYLPHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
4-NITROANILINE	03/31/93	0001	UG/L	U	26.	UJ	26.	I
4-NITROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
ACENAPHTHENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
ACENAPHTHYLENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ALDRIN	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/31/93	0001	UG/L		280.	J	280.	I
ANTHRACENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
ANTIMONY, TOTAL	03/31/93	0001	UG/L	U	20.0	UJ	20.0	I
AROCLOR-1016	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
BARIUM, TOTAL	03/31/93	0001	UG/L		62.3	J	62.3	I
BENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BENZO(A)PYRENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BENZO(B)FLUORANTHENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BENZO(G,H,I)PERYLENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BENZO(K)FLUORANTHENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BENZOIC ACID	03/31/93	0001	UG/L	U	51.	UJ	51.	I
BENZYL ALCOHOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BERYLLIUM, TOTAL	03/31/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BETA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BIS(2-CHLOROETHYL)ETHER	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
BISMUTH-207	03/31/93	0001	PCI/L	U	10.		NA	I *
BISMUTH-210	03/31/93	0001	PCI/L	U	13.		NA	I *
BROMOBENZENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	03/31/93	0001	% RECOVERY		115.		NA	I *
BROMODICHLOROMETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
CADMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
CALCIUM, TOTAL	03/31/93	0001	UG/L		34700.		34700.	I
CARBAZOLE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
CESIUM-137	03/31/93	0001	PCI/L	U	13.		NA	I *
CHLORIDE	03/31/93	0001	MG/L		807.		807.	I
CHLOROBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	03/31/93	0001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	03/31/93	0001	UG/L		4.9	J	4.9	I
CHRYSENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
COBALT, TOTAL	03/31/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/31/93	0001	PCI/L	U	13.		NA	I *
COPPER, TOTAL	03/31/93	0001	UG/L		4.7		4.7	I
DECACHLOROBIPHENYL	03/31/93	0001	% RECOVERY		70.		NA	I *
	03/31/93	0001	% RECOVERY		65.		NA	X1*
DELTA-BHC	03/31/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/31/93	0001	UG/L	JB	1.	UJ	10.	I
DI-N-OCTYL PHTHALATE	03/31/93	0001	UG/L	U	10.	UJ	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZO(A,H)ANTHRACENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
DIBENZOFURAN	03/31/93	0001	UG/L	U	10.	UJ	10.	I
DIBROMOCHLOROMETHANE	03/31/93	0001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	03/31/93	0001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
DIMETHYL PHTHALATE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
ENDOSULFAN I(ALPHA)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/31/93	0001	UG/L	B	0.12		NA	I *
	03/31/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
FLUORENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
GAMMA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
HEXACHLOROBUTADIENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEXACHLOROCYCLOPENTADIENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
HEXACHLOROETHANE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
INDENO(1,2,3-CD)PYRENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
IRON, TOTAL	03/31/93	0001	UG/L		621.		621.	I
ISOPHORONE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
LEAD, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
MAGNESIUM, TOTAL	03/31/93	0001	UG/L		18600.		18600.	I
MANGANESE, TOTAL	03/31/93	0001	UG/L		27.5		27.5	I
MERCURY, TOTAL	03/31/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
N-NITROSODIPHENYLAMINE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
NAPHTHALENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
NICKEL, TOTAL	03/31/93	0001	UG/L		8.3		8.3	I
NITRATE NITRITE	03/31/93	0001	MG/L		0.046		0.046	I
NITROBENZENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
NITROBENZENE-D5	03/31/93	0001	% RECOVERY		64.		NA	I *
P-TERPHENYL-d14	03/31/93	0001	% RECOVERY		71.		NA	I *
PENTACHLOROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
PHENANTHRENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
PHENOL	03/31/93	0001	UG/L	U	10.	UJ	10.	I
PHENOL-d5	03/31/93	0001	% RECOVERY		65.		NA	I *
PLUTONIUM-238	03/31/93	0001	PCI/L	U	.029		NA	I *
PLUTONIUM-239/240	03/31/93	0001	PCI/L		.151		NA	I *
POTASSIUM, TOTAL	03/31/93	0001	UG/L		30700.		30700.	I
POTASSIUM-40	03/31/93	0001	PCI/L	U	240.		NA	I *
PYRENE	03/31/93	0001	UG/L	U	10.	UJ	10.	I
RADIUM-226	03/31/93	0001	PCI/L		1.33		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0380
NORTH COORDINATE: 597109.65 FT
EAST COORDINATE: 1495394.52 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
SELENIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/31/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/31/93	0001	UG/L		648000.		648000.	I
STRONTIUM-90	03/31/93	0001	PCI/L	U	.69		NA	I *
SULFATE	03/31/93	0001	MG/L		9.5	J	9.5	I
TETRACHLORO-M-XYLENE	03/31/93 03/31/93	0001 0001	% RECOVERY % RECOVERY		85. 85.		85. NA	I X1*
TETRACHLOROETHENE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	03/31/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/31/93	0001	PCI/L	U	.072		NA	I *
THORIUM-230	03/31/93	0001	PCI/L		.0921		NA	I *
THORIUM-232	03/31/93	0001	PCI/L	U	.11		NA	I *
TOLUENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	03/31/93 03/31/93	0001 0001	UG/L UG/L	U U	5.0 5.0	U	5.0 NA	I X1*
TRICHLOROETHENE	03/31/93	0001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	03/31/93	0001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	03/31/93	0001	% RECOVERY		82.		NA	I *
TRITIUM	03/31/93	0001	PCI/L		421.		NA	I *
URANIUM-234	03/31/93	0001	PCI/L	U	.12		NA	I *
URANIUM-235/236	03/31/93	0001	PCI/L	U	.035		NA	I *
URANIUM-238	03/31/93	0001	PCI/L	U	.059		NA	I *
VANADIUM, TOTAL	03/31/93	0001	UG/L		10.3	UJ	10.3	I
ZINC, TOTAL	03/31/93	0001	UG/L		28.2	UJ	28.2	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
1,1,1-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	U	0.30	I
1,1,2,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.20	U	0.20	I
1,1-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.70	U	0.70	I
1,1-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
1,2,3-TRICHLOROPROPANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-CIS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
1,2-DICHLOROBENZENE	04/01/93	0001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	U	0.30	I
1,2-DICHLOROPROPANE	04/01/93	0001	UG/L	U	0.40	U	0.40	I
1,2-TRANS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
1,3-CIS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	U	3.4	I
1,3-DICHLOROBENZENE	04/01/93	0001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	04/01/93	0001	UG/L	U	2.4	U	2.4	I
1-CHLOROHEXANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
2-CHLOROETHYLVINYLETHER	04/01/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLOROTOLUENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
ALUMINUM, TOTAL	04/01/93	0001	UG/L		2420.		2420.	I
ANTIMONY, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
ARSENIC, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	04/01/93	0001	UG/L		98.8		98.8	I
BENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
BERYLLIUM, TOTAL	04/01/93	0001	UG/L	U	1.0	U	1.0	I
BROMOBENZENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	04/01/93	0001	% RECOVERY		116.		NA	I *
BROMODICHLOROMETHANE	04/01/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BROMOFORM	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
CADMIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	04/01/93	0001	UG/L		109000.		109000.	I
CHLORIDE	04/01/93	0001	MG/L		582.		582.	I
CHLOROBENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	04/01/93	0001	UG/L	U	1.8	U	1.8	I
CHROMIUM, TOTAL	04/01/93	0001	UG/L		16.1	UJ	16.1	I
COBALT, TOTAL	04/01/93	0001	UG/L		6.4		6.4	I
COPPER, TOTAL	04/01/93	0001	UG/L		5.7	J	5.7	I
DIBROMOCHLOROMETHANE	04/01/93	0001	UG/L	U	0.90	U	0.90	I
DIBROMOMETHANE	04/01/93	0001	UG/L	U	2.0	U	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	04/01/93	0001	UG/L	U	4.0	U	4.0	I
ETHYLBENZENE	04/01/93	0001	UG/L	U	1.0	U	1.0	I
IRON, TOTAL	04/01/93	0001	UG/L		4980.		4980.	I
LEAD, TOTAL	04/01/93	0001	UG/L		2.5		2.5	I
MAGNESIUM, TOTAL	04/01/93	0001	UG/L		50100.		50100.	I
MANGANESE, TOTAL	04/01/93	0001	UG/L		255.		255.	I
MERCURY, TOTAL	04/01/93	0001	UG/L	U	0.10	U	0.10	I
NICKEL, TOTAL	04/01/93	0001	UG/L		204.		204.	I
NITRATE NITRITE	04/01/93	0001	MG/L		2.2		2.2	I
POTASSIUM, TOTAL	04/01/93	0001	UG/L		27800.		27800.	I
SELENIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	04/01/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	04/01/93	0001	UG/L		347000.		347000.	I
SULFATE	04/01/93	0001	MG/L		301.	J	301.	I
TETRACHLOROETHENE	04/01/93	0001	UG/L	U	0.30	U	0.30	I
TETRACHLOROMETHANE (CCL4)	04/01/93	0001	UG/L	U	1.0	U	1.0	I
THALLIUM, TOTAL	04/01/93	0001	UG/L	U	5.0	UJ	5.0	I
TOLUENE	04/01/93	0001	UG/L	U	2.0	U	2.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0381
NORTH COORDINATE: 596982.13 FT
EAST COORDINATE: 1495399.69 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TOTAL XYLENES	04/01/93	0001	UG/L	U	2.0	U	2.0	I
TRICHLOROETHENE	04/01/93	0001	UG/L	U	1.2	U	1.2	I
TRICHLOROFLUOROMETHANE	04/01/93	0001	UG/L	U	2.0	U	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	04/01/93	0001	UG/L	U	0.50	U	0.50	I
TRIFLUOROTOLUENE	04/01/93	0001	% RECOVERY		104.		NA	I *
TRITIUM	04/01/93	0001	PCI/L		717.		NA	I *
VANADIUM, TOTAL	04/01/93	0001	UG/L		13.7	UJ	13.7	I
ZINC, TOTAL	04/01/93	0001	UG/L		96.3	J	96.3	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	04/01/93	0001	% RECOVERY		60.		60.	I
1,2-DICHLOROPROPANE	04/01/93	0001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.4	UJ	2.4	I
1-CHLOROHEXANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
2,4,5-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	04/01/93	0001	% RECOVERY		68.		NA	I *
2,4,6-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,6-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	04/01/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	04/01/93	0001	% RECOVERY		58.		NA	I *
2-CHLOROTOLUENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	04/01/93	0001	% RECOVERY		62.		NA	I *
2-FLUOROPHENOL	04/01/93	0001	% RECOVERY		51.		NA	I *
2-METHYLNAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	04/01/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	04/01/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
4-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ALDRIN	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	04/01/93	0001	UG/L		0.061		0.061	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	04/01/93	0001	UG/L		415.		415.	I
ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	04/01/93	0001	UG/L		282.		282.	I
BENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	04/01/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	04/01/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	04/01/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BETA-BHC	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	04/01/93	0001	UG/L	JB	0.6	UJ	10.	I
BISMUTH-207	04/01/93	0001	PCI/L	U	9.5		NA	I *
BISMUTH-210	04/01/93	0001	PCI/L	U	12.		NA	I *
BROMOBENZENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	04/01/93	0001	% RECOVERY		104.		NA	I *
BROMODICHLOROMETHANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	04/01/93	0001	UG/L		87300.		87300.	I
CARBAZOLE	04/01/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	04/01/93	0001	PCI/L	U	12.		NA	I *
CHLORIDE	04/01/93	0001	MG/L		519.		519.	I
CHLOROBENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	04/01/93	0001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	04/01/93	0001	UG/L		3.0	UJ	3.0	I
CHRYSENE	04/01/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	04/01/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	04/01/93	0001	PCI/L	U	18.		NA	I *
COPPER, TOTAL	04/01/93	0001	UG/L		6.3	J	6.3	I
DECACHLOROBIPHENYL	04/01/93	0001	% RECOVERY		80.		NA	I *
	04/01/93	0001	% RECOVERY		75.		NA	X1*
DELTA-BHC	04/01/93	0001	UG/L	U	0.050	UJ	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	04/01/93	0001	UG/L	JB	1.	UJ	10.	I
DI-N-OCTYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZO(A,H)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
DIBENZOFURAN	04/01/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	04/01/93	0001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	04/01/93	0001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	04/01/93	0001	UG/L	B	2.2		NA	I *
	04/01/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	04/01/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEXACHLOROCYCLOPENTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	04/01/93	0001	UG/L		1120.		1120.	I
ISOPHORONE	04/01/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	04/01/93	0001	UG/L	U	2.0	U	2.0	I
MAGNESIUM, TOTAL	04/01/93	0001	UG/L		52100.		52100.	I
MANGANESE, TOTAL	04/01/93	0001	UG/L		51.1		51.1	I
MERCURY, TOTAL	04/01/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	0.50 0.50	U	0.50 NA	I X1*
N-NITROSO-DI-N-PROPYLAMINE	04/01/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	04/01/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	04/01/93	0001	UG/L	U	8.0	UJ	8.0	I
NITRATE NITRITE	04/01/93	0001	MG/L	U	0.020	U	0.020	I
NITROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	04/01/93	0001	% RECOVERY		56.		NA	I *
P-TERPHENYL-d14	04/01/93	0001	% RECOVERY		112.		NA	I *
PENTACHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
PHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	04/01/93	0001	% RECOVERY		59.		NA	I *
PLUTONIUM-238	04/01/93	0001	PCI/L	U	.032		NA	I *
PLUTONIUM-239/240	04/01/93	0001	PCI/L		.117		NA	I *
POTASSIUM, TOTAL	04/01/93	0001	UG/L		25000.		25000.	I
POTASSIUM-40	04/01/93	0001	PCI/L	U	220.		NA	I *
PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	04/01/93	0001	PCI/L		2.35		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0382
NORTH COORDINATE: 596601.67 FT
EAST COORDINATE: 1495444.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
SELENIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	04/01/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	04/01/93	0001	UG/L		268000.		268000.	I
STRONTIUM-90	04/01/93	0001	PCI/L	U	.67		NA	I *
SULFATE	04/01/93	0001	MG/L		11.6	J	11.6	I
TETRACHLORO-M-XYLENE	04/01/93 04/01/93	0001 0001	% RECOVERY % RECOVERY		95. 100.		95. NA	I X1*
TETRACHLOROETHENE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	04/01/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	04/01/93	0001	PCI/L	U	.089		NA	I *
THORIUM-230	04/01/93	0001	PCI/L		.101		NA	I *
THORIUM-232	04/01/93	0001	PCI/L	U	.055		NA	I *
TOLUENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	5.0 5.0	U	5.0 NA	I X1*
TRICHLOROETHENE	04/01/93	0001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	04/01/93	0001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	04/01/93	0001	% RECOVERY		83.		NA	I *
TRITIUM	04/01/93	0001	PCI/L		609.		NA	I *
URANIUM-234	04/01/93	0001	PCI/L		.335		NA	I *
URANIUM-235/236	04/01/93	0001	PCI/L	U	.094		NA	I *
URANIUM-238	04/01/93	0001	PCI/L	U	.067		NA	I *
VANADIUM, TOTAL	04/01/93	0001	UG/L		10.3	UJ	10.3	I
ZINC, TOTAL	04/01/93	0001	UG/L		34.0	UJ	34.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	04/01/93	0001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	04/01/93	0001	% RECOVERY		65.		65.	I
1,2-DICHLOROPROPANE	04/01/93	0001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	04/01/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.4	UJ	2.4	I
1-CHLOROHEXANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	04/01/93	0001	UG/L	U	10.	U	10.	I
	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
2,4,5-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	04/01/93	0001	% RECOVERY		67.		NA	I *
2,4,6-TRICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,6-DINITROTOLUENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	04/01/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	04/01/93	0001	% RECOVERY		61.		NA	I *
2-CHLOROTOLUENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	04/01/93	0001	% RECOVERY		67.		NA	I *
2-FLUOROPHENOL	04/01/93	0001	% RECOVERY		54.		NA	I *
2-METHYLNAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	04/01/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	04/01/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	04/01/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	04/01/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
4-NITROANILINE	04/01/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MWD01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ALDRIN	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	04/01/93	0001	UG/L		93.8		93.8	I
ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	04/01/93	0001	UG/L	U	0.50	U	0.50	I
	04/01/93	0001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	04/01/93	0001	UG/L		108.		108.	I
BENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	04/01/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	04/01/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	04/01/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BETA-BHC	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	0.050 0.050	U	0.050 NA	I X1*
BIS(2-CHLOROETHOXY)METHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	04/01/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	04/01/93	0001	UG/L	JB	0.8	UJ	10.	I
BISMUTH-207	04/01/93	0001	PCI/L	U	8.2		NA	I *
BISMUTH-210	04/01/93	0001	PCI/L	U	12.		NA	I *
BROMOBENZENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	04/01/93	0001	% RECOVERY		109.		NA	I *
BROMODICHLOROMETHANE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	04/01/93	0001	UG/L		69500.		69500.	I
CARBAZOLE	04/01/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	04/01/93	0001	PCI/L	U	11.		NA	I *
CHLORIDE	04/01/93	0001	MG/L		231.		231.	I
CHLOROBENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	04/01/93	0001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	04/01/93	0001	UG/L		9.3	UJ	9.3	I
CHRYSENE	04/01/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	04/01/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	04/01/93	0001	PCI/L	U	12.		NA	I *
COPPER, TOTAL	04/01/93	0001	UG/L		5.7	UJ	5.7	I
DECACHLOROBIPHENYL	04/01/93 04/01/93	0001 0001	% RECOVERY % RECOVERY		75. 70.		NA NA	I * X1*
DELTA-BHC	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	0.050 0.050	UJ	0.050 NA	I X1*
DI-N-BUTYL PHTHALATE	04/01/93	0001	UG/L	JB	0.8	UJ	10.	I
DI-N-OCTYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZO(A,H)ANTHRACENE	04/01/93	0001	UG/L	U	10.	U	10.	I
DIBENZOFURAN	04/01/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	04/01/93	0001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	04/01/93	0001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	04/01/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	04/01/93	0001	UG/L	U	0.10	U	0.10	I
	04/01/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	04/01/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	04/01/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	04/01/93	0001	UG/L	U	0.050	U	0.050	I
	04/01/93	0001	UG/L	U	0.050		NA	X1*
HEXACHLOROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEXACHLOROCYCLOPENTADIENE	04/01/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	04/01/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	04/01/93	0001	UG/L		365.		365.	I
ISOPHORONE	04/01/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	04/01/93	0001	UG/L	U	2.0	U	2.0	I
MAGNESIUM, TOTAL	04/01/93	0001	UG/L		35400.		35400.	I
MANGANESE, TOTAL	04/01/93	0001	UG/L		39.6		39.6	I
MERCURY, TOTAL	04/01/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	0.50 0.50	U	0.50 NA	I X1*
N-NITROSO-DI-N-PROPYLAMINE	04/01/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	04/01/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	04/01/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	04/01/93	0001	UG/L		11.5	J	11.5	I
NITRATE NITRITE	04/01/93	0001	MG/L		0.18		0.18	I
NITROBENZENE	04/01/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	04/01/93	0001	% RECOVERY		60.		NA	I *
P-TERPHENYL-d14	04/01/93	0001	% RECOVERY		108.		NA	I *
PENTACHLOROPHENOL	04/01/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
PHENOL	04/01/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	04/01/93	0001	% RECOVERY		61.		NA	I *
PLUTONIUM-238	04/01/93	0001	PCI/L	U	.027		NA	I *
PLUTONIUM-239/240	04/01/93	0001	PCI/L		.131		NA	I *
POTASSIUM, TOTAL	04/01/93	0001	UG/L		20400.		20400.	I
POTASSIUM-40	04/01/93	0001	PCI/L	U	190.		NA	I *
PYRENE	04/01/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	04/01/93	0001	PCI/L		.762		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0393
NORTH COORDINATE: 596694.53 FT
EAST COORDINATE: 1495024.89 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
SELENIUM, TOTAL	04/01/93	0001	UG/L	U	2.0	U	2.0	I
SILVER, TOTAL	04/01/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	04/01/93	0001	UG/L		114000.		114000.	I
STRONTIUM-90	04/01/93	0001	PCI/L	U	.69		NA	I *
SULFATE	04/01/93	0001	MG/L		39.3	J	39.3	I
TETRACHLORO-M-XYLENE	04/01/93 04/01/93	0001 0001	% RECOVERY % RECOVERY		95. 100.		95. NA	I X1*
TETRACHLOROETHENE	04/01/93	0001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	04/01/93	0001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	04/01/93	0001	UG/L	U	50.0	UJ	50.0	I
THORIUM-228	04/01/93	0001	PCI/L	U	.14		NA	I *
THORIUM-230	04/01/93	0001	PCI/L		.16		NA	I *
THORIUM-232	04/01/93	0001	PCI/L	U	.096		NA	I *
TOLUENE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	04/01/93 04/01/93	0001 0001	UG/L UG/L	U U	5.0 5.0	U	5.0 NA	I X1*
TRICHLOROETHENE	04/01/93	0001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	04/01/93	0001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	04/01/93	0001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	04/01/93	0001	% RECOVERY		85.		NA	I *
TRITIUM	04/01/93	0001	PCI/L		4980.		NA	I *
URANIUM-234	04/01/93	0001	PCI/L		.731		NA	I *
URANIUM-235/236	04/01/93	0001	PCI/L	U	.084		NA	I *
URANIUM-238	04/01/93	0001	PCI/L		.343		NA	I *
VANADIUM, TOTAL	04/01/93	0001	UG/L		10.4	UJ	10.4	I
ZINC, TOTAL	04/01/93	0001	UG/L		55.6	UJ	55.6	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
1,1,1-TRICHLOROETHANE	04/02/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2,2-TETRACHLOROETHANE	04/02/93	0001	UG/L	U	0.30	UJ	0.30	I
1,1,2-TRICHLOROETHANE	04/02/93	0001	UG/L	U	0.20	UJ	0.20	I
1,1-DICHLOROETHANE	04/02/93	0001	UG/L	U	0.70	UJ	0.70	I
1,1-DICHLOROETHENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,3-TRICHLOROPROPANE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2,4-TRICHLOROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
1,2-CIS-DICHLOROETHENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
1,2-DICHLOROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
	04/02/93	0001	UG/L	U	1.5	UJ	1.5	I
1,2-DICHLOROETHANE	04/02/93	0001	UG/L	U	0.30	UJ	0.30	I
1,2-DICHLOROETHENE-d4	04/02/93	0001	% RECOVERY		76.		76.	I
1,2-DICHLOROPROPANE	04/02/93	0001	UG/L	U	0.40	UJ	0.40	I
1,2-TRANS-DICHLOROETHENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
1,3-CIS-DICHLOROPROPENE	04/02/93	0001	UG/L	U	3.4	UJ	3.4	I
1,3-DICHLOROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
	04/02/93	0001	UG/L	U	3.2	UJ	3.2	I
1,3-TRANS-DICHLOROPROPENE	04/02/93	0001	UG/L	U	3.4	UJ	3.4	I
1,4-DICHLOROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
	04/02/93	0001	UG/L	U	2.4	UJ	2.4	I
1-CHLOROHEXANE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
2,2'-OXYBIS (1-CHLOROPROPANE)	04/02/93	0001	UG/L	U	10.	U	10.	I
	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
2,4,5-TRICHLOROPHENOL	04/02/93	0001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	04/02/93	0001	% RECOVERY		80.		NA	I
2,4,6-TRICHLOROPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
2,4-DICHLOROPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
2,4-DIMETHYLPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
2,4-DINITROPHENOL	04/02/93	0001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	04/02/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2,6-DINITROTOLUENE	04/02/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROETHYLVINYLETHER	04/02/93	0001	UG/L	U	1.3	UJ	1.3	I
2-CHLORONAPHTHALENE	04/02/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
2-CHLOROPHENOL-d4	04/02/93	0001	% RECOVERY		77.		NA	I *
2-CHLOROTOLUENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
2-FLUOROBIPHENYL	04/02/93	0001	% RECOVERY		90.		NA	I *
2-FLUOROPHENOL	04/02/93	0001	% RECOVERY		67.		NA	I *
2-METHYLNAPHTHALENE	04/02/93	0001	UG/L	U	10.	U	10.	I
2-METHYLPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
2-NITROANILINE	04/02/93	0001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
3,3'-DICHLOROBENZIDINE	04/02/93	0001	UG/L	U	10.	U	10.	I
3-NITROANILINE	04/02/93	0001	UG/L	U	26.	U	26.	I
4,4'-DDD	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDE	04/02/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
4,4'-DDT	04/02/93	0001	UG/L	U	0.10	UJ	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	04/02/93	0001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	04/02/93	0001	UG/L	U	10.	U	10.	I
4-CHLORO-3-METHYLPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROANILINE	04/02/93	0001	UG/L	U	10.	U	10.	I
4-CHLOROPHENYL-PHENYLETHER	04/02/93	0001	UG/L	U	10.	U	10.	I
4-METHYLPHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
4-NITROANILINE	04/02/93	0001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	04/02/93	0001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	04/02/93	0001	UG/L	U	10.	U	10.	I
ACENAPHTHYLENE	04/02/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ALDRIN	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
ALPHA CHLORDANE	04/02/93	0001	UG/L	J	0.042	J	0.042	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
ALPHA-BHC	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
ALUMINUM, TOTAL	04/02/93	0001	UG/L	U	17.0	U	17.0	I
ANTHRACENE	04/02/93	0001	UG/L	U	10.	U	10.	I
ANTIMONY, TOTAL	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1221	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1232	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1242	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1248	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1254	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
AROCLOR-1260	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
ARSENIC, TOTAL	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
BARIUM, TOTAL	04/02/93	0001	UG/L		90.6		90.6	I
BENZENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
BENZO(A)ANTHRACENE	04/02/93	0001	UG/L	U	10.	U	10.	I
BENZO(A)PYRENE	04/02/93	0001	UG/L	U	10.	U	10.	I
BENZO(B)FLUORANTHENE	04/02/93	0001	UG/L	U	10.	U	10.	I
BENZO(G,H,I)PERYLENE	04/02/93	0001	UG/L	U	10.	U	10.	I
BENZO(K)FLUORANTHENE	04/02/93	0001	UG/L	U	10.	U	10.	I
BENZOIC ACID	04/02/93	0001	UG/L	U	51.	U	51.	I
BENZYL ALCOHOL	04/02/93	0001	UG/L	U	10.	U	10.	I
BERYLLIUM, TOTAL	04/02/93	0001	UG/L	U	1.0	U	1.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BETA-BHC	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	04/02/93	0001	UG/L	U	10.	U	10.	I
BIS(2-CHLOROETHYL)ETHER	04/02/93	0001	UG/L	U	10.	U	10.	I
BIS(2-ETHYLHEXYL)PHTHALATE	04/02/93	0001	UG/L	JB	2.	UJ	10.	I
BISMUTH-207	04/02/93	0001	PCI/L	U	12.		NA	I *
BISMUTH-210	04/02/93	0001	PCI/L	U	13.		NA	I *
BROMOBENZENE	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
BROMOCHLOROMETHANE	04/02/93	0001	% RECOVERY		109.		NA	I *
BROMODICHLOROMETHANE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
BROMOFORM	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
BUTYL BENZYL PHTHALATE	04/02/93	0001	UG/L	U	10.	U	10.	I
CADMIUM, TOTAL	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
CALCIUM, TOTAL	04/02/93	0001	UG/L		74100.		74100.	I
CARBAZOLE	04/02/93	0001	UG/L	U	10.	U	10.	I
CESIUM-137	04/02/93	0001	PCI/L	U	11.		NA	I *
CHLORIDE	04/02/93	0001	MG/L		181.		181.	I
CHLOROBENZENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
CHLOROETHENE (VINYL CHLORIDE)	04/02/93	0001	UG/L	U	1.8	UJ	1.8	I
CHROMIUM, TOTAL	04/02/93	0001	UG/L		2.3	UJ	2.3	I
CHRYSENE	04/02/93	0001	UG/L	U	10.	U	10.	I
COBALT, TOTAL	04/02/93	0001	UG/L	U	4.0	U	4.0	I
COBALT-60	04/02/93	0001	PCI/L	U	19.		NA	I *
COPPER, TOTAL	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
DECACHLOROBIPHENYL	04/02/93	0001	% RECOVERY		90.		NA	I *
	04/02/93	0001	% RECOVERY		85.		NA	X1*
DELTA-BHC	04/02/93	0001	UG/L	U	0.052	UJ	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
DI-N-BUTYL PHTHALATE	04/02/93	0001	UG/L	JB	0.8	UJ	10.	I
DI-N-OCTYL PHTHALATE	04/02/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
DIBENZO(A,H)ANTHRACENE	04/02/93	0001	UG/L	U	10.	U	10.	I
DIBENZOFURAN	04/02/93	0001	UG/L	U	10.	U	10.	I
DIBROMOCHLOROMETHANE	04/02/93	0001	UG/L	U	0.90	UJ	0.90	I
DIBROMOMETHANE	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
DICHLOROMETHANE-METHYLENE CHLORIDE	04/02/93	0001	UG/L	U	4.0	UJ	4.0	I
DIELDRIN	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	04/02/93	0001	UG/L	U	10.	U	10.	I
DIMETHYL PHTHALATE	04/02/93	0001	UG/L	U	10.	U	10.	I
ENDOSULFAN I(ALPHA)	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
ENDOSULFAN II(BETA)	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	04/02/93	0001	UG/L	B	0.22		NA	I *
	04/02/93	0001	UG/L	U	0.10	U	0.10	X1
ENDRIN	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	04/02/93	0001	UG/L	U	0.10	U	0.10	I
	04/02/93	0001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
FLUORANTHENE	04/02/93	0001	UG/L	U	10.	U	10.	I
FLUORENE	04/02/93	0001	UG/L	U	10.	U	10.	I
GAMMA CHLORDANE	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
GAMMA-BHC (LINDANE)	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
HEPTACHLOR	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
HEPTACHLOR EPOXIDE	04/02/93	0001	UG/L	U	0.052	U	0.052	I
	04/02/93	0001	UG/L	U	0.052		NA	X1*
HEXACHLOROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROBUTADIENE	04/02/93	0001	UG/L	U	10.	U	10.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
HEXACHLOROCYCLOPENTADIENE	04/02/93	0001	UG/L	U	10.	U	10.	I
HEXACHLOROETHANE	04/02/93	0001	UG/L	U	10.	U	10.	I
INDENO(1,2,3-CD)PYRENE	04/02/93	0001	UG/L	U	10.	U	10.	I
IRON, TOTAL	04/02/93	0001	UG/L		1080.		1080.	I
ISOPHORONE	04/02/93	0001	UG/L	U	10.	U	10.	I
LEAD, TOTAL	04/02/93	0001	UG/L	U	2.0	U	2.0	I
MAGNESIUM, TOTAL	04/02/93	0001	UG/L		33700.		33700.	I
MANGANESE, TOTAL	04/02/93	0001	UG/L		56.9		56.9	I
MERCURY, TOTAL	04/02/93	0001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	04/02/93	0001	UG/L	U	0.52	U	0.52	I
	04/02/93	0001	UG/L	U	0.52		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	04/02/93	0001	UG/L	U	10.	U	10.	I
N-NITROSODIPHENYLAMINE	04/02/93	0001	UG/L	U	10.	U	10.	I
NAPHTHALENE	04/02/93	0001	UG/L	U	10.	U	10.	I
NICKEL, TOTAL	04/02/93	0001	UG/L	U	8.0	UJ	8.0	I
NITRATE NITRITE	04/02/93	0001	MG/L	U	0.020	U	0.020	I
NITROBENZENE	04/02/93	0001	UG/L	U	10.	U	10.	I
NITROBENZENE-D5	04/02/93	0001	% RECOVERY		75.		NA	I *
P-TERPHENYL-d14	04/02/93	0001	% RECOVERY		106.		NA	I *
PENTACHLOROPHENOL	04/02/93	0001	UG/L	U	26.	U	26.	I
PHENANTHRENE	04/02/93	0001	UG/L	U	10.	U	10.	I
PHENOL	04/02/93	0001	UG/L	U	10.	U	10.	I
PHENOL-d5	04/02/93	0001	% RECOVERY		79.		NA	I *
PLUTONIUM-238	04/02/93	0001	PCI/L	U	.028		NA	I *
PLUTONIUM-239/240	04/02/93	0001	PCI/L		.133		NA	I *
POTASSIUM, TOTAL	04/02/93	0001	UG/L		16400.		16400.	I
POTASSIUM-40	04/02/93	0001	PCI/L	U	200.		NA	I *
PYRENE	04/02/93	0001	UG/L	U	10.	U	10.	I
RADIUM-226	04/02/93	0001	PCI/L	U	.7		NA	I *

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0394
NORTH COORDINATE: 596489.48 FT
EAST COORDINATE: 1495003.44 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
SELENIUM, TOTAL	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	04/02/93	0001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	04/02/93	0001	UG/L		114000.		114000.	I
STRONTIUM-90	04/02/93	0001	PCI/L	U	.69		NA	I *
SULFATE	04/02/93	0001	MG/L		51.9	J	51.9	I
TETRACHLORO-M-XYLENE	04/02/93 04/02/93	0001 0001	% RECOVERY % RECOVERY		90. 90.		90. NA	I X1*
TETRACHLOROETHENE	04/02/93	0001	UG/L	U	0.30	UJ	0.30	I
TETRACHLOROMETHANE (CCL4)	04/02/93	0001	UG/L	U	1.0	UJ	1.0	I
THALLIUM, TOTAL	04/02/93	0001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	04/02/93	0001	PCI/L	U	.067		NA	I *
THORIUM-230	04/02/93	0001	PCI/L		.0943		NA	I *
THORIUM-232	04/02/93	0001	PCI/L		.0353		NA	I *
TOLUENE	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
TOTAL XYLENES	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
TOXAPHENE	04/02/93 04/02/93	0001 0001	UG/L UG/L	U U	5.2 5.2	U	5.2 NA	I X1*
TRICHLOROETHENE	04/02/93	0001	UG/L	U	1.2	UJ	1.2	I
TRICHLOROFLUOROMETHANE	04/02/93	0001	UG/L	U	2.0	UJ	2.0	I
TRICHLOROMETHANE (CHLOROFORM)	04/02/93	0001	UG/L	U	0.50	UJ	0.50	I
TRIFLUOROTOLUENE	04/02/93	0001	% RECOVERY		83.		NA	I *
TRITIUM	04/02/93	0001	PCI/L		8570.		NA	I *
URANIUM-234	04/02/93	0001	PCI/L		.185		NA	I *
URANIUM-235/236	04/02/93	0001	PCI/L	U	.068		NA	I *
URANIUM-238	04/02/93	0001	PCI/L		.133		NA	I *
VANADIUM, TOTAL	04/02/93	0001	UG/L		10.0	UJ	10.0	I
ZINC, TOTAL	04/02/93	0001	UG/L		28.1	UJ	28.1	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,1,1,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
1,1,1-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
	03/31/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	1001	UG/L	U	0.30		NA	C1*
	04/01/93	2001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	2001	UG/L	U	0.30		NA	C1*
1,1,2,2-TETRACHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
	03/31/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	1001	UG/L	U	0.30		NA	C1*
	04/01/93	2001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	2001	UG/L	U	0.30		NA	C1*
1,1,2-TRICHLOROETHANE	03/31/93	0001	UG/L	U	0.20	UJ	0.20	I
	03/31/93	0001	UG/L	U	0.20		NA	C1*
	03/31/93	1001	UG/L	U	0.20	UJ	0.20	I
	03/31/93	1001	UG/L	U	0.20		NA	C1*
	04/01/93	2001	UG/L	U	0.20	UJ	0.20	I
	04/01/93	2001	UG/L	U	0.20		NA	C1*
1,1-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.70	UJ	0.70	I
	03/31/93	0001	UG/L	U	0.70		NA	C1*
	03/31/93	1001	UG/L	U	0.70	UJ	0.70	I
	03/31/93	1001	UG/L	U	0.70		NA	C1*
	04/01/93	2001	UG/L	U	0.70	UJ	0.70	I
	04/01/93	2001	UG/L	U	0.70		NA	C1*
1,1-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
1,2,3-TRICHLOROPROPANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
1,2,4-TRICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
1,2-CIS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,2-CIS-DICHLOROETHENE	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
1,2-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	1.5	UJ	1.5	I
	03/31/93	0001	UG/L	U	1.5		NA	C1*
	03/31/93	1001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	1.5	UJ	1.5	I
	03/31/93	1001	UG/L	U	1.5		NA	C1*
	04/01/93	2001	UG/L	U	1.5	UJ	1.5	I
	04/01/93	2001	UG/L	U	1.5		NA	C1*
1,2-DICHLOROETHANE	03/31/93	0001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	0001	UG/L	U	0.30		NA	C1*
	03/31/93	1001	UG/L	U	0.30	UJ	0.30	I
	03/31/93	1001	UG/L	U	0.30		NA	C1*
	04/01/93	2001	UG/L		0.68	J	0.68	I
	04/01/93	2001	UG/L		0.69		NA	C1*
1,2-DICHLOROETHENE-d4	03/31/93	0001	% RECOVERY		85.		85.	I
	03/31/93	1001	% RECOVERY		89.		89.	I
1,2-DICHLOROPROPANE	03/31/93	0001	UG/L	U	0.40	UJ	0.40	I
	03/31/93	0001	UG/L	U	0.40		NA	C1*
	03/31/93	1001	UG/L	U	0.40	UJ	0.40	I
	03/31/93	1001	UG/L	U	0.40		NA	C1*
	04/01/93	2001	UG/L	U	0.40	UJ	0.40	I
	04/01/93	2001	UG/L	U	0.40		NA	C1*
1,2-TRANS-DICHLOROETHENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
1,3-CIS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
	03/31/93	1001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	1001	UG/L	U	3.4		NA	C1*
	04/01/93	2001	UG/L	U	3.4	UJ	3.4	I
	04/01/93	2001	UG/L	U	3.4		NA	C1*
1,3-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	3.2	UJ	3.2	I
	03/31/93	0001	UG/L	U	3.2		NA	C1*
	03/31/93	1001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	3.2	UJ	3.2	I
	03/31/93	1001	UG/L	U	3.2		NA	C1*
	04/01/93	2001	UG/L	U	3.2	UJ	3.2	I
	04/01/93	2001	UG/L	U	3.2		NA	C1*
1,3-TRANS-DICHLOROPROPENE	03/31/93	0001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	0001	UG/L	U	3.4		NA	C1*
	03/31/93	1001	UG/L	U	3.4	UJ	3.4	I
	03/31/93	1001	UG/L	U	3.4		NA	C1*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
1,3-TRANS-DICHLOROPROPENE	04/01/93	2001	UG/L	U	3.4	UJ	3.4	I
	04/01/93	2001	UG/L	U	3.4		NA	C1*
1,4-DICHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	2.4	UJ	2.4	I
	03/31/93	0001	UG/L	U	2.4		NA	C1*
	03/31/93	1001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	2.4	UJ	2.4	I
	03/31/93	1001	UG/L	U	2.4		NA	C1*
	04/01/93	2001	UG/L	U	2.4	UJ	2.4	I
	04/01/93	2001	UG/L	U	2.4		NA	C1*
1-CHLOROHEXANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
2,2'-OXYBIS (1-CHLOROPROPANE)	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	11.	UJ	11.	I
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
2,4,5-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
2,4,6-TRIBROMOPHENOL	03/31/93	0001	% RECOVERY		115.		NA	I *
	03/31/93	1001	% RECOVERY		81.		NA	I *
2,4,6-TRICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2,4-DICHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2,4-DIMETHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2,4-DINITROPHENOL	03/31/93	0001	UG/L	U	26.	UJ	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
2,4-DINITROTOLUENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2,6-DINITROTOLUENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2-CHLOROETHYLVINYLETHER	03/31/93	0001	UG/L	U	1.3	UJ	1.3	I
	03/31/93	0001	UG/L	U	1.3		NA	C1*
	03/31/93	1001	UG/L	U	1.3	UJ	1.3	I
	03/31/93	1001	UG/L	U	1.3		NA	C1*

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
2-CHLOROETHYLVINYLETHER	04/01/93	2001	UG/L	U	1.3	UJ	1.3	I
	04/01/93	2001	UG/L	U	1.3		NA	C1*
2-CHLORONAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2-CHLOROPHENOL-d4	03/31/93	0001	% RECOVERY		73.		NA	I *
	03/31/93	1001	% RECOVERY		90.		NA	I *
2-CHLOROTOLUENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
2-FLUOROBIPHENYL	03/31/93	0001	% RECOVERY		80.		NA	I *
	03/31/93	1001	% RECOVERY		88.		NA	I *
2-FLUOROPHENOL	03/31/93	0001	% RECOVERY		74.		NA	I *
	03/31/93	1001	% RECOVERY		98.		NA	I *
2-METHYLNAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
2-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
2-NITROPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
3,3'-DICHLOROBENZIDINE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
3-NITROANILINE	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
4,4'-DDD	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
4,4'-DDE	03/31/93	0001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	UJ	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
4,4'-DDT	03/31/93	0001	UG/L	J	0.061	UJ	0.061	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	UJ	0.10	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
4,4'-DDT	03/31/93	1001	UG/L	U	0.10		NA	X1*
4,6-DINITRO-O-CRESOL	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
4-BROMOPHENYL-PHENYL ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
4-CHLORO-3-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
4-CHLOROANILINE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
4-CHLOROPHENYL-PHENYLETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
4-METHYLPHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
4-NITROANILINE	03/31/93	0001	UG/L	U	26.	UJ	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
4-NITROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
ACENAPHTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
ACENAPHTHYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
ALDRIN	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
ALPHA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
ALPHA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
ALUMINUM, TOTAL	03/31/93	0001	UG/L		46.3	J	46.3	I
	03/31/93	1001	UG/L	U	17.0	UJ	17.0	I
ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
ANTIMONY, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
AROCLOR-1016	03/31/93	0001	UG/L	U	0.50	U	0.50	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
AROCLOR-1016	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1221	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1232	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1242	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1248	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1254	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
AROCLOR-1260	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
ARSENIC, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	1001	UG/L	U	2.0	U	2.0	I
BARIUM, TOTAL	03/31/93	0001	UG/L		156.	J	156.	I
	03/31/93	1001	UG/L		150.	J	150.	I
BENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
BENZO(A)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BENZO(A)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BENZO(B)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BENZO(G,H,I)PERYLENE	03/31/93	0001	UG/L	U	11.	U	11.	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BENZO(G,H,I)PERYLENE	03/31/93	1001	UG/L	U	11.	U	11.	I
BENZO(K)FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BENZOIC ACID	03/31/93	0001	UG/L	U	53.	U	53.	I
	03/31/93	1001	UG/L	U	53.	U	53.	I
BENZYL ALCOHOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	UJ	11.	I
BERYLLIUM, TOTAL	03/31/93	0001	UG/L	U	1.0	U	1.0	I
	03/31/93	1001	UG/L	U	1.0	U	1.0	I
BETA-BHC	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
BIS(2-CHLOROETHOXY)METHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BIS(2-CHLOROETHYL)ETHER	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BIS(2-ETHYLHEXYL)PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
BISMUTH-207	03/31/93	0001	PCI/L	U	9.1		NA	I *
	03/31/93	1001	PCI/L	U	11.		NA	I *
BISMUTH-210	03/31/93	0001	PCI/L	U	14.		NA	I *
	03/31/93	1001	PCI/L	U	12.		NA	I *
BROMOBENZENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
BROMOCHLOROMETHANE	03/31/93	0001	% RECOVERY		119.		NA	I *
	03/31/93	0001	% RECOVERY		86.		NA	C1*
	03/31/93	1001	% RECOVERY		116.		NA	I *
	03/31/93	1001	% RECOVERY		88.		NA	C1*
	04/01/93	2001	% RECOVERY		98.		NA	I *
	04/01/93	2001	% RECOVERY		63.		NA	C1*
BROMODICHLOROMETHANE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
BROMOFORM	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BROMOFORM	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
BUTYL BENZYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
CADMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	1001	UG/L	U	2.0	U	2.0	I
CALCIUM, TOTAL	03/31/93	0001	UG/L		160000.		160000.	I
	03/31/93	1001	UG/L		156000.		156000.	I
CARBAZOLE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
CESIUM-137	03/31/93	0001	PCI/L	U	14.		NA	I *
	03/31/93	1001	PCI/L	U	13.		NA	I *
CHLORIDE	03/31/93	0001	MG/L		135.		135.	I
	03/31/93	1001	MG/L		136.		136.	I
CHLOROBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
CHLOROETHENE (VINYL CHLORIDE)	03/31/93	0001	UG/L	U	1.8	UJ	1.8	I
	03/31/93	0001	UG/L	U	1.8		NA	C1*
	03/31/93	1001	UG/L	U	1.8	UJ	1.8	I
	03/31/93	1001	UG/L	U	1.8		NA	C1*
	04/01/93	2001	UG/L	U	1.8	UJ	1.8	I
	04/01/93	2001	UG/L	U	1.8		NA	C1*
CHROMIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
CHRYSENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
COBALT, TOTAL	03/31/93	0001	UG/L	U	4.0	U	4.0	I
	03/31/93	1001	UG/L	U	4.0	U	4.0	I
COBALT-60	03/31/93	0001	PCI/L	U	18.		NA	I *
	03/31/93	1001	PCI/L	U	13.		NA	I *
COPPER, TOTAL	03/31/93	0001	UG/L	U	2.0	U	2.0	I
	03/31/93	1001	UG/L	U	2.0	U	2.0	I
DECACHLOROBIPHENYL	03/31/93	0001	% RECOVERY		85.		NA	I *
	03/31/93	0001	% RECOVERY		85.		NA	X1*
	03/31/93	1001	% RECOVERY		80.		NA	I *

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03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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DECACHLOROBIPHENYL	03/31/93	1001	% RECOVERY		75.		NA	X1*
DELTA-BHC	03/31/93	0001	UG/L	U	0.050	UJ	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	UJ	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
DI-N-BUTYL PHTHALATE	03/31/93	0001	UG/L	JB	1.	UJ	11.	I
	03/31/93	1001	UG/L	JB	1.	UJ	11.	I
DI-N-OCTYL PHTHALATE	03/31/93	0001	UG/L	U	11.	UJ	11.	I
	03/31/93	1001	UG/L	U	11.	UJ	11.	I
DIBENZO(A,H)ANTHRACENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
DIBENZOFURAN	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
DIBROMOCHLOROMETHANE	03/31/93	0001	UG/L	U	0.90	UJ	0.90	I
	03/31/93	0001	UG/L	U	0.90		NA	C1*
	03/31/93	1001	UG/L	U	0.90	UJ	0.90	I
	03/31/93	1001	UG/L	U	0.90		NA	C1*
	04/01/93	2001	UG/L	U	0.90	UJ	0.90	I
	04/01/93	2001	UG/L	U	0.90		NA	C1*
DIBROMOMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
DICHLOROMETHANE-METHYLENE CHLORIDE	03/31/93	0001	UG/L	U	4.0	UJ	4.0	I
	03/31/93	0001	UG/L	U	4.0		NA	C1*
	03/31/93	1001	UG/L	U	4.0	UJ	4.0	I
	03/31/93	1001	UG/L	U	4.0		NA	C1*
	04/01/93	2001	UG/L	U	4.0	UJ	4.0	I
	04/01/93	2001	UG/L	U	4.0		NA	C1*
DIELDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
DIETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
DIMETHYL PHTHALATE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
ENDOSULFAN I(ALPHA)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
ENDOSULFAN II(BETA)	03/31/93	0001	UG/L	U	0.10	U	0.10	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
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NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
ENDOSULFAN II(BETA)	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
ENDOSULFAN SULFATE	03/31/93	0001	UG/L	JB	0.091		NA	I *
	03/31/93	0001	UG/L	U	0.10	U	0.10	X1
	03/31/93	1001	UG/L	B	0.11		NA	I *
	03/31/93	1001	UG/L	U	0.10	U	0.10	X1
ENDRIN	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
ENDRIN ALDEHYDE -	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
ENDRIN KETONE	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	0001	UG/L	U	0.10		NA	X1*
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10		NA	X1*
ETHYLBENZENE	03/31/93	0001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	0001	UG/L	U	1.0		NA	C1*
	03/31/93	1001	UG/L	U	1.0	UJ	1.0	I
	03/31/93	1001	UG/L	U	1.0		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
FLUORANTHENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
FLUORENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
GAMMA CHLORDANE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
GAMMA-BHC (LINDANE)	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
HEPTACHLOR	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*
HEPTACHLOR EPOXIDE	03/31/93	0001	UG/L	U	0.050	U	0.050	I
	03/31/93	0001	UG/L	U	0.050		NA	X1*
	03/31/93	1001	UG/L	U	0.050	U	0.050	I
	03/31/93	1001	UG/L	U	0.050		NA	X1*

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FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

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HEXACHLOROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	UJ	11.	I
HEXACHLOROBUTADIENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	UJ	11.	I
HEXACHLOROCYCLOPENTADIENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
HEXACHLOROETHANE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
INDENO(1,2,3-CD)PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
IRON, TOTAL	03/31/93	0001	UG/L		220.		220.	I
	03/31/93	1001	UG/L		218.		218.	I
ISOPHORONE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
LEAD, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
MAGNESIUM, TOTAL	03/31/93	0001	UG/L		48800.		48800.	I
	03/31/93	1001	UG/L		47400.		47400.	I
MANGANESE, TOTAL	03/31/93	0001	UG/L		9.7	J	9.7	I
	03/31/93	1001	UG/L		9.2	J	9.2	I
MERCURY, TOTAL	03/31/93	0001	UG/L	U	0.10	U	0.10	I
	03/31/93	1001	UG/L	U	0.10	U	0.10	I
METHOXYCHLOR	03/31/93	0001	UG/L	U	0.50	U	0.50	I
	03/31/93	0001	UG/L	U	0.50		NA	X1*
	03/31/93	1001	UG/L	U	0.50	U	0.50	I
	03/31/93	1001	UG/L	U	0.50		NA	X1*
N-NITROSO-DI-N-PROPYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
N-NITROSODIPHENYLAMINE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
NAPHTHALENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
NICKEL, TOTAL	03/31/93	0001	UG/L		66.1		66.1	I
	03/31/93	1001	UG/L		57.4		57.4	I
NITRATE NITRITE	03/31/93	0001	MG/L		2.8		2.8	I
	03/31/93	1001	MG/L		2.5		2.5	I
NITROBENZENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
NITROBENZENE-D5	03/31/93	0001	% RECOVERY		74.		NA	I *

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NITROBENZENE-D5	03/31/93	1001	% RECOVERY		97.		NA	I *
P-TERPHENYL-d14	03/31/93	0001	% RECOVERY		89.		NA	I *
	03/31/93	1001	% RECOVERY		97.		NA	I *
PENTACHLOROPHENOL	03/31/93	0001	UG/L	U	26.	U	26.	I
	03/31/93	1001	UG/L	U	26.	U	26.	I
PHENANTHRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
PHENOL	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
PHENOL-d5	03/31/93	0001	% RECOVERY		70.		NA	I *
	03/31/93	1001	% RECOVERY		98.		NA	I *
PLUTONIUM-238	03/31/93	0001	PCI/L	U	.029		NA	I *
	03/31/93	1001	PCI/L	U	.067		NA	I *
PLUTONIUM-239/240	03/31/93	0001	PCI/L		.127		NA	I *
	03/31/93	1001	PCI/L		.113		NA	I *
POTASSIUM, TOTAL	03/31/93	0001	UG/L		3660.		3660.	I
	03/31/93	1001	UG/L		3330.		3330.	I
POTASSIUM-40	03/31/93	0001	PCI/L	U	190.		NA	I *
	03/31/93	1001	PCI/L	U	230.		NA	I *
PYRENE	03/31/93	0001	UG/L	U	11.	U	11.	I
	03/31/93	1001	UG/L	U	11.	U	11.	I
RADIUM-226	03/31/93	0001	PCI/L		.293		NA	I *
	03/31/93	1001	PCI/L		.455		NA	I *
SELENIUM, TOTAL	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
SILVER, TOTAL	03/31/93	0001	UG/L	U	3.0	U	3.0	I
	03/31/93	1001	UG/L	U	3.0	U	3.0	I
SODIUM, TOTAL	03/31/93	0001	UG/L		95700.		95700.	I
	03/31/93	1001	UG/L		93200.		93200.	I
STRONTIUM-90	03/31/93	0001	PCI/L	U	.78		NA	I *
	03/31/93	1001	PCI/L	U	.7		NA	I *
SULFATE	03/31/93	0001	MG/L		128.	J	128.	I
	03/31/93	1001	MG/L		130.	J	130.	I
TETRACHLORO-M-XYLENE	03/31/93	0001	% RECOVERY		95.		95.	I
	03/31/93	0001	% RECOVERY		100.		NA	X1*
	03/31/93	1001	% RECOVERY		85.		85.	I
	03/31/93	1001	% RECOVERY		90.		NA	X1*
TETRACHLOROETHENE	03/31/93	0001	UG/L		9.2	J	9.2	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TETRACHLOROETHENE	03/31/93	0001	UG/L		16.		NA	C1*
	03/31/93	1001	UG/L		12.	J	12.	I
	03/31/93	1001	UG/L		16.		NA	C1*
	04/01/93	2001	UG/L	U	0.30	UJ	0.30	I
	04/01/93	2001	UG/L	U	0.30		NA	C1*
TETRACHLOROMETHANE (CCL4)	03/31/93	0001	UG/L		2.3	J	2.3	I
	03/31/93	0001	UG/L		1.7		NA	C1*
	03/31/93	1001	UG/L		2.3	J	2.3	I
	03/31/93	1001	UG/L		1.7		NA	C1*
	04/01/93	2001	UG/L	U	1.0	UJ	1.0	I
	04/01/93	2001	UG/L	U	1.0		NA	C1*
THALLIUM, TOTAL	03/31/93	0001	UG/L	U	5.0	UJ	5.0	I
	03/31/93	1001	UG/L	U	5.0	UJ	5.0	I
THORIUM-228	03/31/93	0001	PCI/L		.113		NA	I *
	03/31/93	1001	PCI/L	U	.1		NA	I *
THORIUM-230	03/31/93	0001	PCI/L	U	.13		NA	I *
	03/31/93	1001	PCI/L	U	.14		NA	I *
THORIUM-232	03/31/93	0001	PCI/L	U	.11		NA	I *
	03/31/93	1001	PCI/L	U	.1		NA	I *
TOLUENE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
TOTAL XYLENES	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I
	04/01/93	2001	UG/L	U	2.0		NA	C1*
TOXAPHENE	03/31/93	0001	UG/L	U	5.0	U	5.0	I
	03/31/93	0001	UG/L	U	5.0		NA	X1*
	03/31/93	1001	UG/L	U	5.0	U	5.0	I
	03/31/93	1001	UG/L	U	5.0		NA	X1*
TRICHLOROETHENE	03/31/93	0001	UG/L		7.5	J	7.5	I
	03/31/93	0001	UG/L		11.		NA	C1*
	03/31/93	1001	UG/L		8.1	J	8.1	I
	03/31/93	1001	UG/L		11.		NA	C1*
	04/01/93	2001	UG/L	U	1.2	UJ	1.2	I
	04/01/93	2001	UG/L	U	1.2		NA	C1*
TRICHLOROFLUOROMETHANE	03/31/93	0001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	0001	UG/L	U	2.0		NA	C1*
	03/31/93	1001	UG/L	U	2.0	UJ	2.0	I
	03/31/93	1001	UG/L	U	2.0		NA	C1*
	04/01/93	2001	UG/L	U	2.0	UJ	2.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MND01 OU1 VALIDATED DATA
LOCATION: 0397
NORTH COORDINATE: 596702.12 FT
EAST COORDINATE: 1495024.40 FT
03/28/93 TO 04/02/93
REPORT DATE: 02/28/94

FORMATION OF COMPLETION: TILL (TI)
HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TRICHLOROFLUOROMETHANE	04/01/93	2001	UG/L	U	2.0		NA	C1*
TRICHLOROMETHANE (CHLOROFORM)	03/31/93	0001	UG/L		0.66	J	0.66	I
	03/31/93	0001	UG/L		0.84		NA	C1*
	03/31/93	1001	UG/L		0.62	J	0.62	I
	03/31/93	1001	UG/L		0.83		NA	C1*
	04/01/93	2001	UG/L	U	0.50	UJ	0.50	I
	04/01/93	2001	UG/L	U	0.50		NA	C1*
TRIFLUOROTOLUENE	03/31/93	0001	% RECOVERY		72.		NA	I *
	03/31/93	0001	% RECOVERY		0.00		NA	C1*
	03/31/93	1001	% RECOVERY		74.		NA	I *
	03/31/93	1001	% RECOVERY		0.00		NA	C1*
	04/01/93	2001	% RECOVERY		70.		NA	I *
	04/01/93	2001	% RECOVERY		0.00		NA	C1*
TRITIUM	03/31/93	0001	PCI/L		5930.		NA	I *
	03/31/93	1001	PCI/L		5630.		NA	I *
URANIUM-234	03/31/93	0001	PCI/L		.555		NA	I *
	03/31/93	1001	PCI/L		.461		NA	I *
URANIUM-235/236	03/31/93	0001	PCI/L	U	.066		NA	I *
	03/31/93	1001	PCI/L	U	.095		NA	I *
URANIUM-238	03/31/93	0001	PCI/L		.29		NA	I *
	03/31/93	1001	PCI/L		.41		NA	I *
VANADIUM, TOTAL	03/31/93	0001	UG/L		23.7	UJ	23.7	I
	03/31/93	1001	UG/L		25.5	UJ	25.5	I
ZINC, TOTAL	03/31/93	0001	UG/L		124.	J	124.	I
	03/31/93	1001	UG/L		18.7	UJ	18.7	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

DATA FILE NAME: K:\DART\TXT\MND01\GWQ10000.DAT

A8. VALIDATED DETECTIONS OF ANALYTES

Table A8a. Validated Detections in Soils - Volatile Organic Compounds

Sample Location	Depth (ft)	1,2-DCE (µg/kg)	Benzene (µg/kg)	Ethyl-benzene (µg/kg)	PCE (µg/kg)	Vinyl Chloride (µg/kg)	Toluene	Total Xylenes (µg/kg)	TCE (µg/kg)	Dichloro-methane	Reason for Qualification
B001	3.5-5.0	37	-	-	-	4 J	-	-	3 J	-	Less than CRDL
	5.0-7.0	140	-	-	68	-	-	-	74	-	
	12.5-14.0	520	-	-	37 J	-	-	-	38 J	-	
	15.0-16.5	6700	-	-	-	-	-	-	-	-	
	21.5-23.0	52	-	-	17	-	-	-	160	-	
	26.0-28.0	4 J	-	-	19	-	2 J	-	33	-	
	33.5-38.0	-	-	-	12	-	-	-	6 J	-	
	36.5-38.0	-	-	-	6 J	-	-	-	3 J	-	
B002	3.5-5.0	25	-	-	3 J	-	-	-	-	-	Less then CRDL
	8.0-10.0	45	-	-	7	-	-	-	-	-	
	13.0-15.0	-	-	-	170	-	-	-	230	-	
	21.5-23.0	-	-	-	80	-	-	-	140	-	
B003	22.0-26.0	4 J	-	-	11	-	-	-	27	-	Less than CRDL
	34.5-35.0	2 J	-	-	10	-	-	-	13	-	
	35.0-36.5	-	-	-	20	-	1 J	-	10	-	
0370	35.5-36.0	240	-	-	440	-	-	-	160	-	Less than CRDL
	39.5-40.0	24	-	-	350	-	1 J	-	47	-	
0373	53.5-54.0	7	-	-	19	-	-	-	7	-	Less than CRDL
	57.5-58.0	-	-	-	16	-	-	-	4 J	-	
0374	20.5-22.0	9	-	-	37	-	-	-	21	-	Less than CRDL
	25.5-27.0	5 J	-	-	37	-	-	-	11	-	
0375	23.5-24.0	-	-	-	9	-	-	-	2 J	-	Less than CRDL
	25.5-26.0	-	-	-	23	-	2 J	-	5 J	-	
0379	30.5-32.0	-	-	-	14 J	-	-	-	7 J	-	PCE calibratio n criteria out by 67%. Sample result possibly bias by 67%.
	35.0-37.0	-	-	-	6 J	-	-	-	-	-	PCE was not detected in field duplicate. Higher value of initial field sample is reported.

Table A8a. (page 2 of 4)

Sample Location	Depth (ft)	1,2-DCE (µg/kg)	Benzene (µg/kg)	Ethyl-benzene (µg/kg)	PCE (µg/kg)	Vinyl Chloride (µg/kg)	Toluene	Total Xylenes (µg/kg)	TCE (µg/kg)	Dichloro-methane	Reason for Qualification
0393	3.0-5.0	31	-	-	-	-	-	-	64	-	Less than CRDL except DCE and PCE at depth of 20-22 ft. For both compounds, high variability was noted between the initial, MS, and MSD unspiked results (>50% RSD), possibly due to inhomogeneity of soil sample. Initial samples values reported.
	13.5-14.0	6600	160	35	440 J	190	7100	160	490 J	-	
	17.5-18.0	5200	8	3 J	1600	-	180	4 J	220	-	
	20.0-22.0	52	-	-	5	30	1 J	-	3 J	-	
	26.0-27.0	2 J	-	-	UJ	-	2 J	-	3 J	-	
	34.0-35.0		3 J	-	14	-	7	1 J	11	-	
	38.0-39.0		2 J	-	52	-	5 J	1 J	6	-	
					26						
0394	10.5-11.0	-	-	-	-	-	2 J	-	-	-	Less than CRDL except: Continuing calibration for 1,2-DCE out by -26%. Reported sample result is probably biased low by 26%.
	19.5-20.0	-	-	-	-	-	3 J	-	-	-	
	24.5-25.0	5 J	2 J	2 J	36 J	-	7	-	73	-	
	25.0-26.0	-	-	-	1 J	-	-	-	1 J	-	
	28.5-30.0	-	-	-	1 J	-	-	-	2 J	-	
	34.5-35.0	-	-	-	2 J	-	-	-	2 J	-	
	39.5-40.0	-	-	-	2 J	-	-	-	1 J	-	
0397	23.5-24.0	-	-	-	24	-	1 J	-	13	-	Less than CRDL
	27.5-28.0	-	-	-	14	-	-	-	2 J	-	
P001	16.5-18.0	9 J	-	1 J	4	18	1 J	3 J	11 J	-	Less than CRDL except for qualified results at 34.5-36 foot depth. Reported values are taken from field duplicate results which showed higher values than initial field sample. The field duplicate %RPDs for DCE, PCE, and TCE were 75%, 77%, and 65%, respectively.
	26.5-28.0	1100 J	-	610 J	24000	-	-	240 J	970 J	-	
	31.5-33.0	750	-	-	1100	-	-	-	310	-	
	34.5-36.0	180 J	-	-	430 J	-	-	-	88 J	-	
	43.5-45.0	-	-	-	33	-	-	-	7 J	-	
	45.5-47.0	-	-	-	53	-	1 J	-	9 J	-	
P002	34.5-36.0	250	-	-	5500	-	-	-	180	-	Less than CRDL
	46.5-48.0	-	-	2 J	79	-	4 J	2 J	18	-	

Table A8a. (page 3 of 4)

Sample Location	Depth (ft)	1,2-DCE (µg/kg)	Benzene (µg/kg)	Ethyl-benzene (µg/kg)	PCE (µg/kg)	Vinyl Chloride (µg/kg)	Toluene	Total Xylenes (µg/kg)	TCE (µg/kg)	Dichloro-methane	Reason for Qualification
P003	3.5-5.0	19	-	260 J	-	2 J	1 J	2 J	21	-	Less than CRDL except for analytes at 15-17 foot depth. Field duplicate RPD high for DCE, PCE, ethylbenzene, and xylenes. High variability noted for DCE in initial, MS, MSD unspiked results (60% RSD). MS/MSD recovery high for TCE (170%), and toluene (220%). Indicates probable inhomogeneous soil sample.
	5.0-6.5	-	150 J	-	-	-	750 J	6100	160 J	-	
	13.5-15.0	1100 J	150 J	-	150 J	-	-	-	-	-	
	15.0-17.0	1200 J	44 J	55 J	480 J	-	460 J	440 J	56 J	-	
	20.0-21.5	79	2 J	-	-	21	9 J	-	-	-	
	25.0-26.5	-	-	-	22	-	1 J	-	4 J	-	
	30.5-37.0	-	-	-	14	-	1 J	4 J	3 J	-	
	35.5-37.0	-	-	-	10	-	460 J	1 J	1 J	-	
P004	3.5-5.0	2 J	-	-	-	-	8 J	-	-	-	Less than CRDL
	8.5-10.0	8 J	-	200	-	-	-	1300	-	-	
	10.0-11.3	-	-	32	-	-	2 J	220	-	-	
	18.5-20.0	-	-	12	-	-	110	25	-	-	
	23.0-25.0	2 J	-	8 J	-	-	14	16	-	-	
	28.5-30.0	2 J	-	4 J	1 J	-	5 J	15	2 J	-	
	30.0-31.5		-	23	2 J	2 J	15	130	3 J	-	
	34.5-35.0							2 J		-	
P005	31.5-32.0	2 J	-	-	-	-	-	-	1 J	-	Less than CRDL
	42.0-43.0	1 J	-	-	-	-	-	-	2 J	-	
	44.0-45.0	4 J	-	-	3 J	-	1 J	-	12	-	
	48.5-49.0	17	-	-	2 J	-	-	-	3 J	-	
	54.5-55.0	2 J	-	-	10	-	1 J	-	3 J	-	
	55.0-59.0	5 J	-	-	11	-	-	-	4 J	-	
	62.5-63.0	-	-	-	13	-	-	-	7	-	
P006	4.5-5.0	9	-	-	5 J	-	-	-	28	-	Less than CRDL
	9.0-10.0	2 J	-	-	-	-	-	-	2J	-	
	13.0-15.0	2 J	-	-	22	-	-	-	11	-	
	15.0-16.0	5 J	-	-	41	-	-	-	22	-	
	23.0-25.0	6	-	-	59	-	-	-	24	-	
	30.0-31.0	-	-	-	24	-	-	-	4 J	-	
	33.0-34.0	5 J	-	1 J	30	-	3 J	3 J	20	-	
P007	19.6-20.0	-	-	-	3 J	-	3 J	-	-	-	Less than CRDL
	24.5-25.0	-	-	-	7	-	-	-	2 J	-	
	25.0-26.0	-	-	-	7	-	1 J	-	2 J	-	
	29.0-30.0	-	-	2 J	-	-	4 J	-	2 J	-	
	30.0-31.0	-	-	-	18	-	2 J	-	11	-	
	32.0-33.0	-	-	-	15	-	1 J	-	20	-	

Table A8a. (page 4 of 4)

Sample Location	Depth (ft)	1,2-DCE (µg/kg)	Benzene (µg/kg)	Ethyl-benzene (µg/kg)	PCE (µg/kg)	Vinyl Chloride (µg/kg)	Toluene	Total Xylenes (µg/kg)	TCE (µg/kg)	Dichloro-methane	Reason for Qualification
P008	18.0-19.5	-	-	1 J	-	-	-	-	-	-	Less than CRDL
P009	18.0-19.5	-	-	1 J	-	-	6 J	3 J	-	-	Less than CRDL except low recoveries of internal standard for toluene at 67.5 feet (60%) and 73 feet (52%). Reported values may be biased high by the associated amounts.
	23.5-25.0	-	-	-	-	-	4 J	3 J	-	-	
	53.5-55.0	-	-	-	-	-	2 J				
	58.0-59.5	-	-	-	-	-	3 J				
	66.0-67.5	-	-	-	-	-	2 J				
	71.0-73.0	-	-	-	-	-	2 J				
P013	87.0-88.5	-	-	-	-	-	1 J	-	-	-	Internal standard recovery is low (62%). Reported value possibly biased high by 62%.
P014	1.5-3.0	-	-	-	-	-	-	-	-	81 J	Less than CRDL
	19.2-20.0	-	-	-	-	-	-	-	-	70	
	24.2-25.0	-	-	-	-	-	-	2 J	-	71	
	26.5-27.0	-	-	-	2 J	-	-	-	-	-	
	34.5-35.0	-	-	-	3 J	-	-	-	-	-	
	35.0-36.0	-	-	-	2 J	-	-	-	-	-	
	36.0-37.0	-	-	-	6	-	2 J	2 J	1 J	-	
	39.5-40.0	-	-	-	13	-	2 J	2 J	5 J	-	
P015	4.5-5.0	-	-	-	-	-	-	-	16	-	Less than CRDL
	19.5-20.0	-	2 J	-	-	-	2 J	-	-	-	
	21.5-22.0	-	1 J	-	-	-	2 J	-	-	-	
	32.0-34.0	1 J	-	-	-	-	1 J	-	-	-	
	36.0-37.0	-	-	-	-	-	-	-	-	-	
	39.5-40.0	-	-	-	-	-	-	-	-	-	
	43.0-45.0	-	-	-	-	-	-	-	1 J	-	
	47.0-48.0	10	-	-	5 J	-	-	-	11	-	
	54.0-55.0	9	-	-	8	-	2 J	-	16	-	
	55.5-56.0	6	-	-	5 J	-	-	1 J	11	-	

J - Estimated value

NOTE: The following VOCs were detected but not presented on this table due to low frequency of detection or probability of being a lab contaminent: 1,1,1-trichlorethane, 1,1-dichloroethene, 2-butanone, 2-hexanone, acetone, carbon disulfide, chlorobenzene, tetrachloromethane, and trichloromethane. All results for these analytes are presented in Appendix A6.

Table A8b. Validated Detections in Soils - Semivolatile Compounds (page 1 of 2)

Sample Location	Depth (ft)	Benzo(a) anthracene (µg/kg)	Benzo(a) pyrene (µg/kg)	Benzo(b) fluoranthene (µg/kg)	Benzo (g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Fluoranthene (µg/kg)	Reason for Qualification
SL01	0.5-1.5	48 J	54 J	77 J	-	-	52 J	Less than CRDL
SL02	0.5-1.5	90 J	140 J	190 J	44 J	64 J	120 J	Less than CRDL
SL04	0.5-1.5	-	-	-	-	43 J	-	Less than CRDL
SL05	0.5-1.5	230 J	230 J	380 J	81 J	140 J	320 J	Less than CRDL
SL06	0.5-1.5	-	-	39 J	-	-	41 J	Less than CRDL
SL07	0.5-1.5	66 J	80 J	-	-	-	160 J	Less than CRDL
SL08	0.5-1.5	-	44 J	58 J	-	-	48 J	Less than CRDL
SL09	0.5-1.5	-	-	-	-	-	58 J	Less than CRDL
SL10	0.5-1.5	-	40 J	47 J	-	-	60 J	Less than CRDL
SL11	0.5-1.5	53 J	62 J	-	-	-	160 J	Less than CRDL
0393	3.0-5.0	66 J	55 J	80 J	-	-	160 J	Less than CRDL
0394	2.0-3.0	-	-	-	-	-	39 J	Less than CRDL
P001	26.5-28.0	52 J	-	-	-	-	110 J	Less than CRDL
P003	5.0-6.5 15.0-17.0	- 50 J	24 J -	-	-	-	78 J 190 J	Samples re-extracted 39 days out of holding time. Impact on data indeterminable.
P004	23.0-25.0	3400 J	2500 J	4000 J	850 J	1500 J	8300 J	Field duplicate values consistently well below initial field sample values. The higher values of initial field sample are reported. High variability noted between original, MS, and MSD unspiked results (>50% RSD). Data impact indeterminable.
	30.0-31.5 37.0-38.0	1900 -	1300 -	1800 -	440 -	780 -	2600 43 J	
P015	12.0-14.0	-	-	-	-	-	60 J	Less than CRDL

Table A8b. Validated Detections in Soils - Semivolatile Compounds (page 2 of 2)

Sample Location	Depth (ft)	Indeno(1,2,3-cd)pyrene (µg/kg)	Chrysene (µg/kg)	Phenanthrene (µg/kg)	Pyrene (µg/kg)	Reason for Qualification
SL01	0.5-1.5	-	48 J	-	55 J	Less than CRDL
SL02	0.5-1.5	71 J	95 J	-	120 J	Less than CRDL
SL05	0.5-1.5	94 J	230 J	240 J	280 J	Less than CRDL
SL06	0.5-1.5	-	-	-	46 J	Less than CRDL
SL07	0.5-1.5	-	86 J	62 J	120 J	Less than CRDL
SL08	0.5-1.5	-	-	-	43 J	Less than CRDL
SL09	0.5-1.5	-	-	-	43 J	Less than CRDL
SL10	0.5-1.5	-	38 J	65 J	44 J	Less than CRDL
SL11	0.5-1.5	-	73 J	87 J	120 J	Less than CRDL
0393	3.0-5.0	-	70 J	110 J	140 J	Less than CRDL
P001	26.5-28.0	-	66 J	94 J	96 J	Less than CRDL
P003	5.0-6.5 15.0-17.0	-	- 84 J	57 J 160 J	64 J -	Extraction holding time out by 39 days. Data impact indeterminable.
P004	23.0-25.0 30.0-31.5	1200 J 410	2600 J 1500	7400 J 3300	7200 J 3000	Field duplicate values consistently below initial field sample values. The higher values of initial field samples are reported.
P005	1.5-3.0 7.7-9.0 16.5-18.0 55.0-59.0	- - - -	- - - -	- - - -	67 J 260 J 100 J 40 J	Less than CRDL
P015	12.0-14	-	-	45 J	70 J	Less than CRDL

Table A8c. Additional Validated Detections in Soils - Semivolatile Compounds

The following compounds were detected in soil samples, but are considered to leave minimal impact based on the frequency of detections and concentration levels. Results for all detections of semivolatile compounds are presented in Appendix A6.	
1,2-Dichloroethene	*Bis*(2-ehtylhexyl)phthalate
1,4-Dichlorobenzene	Butylbenzylphthalate
2,4-Dimethylphenol	Carbazole
2-Methylnaphthalene	Di-n-butylphthalate
4-Methylphenol	Di-n-octylphthalate
4-Nitroaniline	Dibenzofuran
Acenaphthene	Diethylphathalate
Acenaphthylene	Flourene
Anthracene	Naphthalene
Benzoic Acid	Phenol

Table A8d. Validated Detections in Soils - Pesticide/PCBs

Sample Location	Depth (ft)	Aroclor-1248 (PCB) (µg/kg)	Reason for Qualification
SL01	0.5-1.5	46	
SL02	0.5-1.5	46 J	
SL03	0.5-1.5	38 J	Results varied by 43% on two GC columns; reported result may be biased 43% low.
SL04	0.5-1.5	49	
SL07	0.5-1.5	64	
SL08	0.5-1.5	40	
SL09	0.5-1.5	43 J	Results varied by 41% on two GC columns; reported result may be biased 41% low.
SL10	0.5-1.5	50	Field duplicate value reported. Initial field sample value is 40J. For initial field sample, results varied by 32% on two GC columns. Initial result may be biased 32% low.
SL12	0.5-1.5	11 J	Less than CRDL
0393	3.0-5.0	410 J	Results varied by 27% on two GC columns; reported result may be biased 27% low.
0394	10.5-11.0	24 J	Less than CRDL
P001	26.5-28.0	220,000 J	Surrogate recoveries high, probably due to dilution required for PCB analysis. Impact on data indeterminable; consider as usable.
	31.5-33.0	210	
P003	3.5-5.0	38,000 J	Surrogate recoveries high, probably due to dilution required for PCB analysis. Impact on data indeterminable; consider as usable.
P004	23.0-25.0	410 J	Poor agreement between field and field duplicate (56% RPD), probably due to inhomogeneity of soil samples. Field duplicate value reported as estimated result. Initial field sample value is 230 J.
	30.0-31.5	13,000	
P005	0-10	2300	

NOTE: One detection was reported for methoxyelor. Two detections were reported for endosulfan sulfate. Validated results are presented in Appendix A6.

Table A8e. Validated Detections in Soils - Tritium

Sample Location	Depth (ft)	Tritium (pCi/g)	Reason for Qualification
SL01	0.5-1.5	0.054	
SL02	0.5-1.5	0.121	
SL03	0.5-1.5	0.149	
SL04	0.5-1.5	0.167	
SL05	0.5-1.5	0.218	
SL06	0.5-1.5	0.376	
SL07	0.5-1.5	0.178	
SL08	0.5-1.5	0.061	
SL09	0.5-1.5	1.17	
SL10	0.5-1.5	0.402 J	Field duplicate high by 1.3 SD. Total sample error could be +/-5.3SD.
SL11	0.5-1.5	-	
SL12	0.5-1.5	0.149	
SL13	0.5-1.5	0.102	
B002	3.5-5.0 8.0-10.0 13.0-15.0 16.5-18.0 21.5-23.0	0.0817 0.056 0.066 0.104 0.747	
B003	22.0-26.0 34.5-35.0 35.0-36.5	0.218 0.416 0.514	
0370	35.5-36.0 39.5-40.0	1.02 0.417	
0374	20.5-22.0 25.5-27.0	0.327 1.27	
0375	23.5-24.0 25.5-26.0	0.141 0.795	
0376	15.5-16.5 20.5-21.5	0.198 J 0.325 J	
0377	16.5-17.5 22.5-23.5	0.299 J 0.421 J	

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Sample Location	Depth (ft)	Tritium (pCi/g)	Reason for Qualification
0378	16.5-17.5	0.109 J	
	21.5-23.0	0.621 J	
0379	30.5-32.0	0.796	
	35.0-37.0	0.65	
0381	3.5-5.0	0.12	
	9.0-11.0	0.046	
0393	3.0-5.0	0.594 J	Matrix spike out by 3.7 SD. Total error associated with samples could be +/-6.7SD
	13.5-14.0	2.09 J	
	17.5-18.0	1.14 J	
	20.0-22.0	1.25 J	
	26.0-27.0	0.44 J	
	34.0-35.0	0.466 J	
	38.0-39.0	0.598 J	
0394	2.0-3.0	0.376	
	8.5-9.0	0.022	
	10.0-11.0	0.076	
	14.5-15.0	0.089	
	19.5-20.0	0.382	
	24.5-25.0	0.318	
	25.0-26.0	0.579	
	28.5-30.0	0.393	
	34.5-35.0	0.367	
	39.5-40.0	0.315	
	44.5-45.0	0.971	
	49.5-50.0	0.815	
0397	23.5-24.0	0.631	
	27.5-28.0	0.301	
P001	3.5-5.0	2.05	
	8.5-10.0	0.903	
	13.5-15.0	1.11	
	23.5-25.0	8.31	
	26.5-28.0	2.19	
	34.5-36.0	0.967	
	43.5-45.0	0.725	
	45.5-47.0	0.098	
P002	34.5-36.0	0.722	
	46.5-48.0	0.893	

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Sample Location	Depth (ft)	Tritium (pCi/g)	Reason for Qualification
P003	3.5-5.0	2.4	
	5.0-6.5	1.15	
	13.5-15.0	0.852	
	15.0-17.0	1.03	
	20.0-21.5	0.971	
	25.0-26.5	0.585	
	30.5-37.0	0.34	
	35.5-37.0	0.372	
P004	3.5-5.0	2.04	
	8.5-10.0	17	
	10.0-11.3	29.6	
	18.5-20.0	27.1	
	23.0-25.0	17.2 J	
	28.5-30.0	15.8	
	30.0-31.5	18	
	34.5-35.0	5.83	
	37.0-38.0	1.35	
	39.0-40.0	4.16	
P005	1.5-3.0	0.209	
	7.5-9.0	0.294	
	16.5-18.0	0.542	
	21.5-22.0	1.02	
	28.5-29.0	0.529	
	31.5-32.0	1.74	
	36.5-37.0	40.3	
	42.0-43.0	6.84	
	44.0-45.0	4.47	
	48.5-49.0	0.63	
	54.5-55.0	0.552	
	55.0-59.0	7.38	
	62.5-63.0	0.69	
P007	3.5-5.0	2.83	
	25.0-26.0	2.74	
	32.0-33.0	2.19	

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Sample Location	Depth (ft)	Tritium (pCi/g)	Reason for Qualification
P008	1.0-3.0	0.598	
	6.0-8.0	0.014	
	10-12.0	0.023	
	18.0-19.5	0.035	
	20.0-21.5	0.483	
	26.0-27.5	0.253	
	38.5-40.0	0.182	
	43.5-45.0	0.182	
	47.0-48.5	0.192	
	53.0-54.5	0.67	
P009	13.5-15.0	0.049	
	18.0-19.5	0.612	
	23.5-25.0	0.444	
	28.5-30.0	0.209	
	33.5-35.0	0.197	
	38.5-40.0	0.159	
	43.5-45.0	0.136	
	48.5-50.0	0.227	
	53.5-55.0	0.154	
	58.0-59.5	1.16	
	61.5-63.0	0.327	
	66.0-67.5	0.05	
P013	3.5-5.0	4.53	
	6.0-7.5	0.487	
	13.5-15.0	0.054	
	16.0-17.0	0.166	
	23.5-25.0	0.457	
	28.5-30.0	0.562	
	33.5-35.0	0.125	
	38.0-39.5	0.143	
	43.5-45.0	0.125	
	48.5-50.0	0.109	
	53.5-55.0	0.132	
	58.5-60.0	0.108	
	63.5-65.0	0.115	
	68.0-69.5	0.167	
	71.0-72.5	0.137	

Table A8f. Validated Detections in Soils - Radiological

Sample Location	Depth (ft)	Plutonium-238 (pCi/g)	Plutonium-239/240 (pCi/g)	Strontium-90 (pCi/g)	Reason for Qualification
SL01	0.5-1.5	0.279	-	-	
SL02	0.5-1.5	0.171	0.0676	-	
SL03	0.5-1.5	0.211	0.0643	-	
SL04	0.5-1.5	0.39	0.12	-	
SL05	0.5-1.5	3.56	0.0861	0.48	
SL06	0.5-1.5	0.0521	0.0729	0.522	
SL07	0.5-1.5	3.08	0.0365	-	
SL08	0.5-1.5	0.0288	0.0433	-	
SL09	0.5-1.5	2.43	0.0674	-	
SL10	0.5-1.5	0.291	-	0.682	
SL11	0.5-1.5	8.75	0.0575	0.574	
SL12	0.5-1.5	0.318	-	-	
SL13	0.5-1.5	0.165	0.0449	0.627	
B001	5.0-7.0	-	-	-	
	15.0-16.5	-	-	-	
	26.0-28.0	-	-	-	
B002	8.0-10.0	0.114	0.0887	-	
	13.0-15.0	-	-	-	
B003	22.0-26.0	0.126	0.126	-	
0380	2.5-4.0	-	-	-	
	28.5-29.0	-	-	-	
0381	3.5-5.0	-	-	-	
	18.5-20.0	-	-	-	
0382	4.0-5.0	-	-	-	
	9.0-10.0	-	-	-	
0393	3.0-5.0	0.496	0.131	-	
	20.0-22.0	-	0.0831	-	
	26.0-27.0	-	-	-	
0394	2.0-3.0	2.06	0.0895	-	
	10.0-11.0	0.0688	0.0619	-	
	25.0-26.0	-	-	-	

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Sample Location	Depth (ft)	Plutonium-238 (pCi/g)	Plutonium-239/240 (pCi/g)	Strontium-90 (pCi/g)	Reason for Qualification
P001	13.5-15.0	0.413	-	-	
	34.5-36.0	0.0865	0.0124	-	
P003	5.0-6.5	0.234	-	-	
	15.0-17.0	0.278	-	-	
	25.0-26.5	0.0753	-	-	
P004	3.5-5.0	-	-	-	Field duplicate % RPD high for Pu-238, Sr-90, tritium.
	23.0-25.0	14.2 J	-	1.08 J	
	30.0-31.5	17.8	1.2	-	
	37.0-38.0	-	0.0871	-	
	43.5-45.0	-	0.0761	0.308	
P005	1.5-3.0	0.0953	-	0.55	
	7.5-9.0	0.0479	0.0359	-	
	16.5-18.0	0.245	-	0.606	
	44.0-45.0	2.34	0.0427	0.841	
	55.0-59.0	0.119	0.0746	0.429	
P006	9.0-10.0	0.213	0.178	-	
	13.0-15.0	0.147	0.147	-	
	23.0-25.0	0.221	0.261	5.78	
	30.0-31.0	0.112	0.0722	-	
P007	3.5-5.0	0.265	0.237	-	
	11.0-13.0	0.326	0.179	-	
	24.5-25.0	-	0.116	-	
P014	9.0-10.0	0.114	0.109	-	
	24.2-25.0	0.112	0.151	-	
	35.0-36.0	0.124	0.201	-	
P015	12.0-14.0	0.292	0.0727	-	
	43.0-45.0	-	-	-	
	47.0-48.0	0.110	0.0548	0.358	

NOTE: Due to low frequency of detection or concentration, the following radionuclides are not included on this table: americium-241, cesium-137, potassium-40, radium-226, thorium-228, thorium-230, throium-232, uranium-234, uranium-235/236, and uranium-238. All results are presented in Appendix A6.

Table A8g. Validated Detections in Soils - Dioxin/Furan

Sample Location	Depth (ft)	1,2,3,4,6,7,8-HpCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	1,2,3,4,7,8-HxCDF (pg/g)	Reason for Qualification
B001	5.0-7.0 15.0-16.5	0.45 -	3.2 0.85	- -	- -	
B003	22.0-26.0	.22	-	-	-	
0393	3.0-5.0	3.3 J	12.2 J	-	2 J	Extraction holding time out 16 days. No impact on data.
0394	2.0-3.0 10.5-11.0	6.3 -	30.3 0.52	0.62 -	2.2 -	
P001	34.5-36.0	-	0.59	-	0.18	
P003	5.0-6.5 15.0-17.0	56.4 J 2.8	259 J 4.4	6 -	41 J 1.8	Internal standard recovery high for estimated results, due to ion suppression of recovery standard. Since IS areas appear unaffected, data are probably not affected.
P004	23.0-25.0 30.0-31.5 37.0-38.0	10.4 214 3.1	84.6 J 230 9.2	1.8 41.4 -	1.7 209 1.4	MS recovery for HpCDD was high (151%). Possible low bias in reported sample result.
P005	7.5-9.0 16.5-18.0 55.0-59.0	0.36 1 1.5	- - -	- - -	- 0.49 -	
P006	9.0-10.0	8	53.4	0.48	1.4	
P015	12.0-14.0	17.3	246	1.5	1.3	

Table A8h. Validated Detections in Soils - Dioxin/Furan

Sample Location	Depth (ft)	1,2,3,5,7,8-HxCDF (pg/g)	1,2,3,6,7,8-HxCDD (pg/g)	1,2,3,7,8,9-HxCDD (pg/g)	1,2,3,7,8-PeCDD (pg/g)	1,2,3,7,8-PeCDF (pg/g)	Reason for Qualification
0393	3.0-5.0	0.78 J	-	-	-	0.96 J	Extraction holding time out by 16 days. No impact on data.
0394	2.0-3.0	1.2	1.7	1.8	-	1.1	
P003	5.0-6.5	15.6	11.9	21.2	2.7	9.7	
	15.0-17.0	0.58	-	0.89	-	0.42	
P004	23.0-25.0	1.3	2.1	-	-	0.74	
	30.0-31.5	63.2	28.3	39.7	11	43.2	
	37.0-38.0	0.65	-	-	-	0.75	
P006	9.0-10.0	0.75	1.3	1.5	-	0.42	
P015	12.0-14.0	2.5	13.7	4.7	0.71	-	

Table A8i. Validated Detections in Soils - Dioxin/Furan

Sample Location	Depth (ft)	2,3,4,6,7,8-HxCDF (pg/g)	2,3,4,7,8-PeCDF (pg/g)	2,3,7,8-TCDD (pg/g)	2,3,7,8-TCDF (pg/g)	OCDD (pg/g)	OCDF (pg/g)	Reason for Qualification
B001	5.0-7.0	0.22	-	-	-	-	0.6	
B002	13.0-15.0	-	-	-	-	-	0.22	
B003	22.0-26.0	-	-	-	-	-	1.1	
0393	3.0-5.0 20-22	0.77 J	1.6 J	9.6 J	2.4 J	96 J 6.5 J	3.3 J	Extraction holding time out by 16 days. No impact on data.
0394	2.0-3.0 10.5-11.0	1 -	1.5 -	3 1.8	2.8 -	273 -	10.3 0.28	
P001	34.5-36.0	-	0.24	-	-	-	0.33 J	Associated MS/MSD recovery for OCDF low (10/18%). Reported results possibly biased low by factor of 5-10.
P003	5.0-6.5 15.0-17.0	11.1 0.92	46.2 1	- 1.5	59 0.39	1780 J -	7.9 1.5	Internal standard recovery high for OCDD, due to ion suppression of recovery standard. Since IS area appears unaffected, result is probably not affected.
P004	23.0-25.0 30.0-31.5 37.0-38.0	0.76 64.1 0.66	0.71 150 0.77	1.3 22.5 3.4	1.6 132 1.4	1010 J 1660 J 86.9	6.5 J 163 J 1.3	MS/MSD recoveries for OCDF low (10/18%). Reported results possibly biased low by factor of 5-10. MS/MSD recovery for OCDD, 590/-88%, indicates inhomogeneity of soil. Wide variability may affect sample result.
P005	7.5-9.0 16.5-18.0 55.0-59.0	0.21 0.41 0.15	- - -	0.78 0.62 -	- - -	- - -	- - 3	
P006	9.0-10.0	1.2	-	-	0.99	37.1	15	
P015	12.0-14.0	0.99	-	-	-	2110	50.2	

Table A8j. Validated Detections of 1,1,1-Trichloroethane (μg/L) in Groundwater

MCL = 200 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0071	1.8 J	U	U	U
0124 *	0.78	NS	NS	NS
0126 *	1.7	0.36	NS	NS
0129 *	3.0	1.7	2	3.2
0153 *	1.4	NS	NS	NS
0154 *	0.72 A	U	NS	NS
0271	1.8	U	U	1.1
0370	NA	NA	NA	1.6 J
0376	NA	NA	NA	1.0 J
0377	NA	NA	NA	9.1 J A
0378	NA	NA	NA	18 J

U - Not Detected
J - Estimated Value
A - Average of initial sample and field duplicate
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.41. See Figure 4.1 for well location.

Table A8k. Validated Detections of 1,2-cis-Dichloroethene (μg/L) in Groundwater

MCL = 70 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 *	2.9 J	U	NS	NS
0063 *	13 J	U	NS	NS
0071	3.2 J	U	4.5 A	16.5 A
0076	U	U	U	3
0124 *	1.8	NS	NS	NS
0154 *	16 A	24	NS	NS
0155 *	6	14	NS	NS
0271	2.1 J	U	4	7.2
0305	16 J	U	11	28
0370	NA	NA	NA	640 J
0373	NA	NA	NA	17 J
0374	NA	NA	NA	48

U - Not Detected
J - Estimated Value
A - Average of initial sample and field duplicate
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.42. See Figure 4.1 for well location.

Table A8I. Validated Detections of Tetrachloromethane (Tetrachloromethane) (μg/L) in Groundwater

MCL = 5 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0063 *	3.1 J	U	NS	NS
0152 *	1.3 J	U	NS	NS
0305	2.8 J	2.6	3	U
0306	0.94 J	U	1	U
0307	2.0	1.9	2	2 A
0313	2.1	2.2	2	1.5
0315	4.7 J	4.0	5	3.6
0370	NA	NA	NA	4.6
0373	NA	NA	NA	4.0
0379	NA	NA	NA	3.4
0397	NA	NA	NA	2.3 J A

U - Not Detected
J - Estimated Value
A - Average Concentration
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.43. See Figure 4.1 for well location.

Table A8m. Validated Detections of Trichloromethane (Chloroform) (µg/L) in Groundwater

MCL = 100 ug/L (THM)

Well #	June 92	Sept 92	Dec 92	Mar 93
0063 •	7.9 J	U	NS	NS
0155 •	0.33 J	U	NS	NS
0305	6.6 J	U	6	U
0307	0.84	U	U	U
0313	0.77	U	U	U
0315	0.46 J	U	U	U
0370	NA	NA	NA	130 J
0373	NA	NA	NA	13 J
0397	NA	NA	NA	0.66 J

U - Not Detected
J - Estimated Value
NS - Not Sampled
NA - Not Applicable
• - Not included on Figure 4.44. See Figure 4.1 for well location.

Table A8n. Validated Detections of Tetrachloroethene (μg/L) in Groundwater

MCL = 5 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 *	1.7 J	U	NS	NS
0063 *	23 J	U	NS	NS
0071	0.52 J	U	U	U
0152 *	U	5.6	NS	NS
0153 *	6.0	NS	NS	NS
0154 *	1.4	0.86	NS	NS
0155 *	0.68 J	0.44	NS	NS
0271	0.60 J	U	U	U
0305	21 J	U	32	16
0306	4.5 J	8.4	9	5.2
0307	11	11	16	16
0313	11	12	16	11
0315	0.33 J	U	U	U
0370	NA	NA	NA	270 J
0373	NA	NA	NA	40 J
0374	NA	NA	NA	23
0375	NA	NA	NA	5.3 J
0379	NA	NA	NA	4.8 J
0397	NA	NA	NA	12 J

U - Not Detected
J - Estimated Value
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.45. See Figure 4.1 for well location.

Table A8o. Validated Detections of Trichloroethene (μg/L) in Groundwater

MCL = 5 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 •	1.7 J	U	NS	NS
0063 •	47 J	U	NS	NS
0071	2.1 J	U	3	4.4
0076	1.6 J	U	1	2.0
0152 •	8.2 J	8.3	NS	NS
0153 •	12 J	NS	NS	NS
0154 •	8.1 J	5.1	NS	NS
0155 •	4.4 J	3.5	NS	NS
0271	1.8 J	U	1	1.7
0305	35 J	U	32	32
0306	8.5 J	14	13	16
0307	8.8	7.6	10	10
0313	6.2	6.1	6	6.6
0315	5.3 J	U	9	7.2
0370	NA	NA	NA	210 J
0373	NA	NA	NA	31 J
0374	NA	NA	NA	24
0375	NA	NA	NA	3.9 J
0379	NA	NA	NA	2.8 J
0397	NA	NA	NA	8.1 J

U - Not Detected
J - Estimated Value
NS - Not Sampled
NA - Not Applicable
• - Not included on Figure 4.46. See Figure 4.1 for well location.

Table A8p. Validated Detections of Aluminum (μg/L) in Groundwater

SMCL = 50 to 200 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0063 *	73 J A	70.6	NS	NS
0129	95.6	U	U	Not Used
0305	154 J A	120	U	299 J
0313	2030 J	2330	1730 J	1440 J
0370	NA	NA	NA	36.4 J
0372	NA	NA	NA	1440 J
0374	NA	NA	NA	33.4
0376	NA	NA	NA	136
0378	NA	NA	NA	83.8
0379	NA	NA	NA	24.3
0380	NA	NA	NA	280 J
0381	NA	NA	NA	2420
0382	NA	NA	NA	415
0393	NA	NA	NA	93.8
0397	NA	NA	NA	31.7 J A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
Not Used - Validated data reported in the Environmental Safety & Health Groundwater Monitoring and Mapping Results for March 1993 Report (DOE 1993 y) were qualified in an inconsistent manner and will not be used in this report.
* - Not included on Figure 4.47. See Figure 4.1 for well location.

Table A8q. Validated Detections of Arsenic (μg/L) in Groundwater

MCL = 50 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0305	U	U	1.1 J	Not Used
0307	2.0 J	U	U	U
0313	2.10 J	2.8	2.1	Not Used

U - Not Detected
J - Estimated value
Not Used - Validated data reported in the Environmental Safety & Health Groundwater Monitoring and Mapping Results for March 1993 Report (DOE 1993 y) were qualified in an inconsistent manner and will not be used in this report. See Figure 4.1 for well location.

Table A8r. Validated Detections of Barium (μg/L) in Groundwater

MCL = 2000 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0063 *	141 A	136	NS	NS
0071	83.4	91.9	94.4 A	119
0076	79.7	75.0	81.5	93.2
0123 *	NS	NS	67.3	68.9
0126 *	97	98 A	NS	NS
0129	77.2	82.3	86.5	92.6
0271	82.4	78.6	91.0	99.5
0305	164 A	162	165	193
0306	NS	NS	97.7	113
0307	144	148	148 A	150
0310 *	157	NS	NS	NS
0313	165	170	168	175
0315	NS	NS	173	202
0370	NA	NA	NA	160 J
0372	NA	NA	NA	162 J
0373	NA	NA	NA	198 J
0374	NA	NA	NA	152
0375	NA	NA	NA	99.7 J
0376	NA	NA	NA	65.9
0377	NA	NA	NA	65.9 A
0378	NA	NA	NA	85.1
0379	NA	NA	NA	157
0380	NA	NA	NA	62.3 J
0381	NA	NA	NA	98.8
0382	NA	NA	NA	282
0393	NA	NA	NA	108
0394	NA	NA	NA	90.6
0397	NA	NA	NA	153 J A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.48. See Figure 4.1 for well location.

Table A8s. Validated Detections of Calcium (µg/L) in Groundwater

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 *	107000	139000	NS	NS
0063 *	136000	125000	NS	NS
0071	109000	117000	113000 A	1136000
0076	94500	94600	99200	111000
0123 *	79600	NS	73500	75100
0124 *	11400 A	NS	NS	NS
0125 *	101000	NS	NS	NS
0126 *	121000	117000	NS	NS
0129	121000	125000	128000	132000
0138 *	133000	129000	NS	NS
0152 *	147000 J	158000	NS	NS
0153 *	150000 J	NS	NS	NS
0154 *	120000 J A	134000	NS	NS
0155 *	139000 J	154000	NS	NS
0159 *	88100	80900	NS	NS
0271	103000	105000	112000	118000
0305	141000 A	146000	152000	157000
0306	147000 J	162000	146000	164000
0307	153000	154000	150000 A	151000
0309 *	49300 J	48000	NS	NS
0310 *	119000	NS	NS	NS
0313	184000	179000	165000	166000
0315	171000	152000	155000	171000
0370	NA	NA	NA	176000
0372	NA	NA	NA	78700
0373	NA	NA	NA	176000
0374	NA	NA	NA	154000
0375	NA	NA	NA	167000
0376	NA	NA	NA	115000
0377	NA	NA	NA	99000 A
0378	NA	NA	NA	105000
0379	NA	NA	NA	151000
0380	NA	NA	NA	34700
0381	NA	NA	NA	109000
0382	NA	NA	NA	87300
0393	NA	NA	NA	69500
0394	NA	NA	NA	74100
0397	NA	NA	NA	158000 A

J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.49. See Figure 4.1 for well location.

Table A8t. Validated Detections of Cobalt (μg/L) in Groundwater

Well #	June 92	Sept 92	Dec 92	Mar 93
0305	26.2 A	U	U	21.0
0306	NS	NS	U	12.3
0313	7.8	19.0	U	U
0381	NA	NA	NA	6.4
0397	NA	NA	NA	4.0 J A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
See Figure 4.50 for well location.

Table A8u. Validated Detections of Chromium (µg/L) in Groundwater

MCL = 100 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0071	U	U	14.1 J	U
0305	2800 A	1840	1090 J	2880
0306	NS	NS	150 J	333
0307	U	U	13.7 J	12.3
0310 *	11.8	NS	NS	NS
0313	256	293	353 J	315
0315	NS	NS	51.5 J	U
0372	NA	NA	NA	6.0 J
0373	NA	NA	NA	4.9 J
0376	NA	NA	NA	57.0
0379	NA	NA	NA	38.4
0380	NA	NA	NA	4.9 J

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.51. See Figure 4.1 for well location.

Table A8v. Validated Detections of Copper (μg/L) in Groundwater

MCLG = 1300 ug/L, SMCL = 1000 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0063	18.9 A	42.1	NS	NS
0071	U	5.0 J	U	U
0076	U	4.0 J	U	11.3
0129	U	2.0 J	U	U
0271	9.90	4.0 J	U	5.2
0305	95.0 A	73.4	43.4 J	89.9
0306	NS	NS	U	7.5
0313	21.7	22.4	22.8 J	17.0
0370	NA	NA	NA	3.7
0372	NA	NA	NA	14.1
0374	NA	NA	NA	3.8 J
0380	NA	NA	NA	4.7
0381	NA	NA	NA	5.7 J
0382	NA	NA	NA	6.3 J

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
See Figure 4.1 for well location.

Table A8w. Validated Detections of Iron (μg/L) in Groundwater

SMCL = 300 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 •	11800	2330	NS	NS
0063 •	2315 A	11400	NS	NS
0071	U	49	377 J	U
0076	69.6	U	U	1890 J
0126 •	19.1	U	NS	NS
0138 •	66	157	NS	NS
0152 •	2810	15800	NS	NS
0154 •	65.4 A	U	NS	NS
0155 •	140	357	NS	NS
0159 •	4380	4680	NS	NS
0271	19.8	U	U	Not Used
0305	31900 A	24900	16400 J	30600 J
0306	299	374 A	1860 J	5850 J
0307	154	186	352 A	U
0309 •	1250	644	NS	NS
0310 •	514	NS	NS	NS
0313	8470	8990	8430 J	7240 J
0315	3150	3840	1400 J	824 J
0372	NA	NA	NA	2900
0376	NA	NA	NA	3800
0378	NA	NA	NA	417
0379	NA	NA	NA	570
0380	NA	NA	NA	621
0381	NA	NA	NA	4980
0382	NA	NA	NA	1120
0393	NA	NA	NA	365
0394	NA	NA	NA	1080
0397	NA	NA	NA	219 A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
Not Used - Validated data reported in the Environmental Safety & Health Groundwater Monitoring and Mapping Results for March 1993 Report (DOE 1993 y) were qualified in an inconsistent manner and will not be used in this report.
• - Not included on Figure 4.52. See Figure 4.1 for well location.

Table A8x. Validated Detections of Lead (μg/L) in Groundwater

MCLG = zero

Well #	June 92	Sept 92	Dec 92	Mar 93
0063 *	5.4 J	9.6 J	NS	NS
0305	4.7 J	U	U	U
0313	3.6 J	8.6 J	2.6 J	1.8
0372	NA	NA	NA	2.0 J
0376	NA	NA	NA	4.3
0378	NA	NA	NA	5.2
0379	NA	NA	NA	3.3
0381	NA	NA	NA	2.5

U - Not Detected
J - Estimated value
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.53. See Figure 4.1 for well location.

Table A8y. Validated Detections of Magnesium (μg/L) in Groundwater

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 *	35300	43000	NS	NS
0063 *	44000 A	49800	NS	NS
0071	32100	34800 A	33600 J A	40800
0076	29200	29100	29800 J	34100
0123 *	32900	NS	31800 J	32600
0126 *	32800	33600 A	NS	NS
0129	33200	36500	36500 J	39000
0138 *	36300	38100	NS	NS
0152 *	44100 J	45900	NS	NS
0154 *	34300 J A	38800	NS	NS
0155 *	38600 J	42100	NS	NS
0159 *	29900	27900	NS	NS
0271	31600	32500	34300 J	37000
0305	43700 A	45300	46400 J	48600
0306	42000 J	46300	41200 J	47000
0307	47900	49100	47500 J A	49700
0309 *	25200 J	23900	NS	NS
0310 *	49800	NS	NS	NS
0313	53900	52800	48500 J	51000
0315	52800	51800	50700 J	58400
0370	NA	NA	NA	63100
0372	NA	NA	NA	50400
0373	NA	NA	NA	62800
0374	NA	NA	NA	52100
0375	NA	NA	NA	49300
0376	NA	NA	NA	33300
0377	NA	NA	NA	28500
0378	NA	NA	NA	30400
0379	NA	NA	NA	59100
0380	NA	NA	NA	18600
0381	NA	NA	NA	50100
0382	NA	NA	NA	52100
0393	NA	NA	NA	35400
0394	NA	NA	NA	33700
0397	NA	NA	NA	48100 A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.54. See Figure 4.1 for well location.

Table A8z. Validated Detections of Manganese (µg/L) in Groundwater

SMCL = 50 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 *	155	120	NS	NS
0063 *	42.5 A	189	NS	NS
0071	8.3	10.5	12.5 A	6.7
0076	6.8	9.2	8.6	224
0123 *	416	NS	3806	398
0126 *	4.6	U	NS	NS
0129	U	U	3.1	U
0152 *	37.9	108	NS	NS
0154 *	U	2.3	NS	NS
0155 *	8.3	7.5	NS	NS
0159 *	229	237	NS	NS
0271	13.0	17.1	21.1	18.9
0305	213 A	161	75.3	148
0306	6.5	12.9 A	16.3	32.6
0307	40.2	57.8	41.3 A	37.2
0309 *	256	318	NS	NS
0310 *	82.7	NS	NS	NS
0313	324	504	280	210
0315	55.8	99.3	25.4	14.2
0370	NA	NA	NA	267
0372	NA	NA	NA	98.5
0373	NA	NA	NA	156
0374	NA	NA	NA	295
0375	NA	NA	NA	10.5 J
0376	NA	NA	NA	45.3
0377	NA	NA	NA	9.5 A
0378	NA	NA	NA	34.6
0379	NA	NA	NA	22.3
0380	NA	NA	NA	27.5
0381	NA	NA	NA	255
0382	NA	NA	NA	51.1
0393	NA	NA	NA	39.6
0394	NA	NA	NA	56.9
0397	NA	NA	NA	9.5 J A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
* - Not included on Figure 4.55. See Figure 4.1 for well location.

Table A8aa. Validated Detections of Nickel (µg/L) in Groundwater

MCL = 100 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0123 •	NS	NS	13.4 J	U
0129	45.3	88.7	76.7 J	U
0305	910 A	707	401 J	663
0306	NS	NS	100 J	221
0307	45.5	71.8	40.9 J A	U
0310 •	35.2	NS	NS	NS
0313	100	418	510 J	425
0315	NS	NS	135 J	U
0370	NA	NA	NA	56.7
0372	NA	NA	NA	18.1
0373	NA	NA	NA	20.2
0375	NA	NA	NA	47.7
0376	NA	NA	NA	46.4 J
0379	NA	NA	NA	30.8 J
0380	NA	NA	NA	8.3
0381	NA	NA	NA	204
0393	NA	NA	NA	11.5 J
0397	NA	NA	NA	61.8 A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
• - Not included on Figure 4.56. See Figure 4.1 for well location.

Table A8bb. Validated Detections of Potassium (µg/L) in Groundwater

Well #	June 92	Sept 92	Dec 92	Mar 93
0046 •	3380	2900	NS	NS
0063 •	3160 A	3910	NS	NS
0071	2250	U	3160 A	3460
0076	2990	U	2850	3050
0123 •	13100	NS	14200	13700
0126 •	2650	3600	NS	NS
0129	2770	3980	3880	4120
0138 •	2650	3600	NS	NS
0152 •	3710	3930	NS	NS
0154 •	3210 A	3800	NS	NS
0155 •	3430	3750	NS	NS
0159 •	2080	U	NS	NS
0271	3160	U	3040	3160
0305	3390 A	3720	3550	3530
0306	3470	3760	3430	3700
0307	3510 J	4080	3850 A	3870
0309 •	28500	27000	NS	NS
0313	3440 J	4860	4900	4630
0315	2090	U	3170	3580
0370	NA	NA	NA	5230
0372	NA	NA	NA	25400
0373	NA	NA	NA	4010
0374	NA	NA	NA	4110
0375	NA	NA	NA	5760
0376	NA	NA	NA	3410
0377	NA	NA	NA	2800 A
0378	NA	NA	NA	2780
0379	NA	NA	NA	4420
0380	NA	NA	NA	30700
0381	NA	NA	NA	27800
0382	NA	NA	NA	25000
0393	NA	NA	NA	20400
0394	NA	NA	NA	16400
0397	NA	NA	NA	3500 A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
• - Not included on Figure 4.57. See Figure 4.1 for well location.

Table A8cc. Validated Detections of Sodium (μg/L)

Well #	June 92	Sept 92	Dec 92	Mar 93
0046	64500	85100	NS	NS
0063	86500 A	101000	NS	NS
0071	68600	70500 A	65000 A	92600
0076	46800	47700	51300	56600
0123	565000	NS	570000	2870000
0126	68900	70500 A	NS	NS
0129	60400	65400	68600	69400
0138	64500	70300	NS	NS
0152	70200 J	73000	NS	NS
0154	75600 J A	88600	NS	NS
0155	76600 J	84500	NS	NS
0159	46600	28300	NS	NS
0271	64800	61800	69100	73600
0305	83000 J A	88300	92800	90800
0306	72900 J	76700 A	71400	71900
0307	93300	103000	101000 A	99500
0309	317000 J	299000	NS	NS
0313	84100	90100	95600	95100
0315	108000	114000	105000	123000
0370	NA	NA	NA	123000
0372	NA	NA	NA	336000
0373	NA	NA	NA	123000
0374	NA	NA	NA	103000
0375	NA	NA	NA	51300
0376	NA	NA	NA	110000
0377	NA	NA	NA	150000 A
0378	NA	NA	NA	118000
0379	NA	NA	NA	129000
0380	NA	NA	NA	648000
0381	NA	NA	NA	347000
0382	NA	NA	NA	268000
0393	NA	NA	NA	114000
0394	NA	NA	NA	114000
0397	NA	NA	NA	94500 A

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
• - Not included on Figure 4.58. See Figure 4.1 for well location.

Table A8dd. Validated Detections of Vanadium (μg/L)

Well #	June 92	Sept 92	Dec 92	Mar 93
0071	17.9	13.7 J	U	U
0305	U	12.1 J	5.1	12.7
0307	27.5	14.1 J	U	U
0313	31.4	19.8 J	4.3	U

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
See Figure 4.1 for well location.

Table A8ee. Validated Detections of Zinc (μg/L) in Groundwater

SMCL = 5000 ug/L

Well #	June 92	Sept 92	Dec 92	Mar 93
0063	588 A	915	NS	NS
0071	27.8	U	6.6 J A	U
0076	U	U	4.5 J	U
0123	NS	NS	9.9 J	19.8 J
0126	8.9	U	NS	NS
0129	U	U	23.8 J	U
0271	28.9	U	17.4 J	25.5 J
0305	12.0 A	U	10.4 J	17.1 J
0306	NS	NS	5.2 J	Not Used
0307	U	U	14.5 J A	U
0313	44	77.9	40 J	18.1 J
0315	NS	NS	16.4 J	Not Used
0370	NA	NA	NA	50.9 J
0372	NA	NA	NA	61.9 J
0373	NA	NA	NA	47.4 J
0381	NA	NA	NA	96.3 J
0397	NA	NA	NA	124 J

U - Not Detected
J - Estimated value
A - Average of initial sample and field duplicate sample
NS - Not Sampled
NA - Not Applicable
Not Used - Validated data reported in the Environmental Safety & Health Groundwater Monitoring and Mapping Results for March 1993 Report (DOE 1993b) were qualified in an inconsistent manner and will not be used in this report.
• - Not included on Figure 4.59. See Figure 4.1 for well location.

APPENDIX B

CHAIN-OF-CUSTODY FORMS

B1. OPERABLE UNIT 1 PUMP TEST

B2. ADDITIONAL WORK - SUBSURFACE SOIL SAMPLES

B3. ADDITIONAL WORK - SURFACE SOIL SAMPLES

B4. MARCH 1993 GROUNDWATER SAMPLES

B1. OPERABLE UNIT 1 PUMP TEST

WESTON Analytics Use Only

93051 1111

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05326-021-140-1510-00
Project Contact/Phone #: Howard Smith/505-884-5050
AD Project Manager: William Little
QC: STD Del: STD TAT: 48
Date Rec'd: 5/21/93 Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	6				6											
	Solid																
Volume	Liquid	2-40ml				1x250ml											
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
WESTON Analytics Use Only		12 8010				13 TOC											

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12 8010				13 TOC								
01	AN001-0071-00D3			W	5-20-93	0800	2				1								
02	AN001-0071-20D3			W	"	"	1												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 Halo VOCs 8010, filled
13 TOC
cooler temp = 1.7°C

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[signature]			
5-20-93 1527			

Relinquished by	Received by	Date	Time
FEDEX	[signature]	5/21/93	0820

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

WESTON Analytics Use Only

93C6L745

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 7

Client: EG&G MOUND - OU1
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: HANNA SEALY/505-884-5050
AD Project Manager: WILLIAM LITTLE / Peg Beaty
QC: STD Del: STD TAT: STD 16 DAY
Date Rec'd: 6/2/93 Date Due: 6/18/93
Account #: EG&G MOUND

Refrigerator #		1														
#/Type Container	Liquid	13														
	Solid															
Volume	Liquid	40ml														
	Solid															
Preservatives		HCL														
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
WESTON Analytics Use Only		12, 13														

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	MN001-0071-0014			W	6-1-93	0700	2											
002	MN001-0071-2014			W	"		1											

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HALO VOCs 8010
13 HALO VOCs 8020
COOLER TEMP = 3.2

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered
Airbill # 5616478954
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]				Fedex	[illegible]	6/2/93	0930
[illegible]					[illegible] 6-2-93		

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# N/A Cooler# N/A 381-596a

WESTON Analytics Use Only
93061777

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: EG&G MOUND - 00
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Hannah Scott/505-884-5050
AD Project Manager: William Little
QC: STD Del: STD TAT: STD 16DAY
Date Rec'd: 6/4/93 Date Due: 6/20/93
Account #: EG&G MOUND

Refrigerator #		1
#/Type Container	Liquid	6
	Solid	
Volume	Liquid	40ml
	Solid	
Preservatives		HCL

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN
							12, 13					
001	MN001-IW5W-0001			W	5-29-93	1035	2					
002	~~TRIP BLANK~~ MN001-IW5W-2001			W	"	"	1					
	CROSS OF DUKE in Field											

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

WESTON Analytics Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HALO VOCs 8010

13. BROM VOCs 8020

Temp - 2.1°

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered
Airbill # 4648 7[illegible]
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
6/3/93 1900			

Relinquished by	Received by	Date	Time
Fed X	B. Bu[illegible]	6-4-93	01:30
	BBS 6/4/93		

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# N/A Cooler# N/A 381-596a

WESTON Analytics Use Only
92-L840

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG-G MOUND - 001
Est. Final Proj. Sampling Date:
Work Order #: 05326-021-140-1510-00
Project Contact/Phone #: HOWARD SCALY / 865-804-505
AD Project Manager: WILLIAM LITLE
QC: STD Del: STD TAT: 48 hour
Date Rec'd: 6-11-93 Date Due: 6-15-93
Account #:

Refrigerator #																	
#/Type Container	Liquid	G				G											
	Solid																
Volume	Liquid	40ml				250ml											
	Solid																
Preservatives		HCl				H2SO4											
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
WESTON Analytics Use Only		12				14											

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	MN001-0071-00D9			W	6-10-93	0700	2				1								
002	MN001-0071-20D9			W	"	"	1												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
Temp = 4.3°C
12 = Halo VOC - 8010
14 = TOC - 415.1

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # 6644 7101
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Labels Indicate Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

COC Tape was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]				[illegible]	[illegible]	6/11/93	0730
1730 6-10-93							

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only
9306L883 ...

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND - OU2
Est. Final Proj. Sampling Date:
Work Order #: 05396-021-140-1510-00
Project Contact/Phone #: HOWARD SEALY/513-884-5050
AD Project Manager: WILLIAM LITTLE/YEAGER
QC: STD Del: STD TAT: 45
Date Rec'd: 6/15/93 Date Due: 6/17/93
Account #: EG&G/MOUND

Refrigerator #		1				1												
#/Type Container	Liquid	6				6												
	Solid																	
Volume	Liquid	40ml				250ml												
	Solid																	
Preservatives		HCL				H2SO4												
ANALYSES REQUESTED		ORGANIC							INORG									
		VOA	BNA	Pest/PCB	Herb				Metal	CN								
WESTON Analytics Use Only		12				14												

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN					
001	MN001-0071-0D10			W	6-14-93	0700	2				1									
11A	MN001-0071-2D10			W	"	"	1													

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 HNO3 VOCs 8010
14 TOC
Temp 4.5°

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill #
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]
[illegible]							

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# 7716 Cooler# NA 381-596a

7879

WESTON Analytics Use Only

93061955

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of 2

Client: FCA6 (HOWARD) - 001
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: HOWARD SEALY / 505-884-3011
AD Project Manager: WILLIAM LITTLE
QC: CLP Del: CLP TAT: STD 45DAY
Date Rec'd: 6/16/93 Date Due: 8/2/93
Account #: FCA6 (HOWARD)

Refrigerator #		1																	
#/Type Container	Liquid	G																	
	Solid																		
Volume	Liquid	40ml																	
	Solid																		
Preservatives		HCL																	
ANALYSES REQUESTED →		ORGANIC								INORG									
		VOA	BNA	Pest/PCB	Herb					Metal	CN								
		WESTON Analytics Use Only																	
		12, 13																	

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
	MN001-0375-0005			W	6-16-93	1100	2												
	MN001-0153-0005			W	6-16-93	1240	2												
	MN001-0374-0005			W	6-16-93	1435	2												
	MN001-0305-0005			W	6-16-93	1555	2												
	MN001-0305-1005			W	6-16-93	1555	2												
	MN001-0063-0005			W	6-16-93	1645	2												
	MN001-0076-0001			W	6-16-93	1730	2												
	MN001-0071-0015			W	6-16-93	1818	2												
	MN001-0071-1015			W	6-16-93	1818	2												
	MN001-0071-0015 MS/MSD			W	6-16-93	1818	2												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
COOLER TEMP = 4.8
12 MKS VOCS 8010
13 MKS VOCS 8020

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were: 1) Shipped X or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
6-17-93/1800			

Relinquished by	Received by	Date	Time
FCA6	[illegible]	[illegible]	[illegible]

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

WESTON Analytics Use Only

B00L955

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 2

Client: EG&G Mound - 001
Est. Final Proj. Sampling Date:
Work Order #: 0316-021-140-1510-00
Project Contact/Phone #: [illegible]
AD Project Manager: W. [illegible]
QC: CLP Del: CLP TAT: STD 4 Day
Date Rec'd: Date Due:
Account #:

Refrigerator #		6															
#/Type Container	Liquid	6															
	Solid																
Volume	Liquid	40 ml															
	Solid																
Preservatives		HCL															
ANALYSES REQUESTED			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal	CN						
			WESTON Analytics Use Only														
			12														
			13														

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
	MND1-0021-2015			W	[illegible]	1820	2												
	MND1-0021-2015			W	[illegible]	[illegible]	2												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 Aroclors 8080
13 Aroclors 8080

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ 381-596a

WESTON Analytics Use Only

93061952

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND-001
Est. Final Proj. Sampling Date
Work Order #: 05396-021-140-1510-00
Project Contact/Phone #: HOWARD SEALY/505-844-5050
AD Project Manager: WILLIAM LITTLE
QC: STD Del: STD TAT: 48 hour
Date Rec'd: 6/18/93 Date Due: 6/20/93
Account #: EG&G MOUND

Refrigerator #																		
#/Type Container	Liquid	6					6											
	Solid																	
Volume	Liquid	40ml					1gr											
	Solid																	
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb					Metal	CN							
		WESTON Analytics Use Only																
		12					14											

MATRIX CODES:
B - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN					
001	MW001-0071-0011			W	6-17-93	0720	2				1									
002	MW001-0071-2011			W	6-17-93	—	1													

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
cooler temp: 4.8
12 HALO VOCS 8010
14 TOC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # See Attached
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
FEDEX		6/18/93	0920

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# 7226 Cooler# N/A 381-596a

WESTON Analytics Use Only
9305L571
9305L570 SC 11/13/93

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G (MOUND)
Est. Final Proj. Sampling Date:
Work Order #: 05326-021-140-1510-00
Project Contact/Phone #: HOWARD SCULLY / 303-864-3050
AD Project Manager: WILLIAM LITTLE
QC: CLP Del: CLP TAT: STD (14)
Date Rec'd: 11/8/93 Date Due: 12/3/93
Account #: (GILLIAN)

Refrigerator #																	
#/Type Container	Liquid	6															
	Solid																
Volume	Liquid	2x40ml															
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
WESTON Analytics Use Only		12, 13															

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12	13											
001	MN001-0071-0003			W	5-14-93	1220	2												
002	MN001-0071-1003			W	5-14-93	1320	2												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HNU VOCS 8010
13 ANOM VOCS 8020 HNU

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only

73[illegible]

Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client: ECC Minn
Est. Final Proj. Sampling Date: ____
Work Order #: 05376-021-140-150-00
Project Contact/Phone #: [illegible] 303-884-[illegible]
AD Project Manager: [illegible]
QC: CLP Del: CLP TAT: STD
Date Rec'd: [illegible] Date Due: [illegible]
Account #: [illegible]

Refrigerator #		1																
#/Type Container	Liquid	6																
	Solid																	
Volume	Liquid	1 qt																
	Solid																	
Preservatives																		
ANALYSES REQUESTED →		ORGANIC							INORG									
		VOA	BNA	Pest/PCB	Herb				Metal	CN								
WESTON Analytics Use Only		12	8270															
		13																

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12	13
01	MN001-0063-0004			W	5-21-93	1525	2	
02	MN001-0305-0004			W	5-21-93	1145	2	
03	MN001-0153-0004			W	5-21-93	1030	2	
04	MN001-0375-0004			W	5-21-93	0915	2	
05	MN001-0324-0004			W	5-21-93	1330	2	
06	MN001-0071-0013			W	5-21-93	1445	2	
07	MN001-0071-2013			W	5-21-93	1445	1	

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 Halo Vocs 8010

13 Aroma Vocs 8020

DATE/REVISIONS:

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only

9306L801

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND - OU1
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: HOWARD SEALY 505-884-5050
AD Project Manager: WILLIAM LITTLE
QC: STD Del: STD TAT: 48 hour
Date Rec'd: 6/8/93 Date Due: 6/10/93
Account #: EG&G MOUND

Refrigerator #																
#/Type Container	Liquid	6				6										
	Solid															
Volume	Liquid	40ml				250ml										
	Solid															
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	TOC			Metal	CN						
WESTON Analytics Use Only																
						12					14					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
001	MN001-0071-00D8			W	6-7-93	0700	2				1										
002	MN001-0071-20D8			W	6-7-93	0700	1														

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HALO VOCS 8010

14 TOC

TEMP-2.3°C

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill #296809064
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
[illegible] 6-7-93			

Relinquished by	Received by	Date	Time
FEDEX	[illegible]	6/8/93	0830

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# N/A Cooler# N/A 381-596a

WESTON Analytics Use Only
9306L776

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 2

Client: EG&G MOUND - 001
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: HOWARD SEALY / 505-884-5050
AD Project Manager: WILLIAM LITTLE
QC: STD Del: STD TAT: 48 hours
Date Rec'd: 6/4/93 Date Due: 6/6/93
Account #: EG&G MOUND

Refrigerator #		1				1												
#/Type Container	Liquid	6				6												
	Solid																	
Volume	Liquid	40 ml				250 ml												
	Solid																	
Preservatives		HCL				HCL												
ANALYSES REQUESTED →		ORGANIC							INORG									
		VOA	BNA	Pest/PCB	Herb	14			Metal	CN								
						WESTON Analytics Use Only												
		12				14												

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
001	MN001-0071-00d7			W	6-3-93	0650	2				1									
002	MN001-0071-20d7			W	6-3-93	0650	1													

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 Hazo VOCs 8010
14 TOC
TEMP - 2.1°C

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered
Airbill # 2054 7775
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only

9306L744

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND - COT
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: HOWARD SEAL 4/505-884-5050
AD Project Manager: WILLIAM LITTLE
QC: STD Del: STD TAT: 48
Date Rec'd: 6/2/93 Date Due: 6/9/93
Account #: EG&G MOUNDS

Refrigerator #																
#/Type Container	Liquid	G				G										
	Solid															
Volume	Liquid	40ml				250ml										
	Solid															
Preservatives						HCl										
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	14			Metal	CN						
						WESTON Analytics Use Only										
						12				14						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	MN001-0071-0026			W	6-1-93	0700	2				1								

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 Halo VOCs 8010

14 TOC

COOLER TEMP = 3.2

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered
Airbill # 5664895640
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[signature]				FEDEX	[signature]	6/2/93	0930
6-1-93 1700							

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# N/A Cooler# N/A 381-596a

WESTON Analytics Use Only

72054717

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND
Est. Final Proj. Sampling Date:
Work Order #: 0538-021-140-1510-00
Project Contact/Phone #:
AD Project Manager:
QC: STD Del: STD TAT: 48
Date Rec'd: 5/28/92 Date Due:
Account #:

Refrigerator #		1				1											
#/Type Container	Liquid	6				6											
	Solid																
Volume	Liquid	4L				4L											
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
WESTON Analytics Use Only		12 CS/10				14 TOC											

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001		MW001-0021-0005			W	5-1-92	1130	2				1								
002		MW001-0021-1000 (D)			W	"	"	2				1								
003		MW001-0021-0001 (RAD)			W	"	0820					1								
004		MW001-0021-0005			W	"	"	1												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or
Hand Delivered
Airbill 6025411276 5
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
TCHS							

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# N/A Cooler# N/A 381-596a

WESTON Analytics Use Only

93051665

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G MOUND
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Howard Seal / 505-864-5650
AD Project Manager: William Little
QC: STD Del: STD TAT: 48
Date Rec'd: 5/5/93 Date Due: 5/12/93
Account #: (Building)

Refrigerator #																	
#/Type Container	Liquid	1 Co					3 Co										
	Solid																
Volume	Liquid	40ml					250ml										
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						
		WESTON Analytics Use Only															
		12, 13	8010			14	TOC										

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12, 13	8010			14	TOC								
001	MW001-0071-00D4			W	5-4-93	0645	2				1									

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HALO VOCS 8010
14 TOC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]							
[illegible]	[illegible]	5/5/93	1500		[illegible]	5/5/93	

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ 381-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of ___

Client: EG&G Mound
Est. Final Proj. Sampling Date: ___
Work Order #: 03376-021-140-1310-00
Project Contact/Phone #: Harry Scull / 865-864-5550
AD Project Manager: D. Little
QC: STD Del: STD TAT: ~~48 hr~~ STD
Date Rec'd: ___ Date Due: ___
Account #: ___

Refrigerator #		
#/Type Container	Liquid	05
	Solid	
Volume	Liquid	2-40ml
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

WESTON Analytics Use Only

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12	13
01		MN001-0091-0012			W	5-18-93	1215	2	
02		MN001-0071-2012			W	5-18-93	1215	1	

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 HALO VOC 8010
13 AROM VOC 8020
temp 3-2°C

DATE/REVISIONS:
1. ___
2. ___
3. ___
4. ___
5. ___
6. ___

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # [illegible]
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
5-19-93 [illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

WESTON Analytics Use Only

93051570

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 3

Client: EG&G MOUND
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Howard Smith/513-864-3650
AD Project Manager: William Little
QC: STD Del: STD TAT: STD KUH
Date Rec'd: 5-14-93 Date Due: 6-14-93
Account #: 1.0100.1.0.1

Refrigerator #		
#/Type Container	Liquid	G
	Solid	
Volume	Liquid	2 gal
	Solid	
Preservatives		HCL

ANALYSES REQUESTED →

MATRIX CODES:	
S -	Soil
SE -	Sediment
SO -	Solid
SL -	Sludge
W -	Water
O -	Oil
A -	Air
DS -	Drum Solids
DL -	Drum Liquids
L -	EP/TCLP Leachate
WI -	Wipe
X -	Other
F -	Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN	WESTON Analytics Use Only
							12,13	13					
001	MW01-0071-0002			W	5-14-93	1217	2						
	~~MW01-0071-0003~~			~~W~~	~~5-14-93~~	~~1220~~	~~2~~	~~MW~~					
002	MW01-0071-0004			W	5-14-93	1225	2						
003	MW01-0071-0005			W	5-14-93	1235	2						
004	MW01-0071-0006			W	5-14-93	1305	2						
005	MW01-0071-0007			W	5-14-93	1355	2						
006	MW01-0071-0008			W	5-14-93	~~1525~~ 1535	2						
007	MW01-0071-0009 MS/MSD	✓	✓	W		~~1725~~ 1730	2						
008	MW01-0071-0010			W	5-15-93	0955	2						
009	MW01-0071-0011			W	5-15-93	2135	2						

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 - HLW VOCs - 8010
13 - NON VOCs - 8020

TKLON

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Labels Indicate Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't (Y) or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
FEDEX	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time
	[illegible]		

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

WESTON Analytics Use Only

93051576

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 7

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Howard Sealy / 505-884-5150
AD Project Manager: William Little
QC: STD Del: STD TAT: STD (CLIN)
Date Rec'd: [illegible] Date Due: [illegible]
Account #: [illegible]

Refrigerator #																	
#/Type Container	Liquid	6															
	Solid																
Volume	Liquid	1 x 40 ml															
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only: 12 / 13												
010	M0001-0071-3009			W	5-14-93	2035	✓2												
	~~M0001-0071-1003~~			~~W~~	RUN														
011	M0001-0063-1002			W	5-14-93	2110	✓2												
012	M0001-0063-0002			W	5-14-93	2110	✓2												
013	M0001-0063-0003			W	5-14-93	0015	✓2												
014	M0001-0374-0002			W	5-14-93	2010	✓2												
015	M0001-0374-0003			W	5-15-93	2315	✓2												
016	M0001-0153-0002			W	5-14-93	1920	2												
017	M0001-0153-0003			W	5-15-93	2055	2												
018	M0001-0315-0002			W	5-14-93	1800	2												

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 HNO3 VOCs 8010
13 HNO3 VOCs 8020

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]							
[illegible]							

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only

93056570

Custody Transfer Record/Lab Work Request

WESTON

Page 3 of 3

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Kathy Scott/605-864-5050
AD Project Manager: William Little
QC: STD Del: STD TAT: STD 10 DAY
Date Rec'd: [illegible] Date Due: [illegible]
Account #: [illegible]

Refrigerator #																
#/Type Container	Liquid	6														
	Solid															
Volume	Liquid	2x40mL														
	Solid															
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	VOA	TOC			Metal	CN					
WESTON Analytics Use Only		12 13				14	15									

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
S - Soil	014	MN001-0305-0003			W	5-6-93	1925	2												
SE - Sediment	020	MN001-0305-0002			W	5-14-93	1645	2												
SO - Solid	021	MN001-0305-0003			W	5-15-93	2155	2												
SL - Sludge		~~MN001-0071-0002~~			~~W~~	~~5-14-93~~	~~2015~~				~~2~~	~~1~~								
W - Water	022	MN001-0071-2002			W	5-12-93	1830	2												
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

12 Halo VOCs 5010
13 Aromatic VOCs 8020
14 Halo VOCs 8010 (low-level)
15 TOC

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]				

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596

WESTON Analytics Use Only
93054572 ~~93054576~~ EG 5/18/93

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1 EG 5/18/93

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Howard Scott / 505-384-5050
AD Project Manager: William Little
QC: STD Del: STD TAT: 48 HR
Date Rec'd: 5/18/93 Date Due: 5/18/93
Account #: (illegible)

Refrigerator #																	
#/Type Container	Liquid	6				6											
	Solid																
Volume	Liquid	2x40 ml				1x250 ml											
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	TOCT			INORG: Metal	CN							
WESTON Analytics Use Only		1200 8010				TOC											

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
BL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	1200	8010			TOC									
001	MN001-0071-00D2			W	5-14-93	2045	2				1									

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 Halo VOCs 8010
TOC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]			
5-17-93 1530	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time
	[illegible]		

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

WESTON Analytics Use Only: 9305L48

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G Mound - OU1
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-1510-00
Project Contact/Phone #: Howard Scaly/505-884-5005
AD Project Manager: William Lattelle
QC: CLP Del: CLP TAT: STD 14DTT
Date Rec'd: 5-11-93 Date Due: 11/93
Account #: EG&G Mound

Refrigerator #: 1

#/Type Container	Liquid	G				G									
	Solid														
Volume (mL)	Liquid	2x40				250									
	Solid														
Preservatives		HCL				None									

ANALYSES REQUESTED →

ORGANIC							INORG							
VOA	BNA	Pest/PCB	Herb	Tritium			Metal	CN						

WESTON Analytics Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	12, 1,2,3,4,5				ISCB									
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	CO1	MN020-0305-1			W	5/7/93	0845	3				1									
	CO2	MN020-0374-1			W	5/7/93	0955	3				1									
	CO3	MN020-0375-1			W	5/7/93	1055	3				1									
	CO4	MN020-0063-1			W	5/7/93	1240	3				1									
	CO5	MN020-0071-1			W	5/7/93	1630	3				1									
	CO6	MN020-0153-1			W	5/7/93	1200	3				1									
		~~MN020-0063 2001~~			~~W~~	~~5/7/93~~	~~1240~~	~~2~~													
		Cross off Dm ... Tuesday																			

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
12 - HALO VOCS - 8010
13 AROM VOCS - 8020
Temp: 2.8°C

DATE/REVISIONS:
5/11/93 1. Tritium on Hold till further
2. Notice
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___
Airbill # 4400 4764 4
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]			
[illegible]			

Relinquished by	Received by	Date	Time
Ted Fox	[illegible]	[illegible]	[illegible]

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# NA Cooler# NA 381-596a

B2. ADDITIONAL WORK - SUBSURFACE SOIL SAMPLES

WESTON Analytics Use Only

R9A317131

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: [illegible]
Est. Final Proj. Sampling Date
Work Order #: [illegible]
Project Contact/Phone #: [illegible]
AD Project Manager: William [illegible]
QC: Del TAT

Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	3G	1G	1G		1G	1G	1G	1G	1G		1G					
Volume (ml)	Liquid											1G					
	Solid	40	25	25g		250	125	500	500	250		40					
Preservatives																	

ANALYSES REQUESTED →	ORGANIC								INORG						
	VOA	BNA	Pest/PCB	Herb	H-3	Tc	Ra-226	RAD	Metal	CN	VOC				
	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)		(9)				

MATRIX CODES: S - Soil, SD - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, Wp - Wipe, X - Other, F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA (1)	BNA (2)	Pest/PCB (3)	Herb	H-3 (4)	Tc (5)	Ra-226 (6)	RAD (7)	Metal (8)	CN	VOC (9)				
	MND23-P007-0005		S	10/23/92	3	1	1		1	1		1	1						
	MND23-P007-0015		S	10/23/92	3	1	1		1	1	1	1	1						
	MND23-P007-0020		S	10/23/92	3				1	1									
	MND23-P007-0025		S		3	1	1		1	1	1	1	1						
	MND23-P007-0026		S		3				1	1									
	MND23-P007-0030		S		3				1	1									
	MND23-P007-0031		S		3				1	1									
	MND23-P007-0033		S	10/23/92	3				1	1									
	MND23-P007-2001		W	10/23/92									1		2				
	MND23-P007-2002		W	10/23/92									1		2				

Special Instructions:
(1) VOC - CLP SOW
(2) Semivolatiles - CLP SOW
(3) PCBs - CLP SOW
(4) Tritium - E906.0
(5) Tc - E415.1/2
(6) Ra226 (Ra, Na, NO3, Cl, SO4, Alkalinity) (E903.2, E300.2, SM9251, E375.2, E310.1)
(7) RAD - Ra, Th, U } OK 7/03
(8) Metals - CLP SOW
(9) VOCs - SW8260/8020

DATE/REVISIONS:
1.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	10/23/92	1700

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

R4A37131

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Page ____ of ____

Client: EG&G Mound
Est. Final Proj. Sampling Date: ____
Work Order #: 05376-021-140-0910
Project Contact/Phone #: Howard Sorley/605-884-5050
AD Project Manager: William Little
QC: ____ Del: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #: ____

Refrigerator #																
#/Type Container	Liquid	4/6														
	Solid															
Volume (ml)	Liquid	40														
	Solid															
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb					Metal	CN					
		(7)														

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA (7)	BNA	Pest/PCB	Herb					Metal	CN					
	MN023-P007-2U03		W	10/20/92	4														

Special Instructions:
(7) VOCs - SW 8010/8020

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

RFW 21-21-001A ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

WESTON Analytics Use Only

Field Batch No. 001 RQA37942

Custody Transfer Record/Lab Work Request

WESTON

Client: E G & G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Sealey/505-884-5050
AD Project Manager: William L. Hill
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

		VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	VOC	TPC	H3		
Refrigerator #																
#/Type Container	Liquid											2/G	2/G	1/G		
	Solid	3/G	1/G	1/G		1/P	1/G	1/P	1/P	1/P						
Volume (ml)	Liquid											40	250	250		
	Solid	40	250	250		250	125	500	1000	250						
Preservatives																
ANALYSES REQUESTED →		(9)	(10)	(11)		(6)	(15)	(23) (24) (25) (31)	(1) (2) (3) (7) (8)	(20)		(9)	(15)	(6)		

ORGANIC: VOA, BNA, Pest/PCB, Herb. INORG: Metal, CN.

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	VOC	TPC	H3		
	MN023-P014-0003		S	10/24/92	3				1	1									
	-1003		S		3				1	1									
	-0010		S		3	1	1		1	1		1							
	-4010		W						1						2	2	1		
	-0015		S		3				1	1									
	-0020		S		3				1	1									
	-0025		S		3	1	1		1	1	1	1	1						
	-0027		S		3				1	1									
	-0035	✓	S		6				2	2									
	-0036		S		3	1	1		1	1	1	1	1						

Special Instructions: (1)-U, (2)-Pu, (3)-Th, (6)-H3-906.0, (7)-Gamma RAD (8)-Sr-90/Y-90, (9)-VOC-CLP SOW OLM01.8, Mod. D
(10)-Semi VOCs-CLP SOW OLM01.8, Mod. D
(11)-Pest/PCB-CLP SOW OLM01.8, (15)-TOC-415.1/415.2
(19) Dioxins/Furans-8290, (20)-Metals-CLP SOW ILM01.0, Mod. A
(22)-Cl-9250/9251/325.1, (24)-NO_2 NO_3-353.2
(25) SO_4-375.2, (27)-Fl-340.2, (31) Alk.-310.1

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	10/1/92	1730

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Book No. [illegible] RCA37742

Custody Transfer Record/Lab Work Request

WESTON

Client: E.G. & G. MOUND
Est. Final Proj. Sampling Date
Work Order # 05376-021-140-0810
Project Contact/Phone # Howard Seeley/[illegible]-864-5050
AD Project Manager William Little
QC: Del: TAT:

Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid											2/G	2/G			1/G
	Solid	3/G	1/G	1/G		1/P	1/G	1/P	1/P	1/P		2/G		1/G	1/G	
Volume (ml)	Liquid											40	250			250
	Solid	40	250	250		250	[illegible]	500	1000	250				500	250	
Preservatives																

ANALYSES REQUESTED →	ORGANIC								INORG						
	VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	VOC	TOC	TOC	Dioxin Furan	H3
	(7)	(10)	(11)		(6)	(15)	(8)	(16)			(7)	(15)	(15)	(17)	(6)

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	VOC	TOC	TOC	Dioxin Furan	H3
	MND23-P014-0037		S	10/24/92	3				1	1									
	-0040		S		3				1	1									
	MND23-P006-0005		S	10/25/92	3				1	1									
	-0010		S		3	1	1		1	1	1	1	1					1	
	-4010		W						1 EP	1					2	1			1
	-0015		S		3	1	1		1	1	1	1	1					1	
	-0016		S		3				1	1 EP							1		
	-1016		S		3				1	1 EP							1		
	-3016		W												2				
	MND23-085D-3001		W												2				

Special Instructions: (1)-U, (2)-R, (3)-Th, (6)-H3-TOC.D (7) Gamma RAD (8)-S-90/Y-90 (9)-VOC-CLP 500 OL MO1.8, Mod. D (10)-Semi VOCs-CLP 500 OL MO1.8, Mod D (11)-Pest/PCB-CLP 500 OL MO1.8 (15)-TOC-415.1/415.2, (17) Dioxins/Furans-8290, (20)-Metals-CLP 500 ILM01.0, Mod. A (23)-Cl-9250/9251/325.1, (24)-NO2,NO3-353.2 (25) SO4-375.2 (27)-Fl-340.2, (31) Alk-310.1

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Field Batch No. 001 RQA37742

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Page 2 of 3

Client: EG & G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley/513-864-5055
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid													2/G			
	Solid	3/G	1/G	1/G		1/P	1/G	1/P	1/G	1/P		1/P					
Volume (ml)	Liquid																
	Solid	40	500	500		250	125	500	500	250		1000		40			
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	H-3	TOC	Anions	Dioxin Furan	Metal	CN	RAD	VOC				
		(9)	(10)	(11)		(6)	(15)	(24) (25) (26) (27) (31)	(17)	(20)		(1) (2) (3) (7) (8)	(9)				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA (9)	BNA (10)	Pest/PCB (11)	Herb	H-3 (6)	TOC (15)	Anions (24) (25) (26) (27) (31)	Dioxin Furan (17)	Metal (20)	CN	RAD (1) (2) (3) (7) (8)	VOC (9)			
	MND23-P006-0025		S	10/25/92	3	1	1		1	1	1	1	1		1				
	MND23-P006-0031		S	10/25/92	3	1	1		1	1	1		1		1				
	MND23-P006-0034		S	10/25/92	3				1	1									
	MND23-P014-2004		W	10/24/92												2			
	MND23-P006-2005		W	10/25/92												2			
				(6)	H3-906.0														
				(31)	Alk.-310.1														
				(27) ~~(26)~~	Fl-340.2														
				(25)	SO4-375.2														
				(24)	NO2-NO3-353.2														

Special Instructions: (1) - U (2) - Pu (3) - Th
(7) - Gamma RAD (8) - Sr-90/Y-90
(9) - VOC CLP SOW OLM01.8 Mod D
(10) - Semi VOC - CLP SOW OLM01.8, Mod. D
(11) - Pest/PCB CLP SOW OLM01.8
(15) - TOC - 415.1/415.2 (17) Dioxins/Furans 8290
(20) - Metals - CLP SOW ILM01.0, Mod A

DATE/REVISIONS: (25) - Cl - 9250/9251/325.1

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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

RQA3774$

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: [illegible]
Est. Final Proj. Sampling Date: [illegible]
Work Order #: 05 3746 [illegible] 140-0R10
Project Contact/Phone #: H.S. [illegible] 203-894-[illegible]
AD Project Manager: [illegible]
QC: [illegible] Del: [illegible] TAT: [illegible]
Date Rec'd: [illegible] Date Due: [illegible]
Account #: [illegible]

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/P	1/G	1/P	1/P	1/P		1/G					
Volume	Liquid																
	Solid	40	500	500		250	125	500	1000	250		500					
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	Dioxin					
		(7)	(10)	(11)		(6)	(15)	(5) (2) (30)	(4) (1)	(20)		(17)					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	Metal	CN	Dioxin				
	MND23-P015-0005		S	10/26/92	3				1	1									
	-0010	✓	S		5				2	2									
	-0014		S		3	1	1		1	1	1	1	1		1				
	-1014		S		3	1	1		1	1	1	1	1						
	-0020		S		3				1	1									
	-0027		S		3				1	1									
	-0034		S		3				1	1									
	-0045		S		3	1	1		1	1	1	1	1		1				
	-0048		S		3	1	1		1	1	1	1	1						
	-0055		S		3				1	1									

Special Instructions: (1) [illegible] (2) [illegible] (3) [illegible] (4) [illegible] (5) [illegible] (6) [illegible] (7) [illegible] (8) [illegible] (9) [illegible] (10) [illegible] (11) [illegible] (12) [illegible] (13) [illegible] (14) [illegible] (15) [illegible] (16) [illegible] (17) [illegible] (18) [illegible] (19) [illegible] (20) [illegible] (21) [illegible]

DATE/REVISIONS:
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Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

REA37748

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of ___

Client
Est. Final Proj. Sampling Date
Work Order #
Project Contact/Phone #
AD Project Manager
QC ___ Del ___ TAT ___

Date Rec'd ___ Date Due ___
Account # ___

Refrigerator #																
#/Type Container	Liquid															
	Solid	1/G	1/G	1/G		1/P	1/G	1/P	1/P	1/P			1/G		1/G	1/G
Volume	Liquid												40		250	250
	Solid	10	500	500		250	125	500	1000	250				500		
Preservatives																

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	H3	TOC	Anion	RAD	INORG Metal	CN	VOC	Diquat Paraquat	TOC	H3
S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish		~~MN023-P015~~																	
		MN023-P015-4055		W	10/1/92											2		1	1
		MN023-P015-0051		S	1	3				1	1								
		MN023-P015-2006		W	1											2			

Special Instructions: (1)-W, (2)-[illegible], (3)-TN, (4)-H3-906.0 DATE/REVISIONS:
(5) [illegible] (6) VOC-[illegible] P015, Mod. D
(7) [illegible] P015, Mod. D
(8) [illegible] P015
(9) [illegible] 8290
(10) [illegible] P015, Mod. D
(11) [illegible] 353.2
(12) [illegible] 2, (13) [illegible] 3, (14) [illegible]

1. ___
2. ___
3. ___
4. ___
5. ___
6. ___

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	[illegible]	[illegible]				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

WESTON Analytics Use Only

R&A37759

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 03376-011-140-0010
Project Contact/Phone #: Howard Seeley (909)-884-505
AD Project Manager: William Little
QC: Del: TAT

Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P	2/G			
Volume	Liquid																
	Solid	4	250	250		125	250	500	125	250		250	500	40			
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	[illegible] SO4	Alk.	Metal	CN	[illegible]	[illegible]	VOA			
		7	11	11		15	1	[illegible]	31	20		19	[illegible]	7			

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	[illegible] SO4	Alk.	Metal	CN	[illegible]	[illegible]	VOA		
	MWD23-B002-0005		S	11/3/92	3				1	1									
	-0010				3	1			1	1						1			
	-0015				3	1			1	1	1	1	1		1	1			
	-0019				3				1	1									
	-1018				2				1	1							2		
	-0023				3				1	1									
	-B003-0024	✓			4	2	1		2	2	2	2	2		2	2			
	-1024					1					1	1	1		1	1			
	-0035				3				1	1									
	-0036				3				1	1									

Special Instructions:

[illegible]

DATE/REVISIONS:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: CDAG Fund
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (303)-886-303
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	3/G	3/G	3/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/P	1/P	1/P
	Solid																
Volume	Liquid	40	1000	1000		500	500	500	500	500		500	500	500	500	500	500
	Solid																
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TC	H3	F1	NO2/NO3	Metal	CN	Cl, SO4	NH3	Metals	Diss. Fe	Mn	
		9	10	11		15	6	27	24	21		25, 26	31	1,2,3, 4,5	17	9	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TC	H3	F1	NO2/NO3	Metal	CN	Cl, SO4	NH3	Metals	Diss. Fe	Mn
	MN023-B002-3020		W	11/3/92	3														
	-4020		W		3	2	2		1	1	1	1	1		1	1	2		2
	-B003-2007		W																2
	-0950-3002		W																2

Special Instructions:
[illegible]
[illegible]
[illegible]
[illegible]-903.0
[illegible]-Gamma rad
[illegible]-Sr-90
[illegible]-VOCs-CLP SOW OLM01.8
[illegible]-Semi-VOCs-CLP SOW OLM01.3
[illegible]-Pesticides/PCBs-CLP SOW OLM01.8
[illegible]-TOC-415.1/415.2

DATE/REVISIONS:
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0,ISM01.0
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

1. 2. 3. 4. 5. 6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/4/92	[illegible]

Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Field Batch No. [illegible] RQA37760

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 2

Client: [illegible] Bldg Hound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0510
Project Contact/Phone #: Howard Beeler (505)-984-505
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	G	G	G		G	G	PG	G	G	G	G	P				
Volume (ml)	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	100				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl Jo Jo Jo Cl Sol	Alk	Metal	CN	Dox Fe	GAM P T L S				
		9	10	11		15	6	23, 24, 25, 27	31	20		19	1, 2, 3, 7, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl Jo Jo Jo Cl Sol	Alk	Metal	CN	Dox Fe	GAM P T L S			
	MN023-B001-0005		S	11/4/92	3				1	1									
	-0007				3	1			1	1	1		1		1	1			
	-0014				3				1	1									
	-0015				3	1	1		1	1	1	1	1		1	1			
	-0023				3				1	1									
	-1023				3	1			1	1	1								
	-0028	P/PCB ONLY			3	1	2		1	1	1	1	1			1			
	-1028						1												
	-0035				3				1	1									
	-0038				3				1	1									

Special Instructions:

1-U
2-Pu
3-Sr
4-U3-900.0
7-Gamma [illegible]
8-Sr-90
9-VOCs-GC/MS SW 8240/8260
10-Semi-VOCs GC/MS SW 8270/8270C
11-Pest/PCBs-GC/MS SW 8081/8082
15-TOC-415.1/415.2
19-Metals/Inorganics-6200
20-Cyanide-GC/P SW 9010/9012
23-Cl-9251/325.2
24-TDS-160.1-353.2
25-SO4-375.2
27-F 340.2
31-Alk.-310.1

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Kath Ca	Fed Ex	11/5/92	1200

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

KLA37160

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of 2

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 03376-021-140-0318
Project Contact/Phone #: Howard Seeley (508)-664-3030
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	G		G		G	G										
	Solid																
Volume	Liquid	40		1000		250	250										
	Solid																
Preservatives		HCl		4°C		HCl	—										
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H2			Metal	CN						
		0		11		15	6										

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H2			Metal	CN					
	MND23-B001-4131		LW	11/04/92	3		2		1	1									
	MND23-B001-2008		LW	11/11/92	2														

Special Instructions:
[illegible]

DATE/REVISIONS:
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-[illegible]/A-8/90 ____ L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# ____ G77-596a

WESTON Analytics Use Only

RCA 377163

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 4

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 05378-021-140-0310
Project Contact/Phone #: Howard Bosley (505)-884-[illegible]
AD Project Manager: William Little
QC: Del: TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	G	G	G		G	P	P	G	P		G	P					
Volume	Liquid																	
	Solid	4L	250	250		125	500	500	125	500		500						
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	H2S	Fl. Hc. Cl. Sol.	Alk.	Metal	CN							
		7	11	11		1	6		1	2		1						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H2S	Fl. Hc. Cl. Sol.	Alk.	Metal	CN					
	MW03-F003-[illegible]		S	11/1/12	3				1	1									
	-[illegible]				3	1	1		1	1	1	1	1		1	1			
	-[illegible]				3				1	1									
	-[illegible]	✓		11/1/12	6	1	1		2	2	1		1		1	1			
	-[illegible]				3				1	1									
	-[illegible]				3				1	1									
	-[illegible]				3	1	1		1	1	1	1	1		1	1			
	-[illegible]				3				1	1									
	MW02-F003-[illegible]		S	11/1/12	3				1	1									

Special Instructions:

1-U
2-Pa
3-Th
4-R3-[illegible]
5-Gross Pad
6-Sr-90
7-VOCs-CLP 500 OLM01.8
10-Semi VOCs-CLP 500 OLM01.8
11-Pesticide/PCBs-CLP 500 OLM01.8
15-TOC-415.1/415.2

DATE/REVISIONS:

19-Chlorine/Fecals-8290
20-Metals-CLP 500 ILM01.0,200.8
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	[illegible]				

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

R9A37763

Custody Transfer Record/Lab Work Request

WESTON

Page ___ of ___

Client

Est. Final Proj. Sampling Date

Work Order # 03376-021-340-0510

Project Contact/Phone # Howard Sanitary (513)984-5050

AD Project Manager Quillie Little

QC Del TAT

Date Rec'd ___ Date Due ___

Account # ___

Refrigerator #																		
#/Type Container	Liquid	G	G	G		G	G	P	P	P	S	P	P	P	G	G
	Solid															
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000	500	500	500	4000	1000	500
	Solid															
Preservatives		HCl				HCl			H_2SO_4					NaOH		
ANALYSES REQUESTED		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TOC	TS	TSS	NH_3 NO_3	Metal	CN	Cl_2 SO_4	AIR	$S^=$ S_2O_3	Phenol	
		9	11	11		17	6	27	24	20		25	31	1.2	19	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	TSS	NH_3 NO_3	Metal	CN	Cl_2 SO_4	AIR	$S^=$ S_2O_3	Phenol	
	MND23-2003-3020		W	11/7/92	3														
	MND23-2003-4020		W	11/7/92	3	2	2		1	1	1	1	1		1	1	2	2	

Special Instructions:

DATE/REVISIONS:

19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Media
23-Cl-9250/325.2
24-TOC-9060-415.2
25-TS-160.3
27-S-376.2
31-AIR-310.1

1. ___ 2. ___ 3. ___ 4. ___ 5. ___ 6. ___

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21 -8/90 ___ L372 ___ L373 ___ ___ L377 ___ L378 Ref# ___ Cooler# ___ G77-596a

WESTON Analytics Use Only

F...S Id. No. 004

RQA37764

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible] Round
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0019
Project Contact/Phone #: Howard Sealey (305)-384-[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	G	G	G		G	P	P	G	P		G	P				
Volume (ml)	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	100				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl, Br, NO2, Li, SO4	AIR	Metal	CN	P-K, Fe, Mn	Gross α, β, TCLP, Ra, SO4				
		7	11	11		15	6	23, 24, 25, 27	31	20		17	1, 2, 5, 7, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl, Br, NO2, Li, SO4	AIR	Metal	CN	P-K, Fe, Mn	Gross α, β, TCLP, Ra, SO4			
	MN023-P001-0005		S	11/8/92	3				1	1									
	-0010				3				1	1									
	-0015				3	1	1		1	1	1	1	1			1			
	-0018				3				1										
	-0025				3				1	1									
	-0028				3	1	1		1	1									
	~~-0035~~ -0036				3				1	1									
	-0036				3	1	1		1	1	1	1	1		1	1			
	-0045				3				1	1									
	MN023-P002-0047		S	11/8/92	3				1	1									

Special Instructions:

1-U
2-Pa
3-Th
4-Ra-[illegible]
5-Ra-[illegible]
6-Se-[illegible]
7-[illegible]
8-Se-[illegible]
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM02.0, [illegible]
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-AIR-310.1

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/8/92	1200

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

REA37764

WESTON

Page 1 of 1

Client: SCDHC Round
Est. Final Proj. Sampling Date:
Work Order #: 03376-021-140-0810
Project Contact/Phone #: Howard Bailey (305)885-5052
AD Project Manager: William Lattie
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	G	[illegible]			G	G										
	Solid							G									
Volume/(ml)	Liquid	40				250	250										
	Solid							40									
Preservatives		HCl				HCl		HCl									
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	VOA		Metal	CN						
		7				15	4										

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	VOA		Metal	CN					
	MN023-P001-4025		W	11/8/92	3				1	1									
	MN023-P001-0033		S	11/ /92							3								
	MN023-P001-2009		W	11/9/92	2														
	~~MN023-P001-MP~~																		
	MN023-0850-3003		W	11/5/92	2														

Special Instructions:
-U
-Pu
-Th
-Ra-226-ASTM D2460-70
-H3-906.0
-Gamma rad.
-Sr-90
-VOCs-CLP SOW OLM01.6
-SemiVOCs-CLP SOW OLM01.2
-Pests/PCBs-CLP SOW OLM01.6
-TOC-415.1/415.2

DATE/REVISIONS:
1. 10-Dioxins/Furans-8290
2. 20-Metals-CLP SOW ~~ILM01.0, Hg:~~ 1A
3. 23-Cl-9251/325.2
4. 24-NO3-NO3-353.2
5. 25-NO4-375.2
6. 27-F-340.2
31-Alk.-310.1

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]A-8/90 L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# ____ G77-596a

WESTON Analytics Use Only

Field Blank No. 004 RE437661

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: [illegible]-021-140-0819
Project Contact/Phone #: [illegible] Seeley (303)-[illegible]
AD Project Manager: William Little
QC: Del TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	G	G	G		G	P	P	G	P		G	P				
Volume (ml)	Liquid																
	Solid	S	250	250		125	250	500	500	250		250	125				
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TKN	Vol. Cl. Sol	Alk	Metal	CN	Diox	Furans				
		7	10	11		15	6	22, 24, 25, 27	31	20		19	1, 2, 3, 7, 8				

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; Wi - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TKN	Vol. Cl. Sol	Alk	Metal	CN	Diox	Furans			
	MND23-P002-0036		S	11/7/92	3				1	1									
	-0048		S		3				1	1									
	MND23-P004-0005		S	11/10/92	3	1	1		1	1	1	1	1		1	1			
	-0010		S		3				1	1									
	-0011		S		3				1	1									
	-0020		S		3				1	1									
	-0025	✓	S		6	1	1		2	2	1	1	1		1	1			
	-1025		S		3	1	1		1	1	1		1			1			
	-0030		S		3				1	1									
	-0031		S		3	1	1		1	1	1	1	1		1	1			

Special Instructions:

1-U
2-Pu
3-Th
6-83-906.0
7-Gamma rad
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0,Mod.2
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/[illegible]	1300

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Batch No. 004 RE3T166

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 2

Client: [illegible] Board
Est. Final Proj. Sampling Date:
Work Order #: 03376-021-140-0810
Project Contact/Phone #: Howard Sealey (505)884-505[illegible]
AD Project Manager: Allina Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid	G	G	G		G	G	P	P	P		P	P	P				
	Solid																	
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000				
	Solid																	
Preservatives		HCl				HCl			H_2SO_4	HNO_3				HNO_3				

ANALYSES REQUESTED →	ORGANIC								INORG							
	VOA	BNA	Pest/PCB	Herb	TRC	H_2S	Fl	NO_2	Metal	CN	Gr. Sol.	AIR	Gam. Th. K-40 Ra-226			
	7	10	11		15	6	27	24	20		23, 25	31	1,2,3, 4,5, 7,8			

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TRC	H_2S	Fl	NO_2	Metal	CN	Gr. Sol.	AIR	Gam. Th. K-40 Ra-226		
	MN023-F004-3025		W	11/10/92	3														
	" -4025		W	"	3	2	2		1	1	1	1	1		1	1	2		
	" -2010		W	11/10/92	2														
	MN023-URSD-3004		W	"	2												1		

Special Instructions:
1-U
2-Pu 4-[illegible]
3-Th
5-As-[illegible]-ASDI D2460-70
6-[illegible]-900.0
7-Gross [illegible]
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2

DATE/REVISIONS:
19-Dioxins/Furans-8290
20-Metals-CLP SOW ~~ILM01.0, Nov.A~~
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

1. 2. 3. 4. 5. 6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/10/92	13[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]/A-8/90 ____ L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# ____ G77-596a

WESTON Analytics Use Only

FIELD BATCH NO. 005 AIRBILL NO. 4580174014 BR037777

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 1

Client: DOE/Rocky Flats
Est. Final Proj. Sampling Date:
Work Order #: 05370-021-149-0810
Project Contact/Phone #: Howard Beeley (505)-884-505
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	6	6	6		6	P	P	6	P		6	P					
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	100					
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	Hg	PL NO2 NO3 CL SO4	ALK	Metal	CN	Dioxin Furan	CAN PU TU SR 90					
		9	10	11		15	6	23 24 25 27	31	20		19	1,2,3 7,8					
MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected													
		MND23-F004-0035		S	11-7-92	4				1	1							
		0038				4	1	1		1	1	1	1	1		1	1	
		0040				4				1	1							
		0045				4	1	1		1	1	1	1	1		1	1	
		0050				4				1	1							
		-2011		W	11-18-92	2												

Special Instructions:

[illegible]-U
[illegible]-Pu
[illegible]-Th
[illegible]-H3-906.0
[illegible]-Gamma rad
[illegible]-Sr-90
[illegible]-VOCs-CLP SOW OLM01.8
[illegible]-Semi-VOCs-CLP SOW OLM01.8
[illegible]-Pests/PCBs-CLP SOW OLM01.8
[illegible]-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0,Mod.A
23-Cl-9251/325.2
24-[illegible]-353.2
25-[illegible]-375.2
27-F-340.2
31-Alk-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	FED EX	11-18-92	1600

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 519 G77-596a

WESTON Analytics Use Only

FIELD BATCH NO. 005 AIRBILL NO. 4850174003 REA3778

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: DOD Hanford
Est. Final Proj. Sampling Date:
Work Order #: 106376-021-140-0310
Project Contact/Phone #: Howard Seeley (505)884-5050
AD Project Manager: William Little
QC: Del: TAT:

Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	6	6	6		6	6	P	P	P		P	P	6	P		
	Solid																
Volume	Liquid	40 mL	100	1000		250	1000	500	500	1000		500	500	250	4 L		
	Solid																
Preservatives		HCL				H_2SO_4			H_2SO_4	$NaOH$					H_2SO_4		
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	Diesel Fuel	Phenols	NO_2 NO_3	Metal	CN	Cl SO_4	NH_3	H_2S	Cyanide Iodide Nitrate		
MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	9	10	11		15	19	27	24	20		23 25	31	6	1,2,3 4,5 7,8	
S - Soil		MND23-0394-4005		W	11-19-92	3	2	2		1	2	1	1	1		1	1	1	2	
SE - Sediment		MND23-0394-2012		W	11-19-92	2														
SO - Solid																				
SL - Sludge																				
W - Water																				
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions:

4-Am-241

DATE/REVISIONS:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]		11-A-92	1710

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]/A-8/90 ____ L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# 51[illegible] G77-596a

WESTON Analytics Use Only

Field Batch No. 005 REA37784

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Client: Scott Sound
Est. Final Proj. Sampling Date:
Work Order #: 05376-022-140-0810
Project Contact/Phone #: Howard Seeley (503)-[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	G	G	G		G	P	P	G	P		G	P					
Volume (ml)	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	1000					
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl, NO_2, NO_3, Cl, SO_4	Alk.	T.D. Metal	CN	Dup Exp	Ram Pb, Th, U, Sr-90					
		9	10	11		15	6	23, 24, 25, 27	31	20		19	1, 2, 3, 7, 8					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	Fl, NO_2, NO_3, Cl, SO_4	Alk.	T.D. Metal	CN	Dup Exp	Ram Pb, Th, U, Sr-90			
	MN023-0399-0005		S	11/19/92	4	1	1		1	1	1	1	1		1	1			
	-0014				4				1	1									
	-0018				4				1	1									
	-0021	✓			8	2	2		2	2	2	1	2		1	2			
	-1021				4				1	1		1			1				
	-0027				4	1	1		1	1	1	1	1			1			
	-0035				4				1	1									
	↓ -0039		↓	↓	4				1	1									

Special Instructions:

[illegible]-D
[illegible]-Pb
[illegible]-Sr
[illegible]-900.0
[illegible]-Gross Pzd
[illegible]-Sr-90
[illegible]-VOCs-CLP SOW OLM01.8
[illegible]-Semivols-CLP SOW OLM01.8
[illegible]-Pesticides/PCBs-CLP SOW OLM01.8
[illegible]-TOC-415.1/415.2

19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0,mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-[illegible]-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/20/92	1730				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

WESTON Analytics Use Only

Field Blank Numbers RCA31784

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible]
Est. Final Proj. Sampling Date: _____
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Scaley (505)884-[illegible]
AD Project Manager: William Little
QC _____ Del _____ TAT _____
Date Rec'd _____ Date Due _____
Account # _____

Refrigerator #																			
#/Type Container	Liquid	1/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	2/P	2/P	
	Solid																
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	500	1000	1000	
	Solid																
Preservatives		HCl				HNO3			HNO3	HNO3					HNO3		
ANALYSES REQUESTED →		ORGANIC									INORG						
		VOA	BNA	Pest/PCB	Herb	200.7	13	7	8082 8081		Metal	CN	Ca, Mg	Na	Fe, Mn, Cu, Zn, Pb	Al	
		9	10	11		15	6	27	24	25		20, 23	21	7, 2, 3, 4, 5, 6	19		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	200.7	13	7	8082 8081		Metal	CN	Ca, Mg	Na	Fe, Mn, Cu, Zn, Pb	Al	
	MND23-0393-3005		W	11/19/92	2															
	MND23-0351-2013		W	11/19/92	2															
	MND23-0850-3005		W	11/19/92	2															

Special Instructions:
1-U
2-Pu
3-Th
4-Am-241-DOE EML-A01
5-Ra-226-ASTM D2460-70
6-U3-908.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs-CLP SOW OLM01.8
11-Pesta/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	11/20/92	1730

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

R2137791

WESTON

Client: BCAA Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Bernard Bailey (305)[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives		[illegible]															

ANALYSES REQUESTED	ORGANIC								INORG						
	VOA	BNA	Pest/PCB	Herb	TOC	RS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Rad Thor	Cs, Pu, Th, U, Sr-90			
	9	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8			

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	RS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Rad Thor	Cs, Pu, Th, U, Sr-90			
	MND23-0394-0003		S	11-19-92	4	1	1		1	1	1	1	1		1	1			
	0009		S	11-19-92	4				1	1									
	0011		S	11-19-92	4	1	1		1	1	1	1	1		1	1			
	0015		S	11-19-92	4				1	1									
	0020		S	11-19-92	4				1	1									
	0025		S	11-19-92	4				1	1					[illegible]				
	0026		S	11-20-92	4	1	1		1	1	1	1	1		[illegible]	1			
	0030		S	11-20-92	4				1	1									
	0035		S	11-20-92	4				1	1									
	0040		S	11-20-92	4				1	1									

Special Instructions:

1-[illegible]
2-[illegible]
3-[illegible]
4-[illegible]
5-[illegible]
6-[illegible]
7-[illegible]
8-[illegible]
9-[illegible]
10-[illegible]

10-Dioxins/Furans-8290
20-[illegible]-CLP SOW TLM01.1, [illegible] A
11-[illegible]-8151/515.2
2[illegible]-[illegible]-353.2
25-[illegible]-375.4
27-F-300.2
31-Alk.-310.1

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[signature]	FED EX	11-23-92	1530

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Client: Mobil Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0010
Project Contact/Phone #: Howard Bedley (505)884-50
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	60	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	F SO4 NO3, Cl, PO4	Alk.	Metal	CN	Diox Fur	Gross Pu, Th, U, Sr-90				
MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected												
		MND23-0394-0045		S	11-20-92	4				1	1	X	KP				
		MND23-0394-0050		S	11-20-92	4				1	1	X	KP				

Special Instructions:

DATE/REVISIONS:

1. KP revisions made 12/3/92
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/23/92	15[illegible]

Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

FIELD BATCH NO. 00[illegible] RCA37792

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Client: ECLC Round
Est. Final Proj. Sampling Date:
Work Order #: 03376-021-140-0010
Project Contact/Phone #: Howard Sealey (303)384-30[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	4/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO3 NO3, Cl, SO4	AIR.	Metal	CN	Bias Par	Gam Po, Ra, U, Sr-90				
		9	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO3 NO3, Cl, SO4	AIR.	Metal	CN	Bias Par	Gam Po, Ra, U, Sr-90			
	MND23-P005-0003		S	11-20-92	4	1	1		1	1	1	1	1		1	1			
	— -0009				4	1	1		1	1	1	1	1		1	1			
	— -0018				4	1	1		1	1	1	1	1		1	1			
	— -0022				4				1	1									
	— -0032				4				1	1									
	— -0037			11-21-92	4				1	1									
	— -0043				4				1	1									
	— -0045				4	1	1		1	1	1	1	1		1	1			
	— -0049				4				1	1									
	— -0055				4				1	1									

Special Instructions:

[illegible]

DATE/REVISIONS:

19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, [illegible] A
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
31-Air.-310.1

1. 2. 3. 4. 5. 6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	FED EX	11-23-92	1530

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0610
Project Contact/Phone #: Howard Seeley (505)884-50[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	4/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P					
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	1000					
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	O3	NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diss Pur	Gam. Pu, Ra, U, Sr-90					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	O3	NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diss Pur	Gam. Pu, Ra, U, Sr-90			
	MND23-P005-0056		S	11-21-92	4	1	1		1	1	1	1	1		1	1			
	" - " - 1056		S	11-21-92	4	1	1		1	1	1	1	1		1	1			
	" - " - 0063		S	11-21-92	4				1	1									
	~~" - " - 4065~~		~~S~~	~~11-21-92~~	~~2~~				~~1~~	~~1~~	KP								
	MND23-P005-0029		S	11/20/92	4				1	1									
	KP																		

Special Instructions:

DATE/REVISIONS:
1. KP revisions made 12/3/92
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	11 2[illegible]	1720

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible] A-8/90 ____ L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

FIELD BATCH NO. 5, 6 REA37792

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-160-0810
Project Contact/Phone #: Howard Seeley (505)884-505[illegible]
AD Project Manager: William Little
QC: Del TAT

Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid	2/G	2/G	1/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/P			
	Solid																	
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000	1000			
	Solid																	
Preservatives		HCL				H2SO4			H2SO4	NaOH					[illegible]			
ANALYSES REQUESTED		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	NO2/NO3	Metal	CN	Cl, SO4	Alk.	[illegible]	[illegible]	[illegible]		
		9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 3,4 5	19			

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	NO2/NO3	Metal	CN	Cl, SO4	Alk.	[illegible]	[illegible]	[illegible]
	MND23-P005-4005		W	11-20-92	4				1	1									
					2														
	MND23-P005-4005 TB		W	11-21-92	2				1	1									
	MND23-P005-2014		W	11/23/92	2														
	MND23-0850-3006		W	11/23/92	2														

Special Instructions:
1-U
2-Pu
3-Th
4-Am-241-DOE EML-AM-01
5-Ra-226-ASTM D2460-70
6-H3-906.0
7-Gross rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Hg1.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-P-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. 2014 + 3006 added 11/30/92 by K. Ass
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	FEDEX	11-23-92	1530

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Batch No. 006

RQA37806

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: ECSS Hound
Est. Final Proj. Sampling Date:
Work Order #: 05370-021-003-0810
Project Contact/Phone #: Howard Sachs (303)-[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	G				G	P										
Volume (ml)	Liquid																
	Solid	40				125	250										
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3			Metal	CN						
		9				15	6										

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3			Metal	CN					
	MN023-0379-0033		S	12/4/92	4				1	1									
	- -1033				4				1	1									
	- -0036				4				1	1									
	- -1036				4				1	1									
	-0374-0022	✓		12/5/92	8				2	2									
	- -0027				4				1	1									
	~~0371 0024~~			~~12/4/92~~	~~4~~				~~1~~	~~1~~									
	~~MN023- 0028~~				~~4~~				~~1~~	~~1~~									

Special Instructions:

1-[illegible]
2-[illegible]
3-[illegible]
4-[illegible]
5-[illegible]
6-[illegible]
7-[illegible]
8-[illegible]
9-[illegible]
10-[illegible]
11-[illegible]
12-[illegible]

14-[illegible]
20-[illegible]
21-[illegible]
24-[illegible]
25-[illegible]
27-[illegible]
31-[illegible]

DATE/REVISIONS:

1.
2.
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4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/7/92	1800

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Batch No. 0016 RCA37806

Custody Transfer Record/Lab Work Request

WESTON

Client: KDHC Round
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-1A0-0510
Project Contact/Phone #: Howard Conley (305)[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	1/G	1/G	1/G		1/G	1/G	1/G	1/G	1/G		1/G	1/G	1/G	1/G		
	Solid																
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	1000	1000		
	Solid																
Preservatives		NO3				H2SO4			H2SO4	H2SO4				NaOH			

ANALYSES REQUESTED →

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	ORGANIC BNA	ORGANIC Pest/PCB	ORGANIC Herb	TOC	Cl	F	NO2/NO3	INORG Metal	INORG CN	Cl, SO4	Alk.	Cond, Fe, Zn, Cr, Ag, Pb	Phos, Sulf
						9	~~[illegible]~~	~~11~~		15	6	~~27~~	~~26~~	~~20~~		~~28~~, 25	~~31~~	1,2 3,1 8,6 5	19
		MN023-0379-3035		W	12/4/92	2													
		MN023-0377-4035		W	12/4/92	4				1	1								
		MN023-0371-2015		W	12/3/92	2													

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:

1-U
2-Pb
3-Zn
4-Ba-[illegible]-ENC-AM-01
5-Ba-[illegible]-[illegible]2460-70
6-Cd-996.0
7-Cd-[illegible]
8-Ar-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Phosphorus/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/7/92	18:00

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: [illegible] Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0010
Project Contact/Phone #: Howard Seeley (513)[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																2/G	
	Solid	4/C	1/G	1/G		1/G	1/P	1/P	1/	1/P	1/G	1/C	1/P					
Volume	Liquid																40	
	Solid	40	250	250		125	250	500	125	250		250	1000					
Preservatives																	HCl	
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	TS	NO2 NO3 Cl, SO4	Alk	Metal	CN	Diox Fur	Cs, Sr, Ra, U, Sr-90					
		9	~~10~~	~~11~~		15	6	~~17~~, ~~18~~, ~~23~~, ~~25~~, ~~28~~	~~22~~			~~19~~	7, 2, 3, ~~1~~				9	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	NO2 NO3 Cl, SO4	Alk	Metal	CN	Diox Fur	Cs, Sr, Ra, U, Sr-90		
	MND25-0371-0024		S	12/1/92	4				1	1								
	-1-0028		S	1	4				1	1								
	-0370-0036		S	12/2/92	4				1	1								
	-1-0040		S	1	4				1	1								
	-0375-0024		S	12/1/92	4				1	1								
	-1-0026		S	1	4				1	1								
	-1-2016		W	12/1/92													2	

Special Instructions:

1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, AND A
23-Cl-9251/325.2
26-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/2/92	1130

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client

Est. Final Proj. Sampling Date

Work Order # 053-6121-140-1000-00

Project Contact/Phone # Hunter Seely/205-934-5250

AD Project Manager William Lutz

QC Del TAT

Date Rec'd Date Due

Account #

Refrigerator #																	
#/Type Container	Liquid																
	Solid					1	1	1				1	1				
Volume	Liquid																
	Solid					212	212	212				Syl	Syl				
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	34, 36, 44, 46	43	37, 42, 45		Metal	CN	34, 36, 44, 46	37, 42, 45				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected													
	MN023-0373-0001		S	12/14/92				1	1	1							
	-0031							1	1	1							
	-0051			12/15/92				1	1	1							
	-0055											1	1				
	-0392-0002							1									
	-0017			12/16/92								1					
	-0023											1					

Special Instructions: 34-Particle Size Analysis, 36-Organic Content, 37-Moisture Content, 42-Atterberg Limits, 43-Triaxial Permeability, 44-Total Porosity, 45-Capillary Moisture, 46-Bulk Density

DATE/REVISIONS:

1.
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5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/16/92	[illegible]				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]/A-8/90 ____ L372 ____ L373 ____ [illegible]5 ____ L377 ____ L378 Ref# _____ Cooler# ____ G77-596a

WESTON Analytics Use Only

Field Batch No. 007 RCA37821

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 3

Client: RCAC Hazwat
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-260-0510
Project Contact/Phone #: Howard Sealey (303)830-3025
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid					1											
	Solid	4/C	1/C	1/C		1/C	1/P	1/P	1/C	1/P		1/C	1/P				
Volume (ml)	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Gross Alpha, Gross Beta	Gam. Ra, Th, U, Sr-90				
		9	10	11		15	6	27, 24, 23, 25	31			150 10	7, 2,3 1,8				

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Gross Alpha, Gross Beta	Gam. Ra, Th, U, Sr-90			
	MN023-0323-0054		S	12/15/92	4				1	1									
	-0058				4				1	1									
	-0382-0005				4	1	1		1	1						1			
	-0010				4	1	1		1	1	1	1	1			1			
	-0015				4				1	1									
	-0016			12/16/92	4				1	1									
	-1016				4				1	1									
	-0380-0004				4	1	1		1	1	1		1			1			
	-1004				4	1	1		1	1	1	1	1			1			
	-0009				4				1	1									

Special Instructions:

1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20->Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	F. EX	12/17/92	1500

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Batch No. 007 R2351821

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible] Bound

Est. Final Proj. Sampling Date:

Work Order #: 05376-021-140-0810

Project Contact/Phone #: Howard Seeley (505)884-385[illegible]

AD Project Manager: William Little

QC: Del[illegible] TAT

Date Rec'd: Date Due:

Account #:

Refrigerator #																	
#/Type Container	Liquid	1/G	1/G	1/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/P		
	Solid																
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	1000	1000		
	Solid																
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3			

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	ORGANIC BNA	ORGANIC Pest/PCB	ORGANIC Herb	SOC	[illegible]	[illegible]	NO3/NO2	INORG Metal	INORG CN	[illegible]	[illegible]	[illegible]	[illegible]	
						9	10	11		15	6	27	24	20		23, 23	31	7,2 8,1 2,4	[illegible]	
S - Soil		MND23-0312-4016		W	12/16/92	2				1	1									
SE - Sediment		-2017				2														
SO - Solid		-0380-4004				4	2	2		1	1	1	1	1		1	1	2		
SL - Sludge		-3014			12/17/92	2														
W - Water		MND23-0950-2007		W		2														
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions:

1-U
2-Pu
3-Th
4-[illegible]
5-[illegible] 02460-70
6-[illegible]
7-[illegible]
8-Sr-90
9-VOC-CLP SOW OLM01.8
10-Semi VOC-CLP SOW OLM01.8
11-Pesticide/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-01-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-P-365.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	1900

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Field Batch No. 007 RGA37621

Custody Transfer Record/Lab Work Request

WESTON

Client: SCGC Hound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-LAG-0810
Project Contact/Phone #: Howard Seeley (505)884-50
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	~~1/G~~	~~1/G~~	~~1/G~~		~~1/G~~	1/P				
Volume (ml)	Liquid																
	Solid	40	250	250		125	250	~~500~~	~~125~~	~~250~~		~~250~~	1000				
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TS	KP, ~~[illegible]~~, ~~[illegible]~~, ~~[illegible]~~	~~[illegible]~~	Metal	CN	~~[illegible]~~ ~~[illegible]~~	Gamma, Pu, Th, U, Sr-90				
		9	10	11		15	6	7, 2, 4, 3, 15	KP ~~21~~			KP ~~10~~	1, 2, 3 1, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	KP, ~~[illegible]~~, ~~[illegible]~~, ~~[illegible]~~	~~[illegible]~~	Metal	CN	~~[illegible]~~ ~~[illegible]~~	Gamma, Pu, Th, U, Sr-90			
	MN023-0380-0014	✓	S	12/13/92	8				2	2									
	-0017				4				1	1									
	-0024				4				1	1									
	-0029				4	1	1		1	1						1			
	MN023-0380-0032		S	12/13/92	4				1	1									
	KP ~~0850-3007~~				~~[illegible]~~														

Special Instructions:

1-U
2-Pu
3-Th
6-Sr-90
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-Semi VOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	12/14/92	1500

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client
Est. Final Proj. Sampling Date
Work Order #
Project Contact/Phone #
AD Project Manager
QC Del TAT

Date Rec'd _____ Date Due _____
Account # _____

Refrigerator #																
#/Type Container	Liquid															
	Solid															
Volume	Liquid															
	Solid															
Preservatives																
ANALYSES REQUESTED →		ORGANIC									INORG					
		VOA	BNA	Pest/PCB	Herb						Metal	CN				

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected													
	1-HOC-SS-0339-0010		S	12/1/92													
	1-HOC-SS-0339-0012		S														
	1-HOC-SS-0339-0004		S	10/13/92													
	1-HOC-SS-0339-0009		S														
	1-HOC-SS-0339-0014		S														

Special Instructions:

1 - Bulk Density, Total Porosity, Grain Size, % Organics.
2 - Triaxial Permeability.
3 - Atterberg Limits, Moisture Content, Capillary Moisture Curve.
4 - Clay Minerals.

DATE/REVISIONS:

12/9/92 1. Samples for analysis #4 incorrectly delivered to Berger-Mercer.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/1/92	1230

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

RCA37809

WESTON

Page 1 of 1

Client

Est. Final Proj. Sampling Date

Work Order # D5376-021-140-1000-00

Project Contact/Phone # Howard Seely/505-884-5050

AD Project Manager William Little

QC Del TAT

Date Rec'd Date Due

Account #

Refrigerator #																
#/Type Container	Liquid															
	Solid															
Volume (in²)	Liquid															
	Solid															
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	1	2	3	1	Metal	CN					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected													
	MND23-0371-0004		S	12/6/92				1	1	1							
	-0009							1	1	1							
	-0014							1	1	1							
	-0021							1		1							
	-0370-0021			12/7/92				1	1								
	-0026							1									
	-0375-0024			12/8/92				1		1							
	-0005							1									
	-0007							1									
	-0014							1		1							

Special Instructions:

1- Bulk Density, Total Porosity, Grain Size, % Organics.

2- Triaxial Permeability.

3- Atterberg Limits, Moisture Content, Capillary Moisture Curve.

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/9/92	1:15 pm

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

RCP38

WESTON MANAGERS DESIGNERS/CONSULTANTS

Client
Est. Final Proj. Sampling Date
Work Order # 0376-021-140-1000-20
Project Contact/Phone # Howard Seeley/505-884-5050
AD Project Manager
QC Del TAT
Date Rec'd Date Due
Account #

Refrigerator #																
#/Type Container	Liquid															
	Solid					1 Ziplock		1 Bucket								
Volume	Liquid					8 loc										
	Solid					2 12		5 gal								
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/ PCB	Herb					Metal	CN					
						1		1								

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected
	MND023-0375-0033		S	12/8/92
	MND023-0370-0041		S	12/7/92

Special Instructions:
1 - Bulk Density, Total Porosity, Grain Size, % Organics.
2 - Triaxial Permeability.
3 - Atterberg Limits, Moisture Content, Capillary Moisture Curve.

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/9/92	1:15 pm

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]A-8/90 ____ L372 ____ L373 ____ [illegible] ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client: SGIG MOUND
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (305) 884-5050
AD Project Manager: William Lime
QC: ____ Del: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #: ____

Refrigerator #																	
#/Type Container	Liquid																
	Solid					VP											
Volume (ml)	Liquid																
	Solid					500											
Preservatives						N/A											
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	41			Metal	CN							
		WESTON Analytics Use Only															

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
	MND 23-0373-0031			S	12/14/92	15:16					1									
	END																			

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

41 - CLAY MINERALOGY - X RAY DIFFRACTION

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
Andrew Spring	FedEx	30 Apr 93	11:45

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

WESTON Analytics Use Only

Field Batch No. 07 10/13/94

Custody Transfer Record/Lab Work Request

WESTON DESIGNERS CONSULTANTS

Client: Zia Mound
Est. Final Proj. Sampling Date:
Work Order #: 05379-021-140-0310
Project Contact/Phone #: Howard Seeley (505)896-50
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	4/G	1/G	1/G		1/G	1/P	1/G	1/G	1/G		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	250	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TS	pH, SO2, SO3, Cl, SO4	Alk.	Metal	CN	Dioxin Pur.	Cam. Pu, Th, U, Sr-90				
		9	10	11		12	6	27, 24, 23, 25	31			19	7, 2, 3, 1				

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	pH, SO2, SO3, Cl, SO4	Alk.	Metal	CN	Dioxin Pur.	Cam. Pu, Th, U, Sr-90			
	MMO23-0391-0004		S	11/2/93	4	1	1		1	1						1			
	-0010				4				1	1									
	-1010				4				1	1									
	-0015				4				1	1									
	-0020	✓			8	2	2		2	2	2	2	2			2			
	-0025				4				1	1									

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'l Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
Kath. Pos	[illegible]	11/4/93	1700

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Field Sample No. 002 [illegible]

Custody Transfer Record/Lab Work Request

WESTON DESIGNERS CONSULTANTS

Client: [illegible] Long Island
Est. Final Proj. Sampling Date: [illegible]
Work Order #: [illegible] 05376-021-140-0010
Project Contact/Phone #: [illegible] Howard Sealey (305)884-505
AD Project Manager: [illegible] William Little
QC: [illegible] Del [illegible] TAT

Date Rec'd _____ Date Due _____
Account # _____

Refrigerator #																	
#/Type Container	Liquid	2/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/P		
	Solid																
Volume	Liquid	40	1000	1000		250	250	500	500	1000		500	500	1000	1000		
	Solid																
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3			
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/ PCB	Herb	TOC	[illegible]	[illegible]	NO2/ NO3	Metal	CN	Cl, SO4	[illegible]	Cor. Pb, Cr, [illegible], Sr, [illegible], Ra	Diss Oxy		
		2	1	1		15	5	17	14	19		13, 15	11	[illegible]	3		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/ PCB	Herb	TOC	[illegible]	[illegible]	NO2/ NO3	Metal	CN	Cl, SO4	[illegible]	Cor. Pb, Cr, [illegible], Sr, [illegible], Ra	Diss Oxy	
	MN023-0381-4020		W	1/7/93	4				1	1									
	MN023-0381-2019		W	1/8/93	2														

Special Instructions:

DATE/REVISIONS:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	1/8/93	[illegible]

Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client
Est. Final Proj. Sampling Date
Work Order # 05376-021-140
Project Contact/Phone # Howard Seley
AD Project Manager
QC ____ Del ____ TAT ____

Date Rec'd ____ Date Due ____
Account # ____

Refrigerator #																	
#/Type Container	Liquid																
	Solid					1	1	1				1-8 oz					
Volume	Liquid																
	Solid					2	2	2				1 unknown					
Preservatives																	
ANALYSES REQUESTED →		ORGANIC				A B C D				INORG		A B C D					
		VOA	BNA	Pest/ PCB	Herb					Metal	CN						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/ PCB	Herb	A				Metal	CN	A	B			
	MND23-0372-0003		S	1/4/93					1										
	↓ 0393-0048		↓	1/6/93											1	1			

Special Instructions:
A - Bulk Density
B - Total Porosity
C - ASTM 513-C
D - % Organic

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

WESTON Ar[illegible]s Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client

Est. Final Proj. Sampling Date

Work Order # 05376-021-140

Project Contact/Phone # Howard Seeley/505-881-5058

AD Project Manager D. William Little

QC Del TAT

Date Rec'd Date Due

Account #

Refrigerator #																		
#/Type Container	Liquid	X																
	Solid									— Shelby —					Block			
Volume	Liquid																	
	Solid									— 2 L —					unknown			
Preservatives																		
ANALYSES REQUESTED →		ORGANIC				A B C D	E F G	Trace Metals		INORG		A B C D	Toxicity Permeability					
		VOA	BNA	Pest/PCB	Herb					Metal	CN							

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	A B C D	E F G	Trace Metals		Metal	CN	A B C D	Toxicity Permeability			
	MND23-0372-~~0003~~		S	1/4/93					1	FP									
	-0036			1/6/93					1										
	-0046								1	1	1								
	-0052														1				
	-0057														1				
	~~-0393-0048~~														1	1			
	-0381-0004			1/7/93					1										
	-0027			1/8/93											1				

Special Instructions:
A - Bulk Density
B - Total Porosity
C - Grain Size
D - % Organics
E - Atterberg Limits
F - Moisture Content
G - Capillary Moisture Curve

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
Keith Ross	[illegible]	1/11/93	R 10
[illegible]	[illegible]	1/11/93	2:20p

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible] A-8/90 ____ L372 ____ L373 ____ [illegible] ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

RCA37892

Custody Transfer Record/Lab Work Request

Page 1 of 1

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5050
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	3/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	2/P	2/G		
	Solid																
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000	1000		
	Solid																
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3			
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA *	Pest/PCB *	Herb	TOC	H3	F	NO2/NO3	Metal	CN	Cl, SO4	Alk.	Gam. Pu, Th, U, Sr, Am, Ra	Diox Fur		
		9	10	11		15	6	7	4	20		23, 25	11	7, 2, 3, 1, 8, 4, 5	19		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA *	Pest/PCB *	Herb	TOC	H3	F	NO2/NO3	Metal	CN	Cl, SO4	Alk.	Gam. Pu, Th, U, Sr, Am, Ra	Diox Fur
✓	MND23 P008 4020		W	2-19-93	X	X	X		X	X	X	X	X		X	X		
✓	P013 4015		W	2-20-93	X				X	X								
✓	4016		W	2-21-93	X				X	X								
✓	2019		W	2-22-93	X													

Special Instructions:
1-U
2-Pu
3-Th
4-Am-241-DOE EML-AM-01
5-Ra-226-ASTM D2460-70
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Metals
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

* RUSH SAMPLES

DATE REVISIONS:
1
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WESTON Analytics Use Only

Samples were
1) Shipped ___ or Hand Delivered
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[signature]		2-22-93	1700				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES

RFW 21 21 001 A 8 90 L372 L373 L375 L377 L378 Rel# Cooler# Cooler Seal

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5010
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	8 1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P					
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	1000					
Preservatives																		

ANALYSES REQUESTED →

	ORGANIC								INORG							
	VOA	BNA	Pest/PCB	Herb	TOC	HA	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Dlox Fur	Gam. Pu, Th, U, Sr-90				
	9	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	HA	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Dlox Fur	Gam. Pu, Th, U, Sr-90				
✓	MN023 P008 0002		S	2-1-93	X				X	X										
✓	0007				X				X	X										
✓	0011				X				X	X	X	X	X							
✓	0019				X				X	X										
✓	0021				X	X	X		X	X	X	X	X							
✓	0021 MS/MSD				X	X	X		X	X	X	X	X							
✓	1021				X	X	X		X	X	X	X	X							
✓	0027			2-20-93	X				X	X										
✓	0040				X				X	X										
✓	0045				X				X	X										

Special Instructions:

1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were
1) Shipped ___ or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]		2-22-93	1700				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES

RFW 2121 001 A 6/90 L372 L373 L375 L377 L378 Ref# Cooler# 077 5966

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5050
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90				
		4	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90			
✓	MND23 P008 0048		S	2-20-93	X				X	X									
✓	P008 0054		S	↓	X				X	X									
✓	P013 0005			2-21-93	X				X	X									
✓	0007				X				X	X	X	X	X						
✓	0015				X	[illegible]													
✓	0017				X	X	X		X	X	X	X	X						
✓	0025				X				X	X									
✓	1025				X				X	X									
✓	0030				X				X	X									
✓	0035				X				X	X									

Special Instructions:

1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-[illegible].2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE REVISIONS:
1
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WESTON Analytics Use Only

Samples were
1) Shipped ___ or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]		2-22-93	1700				

WESTON Analytics Use Only

REA37893

Custody Transfer Record/Lab Work Request

WESTON

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5050
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90				
		9	10	11		15	5	27, 24, 23, 25	31			19	7, 2, 3 1, 5				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90			
✓	MN023 P013 0039		S	2-21-93	X				X	X									
✓	0045				X				X	X									
✓	0050				X				X	X									
✓	0055				X				X	X									
✓	0060				X				X	X									
✓	0060 MS/MSD				X				X	X									
✓	0065				X				X	X									
✓	0069				X				X	X									
✓	0072				X				X	X									
✓	1072				X				X	X									

Special Instructions:
1-U
2-Pu
3-Th
6-Dioxins-1306.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE REVISIONS:
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WESTON Analytics Use Only

Samples were
1) Shipped or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was
1) Present Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]		2-22-93					

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES

RFW 2: 21-001 A 8-90 L372 L373 L375 L377 L378 Ref# Cooler#

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5010
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P					
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	1000					
Preservatives																		
ANALYSES REQUESTED		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90					
		9	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Diox Fur	Gam. Pu, Th, U, Sr-90			
✓	MND23 P013 0080		S	2-21-93	X				X	X									
✓	↓ ↓ 0085		↓	↓	X				X	X									
✓	↓ ↓ 0088		↓	↓	X				X	X									
✓	↓ ↓ 0096		↓	2-22-93	X				X	X									

Special Instructions:

1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[signature]		2-22-93	1700

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 2[illegible]01 A-8/90 L372 L373 [illegible]375 L377 L378 Ref# Cooler# G77 596a

FIELD BATCH 10

Custody Transfer Record/Lab Work Request

WESTON Analytics Use Only

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 1

Client: [illegible]
Est. Final Proj. Sampling Date
Work Order #: 03375-021-140-0810
Project Contact/Phone #: Howard Senier (509)88A-[illegible]
AD Project Manager: William Little
QC: Del TAT

Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid	3/1C	1/C	2/C		1/C	1/C	1/P	1/P	1/P		1/P	1/P	1/P	1/C			
	Solid																	
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	500	1000			
	Solid																	
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3				
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	[illegible]	Metal	CN	Cl, SO4	Alk.	Cat., Fe, ID, Mn, Na, K	[illegible]			
		9	10	11		15	6	27	24	20		23, 25	34	7, 2, 3, 1, 7, 4, 5	19			

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	[illegible]	Metal	CN	Cl, SO4	Alk.	Cat., Fe, ID, Mn, Na, K	[illegible]
	MND23 P009 4045		W	2-23-93	X				X	X								
	~~MND23 P009 0050~~																	
	*MND23 P009 3020		W	2-23-93	X													
	MND23 0850 3009		W	2-23-93	X													
	MND23 P009 2021		W	2-23-93	X													

Special Instructions:

DATE/REVISIONS:
1. *NOTE MND23 P009 2020
2. SHOULD BE
3. MND23 P009 3020
4. PLEASE CHANGE
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]		2-23-93	1820

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ G77-596a

WESTON Analytics Use Only

FIELD BATCH 10

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible]
Est. Final Proj. Sampling Date:
Work Order #: 00376-021-140-0010
Project Contact/Phone #: Howard Seeley (505)884-[illegible]
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	1/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P					
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250		250	500					
Preservatives																		

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	7, 8, 8, 8, 11, 504	[illegible]	INORG Metal	CN	[illegible]	[illegible]			
							10	11		15	6	27, 24, 23, 25	31			19	3, 8			
S - Soil		MAD23 A009 0035		S	2-23-93	X				X	X									
SE - Sediment		0040				X				X	X									
SO - Solid		0045				X				X	X									
SL - Sludge		0045 MS/MSD				X				X	X									
W - Water		0050				X				X	X									
O - Oil		0055				X				X	X									
A - Air		0059				X				X	X									
DS - Drum Solids		0067				X				X	X									
DL - Drum Liquids		0073				X				X	X									
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions:

1-U
2-Pb
3-Ba
4-Hg-[illegible]
7-Cyanide total
8-Sr-90
9-VOCs-CLP SOW OLM01.0
10-Semivols-CLP SOW OLM01.0
11-Pests/PCBs-CLP SOW OLM01.3
15-DRO-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MDD A
23-Cl-9252/325.2
24-SO2-NO3-353.2
25-[illegible]-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[signature]		2-23-93	1820

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]A-8/90 ____ L372 ____ L373 ____ ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

FIELD BATCH 09 RUN 3/1/96

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Client: MCBG Hound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0310
Project Contact/Phone #: Howard Seeley (303)234-305
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	1/G															
	Solid	1/C	1/G	1/C		1/G	1/P	1/P	1/C	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Mean Pwr	Comp. Ha, Ba, Cd, Cr-Pb				
		9	10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 6				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Mean Pwr	Comp. Ha, Ba, Cd, Cr-Pb			
	MN09P009 0063		S	2-23-93	X				X	X									
	0005				X				X	X									
	0010				X				X	X									
	1010				X				X	X									
	0015				X				X	X	X	X	X						
	0019				X	X	X		X	X	X	X	X						
	0025				X				X	X									
	0030				X				X	X									

Special Instructions:

1-U
2-Pu
3-Th
6-U3-905.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pest/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, Rev 1
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1.
2.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[illegible]		2-23-93	1620		[illegible]	[illegible]	[illegible]

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES: [illegible]

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 1

Client: ES&G MOUND
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0910-00
Project Contact/Phone #: HOWARD SCALET / 505 591 5060
AD Project Manager: WILLIAM LITTLE
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid					1/P	1/P	1/P	1/P								
Volume	Liquid																
	Solid					5GAL	5GAL	5GAL	5GAL	50ML							
Preservatives						NONE	NONE	NONE	NONE								
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb.	*	**	***	****	Metal	CN						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
Wi - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb.	*	**	***	****	Metal	CN
	MND23 P008 0004		S	2-19-93					X		X			
	0020			↓					X		X			
	0057			2-20-93					X	X		X		
	P013 0012			2-21-93					X					
	0050			↓						X	X	X		
	P009 0002			2-23-93					X					
	0023								[redacted]		X			
	0063								X	X		X		

Special Instructions:

* BULK DENSITY, TOTAL POROSITY, GRAIN SIZE AND % ORGANICS
** TRIAXIAL PERMEABILITY
*** ATTERBURG LIMITS, MOISTURE CONTENT, CAPILLARY MOISTURE CURVE, Fe, Mg
~~**** CLAY MINERALS~~ JLB

DATE/REVISIONS:
1.
2.
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6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
Jeff Bent	[illegible]	2-24-93	0930

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-2[illegible]A-8/90 ____ L372 ____ L373 ____ ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 2

Client: EG+G MOUND
Est. Final Proj. Sampling Date:
Work Order #: 05376 021140 0910
Project Contact/Phone #: HOWARD SECLEY 505 845 9050
AD Project Manager: WILLIAM LITTLE
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid	4/6				1/6	1/P										
Volume	Liquid																
	Solid	40				125	250										
Preservatives		NONE				NONE	NONE										
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H_3			Metal	CN						

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H_3			Metal	CN					
	MMD23-0378-0017		S	3-3-93	X				X	X									
	- ↓ -0022		↓	↓	X				X	X									
	-0377-0017			3-4-93	X				X	X									
	- 0017 MS/MSD				X				X	X									
	1017				X				X	X									
	↓ ↓ 0023		↓	↓	X				X	X									

Special Instructions:

6. H_3 - 906.0
9. VOC's CLP SOW OLM 01.8
15. TOC - 415.1/415.2

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	FedEx	3/4/93	1800

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# 5501 G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: [illegible] Mound
Est. Final Proj. Sampling Date: [illegible]
Work Order #: [illegible]05376-021-1A0-0810
Project Contact/Phone #: Howard Ensley (505)884-505[illegible]
AD Project Manager: William Little
QC: Del TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																			
#/Type Container	Liquid	3/G	2/G	1/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/P		
	Solid																		
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	1000	1000		
	Solid																		
Preservatives		HCL				H2SO4			H2SO4	NaOH				NaOH			
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	NO2/NO3	Metal	CN	Cl, SO4	Alk	Gen. Pa, Th, U, Sr, Ra, Ra	Diss. Fus		
		9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 3,4 5	19		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	[illegible]	[illegible]	NO2/NO3	Metal	CN	Cl, SO4	Alk	Gen. Pa, Th, U, Sr, Ra, Ra	Diss. Fus	
	MND23-0378-2022		W	3-3-93	X														
	~~MND23-3010-SL~~																		
	MND23-0850-3010		W	3-3-93	X														
	MND23-0377-4017		W	3-4-93	X				X	X									
	↓ ↓ 3017		W	3-4-93	X														

Special Instructions:

[illegible]
2-[illegible]
3-[illegible]
[illegible]-AN-01
[illegible]-70
[illegible]
7-[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

15-F-C-415.1/415.2
19-[illegible]/Turbidity-[illegible]
20-[illegible]-CLP SOW ILM01.0, App.A
23-Cl-9251/325.2
24-[illegible]-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/4/93	18[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

AIRBILL # 1138017 3876 FIELD BATCH # 11

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 1

Client: RCRA Round
Est. Final Proj. Sampling Date:
Work Order #: 03376-021-140-0310
Project Contact/Phone #: Howard Seeley (305)886-509
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																
#/Type Container	Liquid	3/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	2/P	2/G	
	Solid	3/G														
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000	1000	
	Solid	40														
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3		
ANALYSES REQUESTED		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TOC	TS	F	NO3/NO2	Metal	CN	Cl, SO4	Alk.	Gen. Pu, Sr, U, Br, Am, Ra	Diox Furn	
		9	10	11		15	5	27	24	20		23, 25	31	1,2 3,1 3,4 5	19	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	F	NO3/NO2	Metal	CN	Cl, SO4	Alk.	Gen.	Diox Furn	
	MND23-0376-2023		W	3-5-93	X														
	0016		S		X				X	X									
	0021		S		X				X	X									

Special Instructions:

1-[illegible]
2-[illegible]
3-[illegible]
4-[illegible]
5-[illegible]
6-[illegible]
7-[illegible]
8-[illegible]
9-[illegible]
10-[illegible]
11-[illegible]

15-[illegible]-415.1/615.2
19-[illegible]/Furans-8290
21-[illegible]-CLP SOW IL501.0, [illegible]
23-[illegible]-232/335.2
26-[illegible]-352.2
25-[illegible]-375.2
27-[illegible]-340.2
31-AIR.-310.1

DATE/REVISIONS:

1.
2. A
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	3/5/93	17[illegible]

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

B3. ADDITIONAL WORK - SURFACE SOIL SAMPLES

WESTON Analytics Use Only

FEDERAL EXPRESS AIRBILL # 5119242203

Custody Transfer Record/Lab Work Request

SHIPMENT CONSISTS OF 7 COOLERS

WESTON

Client: ECSG Hound
Est. Final Proj. Sampling Date: 17-DEC 92
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5010
AD Project Manager: William Little
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account # ____

Refrigerator #																	
#/Type Container	Liquid																
	Solid	4/G	1/G	1/G		1/G	1/P	1/P	1/G	1/P		1/G	1/P				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		250	1000				
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Dioxin Fur	Gam. Pu, Th, U, Sr-90				
		9	10	11		15	6	27, 24, 23, 25	31			19	7, 2,3 1,8				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F NO2 NO3, Cl, SO4	Alk.	Metal	CN	Dioxin Fur	Gam. Pu, Th, U, Sr-90			
	MND23-SL01-0001		SOIL	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL02-0001		SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL02-1001		SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL03-0001		SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL04-0001		SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL04-5001	X	SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL05-0001		SOIL	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL06-0001		SOIL	15DEC 92	X	X	X		X	X	X	X	X			X			
	MND23-SL08-0001		SOIL	15DEC92	X	X	X		X	X	X	X	X			X			

Special Instructions:
1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, MOD A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[signature] WESTON		15 DEC 92	1515

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

WESTON Analytics Use Only

FEDERAL EXPRESS AIRBILL # 5119242203

Custody Transfer Record/Lab Work Request

SHIPMENT CONSISTS OF 7 COOLERS

WESTON

Page 1 of 1

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-5050
AD Project Manager: William Little
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account # ____

Refrigerator #																	
#/Type Container	Liquid	2/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	2/P	2/G	
	Solid															
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000	1000	
	Solid															
Preservatives		HCL				H2SO4			H2SO4	HNO3				HNO3		
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F	NO2/NO3	Metal	CN	Cl, SO4	Alk.	Gam. Pu,Th, U,Sr, Am,Ra	Diox Fur	
		9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 8,4 5	19	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
Wi - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F	NO2/NO3	Metal	CN	Cl, SO4	Alk.	Gam. Pu,Th, U,Sr, Am,Ra	Diox Fur	
	MND23-SL06-4001		WATER	15 DEC 92	X	X	X		X	X	X	X	X		X	X	X		
	MND23-SL01-2001		WATER	15 DEC 92	X														
	MND23-SL01-3001		WATER	15 DEC 92	X														

Special Instructions:
1-U
2-Pu
3-Th
4-Am-241-DOE EML-AM-01
5-Ra-226-ASTM D2460-70
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
T. Hallstein WESTON		15 DEC 92	1515

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

FEDERAL EXPRESS AIRBILL # 5119242214
SHIPMENT CONSISTS OF 6 COOLERS

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

CUSTODY SEAL APPLIED TO EACH COOLER

WESTON

Date Rec'd _____ Date Due _____
Account # _____

Refrigerator #																		
#/Type Container	Liquid																	
	Solid																	
Volume	Liquid																	
	Solid																	
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA*	BNA	Pest/PCB	Herb					Metal	CN							
			10	11		15	6	27, 24, 23, 25	31			19	7, 2, 3 1, 8					

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected															
	MND1 [illegible] 0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND1 SL10-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND2 SL0-1001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND2 SL4-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND2 SL11-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND2 SL7-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND2 SL13-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			

Special Instructions:

1-[illegible]
2-[illegible]
3-[illegible]
4-[illegible]
5-[illegible]
6-[illegible]
7-[illegible]
8-[illegible]
9-[illegible]
10-Semi/VOCs-GC/MS [illegible]
11-Pesticides/PCBs-GC/MS [illegible]
12-[illegible]-15.1/415.2
13-[illegible]/Phenols-8270
14-[illegible]
15-[illegible]/325.2
16-[illegible]-353.2
17-[illegible]-375.2
18-[illegible]
19-[illegible]-810.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible] WESTON		16DEC92	1500

Relinquished by	Received by	Date	Time

FEDERAL EXPRESS AIRBILL # 5119242219
SHIPMENT CONSISTS OF 6 COOLERS.
CUSTODY SEAL APPLIED TO EACH COOLER.

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

16-DEC-92

Del TAT

Date Rec'd _____ Date Due _____

Account # _____

Refrigerator #																					
#/Type Container	Liquid																				
	Solid																				
Volume (ml)	Liquid																				
	Solid																				
Preservatives																					

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	BNA	Pest/PCB	Herb					INORG Metal	CN					
					9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 8,4 5	19	
	MW02-SL03-4001		WATER	16DEC92	X	X	X		X	X	X	X	X		X	X	X		
	MW02-SL01-2001		WATER	16DEC92	X														
	MW23-SL09-3001		WATER	16DEC92	X														

Special Instructions:

1-U
2-Pu
3-Th
4-Am-241-DOE EML-AM-01
5-Ra-226-ASTM D2460-70
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8

15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible] WESTON		16DEC92	1500

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

FEDERAL EXPRESS AIRBILL # 5119242203
SHIPMENT CONSISTS OF 7 COOLERS
CHAIN CUSTODY SEAL APPLIED TO EACH COOLER

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Client: BLM Farmington
Est. Final Proj. Sampling Date: 17 DEC 92
Work Order #: 05376-021-140-0810
Project Contact/Phone #: Howard Seeley (505)884-50
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid																	
	Solid	1/G	1/G	1/G		1/G	1/G	1/G	1/G	1/G			1/G	1/G				
Volume	Liquid																	
	Solid	40	250	250		125	250	500	125	250			250	1000				
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	TOC	H3	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Gamma Rad, Pu, Th, U, Uranium, Sr-90						
		9	10	11		15	6	27, 24, 23, 25	31			19	7, 2,3 1,8					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	H3	F, NO2, NO3, Cl, SO4	Alk.	Metal	CN	Gamma Rad, Pu, Th, U, Uranium, Sr-90				
	MND23-SL01-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL02-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL02-1001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL03-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL04-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL04-5001	X	Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL05-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL06-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL08-0001		Soil	15DEC92	X	X	X		X	X	X	X	X			X			

Special Instructions:
1-U
2-Pu
3-Th
6-H3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs -CLP SOW OLM01.8
11-Pests/PCBs-CLP SOW OLM01.8
15-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.1, HG
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible] WESTON		15 DEC 92	1575

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

FEDERAL EXPRESS AIRBILL #5119242203 SHIPMENT CONSISTS OF 7 COOLERS

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client
Est. Final Proj. Sampling Date
Work Order #
Project Contact/Phone # Howard Seeley (505)884-5[illegible]
AD Project Manager William Little
QC Del TAT
Date Rec'd Date Due
Account #

Refrigerator #																					
#/Type Container	Liquid	2/G	2/G	2/G		2/G	2/G	2/G	2/G	2/G		2/G	2/G	2/G							
	Solid																				
Volume	Liquid	40	500	1000		250	250	500	500	1000		500	500	500							
	Solid																				
Preservatives		HCl				H2SO4			H2SO4	HCl											

ANALYSES REQUESTED →

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	ORGANIC VOA	ORGANIC BNA	ORGANIC Pest/PCB	ORGANIC Herb	TOC	TID	[illegible]	TOX/TOC	INORG Metal	INORG CN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
						9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 0,4 5	1	
		MND23-SL06-4001		WATER	15 DEC 92	X	X	X		X	X	X	X	X		X	X	X		
		MND23-SL01-2001		WATER	15 DEC 92	X														
		MND23-SL01-3001		WATER	15 DEC 92	X														

S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:
1-[illegible]
2-[illegible]
3-[illegible]
4-[illegible]-901-DOE EPA-VI-01
5-[illegible]-[illegible]-D2460-70
6-[illegible]-906.0
7-[illegible] std.
8-[illegible]-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pest/PCBs-CLP SOW OLM01.8
15-EDC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Reg.A
23-[illegible]-9251/375.2
24-[illegible]-H03-353.2
25-[illegible]-375.2
27-F-340.2
31-Alk.-310.1

DATE/REVISIONS:
1.
2.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible] WESTON		15 DEC 92	15:15

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW[illegible]1-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

FEDERAL EXPRESS AIRBILL # 5719242214
SHIPMENT CONSISTS OF 6 COOLERS.
CUSTODY SEAL APPLIED TO EACH COOLER.

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS/CONSULTANTS

Page 1 of 1

Client: ESOC Mound
Est. Final Proj. Sampling Date: 16DEC92
Work Order #: 05376-021-140-0410
Project Contact/Phone #: Howard Seeley (505)894-5
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																			
#/Type Container	Liquid	1/G	2/G	2/G		1/G	1/G	1/P	1/P	1/P		1/P	1/P	1/P	1/G	
	Solid															
Volume (ml)	Liquid	40	1000	1000		250	250	500	500	1000		500	500	4000	1000	
	Solid															
Preservatives		HCL				H2SO4			H2SO4	HNO3			HNO3			
ANALYSES REQUESTED		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb	TOC	HD		NO2/NO3	Metal	CN	Cl, SO4	Alk	Cam-Pu-Ir-U-Sr-Ac-Ra	Thor-Pac	
		9	10	11		15	6	27	24	20		23, 25	31	7,2 3,1 3,4 5	19	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	HD		NO2/NO3	Metal	CN	Cl, SO4	Alk	Cam-Pu-Ir-U-Sr-Ac-Ra	Thor-Pac	
	MND23-SL03-4001		WATER	16DEC92	X	X	X		X	X	X	X	X		X	X	X		
	MND23-SL09-2001		WATER	16DEC92	X														
	MND23-SL09-3001		WATER	16DEC92	X														

Special Instructions:
1-U
2-Pu
3-Th
4-Am-241-DOE HEL-A4-01
5-Ra-226-ASTM D2460-70
6-U3-906.0
7-Gamma rad.
8-Sr-90
9-VOCs-CLP SOW OLM01.8
10-SemiVOCs-CLP SOW OLM01.8
11-Pest/PCBs-CLP SOW OLM01.8

DATE/REVISIONS:
13-TOC-415.1/415.2
19-Dioxins/Furans-8290
20-Metals-CLP SOW ILM01.0, Mod.A
23-Cl-9251/325.2
24-NO2-NO3-353.2
25-SO4-375.2
27-P-340.2
31-ALK.-310.1

1. 2. 3. 4. 5. 6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
T. Hoff Weston		16DEC92	1500				

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page ____ of ____

Client: [illegible]
Est. Final Proj. Sampling Date: 18 DEC 92
Work Order #: [illegible] 05376-221-[illegible] 0416
Project Contact/Phone #: [illegible] Howard Seeley (504) 334-305[illegible]
AD Project Manager: [illegible] William Little
QC: ____ Del: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #: ____

Refrigerator #																	
#/Type Container	Liquid																
	Solid	1/8	1/8	1/8		1/8	1/8	1/8	1/8	1/8		1/8	1/8				
Volume	Liquid																
	Solid	40	250	250		125	250	500	125	250		500	1000				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	TOC	TS	NO2 NO3 Cl SO4	Alk.	Metal	CN						
			10	12		15	6	7 13 15	21			1	1 3				

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	TOC	TS	NO2 NO3 Cl SO4	Alk.	Metal	CN					
	MND23-SL09-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL10-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL10-1001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL12-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL11-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL07-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			
	MND23-SL13-0001		SOIL	16DEC92	X	X	X		X	X	X	X	X			X			

Special Instructions:

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

Relinquished by	Received by	Date	Time
[illegible]		16 DEC 92	1500

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

B4. MARCH 1993 GROUNDWATER SAMPLES

Batch #1

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

WESTON Analytics Use Only

Client: E&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-040-5200-99
Project Contact/Phone #: Eric Larson/513-866-9444
AD Project Manager: William Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																
#/Type Container	Liquid					2/P										
	Solid															
Volume (ml)	Liquid					4000										
	Solid															
Preservatives						HNO3										
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	RAD			Metal	CN						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only													
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish								11, 12, 13, 14													
		MND20-0381-0001			W	14Apr93	1500	2													

END

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

11- Gamma Rad.
12- Isotopic Pu, Th, U
13- Ra-226
14- Sr 90/Y-90

DATE/REVISIONS:

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Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	14Apr93	1900

Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ 381-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 0376-021-040-5200-99
Project Contact/Phone #: Tom Thorp/505-884-5065
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid	1G	2G	2G		1P	1P			1P								
	Solid																	
Volume (ml)	Liquid	40	750	750		500	500			1000								
	Solid																	
Preservatives		HCL	None	None		None	H_2SO_4			HNO_3								
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb					Metal	CN							
		10	3	4		7, 9	8			5								

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	7, 9	8			Metal	CN					
	MND20-0370-0001		W	31 Mar 93	2	2	2		1	1			1						
	MND20-0371-0001		W	31 Mar 93	2	2	2		1	1			1						
	MND20-0371-1001		W	31 Mar 93	2	2	2		1	1			1						
	MND20-0372-0001		W	30 Mar 93	2	2	2		1	1			1						
	MND20-0373-0001		W	30 Mar 93	2	2	2		1	1			1						
	MND20-0375-0001		W	31 Mar 93	2	2	2		1	1			1						
	MND20-0380-0001		W	31 Mar 93	2	2	2		1	1			1						
	MND20-0371-2001		W	1 Apr 93	2														
						END													

Special Instructions:

10 - VOCs - 8010/8020
3 - TCL SemiVOCs - CLP SOW
4 - TCL Pest/PCBs - CLP SOW
7 - Cl 325.1/9250
8 - NO_3-NO_2 - 353.2
9 - SO4 - 375.2
5 - TAL Metals - CLP SOW

DATE/REVISIONS:

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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	1 Apr 93	1730

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW[illegible]-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

Airbill #4100320130 Field Lab #01

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: E.G.&G. MOUND
Est. Final Proj. Sampling Date:
Work Order #: 0537G-021-040-5200-99
Project Contact/Phone #: Tom Thatcher/505 384-5073
AD Project Manager: Gilliland Little
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #																		
#/Type Container	Liquid	2/G	2/G	2/G		1/P	1/P			1/P								
	Solid																	
Volume (ml)	Liquid	40	950	950		500	500			1000								
	Solid																	
Preservatives		HCl	None	None		None	H_2SO_4			HNO_3								
ANALYSES REQUESTED →		ORGANIC								INORG								
		VOA	BNA	Pest/PCB	Herb	Cl SO_4	NO_3 NO_2			Metal	CN							
		10	3	4		7, 9	8			5								

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; Wi - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	Cl SO_4	NO_3 NO_2			Metal	CN					
	MND20-0374-0001	✓	W	4/1/93	2	2	2		1	1			1						
	MND20-0374-0001 MS/MSD				2	2	2		1	1			1						
	MND20-0391-0001				2				1	1			1						
	MND20-0392-0001				2	2	2		1	1			1						
	MND20-0393-0001				2	2	2		1	1			1						
	MND20-0374-3001			4/1/93	2														
	MND20-0394-0001		W	4/2/93	2	2	2		1	1			1						
	MND20-0379-2001				2														
	MND20-0800-3001				2														

Special Instructions:
1D - VOCs - 8010/8020
3 - TCL Semi, VOCs - CLP SOW
4 - TCL Pest/PCBs - CLP SOW
7 - Cl - 325.1/9250
8 - NO_3 - NO_2 - 353.2
9 - SO_4 - 375.2
5 - TAL Metals - CLP SOW

DATE/REVISIONS:
1.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	2 Apr 93	1700

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# [illegible] G77-596a

WESTON Analytics Use Only

Field Batch #1

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-090-5200-99
Project Contact/Phone #: Tom Tharp/505-884-5560
AD Project Manager: William Little
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid	2/G	2/G	2/G		1/P	1/P			1/P							
	Solid																
Volume (ml)	Liquid	40	950	950		500	500			1000							
	Solid																
Preservatives		HCL	None	None		None	H_2SO_4			HNO_3							
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	Cl, SO_4	NO_2, NO_3			Metal	CN						
		10	3	4		7, 9	8			5							

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	Cl, SO_4	NO_2, NO_3			Metal	CN					
	MND20-0376-0001		W	28Mar93	2	2	2		1	1			1						
	MND20-0377-0001		W	29Mar93	2	2	2		1	1			1						
	MND20-0377-1001		W	29Mar93	2	2	2		1	1			1						
	MND20-0378-0001		W	28Mar93	2	2	2		1	1			1						
	MND20-0379-0001		W	29Mar93	2	2	2		1	1			1						
	MND20-0379-2001		W	20Mar93	2														

—END—

Special Instructions:

10 - VOCs - 8010/8020
3 - TCL SemiVOCs - CLP SOW
4 - TCL Pest/PCBs - CLP SOW
7 - Cl - 325.1/9250
8 - ~~SO_4 - 375.2~~ NO_3-NO_2 - 353.2
9 - SO_4 - 375.2
5 - TAL Metals - CLP SOW

DATE/REVISIONS:

1.
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WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[signature]	Fed Ex	30Mar93	1930

Relinquished by	Received by	Date	Time

RFW[illegible]-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# _____ Cooler# _____ G77-596a

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of ____

Client: E.C. + G. Mobil
Est. Final Proj. Sampling Date:
Work Order #: 05374-021-040-5200-99
Project Contact/Phone #: Tom Thrip/505-821-5052
AD Project Manager: William Little
QC: ____ Del: ____ TAT: ____
Date Rec'd: ____ Date Due: ____
Account #: ____

Refrigerator #																	
#/Type Container	Liquid						1G	2/P									
	Solid																
Volume	Liquid						250	1000									
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC									INORG						
		VOA	BNA	Pest/PCB	Herb		H_3	RAD			Metal	CN					
							1	11, 12, 13, 14									

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	H_3	RAD			Metal	CN					
	MNA20-0370-0001			3/31/93					1	2									
	MNA20-0371-0001			↓					1	2									
	MNA20-0371-1001			↓					1	2									
	MNA20-0372-0001			3/30/93					1	2									
	MNA20-0373-0001			↓					1	2									
	MNA20-0374-0001	X		4/1/93					1	2									
	MNA20-0374-0001 MS/MSD			↓					1	2									
	MNA20-0375-0001			3/31/93					1	2									
	MNA20-0376-0001			3/29/93					1	2									
	MNA20-0377-0001			↓					1	2									

Special Instructions:

1 - H_3, 906.0
11 - Gamma Rad
12 - Radium Rad Total
13 - Pb - 210
14 - Sr-90/Y-90

DATE/REVISIONS:

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	2 Apr	1700

Relinquished by	Received by	Date	Time

RFW 21-21-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____

-596a

Airbill #4 820173285 Field Int'l # 01

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of

Client: EG&G Mound
Est. Final Proj. Sampling Date:
Work Order #: 05376-021-040-5200-97
Project Contact/Phone #: Tom Tracy/505-884-5050
AD Project Manager: Lillian L. Hile
QC: Del TAT
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid					1G	2P										
	Solid																
Volume (ml)	Liquid					250	1000										
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb	H_3	Gamma Rad			Metal	CN						
						1	11, 12, 13, 14										

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	VOA	BNA	Pest/PCB	Herb	H_3	Gamma Rad			Metal	CN					
	MND20-0377-1001			3/29/93					1	2									
	MND20-0378-0001			3/29/93					1	2									
	MND20-0379-0001			3/29/93					1	2									
	MND20-0380-0001			3/31/93					1	2									
	MND20-0381-0001			4/1/93					1										
	MND20-0382-0001			4/1/93					1	2									
	MND20-0393-0001			4/1/93					1	2									
	MND20-0394-0001			4/2/93					1	2									
	MND20-0399-2001			4/2/93															
	MND20-0400-3001																		

Special Instructions:

1 - H_3, 906.0
11 - Gamma Rad
12 - Isotopic Pu, Th, U
13 - Ra-226
14 - Sr-90/Y-90

DATE/REVISIONS:
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WESTON Analytics Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time
[illegible]	Fed Ex	2 Apr 93	1700

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW [illegible]1-001/A-8/90 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ G77-596a

APPENDIX C

SITE GEOLOGY

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ACRONYMS

BGS	below ground surface
MSL	mean sea level
RI	remedial investigation
SCS	Soil Conservation Service
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture

C. SITE GEOLOGY

C.1. INTRODUCTION

An understanding of the geology is important to set the context for groundwater flow and contaminant migration pathways in soils and subsurface deposits at Mound Plant. A general overview of the geologic structure, stratigraphy, and glaciation of the region and site-specific geomorphology and lithology are presented in subsection 2.2 of the Operable Unit 1 Remedial Investigation (RI) Report. A series of cross sections and two fence diagrams are presented to show the distribution of bedrock and Quaternary deposits in the vicinity of Area B. Cross sections presented in this report are based on data collected over a wide time span by different geologists and are subject to interpretation.

C.2. BEDROCK

The bedrock lithology at the Mound Plant consists of Ordovician-aged, interbedded limestones and shales. The Richmond Group of Upper Ordovician age underlies Area B and outcrops at the surface in a few areas at the Main Hill and the SM/PP Hill. The Main Hill and SM/PP Hill are topographic highs within the Mound Plant boundaries.

C.2.1. Lithologic Description

As part of the site-wide Operable Unit 9 field investigation to characterize groundwater flow in the bedrock and to refine the interpretation of lithologic and hydrostratigraphic units, continuous bedrock core was collected from six boreholes; four transects were mapped on the face of the outcrop formed by the railroad cut along the western extent of the Mound Plant, and borehole geophysical measurements were made in the six boreholes. The mapping included the measurement of the thickness of discrete shale and limestone beds, and notation of the presence or absence of linear features (fractures, bedding surfaces) with regard to orientation and frequency. The continuous bedrock core was logged according to the methods described in the Handbook for Logging Carbonate Rocks (Bebout and Loucks 1984). Features that were described included percent shale, fossil assemblage, structure, texture, fabric, grain size, color, and rock type. The core log for borehole 0352 is shown in Appendix D of the Operable Unit 1 RI Report. The objectives of the borehole geophysical investigation were to identify lithologic variation and stratigraphic sequences in bedrock underlying the Mound Plant, to locate fractures and permeable zones in the shallow and deep bedrock systems, and to evaluate the bedrock flow regime in the shallow and deep bedrock systems. The lateral persistence of thick beds of shale and limestone was determined by correlating data from the vertical profiles (railroad mapping), the bedrock cores, and the geophysical logs to evaluate the extent of lithologic units and the bedrock groundwater flow system.

Changes in rock fabrics were identified to the nearest 0.1 ft as part of the rock core analysis. Rock fabric is defined as the size, shape and arrangement of the grains in a rock. Grains are further defined to include fossil fragments. Five lithologic fabric types were observed in the bedrock at the Mound Plant: claystone, mudstone, packstone, wackestone, and grainstone. The method used to describe the carbonate fabric types, with the exception of claystone, is the Classification of Carbonate Rocks according to Depositional Texture (Dunham 1962).

Mudstone

Mudstones, by definition, contain less than 10 percent grains and are mud-supported with particles of clay and fine silts (Dunham 1962). The mudstones observed in the bedrock at the Mound Plant are dark gray to dark greenish-gray and are predominantly composed of terrigenous clays and silts with a particle size of <1/16 mm. The mudstones were non to very calcareous, grading at times to a true carbonate mudstone. The silt content in the mudstones varied from slightly silty to very silty, with some gradation to a silt-dominant mudstone. No primary porosity was observed in the mudstones and very few fractures yielding secondary porosity were observed.

Structurally, the mudstones were very thinly laminated (< 2 mm) to medium-bedded units 2 to 3 ft thick. Due to weathering, bedding features within individual mudstone units were much more apparent in the outcrop than in the core. The silt-dominant mudstones tended to be more massive and less platy than the clay-dominant mudstones, and were more resistive to weathering in the exposed outcrop.

Internal structures within the mudstones were difficult to distinguish. Burrows and bioturbation were observed usually at or near the contacts with packstones. Some streaky laminations of carbonate materials were observed, as were nodules of packstone material. These nodular packstones were present in only a few mudstone-dominated sequences.

The paleofauna observed in the mudstones primarily consisted of thin-walled brachiopods, branching bryozoa, and trilobites.

Packstone

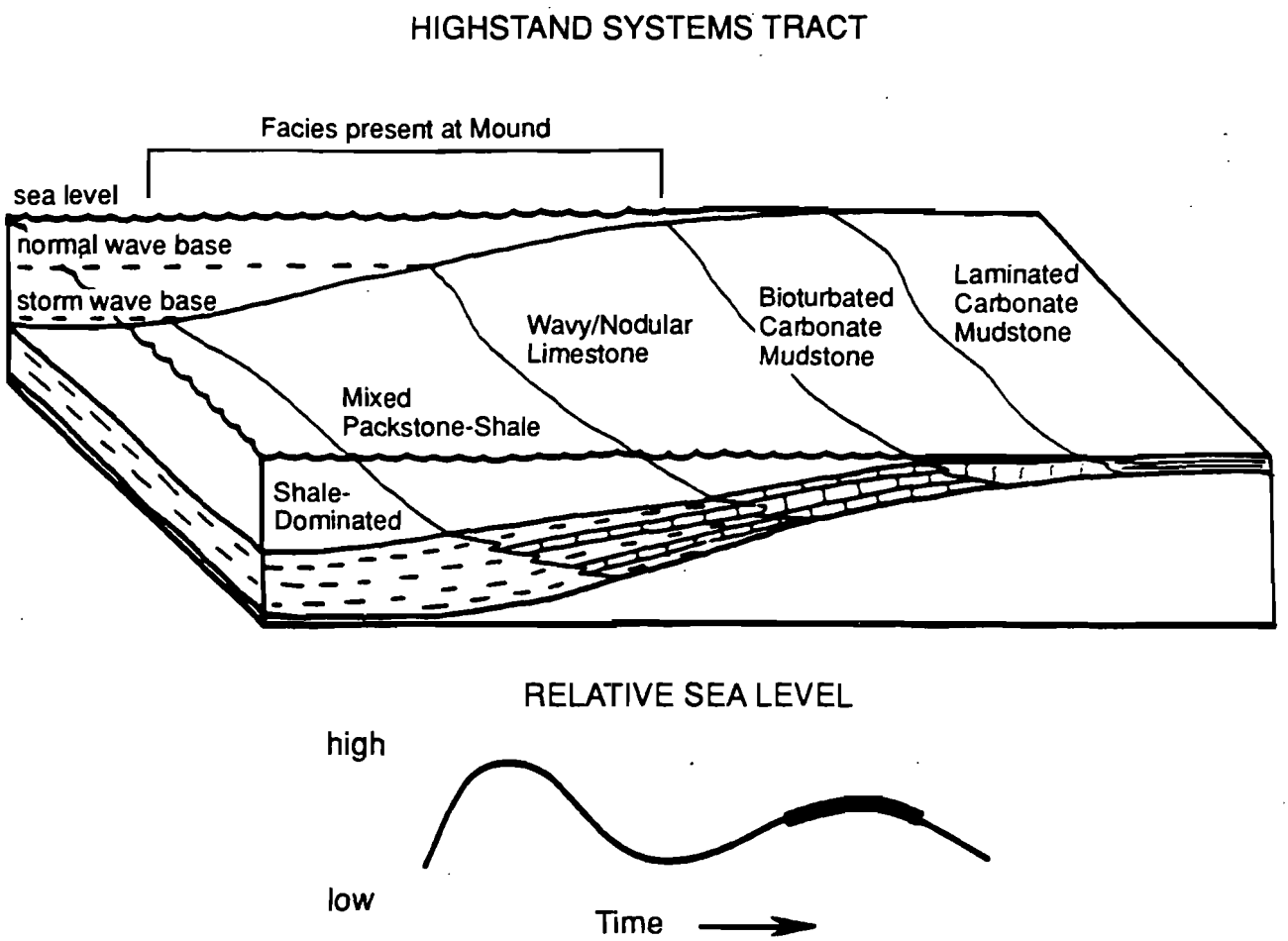
Packstones, by definition, are grain-supported limestones containing some mud matrix (Dunham 1962). The packstones observed at the Mound Plant are typically medium gray and are composed of reworked skeletal grains of calcium carbonate and calcium carbonate muds. Grain sizes varied from very fine (<1/16 mm) to very coarse (>2 mm), and the packstones typically were poorly sorted.

Structurally, the packstones were found to be very thin to medium bedded (.05 to 1.0 ft thick). Bedding features within individual packstones were more evident in the exposed weathered outcrops due to differential weathering of the beds than in the freshly exposed packstones in the core. Individual packstones observed in the core were massive with very thin (generally < 2 mm) laminations or varves of clay material. These very thin clay laminations were weathered away in the exposed packstones in the outcrop, giving some of the outcropping packstones a bedded appearance. Nodular packstones also were observed in the core. These nodular packstones are probably the result of storm events ripping up and reworking partially lithified sediments (Holland 1993).

Holland describes six shallowing-upward or highstand-systems lithofacies. Two of the six lithofacies are dominant at the Mound Plant, the wavy/nodular limestones facies and the mixed packstone-shale facies. The wavy/nodular limestone facies is characteristic of a shoreface environment. Packstones (70 percent) and mudstones (30 percent) constitute the common rock fabrics. The mixed packstone-shale facies represents a transition-zone mid-shelf environment with quieter background conditions than in the shore-face environment. Packstones (45 percent), mudstones (45 percent), and wackestones and grainstones (10 percent) make up the common rock fabrics. Figure C.1 illustrates this highstand-systems tract in the Cincinnatian Series. These nodular packstones varied in size and were generally in a mudstone matrix. Some packstones had a nodular appearance due to bioturbation. Contacts between interbeds of packstones and mudstones were generally described as sharp-irregular; however, some gradational, burrowed, and visibly scoured contacts were noted.

Internal structures within the packstones consisted of styolites, intraclasts, burrows, clasts, fining upward sequences, and crossbedding. Burrows and bioturbation were common giving the packstones a highly disturbed appearance. Fining upward sequences were observed infrequently and were generally gradational with the overlying mudstone beds. Crossbedding was observed in very few instances. Intraclasts were observed frequently due to bioturbation and storm events that reworked the carbonate sediments.

The paleofauna observed in the packstones consisted primarily of thin-walled brachiopods and, to a lesser extent, branching bryozoa, rugose corals, pelecypods, gastropods, and thick-walled brachiopods. Rugose corals were observed in the uppermost limestone dominant sequence. Very few trilobites or trilobite parts were observed in the packstones logged in the core, but they were somewhat more evident in the packstones logged in the outcrop.



Highstand-systems tract in the Cincinnatian Series. Five major environments were developed on a northward-facing, storm-dominated, mixed carbonate-clastic ramp. Laminated carbonate mudstones were deposited in supratidal environments. Bioturbated carbonate mudstones were deposited in intertidal to shallow subtidal environments. Wavy-bedded to nodular packstones were deposited in shoreface settings. Normal wave base defines the top of the transition zone, in which a mixture of predominantly packstones and shales was deposited. Storm wave base defines the top of the offshore, in which mostly shales and distal carbonate tempestites were deposited.

(After Holland, 1993)

Figure C.1. Highstand-systems tract in the Cincinnatian Series.

Wackestone

Wackestones, by definition, contain more than 10 percent grains and are mud-supported with particles of clay and fine silts (Dunham 1962). The wackestones observed in the bedrock at the Mound Plant are dark gray to dark greenish gray and are generally bioclastic, composed of a terrigenous clay and silt matrix with pavements of, or an abundance of, calcium carbonate skeletal grains and fossil fragments. Grain size varied from the < 1/16 mm matrix to > 2 mm fossil and nodular grains. No primary porosity was observed in the wackestones and very few fractures yielding secondary porosity were observed.

Structurally, the wackestones were thinly bedded (0.1 to 0.8 ft thick). The beds of wackestones were usually gradational with the mudstones and were associated with bioclastic accumulations of paleofauna. Occasional evidence of bioturbation was observed, giving the wackestones a highly disturbed appearance.

The paleofauna observed in the wackestones primarily consisted of thin-walled brachiopods and branching bryozoa. Other fossil types, such as pelecipods, gastropods, and trilobites were present in only trace quantities.

Grainstone

Grainstones, by definition, are grain-supported limestones containing less than 10 percent mud (Dunham 1962). The grainstones observed in the bedrock at the Mound Plant are typically medium gray and are composed of reworked skeletal grains of calcium carbonate and calcium carbonate cements. Grain sizes varied from very fine (1/16 mm) to fine (1/4 mm), and the grainstone was typically very well sorted. Very few grainstones were observed in the bedrock at the Mound Plant. No primary porosity was observed in any of the grainstones; however, secondary porosity was observed as fractures.

Structurally, the grainstones were found to be thinly bedded (0.2 to 0.5 ft thick). Some very thin (<2 mm) laminations of grainstone were observed in the mudstones as horizontal or streaky laminations. Traces of nodular grainstones were also observed in the core. Bedding features within individual beds of grainstone were not evident in either the core or the grainstones exposed in the outcrop. Contacts between individual beds of grainstones and mudstones were generally described as sharp-irregular; however, some gradational contacts with packstones were observed. Bioturbation, burrows, and paleofauna were not observed in the grainstones.

Of the five fabric types found in the bedrock at the Mound Plant, packstone, mudstone, and wackestone were the dominant lithologies. Rock fabrics not only reveal considerable information about the condition of origin or depositional environment of the rock, but also permit detailed comparisons among the various rock types. The rock fabrics can be grouped to form recognizable rock types.

Six rock types are interpreted to represent the bedrock lithology at the Mound Plant:

1. Limestone (100 percent limestone). In Area B at borehole 0352, as shown in Figure C.2, this rock type is absent.

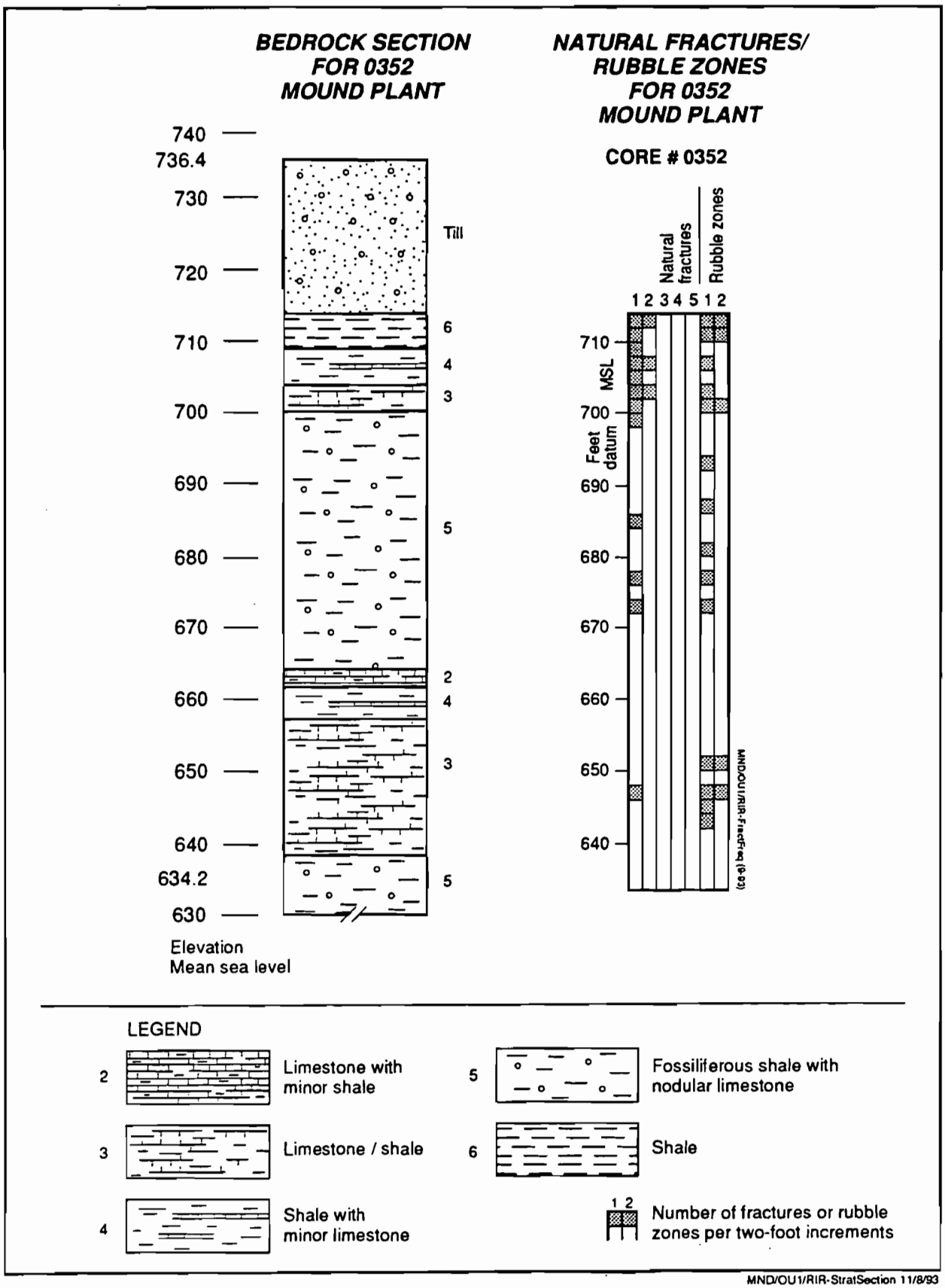
2. Limestone with interbedded shale (75 percent limestone with 25 percent of interbedded shale). At borehole 0352, this rock type is approximately 2.5 ft thick and is 665 ft above mean sea level (MSL). As shown in Figure C.2, no fractures are present in this rock type.

3. Interbedded limestone and shale (50 percent limestone and 50 percent shale). This rock type is present in the upper and lower section at borehole 0352. At 705 ft above MSL, this rock type is approximately 4 ft thick and contains fractures. The lower unit is approximately 20 ft thick at 655 ft above MSL, and fractures are less abundant.

4. Shale with interbedded limestone (75 percent shale with 25 percent interbedded limestone). This rock type appears in the upper and lower section at borehole 0352, with comparable thicknesses of 5 ft and 4.5 ft, respectively. Fractures are present in the upper section at 710 ft above MSL, but are absent in the lower section at 662 ft above MSL.

5. Fossiliferous shale with nodular limestone (contains fossils and nodular limestone). At 701 ft above MSL, this rock type is approximately 36 ft thick and contains fractures. At 638 ft above MSL, this unit is approximately 4 ft thick and fractures are absent. The most common fossil assemblages in this unit include branching bryozoans and thin-walled brachiopods and, less commonly, mollusks, trilobites, thick-walled brachiopods, and encrusted bryozoans.

6. Shale (100 percent shale). This is the uppermost unit at borehole 0352, which is 714 ft above MSL. This unit is 4 ft thick and is fractured, as shown in Figure C.2.



MND/OU1/RIR-StratSection 11/8/93

Figure C.2. Bedrock section and natural fractures for borehole 0352.

With the exception of limestone, five of the six rock types described above are present at Area B, southeast of the site-sanitary landfill at borehole location 0352.

C.2.1.1. Fracture Description

The presence or absence of fractures was observed in both the railroad cut outcrop and the bedrock core. Four fracture sets were identified and measured at the railroad cut. The first-formed or primary fracture set in almost all layers trends northwest. The trend lies between N60° and 80°W. Fractures in limestone generally penetrated the entire layer and decreased with depth, whereas individual fractures in shale rarely penetrated the entire unit. Fractures in the bedrock core appear to be associated with rubble zones. As shown in Figure C.2, the frequency of fractures and rubble zones at well 0352 decreases with depth. Shallow fractures are present from 714 ft above MSL to 699 ft above MSL.

C.2.1.2. Borehole Geophysics Description

The borehole geophysics provides the most comprehensive picture of weathering processes that are superimposed on the shales and limestone lithologies. Note that the complete analyses of the borehole geophysical data are pending and will be presented in the Operable Unit 9 Bedrock Report. The general trends observed in borehole 0352 (as shown in Figure C.3) are:

- Resistivity data (EM and Guard) show a gradual, but marked increase in resistivity in the shallow portion of bedrock (<100 ft depth). The increase in resistivity is probably related to weathering in the shallow bedrock related to fracturing and removal of electrolyte salts.

- Fluid temperature and resistivity indicate changes in water temperature and composition in the shallow bedrock, with more consistent values in the deeper bedrock. The data indicate that the flow of water into the borehole through fractures is limited to the shallow bedrock.

- Natural gamma logs indicate variable shale and limestone content throughout the section. A decrease in natural gamma indicates a limestone, whereas an increase in natural gamma indicates a shale.

- Gamma (density) and neutron logs indicate thin beds with variable density and porosity, respectively. Neither log indicates broad changes in lithology across the section.

- Borehole flow measurements showed no vertical flow.

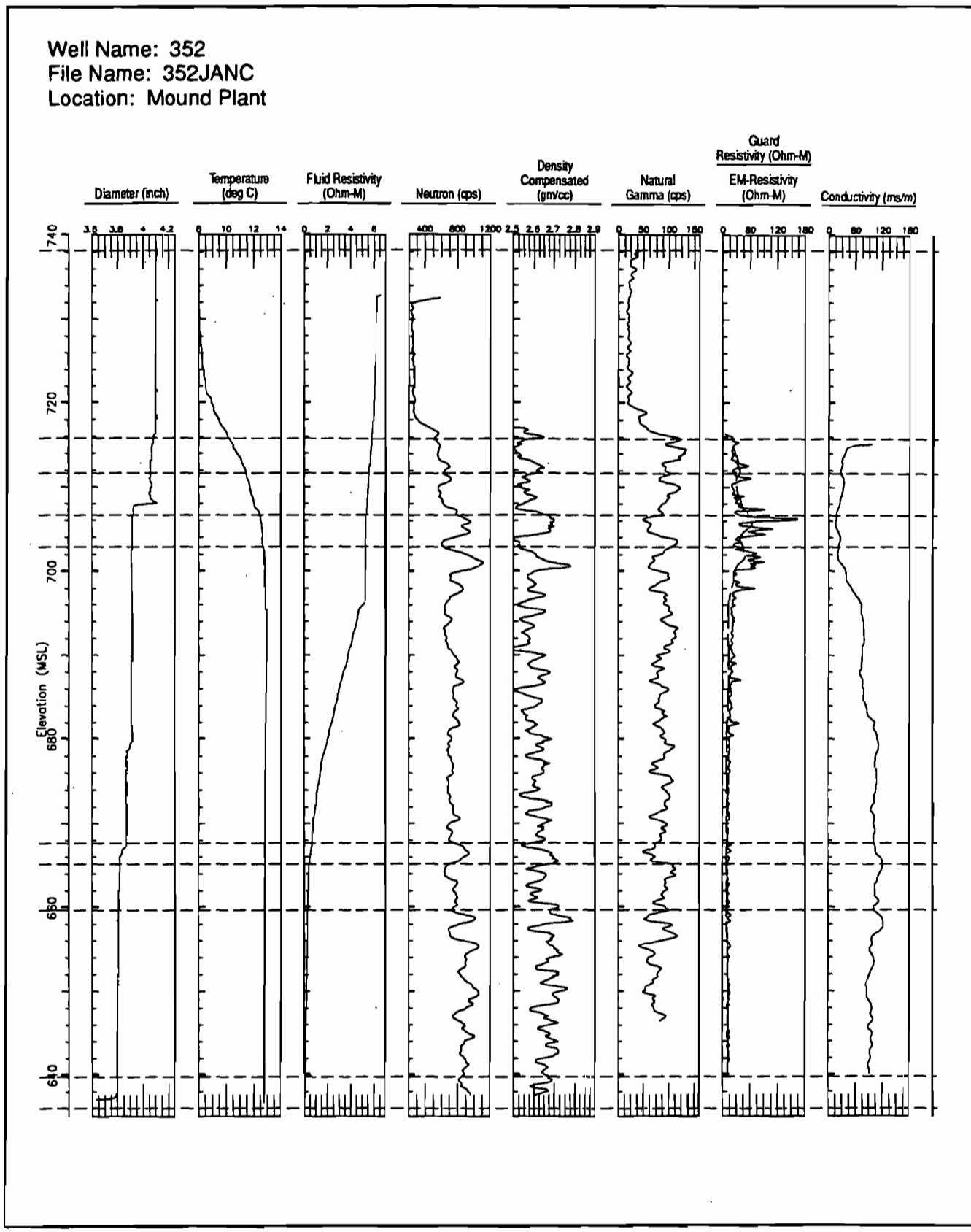


Figure C.3. Geophysical logs for borehole 0352.

The correlation of lithology and the borehole geophysical data indicate the following:

- there are no apparent stratigraphic controls of groundwater movement in bedrock;
- groundwater flow in bedrock is controlled by an interconnected network of shallow fractures that generally mimic topography; and
- the fracture density and occurrence decrease with depth.

The bedrock core and the railroad cut provide the most complete lithologic section of the interbedded shales and limestones to date. The borehole geophysics indicate groundwater flow in the bedrock is controlled by a network of shallow fractures.

Bedrock core data evaluation at borehole 0352 and lithologic logs from wells 0372 and P004 indicate that a moderately permeable limestone unit is truncated by a till with increasing depth under Area B. Cross section B-B[6] (Plate A) and the fence diagram (Plate B) both illustrate the absence of this underlying limestone unit, indicating that there is no stratigraphic control of groundwater movement in bedrock at Area B. Deeper limestone units are present under Area B, but fracture density decreases with depth, allowing groundwater flow in bedrock to be controlled only by interconnected shallow fractures.

C.2.2. Quaternary Glacial/Fluvial Deposits

There are two general types of glacial drift, nonstratified and stratified. Nonstratified drift (commonly called till) formed as ground moraine when materials carried in the base of the advancing glacier were deposited (lodgement till) or let down to the surface as ice melted during glacial retreat (ablation till). Ground moraine primarily consists of till, which is high in clay content, compact, and largely impervious. The till that exists in and adjacent to Area B is generally composed of an unsorted, unstratified mixture of clay, silt, sand, and coarser material (Struble 1987). Materials of this composition are known to have low permeability (Freeze and Cherry 1979). Stratified drift (commonly called outwash) is deposited as kames, outwash plains, and valley trains. The outwash in the vicinity of Area B occurs as restricted valley-train deposits that were formed by the aggradation of glacial meltwater streams (Goldthwait et al. 1979). Floods of meltwater deposited vast quantities of glacial debris along the deep valleys in the area. Periodic changes in flow velocity caused deposition of layers of glacial material ranging from coarse gravel to fine sand. Pore spaces in these outwash deposits are large and the openings are interconnected, producing highly permeable deposits. Interbedded in the sands and gravels of the valley train are layers and irregular lens of till. The complex interstratification of glacial till and outwash forms the Buried Valley aquifer and contiguous deposits and has greatly

affected the hydrologic conditions at Area B. At this locality, the shape and continuity of till deposits have been affected by stream alluviation and dissection.

Recent fluvial deposits consist of overbank silt, clay, and sand deposited by the present streams or rivers as they cut their channels into the glacial deposits. The alluvium is thin and consists primarily of fine-grained, relatively impermeable materials. No coarse fraction is seen in point bar deposits or other surficial fluvial deposits in the vicinity of Mound Plant. The recent alluvium is not a good source of groundwater but the glacial deposits underlying it often furnish large supplies of groundwater.

C.2.2.1. Surface Soils and Vadose Zone Sediments

Review of Previous Investigations

A detailed soil survey of Montgomery County was published by the U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS) in June 1976. The soil survey manual is used as a general guide in identifying soil types found at the Mound Plant, specifically at Area B. The manual identifies specific soil series, defined as mappable soil units of similar morphology, and gives the engineering properties of the soil units. Data from this soil survey are presented in subsection 2.2.

Geotechnical soil investigations were performed at Area B by Bowser and Morner, Inc., in 1975 (Bowser and Morner 1975) and by Dames and Moore, Inc., in 1976 (Dames and Moore 1976). The purpose of the investigations was to determine the engineering properties of the soils in Area B. These properties were used to determine soil response for the construction of an overflow pond built in 1978. Roy F. Weston, Inc. (WESTON) conducted Stage 3 and additional field work at Mound Plant from 1989 through 1993 to determine the extent of contamination in the soils at specific areas of Mound Plant, including Area B.

Physical Properties

Figure C.4 illustrates the local distribution of agricultural soil units in the vicinity of Mound Plant in 1966. The surface soils were reworked extensively by earth moving equipment during the construction of the overflow pond, site sanitary landfill, and related dike structures in 1978. Based on the soil conditions in 1966, four soil types existed within the boundaries of Area B. The soil types include made land, the Miamian clay loam, the Miamian silt loam, and the Fairmont silty clay loam. Due to the reworking of those soil types, the dominant surface soil at Area B is classified as made land. The general soil morphology of each unit has been transcribed from the USDA Soil Survey Manual of Montgomery County and was presented in subsection 2.2.

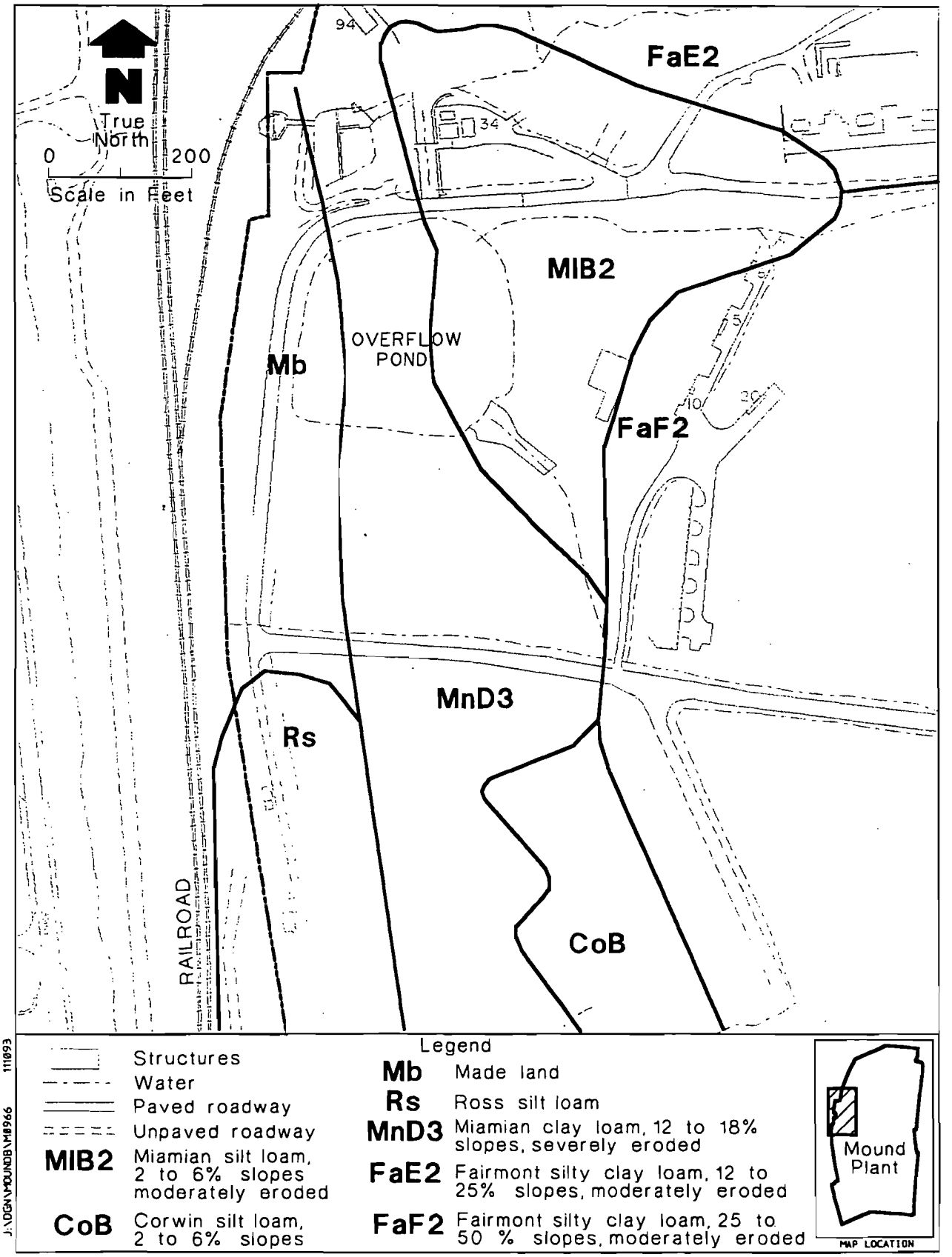


Figure C.4. Pre-1978 distribution of soil units in the immediate vicinity of Area B, Mound Plant.

The lithology of the regolith that underlies Area B can be described in detail by 1) an examination of the C horizon of the former soil complex, since it is considered the parent material of the soil unit and is roughly equivalent to the upper regolith; and 2) a compilation of borehole logs from previous investigations. This information was used to construct a detailed geologic cross section (Plate B) of the lower regolith. As described above, the C horizon in the Miamian Series soil profile consists of a dense, compact, calcareous loam glacial till. The C horizon in the Fairmont Series soil profile consists of interbedded limestone and calcareous clay shale bedrock. These morphologies represent the uppermost portion of the regolith that underlies portions of Area B. In areas where man-made reworking of the original soil profile has created made land, the C horizon probably no longer exists and the description of the upper regolith is based on soil boring data.

A site investigation program conducted in 1973 by Dames and Moore involved two borings (DM-5 and DM-6) drilled in Area B. An additional Dames and Moore investigation in February 1976 involved the drilling of three soil borings (BP-1 through BP-3) and nine auger probes (AP-1 through AP-9). The location of the borings and auger probes in relation to the overflow pond and site sanitary landfill are shown in Figure C.5.

Geologic logs were produced for each well boring, soil boring, and auger probe. Numerous geotechnical tests were performed on soil samples collected at various depths from each boring. These geotechnical data are used in determining the engineering properties of the soil.

The Dames and Moore auger probes confirmed the presence of a 5- to 25-ft-thick veneer of soil fill in the southwest portion of Area B. The veneer consisted of silty clay/clayey silt and gravel that graded with solid waste. The soil fill and solid waste were produced by landfill operations from 1948 to the mid-1970s.

Engineering Properties

Previous investigations by the USDA SCS, Bowser and Morner, Dames and Moore, and WESTON have included geotechnical tests on soil and regolith samples collected at Area B. These tests addressed dominant USDA texture (applicable to surface and near-surface soil horizons), Unified Soil Classification System (USCS) characterization, grain size, moisture content, dry density, Atterberg limits, unconfined compression, triaxial compression, hydraulic conductivity, and available moisture capacity. A USCS soil classification chart is provided in Figure C.6 as a reference for letter symbols representing soil types (Waterways Equipment Station 1953).

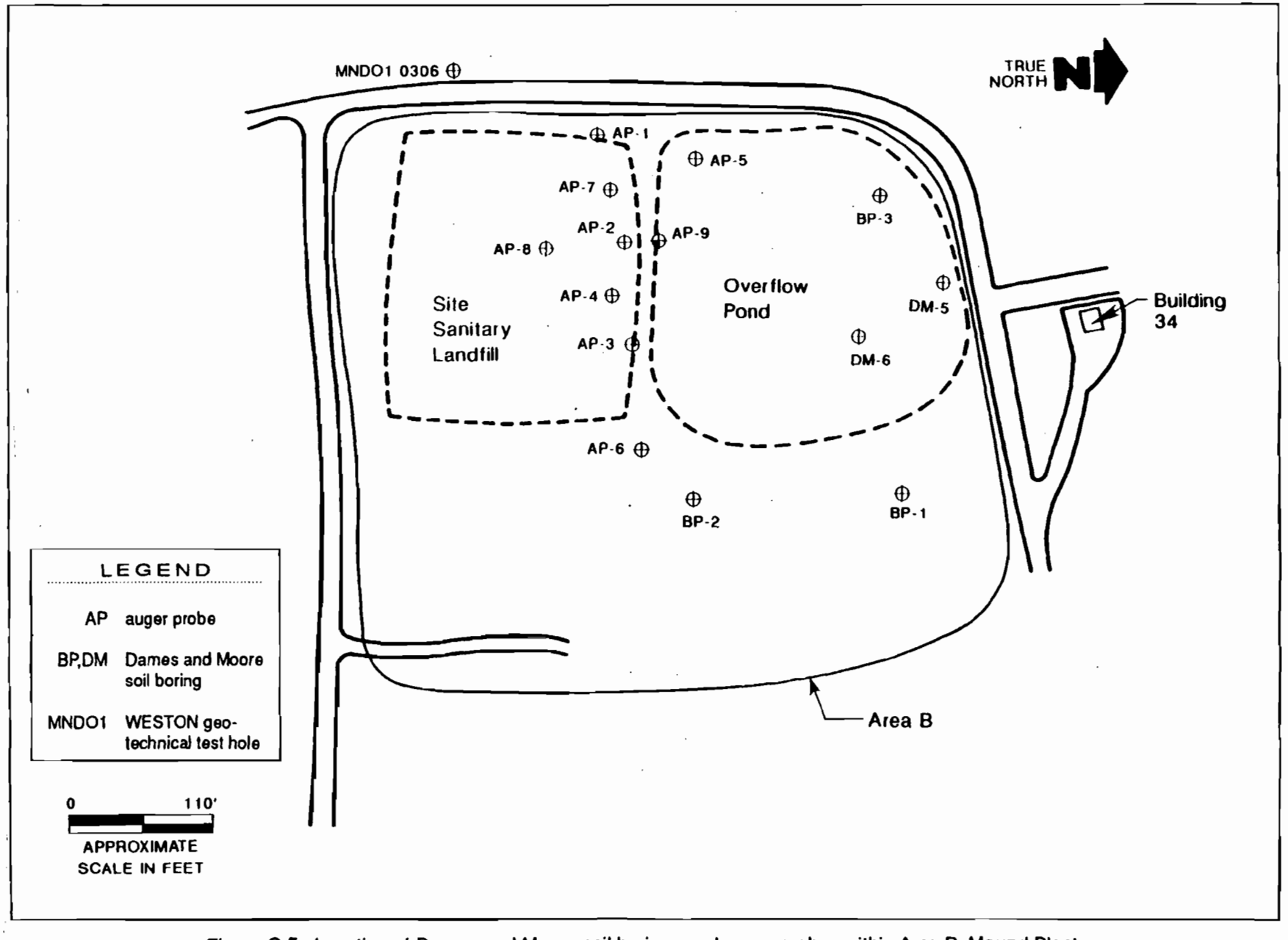


Figure C.5. Location of Dames and Moore soil borings and auger probes within Area B, Mound Plant.

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICTY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICTY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Dual symbols are used to indicate borderline soil classifications.

MOUND/SoilClass 4-4-91

Figure C.6. Unified Soil Classification System chart.

Table C.I shows the estimated engineering properties of soils occurring in Area B, based on the county soil survey. As discussed previously, made land is the dominant surface soil type in Area B. Most of the original soil at Area B was reworked during landfill operations and the construction of the site sanitary landfill, overflow pond, and associated dike structures. Soil compaction may have occurred during these operations. The degree of soil compaction is variable and dependent on site conditions and the type of operation performed (SCS 1976).

The engineering properties of made land are generally similar to those of the original soil types. The original USDA textures for the Fairmont, Miamian, and Ross soil series have probably been altered; however, the USCS classification, grain size analysis results, hydraulic conductivity, and available moisture capacity for these soils are averaged as a rough model of the engineering properties of the made land in Area B. This indicates that made land consists of predominantly clayey silt to silty clay (ML-CL) with a trace of fine- to medium-grained sand and fine gravel.

The average estimated saturated hydraulic conductivity for the made land is 3×10^{-4} to 1×10^{-2} centimeters per second (cm/sec) and the average estimated available moisture capacity is 0.14 to 0.18 inches/inch of soil. These values correspond with intermediate hydraulic conductivity and moisture capacity values for made land (SCS 1976).

In a 1975 investigation conducted by Bowser and Morner, Inc., seven soil borings (B-1 through B-4 and A through C) were drilled. The location of each soil boring was not recorded and thus is not available; however, it has been confirmed that the borings were completed in the area of the overflow pond in the northwest section of Area B.

The Bowser and Morner (1975) investigation involved drilling borings B-1 through B-4 using hollow stem augers with samples collected in shelby tubes and split spoons. The precise borehole locations have not been identified, but it has been confirmed that the borings were completed in the area of the overflow pond in the northeast section of Area B. The geotechnical test results are shown in Table C.2. The tested samples were collected from unconsolidated deposits at depths ranging from 1.0 to 15.0 ft. Four of the geotechnical tests were performed on these samples. Grain size analyses were performed on samples B-1-2A and B-2-3A at respective depths of 6.0 to 7.5 ft and 8.5 to 10 ft. These analyses yielded grain size curves that were combined with Atterberg limit values resulting in a USCS classification of CL (sandy clay) for both samples as shown in Figures C.7 and C.8. Moisture content for all tested samples ranged from 9.1 to 13.3 percent for the depth interval of 1.0 to 15.0 ft.

Bowser and Morner also performed three field permeability tests that measured the water loss to the formation at specific depths. Three hollow-stem auger borings, A, B, and C, were drilled to depths of 10 ft, 10 ft, and 20 ft, respectively. Surface casing was installed from the ground surface to the

Table C.1. Estimated Engineering Properties of Soils for Soil Types Located in Area B, Mound Plant (Based on Soil Survey Manual for Montgomery County, Ohio)

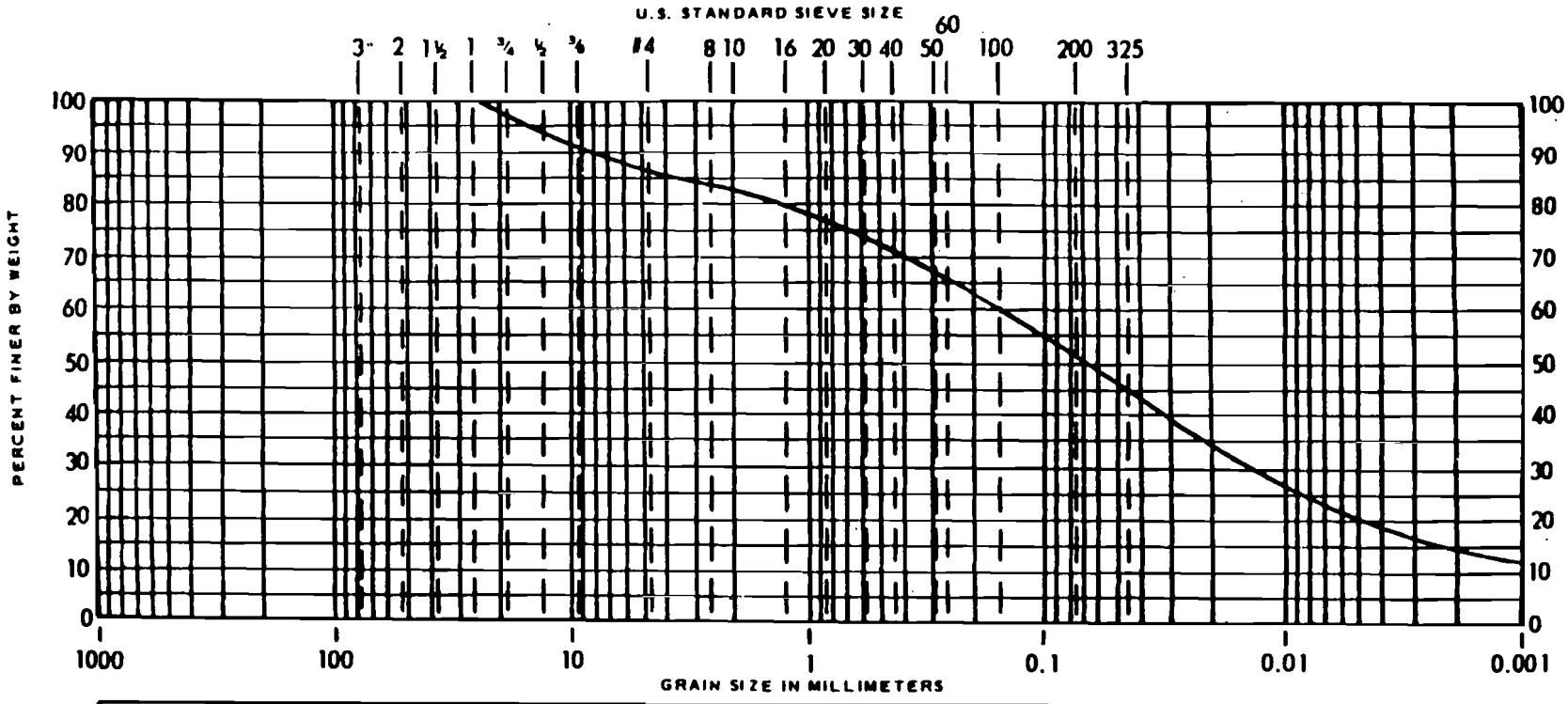
Soil Series and Map Symbols	Depth from Surface (Typical Profile) (in)	Dominant USDA Texture	USCS Classification	Percentage Passing Sieve				Hydraulic Conductivity (cm/sec)	Available Moisture Capacity (inches per inch of soil)
				No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)		
Fairmont: FaE2	0-7	Silty clay loam	ML, CL	90-100	90-100	80-90	70-85	4.4×10^{-4} - 1.4×10^{-3}	0.16-0.22
	7-19	Silty clay	ML-CL, CH	100	80-100	75-90	70-90	1.4×10^{-4} - 4.4×10^{-4}	0.14-0.18
	19-24	Interbedded limestone and calcareous clay shale	—	—	—	—	—	—	—
Made land: Mb	—	—	ML,-CL*	95*	92.5*	78.6*	81.1*	3.2×10^{-4} - 9.9×10^{-3}	0.14-0.18
Miamian: M1B2, MnD3	0-7	Silt loam	ML, ML-CL	90-100	90-100	80-90	70-90	4.4×10^{-4} - 1.4×10^{-3}	0.17-0.20
	7-24	Clay loam to clay	CL	90-100	85-95	75-90	70-85	1.4×10^{-4} - 4.4×10^{-4}	0.14-0.19
	24-60	Loam	CL, ML-CL	75-95	75-90	65-75	55-70	1.4×10^{-4} - 4.4×10^{-4}	0.06-0.10
Ross: Rs	0-22	Silt loam	ML, ML-CL	90-100	80-90	80-90	70-85	4.4×10^{-4} - 1.4×10^{-3}	0.18-0.24
	22-34	Fine sandy loam	SM, ML	100	100	50-70	30-55	4.4×10^{-4} - 1.4×10^{-3}	0.12-0.15

*Averaged

Table C.2. Geotechnical Test Results for Bowser and Morner Test Holes B-1, B-2, B-3, and B-4 at Area B, Mound Plant

Borehole Identification	Depth (ft)	Sample ID	USCS Classification	Moisture Content (%)	Atterberg Limits-Moisture Content in Percent		
					Liquid Limit	Plastic Limit	Plasticity Index
B-1	6.0-7.5	2A	CL	11.0	21.0	11.0	10.0
	8.5-10.0	3A	—	9.4	—	—	—
	13.5-15.0	4A	—	10.1	—	—	—
B-2	6.0-7.5	2A	—	13.3	—	—	—
	8.5-10.0	3A	CL	11.3	21.0	12.0	9.0
	13.5-15.0	4A	—	12.0	—	—	—
B-3	1.0-2.5	1A	—	11.2	—	—	—
	3.5-5.0	2A	—	11.0	—	—	—
	6.0-7.5	3A	—	11.1	—	—	—
	8.5-10.0	4A	—	11.4	—	—	—
B-4	3.5-5.0	2A	—	10.9	—	—	—
	6.0-7.5	3A	—	9.1	—	—	—

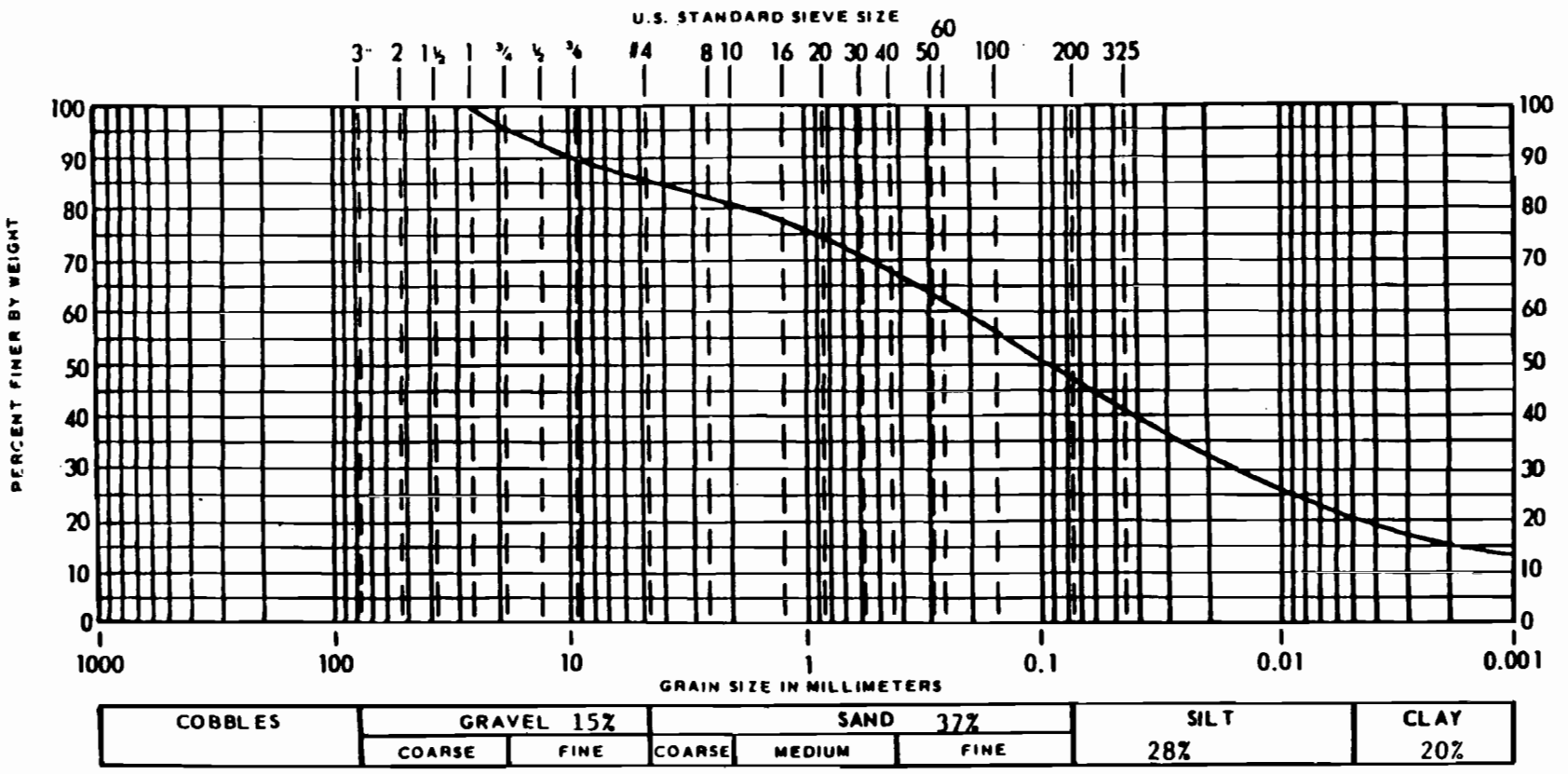
A - Indicates sample was collected using a split-spoon sampler
USCS - Unified Soil Classification System



COBBLES	GRAVEL 14%		SAND 34%			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	29%	23%

PROJECT RETENTION BASINS MOUND LABORATORY	NATURAL % MOISTURE 11.0%	BOWSER-MORNER
BORING NO. 1	LIQUID LIMIT 21	TESTING LABORATORIES, INC.
SAMPLE NO. 2A	PLASTIC LIMIT 11	
DEPTH 6.0-7.5'	PLASTICITY INDEX 10	
CLASSIFICATION "CL" sandy CLAY	COLOR Brown and Gray	
	REMARKS "U.S.C.S."	

Figure C.7. Grain-size distribution curve and Atterberg Limit values for sample 2A from Bowser and Morner Boring 1.



PROJECT RETENTION BASINS MOUND LABORATORY	NATURAL % MOISTURE 11.3%	BOWSER-MORNER
BORING NO. 2	LIQUID LIMIT 21	TESTING LABORATORIES, INC.
SAMPLE NO. 3A	PLASTIC LIMIT 12	
DEPTH 8.5-10.0'	PLASTICITY INDEX 9	
CLASSIFICATION "CL" sandy CLAY	COLOR Brown	
	REMARKS "U.S.C.S."	

Figure C.8. Grain-size distribution curve and Atterberg Limit values for sample 3A from Bowser and Morner Boring 2.

bottom of each borehole to seal off the formation. Water was then added to each hole and the water lost to the formation was measured over a 20-minute time period. Again, the precise locations of these boreholes are not known, but it has been confirmed that they were completed in the area of the overflow pond in the northeast section of Area B. The results of the field permeability tests (Table C.3) indicate that the regolith at each of the test depths was relatively impermeable at its ambient moisture content (Bowser and Morner 1975).

Dames and Moore conducted an extensive subsurface investigation that involved the drilling of five soil borings (BP-1, BP-2, BP-3, DM-5, and DM-6) and nine auger probes (AP-1 through AP-9). The locations of the borings and auger probes are shown in Figure C.5. The borings were drilled to depths ranging from 45 to 110 ft and the auger probes were drilled to depths ranging from 13.5 to 31.5 ft. Borings BP-1 and BP-2 were drilled with rotary-wash drilling equipment, and boring BP-3 was drilled with a hollow-stem auger using drilling mud to stabilize the bottom of the borehole (Dames and Moore 1976). The drilling method for borings DM-5 and DM-6 is not known but was probably a rotary-wash technique due to the depth of each borehole. The auger probes were drilled with hollow-stem augers (Dames and Moore 1976). Soil samples were collected using a Dames and Moore Type U sampler. The geotechnical test results are shown in Tables C.4 and C.5. The tested samples were collected from unconsolidated deposits at depths ranging from 3 to 40 ft. Grain size analyses were performed on all samples collected. These analyses yielded grain size curves that were combined with Atterberg limit values resulting in a USCS classification of CL-ML for samples collected from 3 to 34 ft and GW for samples collected from 36 to 40 ft. For the depth interval 3 to 40 ft, moisture contents ranged from 7.8 to 11.3 percent and dry densities ranged from 118 to 141 pounds per cubic ft (lbs/ft^3) for all tested samples. Hydraulic conductivity tests were performed on eight samples for the depth interval of 4.0 to 40.0 ft. Values ranged from 1.10×10^{-8} to 7.38×10^{-2} cm/sec. Sample DM-6-0010 yielded a hydraulic conductivity value of 7.30×10^{-9} cm/sec, which does not correlate with its corresponding USCS unit GW (well-graded gravel). This value is not considered valid.

During the Stage 3 RI, WESTON collected three samples from well boring MND01-0306 and submitted them to Bowser and Morner Laboratories for geotechnical and related analysis. The location of the well boring is shown in Figure C.9. The well boring was drilled with a cable tool rig, and soil samples were collected using a split-barrel sampler with a plastic liner insert. The geotechnical and related test results are shown in Table C.6. The tested samples were collected from unconsolidated deposits at depths ranging from 20.0 to 40.75 ft. Grain size analyses curves were combined with Atterberg limit values resulting in a USCS classification of SC-SM for sample 0020 (20 to 22 ft), SM for sample 0032 (32 to 34 ft), and CL for sample 0040 (40.0 to 40.75 ft). For the three samples tested, values ranged from 0.98 to 1.78 percent for organic content, 4,800 to 18,700 mg/kg for iron content, and 200 to 500 mg/kg for manganese content.

Table C.3. Field Permeability Test Results for Bowser and Morner Test Holes A, B, and C at Area B, Mound Plant

Borehole Identification	Depth (ft)	Date of Test	Test Duration (min)	Water Loss from Hole (gal)
A	10.0	6-13-75	20.0	None
B	10.0	6-13-75	20.0	None
C	20.0	6-13-75	20.0	0.125

Table C.4. Geotechnical Test Results for Dames and Moore Test Holes AP-1, AP-4, AP-6, BP-1, BP-2, and BP-3, at Area B, Mound Plant

Borehole Identification	Depth (ft)	Sample ID	USCS Classification	Moisture Content (%)	Dry Density (lbs/ft³)	Measured Vertical Hydraulic Conductivity (cm/sec)
AP-1	14.0	0002	CL-ML	11.2	128	---
	20.0	0003	CL-ML	10.3	133	---
	24.0	0004	CL-ML	10.7	135	---
AP-4	19.0	0002	CL-ML	9.0	135	---
	24.0	0003	CL-ML	9.2	125	---
AP-6	29.0	0004	SW	11.3	129	---
BP-1	4.0	0001	CL-ML	11.3	129	2.40×10^{-8}
	24.0	0005	CL-ML	10.1	134	4.70×10^{-8}[a]
BP-2	9.0	0002	CL-ML	9.9	132	---
	15.0	0003	CL-ML	9.3	138	---
	24.0	0005	CL-ML	10.6	139	---
BP-3	15.0	0003	CL-ML	11.1	132	---
	19.0	0004	CL-ML	8.6	138	1.10×10^{-8}

[a]Remolded sample
USCS - Unified Soil Classification System

Table C.5. Geotechnical Test Results for Dames and Moore Test Holes DM-5 and DM-6 at Area B, Mound Plant

Borehole Identification	Depth (ft)	Sample ID	USCS Classification	Moisture Content (%)	Dry Density (lbs/ft³)	Atterberg Limits - Moisture Content (%)			Measured Vertical Permeability (cm/sec)
						Liquid Limit	Plastic Limit	Plasticity Index	
DM-5	3.0	0001	CL-ML	11.0	130	24.3	14.6	9.6	---
	13.0	0005	CL-ML	8.4	140	---	---	---	---
	16.0	0006	CL-ML	8.1	139	17.6	11.1	6.5	—
	19.0	0007	CL-ML	8.0	137	19.6	14.4	8.3	—
	22.0	0008	CL-ML	9.0	137	—	—	—	2.24×10^{-7}
	26.0	0009	CL-ML	7.8	137	---	---	---	---
	31.0	0010	CL-ML	10.2	133	19.2	12.2	7.0	—
	33.0	0011	CL-ML	10.9	131	---	---	---	3.06×10^{-8}
	40.0	0014	GW	9.2	126	---	---	---	7.38×10^{-2}
DM-6	7.5	0001	CL-ML	10.9	130	---	---	---	3.32×10^{-6}
	10.5	0002	CL-ML	9.5	130	16.9	5.6	11.3	—
	15.0	0003	CL-ML	11.1	118	---	---	---	2.00×10^{-8}
	18.0	0004	CL-ML	9.9	132	14.9	10.0	4.9	---
	23.0	0006	CL-ML	9.5	138	18.7	12.1	6.6	---
	25.5	0007	CL-ML	8.9	136	13.9	10.0	3.9	---
	34.0	0009	CL-ML	8.8	---	20.2	11.7	8.5	---
	36.0	0010	GW	9.6	141	—	—	—	7.30×10^{-9}

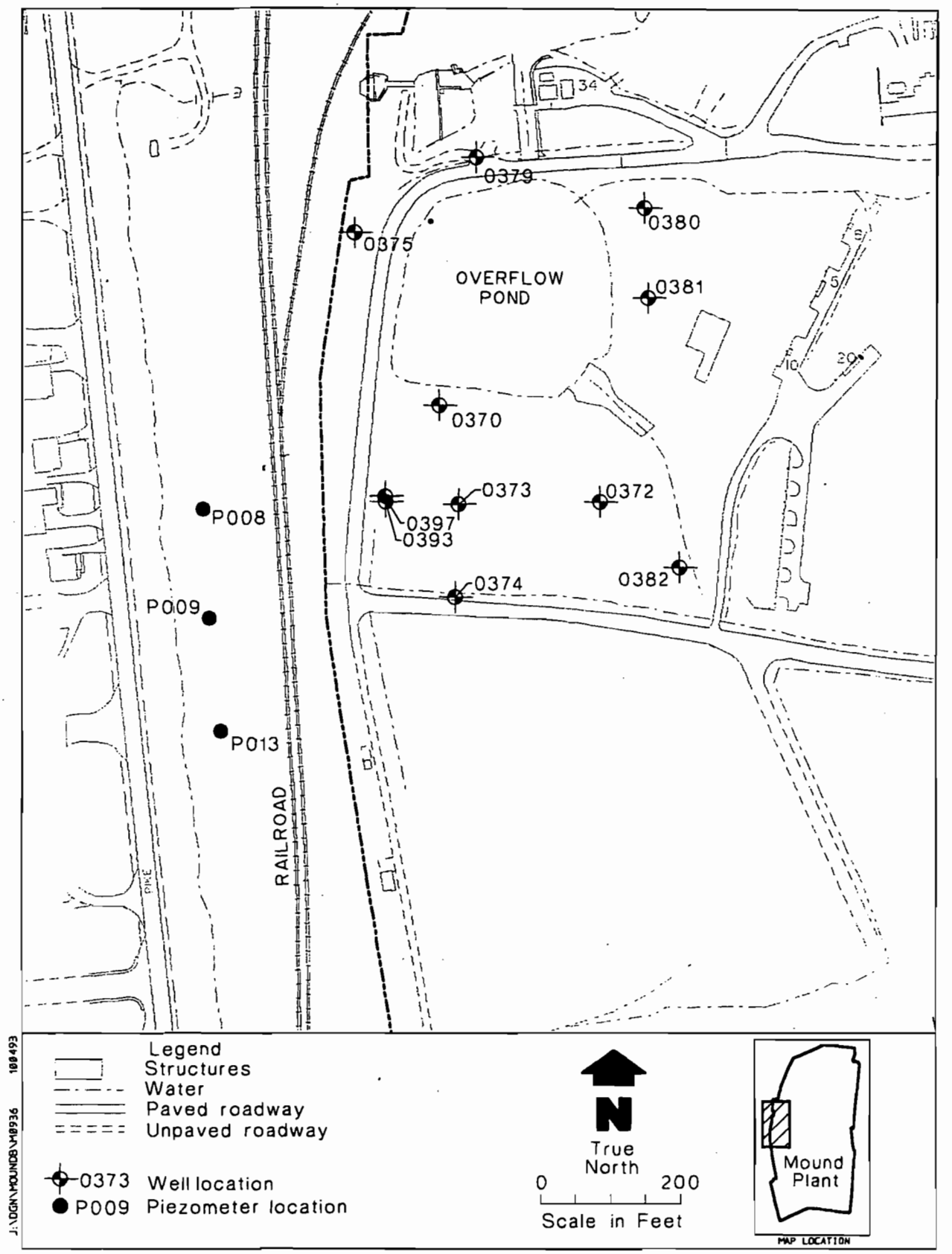


Figure C.9. Location of monitoring wells and piezometers in which samples were collected for geotechnical testing and clay minerology analyses.

Table C.6. Geotechnical and Related Test Results for WESTON Test Hole MND01-0306 at Area B, Mound Plant

Borehole Identification	Depth (ft)	Sample ID	USCS Classification	Atterberg Limits -- Moisture Content (%)			Organic Content (%)	Iron (mg/kg)	Manganese (mg/kg)
				Liquid Limit	Plastic Limit	Plasticity Index			
MND01-0306	20.0-22.0	0020	SC-SM	19.0	13.0	6.0	1.78	9,400	200
	32.0-34.0	0032	SM	18.0	16.0	2.0	0.98	4,800	400
	40.0-40.75	0040	CL	29.0	18.0	11.0	1.73	18,700	500

USCS - Unified Soil Classification System

During the additional work stage of the RI, WESTON collected samples from various monitoring well boreholes and submitted them to Bowser and Morner Laboratories for geotechnical analysis and to Lambda Research, Inc., for clay mineralogy analysis. The well boring locations are shown in Figure C.9. The well borings were drilled with a rotosonic rig, and clay mineralogy samples were collected directly from the recovered core and placed in small containers. Geotechnical samples consisting of fill and the fine-grained glacial till materials were collected using a thin-walled, steel shelby tube. However, the shelby tube collapsed during attempts to collect samples containing large outwash cobbles or well-indurated bedrock. Therefore, bulk samples of outwash and bedrock were collected and sealed in 5-gallon buckets. The tested samples were collected at specific depth intervals from the various well boreholes as outlined in the Operable Unit 1 additional work plan (DOE 1992a).

Forty-one subsurface samples were collected and submitted for geotechnical analysis. However, a total of 43 samples were subjected to geotechnical testing, since one sample contained three lithologically distinct units and separate geotechnical tests were performed on each. Thirty-seven samples were collected from unconsolidated deposits at depths ranging from 0 to 64 ft below ground surface (BGS), and 6 samples were collected from bedrock at depths ranging from 22 to 58 ft BGS. The geotechnical test results are shown in Table C.7. Bowser and Morner, Inc., subcontracted Harding Lawson Associates to perform capillary moisture relationship testing on 10 of the 43 samples collected.

Grain size analyses were performed on all samples collected. These analyses yielded grain size curves that illustrate the distribution of particle size for each sample. Atterberg limit analyses were performed on 15 samples to determine the liquid limit, plastic limit, and plasticity index for the sampled medium. The grain size curve results were combined with Atterberg limit values resulting in a "laboratory-derived" USCS classification for 15 of the 43 samples tested. The samples that were not tested for Atterberg limits were "designated" a USCS classification using grain size curve values.

The samples collected from the unconsolidated deposits can be categorized into three general lithologic units: fill material, glacial till, and glacio-fluvial outwash. One sample was collected from a dense alluvial deposit overlying bedrock (see subsection 4.1.2). Samples collected from bedrock deposits consisted of primarily shale or shale with limestone interbeds. Grain size curves were developed for two of the bedrock samples collected and Atterberg limit tests were performed on one of these samples. The range of laboratory-derived and designated USCS classifications for each lithologic unit are given below.

Table C.7. Geotechnical Test Results for WESTON Additional-Work-Stage Well and Piezometer Borings.

Monitoring Well/ Piezometer ID	Sample ID	Depth (ft)	Visual Lithology	Moisture Content (%)	Specific Gravity	Particle Sizes (%)					Atterberg Limits			USCS Classification	Loss on Ignition (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Porosity (%)	Hydraulic Conductivity (cm/sec)
						Cobble	Gravel	Sand	Silt	Clay	Liquid Limit	Plastic Limit	Plasticity Index						
0370	0021	20.0-22.0	Fill Material	25.1	2.69	0	0	8	47	47	---	---	---	CL-ML (w)	3.1	125.4	100.2	40.3	6.1×10^{-6}
0370	0026	25.0-27.0	Fill Material	30.3	2.76	0	14	37	28	21	---	---	---	SC-SM (w)	1.7	121.2	93.1	45.9	---
0370	0041	40.0-42.0	Glacio-fluvial Outwash	---	---	8	76	16	0	0	---	---	---	GW (l)	0.7	---	---	---	---
0372	0003	2.0-3.0	Fill Material	9.3	2.74	0	12	35	30	23	---	---	---	SC-SM (w)	1.2	146.2	133.7	22.0	---
0372	0036	35.0-37.0	Fill Material	11.7	2.77	0	10	33	31	26	---	---	---	SC-SM (w)	1.9	144.1	129.0	26.4	---
0372	0046	45.0-47.0	Glacial Till	10.4	2.75	0	9	41	29	21	17	11	6	CL-ML (a)	1.8	148.5	134.4	21.6	1.0×10^{-6}
0372	0052	51.0-53.0	Bedrock (Shale/ Limestone)	1.2	2.73	---	---	---	---	---	---	---	---	---	0.5	163.6	161.7	5.3	---
0372	0057	56.0-58.0	Bedrock (Shale)	5.6	2.80	---	---	---	---	---	---	---	---	---	1.1	155.5	147.3	15.8	---
0373	0001	0.0-1.0	Fill Material	7.8	2.74	0	22	30	26	22	21	13	8	SC (a)	1.6	146.9	136.3	20.6	6.4×10^{-6}
0373	0031	30.0-31.0	Fill Material	11.8	2.74	0	10	^56	18	18	20	14	6	SC-SM (a)	1.0	145.9	130.4	23.7	1.1×10^{-7}
0373	0051	50.0-51.0	Glacial Till	11.2	2.75	0	16	47	21	16	18	13	5	SC-SM (a)	1.5	140.9	126.7	25.9	7.7×10^{-7}
0373	0055	54.0-55.0	Glacio-fluvial Outwash	7.9	2.77	0	54	30	8	8	24	17	7	GC-GM (a)	1.6	---	---	---	---
0374	0004	3.0-5.0	Fill Material	20.9	2.71	0	0	12	41	47	---	---	---	CL-ML (w)	2.9	128.6	106.4	37.2	---
0374	0009	8.0-10.0	Fill Material	17.6	2.69	0	8	62	10	20	37	16	21	SC (a)	1.9	124.0	105.4	37.0	9.1×10^{-6}
0374	0014	13.0-15.0	Glacio-fluvial Outwash	11.7	2.75	0	52	24	16	7	---	---	---	GM-GW (w)	1.5	137.6	123.3	28.4	1.1×10^{-4}
0375	0005	4.0-6.0	Fill Material	27.6	2.70	0	3	19	37	41	---	---	---	CL-ML (w)	3.9	117.9	92.3	45.2	---
0375	0007	6.0-7.5	Glacio-fluvial Outwash	22.2	2.78	0	48	27	16	9	---	---	---	GW-GM (w)	1.4	149.4	122.3	29.5	---
0375	0014	13.0-15.0	Glacio-fluvial Outwash	---	---	5	67	27	1	0	---	---	---	GW (l)	1.3	---	---	---	---

Table C.7. (page 2 of 3)

Monitoring Well/ Piezometer ID	Sample ID	Depth (ft)	Visual Lithology	Moisture Content (%)	Specific Gravity	Particle Sizes (%)					Attarberg Limits			USCS Classification	Loss on Ignition (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Porosity (%)	Hydraulic Conductivity (cm/sec)
						Cobble	Gravel	Sand	Silt	Clay	Liquid Limit	Plastic Limit	Plasticity Index						
0375	0024	23.0-25.0	Glacio-fluvial Outwash	---	---	14	64	22	0	0	---	---	---	GW (i)	1.0	---	---	---	---
0375	0033	32.0-34.0	Glacial Till	9.2	2.75	8	35	18	16	25	---	---	---	GC (w)	2.2	143.8	131.7	23.3	---
0379	0010	9.0-11.0	Glacial Till	9.4	2.75	0	12	37	30	21	19	12	7	CL-ML (a)	1.6	148.7	135.9	20.8	1.2×10^{-6}
0379	0022	21.0-23.0	Glacial Till	10.5	2.72	0	11	36	30	23	---	---	---	SC-SM (w)	1.8	150.5	136.2	19.6	---
0380	0031	30.0-32.0	Glacial Till	8.0	2.73	0	13	34	28	25	20	12	8	CL (a)	1.1	151.0	139.8	18.0	---
0381	0004	3.0-4.0	Glacial Till	10.9	2.72	0	9	41	29	21	---	---	---	SC-SM (w)	1.7	146.5	132.1	22.2	---
0381	0027	26.0-27.0	Bedrock (Shale/Lime stone)	3.7	2.78	---	---	---	---	---	---	---	---	---	1.1	161.3	155.5	10.4	---
0382	0002	0.0-2.0	Fill Material	13.4	2.73	0	18	31	27	24	---	---	---	SC-SM (w)	2.3	136.8	120.6	29.2	---
0382	0017	16.0-17.0	Glacial Till	9.2	2.75	0	14	41	26	19	---	---	---	SC-SM (w)	1.2	147.3	134.9	28.0	---
0382	0023	22.0-23.0	Bedrock (Shale)	7.1	2.75	0	0	34	39	27	---	---	---	CL-ML (w)	1.0	153.4	143.2	16.6	---
0393	0048	47.0-48.0	Bedrock (Shale/Lime stone)	4.8	2.79	---	---	---	---	---	---	---	---	---	0.7	162.0	154.5	11.3	1.2×10^{-6}
0397	0004	3.0-5.0	Fill Material	18.5	2.63	0	6	11	42	41	54	17	37	CH (a)	4.3	131.9	111.3	32.2	5.7×10^{-6}
0397	0009	8.0-10.0	Fill Material	10.1	2.69	0	2	77	14	7	---	---	---	SM (i)	0.8	127.1	115.4	30.2	4.4×10^{-4}
0397	0014	13.0-15.0	Glacial Till	10.2	2.74	0	11	38	29	22	21	14	7	CL-ML (a)	1.8	146.7	133.1	22.4	2.0×10^{-6}
0397	0021	20.0-22.0	Glacial Till	10.2	2.74	0	10	36	30	24	21	12	9	CL (a)	2.0	146.3	134.6	28.6	---
P008	0004	3.0-5.0	Glacio-fluvial Outwash	4.5	---	0	44	43	9	4	---	---	---	GM (i)	1.1	---	---	---	---
P008	0020	19.0-21.0	Glacio-fluvial Outwash	7.3	---	0	48	35	11	6	---	---	---	GM (i)	1.1	---	---	---	---
P008	0057	58.0-58.0	Bedrock (Shale)	12.9	2.75	0	20	23	25	32	36	17	19	CL (a)	2.1	130.3	115.4	32.8	2.1×10^{-7}
P009	0002	1.0-3.0	Fill Material	13.3	2.66	0	14	37	21	28	45	20	25	SC (a)	5.4	---	---	---	---
P009	0002	1.0-3.0	Fill Material	8.0	2.75	0	27	45	18	10	---	---	---	SM (i)	1.2	143.8	132.7	22.8	---

Table C.7. (page 3 of 3)

Monitoring Well/ Piezometer ID	Sample ID	Depth (ft)	Visual Lithology	Moisture Content (%)	Specific Gravity	Particle Sizes (%)					Atterberg Limits			USCS Classification	Loss on Ignition (%)	Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Porosity (%)	Hydraulic Conductivity (cm/sec)
						Cobble	Gravel	Sand	Silt	Clay	Liquid Limit	Plastic Limit	Plasticity Index						
P009	0002	1.0-3.0	Fill Material	21.5	2.59	0	15	31	26	28	46	23	23	OL (a)	7.1	118.1	97.1	39.9	—
P009	0023	22.0-24.0	Glacio-fluvial Outwash	Saturated	---	0	56	31	8	5	---	---	---	GM (l)	1.7	---	---	---	---
P009	0063	62.0-64.0	Alluvial Deposit	11.8	2.75	0	14	26	26	34	29	14	15	CL (a)	2.2	143.8	128.6	25.1	1.5×10^{-9}
P013	0012	11.0-13.0	Glacio-fluvial Outwash	6.4	---	0	56	29	8	7	---	---	---	GM (l)	1.3	---	---	---	---
P013	0050	49.0-51.0	Glacio-fluvial Outwash	Saturated	---	0	17	75	5	3	---	---	---	SW-SM (l)	1.3	---	---	---	---

Explanation

(a): Laboratory-derived USCS classification based on Atterberg limit/grain size curve values

(l): Laboratory designated USCS classification based on grain size curve values

(w): WESTON designated USCS classification based on grain size curve values

Laboratory-Derived

Fill Material

CH: Fat clay with sand
OL: Sandy organic clay with gravel
SC: Clayey sand with gravel
SC-SM: Clayey sand

Glacial Till

CL: Sandy lean clay
CL-ML: Sandy silty clay
SC-SM: Silty clayey sand

Alluvial Material

CL: Sandy lean clay with gravel

Glacio-fluvial Outwash

GC-GM: Silty, clayey gravel with sand

Bedrock (crushed sample)

CL: Sandy lean clay with gravel

Designated

Fill Material

CL-ML: Clay and silt with some sand
SC-SM: Clayey, silty sand with some gravel
SM: Silty sand

Glacial Till

SC-SM: Clayey, silty sand with some gravel
GC: Clayey gravel with some sand and silt

Glacio-fluvial Outwash

SW-SM: Well graded sand with silt and gravel
GM: Silty gravel with sand
GM-GW: Silty, sandy gravel with trace clay
GW: Well-graded gravel with sand

Bedrock

CL-ML: Sandy clayey silt

Laboratory results from the 43 samples tested yielded geotechnical parameters that included moisture content, specific gravity, percent lost on ignition, wet unit weight, dry unit weight, porosity, and hydraulic conductivity. As discussed previously, the lithologic units sampled are categorized as fill

material, glacial till, dense alluvial material, glacio-fluvial outwash, and bedrock. The range of geotechnical parameter values for each lithologic unit are summarized below.

Fill Material (15 samples collected between 0 and 37 ft BGS)

Moisture content: 7.8 to 30.3 percent
Specific gravity: 2.59 to 2.76
Lost on ignition: 0.8 to 7.1 percent
Wet unit weight: 117.9 to 146.9 lbs/cu ft
Dry unit weight: 92.3 to 136.3 lbs/cu ft
Porosity: 20.6 to 45.9 percent
Hydraulic conductivity: 5.7×10^{-9} to 4.4×10^{-4} cm/sec

Glacial Till (10 samples collected between 3 and 51 ft BGS)

Moisture content: 8.0 to 11.2 percent
Specific gravity: 2.72 to 2.75
Lost on ignition: 1.1 to 2.2 percent
Wet unit weight: 140.9 to 151.0 lbs/cu ft
Dry unit weight: 126.7 to 139.8 lbs/cu ft
Porosity: 18.0 to 28.6 percent
Hydraulic conductivity: 1.0×10^{-8} to 7.7×10^{-7} cm/sec

Alluvial Material (1 sample collected between 62 and 64 ft BGS)

Moisture content: 11.8 percent
Specific gravity: 2.75
Lost on ignition: 2.2 percent
Wet unit weight: 143.8 lbs/cu ft
Dry unit weight: 128.6 lbs/cu ft
Porosity: 25.1 percent
Hydraulic conductivity: 1.5×10^{-8} cm/sec

Glacio-fluvial outwash (11 samples collected between 3 and 55 ft BGS)

Moisture content: 4.5 to 22.2 percent (two samples were saturated)
Specific gravity: 2.75 to 2.78 (only two samples tested)
Lost on ignition: 0.7 to 1.7 percent
Wet unit weight: 137.6 to 149.4 lbs/cu ft (only two samples tested)
Dry unit weight: 122.3 to 123.3 lbs/cu ft (only two samples tested)
Porosity: 28.4 to 29.5 percent (only two samples tested)
Hydraulic conductivity: 1.1×10^{-4} cm/sec (only one sample tested)

Bedrock (6 samples collected between 22 and 58 ft BGS)

Moisture content: 1.2 to 12.9 percent
Specific gravity: 2.73 to 2.80
Lost on ignition: 0.5 to 2.1 percent
Wet unit weight: 130.3 to 163.6 lbs/cu ft
Dry unit weight: 115.4 to 161.7 lbs/cu ft

Porosity: 5.3 to 32.8 percent
Hydraulic conductivity: 1.2×10^{-9} to 2.1×10^{-7} cm/sec (only two samples tested)

Tests were performed to determine capillary-moisture relationships of 10 subsurface soil samples collected at depths ranging from 3 to 51 ft BGS. The samples consisted of unconsolidated deposits that are categorized into two general lithologic units: fill material and glacial till. Lithologic information and corresponding capillary moisture test results are shown in Table C.8. The capillary moisture data are presented in terms of the moisture content (in percent dry weight and percent volume) that is retained in the sample medium as the sample is subjected to increasing levels of atmospheric tension. The tension applied to each sample ranged from 0.1 to 15.0 atmospheres (atm). The range of capillary moisture content for samples consisting of fill material and glacial till are summarized below.

Fill Material (5 samples collected between 0 and 31 ft BGS)

0.1 atm - 9.3 to 20.9 percent dry weight; 20.0 to 34.8 percent volume
15.0 atm - 3.9 to 11.4 percent dry weight; 8.8 to 19.0 percent volume

Glacial Till (5 samples collected between 9 and 51 ft BGS)

0.1 atm - 8.5 to 11.0 percent dry weight; 18.0 to 23.5 percent volume
15.0 atm - 2.4 to 7.3 percent dry weight; 5.1 to 15.7 percent volume

Sixteen subsurface samples were collected and submitted for clay mineralogy analyses. Fourteen of these samples were collected from unconsolidated deposits at depths ranging from 0 to 64 ft BGS, and two samples were collected from bedrock at depths ranging from 47 to 58 ft BGS. The samples collected from the unconsolidated deposits can be categorized into three general lithologic units: fill material, glacial till, and glacio-fluvial outwash. One sample was collected from a dense alluvial deposit overlying bedrock. Samples collected from bedrock deposits consisted of primarily shale or shale with limestone interbeds.

X-ray diffraction semi-quantitative phase analysis was used to determine the weight percent of minerals and clays contained in each sample. X-ray fluorescence analysis was used to identify the elemental constituents of each sample. Lithologic information and corresponding test results are shown in Table C.9.

The -200-mesh fraction of the samples analyzed contained more non-clay minerals than actual clay minerals. The minerals identified are quartz, calcite, dolomite, stilbite, anorthite, and hydrosodalite. The clays are identified as montmorillonite, illite, and kaolinite. The major constituents in most samples are quartz, calcite, and dolomite. Montmorillonite and illite are the major clay minerals present, while

Table C.8. Capillary Moisture Relationship Test Results for WESTON Additional-Work-Stage Well Borings

Monitoring Well ID	Sample ID	Depth (ft)	Visual Lithology	USCS Classification	Lithologic Description	Moisture Content (% Dry Weight)						Moisture Content (% Volume)					
					Tension (atm)	0.1	0.5	1.0	2.0	4.0	15.0	0.1	0.5	1.0	2.0	4.0	15.0
0372	0046	45.0-47.0	Glacial Till	CL-ML	Sandy Silty Clay	10.6	10.0	8.5	8.5	8.4	7.0	22.9	21.8	18.4	18.4	18.2	15.2
0373	0001	0.0-1.0	Fill Material	SC	Clayey Sand with Gravel	9.7	9.2	8.9	8.7	8.2	5.8	20.0	19.1	18.4	17.9	17.1	12.1
0373	0031	30.0-31.0	Fill Material	SC-SM	Silty Clayey Sand	9.3	7.9	7.0	6.3	5.6	3.9	20.8	17.6	15.6	14.0	12.4	8.8
0373	0051	50.0-51.0	Glacial Till	SC-SM	Silty Clayey Sand	8.5	6.6	5.2	4.5	3.8	2.4	18.0	13.9	11.0	9.6	8.0	5.1
0374	0009	8.0-10.0	Fill Material	SC	Clayey Sand	20.9	18.7	17.0	15.8	14.3	11.4	34.8	31.1	28.3	26.3	23.8	18.9
0379	0010	9.0-11.0	Glacial Till	CL-ML	Sandy Silty Clay	9.2	8.9	8.6	8.4	8.0	6.5	20.1	19.5	18.8	18.2	17.4	14.2
0397	0004	3.0-5.0	Fill Material	CH	Fat Clay with Sand	17.9	16.2	15.0	13.9	12.5	10.8	31.6	28.5	26.5	24.5	22.0	19.0
0397	0009	8.0-10.0	Fill Material	SM	Silty Sand	14.6	12.6	10.7	9.4	7.9	5.8	28.1	24.4	20.6	18.1	15.3	11.3
0397	0014	13.0-15.0	Glacial Till	CL-ML	Sandy Silty Clay	11.0	10.6	10.3	9.9	9.5	7.3	23.5	22.7	21.9	21.2	20.2	15.7
0397	0021	20.0-22.0	Glacial Till	CL	Sandy Lean Clay	10.4	10.0	9.6	9.2	8.8	7.0	22.3	21.4	20.6	19.8	18.9	15.0

Table C.9. Clay Mineralogy Test Results for WESTON Additional-Work-Stage Well and Piezometer Borings

			X-RAY DIFFRACTION - QUANTITATIVE PHASE ANALYSIS										X-RAY DIFFRACTION FLUORESCENCE ANALYSIS
			WEIGHT PERCENT										
Sample ID	Depth (ft)	Visual Lithology	Montmorillonite	Illite	Stilbite	Kaolinite	Hydrosodalite	Quartz	Anorthite	Calcite	Dolomite	% Crystallinity	Elements
MND23-P008-0057	56.0-58.0	Bedrock (Shale)	19	19	0	16	0	17	7	11	7	95	Fe, Ca, K, Ti, S, Si, Al
MND23-P009-0063	62.0-64.0	Alluvial Material	7	12	0	8	0	17	5	13	22	84	Ca, Fe, Cl, Al, Si
MND23-P013-0050	49.0-51.0	Glacio-fluvial Outwash	6	6	1	2	0	11	3	11	75	114	Ca, Fe, Si
MND23-0370-0026	25.0-27.0	Fill Material	14	6	0	2	0	16	7	6	42	96	Fe, Ca, K, Si
MND23-0370-0041	40.0-42.0	Glacio-fluvial Outwash	11	8	1	2	0	12	5	15	49	101	Ca, Fe, K, Cl, Si
MND23-0372-0003	2.0-3.0	Fill Material	8	7	0	4	0	17	5	10	55	105	Fe, Ca, K, S, Ti, Si
MND23-0372-0046	45.0-47.0	Glacial Till	8	6	0	5	0	19	14	5	53	112	Fe, Ca, K, S, Si
MND23-0373-0031	30.0-31.0	Fill Material	10	8	1	2	0	2	4	11	39	76	Fe, Ca, Al, Cl
MND23-0373-0051	50.0-51.0	Glacial Till	16	10	1	3	0	15	6	20	48	117	Ca, Fe, K, S, Si, Ti, Al
MND23-0373-0055	54.0-55.0	Glacio-fluvial Outwash	12	10	1	3	0	11	3	16	34	91	Ca, Fe, K, Si
MND23-0374-0009	8.0-10.0	Fill Material	9	7	1	3	0	34	15	0	6	75	Fe, K, Ca, Si, S, Ti
MND23-0374-0014	13.0-15.0	Glacio-fluvial Outwash	6	4	0	0	0	8	2	2	90	109	Ca, Fe, S, Si, Al
MND23-0379-0010	9.0-11.0	Glacial Till	10	15	2	9	0	17	7	10	56	126	Ca, Fe, K, Al, S
MND23-0379-0010 (a)	9.0-11.0		10	10	1	6	0	18	6	13	56	119	
MND23-0393-0048	47.0-48.0	Bedrock (Shale/ Limestone)	20	21	0	17	0	17	8	6	8	8	Fe, Ca, K, S, Ti, Si
MND23-0397-0004	3.0-5.0	Fill Material	0	7	2	3	0	25	6	3	9	55	Fe, Ca, Al, Si, Ti
MND23-0397-0004 (a)	3.0-5.0		0	6	2	3	0	27	7	3	13	63	
MND23-0397-0014	13.0-15.0	Glacial Till	7	8	5	2	0	17	7	7	42	94	Fe, Ca, Si, S

(a) - Repeat measurement
Al - Aluminum
Ca - Calcium
Fe - Iron
K - Potassium
S - Sulfur
Si - Silicon
Ti - Titanium

kaolinite is secondary. Montmorillonite is an expansive clay and has a higher ion exchange capacity than illite or kaolinite.

The predominance of non-clay minerals in the samples rather than clay minerals indicates that the unconsolidated deposits underlying Area B (especially glacial till) consist primarily of "rock flour," which is indicative of the glacial origin for the materials. The low percentages of clays contained in the unconsolidated deposits at Area B indicate a lower ion exchange capacity for these materials than would be expected, based on grain size alone.

C.2.2.2. Distribution of Quaternary and Bedrock Units

Three geologic cross sections and one fence block diagram were constructed using borehole log information to show the lithologic variation of Quaternary deposits within and adjacent to Area B, the relationship of these deposits to the underlying bedrock, and the potential pathways of preferential contaminant migration. The data used to construct each cross section and the fence diagram are from boring logs that are compiled in the Site Scoping Report: Volume 2 Geologic Log and Well Information Report (DOE 1992b), and the Hydrogeologic Investigation Well Information Report (DOE 1993).

The projected/interconnected boreholes on each cross section and the interconnected boreholes on the fence diagram were selected based on their location and proximity to Area B and the consistency of lithologic descriptions within the borehole network. When possible, boreholes were selected in which continuous core was collected and the underlying bedrock was penetrated.

Figure C.10 and Plate A show plan views of the locations and trends of each cross section. In cases where nearby boreholes do not lie directly on a trace line, the stratigraphic information from these boreholes was projected along a perpendicular axis into the plane of the cross section (Plate A).

The fence block diagram illustrates an interpretation of the present-day configuration of the stratigraphy that underlies Area B. It consists of stratigraphic information compiled into a network of interconnected cross sections between boreholes to create a three-dimensional image of the subsurface deposits. Figure C.10 and Plate B show a plan view of the location and areal extent of the fence block diagram.

The cross sections and fence diagram depict areas dominated by Quaternary glacial deposits and the configuration of these deposits in relation to the bedrock topography that underlies Area B. The lithologic information was synthesized into two primary glacial units (i.e., outwash and till) that have different hydrologic characteristics. In general, the outwash deposits consist of sand and gravel with

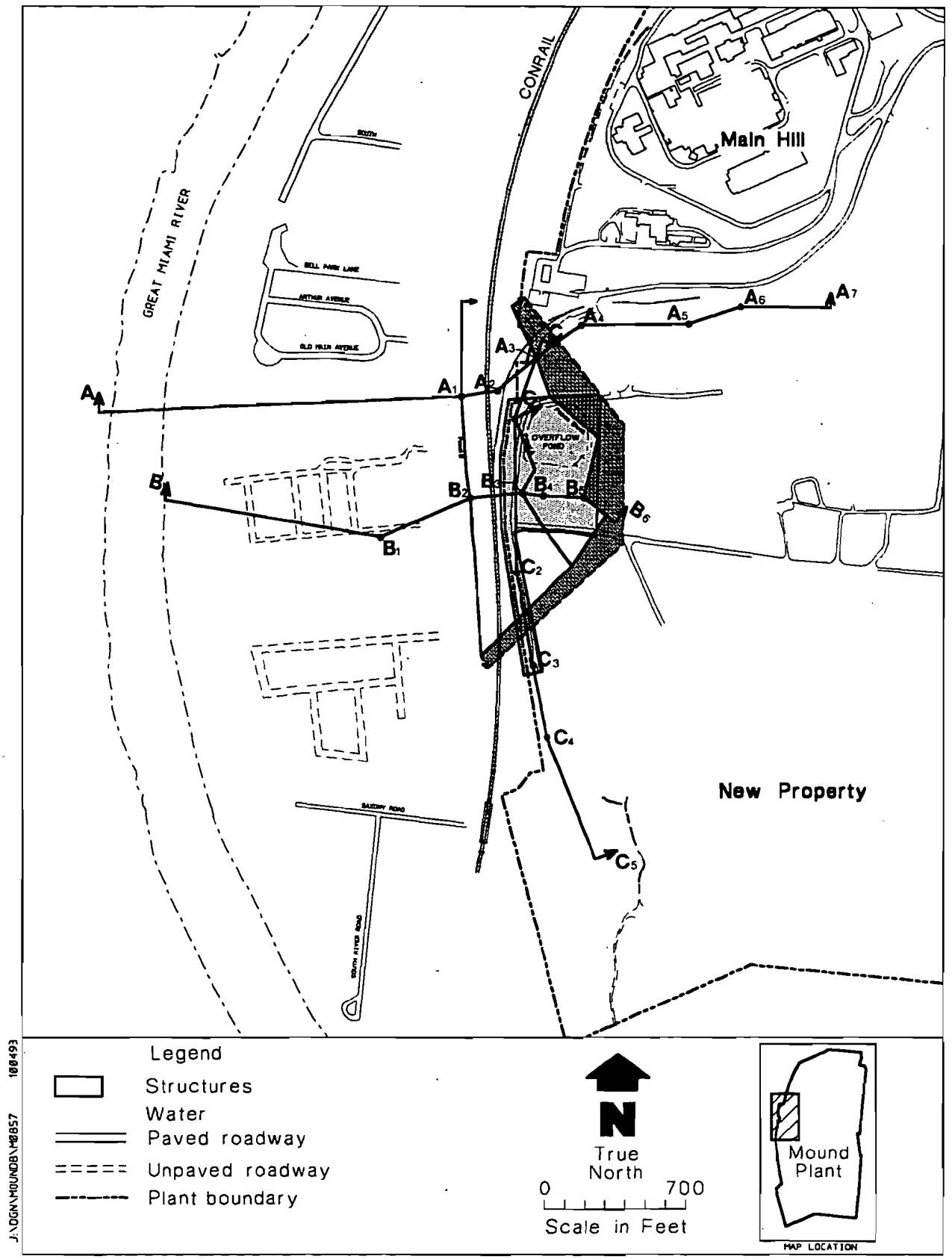


Figure C.10. Location of cross sections and fence diagram trace lines.

minor amounts of silt and sporadic trace amounts of clay and have a moderate to high hydraulic conductivity. The till deposits consist of gravelly silt to gravelly, very fine-grained sand with minor amounts of clay and have lower hydraulic conductivities than the outwash materials. Although the outwash deposits are thickest in the valley of the Great Miami River, tongues of sand and gravel extend eastward onto Mound Plant property along topographic embayments in the top of bedrock. Such an embayment underlies the northern margin of Area B, as illustrated by a bedrock topography map (Figure C.11) and an isopach map of unconsolidated sediments (Figure C.12) at the Mound Plant facility.

The bedrock lithology is described from exploratory borehole 0352, located along the eastern edge of Area B and clustered with well 0382 (Plate A), which was drilled to a total depth of 102 ft. Based on the surface elevation at the borehole location, the underlying bedrock stratigraphy was characterized from an elevation of 714.3 ft above MSL at the top of bedrock to 634.2 ft at the bottom of the borehole. Within this elevation range, eight distinct bedrock units were identified and are described in Table C.10. The underlying bedrock primarily consists of shale with intermittent, thin beds of limestone.

The contact between Quaternary deposits and bedrock, shown in cross sections A-A_7, B-B_5, C-C_5, and the fence block diagram (Plates A and B), illustrates the configuration of the bedrock surface topography in the area. The elevation of the bedrock surface is based on borehole data (when applicable) and is described in reference to the elevation above MSL. Where borehole data are not available, the top of bedrock is inferred.

Discussion of Cross Sections

Two of the three cross sections (A-A_7 and B-B_6) are oriented approximately east-west. The third (C-C_5) is oriented approximately north-south. The two east-west cross sections show a thick sequence of glacial drift, alluvium, and fill that thins from a total maximum thickness at the west ends of the sections of 144 ft to 18 ft under Area B. These sediments and fill are underlain by a nearly horizontal sequence of shales and limestones to the maximum depth investigated (to an approximate elevation of 634 ft MSL, which is 60 to 115 ft below the ground surface at Area B).

Cross section C-C_5 shows the same sequence of bedrock units and overlying sediments and fill. The glacial and recent alluvial materials thicken from about 35 ft thick under Area B to 70 to 220 ft thick to the south.

Cross Section A-A_7. As shown in Figure C.10 and Plate A, the location and trend of cross section A-A_7 transects the Great Miami River floodplain and the western portion of Mound Plant north of Area B.

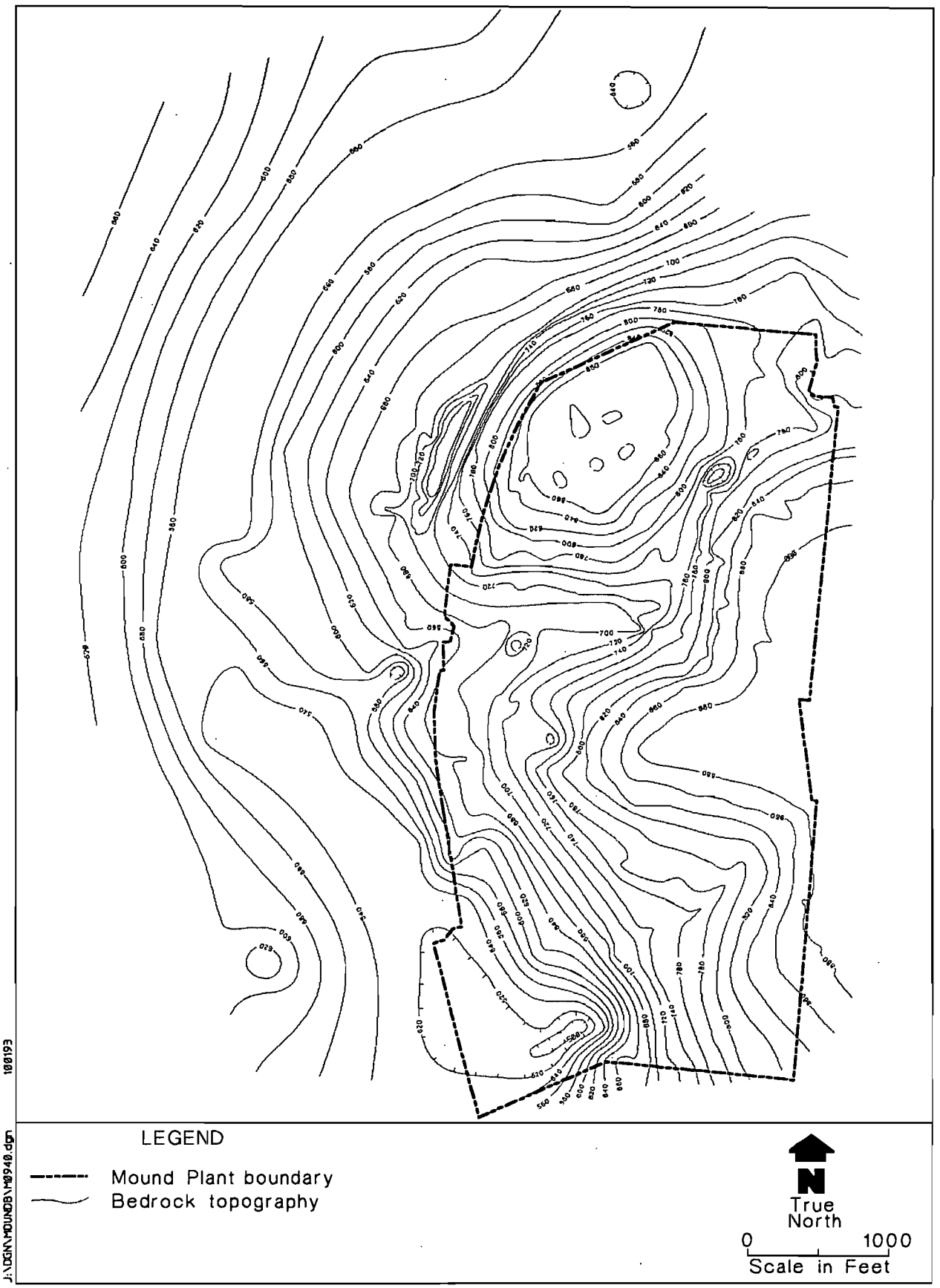


Figure C.11. Bedrock topography.

Table C.10. Identification of Bedrock Units Logged in Exploratory Boring 0352

Unit No.	Elevation at Top of Unit (ft MSL)	Elevation at Bottom of Unit (ft MSL)	Lithologic Description
1	714.3	709.8	Shale
2	709.8	704.8	Shale with interbedded limestone
3	704.8	701.1	Interbedded limestone and shale
4	701.1	664.8	Fossiliferous shale with nodular limestone
5	664.8	662.3	Limestone with interbedded shale
6	662.3	657.9	Shale with interbedded limestone
7	657.9	638.0	Interbedded limestone and shale
8	638.0	634.2	Fossiliferous shale with nodular limestone

Note: Ground surface elevation: 736.39 ft above mean sea level (MSL)

Total depth of borehole: 102.20 ft

Cross section segment A-A_1 trends approximately west to east from the western edge of the Great Miami River, across the Great Miami River floodplain and the Miami-Erie Canal, to piezometer P026 at the base of the western berm of the Conrail Railroad. Segment A_1-A_7 extends up the Mound Plant tributary valley.

Cross section segment A-A_1 shows a 3- to 26-ft-thick surface layer of fill material used to construct a levee system along the eastern bank of the Great Miami River and the Miami-Erie Canal, and later the Dayton-Cincinnati Highway. Between wells 0008 and 0007, the fill is interpreted to grade with an underlying surficial deposit of recent alluvium, which consists of sand and silt with some clay. Some of the alluvium was probably used as fill for the construction of the levee. The alluvium is 9 to 13 ft thick and is deposited along the Great Miami River floodplain. Both the fill material and recent alluvium extend eastward toward the Conrail Railroad. The eastward extent of the fill and alluvium will be discussed in more detail in the description of individual cross section segments from A_1 to A_7.

Underlying the surficial deposit of recent alluvium is an extensive glacial outwash deposit consisting of gravelly sand to sandy gravel with relatively low percentages of silt and clay. The outwash gradually thickens to the west from 74 ft at piezometer P026 to 133 ft at well 0008. This thick sequence of outwash material is continuous along cross section segment A-A_1 and constitutes the main portion of the Buried Valley aquifer.

Several glacial till units of variable thickness have been deposited within the outwash sequence in this area. The till units are interpreted to be generally discontinuous and are believed to have been dissected by fluvial processes during glacial retreat. As a result, most of the till units are distributed within the outwash sequence as lenss. A series of till units have been deposited near the eastern edge of the main portion of the Buried Valley aquifer and are discussed below.

The first unit is interpreted to be continuous between piezometer P026 and well 0343, at a depth of 48 to 54 ft. It is approximately 5 to 18 ft thick, consists of silt and clay with some gravel and very fine sand, and forms relatively large lenses. Below this unit, three smaller till lenses lie deeper in the outwash sequence, range from 2 to 7 thick, and consist of sandy silt to silty clay with some gravel.

A significant, 7- to 57-ft-thick till deposit occupies a deep bedrock depression below piezometer P026 beginning at a depth of about 85 ft. The till primarily consists of silty clay with some fine sand and gravel and contains one 3-ft-thick lens of outwash material (fine-grained sand) near the base of the unit. The till deposit is interpreted as being truncated against the steep bedrock slope to the east, thin westward along the top of bedrock near well 0343, then pinch out within the outwash sequence west of well 0343.

Three distinct till lenss exist at approximately the same depth (about 90 ft) along an east to west trend between wells 0006 and 0008. The first lens is located at well 0006 and is 12 ft thick. The second lens is located at well 0007; the thickness of this unit is unknown. The third lens is located at well 0008 and is approximately 5 ft thick. The specific lithology of each till lens is not described.

As shown in cross section segment A-A_1, the bedrock surface forms a deep depression directly under piezometer P026. This feature is interpreted to be a narrow ravine, which is believed to be an incised portion of the topographic embayment that underlies the northern margin of Area B (Figure C.11). The axis of the ravine is interpreted to trend from northeast to southwest across the plane of the cross section. From west to east along the plane of the cross section, the elevation of the bedrock surface is interpreted to increase sharply westward from 563 ft at the base of the ravine to approximately 605 ft, then to decrease gradually to 600 ft at well 0343 and 547 ft at well 0008. The bedrock surface outlines a broad erosional basin between well 0343 and the western edge of the cross section.

Cross section segments A_1-A_4 generally trend east-northeast from piezometer P026 across the Conrail Railroad tracks to piezometer P022. Cross section segments A_4-A_7 trend eastward to well 0345 and roughly parallel the Mound Plant drainage ditch and the underlying topographic embayment known more commonly as the tributary valley.

Cross section segments A_1-A_7 show a 3- to 20-ft-thick layer of fill material that covers the area. The fill probably originated from former construction projects that included the Conrail Railroad, the storm water retention system, and cut-and-fill activities related to building and roadway construction.

Underlying the fill material is an extensive 7- to 26-ft-thick glacial till deposit consisting of silt and very fine sand with some gravel and clay. The till unit exhibits relatively uniform thickness between well 0345 and piezometer P022, but thins considerably west of piezometer P022 and interfingers with overlying recent alluvium at well 0387. The recent alluvium pinches out to the east and the underlying till pinches out to the west in this area.

Underlying the glacial till, a portion of the Buried Valley aquifer outwash sequence extends eastward onto Mound Plant property and is deposited along the bedrock surface of the tributary valley, north and northeast of Area B. The outwash unit consists of sand and gravel with some silt and minor amounts of clay. The outwash is 55 ft thick at well 0387, then thins northeastward to 1.5 ft thick at piezometer P022, near the northern margin of the tributary valley. Between piezometer P026 and well 0345, the cross section follows an easterly trend and roughly parallels the axis of the tributary valley. As a result, the outwash unit maintains an average thickness of 15 ft.

The elevation of the bedrock surface increases in elevation from 563 ft within the narrow ravine structure at piezometer P026 to 639 ft at well 0387. The bedrock surface forms a bench between wells 0387 and 0137, slopes upward in a northeasterly direction to an elevation of 685 ft at piezometer P022, then gradually increases in elevation eastward to 709 ft at well 0345.

Cross Section B-B$_6$. As shown on Figure C.10 and Plate A, the location and trend of cross section B-B$_6$ transects the Great Miami River floodplain and the south-central portion of Area B. Cross section segment B-B$_1$ trends approximately north-northwest to east-southeast from the Great Miami River across a significant portion of the Great Miami River floodplain to piezometer P018. Segment B-B$_6$ crosses Area B to the western slope of the SM/PP Hill.

Cross section B-B$_1$ shows a 3- to 25-ft-thick layer of fill material in the area of well 0396 that was used to construct a levee system along the eastern bank of the Great Miami River. The fill is interpreted to grade with an underlying surficial deposit of recent alluvium which consists of silty sand to sandy silt. Some of the alluvium was probably used for the construction of the levee. The alluvium is approximately 5 to 13 ft thick and is deposited along the Great Miami River floodplain.

Underlying the surficial deposit of recent alluvium is an extensive glacial outwash deposit consisting of gravelly sand to sandy gravel with relatively low percentages of silt and clay. The outwash is 147 to 153 ft thick between piezometer P018 and borehole 0396. This thick sequence of outwash material is continuous across cross section segment B-B$_1$ and constitutes the main portion of the Buried Valley aquifer. Three isolated glacial till units of variable thickness have been deposited within the outwash sequence in this area. The first unit is located at piezometer P018, is approximately 3 ft thick, consists of sandy silt with traces of gravel, and forms a lens. Below this unit lies a larger, 10-ft-thick till lens that also consists of sandy silt with traces of gravel. The third unit, penetrated by exploratory borehole 0396, is approximately 3.5 ft thick, and consists of silt with seams of sand and traces of gravel.

The bedrock surface gradually decreases in elevation from approximately 543 ft at piezometer P018 to 528 ft at exploratory borehole 0396. The bedrock surface in this area depicts the outline of a broad erosional basin between piezometer P018 and the western edge of the cross section.

Cross section segment B$_1$-B$_2$ trends east-northeast from piezometer P018 across the Cincinnati-Dayton Highway and the Miami-Erie Canal to piezometer P008. Cross section segments B$_2$-B$_4$ trend generally eastward from P008 across the Conrail Railroad and central portion of the site sanitary landfill. Cross section segment B$_4$-B$_5$ trends east-southeast from piezometer P004 along the eastern flank of the site sanitary landfill to well 0382.

Cross section segment B_1-B_2 shows the eastern extent of the 4- to 5-ft-thick layer of surficial alluvium deposited between the Great Miami River and piezometer P018. The unit is interpreted to terminate along the eastern edge of the Great Miami floodplain near the Cincinnati-Dayton Highway. Cross section segments B_1-B_5 show an extensive portion of artificial fill material that extends from the Cincinnati-Dayton Highway to well 0382. The fill probably originated from the construction of the Cincinnati-Dayton Highway, the Conrail Railroad, and Mound Plant roadways. During the construction of the site sanitary landfill, the base, berm, and liner of the landfill were constructed entirely of fill excavated from slopes east and north of the historic waste disposal area (historic landfill). The interior of the landfill primarily consists of trash encapsulated by clean fill that was compacted to 95 percent dry density, forming a liner that essentially surrounds the trash. The basal portion of the landfill liner was designed to be 5 ft thick, but borehole data have shown that it is closer to 7 ft thick.

Underlying the recent alluvium and fill material is an extensive outwash unit deposited on bedrock and extending eastward into Area B. The outwash consists of sandy gravel to gravelly sand with some silt and constitutes the eastern portion of the Buried Valley aquifer. The outwash is 138 ft thick at piezometer P018. It thins eastward to approximately 12 ft thick at piezometer P005, then pinches out to the east against the rising bedrock slope. A 13- to 15-ft-thick glacial till unit consisting of gravelly silt to silty, gravelly, very fine-grained sand underlies the site sanitary landfill, trends westward, and pinches out within the outwash sequence west of piezometer P003. The till unit thins to less than 2-ft thick at piezometer P005. This probably resulted from historic excavation activities. Based on adjacent borehole data, portions of this unit were completely excavated. A small till lens is deposited on top of bedrock at piezometer P008. The lens is 2 ft thick and consists of clayey, fine-grained sand.

From west to east, the bedrock surface rises steadily in elevation from 536 ft at piezometer P018 to 719 ft at well 0382. The rising bedrock surface is the eastern edge of the Buried Valley aquifer in this area.

Cross Section C-C_5. As shown on Figure C.10 and Plate A, the location and trend of cross section C-C_5 parallels the western margin of Mound Plant west of Area B. Cross section segment C-C_1 trends approximately south-southeast from well 0347, across the western edge of the Mound Plant storm water retention system, to piezometer P007. Cross section segments C_1-C_5 trend generally southward, parallel to the western edge of Area B, across the southern plant boundary, and into the northern portion of the Mound Plant new property. The cross-section segments generally follow the line of existing monitoring wells and piezometers that trend from north to south along the western perimeter of the Mound Plant boundary and new property.

This cross section shows a 4- to 20-ft thick layer of fill material that covers the area between wells 0347 and 0394. The fill probably originated from former construction projects that included the storm water retention system, site sanitary landfill, and cut-and-fill activities related to roadway construction. The fill is interpreted to merge with a 3- to 9-ft-thick deposit of recent alluvium south of well 0394. The alluvium consists of silty clay to clayey sand and covers the area between wells 0154 and 0356.

Beneath the layer of fill and recent alluvium lies an extensive outwash sequence that comprises the eastern edge of the Buried Valley aquifer. The outwash consists of sand and gravel with variable proportions of silt. The unit is approximately 55 to 60 ft thick in the area of the tributary valley, thins southward to 15 thick along the western edge of Area B, then progressively thickens southward to 173 ft thick at well 0356.

Within the outwash sequence, many glacial till units exist in the form of layers or lenss at varying depths. A relatively large, 15 ft thick till unit underlies the fill material at well 0347. The till consists of fine sand and silt with some gravel, and pinches out within the outwash sequence south of well 0137. At piezometer P007, a smaller 6-ft-thick till lens is deposited on top of bedrock. The till consists of gravelly silt with large quartzose, shale, and limestone clasts underlain by silty clay with minor amounts of gravel. An extensive till layer directly underlies the fill material between wells 0152 and 0307, and extends southward within the outwash sequence between piezometer P003 and well 0155. The till primarily consists of sandy, gravelly silt with variable amounts of clay, or silty clay with minor amounts of gravel. The unit is 5 to 15 ft thick and pinches out north of well 0152 and south of well 0155. At well 0152, a small, 5-ft-thick till lens is deposited deeper in the outwash sequence and consist of dense clay containing some limestone clasts. A 5- to 8-ft-thick till unit is draped along the bedrock surface and is interpreted to be continuous between wells 0394 and 0317. The till consists of sandy, gravelly silt with minor amounts of clay, or silty gravelly clay. Within the outwash sequence, a relatively thin till lens is interpreted to be continuous between piezometer P025 and well 0317. The lens is approximately 3 ft thick and consists of gravelly clay to sandy clay with some gravel and silt.

Within the deepest portion of the outwash sequence, a series of separate till units are deposited at roughly the same depth and are interpreted to form lenss. One till unit is located at production well 0076. It is 9 ft thick and consists of clay. Three individual till units are located at well 0344. The first is 4 ft thick and consists of gravelly, silty clay. The second is 9 ft thick and consists of silty, gravelly, fine-grained sand. The third unit is 2 ft thick and consists of silty clay with gravel. Two individual till units are located at well 0356. The first unit is 11 ft thick and consists of silty clay with some fine sand and gravel. The second unit is 3 ft thick and consists of fine-grained sandy silt.

The bedrock surface is interpreted to form a broad, gentle valley between well 0344 and piezometer P007. The elevation of the valley at its deepest point is approximately 642 ft. Between piezometer P007 and well 0153, the bedrock surface remains relatively level at an average elevation of 665 ft. The apparent steep slope of the bedrock surface, as displayed in cross section C-C_5, between piezometer P003 and well 0153 is the result of the juxtaposition of each well on opposite sides of the cross section trace line (see Plate A). The bedrock surface is actually sloping downward from east to west rather than north to south as illustrated in the diagram. Continuing on a southerly trend, the bedrock surface slopes gently downward from an elevation of 662 ft at well 0153 to 640 ft at well 0317, then drops steeply downward to an elevation of 525 ft at well 0344. The bedrock surface remains relatively level between wells 0344 and 0356 at an average elevation of 523 ft. This area is depicted as part of a deep embayment that contains the thickest portion of the Buried Valley glacial deposits in the vicinity of Mound Plant.

Discussion of Fence Block Diagram

The fence block diagram presents a three-dimensional image that illustrates the present day configuration of the stratigraphy that underlies Area B (Figure C.13 and Plate B). The main portion of the fence block diagram shows a cutaway view of the eastern section of Area B. The block face begins north of Area B at well 0385 and trends roughly southeastward across the storm water retention system basin, the northeast corner of the overflow pond, and the eastern portion of the site sanitary landfill. It then trends southwestward across the spoils area, and terminates at piezometer P030 southwest of Area B.

Block Face. The block face shows the extensive amount of fill material that covers the Quaternary deposits in the area. The fill shown along the northeastern edge of the block face consists of glacial till that was excavated and used for construction of road embankments, the retention basin system, and the site sanitary landfill. As previously discussed (section 2), the base, berm, and liner of the landfill were constructed entirely of fill excavated from slopes east and north of the historic waste disposal area (historic landfill). The interior of the landfill primarily consists of sanitary trash encapsulated by clean fill. The fill shown along the southeastern edge of the block face comprises the spoils area which is located south of Area B.

The block face also illustrates the northeastern extent of the overflow pond. The bottom of the overflow pond is lined with a 3-ft-thick layer of natural clay distributed over an area of approximately 90,00 square ft (Mound 1977). The natural clay unit adjoins fill material along the periphery of the overflow pond embankments.

Underlying the fill material, there is an extensive, 13- to 25-ft-thick till deposit that extends across the eastern portion of Area B and is continuous between well 0385 and piezometer P015, and pinches out southwest of P015. The till is a relatively low permeability material that consists of gravelly silt with some sand and minor amounts of clay.

Below the till unit toward the northern end of the block face is an 8- to 32-ft-thick outwash deposit that overlies a till unit at well 0385, and overlies bedrock at well 0347 and piezometer P014. The outwash consists of sandy, silty gravel. The outwash unit overlies bedrock at piezometer P015 and thickens significantly to the southwest to a maximum thickness of 168 ft at piezometer P030. This portion of the outwash consists of sand and gravel with variable amounts of silt. Between piezometers P014 and P015, the outwash unit is interpreted to be continuous from north to south across the central portion of Area B, and is shown to pinch out to the east against the rising bedrock slope.

An 8-ft-thick till unit overlies the bedrock surface at well 0385. The till consists of sandy silt with some gravel, and pinches out to the southeast within the outwash sequence.

Two cross-sectional panels originate from the southeastern portion of the block face. Panel A begins at piezometer P015 and trends northwestward across the western portion of Area B to piezometer P007. Panel B begins at piezometer P030 and trends northward along the western edge of the Mound Plant boundary to well 0340.

Panel A. As with the main portion of the fence block, panel A shows the extensive amount of fill material that covers the Quaternary deposits within Area B. The fill shown along the southeastern portion of the panel face comprises the spoils area deposits. The fill shown along the northeastern portion of the panel face consists of glacial till that was excavated and used for construction of road embankments and the site sanitary landfill.

Panel A also shows the southwestern extent of the overflow pond clay liner that adjoins the fill material along the pond embankments. At piezometer P015, there is a 15-ft-thick till unit underlying the fill material that pinches out to the northwest.

Underlying the majority of the fill material is a 15- to 27-ft-thick outwash unit consisting of silty, sandy gravel and gravelly sand. This unit is deposited on top of bedrock and is continuous from piezometer P015 northwestward to piezometer P007. The outwash is interpreted to be continuous from piezometer P007 northeastward to well 0347 and piezometer P014. Till layers within the outwash unit are described below.

- The outwash unit contains a 12-ft-thick till lens at piezometer P003 that consists of silty, gravelly fine-grained sand.

- A 6-ft-thick till layer is deposited along the bedrock surface at piezometer P007, and is shown to be discontinuous to the southeast.

- Based on borehole information not included in the fence block diagram, the till unit is interpreted to be continuous from P007 northward to well 0385.

Panel B. Panel B shows a relatively thin layer of fill material that extends from piezometer P030 northward to beyond piezometer P026. The fill was primarily used to construct the Miami-Erie Canal in the area near piezometer P026 and later the road network that borders the western edge of Mound Plant.

Underlying the fill material in the northern portion of the panel is a deposit of recent alluvium that consists of silt and clay mixed with sand. The alluvium is 4 to 9 ft thick and lies along the edge of the Great Miami River floodplain between well 0340 and piezometer P026. The fill is interpreted to grade with the alluvium north of P026 and the alluvium is interpreted to pinch out south of P026.

Underlying the fill and alluvium is a large outwash deposit that is continuous along the length of the panel. From north to south, the outwash gradually thickens from 8 to 52 ft thick between well 340 and piezometer P008, then thickens significantly to a maximum thickness of 168 ft at piezometer P030.

A 24-ft-thick till unit, consisting of silt and clay with variable amounts of sand and gravel, is deposited on top of bedrock at and south of well 0340. Along a north to south trend, the till is laterally continuous across the deep bedrock ravine structure located at piezometer P026 discussed with cross section C-C_6, but is interpreted to be discontinuous along an east to west trend as shown in cross section A-A_7 (Plate A).

Underlying the till is a 19-ft-thick outwash layer consisting of sand and gravel with variable amounts of silt. This outwash unit is interpreted to span the ravine along a north to south trend and to be continuous and in hydraulic communication with the thick outwash sequence that comprises the Buried Valley aquifer (see cross section A-A_7, Plate A). A 4.5-ft-thick till unit, consisting of silty gravelly clay with sand, lies within the outwash and is interpreted to form a lens. The configuration of this lens along an east to west trend is illustrated in cross section A-A_7 (Plate A).

Underlying the outwash sequence, a 57-ft-thick till unit occupies the lowermost portion of the bedrock ravine structure. The till primarily consists of silty clay with some fine sand and gravel and contains one 3-ft-thick lens of outwash material (consisting of fine-grained sand) near the base of the unit.

In the area of piezometers P009 and P013, a very competent alluvial deposit is shown to drape over the bedrock slope. This unit consists of very competent clayey silt to silty clay and contains numerous angular limestone and quartzose clasts. The alluvial unit is interpreted to be an overbank flood deposit that was compressed by advancing glacial ice, then truncated by stream dissection as the glacial ice retreated. This event was followed by a relatively long period of stream alluviation whereby a thick sequence of outwash was deposited on top of the alluvial unit.

Discussion of Bedrock Surface. Along the main portion of the fence block, the bedrock surface decreases in elevation southeastward from 690 ft at well 0385 to 655 ft at well 0347, then increases in elevation to 674 ft at piezometer P014. This area is interpreted as a portion of the tributary valley that exists north of Area B. The bedrock surface continues to rise in a southeasterly direction to a maximum elevation of 719 ft at well 0382. From this point, the bedrock surface decreases in elevation in a southwesterly direction to 678 ft at piezometer P015, then drops steeply to 526 ft at piezometer P030. Based on borehole information not shown on this diagram, this area is depicted as part of a deep embayment that contains the thickest portion of Buried Valley glacial deposits in the vicinity of Mound Plant.

In a northerly direction along Panel B, the bedrock surface rises steadily to an elevation of 644 ft at piezometer P008, then levels off to an elevation of 648 ft at well 0388. This illustrates the thick sequence of Buried Valley outwash that is deposited south and southwest of Area B. A bedrock high near well 0388 and piezometer P008 is interpreted to trend west-southwest and demarcates the northern extent of these deposits. Continuing on a northerly trend, the elevation of the bedrock surface decreases to 563 ft within the narrow ravine structure below piezometer P026. The ravine is believed to be an incised portion of the tributary valley that underlies the northern margin of Area B. The axis of the ravine is interpreted to trend diagonally from northeast to southwest across the plane of Panel B. The elevation of bedrock surface increases from 563 ft at the base of the ravine to 667 ft at well 0340.

In a northwesterly direction along Panel A, the bedrock surface shows a shallow decrease in elevation from 678 ft at piezometer P015 to 670 ft at piezometer P006. The bedrock surface remains relatively level across the southwestern portion of Area B with elevations ranging 668 to 670 ft between piezometers P006, P003, P001, and P007.

Discussion of Static Groundwater Level. The relative position of static groundwater level and the well screen interval of each monitoring well or piezometer is projected onto cross sections A-A_6, B-B_6, C-C_6, and the fence block diagram. Groundwater in the Buried Valley aquifer is interpreted to be in hydraulic communication with such groundwater as may exist in the bedrock. Lithologic data indicates that the till units in this area consist primarily of fine-grained materials (silt, clay, and very fine-grained sand), exhibit low transmissivities, and consequently are not conducive to the flow of groundwater.

Groundwater levels were measured on 19 May 1993 in all wells and piezometers used in the fence block diagram. The average static groundwater elevation in the Buried Valley aquifer during this period was essentially flat and averaged about 680 ft above MSL. The fence block well network (Plate B) illustrates that the edge of the Buried Valley aquifer trends roughly north to south through the central portion of Area B. Thick deposits of glacial till in the eastern portion of Area B act as a hydraulic barrier to the flow between the Buried Valley aquifer and bedrock in this area. This phenomena is demonstrated by groundwater levels that rise above the bedrock/till contact in piezometer P004 and well 0382. Both are completed in the bedrock, as shown on the logs in Appendix D of the Operable Unit 1 RI Report. These water levels reflect the incomplete communication between the Buried Valley aquifer above the till and the bedrock unit below the till. Along the northern edge of the fence block diagram, the static groundwater level of the Buried Valley aquifer (680 ft) intersects the rising bedrock slope near well 0385. Groundwater also intersects a glacial till unit that overlies the rising bedrock slope near well 0340. Both wells are completed in shallow outwash and are dry. The data defines the northerly extent of the Buried Valley aquifer in this locality.

Summary of Surface Soil, Vadose Zone Sediments, and Saturated Buried Valley aquifer Sediments

Cross section B-B_6 (Plate A), provides an illustration of the subsurface sediments that underlie Area B. Due to the reworking of the original soil types, the dominant surface soil type that presently exists in Area B is made land. Extensive construction within Area B has introduced large quantities of fill material and significantly modified the surface topography. Relatively thick deposits of glacial till underlie the fill material and overlie a steep, westward dipping bedrock slope. Tongues of glacio-fluvial outwash extend eastward into the western portion of Area B, where they interfinger with the glacial till deposits. The outwash deposits gradually thicken west of Area B and comprise the eastern portion of the Buried Valley aquifer. Glacial till is relatively sparse in this area and occurs only as thin lenses or stringers. The eastern periphery of the Buried Valley aquifer outwash deposits occupy the western half of Area B, thin eastward, and pinch out against the rising bedrock slope and overlying till deposits.

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APPENDIX D

SOIL BORINGS AND LITHOLOGIC LOGS

BOREHOLE	0352
WELLS	0370, 0372, 0373, 0374, 0375, 0376, 0377, 0378, 0379, 0380, 0381, 0382
PIEZOMETERS	P001, P002, P003, P004, P005, P006, P007, P008, P009, P013, P014, P015
EXPLORATORY BORINGS	B001, B002, B003

BOREHOLE

21-03-01
#9407190005

WESTON

Page 1 of ___

Borehole No.: 0352

Location code: MND

Surface elevation: 736.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Echinoderms	Structure	Texture	Fabric	1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
	21																								
	22																								
	23																								
	24																								
714	25	90														M							5GY4/1		22.4-22.7 broken Shale; blocky fracture
	26	100														M									
	27	100														M									22.7-22.8 Interbedded SH w/ls.
	28	60														W									
	29	90														M									
	30	100														M									
	31	100														M									
	32	100														M									
	33	100														M									
	34	100														M									
	35	100														M									
	36	100														M									
	37	100														M									
	38	100														M									
	39	100														M									
	40	100														M									
	41	60			SI											W							N4 5G4/1		24.1 Interbedded Sh w/ls; fracturing
	42	100														M									
	43	100														M									
	44	100														M									
	45	90														M									
	46	100														M									
	47	100														M									24.6 Shale to Shale contact sharp [illegible]
	48	100														M									
	49	100														M									
	50	95			SI											M									24.9 Small Drawing [illegible] paving
	51	100														M									
	52	100														M									
	53	100														M									
	54	100														M									
F	55	100														M									
	56	100														M									25.5 Shale fracture
	57	100														M									
	58	100														M									
	59	95														M									25.9 Shale drawing [illegible] fracture
	60	100														M									
	61	100														M									
	62	100														M									
	63	100														M									
	64	100														M									
	65	100														M									26.3 contact
709.9	66	10			SI											P							N4/0 5B4/1		26.4 Interbedded Shale w/ fracturing
	67	100														M									
	68	100														M									
	69	50														W									26.9 Interbedded Shale w/ fracturing
	70	90														W									
	71	90														M									
	72	40			SI											W							N4 5G4/1		27.2 Interbedded Shale w/ fracturing
	73	60														M									
	74	90														M									
	75	90														M									27.5 Crinoid Stem
	76	100														M									
	77	100														M									
	78	100														M									
	79	100														M									
	80	100														M									
	81	60			SI											P									28.1 Interbedded Shale w/ fracturing; Bryozoa forming; 28.2 Bryozoa forming Coral
	82	90														M									
	83	100														M									
	84	100														M									
	85	90														M									
	86	60			SI											W							N4		28.5-29.0 Interbedded Shale w/ ls; fracture; [illegible]
	87	90														P									
	88	60			SI											W									
	89	90														M							5G4/1		
	90	90														M									

Shale w/ minor limestones
Lithologic interbeds

Logged by: JAMES E. DAVIS date 9 Jun

Reviewed by: CW Cunnell date 6/12/93

WESTON

Page 2 of ___

Borehole No.: 0352

Location code: MND

Surface elevation: 736.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Molluscs	Coelenterata	Trilobita	Echinoderm	Structure	Texture	Fabric	1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
A	1	95														M							SG4/1		
	2	100														W									29.1 Bryozoa Packing
	3	95														W									
	4	90														W									29.3 Bryozoa Packing
	5	100														M									
	6	100														M									
	7	100														M									
	8	100														M									
	9	100														M									
	30	100														M									
	1	100														M									
	2	100														M									
	3	100														M									
	4	100														M									
	5	100														M									
	6	100														M									
	7	100														M									
	8	90			SE											W									
	9	10														P							N4		
	31	30			SE											W									
	1	90														M							SG4/1		
	2	90														M									
	3	90														M									
	4	80														W									31.4-33.1 Interbedded Shale w/ Ls.
	5	100														P									31.4 Bryozoa Packing
704.9	6	60														W									
	7	40														W							N4		31.5 CONTACT @ top of bmst
	8	50			SE											W									
	9	0														P									
	32	0			SD											P									
	1	0			S											P									
	2	100														M							SG4/1		
	3	50			SE											W									32.3-32.7 Interbedded Shale w/ Ls; Fracturing; & Turbation
	4	40			SE											W									
	5	20														P							N5		
	6	0														P									
	7	0			SE											P									
F	8	80														W									
	9	80														W							SG4/1		32.9-33.9 Large branching bryozoa Packing
	33	80														M									
	1	100														M									33.2 Crinoid stem
	2	100														M									33.4-34.4 Interbedded Shale w/ Ls; Fracturing; bioturbation
	3	100														M									
	4	60			SE											W									
	5	80			SE											W									
	6	40														W							N4		
	7	80														P									
	8	80														P									
	9	50			SE											W									339 large branching bryozoa Packing
	34	50			SE											W							SG4/1		
	1	0			SE											P							N4		
	2	0														P									
	3	0														P									
	4	30			SD											W									34.4 Large branching bryozoa Packing
	5	95														M							SG4/1		
	6	100														M									
	7	95														M									34.7 bryozoa Packing
	8	100														M									
	9	100														M									
	35	100														M									
	1	100														M									35.1-35.3 GRADATIONAL MIXTURE OF COARSE GRAINED MATERIAL TO FINE GRAINED MATRIX - MOLLER-BERGIN G FACIES
*	2	80			SE											M									
	3	0			SE											W							N4		
F	4	60														W							SG4/1		35.3-36.0 Limestone Clasts and Limestone Nodules
701.1	5	60														W									
G 35.3	6	80														M									35.3 contact
	7	60														W									35.3 - Top of F facies at base of fining upward limestone
	8	40														W									
	9	40														W									
	36	40														W									
	1	50														W									36.0-37.0 Limestone Clasts and Limestone Nodules; Clasts and Nodules; Superimposed on Shale; Bedding [illegible] of [illegible]; Abbreviated Spaces; [illegible] Mottled
	2	40														W							N5		
	3	30														W									
	4	50														W									
	5	40														W									
	6	40														W									
	7	30														P									
	8	40														W									
	9	50														W							SG4/1		
	37	90														M									

Logged by: James E. Davis date [illegible]

Reviewed by: CW Crisinell date 6/13/03

WESTON

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Borehole No.: 0352

Location code: MND 20

Surface elevation: 736.41

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Structure	Texture	Fabric	1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
699.4	1	40													W							N5		23.0-38.0 Limestone [illegible]
	2	10													P									[illegible]
	3	10													P									[illegible]
	4	20													P									[illegible]
	5	40													W									[illegible]
	6	20													P									[illegible]
	7	80													P									[illegible]
	8	80													P									[illegible]
	9	40													W									[illegible]
	38	60													W							5G4/1		
	1	80													P							N4		38.2 Large Brachiopod [illegible]
	2	60													M							5G3/1		38.0-39.2 Limestone nodules in shale
	3	10													P							N4		
	4	10													P									
	5	20													M							5G3/1		
	6	90													M									
	7	90													M									
	8	90													M									
	9	80													M									
	39	95													M									
	1	80													M									39.0-40.0 Nodular Limestone (Big)
	2	90													M									
	3	60													W							N4		
	4	60													M							5G4/1		
	5	80													P							N4		
	6	80													W							5G4/1		
	7	80													M									
	8	80													M									
	9	60													P							N5		
	40	0													P									40.0-41.0 Nodular Limestone (Small)
	1	0													P									
	2	0													P									
	3	80													P							5G4/1		
	4	80													M									
	5	80													M									
	6	80													M									
	7	80													M									
	8	95													M									
	41	95													M									
	1	90													M									41.0-42.0 Nodular Limestones (Big & Small)
	2	90													W									
	3	90													W									
	4	80													W									
	5	90													M									
	6	95													M									
	7	90													M									
	8	70													W									
	9	70													W									
	42	100													M									
	1	100													M									
	2	10													P							N4		42.2 Intercbedded Shale w/ [illegible]
	3	100													M							5G4/1		
	4	100													M									
	5	100													M									
	6	100													M									
	7	60													W									42.7 Intercbedded Shale w/ [illegible]
	8	100													M									
	9	100													M									
	43	90													M									
	1	90													M									43.0-44.0 Nodular Limestones (Big)
	2	90													W									
	3	80													M									
	4	100													M									
	5	100													M									
	6	80													M									
	7	60													V									
	8	70													M									
	9	50													M							N5		
	44	60													M									
	1	90													M							5G4/1		
	2	60													W							N5		
	3	90													W									
	4	90													M							5G4/1		
	5	100													M									
	6	100													M									
	7	100													M									
	8	80													W									
	9	80													M									
	45	90													M									

Fossil Assemblage

Grain Size

Logged by: James E. Davis date 11 June 93

Reviewed by: [illegible] date 6/11/93

WESTON

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Borehole No.: 0352

Location code: MND 20

Surface elevation: 736.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Fossil Assemblage: Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Structure	Texture	Fabric	Grain Size: 1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
G	1	80													M							5GY4/1		45.0-46.0 Limestone Nodule
	2	80													E									
	3	70													P							N6/0		
	4	10																				5GY4/1		
	5	80													E									
	6	90													E									
	7	100													E									
	8	100													E									
	9	95													E									
	46	70													E									
	1	90													E									46.0-47.0 Limestone Nodule
	2	90													E									
	3	80													E									
	4	60													E									
	5	50													E									
	6	80													E									
	7	70													E									
	8	80													E									
	9	80													E									
	47	80													E									
	1	80													K									47.0-48.0 Limestone Nodule (Bag Seal)
	2	60													K									
	3	90													K									
	4	100													K									
	5	100													K									
	6	90													K									
	7	80													K									
	8	60													K									
	9	60													K									
	48	60													K									
	1	60													D									48.0-49.0 Limestone Nodule
	2	60													D									
	3	75													D									
	4	80													M									
	5	80													E									
	6	80													E									
	7	80													E									
	8	60													E									
	9	60													E									
	49	80													E									
	1	80													E									49.0-50.0 Limestone Nodule
	2	80													E									49.4-50.0 Interbedded Shale & Limestone
	3	80													E									
	4	0													D							N4/0		
	5	0													D							5GY4/1		
	6	50													E									
	7	50													E									
	8	0													E							N9/0		
	50	100													M							5GY4/1		50.0-51.0 Limestone Nodule
	1	70													E									
	2	90													E									
	3	60													E									
	4	60													E									
	5	40													E									
	6	50													E									
	7	50													E									
	8	100													E									
	9	70													M									
	51	90													M									51.0-52.0 Limestone Nodule
	1	80													M									
	2	80													M									
	3	80													M									51.3-51.3 Bed-parallel/vertical fracture (open)
	4	80													M									
	5	50													P							N3/0		51.5-51.7 Intraformational
	6	0													D							5GY4/1		
	7	70													E									
	8	60													E									
	9	60													E									
	52	50													E									
	1	50													B									52.0-53.0 Limestone Nodule
	2	95													B									
	3	90													B									
	4	80													B									
	5	90													B									
	6	90													B									
	7	80													B									
	8	80													B									
	9	80													B									
	53	80													B									

Logged by: James E. Davis date 11/

Reviewed by: [illegible] date 6/1/03

WESTON

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Borehole No.: 0352

Location code: MND20

Surface elevation: 736.4

683.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Fossil Assemblage: Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Structure	Texture	Fabric	Grain Size: 1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
G	1	80													W							SGY 4/1		53.0-54.0 Limestone Nodule
	2	80													W									
	3	80													W									
	4	80													W									
	5	90													W									
	6	80													W									
	7	95													M									
	8	95													M									
	9	90													M									
	54	95													W									
		40													W									54.0-55.0 Limestone Nodule
	2	60													W									
	3	80													W									
	4	90													M									
	5	80													W									
	6	60													W									
	7	80													W									
	8	95													W									
	9	60													W									
	55	80													W									
		80													W									55.0-56.0 Limestone Nodule
	2	80													W									
	3	90													M									
	4	90													M									
	5	80													W									
	6	80													W									
	7	95													W									
	8	80													W									
	9	80													W									
	56	80													W									
		80													W									56.0-57.1 Limestone Nodule
	2	80													W									
	3	90													M									
	4	95													M									
	5	80													M									
	6	60													M									
	7	90													M									
	8	80													M							N 5/0		
	9	80													M									
		0																						
	1	0																						57.1-58.0 Limestone Nodule
	2	80													M							SGY 4/1		
	3	90													M									
	4	90													M									
	5	80													M									
	6	80													M									
	7	95													M									
	8	80													M									
	9	80													M									
	58	80													M									
		90													M									58.0-59.0 Limestone Nodule
	2	80													M									
	3	0													M							N 5/0		
	4	0													M							SGY 4/1		
	5	90													M									
	6	90													M									
	7	90													M									
	8	90													M									
	9	70													M									
	59	70													M									
		90													M									59.0-60.0 Limestone Nodule
	2	90													M									
	3	80													M									
	4	40													M							N 5/0		
	5	70													M							SGY 4/1		
	6	90													M									
	7	80													M									
	8	80													M									
	9	90													M									
	1.0	90													M									
																								No Core Sample Interval
	101																							

Logged by: James E. Davis date 12 Jun 93

Reviewed by: W Winnell date 6/10/93

WESTON

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Borehole No.: 0352

Location code: MND

Surface elevation: 736.11

675.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Fragments	Structure	Texture	Fabric	1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
G	61	0																					5G4/1		616-617:
		5																					N5/0		Poorly sorted packstone
		10																							grainstone (skeletal grains)
		5																					5G4/1		
		30																					N5/0		
		0																							
		15																					5G4/1		
		20																							
	62	95																							
		100																							
		90																							
		80																							
		90																							
		90																							
		0																					N5/0		
		30																							
		40																					5G4/1		
		80																							
	63	100																							
		100																							
		90																							
		90																							
		90																							
		100																							
		90																							
		100																							
		90																							
		80																							
	64	80																							
		100																							
		90																							
		100																							
		100																							
		90																							
		90																							
		100																							664-666: Wackestone is mud dominant w/ variable intraclasts & [illegible] some fossil frag[illegible]
		90																							
		90																							
	65	90																							
		90																							
		1																							
		1																							
	66																								
		75																							
		100																							
		100																							
		90																							
		100																							
		60																							
		40																							
		30																							
		70																							
	67	80																							
		100																							
		100																							
		80																							
		90																							
		0																							
		0																							
		20																					N5/0		
		20																							
		50																					5G4/1		
	68																								
		10																					N5/0		
		40																							
		60																							
		70																							
		70																							
		10																							
		50																					5G4/1		
		45																							
	69																								

Logged by: Rick Morrow date

Reviewed by: CW Criswell date 6/12/93

WESTON

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Borehole No.: 0352

Location code: MUD20

Surface elevation: 736.41

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Structure	Texture	Fabric	Grain Size 1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
667.4	69																					5Y 4/1		
		80																						
		90																						
		100																						
		1																						
		90																						70.1-70.3: shale [illegible]
		90																						wackestone [illegible]
		90																						[illegible]
	70	100																						
		100																						
		90																						
		90																						
		5																						
		100																						
		90																						
		90																						
		90																						
		90																						
	71	95																						
		100																						
		90																				N5/0		
		90																						
		90																						
		100																				5Y 4/1		
664.8 G		5																						71.6 sharp contact placed at top of limestone
H		50																				N5/0		
		5																						
	72	5																						
		100																				5Y 4/1		
		100																						
		80																						72.7-72.5: large [illegible] irregular limestone [illegible] mud-filled burrow structure throughout
		50																				N5/0		
		0																						
		0																						
		0																						
		100																				5Y 4/1		
	73	1																						
		90																						
		0																				N5/0		
		0																						
		10																						
		10																						
		20																						
H		40																						
		90																				5Y 4/1		
662.3	74	100																						
		0																				N5/0		
		95																				5Y 4/1		74.1 sharp contact at base of limestone
		100																						
		1																						
		1																						
		90																						
		90																						
		100																						
	75	5																						
		95																						
		85																						
		100																						
		95																						
		100																						
		95																						75.9-76.0 [illegible] remnant of bedded mst. w/ good sedimentation and sorting
		95																						
		100																						
		20																				N5/0		
	76	20																						
		90																				5Y 4/1		76.7-76.3: nonbioturbated wackestone [illegible]
		90																						[illegible] of limestone
		90																						
		100																						
		100																						
		1																				N5/0		
		0																						
		50																				5Y 4/1		
		100																						
	77	100																						

Logged by: [illegible] date ____

Reviewed by: [illegible] date 6/17/03

WESTON

Borehole No.: 0352

Location code: MW520

Surface elevation: 736.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Fossil Assemblage	Structure	Texture	Fabric	Grain Size 1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
659.4	77	100																					5G4/1		
		80																							
		100																							
		0																					N5/0		
		0																							
		0																							
		100																					5G4/1		
	78	80																							
		70																							
		100																							
		100																							78.5 contact placed at top of nodular limestone (gradational)
657.9		40																							
		70																							
		70																							
		40																					N5/0		
	79	10																							
		95																					5G4/1		
		85																							
		95																							
		100																							
		100																							
		100																							
		40			ST																				
	48	80																					N5/0		
		70			ST																		5G4/1		
		70																					N5/0		
		10																							
		0																							
		0																							
		0																							
		70			ST																		5G7/1		
		70																							
		70																					N5/0		
	81	0																							
H		0																							
		0																							
		10																							
		100																					5G7/1		
		95																							
		100																					N5/0		
		95																							
	87	70																							
		30																							
		100																							
		100																							
		100																					N5/0		
		95																					5G7/1		
		35																							
		100																							
		85																							
		75																							
	93																								
		10																							
		70																							
		80			ST																		N5/0		
		0																					5G7/1		
		90			ST																		N5/0		
		10																							
		80																							
		70																							
	84	0																							
		0																							
		20																					5G4/1		
		80			ST																		N5/0		
					CC																		5G4/1		
		10																					N5/0		
		70			CC																		5G4/1		
																							N5/0		
		100																					5G4/1		
	85																								

Logged by: _____ date _____

Reviewed by: C. W. Crowell date 6/17/93

WESTON

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Borehole No.: 2352

Location code: MND 20

Surface elevation: 736.4

651.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobite	Fossil Assemblage: Rhynchonellids	Structure	Texture	Fabric	Grain Size: 1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
	85	50														W							N5/0		85.4-86.5 - Brachiopod fragments very thinly (1-3 mm) interkeyed w/ mudstone
		40														P									
		50														P									
		50														P									
		50														P									
		50														P									
		50														P									
		50														P									
	86	50														P									
		80														P									
		50														P									
		50														P									
		50														P									
		50														P									
		50														P							5G7/1		
		50														P							N5/0		
		50														P									
		50														P							5G7/1		
	87	50														P									
		70														P									
		100														P									
		100														W							N5/0		
		80														W									
		40														W									
		60														W							5G7/1		
		100														W									
		90														W									
		85			B											P							N5/0		
	88	0																							
		10																							
		10																							
		10																							
		100			SD											W							5G7/1		
		100			SI											P									
		40														W							N5/0		
		90														W									
		80			SI											W							5G7/1		
		60			SI											W									
	89	70														P							N5/0		
		0			B											P									
		0														P									
		90			D											W							5G7/1		89.7-90.0 - Moderately [illegible] mudstone w/ intraclasts [illegible] limestone - presumably [illegible] lime [illegible] fragments
		50																							
		90														P							N5/0		
		0														W							5G7/1		
		90																							
	90	90														W									
		90														W									
		90														W									
		90			SI											W									
		0														P							N5/0		
		0																							
		0																							
		10														W							5G7/1		
		90			SI											W									
		100														W									
	91	100																							
		100			SI											W									
		20														P							N5/0		
		10														P									
		0														P									
		10														P									
		90			SI											W							5G7/1		
		50														P									
		100														P									
		50			SI											P									
	92	0														P							N5/0		
		0														P									
		0														P									
		100			J											P							5G7/1		
		40			SI											P									
		90														W									
		40														W									
		100														W									
		70														W									
		60														W									
	93	50														W									

Logged by: [illegible]

Reviewed by: CW Crimwell

date [illegible]

date 6/12/03

WESTON

Borehole No.: D352

Location code: MND20

Surface elevation: 736.4

643.4

638.

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Echinoderm	Structure	Texture	Fabric	Vfs mm	Fs mm	Ms mm	Cs mm	Vcs mm	Color	Lithologic Type	COMMENTS
H	93																					NSD		
					D																	FGY		
	94																							
					SI																	NSD		
					SI																	SLGY/L		
	95																					NSD		
																						SLGY/L		95.2 - 95.5 - [illegible] limestone very [illegible] (2.5mm) laminated w/ [illegible]
	96				BD																	NSD		
					VS																	SLGY/L		96.5 - 96.5 Bedded [illegible] [illegible] (calcarite)
	97				SI																	SLGY/L		97.3 - 97 [illegible]
	98				G																	NSD		
					SI																	SLGY/L		98.1 - 98.4: [illegible] Topcreeded
					R																	NSD		
					SI																	SLGY/L		98.4 contact closed at base of [illegible]
					R																	SLGY/L		99 - 99.5 - [illegible]
	100																							Possible Frost shale with [illegible]
	101																							

Logged by: _____ date _____

Reviewed by: W Linnell date 6/12/93

WESTON

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Borehole No.: 0352

Location code: MUD20

Surface elevation: 736.4

Facies	Depth	% Shale #	% Shale 20 40 60 80	Graphic Log	Nature of Contact	Encrusted Bryozoa	Branching Bryozoa	Thick-walled Brachiopod	Thin-walled Brachiopod	Mollusca	Coelenterata	Trilobita	Structure	Texture	Fabric	1/16 mm	1/8 mm	1/4 mm	1/2 mm	1 mm	2 mm	Color	Lithologic Type	COMMENTS
635.4	101	60			B																			
	?	0																						
		0																						
		80			SE																			
		10																						
		80																						
H		90			SE																			
		1																						
	102				B																			
		10																						
634.2		30																						

102.2 end

END TD

Bottom of Borehole

Logged by: [illegible] date

Reviewed by: CW Criswell date 6/17/93

WELLS

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0370
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596829.64
Date Started	12/7/92	East (ft)	1495100.73
Date Completed	12/7/92	Ground Surface Elev. (ft)	715.94
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	718.51
Checked By	ERIC LARSEN	Total Depth (ft)	50.0
Comments:	Monitoring well located approximately 8 ft. east of piezometer P001.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4".			FL	0.0 to 5.0' - Yellowish brown (10YR 5/6) to very dark grayish brown (10YR 3/2) clayey to silty sand, very fine grained, some gravel and wood debris. Fill.
				Backfill: Cement and bentonite grout				
5								5.0 to 10.0 - Grayish brown clayey silt to sand with gravel and debris, sand is very fine grained. Fill.
10								10.0 to 15.0' - Clayey sand, very fine grained, 10% gravel, some wood debris. Fill.
15								15.0 to 20.0' - Brown to grayish brown clayey silt to silty sand, sand is very fine grained, 15% gravel, some wood and copper wire. Fill.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	34.00		12/07/92
▼	33.42		01/09/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0370

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	ST	GT	0021				NR	20.0 to 25.0' - No recovery.
				Seal: Bentonite chips				
25	ST	GT	0026				FL	25.0 to 27.8' - Brown clayey to silty sand with gravel and debris, sand is very fine grained. Fill.
				Filter Pack: 20/40 quartz sand			GP	27.8 to 30.0' - Gravel, 80% gravel, 20% sand, silt, and clay. Outwash.
30				Screen: Stainless steel, 4".			NR	30.0 to 35.0' - No recovery.
35	O	GC	0036				GP	35.0 to 40.0' - Gravel, 80% gravel, 20% sand, silt, and clay. Outwash.
40	O	GC	0040	Backfill: Native sediment				40.0 to 47.8' - Gravel, very coarse grained, 90% gravel, 10% sand, average gravel size is approximately 1.8" in diameter. Outwash.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	34.00		12/07/92
▼	33.42		01/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 3 of 3

Borehole/Well Id 0370

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Backfill: Native sediment				
							ST	47.8 to 50.0' - Gray siltstone, calcareous. Bedrock.
50								Total Depth = 50.0'.
55								
60								
65								
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	34.00		12/07/92
▼	33.42		01/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0372
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596693.75
Date Started	1/4/93	**East (ft)**	1495331.22
Date Completed	1/7/93	**Ground Surface Elev. (ft)**	752.53
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	754.69
Checked By	TOM THARP	**Total Depth (ft)**	62.0
Comments:	Monitoring well located 6 ft. northeast of piezometer P004.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			FL	0.0 to 4.7' - Brown silty, gravelly clay, 20% gravel. Fill.
	ST	GT	0003					
				Backfill: Cement and bentonite grout				
5								4.7 to 5.0' - Brown silty clay, contains debris and paper. Fill. 5.0 to 31.2' - Dark grayish brown silty clay to clayey silt with gravel, contains debris (paper and plastic). Fill.
10								
15								
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	35.31		03/08/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0372

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Casing: Stainless steel, 4"				
25				Backfill: Cement and bentonite grout				
30							FL	31.2 to 32.0' - Brown silty clay to clayey silt, competent, 10% gravel, no debris. Basal landfill liner. 32.0 to 35.0' - Yellowish brown gravelly, silty sand, very fine grained, 60% sand, 20% silt/clay, 20% gravel up to 1.8" in diameter (average diameter = 0.4"), areas of gray staining from 32.0 to 33.0'. Basal landfill liner.
35	ST	GT	0036					35.0 to 38.0' - Yellowish brown silty, gravelly sand, very fine grained, 20% gravel, zones of gray silty clay. Basal landfill liner.
								38.0 to 39.5' - Yellowish brown (10YR 5/8) and grayish brown (2.5Y 5/2) clayey silt to silty sand, very fine grained, 10% gravel, zones with black residue. Basal landfill liner.
40							TI	39.5 to 40.0' - Dark grayish brown (2.5Y 4/2) silty sand, very fine grained, very compact, hard, 10% silt/clay, gravel up to 1.2" in diameter (average diameter 0.3"), angular to subangular. Till. 40.0 to 50.0' - Dark brown (10YR 3/3) clayey to silty sand, 20% gravel up to 2.0" in diameter (average diameter = 0.4"), 60% very fine grained sand, 20% silt/clay, damp at 42.0', moist at 45.0'. Till.
45				Seal: Bentonite chips				

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	35.31		03/08/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0372

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
	ST	GT	0046	Seal: Bentonite chips			TI	
50							NR	50.0 to 51.0' - No recovery. Top of bedrock estimated at 50.0'.
							ST	51.0 to 51.4' - Medium gray siltstone, local dark gray shaley partings, calcareous, fossiliferous. Bedrock.
							LS	51.4 to 52.0' - Limestone, fossiliferous.
	O	GT	0052	Filter Pack: 20/40 quartz sand			ST	52.0 to 52.5' - Medium gray siltstone, local dark gray shaley partings, calcareous, fossiliferous. Bedrock. 52.5 to 52.8' - Siltstone, calcareous, some limestone interbeds. 52.8 to 55.0' - Siltstone, calcareous. 55.0 to 60.0' - Siltstone, calcareous, interbeds of fossiliferous limestone beginning at 55.5', fracture zone at 55.5 to 56.0', dark gray staining along fractures. Bedrock.
55				Screen: Stainless steel, 4"				
	O	GT	0057					
60							NR	60.0 to 62.0' - No recovery.
								Total Depth = 62.0'.
65								
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	35.31		03/08/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0373
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596690.56
Date Started	12/14/92	**East (ft)**	1495128.52
Date Completed	12/15/92	**Ground Surface Elev. (ft)**	737.00
Logged By	ERIC LARSEN	**Top of Casing Elev. (ft)**	738.73
Checked By	TOM THARP	**Total Depth (ft)**	65.0

Comments: Monitoring well located on upper bench of site sanitary landfill , 5 ft. south of piezometer P005. Initial groundwater measurment was taken from piezometer P005.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0	ST	GT	0001	Casing: Stainless steel, 4"			FL	0.0 to 0.8' - Yellowish brown to dark gray (10YR 5/6 to 4/1) silty sand, soft, trace gravel, numerous roots, damp. Fill.
				Backfill: Cement and bentonite grout				0.8 to 21.3' - Dark gray (10YR 4/1) sandy, gravelly silt, occasional brownish yellow (10YR 6/6) mottling, firm, 40% silt, 30% very fine to medium grained sand, 25% fine to very coarse gravel, 5% clay in occasional pockets, few medium to large cobbles, scattered debris (dark brown to black charred material), pieces of red brick at 11.4', damp. Fill.
5								
10								
15								
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	55.90	16:35	12/14/92
▼	55.84		01/12/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id 0373

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Casing: Stainless steel, 4"			FL	21.3 to 37.2' - Yellowish brown (10YR 5/6) silty, gravelly sand, 60% very fine to very coarse grained sand, 20% fine to medium gravel, 20% silt, trace clay, occasional large cobble, dry to damp, spotty staining, little or no debris, occasional zones of clayey silt, clayey silt interval with interspersed charred material at 26.3 to 26.7', dark grayish brown organic/stained zone with root fragments at 33.2 to 33.7'. Fill.
25				Backfill: Cement and bentonite grout				
30	ST	GT	0031					
35								37.2 to 37.9' - Dark grayish brown debris zone, contains wood and metal, soil is stained. Fill. 37.9 to 41.4' - Yellowish brown to olive gray (10YR 5/8 to 5Y 4/2), silty clay, soft, moderately plastic, minor fine to coarse grained sand, very uniform. Fill.
40								41.4 to 42.7' - Olive gray (5Y 5/2) silty, gravelly sand, firm, trace clay, very fine to very coarse sand and gravel. Fill. 42.7 to 48.4' - Olive gray (5Y 5/2) sand, silt, and gravel, heterogeneous mixture, loose, non-graded, poorly sorted, 15% silt, 40% sand, 45% gravel, spotty dark brown staining in places, occasional medium to large cobbles, damp to slightly moist, dark grayish brown staining at 46.2 to 46.5' and 47.4 to 48.4', debris zone (wood) at 45.0 to 45.4', hydrocarbon odor emitted from core between 40.0 and 50.0'. Fill.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	55.90	16:35	12/14/92
▼	55.84		01/12/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0373

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips				48.4 to 49.2' - Pale olive (5Y 6/4) sand, loose, fine to very coarse grained, trace fine gravel, moist. Fill.
50							TI	49.2 to 50.8' - Light yellowish brown (2.5Y 6/4) sandy, gravelly silt, firm, 30% very fine to fine grained sand, 25% fine to coarse gravel, damp. Till.
	ST	GT	0051	Filter Pack: 20/40 quartz sand				50.8 to 51.3' - Large limestone boulder.
							GM-GP	51.3 to 62.8' - Light olive brown (2.5Y 5/4) silty, sandy gravel, loose, 55% very fine to very coarse gravel, 25% very fine to very coarse grained sand, 20% silt, numerous cobbles and boulders, trace clay, damp. Outwash.
	O	GC	0054					
55	O	GT	0055	Screen: Stainless steel, 4"				
	O	GC	0058					
60								
							ML	62.8 to 63.2' - Light brownish gray (2.5Y 6/2) clayey silt, firm, scattered minor sand and gravel, slight foliation texture, damp.
				Backfill: Native sediment			SH	63.2 to 65.0' - Gray (2.5Y 5/0) shale, weathered, stiff, slightly competent, friable in places, slightly foliated, dry. Bedrock.
65								Total Depth = 65.0'.
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	55.90	16:35	12/14/92
▼	55.84		01/12/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0374
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596559.25
Date Started	12/5/92	**East (ft)**	1495123.53
Date Completed	12/6/92	**Ground Surface Elev. (ft)**	704.42
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	706.33
Checked By	ERIC LARSEN	**Total Depth (ft)**	35.0
Comments:	Moinitoring well located approximately 8 ft. east of piezometer P006.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 1.3' - Brown to dark brown (10YR 4/3) gravelly sand with silt and clay, sand is fine grained, 30% gravel, 30% silt/clay, roots. Topsoil.
							FL	1.3 to 4.1' - Dark brown gravelly sand with silt and clay, 30% silt/clay, 50% very fine grained sand, 20% gravel. Fill.
	ST	GT	0004	Backfill: Cement and bentonite grout				4.1 to 4.3'- Unidentified material, possibly white lime. Fill.
5								4.3 to 10.4' - Dark yellowish brown (10YR 3/6) clayey, silty sand, 60% fine to coarse grained sand, 40% silt and clay, no gravel. Fill.
	ST	GT	0009					
10							GP	10.4 to 13.0' - Brown sandy gravel, 50% gravel, 30% fine to coarse grained sand, 20% silt/clay. Outwash.
								13.0 to 18.0' - Brown sandy gravel, 60% gravel up to 2.5" in diameter (average diameter = 0.4"), 30% fine to coarse grained sand, 10% silt/clay, odorous, damp. Outwash.
	ST	GT	0014	Seal: Bentonite chips				
15								
								18.0 to 20.0' - Brown gravel, 80% gravel, matrix contains 80% sand, 20% silt/clay. Outwash.
20								

GROUNDWATER

DEPTH	HOUR	DATE
19.73		01/11/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0374

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0022	Filter Pack: 20/40 quartz sand Screen: Stainless steel, 4"			GP	20.0 to 25.0' - Brown gravel, 80% gravel up to 2.0" in diameter (average diameter = 0.6"), 15% sand, 5% silt/clay, wet. Outwash.
25	O	GC	0027	Backfill: Native sediment			GP	25.0 to 33.4' - Brown sandy gravel, 70% gravel up to 3.0" in diameter (average diameter = 0.7"), 20% sand, 10% silt/clay. Outwash.
30								
35							ST	33.4 to 35.0' - Gray siltstone, calcareous, contains calcareous nodules. Bedrock.
								Total Depth = 35.0'.
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	19.73		01/11/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0375
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	597074.08
Date Started	12/8/92	**East (ft)**	1494980.33
Date Completed	12/8/92	**Ground Surface Elev. (ft)**	703.43
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	705.48
Checked By	ERIC LARSEN	**Total Depth (ft)**	35.0
Comments:	Monitoring well located approximately 8 ft. west of piezometer P007.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			NR	0.0 to 4.0' - No recovery.
5	ST	GT	0005	Backfill: Cement and bentonite grout			FL	4.0 to 5.7' - Yellowish brown sand, very fine grained, 80% sand, 20% silt/clay, damp. Fill.
							GP	5.7 to 7.0' - Gravel, 90% gravel up to 0.6" in diameter (average diameter = 0.4") 10% sand. Outwash.
	ST	GT	0007				SP-GP	7.0 to 10.0' - Brown sand and gravel, 40% gravel up to 4.0" in diameter (average diameter = 0.8"), 40% coarse grained sand, 10% silt/clay. Outwash.
10							SP	10.0 to 11.2' - Gravelly sand, 35% gravel, 50% sand, 15% silt/clay. Outwash.
				Seal: Bentonite chips			GP	11.2 to 20.0' - Brown to yellowish brown gravel, 75% gravel, 15% sand, 10% silt/clay. Outwash.
	O	GT	0014					
15								
				Filter Pack: 20/40 quartz sand				
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	20.98		01/11/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0375

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Screen: Stainless steel, 4"			GP	20.0 to 22.0' - Grayish brown gravel, 90% gravel. Outwash.
								22.0 to 28.5' - Brown gravel, 80% gravel up to 6.0" in diameter (average diameter = 0.5"), 10% sand, 10% silt/clay. Outwash.
	O	GT	0024					
	O	GC	0024					
25								
	O	GC	0026					
							SH	28.5 to 29.5' - Gray shale, comprised of silty clay, tight, dry. Bedrock float.
30				Backfill: Native sediment			GP	29.5 to 30.0' - Gravel, 85% gravel up to 4.0" in diameter (average diameter = 0.4"), wet. Outwash.
							GC-GM	30.0 to 31.2' - Silty, clayey, sandy gravel, wet. Outwash.
							TI	31.2 to 35.0' - Gravelly silt, very dense, competent, contains quartzose, siltstone, and limestone clasts, dry. Till.
	ST	GT	0033					
35								Total Depth = 35.0'.
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	20.98		01/11/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0376
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596696.75
Date Started	3/5/93	**East (ft)**	1494760.63
Date Completed	3/5/93	**Ground Surface Elev. (ft)**	698.42
Logged By	ERIC LARSEN	**Top of Casing Elev. (ft)**	700.12
Checked By	TOM THARP	**Total Depth (ft)**	25.2

Comments: Monitoring well located along west access road, 10 ft. northwest of piezometer P008. Initial groundwater level was measured from piezometer P008.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			FL	0.0 to 0.7' - Road gravel. Fill.
							TS	0.7 to 1.5' - Dark yellowish brown (10YR 2/2) sandy silt, firm, organic, numerous roots, damp. Topsoil.
							FL	1.5 to 2.1' - Pale yellowish brown (10YR 6/2) silty gravel, loose, some fine to coarse grained sand, wet. Fill.
5				Backfill: Cement and bentonite grout			SP	2.1 to 13.0' - Moderate to dark yellowish brown (10YR 5/4 to 4/2) gravelly sand, loose, 65% fine to very coarse grained sand, 30% fine to coarse gravel, trace silt, numerous small to large cobbles, damp, becoming very moist at 11.0'. Outwash.
10				Seal: Bentonite chips				
				Filter Pack: 20/40 quartz sand				
15							GP	13.0 to 21.7' - Moderate yellowish brown (10YR 5/4) sandy gravel, mostly loose, 60% fine to very coarse gravel, 25% medium to very coarse grained sand, 15% silt, numerous medium to very large cobbles, boulder at 14.4 to 14.8', patchy hematitic staining of grains, very moist to wet in places, saturated at 16.5'. Outwash.
	O	GC	0016	Screen: Stainless steel, 4"				
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.30	10:20	03/05/93
▼	13.57		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0376

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0021					
							GM	21.7 to 25.2' - Moderate yellowish brown (10YR 5/4) silty gravel, loose, 60% very fine to very coarse gravel, 30% silt, < 10% very fine to coarse grained sand, numerous medium to very large cobbles, saturated. Outwash.
25								Total Depth = 25.2'.
30								
35								
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.30	10:20	03/05/93
▼	13.57		03/07/93

WESTON

GEOLOGIC LOG — MOUND PLANT

Project Manager: William Little

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0377
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596522.25
Date Started	3/4/93	East (ft)	1494774.87
Date Completed	3/4/93	Ground Surface Elev. (ft)	697.63
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	699.25
Checked By	TOM THARP	Total Depth (ft)	25.0

Comments: Monitoring well located on west access road, 7 ft. south of piezometer P009.
Initial groundwater level was measured from piezometer P009.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			FL	0.0 to 0.4' - Road gravel. Fill.
							TS	0.4 to 1.5' - Dark yellowish brown (10YR 2/2) sandy silt, firm, organic, numerous roots, damp. Topsoil.
							FL	1.5 to 2.4' - Moderate brown (5Y 3/4) sandy silt, numerous small to large cobbles. Fill.
5				Backfill: Cement and bentonite grout			SP	2.4 to 12.0' - Dark yellowish brown (10YR 4/2) gravelly sand, loose, 60% fine to very coarse grained sand, 35% fine to very coarse gravel, < 5% silt in places, numerous small to large cobbles, damp. Outwash.
10				Seal: Bentonite chips				
				Filter Pack: 20/40 quartz sand			SM-SP	12.0 to 15.0' - Pale to moderate yellowish brown (10YR 6/2 to 5/4) silty, gravelly sand, slightly soft to loose, 45 to 50% very fine to very coarse grained sand, 30 to 35% fine to coarse gravel, 20 to 25% silt, numerous small cobbles, silty zone at 13.0 to 13.4', boulder at 13.7 to 14.0', damp to moist. Outwash.
15							GP	15.0 to 25.0' - Moderate yellowish brown (10YR 5/4) sandy gravel, loose, 65% very fine to very coarse gravel, 30% fine to coarse grained sand, 5 - 10% cobbles, few boulders, saturated at 17.0'. Outwash.
	O	GC	0017	Screen: Stainless steel, 4"				
	O	GC	1017					
20								

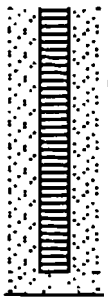
GROUNDWATER

	DEPTH	HOUR	DATE
▽	17.15	09:40	03/04/93
▼	13.49		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0377

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0023	Backfill: 20/40 quartz sand			GP	
25								Total Depth = 25.0'.
30								
35								
40								
45								

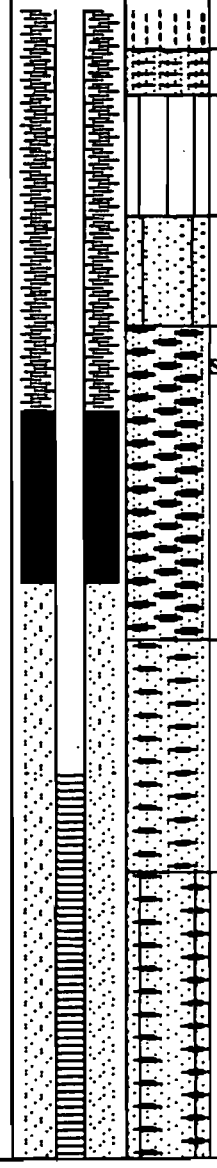
GROUNDWATER

	DEPTH	HOUR	DATE
▽	17.15	09:40	03/04/93
▼	13.49		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0378
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596376.63
Date Started	3/3/93	East (ft)	1494789.86
Date Completed	3/3/93	Ground Surface Elev. (ft)	697.72
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	699.84
Checked By	TOM THARP	Total Depth (ft)	25.0
Comments:	Monitoring well located on west access road, 10 ft. north of piezometer P013.		
	Initial groundwater level was measured from piezometer P013.		



Depth	Sample T	Sample A	Sample ID	Well Materials	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"	FL	0.0 to 0.7' - Road gravel. Fill.
					TS	0.7 to 1.6' - Dusky yellowish brown (10YR 2/2) sandy silt, minor clay, slightly firm, organic, roots, damp. Topsoil.
					ML	1.6 to 3.6' - Moderate yellowish brown (10Y 5/4) silt, soft, minor fine grained sand, trace clay, damp.
5				Backfill: Cement and bentonite grout	SM	3.6 to 5.5' - Moderate brown (5YR 4/4) silty sand; fine to coarse grained, soft to slightly loose, 15% fine to coarse gravel, damp. Outwash.
				Seal: Bentonite chips	SP-GP	5.5 to 11.0' - Moderate yellowish brown (10YR 5/4) sand and gravel, loose, 55% very fine to very coarse grained sand, 40% fine to very coarse gravel, < 5% silt, few small cobbles, damp to moist. Outwash.
10				Filter Pack: 20/40 quartz sand	SP	11.0 to 15.0' - Pale yellowish brown (10YR 6/2) gravelly sand, loose, 50% very fine to very coarse grained sand, 30% gravel, 10 to 15% silt, numerous medium to large cobbles, moist. Outwash.
15				Screen: Stainless steel, 4"		
	O	GC	0017		SM-GM	15.0 to 25.0' - Pale yellowish brown to moderate yellowish brown (10YR 6/2 to 5/4) silty sand and gravel, loose, 40 - 45% very fine to very coarse grained sand, 40 to 45% fine to coarse gravel, 10 to 20% silt, numerous small to large cobbles, boulder at 22.5 to 23.1', brownish gray staining of grains at 16.8 to 17.5', saturated at 17.0'. Outwash.
20						

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.90	10:35	03/03/93
▼	14.52		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0378

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0022	Backfill: 20/40 quartz sand Backfill: Native sediment			SM-GM	
25								Total Depth = 25.0'.
30								
35								
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.90	10:35	03/03/93
▼	14.52		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0379
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	597179.70
Date Started	12/4/92	East (ft)	1495153.92
Date Completed	12/5/92	Ground Surface Elev. (ft)	714.61
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	716.29
Checked By	ERIC LARSEN	Total Depth (ft)	40.0
Comments:	Monitoring well located 10 ft. southwest of piezometer P014, north of overflow pond.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			FL	0.0 to 3.5' - Yellowish brown (10YR 5/8) gravelly clayey silt to silty sand, sand is very fine grained, 30% gravel up to 3.0" in diameter (average diameter = 0.3"). Fill.
								3.5 to 5.0' - Sandy gravel, 25% sand, 70% gravel up to 3.0" in diameter (average diameter = 0.5"). Fill.
				Backfill: Cement and bentonite grout				
5								5.0 to 8.0' - Yellowish brown (10YR 5/8) gravelly clayey silt to silty sand, sand is very fine grained, 25% gravel up to 2.0" in diameter (average diameter = 0.3"). Fill.
							TI	8.0 to 10.0' - Gray to dark gray (10YR 4/1) gravelly sand with silt and clay, very fine grained, 20% gravel up to 1.0" in diameter (average diameter = 0.3"), matrix contains 80% very fine grained sand, 20% silt/clay. Till.
10	ST	GT	0010					10.0 to 15.0' - Dark gray (10YR 4/1) sand with gravel, 15% gravel up to 2.0" in diameter (average diameter = 0.3"), matrix contains 80% very fine grained sand, 20% silt/clay. Till.
15								15.0 to 22.2' - Dark grayish brown (10YR 4/2) silty sand with gravel, 10% gravel up to 2.0" in diameter (average diameter = 0.3"), matrix contains 70% very fine grained sand, 30% silt/clay, uniform color and composition. Till.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	32.90	17:50	12/04/92
▼	31.39		01/11/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0379

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	ST	GT	0022				TI	22.0 to 22.7' - Yellowish brown (10YR 5/6) gravelly sand, 30% gravel, 60% very fine grained sand, 10% silt/clay. Till.
25				Seal: Bentonite chips Filter Pack: 20/40 quartz sand			GP	22.8 to 25.0' - Pale brown (10YR 6/3) sandy gravel, 30% sand, 10% silt/clay, 60% gravel up to 3.0" in diameter (average diameter = 0.4"). Outwash. 25.0 to 30.0' - Yellowish brown (10YR 5/4) sandy gravel, 75% gravel up to 3.0" diameter (average diameter 0.5"), 20% fine to coarse grained sand, 5% silt/clay. Outwash.
30	O	GC	0032	Screen: Stainless steel, 4"			SP	30.0 to 35.0' - Yellowish brown (10YR 5/4) sand with silt, clay and gravel, 15% gravel up to 4.0" in diameter (average diameter = 0.4"), matrix contains 70% sand, 30% silt/clay, iron and manganese oxide staining/deposit on some gravel. Outwash.
35	O	GC	0036				SP-GP	35.0 to 40.0' - Sand and gravel, prominant solvent odor. Outwash.
40								Total Depth = 40.0'.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	32.90	17:50	12/04/92
▼	31.39		01/11/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0380
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	597109.65
Date Started	12/16/92	East (ft)	1495394.52
Date Completed	12/17/92	Ground Surface Elev. (ft)	723.25
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	725.33
Checked By	TOM THARP	Total Depth (ft)	62.0
Comments:	Monitoring well located northeast of overflow pond, approximately 20 ft. east of monitoring well 0316.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 1.3' - Yellowish brown (10YR 5/6) silty sand, 65% very fine to medium grained sand, 30% silt, few small cobbles at 0.0 to 0.3', soft, moist. Topsoil.
							FL	1.3 to 5.7' - Yellowish brown (10YR 5/4 - 5/6) silty, gravelly sand, 55% very fine to medium grained sand, 25% silt, 20% very fine to fine gravels, scattered coarse gravels and small cobbles, slightly firm to firm, damp. Fill.
	O	GC	0004	Backfill: Cement and bentonite grout				
5	O	GC	1004					
							TI	5.7 to 10.5' - Dark grayish brown (2.5Y 4/2) silty, gravelly sand, 45% very fine to fine grained sand, 30% silt, 20 to 25% fine to coarse gravel, < 5% clay, slightly firm, low plasticity, damp. Till.
	O	GC	0009					
10								10.5 to 15.0' - Dark grayish brown (2.5Y 4/2) silty, gravelly sand, 45% very fine to fine grained sand, 30% silt, 20 to 25% fine to coarse gravel, 5 to 7% clay, firm, low plasticity, damp. Till.
	O	GC	0014					
15							SM-GM	15.0 to 18.0' - Yellowish brown (10YR 5/4 - 5/6) silty sand and gravel, 15 to 20% silt, 40% very fine to very coarse grained sand, 40% fine to coarse gravel and very large cobbles, areas of hematitic/limonitic staining of grains, soft to loose, damp. Outwash.
	O	GC	0017					
							GM	18.0 to 19.5' - Yellowish brown (10YR 5/8) silty gravel with cobbles, soft, low to moderate plasticity, 10 to 15% clay, 25% silt, 50% medium to coarse gravel and very large cobbles (possible small
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	56.65	16:37	12/17/92
▼	38.18		03/09/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0380

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20								boulders), < 10% medium to coarse grained sand in pockets, very moist. Outwash.
				Casing: Stainless steel, 4"			GM-GP	19.5 to 26.4'- Yellowish brown (10YR 5/4) silty, sandy gravel, loose, 10 to 15% silt, 20 to 25% fine to coarse grained sand, 60 to 70% very fine to very coarse gravels with numerous small to large cobbles, occasional hematitic/limonitic staining of grains, occasional zones of calcareous deposits, damp to moist. Outwash.
	O	GC	0024	Backfill: Cement and bentonite grout				
25							SP	26.4 to 27.7' - Dark yellowish brown (10YR 4/4) sand, fine to very coarse grained, poorly graded, loose, trace medium to coarse gravel, < 5% silt, wet. Outwash.
	O	GC	0029				TI	27.7 to 28.6' - Yellowish brown (10YR 5/8) silty, gravelly sand, firm, nonplastic, 25% silt, 15 to 20% gravel, 55% very fine to medium grained sand, trace clay, damp. Till.
30	ST	GT	0031					28.6 to 33.0' - Grayish brown (2.5Y 5/2) silty, gravelly sand, very firm, slightly plastic, 30% silt, 15 to 20% fine to coarse gravels, 50% very fine to medium grained sand, scattered small cobbles, damp. Till.
	O	GC	0032					
35							SH-LS	33.0 to 60.0' - Dark gray (2.5Y 4/0) shale with interbedded very dark gray (2.5Y 3/0) limestone; shale is slightly weathered from 33.0 to 34.0', soft and crumbly to hard, fissile, moderately competent, numerous partings, slightly fossiliferous, dry to moist; limestone is very hard, partially crystalline, fossiliferous, massive, essentially non-fractured, occurs as intermittant thin beds, lenses and nodules, significant limestone beds at 35.0 - 35.3', 36.6 - 36.8', 40.5 - 40.8', 45.2 - 45.4', 47.3 - 47.4', 52.4 - 52.6', 53.0 - 53.4', 55.5 - 55.7', 56.1 - 56.3', 56.9 - 57.5', 57.8 - 58.3', 59.0 - 59.3'. Bedrock.
40								
45				Seal: Bentonite chips				

GROUNDWATER

DEPTH	HOUR	DATE
56.65	16:37	12/17/92
38.18		03/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 3 of 3

Borehole/Well Id 0380

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips			SH-LS	
				Filter Pack: 20/40 quartz sand				
50								
				Screen: Stainless steel, 4"				
55								
▽								
60							NR	60.0 to 62.0' - No recovery.
				Backfill: Native sediment				Total Depth = 62.0'.
65								
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	56.65	16:37	12/17/92
▼	38.18		03/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	0381
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	WATER	North (ft)	596982.13
Date Started	1/7/93	East (ft)	1495399.69
Date Completed	1/8/93	Ground Surface Elev. (ft)	723.49
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	726.08
Checked By	ERIC LARSEN	Total Depth (ft)	37.0
Comments:	Monitoring well located 125 ft. south of monitoring well 0380.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 0.5' - Dark gray (10YR 4/1) clayey silt, roots. Topsoil.
							FL	0.5 to 3.0' - Brown (10YR 5/3) silty sand, very fine grained 10% gravel, 60 to 70% sand, 20 to 30% silt/clay, abundant roots, moist. Fill.
	O	GC	0004	Backfill: Cement and bentonite grout			TI	3.0 to 5.0' - Dark gray (10YR 4/1) silty sand, very fine grained, <10% gravel, 20 to 30% silt/clay, root debris. Till.
5	ST	GT	0004					5.0 to 25.0' - Dark gray (10YR 4/1) silty gravelly sand, very fine grained, 20% gravel up to 2.0" in diameter (average diameter = 0.4"), angular to subrounded, damp to moist. Till.
10	O	GC	0010					
	O	GC	1010					
15	O	GC	0015					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	32.79	13:10	03/18/93

WESTON

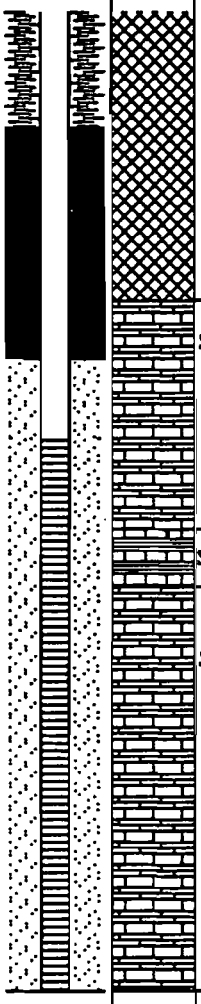
GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0381

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020	Seal: Bentonite chips			TI	
25	O	GC	0025				ST-LS	25.0 to 29.0' - Gray calcareous siltstone with interbedded limestone, fossiliferous limestone beds from 2.0 to 2.5" thick, possible water producing zones at 26.0', 27.0', 27.7', and 29.0'. Bedrock.
	O	GT	0027	Filter Pack: 20/40 quartz sand Screen: Stainless steel, 4"				
30							ST-SH	29.0 to 30.0' - Calcareous siltstone with interbedded shale, shale beds up to 0.5" thick. Bedrock.
							ST-LS	30.0 to 37.0' - Calcareous siltstone with interbedded limestone, limestone beds up to 1.7" thick, siltstone is locally fossiliferous with occasional shale beds < 0.4" thick, no obvious water producing zones. Bedrock.
35								
								Total Depth = 37.0'.
40								
45								



GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	32.79	13:10	03/18/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0382
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596601.67
Date Started	12/16/92	**East (ft)**	1495444.40
Date Completed	12/16/92	**Ground Surface Elev. (ft)**	736.48
Logged By	ERIC LARSEN	**Top of Casing Elev. (ft)**	738.73
Checked By	TOM THARP	**Total Depth (ft)**	35.0

Comments: Monitoring well located in flat area 10 ft. west of culvert that leads to overflow pond spillway, near southeast corner of the site sanitary landfill.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 1.0' - Yellowish brown (10YR 5/8) silty sand, soft, moist, contains roots. Topsoil.
	ST	GT	0002				FL	1.0 to 3.1' - Dark yellowish brown (10YR 3/4) silty sand, slightly firm, some gravel, damp. Fill. 3.1 to 4.3' - Dark brown sandy silt, firm, low plasticity, organic rich, minor gravels, minor clay, damp. Fill.
5	O	GC	0005	Backfill: Cement and bentonite grout			TI	4.3 to 9.8' - Yellowish brown (10YR 5/6) silty, gravelly sand, soft to slightly firm, 50% very fine to fine grained sand, 20% silt, 20 to 25% fine to coarse gravel, 5 to 10% clay, occasional medium to large cobbles, trace medium to very coarse grained sand, damp. Till.
10	O	GC	0010					9.8 to 17.2' - Dark grayish brown (2.5Y 4/2) silty, gravelly sand, soft to slightly firm, 55% very fine to fine grained sand, 25% silt, 15 to 20% fine to medium gravel, < 5% clay, occasional small cobbles, trace coarse gravel, large cobble at 15.7', damp. Till.
15	O	GC	0015					
	O	GC	0016	Seal: Bentonite chips				
	O	GC	1016					
	O	GT	0017				ST	17.2 to 18.2' - Dark gray (5Y 4/1) siltstone, hard, dry, few partings. Bedrock.
20							SH	18.2 to 19.0' - Gray to dark gray (5Y 5/1 to 4/1) shale, weathered, firm to slightly stiff, crumbly, slightly competent in places, slightly

GROUNDWATER

	DEPTH	HOUR	DATE
▽	9.00	10:45	12/16/92
▼	5.98		01/12/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0382

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20								foliated. Bedrock
							SH	19.0 to 31.5' - Dark gray (5Y 4/1) shale, stiff to hard, becoming hard and competent at 20.0', foliated, numerous partings and laminations, highly fossiliferous zones, carbonaceous, contains montmorillonite clays, limestone lense/interbed at 25.4 to 25.6' and at 30.4 to 30.6'. Bedrock.
	O	GT	0023	Filter Pack: 20/40 quartz sand				
25				Screen: Stainless steel, 4"				
30								
							LS	31.5 to 33.3' - Very dark gray (5Y 3/1) limestone, very hard, massive, fossiliferous, partially crystalline, intermittant partings of shale, no visible fractures. Bedrock.
							SH	33.3 to 35.0' - Dark gray (5Y 4/1) shale, hard, laminated in places, numerous partings, fossiliferous, carbonaceous. Bedrock.
35								Total Depth = 35.0'.
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	9.00	10:45	12/16/92
▼	5.98		01/12/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0393
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596694.53
Date Started	11/19/92	**East (ft)**	1495024.89
Date Completed	1/5/93	**Ground Surface Elev. (ft)**	705.02
Logged By	E.LARSEN/T.FRINAK	**Top of Casing Elev. (ft)**	706.88
Checked By	T.THARP/E.LARSEN	**Total Depth (ft)**	50.0

Comments: Telescoped monitoring well installation. Located approximatley 25 ft. south of piezometer P003 in the barrow ditch bordering the western edge of the site sanitary landfill.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 0.7' - Grayish brown (10YR 5/2) clayey silt and sand, roots. Topsoil.
							FL	0.7 to 2.5' - Yellowish brown (10YR 5/4) silty gravelly sand, very fine to fine grained, 50% sand, 20% silt, 20% gravel, 10% clay, dark gray to black stained area at 2.40 to 2.45'. Fill. 2.5 to 3.0' - Dark grayish brown (10YR 4/2) sandy silt, 50% silt, 20 - 30% fine grained sand 10% clay, 10 - 20% gravel. Fill.
				Backfill: Cement and bentonite grout			NR	3.0 to 10.0' - No recovery
5	O	GC	0005					
10							FL	10.0 to 10.6' - Dark grayish brown (10YR 4/2) sandy silt, 50% silt, 20 - 30% fine grained sand, 10 - 20% gravel, 10% clay. Fill. 10.6 to 12.0' - Dark yellowish brown (10YR 4/4) sand, well sorted, minor gravel, trace silt, damp. Fill. 12.0 to 13.2' - Pale brown (10YR 6/3) sand and gravel, minor silt. Fill. 13.2 to 15.8' - Silty, gravelly sand, very fine grained, moist, slightly firm, dark brown to black staining on sand grains and gravels. Fill.
	O	GC	0014					
15								15.8 to 18.0' - Brown (10YR 5/3) sand, very fine to coarse grained, loose, pockets of silt, damp. Fill.
	O	GC	0018					18.0 to 18.4' - Silty, gravelly sand, very fine grained, moist, slightly firm, dark brown to black staining on sand grains and gravels. Fill.
20							TI	18.4 to 25.7' - Dark gray (10YR 4/1) sandy, gravelly silt, sand is primarily very fine grained with a few very coarse grains, mostly fine

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.20	10:55	11/19/92
▽	9.78		01/09/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0393

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20								to medium gravel, slightly firm, slightly to moderately plastic, 20 to 25% gravel, 10-15% clay, clay content increases to 25% in places. Till.
	O	GC	0021	Casing: Stainless steel, 4"				
				Backfill: Cement and bentonite grout				
25							GP	25.7 to 26.5' - Gravels and cobbles, some sand, minor silt, cobbles up to 0.35' in diameter, saturated. Outwash.
	O	GC	0027				SP-GP	26.5 to 29.2' - Light yellowish brown (10YR 6/4) sand and gravel, poorly sorted, occasional large cobbles, loose, saturated. Outwash.
30							SP	29.2 to 31.4'- Brown (10YR 5/3) sand, predominantly medium to coarse grained, well sorted, few zones of medium to large gravel, loose, wet. Outwash.
							GP	31.4 to 36.5' - Brown to dark brown (10YR 4/3) sandy gravel, fine to very coarse grained sand, fine to coarse gravel, some medium to large cobbles, trace silt, loose, wet. Outwash.
35	O	GC	0035	Seal: Bentonite chips				
							GM-GP	36.5 to 39.0' - Yellowish brown (10YR 5/4) silty, sandy gravel, very fine to very coarse grained sand, fine to coarse gravel, numerous large cobbles, loose, very moist to wet. Outwash.
	O	GC	0039				ST-LS	39.0 to 40.0' - Gray to dark gray (2.5Y 6/0 - 4/0) siltstone, calcareous, shaley laminations and limestone interbeds. Bedrock.
40								40.0 to 40.5' - Limestone.
								40.5 to 45.0' - Greenish gray siltstone, calcareous, competent.
				Filter Pack: 20/40 quartz sand				
				Screen: Stainless steel, 4"				
45								45.0 to 45.3' - Siltstone, calcareous.
								45.3 to 45.6' - Limestone, fossiliferous.
								45.6 to 46.4' - Siltstone, calcareous, locally fossiliferous.

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.20	10:55	11/19/92
▼	9.78		01/09/93

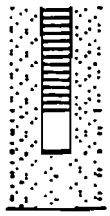
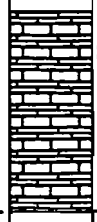
WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0393

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
	O	GT	0048	Backfill: 20/40 quartz sand			ST-LS	46.4 to 46.9' - Limestone, fossiliferous, fragmented, possible water producing zone. 46.9 to 47.1' - Siltstone, fossiliferous, strong partings. 47.1 to 47.8' - Siltstone, calcareous. 47.8 to 48.1' - Limestone, fossiliferous. 48.1 to 48.6' - Siltstone calcareous. 48.6 to 48.8' - Limestone, fossiliferous. 48.8 to 50.0' - Siltstone, calcareous. Total Depth = 50.0'.

50
55
60
65
70

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.20	10:55	11/19/92
▼	9.78		01/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0394
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596489.48
Date Started	11/20/92	**East (ft)**	1495003.44
Date Completed	12/3/92	**Ground Surface Elev. (ft)**	701.61
Logged By	E.LARSEN/T.FRINAK	**Top of Casing Elev. (ft)**	703.31
Checked By	T.THARP/E.LARSEN	**Total Depth (ft)**	65.0
Comments:	Telescoped monitoring well installation. Located approximately 100 ft. west of monitoring well 0305 and 50 ft. south of east-west access road.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4"			TS	0.0 to 0.7' - Dark brown (10YR 3/3) sand, silt, and gravel, minor clay, roots. Topsoil.
	O	GC	0003	Backfill: Cement and bentonite grout			FL	0.7 to 2.1' - Yellowish brown (10YR 5/6) silty, gravelly sand, very fine to coarse grained, fine to coarse gravel, firm, damp. Fill. 2.1 to 5.4' - Very dark grayish brown (10YR 3/2) silty sand, fine to very coarse grained, organic rich, 10% medium to coarse gravel, 5% clay, soft, damp. Fill.
5								5.4 to 7.1' - Dark yellowish brown (10YR 4/6) sand and gravel, non-homogeneous, poorly sorted, trace silt, soft, moist. Fill.
	O	GC	0009				GP	7.1 to 10.3' - Dark yellowish brown (10YR 4/4) sand and gravel, predominantly medium to coarse grained, poorly sorted fine to coarse gravel, few small cobbles, loose, damp to moist. Outwash.
10	O	GC	0011				TI	10.3 to 11.3' - Yellowish brown (10YR 5/6) sandy, gravelly silt, 50% silt, 20% very fine to medium grained sand, 20% gravel, 10% clay, slightly firm, moist. Till. 11.3 to 23.0' - Dark gray (10YR 4/1) sandy, gravelly silt, <10% clay, 40% silt, 20% very fine to very coarse gravel, 30% very fine grained sand, zone of limonite alteration from 22.7 to 23.0', firm, moist. Till.
15	O	GC	0015					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	20.50	09:10	11/20/92
▼	20.12		12/09/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id 0394

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020	Casing: Stainless steel, 4"			TI	
				Backfill: Cement and bentonite grout			GP	23.0 to 25.0 - Yellowish brown (10YR 5/4) sand and gravel, fine to very coarse grained sand, very fine to very coarse gravel, few medium cobbles, zones of minor silt, brownish yellow (10YR 6/8) limonite alteration of grains, spotty pyrolucite deposit at 25.0', very soft to loose, very moist to wet. Outwash. 25.0 to 42.6' - Light yellowish brown (10YR 6/4) sandy gravel, very fine to very coarse grained sand, very fine to very coarse gravel, numerous medium to large cobbles, poorly sorted, 10 - 15% silt, silty gravel zone at 27.0 to 28.4', very coarse gravel and large cobble zone at 36.3 to 38.8', loose, saturated. Outwash.
25	O	GC	0025					
	O	GC	0026					
30	O	GC	0030					
35	O	GC	0035					
40	O	GC	0040					
							TI	42.6 to 46.7' - Dark gray (10YR 4/1) gravelly, sandy silt, 40% silt, 30% very fine grained sand (some very coarse grained sand), 20% fine to medium gravel, 10% clay, slightly plastic, firm, very moist to moist. Till.
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	20.50	09:10	11/20/92
▼	20.12		12/09/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id 0394

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips			TI	46.7 to 50.1' - Dark gray to very dark gray (10YR 4/1 to 3/1) gravelly, sandy silt, zones of very coarse limestone gravel and cobbles, calcareous cementation of grains in places, up to 15% clay in zones and pockets, firm to stiff, dry to damp. Till.
50	O	GC	0050				SH	50.1 to 52.0' - Medium dark gray (N4) shale, hard, foliated, fissile, slightly crumbly, contains minor silt. Bedrock.
				Filter Pack: 20/40 quartz sand			LS	52.0 to 55.5' - Dark gray to brown limestone, fossiliferous, contains some greenish gray clay. Bedrock.
55				Screen: Stainless steel, 4"			GP	55.5 to 57.5' - Greenish gray sand and gravel, 90% gravel up to 4" in diameter (average diameter = 0.75"), well rounded to angular, matrix consist of silty sand.
				Backfill: 20/40 quartz sand			ST-LS	57.5 to 60.0' - Greenish gray calcareous siltstone with interbeds of limestone, siltstone is crumbly, fossiliferous limestone beds up to 2" thick. Bedrock.
60				Backfill: Native sediment			SH-LS	60.0 to 61.0' - Calcareous shale to shaley limestone, fossiliferous, prominant partings. Bedrock.
							LS	61.0 to 63.8' - Limestone, fossiliferous, competent. Bedrock.
65							SH	63.8 to 65.0' - Gray shale, contains layers of calcareous siltstone and shaley limestone, fossiliferous, cracks/fractures, wet, water producing zone. Bedrock.
70								Total Depth = 65.0'.

GROUNDWATER

	DEPTH	HOUR	DATE
▽	20.50	09:10	11/20/92
▼	20.12		12/09/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	0397
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596702.12
Date Started	12/6/92	**East (ft)**	1495024.40
Date Completed	12/6/92	**Ground Surface Elev. (ft)**	705.02
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	707.50
Checked By	ERIC LARSEN	**Total Depth (ft)**	30.0
Comments:	Well located approximately 8 ft. south of piezometer P003.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: Stainless steel, 4".			FL	0.0 to 1.1' - Brown clayey sand and gravel. Fill. 1.1 to 3.0' - Very dark gray (10YR 3/1) clayey silt to sand, sand is very fine grained, some limestone boulders > 6.0" in diameter, some roots. Fill. 3.0 to 8.0' - Dark grayish brown clayey sand with debris. Fill.
5	ST	GT	0004	Backfill: Cement and bentonite grout				
								8.0 to 10.0' - Brown to dark brown (10YR 4/3) sand, 80% sand, 15% clay/silt, 5% gravel. Fill.
	ST	GT	0009					10.0 to 11.4' - Brown clayey, sandy gravel, average gravel size is approximately 0.6" in diameter, black at contact with lower lithology. Fill.
10							TI	11.4 to 15.0' - Yellowish brown (10YR 5/4) sand, very fine grained, 75% sand, 15% silt/clay, 10% gravel. Till.
	ST	GT	0014					
15				Seal: Bentonite chips				15.0 to 23.8' - Dark grayish brown (10YR 4/2) silty sand, very fine grained, matrix consists of 70% very fine sand and 30% silt/clay, 10% gravel, angular to rounded, becoming brown and damp at 23.0'. Till.
				Filter Pack: 20/40 quartz sand				
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	25.00		01/09/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id 0397

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	ST	GT	0021	Screen: Stainless steel, 4".			TI	
	O	GC	0024				GP	23.8 to 27.3' - Yellowish brown (10YR 5/6) sandy gravel, 70% gravel, 20% sand, 10% silt/clay, wet. Outwash.
25							GP	27.3 to 27.8' - Brown gravel, average gravel size is approximately 0.2" in diameter. Outwash.
	O	GC	0028				SW	27.8 to 30.0' - Brown gravelly sand, very coarse grained, fining upward. Outwash.
30								Total Depth = 30.0'.
35								
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	25.00		01/09/93

WESTON

PIEZOMETERS

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	P001
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596826.14
Date Started	11/8/92	**East (ft)**	1495086.63
Date Completed	11/9/92	**Ground Surface Elev. (ft)**	715.94
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	717.71
Checked By	ERIC LARSEN	**Total Depth (ft)**	50.0
Comments:	Piezometer located 25 ft. south of the overflow pond and 75 ft. east of the north-south access road.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			NR	0.0 to 1.5' - No recovery.
							FL	1.5 to 3.6' - Grayish brown (2.5Y 5/2) gravelly sand, very fine grained, 30% gravel, 60% sand, 10% silt and clay, loose, becoming more compact with wood and debris at 2.0 to 3.4', asphalt at 3.4 to 3.6'. Fill.
				Backfill: Cement and bentonite grout				3.6 to 5.0' - Dark grayish brown (2.5Y 4/2) to yellowish brown silty sand with gravel, very compacted, very fine grained. Fill.
5	O	GC	0005					5.0 to 6.0' - Yellowish brown (10YR 5/4) gravelly sand, predominantly very fine grained, 10% silt and clay, 70% sand, 20% gravel. Fill.
								6.0 to 10.0' - Dark yellowish brown (10YR 4/2) gravelly sand, predominantly very fine grained, compacted, 70% sand, 10% silt, 20% gravel up to 2.0" in diameter (average diameter = 0.7"). Fill.
10	O	GC	0010					10.0 to 15.0' - Yellowish brown (10YR 5/4) to light olive brown (2.5Y 5/4) gravelly sand, predominantly very fine grained, 10% silt/clay, 70% sand, 15 - 20% gravel. Fill.
15	O	GC	0015					15.0 to 17.5' - Light grayish brown (2.5Y 5/4) to dark grayish brown (2.5Y 4/2) gravelly sand, very fine grained, 10% silt/clay, 60% sand, 30% gravel up to 4.0" in diameter (average diameter = 0.5"), wood and black residue at 17.4 to 17.5'. Fill.
	O	GC	0018					17.5 to 18.5' - Very dark grayish brown (2.5Y 3/2) sand, predominantly very fine grained, 70% sand, 15% silt, 15% gravel (average diameter = 0.3"), few cobbles covered with black to grayish white coating, unit contains wood, wire, and glass. Fill.
							NR	18.5 to 20.0' - No recovery.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	36.50	15:25	11/08/92
▼	33.52		11/30/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P001

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20							NR	20.0 to 21.5' - No recovery
25	O	GC	0025				FL	21.5 to 23.8' - Dark grayish brown (10YR 4/2) gravelly sand, 15% clay/silt, 15% very fine grained sand, 50% coarse grained sand, 20% gravel, contains asphalt and glass. Fill. 23.8 to 25.0' - Olive gray (5Y 4/2) gravelly sand, predominantly very fine grained, slight plasticity, 60% sand, 15% clay, 25% gravel and debris (wire, glass, metal, old paint brush), damp. Fill. 25.0 to 28.0' - Yellowish brown to gray silt, sweet odor and sheen on water at 27.5', unit contains glass, wire, and metal. Fill.
	O	GC	0028	Seal: Bentonite chips			NR	28.0 to 30.0' - No recovery.
30							FL	30.0 to 30.6' - Olive brown clay with debris. Fill.
							GP	30.6 to 33.2' - Brownish yellow (10YR 6/6) sandy gravel with silt and clay, 25% silt/clay, 20% fine grained sand, 55% gravel up to 4.0" in diameter (average diameter = 1.6"). Outwash.
	O	GC	0033				NR	33.2 to 35.0' - No recovery.
35	O	GC	0036	Filter Pack: 20/40 quartz sand			GP	35.0 to 40.0' - Yellowish brown (10YR 5/6) sandy gravel, 70% gravel up to 3.0" in diameter (average diameter = 1.5"), 5% silt, 25% sand. Outwash.
	O	GC	1036	Screen: PVC, 2"				
40								40.0 to 47.0' - Yellowish brown (10YR 5/4) sandy gravel, 70% gravel up to 3.0" in diameter (average diameter = 0.4"). Outwash.
45	O	GC	0045	Backfill: Native sediment				

GROUNDWATER

	DEPTH	HOUR	DATE
▽	36.50	15:25	11/08/92
▼	33.52		11/30/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P001

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
	O	GC	0047	Backfill: Native sediment				
							ST	47.0 to 50.0' - Gray (10YR 5/1) siltstone, calcareous, contains limestone fragments and dark shaley laminations. Bedrock.
50								Total Depth = 50.0'.
55								
60								
65								
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	36.50	15:25	11/08/92
▼	33.52		11/30/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P002
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596827.93
Date Started	11/9/92	East (ft)	1495092.65
Date Completed	11/22/92	Ground Surface Elev. (ft)	715.94
Logged By	T.FRINAK/E.LARSEN	Top of Casing Elev. (ft)	717.70
Checked By	E.LARSEN/T.THARP	Total Depth (ft)	63.0

Comments: Piezometer located six feet west of piezometer P001. Telescoped completion - surface casing installed to top of bedrock (approximately 48.0 ft. below ground surface).

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 1.2' - Brown (10YR 5/3) sand, predominantly very fine grained, 15% silty clay, 70% sand, 15% gravel, moist. Fill. 1.2 to 3.0' - Dark grayish brown (2.5Y 4/2) gravelly sand, predominantly very fine grained, very compacted, 10% silt/clay, 70% sand, 20% gravel up to 1.5" in diameter (average diameter = 0.4"). Fill.
				Backfill: Cement and bentonite grout			NR	3.0 to 5.0' - No recovery.
5							FL	5.0 to 7.6' - Gravelly sand, very compacted, 10% silt/clay, 40% very fine grained sand, 30% sand, 20% gravel, contains bits of asphalt, glass and wood. Fill.
							NR	7.6 to 10.0' - No recovery.
10							FL	10.0 to 12.2' - Dark grayish brown (2.5Y 4/2) silty sand and gravel, sand is very fine grained, contains asphalt and wood. 12.2 to 14.6' - Light olive brown (2.5Y 5/3) sand, 10% silt/clay, 55% very fine grained sand, 15% sand, 20% gravel and debris, debris consists of asphalt and wood. Fill.
15							NR	14.6 to 15.0' - No recovery.
							FL	15.0 to 17.1' - Light olive brown (2.5Y 5/4) sand and gravel with yellowish brown and grayish brown silt/clay, < 10% very fine grained sand, 50% sand, 25% gravel, 25% debris including glass and wood, odor emitting from core (chlorinated solvent?). Fill. 17.1 to 17.8' - Very dark brown (2.5Y 3/2) sand and gravel, contains metal filings and wood debris. Fill. 17.8 to 19.0' - Light olive brown (2.5Y 5/4) sand and gravel, contains glass and asphalt debris. Fill.
20							NR	

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	34.43		11/30/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id P002

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Casing: PVC, 2"			NR	19.0 to 25.0' - No recovery.
				Backfill: Cement and bentonite grout				
25							FL	25.0 to 26.8' - Brown (2.5Y 5/3) sand, predominantly very fine grained, 20% silt/clay, 70% sand, 10% gravel, contains metal, glass and concrete. Fill. 26.8 to 28.1' - Dark grayish brown (2.5Y 4/2) clayey sand and gravel, solvent odor, contains charcoal. Fill. 28.1 to 30.0' - Brownish yellow (10YR 6/8) to dark grayish brown (2.5Y 4/2) clayey gravel, 60% gravel (average diameter = 2.0"), moist, prominant odor. Fill.
30							SP-GP	30.0 to 32.6' - Yellowish brown (10YR 5/4) to olive gray (5Y 4/2) sand and gravel, 15% clay/silt, 40% sand, 45% gravel up to 4.0" in diameter (average diameter = 2.0"), wet at 31.5'. Outwash.
							NR	32.6 to 35.0' - No recovery.
35	O	GC	0036				SP-GP	35.0 to 35.6' - Yellowish brown (10YR 5/4) to olive gray (5Y 4/2), sand and gravel, 15% clay/silt, 40% sand, 45% gravel up to 4.0" in diameter (average diameter = 2.0"). Outwash.
							GP	35.6 to 38.9' - Yellowish brown (10YR 5/4) sandy gravel, 70% gravel up to 2.0" in diameter (average diameter = 0.4"), 25% sand, 5% silt/clay, wet. Outwash.
40							NR	38.9 to 41.0' - No recovery.
45							SP-GP	41.0 to 48.0' - Yellowish brown (10YR 5/4) sand and gravel, average diameter of gravel is 0.3" from 41.0 - 43.0' and 1.2" from 43.0 - 48.0'. Outwash.

GROUNDWATER

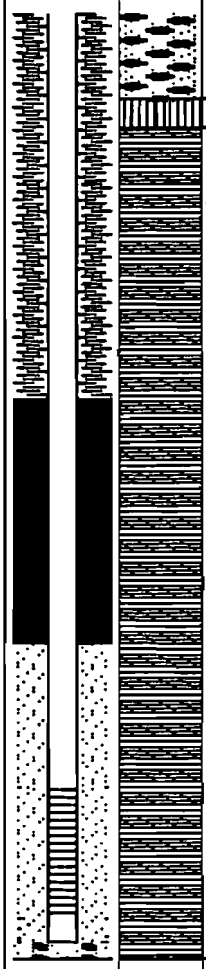
DEPTH	HOUR	DATE
34.43		11/30/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 3 of 3

Borehole/Well Id P002

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
	O	GC	0048	Casing: PVC, 2"			ST	48.0 to 48.5' - Gray siltstone, calcareous. Bedrock.
50				Backfill: Cement and bentonite grout			SH/LS	48.5 to 63.0' - Shale with interbedded limestone, shale is medium gray (N5), very stiff to hard, becoming increasingly competent at 51.0', laminated, numerous partings, few fossils, dry; limestone is medium dark gray (N4), very hard, partially crystalline, numerous fossils in places. Bedrock.
55				Seal: Bentonite chips				
60				Filter Pack: 20/40 quartz sand Screen: PVC, 2"				
65				Backfill: Native sediment				Total Depth = 63.0'.
70								



GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	34.43		11/30/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P003
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596707.87
Date Started	11/7/92	East (ft)	1495024.47
Date Completed	11/7/92	Ground Surface Elev. (ft)	705.02
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	707.51
Checked By	ERIC LARSEN	Total Depth (ft)	39.0
Comments:	Piezometer located along western berm of the site sanitary landfill, 153 ft. north of east-west access road and 42 ft. east of north-south access road.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 2.5' - Brown silty sand, very fine grained, 15% gravel. Fill.
							NR	2.5 to 3.5' - No recovery.
				Backfill: Cement and bentonite grout			FL	3.5 to 4.6' - Brown silty sand and gravel, sand is very fine grained. Fill. 4.6 to 5.0' - Gray sandy, clayey silt, 15% gravel, 20% very fine grained sand. Fill. 5.0 to 6.4' - Light brown (10YR 5/4) silty clay, 10% gravel. Fill. 6.4 to 7.8' - Grayish brown (10YR 5/2) silty clay, approximately 15% gravel (average diameter = 0.5"), contains metal debris. Fill. 7.8 to 9.2' - Dark brown to black fill material, contains metal debris and white precipitate. Fill. 9.2 to 10.0' - Light yellowish brown silty sand and gravel, sand is coarse grained, contains metal debris. Fill. 10.0 to 10.5' - Yellowish brown silty, clayey sand and gravel. Fill.
5	O	GC	0005					
	O	GC	0006					
10							SP-GP	10.5 to 12.5' - Light brownish gray (2.5Y 6/2) sand and gravel, poorly sorted, 35% gravel up to 2.5" in diameter (average diameter = 0.5"). Outwash.
							TI	12.5 to 15.0' - Yellowish brown (10YR 5/4) silty sand, 10% clay, 20% silt, 50% fine grained sand, 5% coarse sand, 15% gravel (average diameter = 0.3"). Till.
15	O	GC	0015					15.0 to 15.5' - Yellowish brown (10YR 5/4) silty, gravelly sand, 10% clay, 20% silt, 40% fine grained sand, 30% gravel. Till.
	O	GC	0016					15.5 to 15.8' - Pale brown (10YR 7/4) silty sand and gravel, 40% gravel. Till.
	O	GC	1016					15.8 to 20.0' - Brown (10YR 4/3) silty sand with gravel, competent, 10% clay, 30% silt, 30% fine grained sand, 15% sand, 15% gravel up to 2.8" in diameter (average diameter = 0.4"). Till.
				Seal: Bentonite chips				
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	26.05	11:45	11/07/92
▼	22.94		11/30/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P003

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0021	Filter Pack: 20/40 quartz sand Screen: PVC, 2"			TI	20.0 to 23.8' - Dark gray (10YR 4/1) gravelly sand, low plasticity, 10% clay, 10% silt, 30% fine grained sand, 20% sand, 30% gravel (average diameter = 0.6"). Till. 23.8 to 24.4' - Dark yellowish brown (10YR 4/6) silty gravelly sand, < 5% clay, 20% silt, 30% fine grained sand, 30% sand, 20% gravel. Till.
25	O	GC	0026				SM-GM	24.4 to 25.0' - Pale brown silty sand and gravel, crumbly, approximately 40% gravel up to 3.0" in diameter (average diameter = 0.8"). Outwash.
							SP-GP	25.0 to 30.0' - Yellowish brown (10YR 5/6) sand and gravel, 60% gravel up to 4.0" in diameter (average diameter = 1.0"), wet. Outwash.
30	O	GC	0032					30.0 to 34.5' - Yellowish brown (10YR 5/3) sand and gravel, 40% sand, 60% gravel up to 1.4" in diameter (average diameter = 0.4"). Outwash. 34.5 to 35.0' - Yellowish brown (10YR 5/3) sand and gravel, 30% coarse grained sand, 70% gravel up to 3.0" in diameter (average diameter = 1.2"), wet. Outwash.
35	O	GC	0037	Backfill: 20/40 quartz sand			GP	35.0 to 37.0' - Brown (10YR 6/4) sandy gravel, 30% coarse grained sand, 70% gravel up to 4.0" in diameter, (average diameter = 1.5"). Outwash.
							ST	37.0 to 39.0' - Gray siltstone, calcareous, dark gray shaley laminations and limestone interbeds.
40								Total Depth = 39.0'.
45								

GROUNDWATER

DEPTH	HOUR	DATE
26.05	11:45	11/07/92
22.94		11/30/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	P004
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596687.67
Date Started	11/10/92	**East (ft)**	1495330.25
Date Completed	11/18/92	**Ground Surface Elev. (ft)**	752.53
Logged By	T.FRINAK/E.LARSEN	**Top of Casing Elev. (ft)**	754.54
Checked By	E.LARSEN/T.THARP	**Total Depth (ft)**	63.5

Comments: Piezometer located on east side of lined landfill. Telescoped completion - surface casing installed to top of basal landfill liner (approximatley 31.5 ft. below ground surface).

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			TS	0.0 to 0.9' - Grayish brown (10YR 5/2) to brown (10YR 5/3) topsoil.
							FL	0.9 to 5.0' - Grayish brown sand with clay and silt, very competent, 15% clay/silt, 60% very fine grained sand, 5 - 10% sand, 5 - 10% gravel up to 2.0" in diameter (average diameter = 0.5"). Landfill cap.
				Backfill: Cement and bentonite grout				
5	O	GC	0005					5.0 to 10.0' - Gray clayey, silty, sandy gravel, 20 - 30% clay, 30% silt to very fine grained sand, 40% gravel/debris (plastic, wood, metal, and glass). Fill.
10	O	GC	0010					10.0 to 10.3' - Grayish brown clayey sand, very fine grained, contains debris.
	O	GC	0011					10.3 to 11.3' - Dark gray clayey sand with gravel, sand is very fine grained, contains debris, wet. Fill.
							NR	11.3 to 15.0' - No recovery.
15							FL	15.0 to 19.0' - Gray to dark gray clayey, silty sand with gravel, sand is very fine grained, contains debris, moist. Fill.
								19.0 to 19.4' - Greenish gray clay, very plastic, damp. Fill.
								19.4 to 20.0' - Dark gray fill, contains debris.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	42.70	07:47	11/18/92
▼	29.24		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id P004

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020	Casing: PVC, 2"			FL	20.0 to 25.0' - Dark grayish brown (10YR 4/2) to light olive brown (2.5Y 4/2) clayey, gravelly sand, very fine grained, 20 - 30% gravel, contains debris (orange boot covers, paper, glass, metal). Fill.
				Backfill: Cement and bentonite grout				
25	O	GC	0025					25.0 to 30.0' - Dark grayish brown (2.5Y 4/2) clayey, gravelly sand, very fine grained, 20 - 30% gravel, contains debris (rubber, glass, wire, paper). Fill.
	O	GC	1025					
30	O	GC	0030					30.0 to 31.5' - Dark gray gravel, abundant debris (metal, copper wire, glass, plastic). Fill.
	O	GC	0031					31.5 to 39.0' - Brownish yellow (10YR 6/6) sand with silt and clay, 20% silt/clay, 50% very fine grained sand, 20% sand, 10% gravel, uniform color and consistancy, contains layers and pockets of dark gray fill material, areas of dark brown to black staining, and scattered debris (metal, plastic). Basal landfill liner.
35	O	GC	0035					
	O	GC	0038					
40	O	GC	0040				TI	39.0 to 50.1' - Olive brown (2.5Y 4/4) gravelly silt, 50% silt, 10% very fine grained sand, 30% fine to coarse gravel, 10% clay, increasing to 25% at 44.0', layered textile at 39.0', soil is stained dark grayish brown (2.5Y 4/2) from 39.0 to 39.6'. Till.
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	42.70	07:47	11/18/92
▼	29.24		11/24/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P004

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips				
50	O	GC	0050				ST-ML	50.1 to 51.0' - Pale brown (10YR 6/3) siltstone/compacted silt, soft to stiff, crumbly, trace very fine gravel. Weathered bedrock.
				Filter Pack: 20/40 quartz sand			LS	51.0 to 52.9' - Light gray to gray (10YR 6/1) limestone, hard, trace fossils, wet along fractures. Bedrock.
				Screen: PVC, 2"			ST-SH	52.9 to 55.0' - Gray (10YR 6/1) siltstone/shale, stiff to slightly hard, slightly foliated, wet in places. Bedrock.
55							SH	55.0 to 56.0' - Gray to dark gray (10YR 5/1 to 4/1) shale, some silty clay, trace of very fine grained sand, soft to stiff, damp to moist, occasional calcareous stringers. Bedrock.
							SH-LS	56.0 to 59.0' - Gray (10YR 6/1 - 5/1) shale, stiff to hard, occasional slight foliation, intermittant fossiliferous limestone lenses or layers, dry. Bedrock.
60							SH	59.0 to 63.5' - Dark gray (2.5Y 4/0) shale, stiff to hard, fissile, foliated. Bedrock.
				Backfill: Native sediment				
65								Total depth = 63.5'.
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	42.70	07:47	11/18/92
▼	29.24		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P005
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596695.30
Date Started	11/21/92	East (ft)	1495128.04
Date Completed	11/21/92	Ground Surface Elev. (ft)	737.00
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	738.67
Checked By	TOM THARP	Total Depth (ft)	67.0

Comments: Piezometer located near southern end of upper bench on site sanitary landfill, approximately 75 ft. north of piezometer P006 and 175 ft. south of southern edge of overflow pond.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 0.9' - Yellowish brown (10YR 5/4) silty sand, very fine to medium grained, soft, minor gravel, numerous roots, damp. Fill.
	O	GC	0003					0.9 to 17.2' - Yellowish brown to dark brown (10YR 5/6 to 3/3) sandy gravelly silt, firm, 40% silt, 25% very fine to medium grained sand, 30% fine to very coarse gravel, 5% clay, few large cobbles, mostly dry, no debris. Fill.
5				Backfill: Cement and bentonite grout				
	O	GC	0009					
10								
15								
	O	GC	0018					17.2 to 36.6' - Yellowish brown (10YR 5/4) silty, gravelly sand, firm, sand is very fine to very coarse grained, poorly sorted, very fine to medium gravel, 30% silt, 25% gravel, 50% sand, < 5% clay, dry to damp, spotty dark brown to black stringer at 21.1 to 22.2', increase in gravel content (35%) at 21.8' to 22.7',
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	58.90	15:45	11/21/92
▼	55.12		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id P005

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Casing: PVC, 2"			FL	pocket of dark brown clayey silt at 25.2 to 25.4', increase in clay (15%) and silt (45%) from 30.6 to 31.5', zone of black staining and charred material at 31.9 to 32.3', increase in medium to coarse gravels at 31.5 to 32.5'. Fill.
	O	GC	0022					
				Backfill: Cement and bentonite grout				
25								
	O	GC	0029					
30								
	O	GC	0032					
35								
	O	GC	0037					36.6 to 40.0' - Yellowish brown (10YR 5/4) sandy silt with gravel, contains abundant very dark gray to black (10YR 3/1 to 2/1) debris (wood, charred material, wire, paper, fabric). Fill.
40								40.0 to 43.5' - Olive gray (5Y 5/2) clay, highly plastic, some silt, trace gravel, occasional small cobble, moist, pockets and zones of dark brown staining and debris (including wire, metal, paper, cloth, wood chips). Fill.
	O	GC	0043					43.5 to 50.0' - Light olive gray to olive gray (5Y 6/2 to 5/2) heterogeneous mixture of silt, sand, gravel and cobbles, loose, damp to moist, trace metal and paper debris at 45.0 to 45.2', spotty dark brown staining in places, layer of dark gray material at 49.0', zone of charred material at 49.7 to 50.0'.
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	58.90	15:45	11/21/92
▼	55.12		11/24/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P005

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips				
	O	GC	0049					
50				Filter Pack: 20/40 quartz sand			FL	50.0 to 54.0' - Heterogeneous mixture of silt, sand, gravel, cobbles, and boulders, loose, poorly sorted, dry to damp, limestone boulder at 52.7 - 53.2'. Fill.
				Screen: PVC, 2"				
55	O	GC	0055				GM-GP	54.0 to 63.2' - Light yellowish brown (2.5Y 6/4) silty, sandy gravel, fine to very coarse grained sand, very fine to very coarse gravel, numerous large cobbles, poorly sorted, loose, saturated. Outwash.
	O	GC	0056					
60								
	O	GC	0063				ML	63.2 to 63.5' - Light brownish gray (2.5Y 6/2) clayey silt, firm, some very fine to fine gravel, minor very fine to fine sand, damp.
				Backfill: Native sediment			SH	63.5 to 65.5' - Dark gray (2.5Y 4/0) shale, weathered, slightly stiff, non-competent, friable, slightly foliated. Weathered bedrock.
65								65.5 to 67.0' - Dark gray (2.5Y 4/0) shale, stiff to hard, mostly competent, foliated, moist, intermittant limestone clasts and lenses, clay filling fractures and voids. Bedrock.
								Total Depth = 67.0'
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	58.90	15:45	11/21/92
▼	55.12		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	P006
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596559.47
Date Started	10/25/92	**East (ft)**	1495115.86
Date Completed	10/25/92	**Ground Surface Elev. (ft)**	704.10
Logged By	ERIC LARSEN	**Top of Casing Elev. (ft)**	706.01
Checked By	TOM THARP	**Total Depth (ft)**	35.0
Comments:	Piezometer located on the south side of the site sanitary landfill, 45 ft. directly east of monitoring well 0063.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			TS	0.0 to 0.3' - Topsoil.
							FL	0.3 to 1.4' - Brown (10YR 4/3) clayey silt with gravel, coarse to very coarse limestone gravel, firm, moist, scattered roots. Fill. 1.4 to 11.1 ' - Dark grayish brown (10YR 4/2) silty clay, minor medium to coarse grained sand, trace coarse gravel, occasional cobble, soft, moist. Fill.
				Backfill: Cement and bentonite grout				
5	O	GC	0005					
	O	GC	0007					
10	O	GC	0010					
							GP	11.1 to 21.6' - Light yellowish brown (10YR 6/4) sandy gravel, very fine to very coarse grained sand, fine to coarse gravel, subangular to subrounded, poorly sorted, trace silt, damp to moist. Outwash.
15	O	GC	0015					
	O	GC	0016					
	O	GC	1016	Seal: Bentonite chips				
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.70	13:40	10/25/92
▼	22.02		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id P006

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Filter Pack: 20/40 quartz sand				
				Screen: PVC, 2"			SM-SP	21.6 to 33.6' - Brown (10YR 4/3) silty, gravelly sand, very fine to coarse grained, fine to very coarse gravel, few large cobbles, poorly sorted, minor clay in pockets of silt, moist becoming slightly wet at 24.0', saturated at 24.7'. Outwash.
25	O	GC	0025					
30	O	GC	0031					
				Backfill: Native sediment				
	O	GC	0034				ML	33.6 to 34.3' - Olive brown (2.5Y 4/4) sandy, gravelly silt, very fine to coarse grained sand, very fine to fine gravel, firm, damp.
35							SH	34.3 to 35.0' - Dark gray (2.5Y 4/0) shale, hard, crumbly, fissile, chevron folds, lenses or clasts of cherty limestone or dolomite, contains approximately 20% silt. Bedrock.
								Total depth = 35.0'.
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.70	13:40	10/25/92
▼	22.02		11/24/92

WESTON

GEOLOGIC LOG — MOUND PLANT

Project Manager: William Little

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P007
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	597073.36
Date Started	10/22/92	East (ft)	1494987.45
Date Completed	10/23/92	Ground Surface Elev. (ft)	703.58
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	705.74
Checked By	TOM THARP	Total Depth (ft)	40.0

Comments: Piezometer located 10 ft. west of monitoring well 0046, near the north-west corner of the overflow pond.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			TS	0.0 to 0.8' - Silty sand, very fine grained, roots. Topsoil.
							FL	0.8 to 3.7' - Very dusky red (10R 2.5/2) silty sand, very fine grained, root fragments, organic material, minor limestone fragments up to 0.15' in diameter. Fill.
5	O	GC	0005	Backfill: Cement and bentonite grout			ML	3.7 to 10.3' - Brown to dark brown (10YR 4/3) clayey silt, slightly plastic.
10							SM	10.3 to 11.5' - Dark brown (10YR 3/3) silty sand with gravel, sand is very fine to medium grained, trace clay, subrounded fragments up to 0.1' in diameter, moist.
	O	GC	0013				SP	11.5 to 15.0' - Yellowish brown (10YR 5/4) gravelly sand, very fine to coarse grained, poorly sorted, some cobbles, calcareous gravel zone from 14.4 to 14.8', pockets of silt with minor clay. Outwash.
15							LS	15.0 to 15.4' - Limestone cobble or boulder, fossiliferous.
				Seal: Bentonite chips			SP	15.4 to 19.6' - Brownish yellow (10YR 6/6) gravelly sand, medium to coarse grained, poorly sorted, fine to coarse gravel, 10 - 15% cobbles up to 0.3' in diameter, moist. Outwash.
20							SM-	

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.20	11:10	10/23/92
▼	21.52		11/23/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P007

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020	Filter Pack: 20/40 quartz sand Screen: PVC, 2"			SC	19.6 to 20.5' - Light olive brown (2.5Y 5/4) silty, clayey sand with gravel, sand is fine to very coarse grained, some gravel to 0.2' in diameter, 20% cobbles to 0.3' diameter from 20.0 to 20.5'. Outwash.
							SP	20.5 to 25.0' - Light olive brown (2.5Y 5/4) gravelly sand, medium to coarse grained, gravels are subrounded, 5% cobbles. Outwash.
25	O	GC	0025					25.0 to 26.5' - Strong brown (7.5YR 4/6) gravelly sand, fine to medium grained, gravel up to 0.1' in diameter, trace clay, minor silt, areas of dark brown to black staining, saturated. Outwash.
	O	GC	0026				GP	26.5 to 27.7' - Yellowish brown (10YR 5/4) sandy gravel, sand is very fine to coarse grained, poorly sorted, fine to coarse gravel up to 0.15' in diameter, some silt, minor clay, saturated. Outwash.
							SM-SP	27.7 to 28.5' - Brown (10YR 5/3) silty, gravelly sand, very fine to medium grained, fine to coarse gravel, minor clay, some alteration on grains, wet. Outwash.
							SH	
30	O	GC	0030				TI	28.5 to 30.0' - Gray to dark gray (7.5YR 6/0 to 4/0) shale, laminated to fissile, hard. Remnant bedrock float.
	O	GC	0031				CL	30.0 to 30.8' - Light yellowish gray to light yellowish brown (2.5Y 6/2 to 6/4) clayey, silty gravel, fine to coarse gravels up to 0.1' diameter, moist. Till.
	O	GC	0033				ML	30.8 to 32.2' - Olive brown to dark gray (2.5Y 4/4 to 5/0) silty clay, dense, very firm, trace gravel, dry.
				Backfill: Native sediment			SH	32.2 to 34.0' - Light yellowish brown (2.5Y 6/4) clayey silt, minor fine to medium gravel, soft to firm, moist to wet.
35							CL	34.0 to 35.0' - Gray to dark gray (2.5Y 6/0 to 4/0) shale, laminated, hard, dry. 35.0 to 38.6' - Gray (5Y 5/1) silty clay, very firm to hard, pockets of clay, minor gravel, dry to damp.
							ST	38.6 to 40.0' - Gray (5Y 6/1) siltstone, crumbly, fissile, partings of shale. Bedrock.
40								Total depth = 40.0'.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	24.20	11:10	10/23/92
▼	21.52		11/23/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P008
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596683.60
Date Started	2/17/93	East (ft)	1494765.46
Date Completed	2/20/93	Ground Surface Elev. (ft)	698.68
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	700.52
Checked By	ERIC LARSEN	Total Depth (ft)	61.0
Comments:	Piezometer located on west access road, 405 ft. north of piezometer P013, and 275 ft. north of piezometer P009.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 0.9' - Dark brown (7.5Y 3/2) sandy gravel with silt and clay, 50% gravel, 30% sand, 20% clay/silt, odorous, wet. Fill.
	O	GC	0002				GP	0.9 to 14.0' - Light yellowish brown (10YR 6/4) sandy gravel, 60% gravel up to 3.0" in diameter, 30% fine grained sand, 10% silt, odorous, thin limonite banding at 10.0' and 13.5'. Outwash.
	O	GT	0004	Backfill: Cement and bentonite grout				
5								
	O	GC	0007					
				Seal: Bentonite chips				
10								
	O	GC	0011					
				Filter Pack: 20/40 quartz sand				14.0 to 21.2' - Yellowish brown (10YR 5/6) sandy gravel, 60 to 70% gravel, increased clay content, damp at 15.0'. Outwash.
15				Screen: PVC, 2"				
	O	GC	0019					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
∇	17.55	13:23	02/20/93
▼	15.00		03/07/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P008

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GT	0020					
	O	GC	0021				GP	21.2 to 25.0' - Sandy gravel, 20% sand, 75% gravel up to 2.0" in diameter (average diameter = 0.3"), 5% silt/clay, wet. Outwash.
	O	GC	1021					
25				Backfill: Native sediment			TI	25.0 to 26.0' - Dark yellowish brown (10YR 4/4) gravelly sand, 35% gravel, 55% very fine grained sand, 10% silt/clay, compact, dry. Till.
	O	GC	0027				GP	26.0 to 28.0' - Yellowish brown (10YR 5/4) gravel, 85% gravel up to 4.0" in diameter (average diameter = 0.8"), 15% sand/silt. Outwash.
30							NR	28.0 to 35.0' - No recovery.
35							GP	35.0 to 53.0' - Yellowish brown (10YR 5/4) gravel, 85% gravel up to 4.0" in diameter (average diameter = 0.8"), 15% sand/silt. Outwash.
40	O	GC	0040					
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	17.55	13:23	02/20/93
▼	15.00		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 3 of 3

Borehole/Well Id P008

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
50	O	GC	0048					
55	O	GC	0054	Backfill: Bentonite chips			TI	53.0 to 55.0' - Dark grayish brown (2.5Y 4/2) clayey sand, fine grained, 15% gravel, tight, dry. Till.
60	O	GT	0057				ST	55.0 to 61.0' - Gray to dark gray (2.5Y 5/0 to 4/0) calcareous siltstone with shaley partings, limestone interbeds < 1.0" thick at 56.2' and 57.3', dry. Bedrock.
65								Total Depth = 61.0'.
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	17.55	13:23	02/20/93
▼	15.00		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 4

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P009
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	596530.19
Date Started	2/22/93	East (ft)	1494774.76
Date Completed	2/23/93	Ground Surface Elev. (ft)	697.81
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	699.95
Checked By	ERIC LARSEN	Total Depth (ft)	81.0
Comments:	Piezometer located on west access road, 130 ft. north of piezometer P013, and 275 ft. south of piezometer P008.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 1.2' - Dark brown clayey sand and gravel with roots. Fill.
	O	GT	0002				SM-SP	1.2 to 2.4' - Brown silty gravelly sand, 30% gravel, odorous.
				Backfill: Cement and bentonite grout			GP	2.4 to 5.0' - Sand and gravel, 50% gravel, 40% very fine to fine grained sand, 10% silt/clay, odorous. Outwash.
5	O	GC	0005					5.0 to 13.5' - Brown sandy gravel, 70% gravel, 25% sand, 5% silt/clay. Outwash.
10	O	GC	0010					
	O	GC	1010					
								13.5 to 14.5' - Sandy gravel, 70% gravel, 20% sand, 10% clay. Outwash.
								14.5 to 15.0' - Sandy gravel, 60% gravel, 35% sand, 5% clay, dry. Outwash.
15	O	GC	0015				GP	15.0 to 25.0' - Brown gravel, 80% gravel, 15% very fine grained sand, 5% silt/clay, increasing clay at 19.0', wet at 19.0'. Outwash.
	O	GC	0019					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	14.87		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 4

Borehole/Well Id P009

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20				Casing: PVC, 2"				
	O	GT	0023					
				Backfill: Cement and bentonite grout				
25	O	GC	0025				GP	25.0 to 36.0' - Brown gravel, 80% gravel up to 2.0" in diameter (average diameter = 0.4"), 15% very fine grained sand, 5% silt/clay. Outwash.
30	O	GC	0030					
35							SP-GP	36.0 to 37.2' - Sand and gravel, competent, 50% gravel, 40% sand, 10% silt. Outwash.
							GP	37.2 to 41.0' - Sandy gravel, 70% gravel up to 3.0" in diameter (average diameter = 0.4"), 25% sand, 5% silt/clay. Outwash.
40	O	GC	0040					
							SP-GP	41.0 to 59.0' - Brown sand and gravel, little to no fines, well sorted, sand is very coarse grained, gravel is < 0.2" in diameter. Outwash.
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	14.87		03/07/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P009

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
				Seal: Bentonite chips			SP-GP	
50	O	GC	0050					
				Filter Pack: 20/40 quartz sand				
55	O	GC	0055	Screen: PVC, 2"				
	O	GC	0059				ML	59.0 to 63.0' - Gray clayey, gravelly silt with sand, very competent, sand is very fine grained, 30% gravel, angular to rounded, abundant wood fragments, some partially coalified at 62.0 to 63.0', contains clasts of limestone, fossils, and quartzose material. Alluvial deposit.
60								
	O	GC	0063	Backfill: Bentonite chips				63.0 to 71.0' - Green to greenish gray clayey, gravelly silt with sand, very competent, sand is very fine grained, 30% gravel, angular to rounded, contains limestone and some quartzose clasts, dry. Alluvial deposit.
	O	GT	0063					
65								
	O	GC	0067					
70								
								71.0 to 73.0' - Green to greenish gray clayey, gravelly silt with sand, very competent, sand is very fine grained, 30% gravel, angular, contains limestone clasts, dry. Alluvial deposit.

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼	14.87		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 4 of 4

Borehole/Well Id P009

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
75				Backfill: Bentonite chips			ML	73.0 to 76.0' - Greenish gray silt with siltstone clasts, dry, crumbly.
80							ST	76.0 to 81.0' - Siltstone, some thin beds of shell fragments. Bedrock.
								Total Depth = 81.0'.
85								
90								
95								

GROUNDWATER

DEPTH	HOUR	DATE
14.87		03/07/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 5

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	P013
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596370.54
Date Started	2/22/93	**East (ft)**	1494790.87
Date Completed	2/23/93	**Ground Surface Elev. (ft)**	697.72
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	699.87
Checked By	ERIC LARSEN	**Total Depth (ft)**	110.0

Comments: Piezometer located on west access road, 405 ft. south of piezometer P008, and 130 ft. south of piezometer P009.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 1.1' - Gravel. Fill.
							TI	1.1 to 7.1' - Dark brown (10YR 3/3) clayey silty sand, very fine grained, 15% gravel, competent. Till.
				Backfill: Cement and bentonite grout				
5	O	GC	0005					
	O	GC	0007				GP	7.1 to 15.0' - Light brown sandy gravel, 70% gravel, 25% sand, 5% silt/clay, dry. Outwash.
				Seal: Bentonite chips				
10								
	O	GT	0012					
				Filter Pack: 20/40 quartz sand				
				Screen: PVC, 2"				
15	O	GC	0015				GP	15.0 to 38.0' - Yellowish brown (10YR 5/4) gravel, 80-90% gravel, 10-20% sand/silt, becoming wet at 16.0 to 17.0'. Outwash.
	O	GC	0017					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.45	08:51	02/22/93
▼	12.76		03/06/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id: P013

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20							GP	
25	O	GC	0025	Backfill: Native sediment				
	O	GC	1025					
30	O	GC	0030					
35	O	GC	0035					
							TI	38.0 to 39.0' - Brown gravelly sand, very fine grained, competent, 25% gravel, 10% silt/clay. Till.
	O	GC	0039				GP	39.0 to 40.0' - Gravel, < 10% sand/silt, damp. Outwash. 40.0 to 42.0' - Gravel, coarse grained. Outwash.
40								
							SP-GP	42.0 to 50.0' - Sand and gravel, gravel is less than 0.4" in diameter, sand is very coarse grained, well sorted, trace silt/clay. Outwash.
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.45	08:51	02/22/93
▼	12.76		03/06/93

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P013

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
50	O	GC	0050	Backfill: Native sediment			SP-GP	50.0 to 69.0' - Sand and gravel, sand is very coarse grained, gravel up to 1.0" in diameter, trace silt/clay. Outwash.
	O	GT	0050					
55	O	GC	0055					
60	O	GC	0060					
65	O	GC	0065					
	O	GC	0069				SP	69.0 to 69.8'- Light brown sand, fine grained, well sorted. Outwash.
70							GC	69.8 to 74.0' - Gray clayey gravel, 60 to 70% gravel primarily consisting of limestone and some quartzose pebbles. Outwash.
	O	GC	0072					
	O	GC	1072					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.45	08:51	02/22/93
▼	12.76		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 4 of 5

Borehole/Well Id P013

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
75				Backfill: Native sediment			GP	74.0 to 75.0' - Light grayish brown gravel, 15% fine grained sand. Outwash. 75.0 to 77.0' - Brown gravel, gravels are up to 4.0" in diameter (average diameter = 0.6"). Outwash.
80	O	GC	0080				GP	77.0 to 83.5' - Brown sandy gravel, 60% gravel and cobbles up to 6.0" in diameter (average diameter = 1.2"), gravel consists of quartzose, basaltic, and limestone material, 30% sand, 10% silt/clay. Outwash.
							SP	83.5 to 85.0' - Brown sand, medium grained. Outwash.
85	O	GC	0085				SP/GP	85.0 to 86.4' - Greenish brown sand and gravel, 50% gravel, 40% sand, 10% clay/silt. Outwash.
							CL	86.4 to 86.9' - Green to greenish gray silty clay, very hard, competent, contains angular fossiliferous clasts and free fossils (Bryozoans).
							SP	
	O	GC	0088					86.9 to 87.4' - Brown sand, coarse grained.
90							CL	87.4 to 96.0' - Silty clay, very hard, competent, prominant laminations, contains angular limestone fragments and free fossils (Bryozoans), dry. Alluvial deposit.
	O	GC	0094					
95				Backfill: Bentonite chips				
	O	GC	0096				NR	96.0 to 105.0' - No recovery, change in drilling rate at 103.0'.

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.45	08:51	02/22/93
▼	12.76		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 5 of 5

Borehole/Well Id P013

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
100				Backfill: Bentonite chips			NR	
105							CL	105.0 to 106.0' - Brown clay to silty clay, contains very angular limestone clasts. Alluvial deposit.
							ST	107.0 to 110.0' - Gray siltstone, calcareous, shale partings. Bedrock.
110								Total Depth = 110.0'.
115								
120								
125								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	16.45	08:51	02/22/93
▼	12.76		03/06/93

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	P014
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	597187.84
Date Started	10/24/92	East (ft)	1495159.35
Date Completed	10/24/92	Ground Surface Elev. (ft)	714.72
Logged By	ERIC LARSEN	Top of Casing Elev. (ft)	717.33
Checked By	TOM THARP	Total Depth (ft)	45.0
Comments:	Piezometer located 25 ft. southeast of southeast retention basin near northern edge of overflow pond.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			TS	0.0 to 0.3' - Topsoil
							FL	0.3 to 2.0' - Dark yellowish brown (10YR 4/4) silt, slightly firm, minor clay, trace of fine to medium gravel, zones of limonite/hematite alteration, dry. Fill.
	O	GC	0003					2.0 to 6.6' - Yellowish brown (10YR 5/6) clayey silt, firm, minor fine to coarse gravels, slightly moist. Fill.
	O	GC	1003	Backfill: Cement and bentonite grout				
5								6.6 to 10.0' - Dark gray (10YR 4/1) to brown (10YR 5/3) clayey silt, very firm, medium to very coarse gravels up to 0.2' in diameter, moist. Fill.
10	O	GC	0010				TI	10.0 to 11.9' - Dark gray (10YR 4/1) to yellowish brown (10YR 5/4) gravelly silt, firm, fine to medium gravel, minor clay, trace of very fine grained sand, slightly moist. Till.
								11.9 to 15.0' - Very dark gray (10YR 3/1) gravelly silt, firm, medium to very coarse gravel, minor clay, trace of very fine grained sand, moist. Till.
15	O	GC	0015					15.0 to 26.7' - Very dark grayish brown (10YR 3/2) gravelly silt, firm, 35% clay from 23.0' to 26.7, few pockets of fine grained sand, moist. Till.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	35.60	15:13	10/24/92
▼	32.58		11/23/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id P014

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020					
25	O	GC	0025	Seal: Bentonite chips				
	O	GC	0027				TI	26.7 to 33.0' - Brown (10YR 5/3) to yellowish brown (10YR 5/6) gravelly silt, firm to slightly stiff, minor very coarse grained sand, fine to very coarse gravel, trace clay in upper portion, areas of hematite staining, calcareous at 29.8' and 32.1', increasing in silt/clay content at 32.5 to 33.0', dry to damp. Till.
30				Filter Pack: 20/40 quartz sand				
				Screen: PVC, 2"			GP	33.0 to 39.9' - Light yellowish brown (10YR 7/4) sandy gravel, soft to slightly firm, fine to very coarse grained sand, fine to medium gravel, trace silt, scattered limonite/hematite staining, damp, becoming wet at 36.0'. Outwash.
35	O	GC	0035					
	O	GC	0036					
	O	GC	0037					
								39.9 to 40.9' - Light yellowish brown (10YR 7/4) sandy gravel, firm to stiff, fine to very coarse grained sand, fine to coarse gravel, some silt, trace clay, scattered limonite/hematite staining, wet, becoming damp near base of unit. Outwash.
40	O	GC	0040					
				Backfill: Native sediment			ST	40.9 to 43.0' - Light gray (2.5Y 7/0) siltstone, hard, crumbly, dry. Bedrock.
							SH	43.0 to 45.0' - Dark gray (2.5YR 4/0) shale, hard, crumbly, fissile, chevron folds, dry. Bedrock.
45								Total depth = 45.0'.

GROUNDWATER

DEPTH	HOUR	DATE
35.60	15:13	10/24/92
32.58		11/23/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 3

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	P015
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596352.10
Date Started	10/26/92	**East (ft)**	1495271.70
Date Completed	10/26/92	**Ground Surface Elev. (ft)**	733.22
Logged By	ERIC LARSEN	**Top of Casing Elev. (ft)**	735.75
Checked By	TOM THARP	**Total Depth (ft)**	57.0

Comments: Piezometer located within the north-central portion of the spoils area, directly east of Mound production well 0071, and southeast of monitoring wells 0305/0309.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0				Casing: PVC, 2"			FL	0.0 to 10.0' - Dark yellowish brown (10YR 4/4) silt, clay, sand, and gravel, soft to firm, variably proportioned, occasional zones of large cobbles and boulders, dry. Fill.
				Backfill: Cement and bentonite grout				
5	O	GC	0005					
10	O	GC	0010					10.0 to 20.0' - Dark grayish brown (2.5Y 4/2) clayey silt, slightly firm, some fine to medium gravel, boulder at 13.1', moist. Fill.
	O	GC	0014					
15		GC	1014					
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	49.20	11:55	10/26/92
▼	46.92		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 3

Borehole/Well Id P015

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0020	Casing: PVC, 2"			FL	20.0 to 25.0' - Dark gray (5Y 4/1) clay and silt, sticky, soft, some fine to medium gravel, minor sand, pockets of sludge, scattered wood fragments, moist. Fill.
	O	GC	0022					
25				Backfill: Cement and bentonite grout			TI	25.0 to 40.0' - Brown (10YR 4/3) sandy gravelly silt, soft, very fine to fine grained sand with a few very coarse grains, very fine gravel with scattered very coarse fragments, roots, minor clay content, occasional limonite/hematite staining, dry. Till.
30								
	O	GC	0034					
35								
40				Seal: Bentonite chips			GM-GP	40.0 to 50.3' - Yellowish brown (10YR 5/4 to 5/6) silty, sandy gravel, soft, very fine to very coarse grained sand, very fine to very coarse gravel, many small to medium cobbles, poorly sorted, minor pockets of clay, increasing in fine to medium gravel from 48.8' to 50.3', damp, wet at 48.0', saturated at 49.2'. Outwash.
				Filter Pack: 20/40 quartz sand				
45	O	GC	0045					

GROUNDWATER

	DEPTH	HOUR	DATE
▽	49.20	11:55	10/26/92
▼	46.92		11/24/92

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id P015

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
	O	GC	0048	Filter Pack: 20/40 quartz sand			GM-GP	
50				Screen: PVC, 2"			SP	50.3 to 53.9' - Yellowish brown (10YR 5/4) sand, loose, predominantly coarse to very coarse grained, well sorted, minor very fine to fine gravel, trace silt, trace fine to medium grained sand, saturated. Outwash.
55	O	GC	0055	Backfill: Native sediment			GM-GP	53.9 to 55.0' - Yellowish brown (10YR 5/6) silty, sandy gravel, loose, fine to very coarse grained sand, fine to very coarse gravel, many large cobbles, poorly sorted, trace clay, saturated. Outwash.
	O	GC	0056				SH	55.0 to 57.0' - Gray to dark gray (7.5YR 6/0 to 4/0) shale, hard, slightly fossiliferous, 10 - 20% silt, some foliation, limonite staining along partings, dry. Bedrock.
60								Total Depth = 57.0'.
65								
70								

GROUNDWATER

	DEPTH	HOUR	DATE
▽	49.20	11:55	10/26/92
▼	46.92		11/24/92

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	Borehole/Well Id	B001
Drilling Method	ROTO SONIC	STATE PLANE COORDINATES	
Drilling Fluid	NONE	North (ft)	
Date Started	11/4/92	East (ft)	
Date Completed	11/4/92	Ground Surface Elev. (ft)	NA
Logged By	TIM FRINAK	Top of Casing Elev. (ft)	UNKNOWN
Checked By	ERIC LARSEN	Total Depth (ft)	40.0
Comments:	Exploratory boring located 30 ft. east of north-south access road and 3 ft. north of east-west road.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0							FL	0.0 to 0.8' - Pale brown (10YR 9/4) clayey sand and gravel. Fill. 0.8 to 1.4' - Black asphalt mixed with sand and gravel. Fill. 1.4 to 2.5' - Yellowish brown (10YR 3/4) clayey sand and gravel. Fill. 2.5 to 5.0' - Olive brown (2.5Y 4/4) clayey sand and gravel, abundant glass and metal debris. Fill.
5	O	GC	0005					5.0 to 6.1' - Olive brown clayey sand and gravel, contains glass, concrete at 5.8 to 6.1'. Fill.
	O	GC	0007				SM	6.1 to 7.5' - Brown (10YR 4/3) silty sand, 60% sand, 20% silt, 10% gravel, 10% clay. Outwash.
							SP	7.5 to 9.5' - Brown sand, coarse grained, 80% sand, 10% silt and clay, 10% gravel with average diameter of 0.5". Outwash. 9.5 to 10.0' - Pale yellow (2.5Y 7/4) sand, predominantly fine grained, 90% sand, > 5% gravel, < 5% silt. Outwash.
10							SP-GP	10.0 to 13.5' - Pale brown (10YR 6/3) sand and gravel, 10% silt, 40% sand, 50% gravel up to 3.0" in diameter. Outwash.
	O	GC	0014				SM-SP	13.5 to 14.2' - Pale brown silty, gravelly sand, 20% silt, 50% sand, 30% gravel, wet. Outwash.
15	O	GC	0015				TI	14.2 to 15.0' - Light yellowish brown (10YR 6/4) sandy silt, competent, weak plasticity, 60% silt and clay, 30% sand, 10% gravel. Till. 15.0 to 21.8' - Dark yellowish brown (10YR 4/4) sand, competent, < 10% silt, 50% very fine grained sand, 25% sand, 5% - 15% gravel up to 3.5" in diameter (average diameter = 0.5"). Till.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼			

WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id B001

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20							TI	21.8 to 22.2' - Gray (10YR 5/1) silty sand, zones of limonite alteration. Till.
								22.2 to 23.6' - Brown (10YR 5/3) sand, 20% silt and clay, 50% fine grained sand, 20% sand, 10% gravel, fossiliferous limestone fragments from 23.3 to 23.6'. Till.
	O	GC	0023					
	O	GC	1023				SP	23.6 to 25.0' - Brown (10YR 5/3) gravelly sand, 10% silt and clay, 10% fine grained sand, 50% sand, 30% gravel (average diameter = 0.12"), damp at 24.0'. Outwash.
25							GM-GP	25.0 to 26.9' - Olive yellow (2.5Y 6/6) silty, sandy gravel, sand is fine grained, 50% to 70% gravel. Outwash.
							CL	26.9 to 27.3' - Olive brown (2.5Y 5/4) silty clay with fine partings.
	O	GC	0028				SP-GP	27.3 to 30.0' - Olive yellow (2.5Y 6/6) sand and gravel, 10% silt, 50% sand, 40% gravel, wet at 28.1'. Outwash.
30							GP	30.0 to 31.2' - Sandy gravel, sand is very coarse grained, 30% sand, 70% gravel up to 3.5" in diameter (average diameter = 0.5"). Outwash.
								31.2 to 32.5' - Gravel, 10% coarse grained sand, 90% gravel up to 2.0" in diameter (average diameter = 0.5"). Outwash.
							GW	32.5 to 33.3' - Sandy gravel, 30% very coarse grained sand, 70% fine gravel up to 1.0" in diameter (average diameter = 0.2"), grading upward. Outwash.
							SP-GP	33.3 to 35.9' - Light yellowish brown (10YR 6/4) sand and gravel, sand is coarse grained, 80% gravel up to 3.0" in diameter (average diameter = 1.0"). Outwash.
35	O	GC	0035					35.9 to 36.6' - Light yellowish brown (10YR 6/4) sand and gravel, sand is coarse grained, gravel up to 1.5" in diameter (average diameter = 0.5"). Outwash.
							GW	36.6 to 37.6' - Sandy gravel, 30% very coarse grained sand, 70% gravel up to 1.0" in diameter (average diameter = 0.2"), grading upward. Outwash.
	O	GC	0038				SP-GP	
							ST-LS	37.6 to 38.4' - Sand and gravel, sand is very coarse grained, silty matrix, gravel up to 3.0" in diameter (average diameter = 1.4"). Outwash.
40								38.4 to 40.0' - Gray (5Y 5/1) siltstone, calcareous, contains limestone interbeds. Bedrock.
								Total depth = 40.0'.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼			

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	B002
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	
Date Started	11/3/92	**East (ft)**	
Date Completed	11/3/92	**Ground Surface Elev. (ft)**	UNKNOWN
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	NA
Checked By	ERIC LARSEN	**Total Depth (ft)**	25.0

Comments: Exploratory boring located west of monitoring well 0309 and south of east-west access road near Area 2. Groundwater level not recorded because boring was terminated before water table was penetrated.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0							FL	0.0 to 1.3' - Brown silt, 10% gravel up to 0.25' in diameter. Fill. 1.3 to 1.7' - Gray fossiliferous limestone boulder. Fill. 1.7 to 3.9' - Greenish gray clay and silt, pockets of gravel up to 2.0" in diameter. Fill. 3.9 to 5.0' - Dark brown (5YR 3/3) clayey sand, very fine grained, 10 - 20% clay, 80% sand. Fill. 5.0 to 8.1' - Dark brown clayey silt, approximately 10% gravel, rounded, minor limestone fragments < 4 mm in diameter. Fill. 8.1 to 9.1' - Brown (10YR 3/4) silty, clayey gravel, approximately 40 to 60% coarse gravel up to 1.0" in diameter, subangular to rounded. Fill. 9.1 to 10.0' - Brown gravelly clay, gravel is very coarse grained. Fill. 10.0 to 10.8' - Dark brownish gray (5YR 3/1) clayey, gravelly silt, 20% gravel up to 2.0 mm in diameter. Fill.
5	O	GC	0005					
10	O	GC	0010					
							SP-GP	10.8 to 11.9' - Brown to dark brown (10YR 4/4) sand and gravel, sand is very coarse grained, gravel up to 3.0" in diameter (average diameter = 4.0 mm), approximately 10% silt and clay. Outwash.
							SP	11.9 to 14.3' - Reddish brown (5YR 5/3) gravelly sand, medium to very coarse grained, poorly sorted, 20% gravel up to 3.0" in diameter, wet at 14.0'. Outwash.
15	O	GC	0015				Tl	14.3 to 15.5' - Yellowish brown (10YR 5/4) clayey, silty sand, fine to very coarse grained, poorly sorted, competent, 60% sand, 30% silt/clay, 10% gravel up to 1.0" in diameter. Till. 15.5 to 18.0' - Grayish brown (10YR 5/2) sandy, clayey silt, 70% silt and clay, 30% sand, 10% gravels up to 1.0" in diameter. Till.
	O O	GC GC	0018 1018				SM-SP	18.0 to 20.0' - Pale brown (10YR 6/3) silty, gravelly sand, < 10% clay, 20% gravel up to 2.0" in diameter, zones of very fine sand, thin zone of limonite at contact with till (18.0'). Outwash.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
▽			
▼			

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id B002

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20							SM-GM	20.0 to 23.2' - Yellowish brown (10YR 5/6) silty sand and gravel, 55% very fine grained sand and silt, < 5% clay, 40% gravel. Outwash.
	O	GC	0023				SP	23.2 to 24.4' - Yellowish brown (10YR 5/4) sand, medium grained, rounded, moderately to well sorted, 10% silt. Outwash.
25							SM-GM	24.4 to 25.0' - Yellowish brown (10YR 5/6) silty sand and gravel, sand is very fine grained. Outwash.
30								Total Depth = 25.0'. Boring was terminated because drill bit was lost in hole. Borehole log will begin at 25.0' for offset boring B003.
35								
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	B003
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	
Date Started	11/3/92	**East (ft)**	
Date Completed	11/3/92	**Ground Surface Elev. (ft)**	UNKNOWN
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	NA
Checked By	ERIC LARSEN	**Total Depth (ft)**	41.5

Comments: Exploratory boring offset approximately 5 ft. east of boring B002. Boring was drilled to 25.0 ft., then cored, lithologically logged, and sampled from 25.0 to 41.5 ft.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0								10.0 - 25.0' - No core sample collected.
5								
10								
15								
20								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id B003

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20								
25	O O	GC GC	0026 1026				SP	25.0 to 27.5' - Yellowish brown (5YR 5/4) gravelly sand, medium grained, 30% gravel, wet/saturated. Outwash. 27.5 - 29.2' - Yellowish brown gravelly sand, 60% sand, 30% gravel, 10% silt and clay, wet. Outwash.
							ML	29.2 to 29.7' - Olive (5Y 5/3) clayey silt, laminated.
30							GP	29.7 to 35.0' - Yellowish brown gravel, 80% gravel up to 3.5" in diameter (average diameter 0.75"), 17% sand, 3% silt/clay, wet/saturated. Outwash.
35	O O	GC GC	0035 0036				GC-GM	35.0 to 37.1' - Yellowish brown sand and gravel with clay and silt, sand is very fine to coarse grained, 50% gravel. Outwash.
40							ST	37.1 to 41.5' - Light gray (2.5Y 7/1) siltstone, calcareous, crumbly, weak parting, irregular, dark gray shaley laminations, fragments of calcareous paleo cocquina (biomicrite). Bedrock.
45								Total Depth = 41.5'. Borehole caved at 22.0' preventing water level measurement, estimated water table at 26.0'.

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

EXPLORATORY BORINGS

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	B001
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596574.00
Date Started	11/4/92	**East (ft)**	1495011.00
Date Completed	11/4/92	**Ground Surface Elev. (ft)**	705.00
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	NA
Checked By	ERIC LARSEN	**Total Depth (ft)**	40.0
Comments:	Exploratory boring located 30 ft. east of north-south access road and 3 ft. north of east-west road. Above coordinates and elevation estimated.		

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0							FL	0.0 to 0.8' - Pale brown (10YR 9/4) clayey sand and gravel. Fill. 0.8 to 1.4' - Black asphalt mixed with sand and gravel. Fill. 1.4 to 2.5' - Yellowish brown (10YR 3/4) clayey sand and gravel. Fill. 2.5 to 5.0' - Olive brown (2.5Y 4/4) clayey sand and gravel, abundant glass and metal debris. Fill.
5	O	GC	0005					5.0 to 6.1' - Olive brown clayey sand and gravel, contains glass, concrete at 5.8 to 6.1'. Fill.
	O	GC	0007				SM	6.1 to 7.5' - Brown (10YR 4/3) silty sand, 60% sand, 20% silt, 10% gravel, 10% clay. Outwash.
							SP	7.5 to 9.5' - Brown sand, coarse grained, 80% sand, 10% silt and clay, 10% gravel with average diameter of 0.5". Outwash. 9.5 to 10.0' - Pale yellow (2.5Y 7/4) sand, predominantly fine grained, 90% sand, > 5% gravel, < 5% silt. Outwash.
10							SP-GP	10.0 to 13.5' - Pale brown (10YR 6/3) sand and gravel, 10% silt, 40% sand, 50% gravel up to 3.0" in diameter. Outwash.
	O	GC	0014				SM-SP	13.5 to 14.2' - Pale brown silty, gravelly sand, 20% silt, 50% sand, 30% gravel, wet. Outwash.
15	O	GC	0015				TI	14.2 to 15.0' - Light yellowish brown (10YR 6/4) sandy silt, competent, weak plasticity, 60% silt and clay, 30% sand, 10% gravel. Till. 15.0 to 21.8' - Dark yellowish brown (10YR 4/4) sand, competent, < 10% silt, 50% very fine grained sand, 25% sand, 5% - 15% gravel up to 3.5" in diameter (average diameter = 0.5"). Till.
20								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG

MOUND PLANT

Project Manager: William Little

Borehole/Well Id B001

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20							TI	21.8 to 22.2' - Gray (10YR 5/1) silty sand, zones of limonite alteration. Till.
								22.2 to 23.6' - Brown (10YR 5/3) sand, 20% silt and clay, 50% fine grained sand, 20% sand, 10% gravel, fossiliferous limestone fragments from 23.3 to 23.6'. Till.
	O	GC	0023					
	O	GC	1023				SP	23.6 to 25.0' - Brown (10YR 5/3) gravelly sand, 10% silt and clay, 10% fine grained sand, 50% sand, 30% gravel (average diameter = 0.12"), damp at 24.0'. Outwash.
25							GM-GP	25.0 to 26.9' - Olive yellow (2.5Y 6/6) silty, sandy gravel, sand is fine grained, 50% to 70% gravel. Outwash.
							CL	26.9 to 27.3' - Olive brown (2.5Y 5/4) silty clay with fine partings.
	O	GC	0028				SP-GP	27.3 to 30.0' - Olive yellow (2.5Y 6/6) sand and gravel, 10% silt, 50% sand, 40% gravel, wet at 28.1'. Outwash.
30							GP	30.0 to 31.2' - Sandy gravel, sand is very coarse grained, 30% sand, 70% gravel up to 3.5" in diameter (average diameter = 0.5"). Outwash.
								31.2 to 32.5' - Gravel, 10% coarse grained sand, 90% gravel up to 2.0" in diameter (average diameter = 0.5"). Outwash.
							GW	32.5 to 33.3' - Sandy gravel, 30% very coarse grained sand, 70% fine gravel up to 1.0" in diameter (average diameter = 0.2"), grading upward. Outwash.
35	O	GC	0035				SP-GP	33.3 to 35.9' - Light yellowish brown (10YR 6/4) sand and gravel, sand is coarse grained, 80% gravel up to 3.0" in diameter (average diameter = 1.0"). Outwash.
								35.9 to 36.6' - Light yellowish brown (10YR 6/4) sand and gravel, sand is coarse grained, gravel up to 1.5" in diameter (average diameter = 0.5"). Outwash.
							GW	36.6 to 37.6' - Sandy gravel, 30% very coarse grained sand, 70% gravel up to 1.0" in diameter (average diameter = 0.2"), grading upward. Outwash.
	O	GC	0038				SP-GP	
							ST-LS	37.6 to 38.4' - Sand and gravel, sand is very coarse grained, silty matrix, gravel up to 3.0" in diameter (average diameter = 1.4"). Outwash.
40								38.4 to 40.0' - Gray (5Y 5/1) siltstone, calcareous, contains limestone interbeds. Bedrock.
								Total depth = 40.0'.
45								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	B002
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596522.00
Date Started	11/3/92	**East (ft)**	1495024.00
Date Completed	11/3/92	**Ground Surface Elev. (ft)**	703.00
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	NA
Checked By	ERIC LARSEN	**Total Depth (ft)**	25.0

Comments: Exploratory boring located west of monitoring well 0309 and south of east west access road near Area 2. Groundwater level not recorded boring was terminated before water was penetrated. Above coord. and elev. estimated.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0							FL	0.0 to 1.3' - Brown silt, 10% gravel up to 0.25' in diameter. Fill. 1.3 to 1.7' - Gray fossiliferous limestone boulder. Fill. 1.7 to 3.9' - Greenish gray clay and silt, pockets of gravel up to 2.0" in diameter. Fill. 3.9 to 5.0' - Dark brown (5YR 3/3) clayey sand, very fine grained, 10 - 20% clay, 80% sand. Fill.
5	O	GC	0005					5.0 to 8.1' - Dark brown clayey silt, approximately 10% gravel, rounded, minor limestone fragments < 4 mm in diameter. Fill. 8.1 to 9.1' - Brown (10YR 3/4) silty, clayey gravel, approximately 40 to 60% coarse gravel up to 1.0" in diameter, subangular to rounded. Fill. 9.1 to 10.0' - Brown gravelly clay, gravel is very coarse grained. Fill. 10.0 to 10.8' - Dark brownish gray (5YR 3/1) clayey, gravelly silt, 20% gravel up to 2.0 mm in diameter. Fill.
10	O	GC	0010				SP-GP	10.8 to 11.9' - Brown to dark brown (10YR 4/4) sand and gravel, sand is very coarse grained, gravel up to 3.0" in diameter (average diameter = 4.0 mm), approximately 10% silt and clay. Outwash.
							SP	11.9 to 14.3' - Reddish brown (5YR 5/3) gravelly sand, medium to very coarse grained, poorly sorted, 20% gravel up to 3.0" in diameter, wet at 14.0'. Outwash.
15	O	GC	0015				TI	14.3 to 15.5' - Yellowish brown (10YR 5/4) clayey, silty sand, fine to very coarse grained, poorly sorted, competent, 60% sand, 30% silt/clay, 10% gravel up to 1.0" in diameter. Till. 15.5 to 18.0' - Grayish brown (10YR 5/2) sandy, clayey silt, 70% silt and clay, 30% sand, 10% gravels up to 1.0" in diameter. Till.
	O O	GC GC	0018 1018				SM-SP	18.0 to 20.0' - Pale brown (10YR 6/3) silty, gravelly sand, < 10% clay, 20% gravel up to 2.0" in diameter, zones of very fine sand, thin zone of limonite at contact with till (18.0'). Outwash.
20								

GROUNDWATER

DEPTH	HOUR	DATE

WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id B002

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20	O	GC	0023				SM-GM	20.0 to 23.2' - Yellowish brown (10YR 5/6) silty sand and gravel, 55% very fine grained sand and silt, < 5% clay, 40% gravel. Outwash.
							SP	23.2 to 24.4' - Yellowish brown (10YR 5/4) sand, medium grained, rounded, moderately to well sorted, 10% silt. Outwash.
25							SM-GM	24.4 to 25.0' - Yellowish brown (10YR 5/6) silty sand and gravel, sand is very fine grained. Outwash.
								Total Depth = 25.0'. Boring was terminated because drill bit was lost in hole. Borehole log will begin at 25.0' for offset boring B003.
30								
35								
40								
45								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 1 of 2

Drilling Company	NORTH STAR DRILLING	**Borehole/Well Id**	B003
Drilling Method	ROTO SONIC	**STATE PLANE COORDINATES**	
Drilling Fluid	NONE	**North (ft)**	596524.00
Date Started	11/3/92	**East (ft)**	1495072.00
Date Completed	11/3/92	**Ground Surface Elev. (ft)**	710.00
Logged By	TIM FRINAK	**Top of Casing Elev. (ft)**	NA
Checked By	ERIC LARSEN	**Total Depth (ft)**	41.5

Comments: Exploratory boring offset approximately 5 ft. east of boring B002. Boring was drilled to 25.0 ft., then cored, lithologically logged, and sampled from 25.0 to 41.5 ft. Above coordinates and elevation are estimated.

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
0								0.0 - 25.0' - No core sample collected.
5								
10								
15								
20								

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

GEOLOGIC LOG	MOUND PLANT	Project Manager William Little	PAGE: 2 of 2

Borehole/Well Id B003

Depth	Sample T	Sample A	Sample ID	Well Materials	Well Con	Lith	USCS or Rock Type	Lithologic Description
20								
25	O O	GC GC	0026 1026				SP	25.0 to 27.5' - Yellowish brown (5YR 5/4) gravelly sand, medium grained, 30% gravel, wet/saturated. Outwash. 27.5 - 29.2' - Yellowish brown gravelly sand, 60% sand, 30% gravel, 10% silt and clay, wet. Outwash.
							ML	29.2 to 29.7' - Olive (5Y 5/3) clayey silt, laminated.
30							GP	29.7 to 35.0' - Yellowish brown gravel, 80% gravel up to 3.5" in diameter (average diameter 0.75"), 17% sand, 3% silt/clay, wet/saturated. Outwash.
35	O O	GC GC	0035 0036				GC-GM	35.0 to 37.1' - Yellowish brown sand and gravel with clay and silt, sand is very fine to coarse grained, 50% gravel. Outwash.
40							ST	37.1 to 41.5' - Light gray (2.5Y 7/1) siltstone, calcareous, crumbly, weak parting, irregular, dark gray shaley laminations, fragments of calcareous paleo cocquina (biomicrite). Bedrock.
45								Total Depth = 41.5'. Borehole caved at 22.0' preventing water level measurement, estimated water table at 26.0'.

GROUNDWATER

	DEPTH	HOUR	DATE
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WESTON

APPENDIX E

MONITORING DATA

E1. DAILY PRECIPITATION DATA

E2. GREAT MIAMI RIVER STAGE AND DISCHARGE DATA

E3. GROUNDWATER DATA USED TO GENERATE AVERAGE ANNUAL WATER LEVEL DATA

E4. GROUNDWATER DATA USED TO GENERATE QUARTERLY WATER LEVEL MAPS

E5. MOUND GROUNDWATER LEVEL DATABASE FROM FEBRUARY 1987 TO MAY 1993

E1. DAILY PRECIPITATION DATA

Table E1. Daily Precipitation Data for Miamisburg, Ohio, 01/01/90 - 06/30/93

Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)
01/01/90		02/11/90		03/24/90	0.25
01/02/90	0.02	02/12/90	0.02	03/25/90	
01/03/90		02/13/90		03/26/90	
01/04/90	0.10	02/14/90	0.08	03/27/90	
01/05/90	0.03	02/15/90	0.46	03/28/90	
01/06/90		02/16/90	1.41	03/29/90	0.02
01/07/90		02/17/90		03/30/90	0.43
01/08/90		02/18/90		03/31/90	0.31
01/09/90		02/19/90		04/01/90	0.14
01/10/90	0.03	02/20/90		04/02/90	0.20
01/11/90		02/21/90		04/03/90	
01/12/90		02/22/90	0.15	04/04/90	
01/13/90		02/23/90	0.04	04/05/90	0.03
01/14/90		02/24/90	0.10	04/06/90	
01/15/90		02/25/90		04/07/90	
01/16/90		02/26/90		04/08/90	
01/17/90		02/27/90	0.08	04/09/90	
01/18/90	0.38	02/28/90	0.03	04/10/90	0.12
01/19/90		03/01/90		04/11/90	1.53
01/20/90	0.83	03/02/90		04/12/90	0.02
01/21/90	0.20	03/03/90		04/13/90	
01/22/90		03/04/90		04/14/90	0.02
01/23/90		03/05/90		04/15/90	0.11
01/24/90		03/06/90		04/16/90	
01/25/90		03/07/90		04/17/90	0.02
01/26/90		03/08/90		04/18/90	
01/27/90		03/09/90	0.06	04/19/90	
01/28/90		03/10/90		04/20/90	0.09
01/29/90	0.40	03/11/90	2.21	04/21/90	0.75
01/30/90	0.23	03/12/90		04/22/90	0.01
01/31/90		03/13/90		04/23/90	
02/01/90	0.01	03/14/90		04/24/90	
02/02/90	0.46	03/15/90		04/25/90	
02/03/90	0.03	03/16/90	0.71	04/26/90	
02/04/90	0.98	03/17/90	0.03	04/27/90	
02/05/90	0.10	03/18/90	0.01	04/28/90	
02/06/90		03/19/90	0.13	04/29/90	0.19
02/07/90	0.21	03/20/90		04/30/90	
02/08/90		03/21/90		05/01/90	0.19
02/09/90	0.05	03/22/90		05/02/90	0.03
02/10/90	0.21	03/23/90	0.03	05/03/90	

Table E1. (page 2 of 11)

Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)
05/04/90	0.47	06/14/90		07/25/90	
05/05/90	2.40	06/15/90	1.00	07/26/90	
05/06/90	0.10	06/16/90		07/27/90	
05/07/90		06/17/90		07/28/90	
05/08/90		06/18/90		07/29/90	
05/09/90		06/19/90		07/30/90	
05/10/90	0.09	06/20/90	0.13	07/31/90	
05/11/90	0.06	06/21/90	0.64	08/01/90	
05/12/90	0.04	06/22/90		08/02/90	
05/13/90	1.71	06/23/90	0.73	08/03/90	
05/14/90	0.07	06/24/90	0.08	08/04/90	
05/15/90		06/25/90		08/05/90	0.43
05/16/90	1.20	06/26/90		08/06/90	
05/17/90	1.08	06/27/90	0.02	08/07/90	
05/18/90		06/28/90		08/08/90	
05/19/90		06/29/90		08/09/90	
05/20/90	0.06	06/30/90		08/10/90	
05/21/90		07/01/90	0.37	08/11/90	
05/22/90		07/02/90		08/12/90	
05/23/90		07/03/90		08/13/90	0.36
05/24/90		07/04/90		08/14/90	0.03
05/25/90	0.01	07/05/90		08/15/90	
05/26/90	1.40	07/06/90	0.04	08/16/90	
05/27/90	0.41	07/07/90		08/17/90	
05/28/90		07/08/90		08/18/90	0.13
05/29/90	0.80	07/09/90		08/19/90	
05/30/90		07/10/90	0.75	08/20/90	
05/31/90		07/11/90	0.11	08/21/90	0.31
06/01/90		07/12/90	1.27	08/22/90	0.96
06/02/90		07/13/90	0.67	08/23/90	
06/03/90	0.18	07/14/90	0.71	08/24/90	
06/04/90		07/15/90	0.03	08/25/90	
06/05/90		07/16/90		08/26/90	
06/06/90		07/17/90		08/27/90	
06/07/90	0.70	07/18/90		08/28/90	
06/08/90		07/19/90		08/29/90	0.81
06/09/90		07/20/90		08/30/90	0.27
06/10/90		07/21/90	0.23	08/31/90	
06/11/90		07/22/90	0.30	09/01/90	
06/12/90		07/23/90		09/02/90	
06/13/90		07/24/90	0.19	09/03/90	

Table E1. (page 3 of 11)

Date	Daily Precipitation (inches)
09/04/90	
09/05/90	
09/06/90	
09/07/90	
09/08/90	
09/09/90	1.30
09/10/90	0.90
09/11/90	
09/12/90	0.14
09/13/90	0.10
09/14/90	
09/15/90	1.16
09/16/90	
09/17/90	
09/18/90	
09/19/90	0.44
09/20/90	0.01
09/21/90	
09/22/90	0.11
09/23/90	0.09
09/24/90	
09/25/90	
09/26/90	
09/27/90	
09/28/90	
09/29/90	0.03
09/30/90	0.02
10/01/90	
10/02/90	
10/03/90	
10/04/90	1.53
10/05/90	
10/06/90	
10/07/90	
10/08/90	
10/09/90	0.35
10/10/90	1.33
10/11/90	0.61
10/12/90	
10/13/90	0.14
10/14/90	

Date	Daily Precipitation (inches)
10/15/90	
10/16/90	
10/17/90	
10/18/90	1.65
10/19/90	0.02
10/20/90	
10/21/90	
10/22/90	0.46
10/23/90	0.11
10/24/90	
10/25/90	
10/26/90	
10/27/90	
10/28/90	
10/29/90	
10/30/90	
10/31/90	
11/01/90	
11/02/90	
11/03/90	
11/04/90	
11/05/90	
11/06/90	0.52
11/07/90	
11/08/90	
11/09/90	
11/10/90	0.50
11/11/90	
11/12/90	
11/13/90	
11/14/90	
11/15/90	
11/16/90	
11/17/90	0.05
11/18/90	
11/19/90	
11/20/90	
11/21/90	
11/22/90	0.23
11/23/90	0.40
11/24/90	

Date	Daily Precipitation (inches)
11/25/90	
11/26/90	
11/27/90	0.18
11/28/90	0.19
11/29/90	
11/30/90	
12/01/90	
12/02/90	
12/03/90	1.44
12/04/90	0.21
12/05/90	
12/06/90	
12/07/90	
12/08/90	
12/09/90	
12/10/90	
12/11/90	
12/12/90	
12/13/90	
12/14/90	
12/15/90	0.83
12/16/90	
12/17/90	
12/18/90	1.22
12/19/90	0.72
12/20/90	
12/21/90	0.01
12/22/90	0.50
12/23/90	0.71
12/24/90	0.10
12/25/90	
12/26/90	
12/27/90	
12/28/90	0.45
12/29/90	0.03
12/30/90	1.23
12/31/90	1.04

1990 Precipitation	
Total	56.69

Table E1. (page 4 of 11)

Date	Daily Precipitation (inches)
01/01/91	
01/02/91	
01/03/91	
01/04/91	
01/05/91	
01/06/91	0.26
01/07/91	0.11
01/08/91	
01/09/91	T
01/10/91	T
01/11/91	0.35
01/12/91	0.27
01/13/91	T
01/14/91	
01/15/91	
01/16/91	0.16
01/17/91	0.08
01/18/91	T
01/19/91	
01/20/91	
01/21/91	0.12
01/22/91	T
01/23/91	
01/24/91	
01/25/91	
01/26/91	0.03
01/27/91	0.02
01/28/91	0.18
01/29/91	
01/30/91	0.46
01/31/91	
02/01/91	
02/02/91	
02/03/91	
02/04/91	
02/05/91	T
02/06/91	0.82
02/07/91	0.46
02/08/91	T
02/09/91	
02/10/91	

Date	Daily Precipitation (inches)
02/11/91	
02/12/91	
02/13/91	
02/14/91	0.60
02/15/91	0.02
02/16/91	
02/17/91	
02/18/91	0.11
02/19/91	0.40
02/20/91	0.01
02/21/91	
02/22/91	
02/23/91	
02/24/91	
02/25/91	
02/26/91	T
02/27/91	
02/28/91	
03/01/91	
03/02/91	0.10
03/03/91	T
03/04/91	
03/05/91	
03/06/91	0.06
03/07/91	0.39
03/08/91	
03/09/91	
03/10/91	0.01
03/11/91	
03/12/91	
03/13/91	1.06
03/14/91	0.61
03/15/91	
03/16/91	
03/17/91	
03/18/91	0.63
03/19/91	
03/20/91	
03/21/91	T
03/22/91	0.58
03/23/91	0.68

Date	Daily Precipitation (inches)
03/24/91	T
03/25/91	
03/26/91	T
03/27/91	0.69
03/28/91	0.15
03/29/91	
03/30/91	
03/31/91	
04/01/91	0.06
04/02/91	
04/03/91	
04/04/91	
04/05/91	0.40
04/06/91	
04/07/91	
04/08/91	
04/09/91	0.05
04/10/91	0.43
04/11/91	
04/12/91	
04/13/91	1.05
04/14/91	0.86
04/15/91	0.07
04/16/91	0.08
04/17/91	
04/18/91	
04/19/91	0.23
04/20/91	0.33
04/21/91	0.01
04/22/91	0.01
04/23/91	
04/24/91	0.31
04/25/91	
04/26/91	0.01
04/27/91	
04/28/91	0.01
04/29/91	0.03
04/30/91	0.04
05/01/91	
05/02/91	0.01
05/03/91	

Table E1. (page 5 of 11)

Date	Daily Precipitation (inches)
05/04/91	0.15
05/05/91	T
05/06/91	0.20
05/07/91	
05/08/91	
05/09/91	0.05
05/10/91	
05/11/91	
05/12/91	
05/13/91	
05/14/91	
05/15/91	
05/16/91	
05/17/91	0.55
05/18/91	1.31
05/19/91	0.07
05/20/91	
05/21/91	
05/22/91	
05/23/91	
05/24/91	
05/25/91	
05/26/91	0.59
05/27/91	0.21
05/28/91	0.10
05/29/91	
05/30/91	T
05/31/91	
06/01/91	T
06/02/91	0.01
06/03/91	0.08
06/04/91	
06/05/91	
06/06/91	
06/07/91	
06/08/91	
06/09/91	
06/10/91	
06/11/91	
06/12/91	T
06/13/91	

Date	Daily Precipitation (inches)
06/14/91	
06/15/91	
06/16/91	0.25
06/17/91	
06/18/91	
06/19/91	
06/20/91	
06/21/91	
06/22/91	1.36
06/23/91	0.41
06/24/91	
06/25/91	
06/26/91	
06/27/91	
06/28/91	
06/29/91	
06/30/91	
07/01/91	
07/02/91	
07/03/91	0.02
07/04/91	0.01
07/05/91	
07/06/91	0.01
07/07/91	
07/08/91	0.88
07/09/91	0.77
07/10/91	0.18
07/11/91	0.29
07/12/91	0.17
07/13/91	0.02
07/14/91	0.03
07/15/91	
07/16/91	
07/17/91	
07/18/91	
07/19/91	
07/20/91	
07/21/91	
07/22/91	
07/23/91	
07/24/91	0.03

Date	Daily Precipitation (inches)
07/25/91	
07/26/91	
07/27/91	
07/28/91	
07/29/91	
07/30/91	
07/31/91	
08/01/91	
08/02/91	
08/03/91	
08/04/91	0.30
08/05/91	
08/06/91	
08/07/91	0.23
08/08/91	
08/09/91	0.65
08/10/91	0.02
08/11/91	
08/12/91	
08/13/91	
08/14/91	
08/15/91	0.02
08/16/91	
08/17/91	
08/18/91	0.57
08/19/91	T
08/20/91	0.12
08/21/91	T
08/22/91	
08/23/91	
08/24/91	
08/25/91	
08/26/91	
08/27/91	
08/28/91	
08/29/91	
08/30/91	
08/31/91	
09/01/91	0.37
09/02/91	
09/03/91	

Table E1. (page 6 of 11)

Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)
09/03/91	1.75	10/15/91	0.28	11/26/91	
09/04/91	T	10/16/91		11/27/91	0.01
09/05/91		10/17/91		11/28/91	0.21
09/06/91		10/18/91		11/29/91	
09/07/91		10/19/91	0.06	11/30/91	0.43
09/08/91		10/20/91	T	12/01/91	
09/09/91		10/21/91		12/02/91	
09/10/91	T	10/22/91		12/03/91	
09/11/91		10/23/91		12/04/91	T
09/12/91		10/24/91	0.01	12/05/91	0.22
09/13/91	0.31	10/25/91	0.08	12/06/91	0.01
09/14/91	0.94	10/26/91	0.05	12/07/91	T
09/15/91		10/27/91	0.11	12/08/91	T
09/16/91		10/28/91	T	12/09/91	T
09/17/91	0.01	10/29/91		12/10/91	T
09/18/91		10/30/91		12/11/91	T
09/19/91	0.15	10/31/91		12/12/91	
09/20/91		11/01/91		12/13/91	0.12
09/21/91		11/02/91		12/14/91	
09/22/91		11/03/91		12/15/91	0.30
09/23/91	0.49	11/04/91	T	12/16/91	T
09/24/91		11/05/91		12/17/91	
09/25/91		11/06/91		12/18/91	
09/26/91		11/07/91	0.07	12/19/91	
09/27/91		11/08/91	0.01	12/20/91	
09/28/91		11/09/91		12/21/91	0.11
09/29/91		11/10/91		12/22/91	T
09/30/91		11/11/91		12/23/91	T
10/01/91		11/12/91		12/24/91	
10/02/91		11/13/91	0.09	12/25/91	0.26
10/03/91		11/14/91		12/26/91	0.11
10/04/91		11/15/91	T	12/27/91	1.82
10/05/91	0.22	11/16/91	0.10	12/28/91	T
10/06/91	0.01	11/17/91	T	12/29/91	
10/07/91		11/18/91		12/30/91	
10/08/91		11/19/91	0.13	12/31/91	
10/09/91		11/20/91	0.06		
10/10/91	0.61	11/21/91	T		
10/11/91	0.02	11/22/91			
10/12/91	0.04	11/23/91			
10/13/91	0.01	11/24/91	T		
10/14/91		11/25/91			

1991 Precipitation	
Total	32.5

Table E1. (page 7 of 11)

Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)
01/01/92		02/11/92		03/23/92	T
01/02/92		02/12/92		03/24/92	
01/03/92	0.83	02/13/92	0.11	03/25/92	
01/04/92	0.13	02/14/92	0.14	03/26/92	0.33
01/05/92		02/15/92	0.16	03/27/92	0.08
01/06/92		02/16/92	0.12	03/28/92	T
01/07/92		02/17/92		03/29/92	0.03
01/08/92		02/18/92	0.11	03/30/92	0.13
01/09/92	0.02	02/19/92	0.18	03/31/92	0.42
01/10/92	0.01	02/20/92	0.02	04/01/92	
01/11/92	0.01	02/21/92		04/02/92	T
01/12/92		02/22/92		04/03/92	
01/13/92	0.03	02/23/92		04/04/92	0.01
01/14/92	1.23	02/24/92	T	04/05/92	0.15
01/15/92	0.12	02/25/92		04/06/92	
01/16/92	0.05	02/26/92		04/07/92	
01/17/92		02/27/92		04/08/92	0.04
01/18/92		02/28/92		04/09/92	0.43
01/19/92		02/29/92	T	04/10/92	0.07
01/20/92	T	03/01/92		04/11/92	0.05
01/21/92		03/02/92		04/12/92	0.08
01/22/92		03/03/92		04/13/92	
01/23/92	0.05	03/04/92		04/14/92	
01/24/92	0.07	03/05/92		04/15/92	0.05
01/25/92	0.01	03/06/92	0.02	04/16/92	T
01/26/92	0.16	03/07/92	0.17	04/17/92	0.7
01/27/92		03/08/92	0.01	04/18/92	0.16
01/28/92		03/09/92		04/19/92	1.07
01/29/92		03/10/92	0.25	04/20/92	0.26
01/30/92		03/11/92	0.16	04/21/92	0.22
01/31/92		03/12/92	T	04/22/92	0.03
02/01/92	T	03/13/92	T	04/23/92	
02/02/92		03/14/92	0.03	04/24/92	
02/03/92		03/15/92	0.01	04/25/92	0.01
02/04/92		03/16/92		04/26/92	0.03
02/05/92		03/17/92		04/27/92	T
02/06/92		03/18/92		04/28/92	0.18
02/07/92		03/19/92	0.92	04/29/92	
02/08/92	0.01	03/20/92		04/30/92	0.08
02/09/92	T	03/21/92	T	05/01/92	
02/10/92		03/22/92	0.02	05/02/92	

Table E1. (page 8 of 11)

Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)	Date	Daily Precipitation (inches)
05/03/92	0.02	06/14/92	T	07/26/92	0.36
05/04/92		06/15/92		07/27/92	0.4
05/05/92	T	06/16/92		07/28/92	
05/06/92		06/17/92		07/29/92	
05/07/92		06/18/92	2.42	07/30/92	0.43
05/08/92		06/19/92		07/31/92	0.27
05/09/92	0.76	06/20/92		08/01/92	T
05/10/92	T	06/21/92	T	08/02/92	
05/11/92		06/22/92		08/03/92	0.06
05/12/92		06/23/92	T	08/04/92	0.09
05/13/92		06/24/92		08/05/92	
05/14/92		06/25/92		08/06/92	
05/15/92	T	06/26/92		08/07/92	
05/16/92		06/27/92		08/08/92	0.83
05/17/92		06/28/92		08/09/92	0.81
05/18/92	0.15	06/29/92		08/10/92	0.03
05/19/92	0.16	06/30/92		08/11/92	0.14
05/20/92		07/01/92	0.08	08/12/92	
05/21/92		07/02/92		08/13/92	0.02
05/22/92		07/03/92	0.63	08/14/92	0.06
05/23/92		07/04/92		08/15/92	0.05
05/24/92	0.54	07/05/92		08/16/92	0.03
05/25/92	0.03	07/06/92		08/17/92	
05/26/92	T	07/07/92		08/18/92	
05/27/92		07/08/92	0.1	08/19/92	0.02
05/28/92		07/09/92	0.07	08/20/92	
05/29/92		07/10/92	0.16	08/21/92	
05/30/92	0.79	07/11/92		08/22/92	
05/31/92	0.03	07/12/92	0.71	08/23/92	
06/01/92		07/13/92	T	08/24/92	
06/02/92		07/14/92		08/25/92	
06/03/92		07/15/92	0.97	08/26/92	
06/04/92	0.33	07/16/92	0.01	08/27/92	1.62
06/05/92	T	07/17/92	3.32	08/28/92	2.32
06/06/92	0.24	07/18/92	0.11	08/29/92	
06/07/92	0.13	07/19/92		08/30/92	
06/08/92	0.44	07/20/92		08/31/92	
06/09/92		07/21/92	0.3	09/01/92	
06/10/92		07/22/92	T	09/02/92	T
06/11/92		07/23/92		09/03/92	0.24
06/12/92		07/24/92	2.24	09/04/92	
06/13/92		07/25/92	T	09/05/92	

Table E1. (page 9 of 11)

Date	Daily Precipitation (inches)
09/06/92	
09/07/92	
09/08/92	0.67
09/09/92	T
09/10/92	0.03
09/11/92	
09/12/92	
09/13/92	
09/14/92	
09/15/92	
09/16/92	
09/17/92	
09/18/92	0.01
09/19/92	0.05
09/20/92	
09/21/92	0.05
09/22/92	1.02
09/23/92	0.01
09/24/92	
09/25/92	
09/26/92	
09/27/92	0.03
09/28/92	
09/29/92	
09/30/92	
10/01/92	
10/02/92	
10/03/92	
10/04/92	
10/05/92	
10/06/92	
10/07/92	
10/08/92	
10/09/92	0.62
10/10/92	
10/11/92	0.07
10/12/92	0.01
10/13/92	
10/14/92	
10/15/92	
10/16/92	1.09
10/17/92	0.07

Date	Daily Precipitation (inches)
10/18/92	
10/19/92	0.06
10/20/92	
10/21/92	T
10/22/92	
10/23/92	
10/24/92	
10/25/92	
10/26/92	
10/27/92	
10/28/92	
10/29/92	
10/30/92	0.02
10/31/92	0.1
11/01/92	0.01
11/02/92	0.38
11/03/92	0.23
11/04/92	0.19
11/05/92	0.13
11/06/92	0.02
11/07/92	
11/08/92	
11/09/92	
11/10/92	T
11/11/92	0.12
11/12/92	0.55
11/13/92	1.26
11/14/92	
11/15/92	T
11/16/92	T
11/17/92	
11/18/92	0.04
11/19/92	0.02
11/20/92	
11/21/92	0.39
11/22/92	0.1
11/23/92	0.78
11/24/92	T
11/25/92	0.23
11/26/92	T
11/27/92	T
11/28/92	T

Date	Daily Precipitation (inches)
11/29/92	0.02
11/30/92	
12/01/92	0.01
12/02/92	T
12/03/92	0.02
12/04/92	
12/05/92	
12/06/92	
12/07/92	T
12/08/92	
12/09/92	T
12/10/92	0.27
12/11/92	0.1
12/12/92	T
12/13/92	
12/14/92	
12/15/92	
12/16/92	T
12/17/92	
12/18/92	
12/19/92	
12/20/92	0.23
12/21/92	
12/22/92	
12/23/92	
12/24/92	
12/25/92	
12/26/92	0.02
12/27/92	
12/28/92	T
12/29/92	T
12/30/92	0.22
12/31/92	0.01

1992 Precipitation Total	41.55

Table E1. (page 10 of 11)

Date	Daily Precipitation (inches)
01/01/93	0.17
01/02/93	
01/03/93	T
01/04/93	T
01/05/93	1.28
01/06/93	
01/07/93	
01/08/93	0.07
01/09/93	
01/10/93	0.1
01/11/93	0.15
01/12/93	0.02
01/13/93	0.27
01/14/93	
01/15/93	T
01/16/93	
01/17/93	
01/18/93	
01/19/93	
01/20/93	
01/21/93	0.72
01/22/93	0.41
01/23/93	T
01/24/93	0.52
01/25/93	0.04
01/26/93	
01/27/93	
01/28/93	
01/29/93	T
01/30/93	
01/31/93	
02/01/93	
02/02/93	
02/03/93	
02/04/93	
02/05/93	
02/06/93	
02/07/93	
02/08/93	
02/09/93	
02/10/93	

Date	Daily Precipitation (inches)
02/11/93	
02/12/93	0.54
02/13/93	0.10
02/14/93	0.03
02/15/93	T
02/16/93	0.6
02/17/93	0.27
02/18/93	
02/19/93	
02/20/93	0.01
02/21/93	0.4
02/22/93	0.14
02/23/93	T
02/24/93	T
02/25/93	
02/26/93	0.57
02/27/93	0.08
02/28/93	
03/01/93	
03/02/93	
03/03/93	0.13
03/04/93	0.48
03/05/93	0.7
03/06/93	0.02
03/07/93	
03/08/93	0.23
03/09/93	T
03/10/93	T
03/11/93	T
03/12/93	T
03/13/93	T
03/14/93	0.14
03/15/93	
03/16/93	
03/17/93	0.22
03/18/93	
03/19/93	
03/20/93	0.03
03/21/93	0.18
03/22/93	
03/23/93	0.59

Date	Daily Precipitation (inches)
03/24/93	0.29
03/25/93	
03/26/93	
03/27/93	
03/28/93	T
03/29/93	T
03/30/93	
03/31/93	
04/01/93	0.28
04/02/93	0.04
04/03/93	T
04/04/93	
04/05/93	
04/06/93	0.03
04/07/93	
04/08/93	
04/09/93	T
04/10/93	0.99
04/11/93	
04/12/93	
04/13/93	
04/14/93	0.37
04/15/93	0.45
04/16/93	0.78
04/17/93	0.03
04/18/93	T
04/19/93	
04/20/93	0.15
04/21/93	0.17
04/22/93	T
04/23/93	
04/24/93	0.07
04/25/93	0.02
04/26/93	1.38
04/27/93	
04/28/93	
04/29/93	
04/30/93	0.07
05/01/93	T
05/02/93	
05/03/93	0.01

Table E1. (page 11 of 11)

Date	Daily Precipitation (inches)
05/04/93	0.09
05/05/93	0.03
05/06/93	
05/07/93	
05/08/93	
05/09/93	
05/10/93	
05/11/93	T
05/12/93	0.25
05/13/93	0.95
05/14/93	
05/15/93	
05/16/93	0.02
05/17/93	
05/18/93	T
05/19/93	0.31
05/20/93	
05/21/93	0.01
05/22/93	0.05
05/23/93	T
05/24/93	T
05/25/93	0.01
05/26/93	
05/27/93	
05/28/93	
05/29/93	T
05/30/93	
05/31/93	0.3
06/01/93	0.01
06/02/93	
06/03/93	0.14
06/04/93	0.04

Date	Daily Precipitation (inches)
06/05/93	0.9
06/06/93	
06/07/93	
06/08/93	0.01
06/09/93	0.11
06/10/93	0.28
06/11/93	0.01
06/12/93	
06/13/93	0.01
06/14/93	
06/15/93	0.04
06/16/93	
06/17/93	
06/18/93	
06/19/93	0.03
06/20/93	
06/21/93	0.77
06/22/93	T
06/23/93	
06/24/93	
06/25/93	0.24
06/26/93	0.74
06/27/93	
06/28/93	0.45
06/29/93	0.5
06/30/93	

Date	Daily Precipitation (inches)

Current 1993 Precipitation	
Total	20.64

T - inticates a trace of precipitation was recorded (< 0.01 inch)

E2. GREAT MIAMI RIVER STAGE AND DISCHARGE DATA

Table E2. River Stage Data for the Great Miami River at Miamisburg, Ohio, 10/01/89 - 07/31/93

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
10/01/89	2.89	931
10/02/89	2.91	953
10/03/89	2.89	931
10/04/89	2.84	884
10/05/89	2.85	870
10/06/89	2.86	900
10/07/89	2.83	866
10/08/89	2.78	818
10/09/89	2.76	801
10/10/89	2.81	854
10/11/89	2.82	863
10/12/89	2.79	828
10/13/89	2.78	814
10/14/89	2.76	799
10/15/89	2.73	761
10/16/89	2.70	736
10/17/89	2.72	753
10/18/89	2.69	729
10/19/89	2.87	917
10/20/89	2.96	1000
10/21/89	2.95	1000
10/22/89	2.95	991
10/23/89	2.95	994
10/24/89	2.97	1010
10/25/89	2.92	968
10/27/89	2.82	864
10/28/89	2.78	821
10/29/89	2.76	794
10/30/89	2.76	793
10/31/89	2.82	862
11/01/89	2.84	876
11/16/89	5.85	5860
11/17/89	6.58	7340
11/18/89	5.09	4270
11/19/89	4.31	2880
11/20/89	3.95	2320
11/21/89	3.74	2000
11/22/89	3.70	1940
11/23/89	3.71	1960
11/24/89	3.49	1640
11/25/89	3.39	1520
11/26/89	3.39	1520
11/27/89	3.38	1500
11/28/89	3.39	1520
11/29/89	3.32	1420
11/30/89	3.27	1360
12/01/89	3.22	1300
12/02/89	3.16	1230
12/03/89	3.10	1170
12/04/89	3.08	1140
12/05/89	3.04	1100
12/06/89	3.10	1160
12/07/89	3.01	1060
12/08/89	2.90	942
12/09/89	2.85	886
12/10/89	2.79	832
12/11/89	2.80	841
12/12/89	2.81	847
12/13/89	2.74	772
12/14/89	2.75	788
12/15/89	2.66	698
12/16/89	2.94	1000
12/17/89	2.86	906
12/18/89	2.70	737
12/19/89	2.68	720
12/20/89	2.68	712
12/21/89	2.62	663
12/22/89	3.27	1400
12/23/89	2.88	923
12/24/89	2.82	860
12/25/89	2.63	671
12/26/89	2.60	638
12/27/89	2.60	639
12/28/89	2.62	655
12/29/89	2.75	797
12/30/89	3.22	1300
12/31/89	4.38	3050
01/01/90	5.58	5170
01/02/90	4.92	3940
01/03/90	4.17	2660
01/04/90	3.91	2260
01/05/90	4.50	3220
01/06/90	4.78	3690
01/07/90	4.17	2670

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
01/08/90	3.88	2210
01/09/90	3.73	1990
01/10/90	3.64	1850
01/11/90	3.71	1950
01/12/90	3.75	2010
01/13/90	3.53	1700
01/14/90	3.33	1440
01/15/90	3.27	1360
01/16/90	3.25	1330
01/17/90	3.21	1280
01/18/90	3.32	1430
01/19/90	3.39	1510
01/20/90	4.53	3300
01/21/90	6.00	6050
01/22/90	5.92	5870
01/23/90	4.98	4050
01/24/90	4.43	3080
01/25/90	4.14	2620
01/26/90	3.96	2340
01/27/90	3.77	2040
01/28/90	3.60	1800
01/29/90	3.58	1770
01/30/90	3.55	1730
01/31/90	3.48	1630
02/01/90	3.56	1750
02/02/90	5.32	4850
02/03/90	7.97	10600
02/04/90	9.40	14600
02/05/90	9.88	15900
02/06/90	8.05	10900
02/07/90	6.73	7650
02/08/90	6.10	6210
02/09/90	5.71	5420
02/10/90	5.61	5220
02/11/90	5.24	4530
02/12/90	4.90	3900
02/13/90	4.57	3320
02/14/90	4.55	3290
02/15/90	7.93	11200
02/16/90	12.33	23400
02/17/90	12.27	23200
02/18/90	10.93	19000

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
02/19/90	9.13	13700
02/20/90	7.63	9810
02/21/90	6.03	6070
02/22/90	5.62	5250
02/23/90	5.48	4980
02/24/90	5.38	4780
02/25/90	5.03	4160
02/26/90	4.71	3560
02/27/90	4.64	3450
02/28/90	4.68	3510
03/01/90	4.80	3730
03/02/90	4.64	3450
03/03/90	4.52	3240
03/04/90	4.38	3000
03/05/90	4.22	2750
03/06/90	4.05	2480
03/07/90	3.93	2290
03/08/90	3.87	2200
03/09/90	3.86	2180
03/10/90	3.83	2130
03/11/90	6.77	7820
03/12/90	7.29	8980
03/13/90	6.15	6370
03/14/90	5.12	4300
03/15/90	4.72	3580
03/16/90	5.14	4350
03/17/90	6.17	6370
03/18/90	5.53	5070
03/19/90	4.87	3850
03/20/90	4.48	3170
03/21/90	4.24	2780
03/22/90	4.10	2550
03/23/90	3.97	2350
03/24/90	3.86	2180
03/25/90	3.81	2100
03/26/90	3.71	1960
03/27/90	3.62	1820
03/28/90	3.57	1750
03/29/90	3.68	1930
03/30/90	4.13	2600
03/31/90	4.74	3630
04/01/90	6.20	6450

Table E2. (page 3 of 17)

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
04/02/90	6.54	7200
04/03/90	6.03	6090
04/04/90	5.30	4630
04/05/90	4.85	3820
04/06/90	4.47	3160
04/07/90	4.23	2760
04/08/90	4.04	2450
04/09/90	3.90	2240
04/10/90	4.70	3720
04/11/90	7.43	9370
04/12/90	7.88	10400
04/13/90	6.47	7050
04/14/90	5.60	5200
04/15/90	5.10	4280
04/16/90	4.70	3550
04/17/90	4.41	3050
04/18/90	4.18	2670
04/19/90	4.04	2450
04/20/90	3.91	2250
04/21/90	5.17	4500
04/22/90	4.86	3830
04/23/90	4.61	3380
04/24/90	4.29	2850
04/25/90	4.08	2520
04/26/90	3.91	2250
04/27/90	3.80	2080
04/28/90	3.73	1980
04/29/90	3.73	1990
04/30/90	3.63	1840
05/01/90	3.55	1730
05/02/90	3.45	1590
05/03/90	3.44	1580
05/04/90	5.43	5510
05/05/90	8.89	13100
05/06/90	7.98	10700
05/07/90	6.27	6630
05/08/90	5.23	4510
05/09/90	4.66	3480
05/10/90	4.36	2960
05/11/90	4.13	2590
05/12/90	4.19	2710
05/13/90	7.45	9590

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
05/14/90	9.54	14900
05/15/90	8.85	13000
05/16/90	9.39	14500
05/17/90	12.15	22900
05/18/90	11.61	21200
05/19/90	9.32	14300
05/20/90	7.46	9410
05/21/90	5.77	5540
05/22/90	5.19	4450
05/23/90	4.79	3710
05/24/90	4.52	3230
05/25/90	4.38	2990
05/26/90	5.33	4700
05/27/90	5.04	4180
05/28/90	4.83	3790
05/29/90	5.71	5430
05/30/90	4.83	3970
05/31/90	4.50	3200
06/01/90	4.21	2720
06/02/90	4.14	2610
06/03/90	4.17	2660
06/04/90	4.18	2670
06/05/90	4.07	2510
06/06/90	4.03	2450
06/07/90	4.09	2540
06/08/90	4.60	3540
06/09/90	8.09	10900
06/10/90	9.13	13700
06/11/90	7.11	8570
06/12/90	5.72	5450
06/13/90	5.11	4290
06/14/90	4.86	3850
06/15/90	6.57	7330
06/16/90	5.21	4490
06/17/90	4.63	3430
06/18/90	4.18	2680
06/19/90	3.95	2320
06/20/90	4.03	2440
06/21/90	3.90	2240
06/22/90	3.85	2170
06/23/90	3.79	2080
06/24/90	3.74	1990

Table E2. (page 4 of 17)

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
06/25/90	3.63	1840
06/26/90	3.56	1740
06/27/90	3.58	1790
06/28/90	3.74	2000
06/29/90	3.60	1800
06/30/90	3.45	1600
07/01/90	3.41	1540
07/02/90	3.25	1340
07/03/90	3.25	1340
07/04/90	3.19	1270
07/05/90	3.11	1170
07/06/90	3.08	1140
07/07/90	3.02	1070
07/08/90	2.95	998
07/09/90	3.27	1510
07/10/90	4.17	2710
07/11/90	3.74	1980
07/12/90	9.04	14000
07/13/90	10.48	17700
07/14/90	9.13	13700
07/15/90	9.26	14100
07/16/90	7.79	10200
07/17/90	5.99	6000
07/18/90	5.19	4450
07/19/90	4.68	3520
07/20/90	4.28	2810
07/21/90	5.27	4630
07/22/90	5.77	5550
07/23/90	7.03	8360
07/24/90	6.54	7230
07/25/90	5.37	4780
07/26/90	4.62	3410
07/27/90	4.20	2670
07/28/90	3.92	2180
07/29/90	3.74	1900
07/30/90	3.62	1720
07/31/90	3.55	1620
08/01/90	3.49	1540
08/02/90	3.43	1450
08/03/90	3.37	1370
08/04/90	3.38	1410
08/05/90	3.69	1820

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
08/06/90	3.52	1570
08/07/90	3.63	1740
08/08/90	3.44	1470
08/09/90	3.33	1330
08/10/90	3.23	1230
08/11/90	3.19	1180
08/12/90	3.15	1140
08/13/90	3.30	1300
08/14/90	3.74	1950
08/15/90	4.26	2740
08/16/90	3.81	2010
08/17/90	3.45	1480
08/18/90	3.30	1300
08/19/90	4.46	3140
08/20/90	4.43	3050
08/21/90	4.46	3090
08/22/90	4.30	2830
08/23/90	4.87	3840
08/24/90	4.44	3060
08/25/90	3.76	1920
08/26/90	3.50	1550
08/27/90	3.31	1320
08/28/90	3.25	1240
08/29/90	3.50	1560
08/30/90	3.91	2210
08/31/90	4.05	2390
09/01/90	3.52	1580
09/02/90	3.26	1250
09/03/90	3.12	1110
09/04/90	3.02	1010
09/05/90	2.97	965
09/06/90	2.91	910
09/07/90	2.85	853
09/08/90	2.96	929
09/09/90	3.89	2210
09/10/90	3.98	2290
09/11/90	4.04	2370
09/12/90	3.63	1740
09/13/90	3.41	1430
09/14/90	3.27	1260
09/15/90	3.66	1780
09/16/90	3.85	2080

Table E2. (page 5 of 17)

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)	Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
09/17/90	3.48	1520	10/29/90	3.86	1900
09/18/90	3.24	1230	10/30/90	3.89	1930
09/19/90	3.32	1320	10/31/90	3.83	1860
09/20/90	3.19	1180	11/01/90	3.83	1870
09/21/90	3.12	1110	11/02/90	3.70	1700
09/22/90	3.19	1190	11/03/90	3.79	1800
09/23/90	3.31	1310	11/04/90	3.71	1720
09/24/90	3.37	1370	11/05/90	3.76	1790
09/25/90	3.31	1310	11/06/90	3.79	1810
09/26/90	3.19	1180	11/07/90	3.71	1710
09/27/90	3.05	1040	11/08/90	3.69	1690
09/28/90	2.97	967	11/09/90	3.64	1630
09/29/90	2.93	975	11/10/90	4.01	2090
09/30/90	3.04	1030	11/11/90	4.14	2260
10/01/90	3.15	1110	11/12/90	4.06	2160
10/02/90	2.91	873	11/13/90	3.91	1960
10/03/90	2.91	873	11/14/90	3.80	1820
10/04/90	2.91	873	11/15/90	3.64	1630
10/05/90	2.91	873	11/16/90	3.48	1450
10/06/90	2.91	873	11/17/90	—	—
10/07/90	2.91	873	11/18/90	3.33	1280
10/08/90	2.91	873	11/19/90	3.50	1470
10/09/90	3.26	1220	11/20/90	3.51	1470
10/10/90	3.45	1410	11/21/90	3.45	1410
10/11/90	6.45	7040	11/22/90	3.83	1880
10/12/90	7.31	8050	11/23/90	4.08	2190
10/13/90	5.97	5220	11/24/90	4.31	2500
10/14/90	5.28	3970	11/25/90	4.12	2230
10/15/90	4.83	3250	11/26/90	3.88	1920
10/16/90	4.35	2560	11/27/90	3.60	1820
10/17/90	3.99	2070	11/28/90	3.82	1840
10/18/90	5.64	4690	11/29/90	3.78	1800
10/19/90	6.87	7040	11/30/90	4.09	2210
10/20/90	5.96	5200	12/01/90	3.93	1980
10/21/90	5.16	3790	12/02/90	3.76	1770
10/22/90	4.96	3290	12/03/90	6.04	5630
10/23/90	—	—	12/04/90	8.70	11500
10/24/90	—	—	12/05/90	7.50	8560
10/25/90	4.65	2980	12/06/90	6.01	5300
10/26/90	4.41	2630	12/07/90	5.32	4050
10/27/90	4.26	2440	12/08/90	4.89	3350
10/28/90	4.09	2200	12/09/90	4.67	3010

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
12/10/90	4.33	2530
12/11/90	4.14	2260
12/12/90	4.13	2260
12/13/90	4.10	2220
12/14/90	3.99	2070
12/15/90	5.43	4400
12/16/90	8.52	11000
12/17/90	7.25	7910
12/18/90	10.10	15900
12/19/90	12.13	22400
12/20/90	10.73	17600
12/21/90	8.90	12100
12/22/90	10.03	15400
12/23/90	11.77	21100
12/24/90	11.16	19000
12/25/90	8.92	12200
12/26/90	7.02	7380
12/27/90	6.22	5700
12/28/90	5.77	4830
12/29/90	6.37	6070
12/30/90	13.23	27100
12/31/90	16.22	38800
01/01/91	15.44	35200
01/02/91	13.76	28200
01/03/91	11.73	21000
01/04/91	9.50	13800
01/05/91	8.57	11100
01/06/91	7.33	8110
01/07/91	6.05	5360
01/08/91	5.88	4670
01/09/91	5.48	4320
01/10/91	5.31	4030
01/11/91	5.95	5210
01/12/91	7.84	9300
01/13/91	7.51	8510
01/14/91	6.29	5840
01/15/91	5.78	4860
01/16/91	6.12	5530
01/17/91	7.36	8120
01/18/91	6.87	7040
01/19/91	6.01	5300
01/20/91	5.60	4530

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
01/21/91	5.44	4250
01/22/91	5.31	4030
01/23/91	5.05	3600
01/24/91	4.97	3470
01/25/91	—	—
01/26/91	—	—
01/27/91	—	—
01/28/91	—	—
01/29/91	—	—
01/30/91	—	—
01/31/91	—	—
02/01/91	—	—
02/02/91	—	—
02/03/91	—	—
02/04/91	—	—
02/05/91	6.39	6040
02/06/91	7.44	8340
02/07/91	9.58	14000
02/08/91	8.43	11800
02/09/91	6.86	7020
02/10/91	6.07	5400
02/11/91	5.57	4480
02/12/91	5.18	3800
02/13/91	5.08	3640
02/14/91	5.72	4740
02/15/91	5.67	4650
02/16/91	5.06	3610
02/17/91	4.82	3240
02/18/91	5.17	3800
02/19/91	7.62	8930
02/20/91	9.01	12300
02/21/91	8.13	10000
02/22/91	6.75	6800
02/23/91	6.00	5270
02/24/91	5.50	4360
02/25/91	5.10	3670
02/26/91	4.89	3340
02/27/91	4.73	3100
02/28/91	4.58	2860
03/01/91	4.50	2760
03/02/91	4.52	2800
03/03/91	4.47	2720

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
03/04/91	4.36	2570
03/05/91	4.37	2580
03/06/91	4.42	2650
03/07/91	4.51	2780
03/08/91	4.49	2750
03/09/91	4.31	2500
03/10/91	4.17	2300
03/11/91	4.09	2200
03/12/91	4.07	2170
03/13/91	5.36	4210
03/14/91	5.65	4640
03/15/91	5.96	5190
03/16/91	6.23	5720
03/17/91	6.48	6220
03/18/91	7.61	8730
03/19/91	7.54	8570
03/20/91	6.26	5790
03/21/91	5.53	4400
03/22/91	6.46	6270
03/23/91	8.35	10600
03/24/91	8.15	10100
03/25/91	6.46	6200
03/26/91	6.18	5640
03/27/91	7.75	9070
03/28/91	7.20	7780
03/29/91	6.34	5930
03/30/91	5.63	4580
03/31/91	5.18	3810
04/01/91	4.88	3330
04/02/91	4.69	3040
04/03/91	4.56	2860
04/04/91	—	—
04/05/91	4.53	2810
04/06/91	4.39	2600
04/07/91	4.32	2510
04/08/91	4.26	2430
04/09/91	4.61	2980
04/10/91	5.27	3970
04/11/91	4.64	2970
04/12/91	4.32	2520
04/13/91	6.05	5590
04/14/91	8.06	9860

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
04/15/91	8.41	10700
04/16/91	7.20	7790
04/17/91	6.13	5520
04/18/91	5.48	4320
04/19/91	5.51	4390
04/20/91	7.13	7690
04/21/91	7.06	7460
04/22/91	6.25	5760
04/23/91	5.69	4690
04/24/91	5.36	4120
04/25/91	5.27	3960
04/26/91	5.06	3610
04/27/91	4.86	3300
04/28/91	4.71	3060
04/29/91	4.62	2940
04/30/91	4.53	2800
05/01/91	4.38	2590
05/02/91	4.27	2440
05/03/91	4.18	2330
05/04/91	4.15	2280
05/05/91	4.21	2370
05/06/91	4.28	2460
05/07/91	4.17	2310
05/08/91	4.07	2170
05/09/91	3.95	2010
05/10/91	3.87	1910
05/11/91	3.80	1820
05/12/91	3.76	1780
05/13/91	3.73	1730
05/14/91	3.73	1740
05/15/91	3.69	1690
05/16/91	3.72	1730
05/17/91	4.12	2240
05/18/91	7.11	8060
05/19/91	5.21	3850
05/20/91	4.58	2880
05/21/91	4.14	2270
05/22/91	3.93	1980
05/23/91	3.84	1880
05/24/91	3.75	1760
05/25/91	3.66	1650
05/26/91	3.91	1970

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
05/27/91	3.94	2000
05/28/91	3.99	2060
05/29/91	3.74	1750
05/30/91	3.62	1600
05/31/91	3.54	1520
06/01/91	3.75	1770
06/02/91	4.13	2250
06/03/91	4.16	2270
06/04/91	4.24	2410
06/05/91	3.89	1940
06/06/91	3.62	1610
06/07/91	3.39	1350
06/08/91	3.34	1290
06/09/91	3.24	1190
06/10/91	3.18	1080
06/11/91	3.15	1100
06/12/91	3.25	1200
06/13/91	3.34	1300
06/14/91	3.40	1360
06/15/91	3.34	1290
06/16/91	3.33	1290
06/17/91	3.19	1140
06/18/91	3.16	1110
06/19/91	3.14	1090
06/20/91	3.00	958
06/21/91	2.97	931
06/22/91	3.38	1340
06/23/91	3.48	1450
06/24/91	3.60	1590
06/25/91	3.43	1390
06/26/91	3.39	1350
06/27/91	3.25	1210
06/28/91	3.26	1220
06/29/91	3.75	1760
06/30/91	3.55	1530
07/01/91	3.16	1120
07/02/91	3.73	1740
07/03/91	3.86	1890
07/04/91	4.19	2340
07/05/91	4.16	2300
07/06/91	3.96	2020
07/07/91	4.00	2090

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
07/08/91	4.31	2500
07/09/91	4.13	2260
07/10/91	4.14	2280
07/11/91	4.14	2270
07/12/91	4.14	2220
07/13/91	4.05	2140
07/14/91	4.06	2150
07/15/91	3.97	2040
07/16/91	3.97	2040
07/17/91	3.99	2070
07/18/91	3.80	1830
07/19/91	3.93	1980
07/20/91	3.99	2070
07/21/91	4.00	2080
07/22/91	3.63	1660
07/23/91	3.39	1370
07/24/91	3.83	1870
07/25/91	3.91	1960
07/26/91	3.91	1990
07/27/91	3.93	1980
07/28/91	3.91	1960
07/29/91	3.94	2000
07/30/91	3.94	2000
07/31/91	3.96	2020
08/01/91	3.93	1990
08/02/91	3.67	1680
08/03/91	3.89	1940
08/04/91	4.07	2170
08/05/91	4.12	2240
08/06/91	4.03	2120
08/07/91	4.01	2090
08/08/91	4.02	2110
08/09/91	4.17	2310
08/10/91	4.03	2120
08/11/91	3.97	2040
08/12/91	3.95	2010
08/13/91	3.97	2030
08/14/91	4.05	2140
08/15/91	4.02	2110
08/16/91	3.98	2050
08/17/91	3.99	2070
08/18/91	4.11	2230

Table E2. (page 9 of 17)

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
08/19/91	4.03	2110
08/20/91	4.01	2100
08/21/91	4.01	2090
08/22/91	4.00	2080
08/23/91	3.98	2060
08/24/91	3.96	2030
08/25/91	3.94	2000
08/26/91	3.76	1780
08/27/91	3.94	2000
08/28/91	3.90	1950
08/29/91	3.86	1900
08/30/91	3.98	2050
08/31/91	3.96	2030
09/01/91	3.96	2020
09/02/91	3.90	1950
09/03/91	3.96	2020
09/04/91	4.34	2550
09/05/91	4.01	2100
09/06/91	3.95	2010
09/07/91	3.93	1980
09/08/91	3.91	1960
09/09/91	3.92	1970
09/10/91	3.94	2000
09/11/91	3.83	1860
09/12/91	3.91	1960
09/13/91	3.92	1970
09/14/91	4.19	2340
09/15/91	3.98	2050
09/16/91	3.90	1950
09/17/91	3.90	1950
09/18/91	3.89	1940
09/19/91	3.87	1920
09/20/91	3.89	1920
09/21/91	3.88	1920
09/22/91	3.89	1940
09/23/91	3.99	2070
09/24/91	3.93	1990
09/25/91	3.91	1960
09/26/91	3.19	1180
09/27/91	3.05	1040
09/28/91	2.97	967
09/29/91	2.93	975

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
09/30/91	3.04	1030
10/01/91	3.94	467
10/02/91	3.89	388
10/03/91	3.84	313
10/04/91	3.90	398
10/05/91	3.88	378
10/06/91	3.90	398
10/07/91	3.75	—
10/08/91	3.79	—
10/09/91	3.75	—
10/10/91	4.02	626
10/11/91	3.97	526
10/12/91	3.93	449
10/13/91	3.89	392
10/14/91	3.82	273
10/15/91	3.78	211
10/16/91	3.74	—
10/17/91	3.72	—
10/18/91	3.86	348
10/19/91	3.85	323
10/20/91	3.89	391
10/21/91	3.82	272
10/22/91	3.88	364
10/23/91	3.90	409
10/24/91	3.88	372
10/25/91	3.87	350
10/26/91	3.93	456
10/27/91	3.95	489
10/28/91	3.90	403
10/29/91	3.91	425
10/30/91	3.78	—
10/31/91	3.83	289
11/01/91	3.86	347
11/02/91	2.89	—
11/03/91	3.26	—
11/04/91	3.69	—
11/05/91	3.66	—
11/06/91	3.68	—
11/07/91	3.71	—
11/08/91	3.83	290
11/09/91	3.88	375
11/10/91	3.90	403

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
11/11/91	3.86	340
11/12/91	3.92	440
11/13/91	3.94	474
11/14/91	3.92	442
11/15/91	3.94	466
11/16/91	3.93	459
11/17/91	3.92	428
11/18/91	3.95	492
11/19/91	4.00	573
11/20/91	4.07	711
11/21/91	4.00	570
11/22/91	3.99	561
11/23/91	3.99	558
11/24/91	3.97	529
11/25/91	3.88	377
11/26/91	3.86	349
11/27/91	4.02	614
11/28/91	4.02	623
11/29/91	4.02	622
11/30/91	4.16	928
12/01/91	4.10	786
12/02/91	4.22	1050
12/03/91	4.82	2410
12/04/91	4.14	883
12/05/91	4.10	791
12/06/91	4.10	781
12/07/91	4.08	735
12/08/91	4.04	662
12/09/91	3.99	560
12/10/91	3.98	545
12/11/91	3.94	468
12/12/91	3.94	474
12/13/91	4.11	802
12/14/91	4.08	739
12/15/91	3.98	542
12/16/91	3.94	472
12/17/91	3.95	479
12/18/91	3.93	454
12/19/91	3.93	458
12/20/91	3.93	458
12/21/91	3.94	461
12/22/91	3.94	475

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
12/23/91	4.11	807
12/24/91	4.07	713
12/25/91	3.97	517
12/26/91	3.95	491
12/27/91	3.95	483
12/28/91	3.95	495
12/29/91	4.08	731
12/30/91	4.07	708
12/31/91	4.00	585
01/01/92	3.97	174
01/02/92	3.99	205
01/03/92	4.42	1010
01/04/92	4.26	655
01/05/92	4.14	428
01/06/92	4.13	424
01/07/92	4.07	326
01/08/92	4.04	281
01/09/92	4.05	300
01/10/92	4.09	355
01/11/92	4.15	447
01/12/92	4.13	412
01/13/92	4.13	411
01/14/92	5.30	3020
01/15/92	4.94	2290
01/16/92	4.77	1880
01/17/92	4.50	1220
01/18/92	4.42	1020
01/19/92	4.28	706
01/20/92	4.31	759
01/21/92	4.32	768
01/22/92	4.31	764
01/23/92	4.37	902
01/24/92	4.40	969
01/25/92	4.41	1000
01/26/92	4.51	1250
01/27/92	4.44	1070
01/28/92	4.38	929
01/29/92	4.33	803
01/30/92	4.27	677
01/31/92	4.25	637
02/01/92	4.26	646
02/02/92	4.25	638

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Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
02/03/92	4.27	683
02/04/92	4.28	684
02/05/92	4.34	844
02/06/92	4.48	1170
02/07/92	4.50	1210
02/08/92	4.44	1070
02/09/92	4.38	914
02/10/92	4.31	758
02/11/92	4.28	689
02/12/92	4.27	684
02/13/92	4.30	738
02/14/92	4.25	631
02/15/92	4.33	817
02/16/92	4.41	999
02/17/92	4.65	1590
02/18/92	4.78	1920
02/19/92	4.70	1730
02/20/92	4.73	1790
02/21/92	4.85	2080
02/22/92	4.69	1700
02/23/92	4.55	1330
02/24/92	4.54	1330
02/25/92	4.56	1380
02/26/92	4.49	1190
02/27/92	4.45	1090
02/28/92	4.38	910
02/29/92	4.34	822
03/01/92	4.32	779
03/02/92	4.31	752
03/03/92	4.37	907
03/04/92	4.36	880
03/05/92	4.32	782
03/06/92	4.40	972
03/07/92	4.45	1090
03/08/92	4.41	1000
03/09/92	4.51	1250
03/10/92	4.65	1590
03/11/92	4.64	1590
03/12/92	4.68	1690
03/13/92	4.66	1640
03/14/92	4.57	1400
03/15/92	4.46	1110
03/16/92	4.40	972
03/17/92	4.38	935
03/18/92	4.58	1390
03/19/92	5.34	3140
03/20/92	5.82	4140
03/21/92	5.60	3680
03/22/92	5.18	2810
03/23/92	4.93	2260
03/24/92	4.85	2080
03/25/92	4.83	2030
03/26/92	4.92	2230
03/27/92	4.90	2200
03/28/92	4.92	2250
03/29/92	4.99	2410
03/30/92	5.05	2530
03/31/92	5.21	1550
04/01/92	5.16	1480
04/02/92	5.06	1340
04/03/92	4.98	1260
04/04/92	4.92	1200
04/05/92	4.87	1150
04/06/92	4.84	1110
04/07/92	4.83	1110
04/08/92	4.78	1060
04/09/92	4.98	1260
04/10/92	4.95	1230
04/11/92	4.90	1180
04/12/92	4.79	1070
04/13/92	4.76	1040
04/14/92	4.84	1120
04/15/92	4.87	1150
04/16/92	4.66	953
04/17/92	6.42	4050
04/18/92	9.61	13200
04/19/92	10.76	17200
04/20/92	9.56	12900
04/21/92	8.83	10500
04/22/92	8.66	9950
04/23/92	7.65	7030
04/24/92	6.65	4470
04/25/92	6.11	3370
04/26/92	5.79	2800
04/27/92	5.59	2460

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
04/28/92	5.53	2370
04/29/92	5.45	2240
04/30/92	5.36	2100
05/01/92	5.27	1960
05/02/92	5.18	1840
05/03/92	5.04	1660
05/04/92	5.00	1610
05/05/92	5.00	1610
05/06/92	4.91	1490
05/07/92	4.81	1370
05/08/92	4.80	1350
05/09/92	5.04	1660
05/10/92	4.82	1380
05/11/92	4.69	1210
05/12/92	4.60	1100
05/13/92	4.55	1040
05/14/92	4.50	985
05/15/92	4.48	958
05/16/92	4.48	958
05/17/92	4.45	926
05/18/92	4.67	1190
05/19/92	4.82	1380
05/20/92	4.70	1230
05/21/92	4.59	1090
05/22/92	4.48	952
05/23/92	4.45	924
05/24/92	4.92	1500
05/25/92	4.98	1580
05/26/92	4.98	1580
05/27/92	4.73	1270
05/28/92	4.59	1090
05/29/92	4.52	1000
05/30/92	5.01	1620
05/31/92	5.53	2380
06/01/92	5.77	2780
06/02/92	5.38	2140
06/03/92	5.05	1680
06/04/92	5.07	1700
06/05/92	5.00	1610
06/06/92	5.19	1850
06/07/92	5.87	2950
06/08/92	5.87	2940

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
06/09/92	5.42	2200
06/10/92	5.12	1760
06/11/92	4.92	1500
06/12/92	4.79	1340
06/13/92	4.68	1200
06/14/92	4.61	1120
06/15/92	4.57	1070
06/16/92	4.63	1130
06/17/92	4.64	1150
06/18/92	5.95	3280
06/19/92	8.88	11000
06/20/92	8.26	8840
06/21/92	6.36	3900
06/22/92	5.57	2440
06/23/92	5.20	1860
06/24/92	5.14	1820
06/25/92	6.03	3240
06/26/92	5.36	2110
06/27/92	5.02	1630
06/28/92	4.82	1380
06/29/92	4.66	1170
06/30/92	4.58	1080
07/01/92	4.53	1020
07/02/92	4.45	925
07/03/92	4.63	1140
07/04/92	4.47	948
07/05/92	4.37	825
07/06/92	4.45	926
07/07/92	4.61	1110
07/08/92	4.56	1050
07/09/92	4.58	1080
07/10/92	4.55	1040
07/11/92	4.50	984
07/12/92	4.77	1320
07/13/92	5.18	2160
07/14/92	10.28	15500
07/15/92	11.40	19500
07/16/92	11.29	19000
07/17/92	11.90	21300
07/18/92	12.36	23100
07/19/92	11.10	18400
07/20/92	9.04	11200

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Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
07/21/92	7.66	7030
07/22/92	7.21	6900
07/23/92	6.91	5080
07/24/92	7.28	6260
07/25/92	6.41	3930
07/26/92	7.31	6180
07/27/92	6.80	4820
07/28/92	6.13	3410
07/29/92	5.70	2660
07/30/92	5.92	3040
07/31/92	7.05	5550
08/01/92	7.66	7050
08/02/92	6.63	4440
08/03/92	6.17	3410
08/04/92	5.88	2930
08/05/92	5.85	2880
08/06/92	5.94	3040
08/07/92	6.26	3590
08/08/92	6.77	4550
08/09/92	5.80	2800
08/10/92	5.78	2770
08/11/92	6.15	3390
08/12/92	6.01	3140
08/13/92	5.74	2690
08/14/92	5.48	2280
08/15/92	5.38	2120
08/16/92	5.31	2020
08/17/92	5.25	1940
08/18/92	5.12	1760
08/19/92	5.14	1790
08/20/92	5.17	1820
08/21/92	5.18	1840
08/22/92	5.03	1640
08/23/92	4.96	1550
08/24/92	5.00	1600
08/25/92	4.97	1570
08/26/92	4.99	1600
08/27/92	6.54	4190
08/28/92	6.95	4910
08/29/92	6.72	4430
08/30/92	6.05	3220
08/31/92	5.61	2480

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
09/01/92	5.30	2010
09/02/92	5.11	1750
09/03/92	5.12	1760
09/04/92	5.05	1660
09/05/92	5.05	1670
09/06/92	5.09	1720
09/07/92	5.25	1960
09/08/92	5.47	2270
09/09/92	5.15	1800
09/10/92	5.08	1710
09/11/92	4.95	1540
09/12/92	4.92	1510
09/13/92	4.90	1480
09/14/92	4.79	1340
09/15/92	4.76	1300
09/16/92	4.74	1270
09/17/92	4.69	1210
09/18/92	4.67	1180
09/19/92	4.78	1330
09/20/92	5.26	1980
09/21/92	5.47	2260
09/22/92	5.60	2480
09/23/92	5.49	2310
09/24/92	5.57	2420
09/25/92	5.24	1920
09/26/92	4.98	1580
09/27/92	4.82	1380
09/28/92	4.74	1280
09/29/92	4.67	1180
09/30/92	4.65	1160
10/01/92	4.64	698
10/02/92	4.64	698
10/03/92	4.57	617
10/04/92	4.50	554
10/05/92	4.54	593
10/06/92	4.52	570
10/07/92	4.54	589
10/08/92	4.57	627
10/09/92	5.05	1210
10/10/92	4.67	729
10/11/92	4.64	700
10/12/92	4.76	837

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Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
10/13/92	4.69	752
10/14/92	4.62	677
10/15/92	5.08	1360
10/16/92	5.30	1550
10/17/92	5.83	2430
10/18/92	6.22	3050
10/19/92	5.61	1990
10/20/92	5.24	1460
10/21/92	5.11	1280
10/22/92	4.96	1090
10/23/92	4.87	972
10/24/92	4.79	876
10/25/92	4.74	815
10/26/92	4.82	912
10/27/92	4.93	1060
10/28/92	4.73	810
10/29/92	4.50	548
10/30/92	4.26	281
10/31/92	4.22	231
11/01/92	4.25	260
11/02/92	4.38	411
11/03/92	5.73	2870
11/04/92	5.68	3390
11/05/92	5.14	2400
11/06/92	4.89	1980
11/07/92	4.63	1600
11/08/92	4.49	1380
11/09/92	4.38	1180
11/10/92	4.37	1170
11/11/92	4.37	1160
11/12/92	6.76	6360
11/13/92	10.77	17300
11/14/92	10.64	16800
11/15/92	8.87	11300
11/16/92	7.03	6300
11/17/92	6.32	4710
11/18/92	5.84	3700
11/19/92	5.49	3030
11/20/92	5.25	2600
11/21/92	5.26	2610
11/22/92	6.13	4440
11/23/92	9.29	12600

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
11/24/92	9.59	13500
11/25/92	7.98	8770
11/26/92	7.03	6290
11/27/92	6.43	4940
11/28/92	5.99	3990
11/29/92	5.63	3290
11/30/92	5.35	2770
12/01/92	5.19	2480
12/02/92	5.08	2290
12/03/92	4.96	2090
12/04/92	4.87	1960
12/05/92	4.79	1830
12/06/92	4.73	1740
12/07/92	4.70	1700
12/08/92	4.64	1600
12/09/92	4.60	1550
12/10/92	4.67	1650
12/11/92	4.68	1670
12/12/92	4.66	1640
12/13/92	4.62	1580
12/14/92	4.60	1550
12/15/92	4.62	1580
12/16/92	4.64	1610
12/17/92	4.63	1590
12/18/92	4.63	1600
12/19/92	4.62	1580
12/20/92	4.70	1700
12/21/92	4.74	1750
12/22/92	4.80	1840
12/23/92	4.71	1710
12/24/92	4.59	1530
12/25/92	4.53	1450
12/26/92	4.43	1270
12/27/92	4.38	1190
12/28/92	4.50	1390
12/29/92	4.49	1380
12/30/92	4.51	1420
12/31/92	4.59	1540
01/01/93	5.01	2190
01/02/93	5.13	2380
01/03/93	4.89	1980
01/04/93	5.48	3310

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
01/05/93	10.38	16000
01/06/93	10.61	16700
01/07/93	8.91	11400
01/08/93	7.28	6930
01/09/93	6.48	5050
01/10/93	6.06	4130
01/11/93	5.70	3420
01/12/93	5.42	2910
01/13/93	6.15	4360
01/14/93	7.72	8050
01/15/93	6.80	5770
01/16/93	6.06	4130
01/17/93	5.67	3360
01/18/93	5.38	2820
01/19/93	5.11	2340
01/20/93	4.97	2110
01/21/93	5.77	3640
01/22/93	8.05	9030
01/23/93	8.27	9580
01/24/93	8.04	8940
01/25/93	9.00	11700
01/26/93	7.44	7330
01/27/93	6.43	4950
01/28/93	5.98	3970
01/29/93	5.69	3410
01/30/93	5.52	3090
01/31/93	5.34	2760
02/01/93	5.21	2510
02/02/93	5.09	2310
02/03/93	4.98	2120
02/04/93	4.91	2010
02/05/93	4.89	1990
02/06/93	4.82	1880
02/07/93	4.79	1840
02/08/93	4.74	1760
02/09/93	4.73	1740
02/10/93	4.69	1690
02/11/93	4.65	1630
02/12/93	5.08	2310
02/13/93	5.93	3900
02/14/93	5.95	3920
02/15/93	5.49	3030

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
02/16/93	5.34	2750
02/17/93	5.28	2660
02/18/93	5.00	2160
02/19/93	4.83	1890
02/20/93	5.05	2240
02/21/93	5.27	2630
02/22/93	6.59	5310
02/23/93	7.21	6750
02/24/93	6.24	4530
02/25/93	5.59	3230
02/26/93	5.42	2900
02/27/93	5.27	2630
02/28/93	5.17	2460
03/01/93	5.08	2290
03/02/93	5.17	2450
03/03/93	5.64	3340
03/04/93	9.11	12300
03/05/93	11.36	19300
03/06/93	10.20	15400
03/07/93	9.29	12500
03/08/93	9.64	13600
03/09/93	10.04	14900
03/10/93	9.15	12100
03/11/93	8.28	9580
03/12/93	7.56	7620
03/13/93	6.88	5940
03/14/93	6.42	4910
03/15/93	5.95	3910
03/16/93	5.72	3470
03/17/93	5.67	3370
03/18/93	5.81	3630
03/19/93	5.71	3440
03/20/93	5.59	3210
03/21/93	5.60	3230
03/22/93	5.67	3370
03/23/93	6.37	4840
03/24/93	8.27	9570
03/25/93	7.62	7790
03/26/93	6.78	5720
03/27/93	6.29	4640
03/28/93	5.96	3940
03/29/93	5.68	3390

Table E2. (page 16 of 17)

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
03/30/93	5.44	2940
03/31/93	5.35	2770
04/01/93	5.51	3080
04/02/93	6.21	4460
04/03/93	6.06	4140
04/04/93	5.65	3330
04/05/93	5.40	2870
04/06/93	5.32	2730
04/07/93	5.22	2540
04/08/93	5.11	2340
04/09/93	5.20	2510
04/10/93	8.07	9240
04/11/93	9.43	13000
04/12/93	7.86	8460
04/13/93	6.52	5140
04/14/93	6.52	5140
04/15/93	7.28	6920
04/16/93	8.90	11400
04/17/93	9.27	12500
04/18/93	7.87	8490
04/19/93	6.53	5150
04/20/93	6.15	4330
04/21/93	6.16	4350
04/22/93	5.81	3640
04/23/93	5.57	3180
04/24/93	5.43	2910
04/25/93	6.46	5380
04/26/93	8.09	9040
04/27/93	7.05	6360
04/28/93	6.30	4650
04/29/93	5.87	3760
04/30/93	5.63	3290
05/01/93	5.43	2910
05/02/93	5.29	2660
05/03/93	5.22	2540
05/04/93	5.17	2460
05/05/93	5.18	2470
05/06/93	5.10	2320
05/07/93	5.00	2160
05/08/93	4.88	1970
05/09/93	4.78	1820
05/10/93	4.70	1700

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
05/11/93	4.86	1950
05/12/93	5.44	2960
05/13/93	6.63	5380
05/14/93	6.03	4080
05/15/93	5.42	2900
05/16/93	5.07	2280
05/17/93	4.90	2000
05/18/93	4.82	1870
05/19/93	4.82	1880
05/20/93	4.73	1740
05/21/93	4.68	1670
05/22/93	4.63	1600
05/23/93	4.59	1530
05/24/93	4.60	1550
05/25/93	4.61	1570
05/26/93	4.66	1630
05/27/93	4.63	1590
05/28/93	4.54	1460
05/29/93	4.53	1430
05/30/93	4.98	2140
05/31/93	5.01	2170
06/01/93	5.01	2180
06/02/93	4.88	1970
06/03/93	4.72	1730
06/04/93	4.84	1920
06/05/93	5.32	2730
06/06/93	5.71	3440
06/07/93	5.09	2310
06/08/93	4.85	1920
06/09/93	5.32	2790
06/10/93	6.11	4250
06/11/93	5.72	3480
06/12/93	5.14	2400
06/13/93	4.89	1990
06/14/93	4.74	1750
06/15/93	4.73	1740
06/16/93	4.70	1700
06/17/93	4.64	1610
06/18/93	4.52	1440
06/19/93	4.70	1710
06/20/93	4.38	1190
06/21/93	4.73	1740

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)
06/22/93	5.39	2860
06/23/93	5.07	2290
06/24/93	4.70	1710
06/25/93	4.59	1530
06/26/93	4.71	1720
06/27/93	4.54	1470
06/28/93	5.30	2730
06/29/93	8.36	10000
06/30/93	8.44	10100
07/01/93	9.31	12600
07/02/93	10.85	17600
07/03/93	12.67	24300
07/04/93	12.37	23100
07/05/93	11.34	19200
07/06/93	8.85	11400
07/07/93	6.96	6130
07/08/93	6.67	5470
07/09/93	6.21	4460
07/10/93	5.69	3410
07/11/93	6.57	5300
07/12/93	8.99	11800
07/13/93	10.47	16200
07/14/93	8.29	9680
07/15/93	6.79	5740
07/16/93	6.25	4540
07/17/93	5.70	3430
07/18/93	5.38	2830
07/19/93	6.18	4560
07/20/93	7.84	8380
07/21/93	7.28	6900
07/22/93		
07/23/93		
07/24/93		
07/25/93		
07/26/93		
07/27/93		
07/28/93		
07/29/93		
07/30/93		
07/31/93		

Date	Mean Gauge Height (ft)	Mean Discharge (cubic ft/sec)

E3. GROUNDWATER DATA USED TO GENERATE AVERAGE ANNUAL WATER LEVEL DATA

Table E3. Mound Plant Groundwater Elevation Database, Average Anual
June 1992 to March 1993

Well Number	June 1992	September 1992	December 1992	March 1993	Average Annual
P001	NM	NM	NM	682.71	NC
P002	NM	NM	NM	682.78	NC
P003	NM	NM	NM	682.73	NC
P004	NM	NM	NM	716.17	NC
P005	NM	NM	NM	682.71	NC
P006	NM	NM	NM	682.66	NC
P007	NM	NM	NM	682.91	NC
P008	NM	NM	NM	682.73	NC
P009	NM	NM	NM	682.72	NC
P013	NM	NM	NM	682.63	NC
P014	NM	NM	NM	682.93	NC
P015	NM	NM	NM	682.47	NC
0005	680.06	NM	682.14	683.03	681.74
0020	734.40	735.11	736.46	738.31	736.07
0028	774.67	775.00	774.77	775.16	774.90
0033	756.26	756.70	756.94	756.99	756.72
0042	737.11	NM	736.88	736.68	736.89
0046	679.83	681.86	682.13	682.96	681.70
0063	679.41	680.63	681.66	682.72	681.11
0106	680.21	NM	682.06	686.84	683.04
0108	682.83	NM	682.53	687.63	684.33
0112	745.31	745.50	745.74	745.80	745.59
0114	819.86	819.84	819.78	822.51	820.50
0115	833.07	833.13	833.36	834.57	833.53
0116	808.68	808.78	809.11	812.08	809.66
0117	790.04	789.27	NM	NM	NC
0118	681.56	681.98	682.99	684.06	682.65
0119	716.02	716.38	716.26	718.98	716.91
0120	800.05	800.20	801.10	802.82	801.04
0121	784.55	NM	785.90	785.80	785.42
0122	717.40	718.48	717.79	717.99	717.92
0123	679.89	680.83	682.26	683.05	681.51
0124	679.91	680.85	682.26	683.03	681.51
0125	705.35	703.50	705.83	706.98	705.42
0126	678.86	680.82	682.24	683.03	681.24
0127	680.08	680.92	682.19	683.08	681.57
0128	680.08	680.95	682.20	683.08	681.58

Table E3. (page 2 of 3)

Well Number	June 1992	September 1992	December 1992	March 1993	Average Annual
0129	679.63	680.64	681.99	682.87	681.28
0130	679.71	680.61	681.89	682.83	681.26
0137	680.91	683.12	681.19	681.54	681.69
0138	681.24	681.76	682.96	683.75	682.43
0151	693.47	693.56	693.42	693.53	693.50
0152	679.70	681.76	682.01	682.88	681.59
0153	679.55	680.68	681.97	682.82	681.26
0154	679.17	680.46	681.69	682.54	680.97
0156	679.23	680.30	681.63	682.52	680.92
0157	679.26	680.30	681.63	682.54	680.93
0158	679.20	680.01	681.42	682.48	680.78
0159	679.33	680.14	681.48	682.52	680.87
0160	679.46	680.29	681.60	682.66	681.00
0301	680.35	681.04	682.35	682.98	681.68
0302	679.89	680.75	682.03	682.91	681.40
0303	679.82	680.68	681.98	682.94	681.36
0304	679.30	680.24	681.59	682.55	680.92
0305	679.30	680.49	682.24	682.65	681.17
0306	679.51	680.66	682.04	682.75	681.24
0307	679.63	680.74	682.06	682.85	681.32
0309	679.29	680.57	681.95	682.75	681.14
0310	679.56	680.69	681.94	682.84	681.26
0311	680.40	681.05	682.23	682.96	681.66
0312	700.19	700.23	700.33	700.54	700.32
0313	679.61	680.74	682.04	682.92	681.33
0314	701.04	701.81	701.72	702.21	701.70
0315	679.85	680.85	682.14	682.99	681.46
0317	678.73	680.32	681.60	682.45	680.78
0318	793.31	794.25	793.90	793.92	793.85
0319	679.29	680.17	681.50	682.47	680.86
0320	679.33	680.19	681.66	682.60	680.95
0370	NM	NM	NM	682.77	NC
0372	NM	NM	NM	715.17	NC
0373	NM	NM	NM	682.68	NC
0374	NM	NM	NM	682.63	NC
0375	NM	NM	NM	682.90	NC
0376	NM	NM	NM	682.75	NC

Table E3. (page 3 of 3)

Well Number	June 1992	September 1992	December 1992	March 1993	Average Annual
0377	NM	NM	NM	682.65	NC
0378	NM	NM	NM	682.64	NC
0379	NM	NM	NM	682.93	NC
0380	NM	NM	NM	682.90	NC
0381	NM	NM	NM	688.82	NC
0382	NM	NM	NM	732.06	NC
0393	NM	NM	NM	682.75	NC
0394	NM	NM	NM	682.59	NC
0397	NM	NM	NM	682.72	NC

NM - not measured

NC - not calculated due to less than 3 measured water levels

E4. GROUNDWATER DATA USED TO GENERATE QUARTERLY WATER LEVEL MAPS

Table E4a. Mound Plant Groundwater Elevation Database June 1992

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	June 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0002	GW/TI	UNK	25.58	UNK
0003	GW	UNK	25.55	UNK
0004	GW	UNK	17.38	UNK
0005	GW	692.36	12.30	680.06
0006	GW	UNK	14.08	UNK
0008	GW/SH	UNK	8.09	UNK
0020	UNK	749.18	14.78	734.40
0028	UNK	786.84	12.17	774.67
0033	TI	776.74	20.48	756.26
0034 (S)	SH	818.71	20.05	798.66
0042	UNK	762.28	25.17	737.11
0046	GC/GP/SH	706.84	27.01	679.83
0063	GC/GP	705.64	26.63	679.01
0101 (S)	GW	708.34	35.63	672.71
0106	GW	693.86	13.65	680.21
0108	GW	688.27	5.44	682.83
0112	ML-GM/LS-SH	773.84	28.53	745.31
0114	LS-SH	872.14	52.28	819.86
0115	LS-SH	872.30	39.23	833.07
0116	LS-SH	871.66	62.98	808.68
0117	LS/LS-SH	801.82	11.78	790.04
0118	SM-SP	704.94	23.38	681.56
0119	ML-GM/SP	741.41	25.39	716.02
0120	LS/LS-SH	821.03	20.98	800.05
0121	LS-SH	887.50	102.95	784.55
0122	ML-GM/LS-SH	742.35	24.95	717.40
0123	SM/GW	705.10	25.21	679.89
0124	SM-SP/GP	705.15	25.24	679.91
0125	ML-GM	721.47	16.12	705.35
0126	SM-SP/GM/ML-GM	705.58	26.72	678.86
0127	SW/SP/GP	694.12	14.04	680.08

Table E4a. (page 2 of 3)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	June 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0128	SW/SP/GP	693.66	13.58	680.08
0129	SM-SP	699.49	19.86	679.63
0130	SP	692.06	12.35	679.71
0137	GW	723.66	42.75	680.91
0138	SP	697.83	16.59	681.24
0151	SC-SP/CL	740.61	47.14	693.47
0152	SP/CL/GP/GC/SH	704.94	25.24	679.70
0153	CL/SC-SW/GC/GW/SH	704.10	24.55	679.55
0154	GM/GP/CL/LS	702.67	23.50	679.17
0155 (S)	GM/SP/SW	704.28	23.52	680.76
0156	SM-SP/ML-GM/SP	689.91	10.68	679.23
0157	GP/SP/GP	690.31	11.05	679.26
0158	SP/SM-SP	702.06	22.86	679.20
0159	SP/GP	689.02	9.69	679.33
0160	GP	689.40	9.94	679.46
0227 (S)	SH	787.19	18.69	768.50
0242 (S)	LS/SH	754.56	15.05	739.51
0301	CL/LS	692.48	12.13	680.35
0302	GC-GM/SP	690.96	11.07	679.89
0303	TI/CL-SP	694.78	14.96	679.82
0304	CL/GC-GM	690.08	10.78	679.30
0305	GC-GM/CL	709.86	30.56	679.30
0306	GC/SH	704.13	24.62	679.51
0307	GW/SH	716.16	36.53	679.63
0308 (D)	GC/SP/SH	750.36	DRY	DRY
0309	SH	710.26	30.97	679.29
0310	LS/CL/LS	703.66	24.10	679.56
0311	SW/CL/GC	692.98	12.58	680.40
0312	GC/SH	731.30	31.11	700.19
0313	CL/GW	716.12	36.51	679.61
0314	CL/SH	742.71	41.67	701.04

Table E4a. (page 3 of 3)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	June 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0315	SM-SW/ML-GM/GP	724.03	44.18	679.85
0316 (D)	GW/CL/LS-SH	725.11	35.47	689.64
0317	GM/SC-SM/LS	703.60	24.87	678.73
0318	SH	810.53	17.22	793.31
0319	SC-SP/SM-SP/SM	701.44	22.15	679.29
0320	CL/SW/SP-SW	704.28	24.95	679.33

NOTE: Wells highlighted with (S) were surveyed using inaccurate benchmark datum; groundwater elevation data is suspect. Wells highlighted with (D) are essentially dry.

Formation of Completion Symbols

Symbol	Name/Description
CL	Lean Clays, Sandy, Silty, or Gravelly Clays
FL	Fill Material
GC	Clayey Gravel or Clayey Sandy Gravel
GM	Silty Gravel
GP	Gravel or Sandy Gravel, Poorly Graded
GW	Gravel or Sandy Gravel, Well Graded
LS	Limestone
ML	Silts, Fine Sands, or Clayey Fine Sands
SC	Clayey Sand or Sand-Clay Mixture
SH	Shale
SM	Silty Sand or Sand-Silt Mixtures
SP	Sand or Gravelly Sand, Poorly Graded
ST	Siltstone
SW	Sand or Gravelly Sand, Well Graded
TI	Till

Explanation of Symbol Grouping

Formation of Completion (FOC): includes lithologies present along well screen and associated filter pack interval

SC-SM: Clayey, silty sand (single lithology along FOC interval)

SC/SM: Clayey sand and silty sand (two separate lithologies along FOC interval)

SC/SC-SM/LS: Clayey sand; clayey, silty sand; and limestone (three separate lithologies along FOC interval)

Table E4b. Mound Plant Groundwater Elevation Database, September 1992

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	September 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0020	UNK	749.18	14.07	735.11
0028	UNK	786.84	11.84	775.00
0033	TI	776.74	20.04	756.70
0046	GC/GP/SH	706.84	24.98	681.86
0063	GC/GP	705.64	25.01	680.63
0112	ML-GM/LS-SH	773.84	28.34	745.50
0114	LS-SH	872.14	52.30	819.84
0115	LS-SH	872.30	39.17	833.13
0116	LS-SH	871.66	62.88	808.78
0117	LS/LS-SH	801.82	12.55	789.27
0118	SM-SP	704.94	22.96	681.98
0119	ML-GM/SP	741.41	25.03	716.38
0120	LS/LS-SH	821.03	20.83	800.20
0122	ML-GM/LS-SH	742.35	23.87	718.48
0123	SM/GW	705.10	24.27	680.83
0124	SM-SP/GP	705.15	24.30	680.85
0125	ML-GM	721.47	17.97	703.50
0126	SM-SP/GM/ML-GM	705.58	24.76	680.82
0127	SW/SP/GP	694.12	13.20	680.92
0128	SW/SP/GP	693.66	12.71	680.95
0129	SM-SP	699.49	18.85	680.64
0130	SP	692.06	11.45	680.61
0137	GW	723.66	40.54	683.12
0138	SP	697.83	16.07	681.76
0151	SC-SP/CL	740.61	47.05	693.56
0152	SP/CL/GP/GC/SH	704.94	23.18	681.76
0153	CL/SC-SW/GC/GW/SH	704.10	23.42	680.68
0154	GM/GP/CL/LS	702.67	22.21	680.46
0155 (S)	GM/SP/SW	704.28	23.22	681.06
0156	SM-SP/ML-GM/SP	689.91	9.61	680.30
0157	GP/SP/GP	690.31	10.01	680.30
0158	SP/SM-SP	702.06	22.05	680.01
0159	SP/GP	689.02	8.88	680.14
0160	GP	689.40	9.11	680.29
0227 (S)	SH	787.19	18.35	768.84
0242 (S)	LS/SH	754.56	15.09	739.47
0301	CL/LS	692.48	11.44	681.04
0302	GC-GM/SP	690.96	10.21	680.75
0303	TI/CL-SP	694.78	14.10	680.68
0304	CL/GC-GM	690.08	9.84	680.24
0305	GC-GM/CL	709.86	29.37	680.49
0306	GC/SH	704.13	23.47	680.66
0307	GW/SH	716.16	35.42	680.74
0308 (D)	GC/SP/SH	750.36	69.24	681.12
0309	SH	710.26	29.69	680.57
0310	LS/CL/LS	703.66	22.97	680.69
0311	SW/CL/GC	692.98	11.93	681.05
0312	GC/SH	731.30	31.07	700.23
0313	CL/GW	716.12	35.38	680.74
0314	CL/SH	742.71	40.90	701.81

Table E4b. (page 2 of 2)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	September 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0315	SM-SW/ML-GM/GP	724.03	43.18	680.85
0316 (D)	GW/CL/LS-SH	725.11	34.21	690.90
0317	GM/SC-SM/LS	703.60	23.28	680.32
0318	SH	810.53	16.28	794.25
0319	SC-SP/SM-SP/SM	701.44	21.27	680.17
0320	CL/SW/SP-SW	704.28	24.09	680.19

NOTE: Wells highlighted with (S) were surveyed using inaccurate benchmark datum; groundwater elevation data is suspect. Wells highlighted with (D) are essentially dry.

Formation of Completion Symbols

Symbol	Name/Description
CL	Lean Clays, Sandy, Silty, or Gravelly Clays
FL	Fill Material
GC	Clayey Gravel or Clayey Sandy Gravel
GM	Silty Gravel
GP	Gravel or Sandy Gravel, Poorly Graded
GW	Gravel or Sandy Gravel, Well Graded
LS	Limestone
ML	Silts, Fine Sands, or Clayey Fine Sands
SC	Clayey Sand or Sand-Clay Mixture
SH	Shale
SM	Silty Sand or Sand-Silt Mixtures
SP	Sand or Gravelly Sand, Poorly Graded
ST	Siltstone
SW	Sand or Gravelly Sand, Well Graded
TI	Till

Explanation of Symbol Grouping

Formation of Completion (FOC): includes lithologies present along well screen and associated filter pack interval

SC-SM: Clayey, silty sand (single lithology along FOC interval)

SC/SM: Clayey sand and silty sand (two separate lithologies along FOC interval)

SC/SC-SM/LS: Clayey sand; clayey, silty sand; and limestone (three separate lithologies along FOC interval)

Table E4c. Mound Plant Groundwater Elevation Database, December 1992

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	December 1992 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0002	GW/TI	UNK	23.47	UNK
0004	GW	UNK	15.24	UNK
0005	GW	692.36	10.22	682.14
0006	GW	UNK	11.60	UNK
0008	GW/SH	UNK	4.20	UNK
0020	UNK	749.18	12.72	736.46
0028	UNK	786.84	12.07	774.77
0033	TI	776.74	19.80	756.94
0042	UNK	762.28	25.40	736.88
0046	GC/GP/SH	706.84	24.71	682.13
0063	GC/GP	705.64	23.98	681.66
0101 (S)	GW	708.34	25.93	682.41
0106	GW	693.86	11.80	682.06
0108	GW	688.27	5.74	682.53
0112	ML-GM/LS-SH	773.84	28.10	745.74
0114	LS-SH	872.14	52.36	819.78
0115	LS-SH	872.30	38.94	833.36
0116	LS-SH	871.66	62.55	809.11
0118	SM-SP	704.94	21.95	682.99
0119	ML-GM/SP	741.41	25.15	716.26
0120	LS/LS-SH	821.03	19.93	801.10
0121	LS-SH	887.50	101.60	785.90
0122	ML-GM/LS-SH	742.35	24.56	717.79
0123	SM/GW	705.10	22.84	682.26
0124	SM-SP/GP	705.15	22.89	682.26
0125	ML-GM	721.47	15.64	705.83
0126	SM-SP/GM/ML-GM	705.58	23.34	682.24
0127	SW/SP/GP	694.12	11.93	682.19
0128	SW/SP/GP	693.66	11.46	682.20
0129	SM-SP	699.49	17.50	681.99
0130	SP	692.06	10.17	681.89
0137	GW	723.66	42.47	681.19
0138	SP	697.83	14.87	682.96
0151	SC-SP/CL	740.61	47.19	693.42
0152	SP/CL/GP/GC/SH	704.94	22.93	682.01
0153	CL/SC-SW/GC/GW/SH	704.10	22.13	681.97
0154	GM/GP/CL/LS	702.67	20.98	681.69
0155 (S)	GM/SP/SW	704.28	21.03	683.25

Table E4c. (page 2 of 3)

0156	SM-SP/ML-GM/SP	689.91	8.28	681.63
0157	GP/SP/GP	690.31	8.68	681.63
0158	SP/SM-SP	702.06	20.64	681.42
0159	SP/GP	689.02	7.54	681.48
0160	GP	689.40	7.80	681.60
0227 (S)	SH	787.19	18.25	768.94
0242 (S)	LS/SH	752.80	15.20	737.60
0301	CL/LS	692.48	10.13	682.35
0302	GC-GM/SP	690.96	8.93	682.03
0303	TI/CL-SP	694.78	12.80	681.98
0304	CL/GC-GM	690.08	8.49	681.59
0305	GC-GM/CL	709.86	27.62	682.24
0306	GC/SH	704.13	22.09	682.04
0307	GW/SH	716.16	34.10	682.06
0308 (D)	GC/SP/SH	750.36	68.19	682.17
0309	SH	710.26	28.31	681.95
0310	LS/CL/LS	703.66	21.72	681.94
0311	SW/CL/GC	692.98	10.75	682.23
0312	GC/SH	731.30	30.97	700.33
0313	CL/GW	716.12	34.08	682.04
0314	CL/SH	742.71	40.99	701.72
0315	SM-SW/ML-GM/GP	724.03	41.89	682.14
0316 (D)	GW/CL/LS-SH	725.11	33.58	691.53
0317	GM/SC-SM/LS	703.60	22.00	681.60
0318	SH	810.53	16.63	793.90
0319	SC-SP/SM-SP/SM	701.44	19.94	681.50
0320	CL/SW/SP-SW	704.28	22.62	681.66

NOTE: Wells highlighted with (S) - were surveyed using inaccurate benchmark datum; groundwater elevation data is suspect

(D) - are essentially dry

Formation of Completion Symbols

Symbol	Name/Description
CL	Lean Clays, Sandy, Silty, or Gravelly Clays
FL	Fill Material
GC	Clayey Gravel or Clayey Sandy Gravel
GM	Silty Gravel
GP	Gravel or Sandy Gravel, Poorly Graded
GW	Gravel or Sandy Gravel, Well Graded
LS	Limestone
ML	Silts, Fine Sands, or Clayey Fine Sands
SC	Clayey Sand or Sand-Clay Mixture
SH	Shale
SM	Silty Sand or Sand-Silt Mixtures
SP	Sand or Gravelly Sand, Poorly Graded
ST	Siltstone
SW	Sand or Gravelly Sand, Well Graded
TI	Till

Explanation of Symbol Grouping

Formation of Completion (FOC): includes lithologies present along well screen and associated filter pack interval

SC-SM: Clayey, silty sand (single lithology along FOC interval)

SC/SM: Clayey sand and silty sand (two separate lithologies along FOC interval)

SC/SC-SM/LS: Clayey sand; clayey, silty sand; and limestone (three separate lithologies along FOC interval)

Table E4d. Mound Plant Groundwater Elevation Database, March 1993

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	March 1993 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
P001	GP	717.71	35.00	682.71
P002	SH-LS	717.70	34.92	682.78
P003	TI/SM-GM/SP-GP/GP/ST	707.51	24.78	682.73
P004	LS/ST-SH/SH/SH-LS/SH	754.54	38.37	716.17
P005	FL/GM-GP	738.67	55.96	682.71
P006	GP/SM-SP	706.01	23.35	682.66
P007	SP/SM-SC/SP/GP/ SM-SP/SH/TI	705.74	22.83	682.91
P008	GP	700.52	17.79	682.73
P009	SP-GP	699.95	17.23	682.72
P013	GP	699.87	17.24	682.63
P014	TI/GP	717.33	34.40	682.93
P015	GM-GP/SP/GM-GP	735.75	53.28	682.47
0002	GW/TI	UNK	22.57	UNK
0003	GW	UNK	22.45	UNK
0004	GW	UNK	14.34	UNK
0005	GW	692.36	9.33	683.03
0006	GW	UNK	10.95	UNK
0008	GW/SH	UNK	5.12	UNK
0020	UNK	749.18	10.87	738.31
0028	UNK	786.84	11.68	775.16
0033	TI	776.74	19.75	756.99
0042	UNK	762.28	25.60	736.68
0046	GC/GP/SH	706.84	23.88	682.96
0063	GC/GP	705.64	22.92	682.72
0101 (S)	GW	708.34	34.72	673.62
0106	GW	693.86	7.02	686.84
0108	GW	688.27	0.64	687.63
0112	ML-GM/LS-SH	773.84	28.04	745.80
0114	LS-SH	872.14	49.63	822.51
0115	LS-SH	872.30	37.73	834.57
0116	LS-SH	871.66	59.58	812.08
0118	SM-SP	704.94	20.88	684.06
0119	ML-GM/SP	741.41	22.43	718.98
0120	LS/LS-SH	821.03	18.21	802.82
0121	LS-SH	887.50	101.70	785.80
0122	ML-GM/LS-SH	742.35	24.36	717.99
0123	SM/GW	705.10	22.05	683.05

Table E4d. (page 2 of 4)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	March 1993 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0124	SM-SP/GP	705.15	22.12	683.03
0125	ML-GM	721.47	14.49	706.98
0126	SM-SP/GM/ML-GM	705.58	22.55	683.03
0127	SW/SP/GP	694.12	11.04	683.08
0128	SW/SP/GP	693.66	10.58	683.08
0129	SM-SP	699.49	16.62	682.87
0130	SP	692.06	9.23	682.83
0137	GW	723.66	42.12	681.54
0138	SP	697.83	14.08	683.75
0151	SC-SP/CL	740.61	47.08	693.53
0152	SP/CL/GP/GC/SH	704.94	22.06	682.88
0153	CL/SC-SW/GC/GW/SH	704.10	21.28	682.82
0154	GM/GP/CL/LS	702.67	20.18 20.07(T)	682.54 (AVERAGE)
0155 (S)	GM/SP/SW	704.28	20.10	684.18
0156	SM-SP/ML-GM/SP	689.91	7.39	682.52
0157	GP/SP/GP	690.31	7.77	682.54
0158	SP/SM-SP	702.06	19.58	682.48
0159	SP/GP	689.02	6.50	682.52
0160	GP	689.40	6.74	682.66
0227 (S)	SH	787.19	13.27	773.92
236	UNK	UNK	4.20	UNK
0242 (S)	LS/SH	754.56	15.06	739.50
0301	CL/LS	692.48	9.50	682.98
0302	GC-GM/SP	690.96	8.05	682.91
0303	TI/CL-SP	694.78	11.84	682.94
0304	CL/GC-GM	690.08	7.53	682.55
0305	GC-GM/CL	709.86	27.21	682.65
0306	GC/SH	704.13	21.41 21.34(T)	682.75 (AVERAGE)
0307	GW/SH	716.16	33.36 33.25(T)	682.85 (AVERAGE)
0308 (D)	GC/SP/SH	750.36	67.67	682.69
0309	SH	710.26	27.51	682.75
0310	LS/CL/LS	703.66	20.82	682.84
0311	SW/CL/GC	692.98	10.02	682.96
0312	GC/SH	731.30	30.76	700.54
0313	CL/GW	716.12	33.20	682.92
0314	CL/SH	742.71	40.50	702.21

Table E4d. (page 3 of 4)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	March 1993 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)
0315	SM-SW/ML-GM/GP	724.03	41.04	682.99
0316 (D)	GW/CL/LS-SH	725.11	32.80	692.31
0317	GM/SC-SM/LS	703.60	21.15	682.45
0318	SH	810.53	16.61	793.92
0319	SC-SP/SM-SP/SM	701.44	18.97	682.47
0320	CL/SW/SP-SW	704.28	21.68	682.60
0370	GP	718.51	35.74	682.77
0372	ST/LS/ST	754.69	39.52	715.17
0373	TI/GM-GP/ML	738.73	56.05	682.68
0374	GP	706.33	23.70	682.63
0375	GP	705.48	22.58	682.90
0376	SP/GP/GM	700.12	17.37	682.75
0377	SP/SM-SP/GP	699.25	16.60	682.65
0378	SP-GP/SP/SM-GM	699.84	17.20	682.64
0379	GP/SP/SP-GP	716.29	33.36	682.93
0380	SH-LS	725.33	42.43	682.90
0381	ST-LS/ST-SH/ST-LS	726.08	37.26	688.82
0382	SH/LS/SH	738.73	6.67	732.06
0393	ST-LS	706.88	24.13	682.75
0394	LS/GP/ST-LS	703.31	20.72	682.59
0397	TI/GP/SW	707.50	24.78	682.72
0471 (S)	UNK	704.73	20.24	684.49
0571 (S)	UNK	704.73	22.23	682.50
0832 (S)	GM	707.10	21.97	685.13

NOTE: Wells highlighted with (S) - were surveyed using inaccurate benchmark datum; groundwater elevatin data is suspect

(D) - are essentially dry

Table E4d. (page 4 of 4)

Well Number	Formation of Completion	Measuring Point Elevation (ft above MSL)	March 1993 Groundwater Level	
			Measured Depth	Elevation (ft above MSL)

Formation of Completion Symbols

Symbol	Name/Description
CL	Lean Clays, Sandy, Silty, or Gravelly Clays
FL	Fill Material
GC	Clayey Gravel or Clayey Sandy Gravel
GM	Silty Gravel
GP	Gravel or Sandy Gravel, Poorly Graded
GW	Gravel or Sandy Gravel, Well Graded
LS	Limestone
ML	Silts, Fine Sands, or Clayey Fine Sands
SC	Clayey Sand or Sand-Clay Mixture
SH	Shale
SM	Silty Sand or Sand-Silt Mixtures
SP	Sand or Gravelly Sand, Poorly Graded
ST	Siltstone
SW	Sand or Gravelly Sand, Well Graded
TI	Till

Explanation of Symbol Grouping

Formation of Completion (FOC): includes lithologies present along well screen and associated filter pack interval

SC-SM: Clayey, silty sand (single lithology along FOC interval)

SC/SM: Clayey sand and silty sand (two separate lithologies along FOC interval)

SC/SC-SM/LS: Clayey sand; clayey, silty sand; and limestone (three separate lithologies along FOC interval)

E5. MOUND GROUNDWATER LEVEL DATABASE FROM FEBRUARY 1987 TO MAY 1993

Table E5. Mound Groundwater Level Database from February 1987 to May 1993

Location	Feb-87	Jul-87	Oct-87	Nov-87	Dec-87	Jan-88	Feb-88	Mar-88	Apr-88	Jul-88	Aug-88	Sep-88	Oct-88
0001	-	-	-	-	-	-	-	-	-	-	-	-	-
0002	-	-	-	-	-	-	-	-	-	-	-	-	-
0003	-	-	-	-	-	-	-	-	-	-	-	-	-
0004	-	-	-	-	-	-	-	-	-	-	-	-	-
0005	677.84	-	-	-	-	675.83	679.24	677.46	678.19	675.91	675.88	678.54	676.47
0006	-	-	-	-	-	-	-	-	-	-	-	-	-
0007	-	-	-	-	-	-	-	-	-	-	-	-	-
0008	-	-	-	-	-	-	-	-	-	-	-	-	-
0020	736.14	-	-	-	-	733.52	735.35	735.35	733.79	733.61	732.58	732.67	732.93
0028	773.32	-	-	-	-	773.09	773.51	773.51	772.84	772.76	773.54	773.35	773.79
0033	756.18	-	-	-	-	756.1	756.47	756.13	754.99	756.46	756.54	756.54	756.56
0034	-	-	-	-	-	802.72	802.9	801.83	801.64	801.8	799.01	801.86	801.54
0042	-	-	-	-	-	736.81	662.29	-	-	-	-	-	-
0046	677.54	-	-	-	-	675.53	670.17	670	678.11	675.85	675.34	-	-
0055	672.71	-	-	-	-	672.71	675.79	675.76	675.26	672.98	679.7	673.65	697.89
0063	677.05	-	-	-	-	674.92	677.96	677.96	677.58	675.06	-	-	-
0071	-	-	-	-	-	-	-	-	-	-	-	-	-
0076	-	-	-	-	-	-	-	-	-	-	-	-	-
0101	679.15	-	-	-	-	678.03	680.47	680.47	677.49	676.42	677.24	677.72	678.34
0106	678.06	-	-	-	-	676.04	678.78	678.78	678.39	676.21	676.06	676.68	676.73
0108	681.77	-	-	-	-	677.22	680.11	680.11	678.68	677.48	-	-	-
0111	-	-	-	727.01	724.38	720.27	720.59	720.41	719.58	718.73	728.61	716.84	-
0112	-	-	-	745.27	744.98	744.78	744.7	744.74	743.28	742.13	743.84	744.42	745.13
0113	-	-	-	-	-	821.39	821.7	821.5	821.35	821.12	821.22	820.91	821.13
0114	-	-	-	-	-	819.82	819.78	820.12	817.14	819.84	814.84	814.69	819.7
0115	-	-	-	-	-	836.74	832.97	833.66	832.89	833.15	833	833.16	833.25
0116	-	-	816.41	-	-	804.84	804.93	803.46	803.04	804.54	805.76	806.94	807.88
0117	-	-	-	-	-	800.55	801.08	801.81	799.36	800.92	800.5	800.1	801.3
0118	-	-	-	678.1	678.32	678.31	680.83	679.38	679.85	678.14	678.34	678.55	678.52
0119	-	-	-	723.7	720.87	716.52	716.56	716.27	716.43	714.13	712.71	712.41	717.11
0120	-	-	-	-	-	799.52	801.77	799.82	800.1	792.4	793.03	795.23	796.83
0121	-	-	-	-	-	790.73	792.24	789.49	793.06	777.86	778.7	777.5	787.5
0122	-	-	-	706.76	717.48	718.63	721.18	721.78	722.43	718.85	718.85	718.87	718.95
0123	-	-	676.59	-	675.56	675.62	678.88	678.63	678.29	675.88	675.8	676.54	676.47
0124	-	-	675.64	-	675.52	675.71	678.66	678.63	678.33	675.91	675.85	676.51	676.48
0125	-	-	-	689.48	692.63	696.8	702.54	692.7	696.93	688.96	-	-	-
0126	-	-	675.48	-	675.37	675.56	678.49	678.51	678.15	675.6	670.78	676.42	676.34
0127	-	-	-	-	-	675.94	678.83	678.78	678.42	676.14	676.02	676.72	676.74
0128	-	-	675.93	-	675.68	675.92	678.82	679.6	678.41	676.13	676.06	676.74	676.72
0129	-	-	-	674.92	674.91	675.21	678.25	678.3	677.89	675.49	675.49	676.13	676.04
0130	-	-	-	675.36	675.1	675.39	678.38	678.36	678	675.71	675.56	676.31	676.28
0137	678.03	-	-	-	-	675.98	678.69	678.67	678.67	675.95	675.96	676.61	678.45
0138	-	-	-	677.85	678.25	678.02	680.56	680.29	679.59	677.83	678.03	681.04	678.29
0151	-	-	-	-	-	693.41	693.39	693.4	693.36	693.33	693.41	693.41	692.81
0152	-	681.44	-	-	-	675.34	678.33	678.31	676.79	675.5	675.54	676.22	675.97
0153	-	681.1	-	-	-	675.08	674.11	678.11	676.55	675.23	672.9	676.01	675.86
0154	-	-	674.79	-	674.01	674.74	677.8	677.57	677.43	674.95	675.17	675.83	675.45
0155	-	-	676.21	-	675.36	676.28	679.3	679.28	678.92	676.42	676.58	677.2	677.02
0156	-	-	-	674.62	674.61	674.73	677.79	677.72	676.1	675.01	-	675.66	675.61
0157	-	-	-	-	-	674.81	677.84	677.81	677.46	675.44	675.01	675.78	675.69
0158	-	-	-	674.28	674.23	674.28	677.55	676.46	677.34	674.87	674.66	675.4	675.35
0159	-	-	674.76	674.6	674.63	674.53	677.67	677.26	677.42	674.97	674.82	675.58	675.52
0160	-	-	-	674.68	674.92	674.67	677.81	677.88	677.57	675.17	674.9	675.64	675.68
0227	-	-	-	-	-	773.59	773.73	773.24	770.52	764.61	769.69	770.19	769.89
0242	-	-	-	-	-	740	740.04	739.89	739.56	740.07	739.86	739.88	-
0271	-	-	-	-	-	-	-	-	-	-	-	-	-
0301	-	-	-	-	-	-	-	-	-	-	-	-	-
0302	-	-	-	-	-	-	-	-	-	-	-	-	-
0303	-	-	-	-	-	-	-	-	-	-	-	-	-
0304	-	-	-	-	-	-	-	-	-	-	-	-	-
0305	-	-	-	-	-	-	-	-	-	-	-	-	-
0306	-	-	-	-	-	-	-	-	-	-	-	-	-
0307	-	-	-	-	-	-	-	-	-	-	-	-	-
0308	-	-	-	-	-	-	-	-	-	-	-	-	-
0309	-	-	-	-	-	-	-	-	-	-	-	-	-
0310	-	-	-	-	-	-	-	-	-	-	-	-	-
0311	-	-	-	-	-	-	-	-	-	-	-	-	-
0312	-	-	-	-	-	-	-	-	-	-	-	-	-
0313	-	-	-	-	-	-	-	-	-	-	-	-	-
0314	-	-	-	-	-	-	-	-	-	-	-	-	-
0315	-	-	-	-	-	-	-	-	-	-	-	-	-
0316	-	-	-	-	-	-	-	-	-	-	-	-	-
0317	-	-	-	-	-	-	-	-	-	-	-	-	-
0318	-	-	-	-	-	-	-	-	-	-	-	-	-
0319	-	-	-	-	-	-	-	-	-	-	-	-	-
0320	-	-	-	-	-	-	-	-	-	-	-	-	-

Table E5. (page 2 of 3)

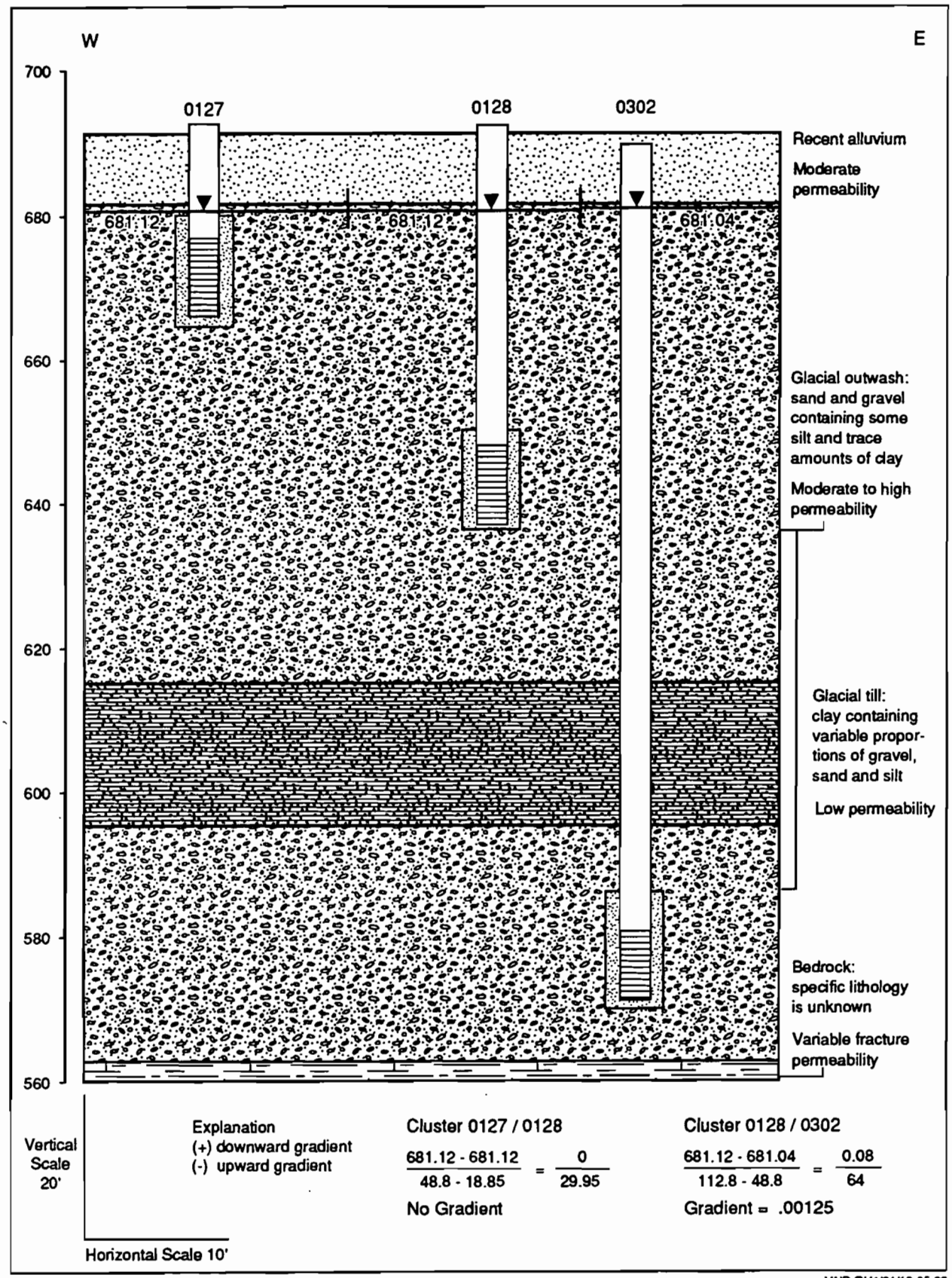
Location	Nov-88	Dec-88	Aug-89	Sep-89	Feb-90	Mar-90	Apr-90	May-90	Jun-90	Jul-90	Aug-90	Sep-90	Oct-90
0001	-	-	-	-	-	-	-	-	-	-	-	-	-
0002	-	-	-	-	-	-	-	-	-	-	-	-	-
0003	-	-	-	-	-	-	-	-	-	-	-	-	-
0004	-	-	-	-	-	-	-	-	-	-	-	-	-
0005	677.66	677.21	-	-	680.5	681.67	681.02	683.11	680.63	680.08	678.63	678.36	680.21
0006	-	-	-	-	-	-	-	-	-	-	-	-	-
0007	-	-	-	-	-	-	-	-	-	-	-	-	-
0008	-	-	-	-	-	-	-	-	-	-	-	-	-
0020	734.58	733.85	-	-	736	736.63	736.78	-	-	-	732.39	-	735.54
0028	773.95	772.87	-	-	774.49	775.1	-	-	-	-	773.41	774.84	775.05
0033	756.69	756.43	-	-	756.64	756.79	-	-	756.38	756.22	756.29	-	-
0034	801.27	802.95	-	-	802.77	-	-	-	802.52	802.22	802.22	802.25	802.44
0042	-	-	-	-	-	-	-	-	-	-	-	-	736.87
0046	-	676.32	-	-	-	681.74	-	683.29	680.72	678.8	661.64	678.24	680.25
0055	-	676.8	-	-	695.42	-	-	-	-	-	-	-	-
0063	-	676.25	-	-	680.13	681.41	680.76	683.09	680.51	679.49	678.04	677.74	679.7
0071	-	-	-	-	-	-	-	-	-	-	-	-	-
0076	-	-	-	-	-	-	-	-	-	-	-	-	-
0101	677.32	678.53	-	-	672.68	674.12	676.71	678.66	676.27	675.79	674.6	673.69	-
0106	677.84	677.53	-	-	680.6	681.83	681.26	683.07	680.81	680.51	678.83	678.53	-
0108	-	677.44	-	-	-	-	-	-	-	-	-	-	-
0111	717.08	717.17	-	-	720.09	722.56	724.71	726.48	726.39	725.54	724.1	716.23	723.63
0112	745.42	745.13	-	-	745.46	745.56	745.28	745.4	745.28	745.24	744.56	745.21	745.28
0113	821.59	821.21	-	-	-	-	-	823.01	821.87	821.46	821.3	821.19	821.85
0114	820.02	819.78	-	-	-	821.81	-	822.75	819.83	819.85	819.67	819.99	819.86
0115	833.7	832.73	-	-	833.61	851.02	-	834.11	834.48	833.8	833.01	833.85	833.79
0116	807.71	806.9	-	-	809.77	810.5	-	808.35	857.73	808.51	804.08	789.86	808.49
0117	803.09	800.49	-	-	801.91	803.62	-	804.56	803.84	801.78	800.78	802.34	800.49
0118	679.5	678.83	-	-	682.12	682.41	682.35	683.79	681.82	682.62	680.27	680.23	681.9
0119	712.12	712.15	-	-	713.15	715.79	716.61	718.6	718.43	717.43	716.28	715.58	716
0120	797.85	793.9	-	-	795.75	800.66	-	796.56	799.04	796.22	793.43	796.17	795.33
0121	777.7	-	-	-	-	-	-	781.37	781.52	781.56	781.73	781.93	781.97
0122	719.51	718.64	-	-	718.26	719.85	-	720.3	719.47	718.59	718.2	699.66	717.88
0123	677.68	677.24	-	-	680.55	682.12	681.17	683.56	683.12	682.22	688.46	674.93	682.27
0124	677.71	677.24	-	-	680.7	681.67	681.24	683.7	681.06	678.77	678.8	678.41	680.31
0125	-	-	-	-	705.02	705.57	705.75	694.21	699.31	702.58	694.35	698.42	703.32
0126	677.57	677.12	-	-	680.49	681.75	681.11	683.92	680.73	677.93	678.68	678.23	680.27
0127	677.88	677.4	-	-	680.66	681.75	681.27	683.07	680.7	680.47	678.81	678.59	680.47
0128	677.87	677.39	-	-	680.71	681.84	681.32	683.1	680.77	680.5	678.8	678.57	680.47
0129	677.4	676.94	-	-	680.25	681.52	681.01	683.19	680.6	-	678.44	678.1	680.07
0130	677.45	676.98	-	-	680.4	681.6	680.89	682.88	680.49	680.29	678.46	678.16	680.14
0137	677.71	677.41	-	-	680.56	681.7	681.28	-	680.99	679.28	678.61	678.31	680.29
0138	679.27	678.6	-	-	686.83	-	682.05	682.23	681.98	682.24	680	680.11	683.26
0151	693.34	693.21	-	-	693.31	693.45	693.45	693.51	693.68	693.46	693.38	693.48	693.51
0152	676.36	677.03	-	-	680.46	681.64	681.14	683.25	680.66	679.14	678.51	677.75	680.12
0153	677.25	676.84	-	-	680.27	681.54	691	683.16	680.98	679.67	678.35	678.03	680.22
0154	676.87	676.59	-	-	679.99	681.36	680.85	683.06	680.38	679.67	678.1	677.82	679.82
0155	678.41	678.09	-	-	681.68	682.85	682.51	684.5	681.77	681.21	679.63	679.41	681.26
0156	676.98	676.52	-	-	679.81	681.33	680.63	682.87	680.22	679.73	678.03	677.74	679.72
0157	677.05	676.57	-	-	680.12	681.4	680.67	683.47	680.31	679.91	678.16	677.89	680.02
0158	676.61	676.1	-	-	679.87	681.34	-	682.93	680.14	679.84	677.93	677.34	679.38
0159	676.71	676.23	-	-	679.84	681.24	680.47	682.69	680.12	680.07	677.99	677.39	679.42
0160	676.87	676.39	-	-	679.97	681.51	680.61	682.83	680.21	680.06	678.13	677.57	679.56
0227	769.49	769.32	-	-	770.15	769.98	-	-	769.22	768.92	768.06	768.05	768.12
0242	740.06	739.97	-	-	739.97	740.1	739.16	-	739.85	739.77	740.14	739.6	-
0271	-	-	-	-	-	-	-	-	-	-	-	-	-
0301	-	-	672.88	-	681.12	682.14	681.3	682.88	681.34	681.87	679.08	679.48	682.09
0302	-	-	-	671.46	680.49	681.74	681.07	682.98	680.65	680.34	678.62	678.3	680.27
0303	-	-	-	660.13	680.38	681.7	681.02	683.07	680.65	680.09	678.52	678.2	680.13
0304	-	-	-	669.13	679.92	681.45	680.58	682.91	680.18	679.45	678.05	677.66	679.62
0305	-	-	675.36	-	680.05	681.36	680.83	688.14	684.34	679.8	678.28	677.82	679.82
0306	-	-	-	677.65	680.43	681.56	690.99	683.11	680.51	679.81	678.37	678.17	680.46
0307	-	-	-	677.16	680.34	681.83	681.11	683.21	680.67	679.48	678.38	678.06	680.08
0308	-	-	-	-	-	-	-	-	-	-	-	-	-
0309	-	-	677.26	-	679.92	681.34	680.92	683.16	680.44	679.66	678.13	677.84	680.8
0310	-	-	671.66	-	680.15	681.56	691.01	683.18	680.5	679.53	678.34	677.95	679.96
0311	-	-	677.03	-	680.98	681.73	681.2	682.58	680.87	683.65	679.27	679.29	681.33
0312	-	-	-	-	700.39	700.5	700.5	700.45	700.23	700.29	699.8	700.23	700.35
0313	-	-	-	677.62	680.33	681.58	681.1	683.16	680.57	679.36	678.38	678.07	680.07
0314	-	-	-	-	701.53	701.45	702.71	702.71	702.78	702.48	702.11	701.82	702.09
0315	-	-	-	-	680.57	681.79	681.23	683.25	682.29	678.59	678.51	678.17	680.35
0316	-	-	-	-	-	-	-	-	-	-	-	-	-
0317	-	-	675.6	-	679.54	681.2	680.48	684.79	680.13	679.67	677.78	677.55	680.02
0318	-	-	-	-	793.69	793.95	793.91	794.5	794.5	794.25	793.24	793.74	794.26
0319	-	-	-	-	679.97	681.45	680.62	683.01	680.18	679.82	677.96	677.45	679.55
0320	-	-	678.73	-	680.1	681.46	680.66	683.04	680.32	680.06	678.02	677.28	679.59

Table E5. (page 3 of 3)

Location	Nov-90	Jan-91	Feb-91	Apr-91	May-91	Jul-91	Aug-91	Dec-91	Mar-92	Jun-92	Sep-92	May-93
0001	–	–	–	–	–	–	–	–	–	–	–	–
0002	–	–	–	–	–	–	–	–	–	–	–	–
0003	–	–	–	–	–	–	–	–	–	–	–	–
0004	–	–	–	–	–	–	–	–	–	–	–	–
0005	–	681.76	682.09	681.71	–	678.71	–	678.29	677.98	680.06	–	–
0006	–	–	–	–	–	–	–	–	–	–	–	–
0007	–	–	–	–	–	–	–	–	–	–	–	–
0008	–	–	–	–	–	–	–	–	–	–	–	–
0020	–	736.06	737.77	736.68	–	733.76	–	733.31	735.15	734.4	735.11	–
0028	–	774.93	774.91	775.14	–	774.28	–	774.77	774.77	774.67	775	–
0033	–	756.34	756.29	–	–	756.34	–	753.26	756.14	756.26	756.7	–
0034	–	802.55	802.72	798.74	–	–	–	–	–	798.66	–	–
0042	–	–	737.09	–	–	–	–	–	737.13	737.11	–	–
0046	–	682.16	682.01	681.84	–	678.41	–	678.03	677.69	679.83	681.86	–
0055	–	–	–	–	–	697.66	–	–	–	–	–	–
0063	679.7	681.93	681.53	681.64	–	677.92	–	677.54	677.24	679.41	680.63	–
0071	–	–	–	–	–	–	–	–	–	–	–	–
0076	–	–	–	–	–	–	–	–	–	–	–	–
0101	–	675.24	675.56	673.79	–	672.44	–	672.39	672.04	672.71	–	–
0106	–	681.91	682.36	681.76	–	678.91	–	678.45	678.16	680.21	–	–
0108	–	–	–	–	–	680.67	–	679.97	679.65	682.83	–	–
0111	723.94	727.52	727.84	–	730.27	727.56	–	721.45	722.24	–	–	–
0112	745.32	745.47	745.55	745.44	745.34	744.72	–	745.44	745.28	745.31	745.5	–
0113	–	821.85	825.17	822.22	–	–	–	–	–	–	–	–
0114	–	819.88	822.81	819.83	–	819.82	–	819.83	819.81	819.86	819.84	–
0115	833.79	833.53	833.7	833.28	833.28	833.01	832.99	833.31	833.18	833.07	833.13	–
0116	–	809.91	–	806.5	–	808.59	–	808.62	808.81	808.68	808.78	–
0117	800.49	801.68	803.66	799.18	799.18	800.33	–	801.27	802.79	801.72	800.95	–
0118	678.23	682.67	683.37	682.79	681.97	680.44	–	680.15	680.29	681.56	681.98	–
0119	–	718.96	719.25	721.91	–	718.68	–	713.64	714.03	716.02	716.38	–
0120	795.33	798.14	800.12	796.31	796.31	794.58	–	796.63	799.86	800.05	800.2	–
0121	–	782.29	782.3	782.9	–	783.3	–	783.6	784.05	784.55	–	–
0122	717.84	717.82	717.77	–	717.45	716.87	716.84	715.39	716.13	717.4	718.48	–
0123	680.05	682.05	682.17	681.9	681.71	678.5	–	678.17	677.83	679.89	680.83	–
0124	680.08	682.05	682.11	681.9	681.62	678.53	–	678.18	677.85	679.91	680.85	–
0125	–	706.8	706.89	706.8	–	705.36	–	704.22	704.77	705.35	703.5	–
0126	679.9	682.03	682.11	681.83	681.73	678.46	–	678.12	677.79	678.86	680.82	–
0127	680.24	682.07	682.35	681.92	681.62	678.74	–	678.4	678.11	680.08	680.92	–
0128	–	682.06	682.38	681.96	–	678.75	–	678.4	678.11	680.08	680.95	–
0129	679.74	681.89	681.94	681.74	680.92	678.17	–	677.85	677.53	679.63	680.64	–
0130	–	681.93	682.15	681.61	–	678.35	–	677.94	677.65	679.71	680.61	–
0137	676.2	682.78	682.11	682.06	681.95	678.53	–	678	677.24	680.91	683.12	–
0138	–	682.44	683.13	682.53	682.19	680.1	–	679.88	680	681.24	681.76	–
0151	693.63	693.52	693.43	693.71	693.55	693.59	–	693.38	693.41	693.47	693.56	–
0152	–	682.1	681.95	681.79	681.42	678.28	678.24	677.92	677.56	679.7	681.76	–
0153	–	681.97	681.86	681.7	681.33	678.11	–	677.72	677.38	679.55	680.68	–
0154	679.42	681.86	681.45	681.47	681.02	677.69	677.72	677.32	677.05	679.17	680.46	–
0155	–	683.45	683.06	683.03	681.53	679.25	679.26	678.89	678.61	680.76	681.06	–
0156	679.4	681.69	681.64	681.41	681.41	677.77	–	677.4	677.07	679.23	680.3	–
0157	–	681.73	681.67	681.41	–	677.79	–	677.42	677.11	679.26	680.3	–
0158	679.06	681.47	681.66	681.31	680.53	677.66	–	677.1	676.93	679.2	680.01	–
0159	679.17	681.55	681.96	681.22	683.95	677.82	677.81	677.32	677.13	679.33	680.14	–
0160	679.33	681.63	682.15	681.4	681.03	677.96	–	677.45	677.26	679.46	680.29	–
0227	–	768.15	768.11	–	–	768.05	–	768.07	768.33	768.5	768.84	–
0242	–	739.63	739.65	739.66	–	739.47	–	739.46	739.48	739.51	739.47	–
0271	–	–	–	–	–	–	–	–	–	–	–	–
0301	680.45	682.05	682.65	681.88	681.88	679.14	–	678.83	678.66	680.35	681.04	–
0302	679.46	681.91	682.19	681.78	680.96	678.53	–	678.16	677.89	679.89	680.75	–
0303	679.73	681.91	682.19	681.78	681.78	678.41	–	683.98	677.72	679.82	680.68	–
0304	676.17	681.51	681.87	681.38	681.38	677.84	–	677.39	677.09	679.3	680.24	–
0305	679.57	681.93	681.51	681.51	680.96	677.72	677.83	677.38	677.16	679.3	680.49	–
0306	–	681.99	681.93	681.68	681.21	678.06	677.98	677.69	677.34	679.51	680.66	–
0307	–	682.02	681.89	681.76	680.92	678.26	678.08	677.79	677.46	679.63	680.74	–
0308	–	–	–	–	–	–	–	–	–	–	681.12	–
0309	679.58	681.98	681.49	681.61	681.06	677.85	–	677.47	677.08	679.29	680.57	–
0310	–	682.08	681.85	681.71	681.24	678.12	–	677.76	677.41	679.56	680.69	–
0311	680.5	682.94	682.53	681.83	681.56	679.22	–	678.98	678.78	680.4	681.05	–
0312	700.3	700.21	700.42	700.37	700.23	700.12	699.92	700.3	700.18	700.19	700.23	–
0313	–	681.67	681.76	681.72	680.91	678.2	678.08	677.79	677.46	679.61	680.74	–
0314	701.96	702.43	702.42	702.91	702.73	702.38	–	700.96	700.32	701.04	701.81	–
0315	–	682.21	682.11	681.86	681.33	678.46	678.48	678.07	677.73	679.85	680.85	–
0316	–	–	–	–	–	–	–	–	–	–	690.9	–
0317	678.7	681.49	681.41	681.25	679.4	677.01	–	676.8	676.7	678.73	680.32	–
0318	794.1	794.1	793.93	794.43	794.11	793.22	–	792.51	792.69	793.31	794.25	–
0319	679.31	681.52	681.72	681.29	680.64	677.76	–	677.34	676.86	679.29	680.17	680.64
0320	679.37	681.51	681.82	680.43	680.68	677.81	–	677.28	677.02	679.33	680.19	–

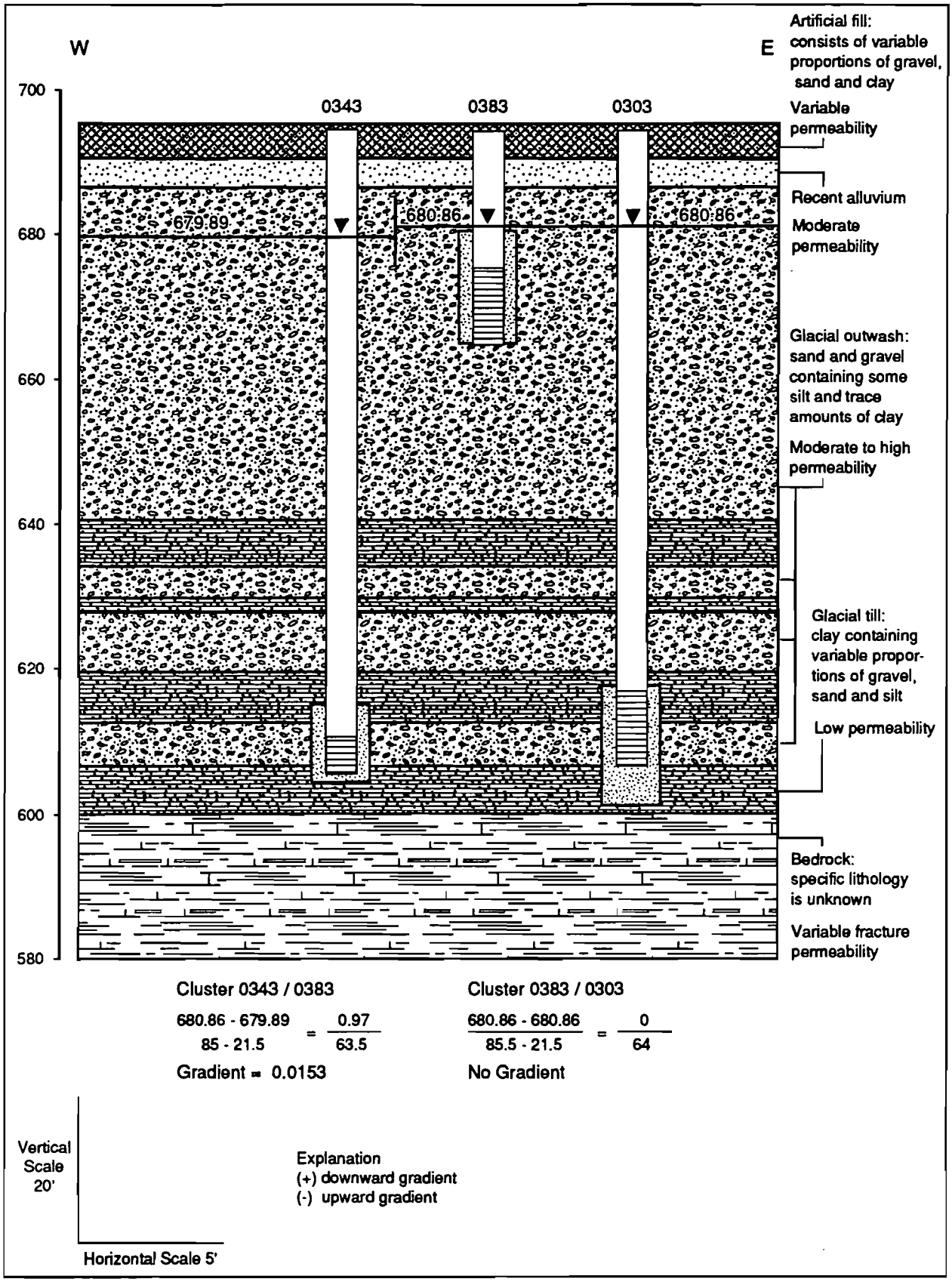
APPENDIX F

HYDRAULIC GRADIENTS



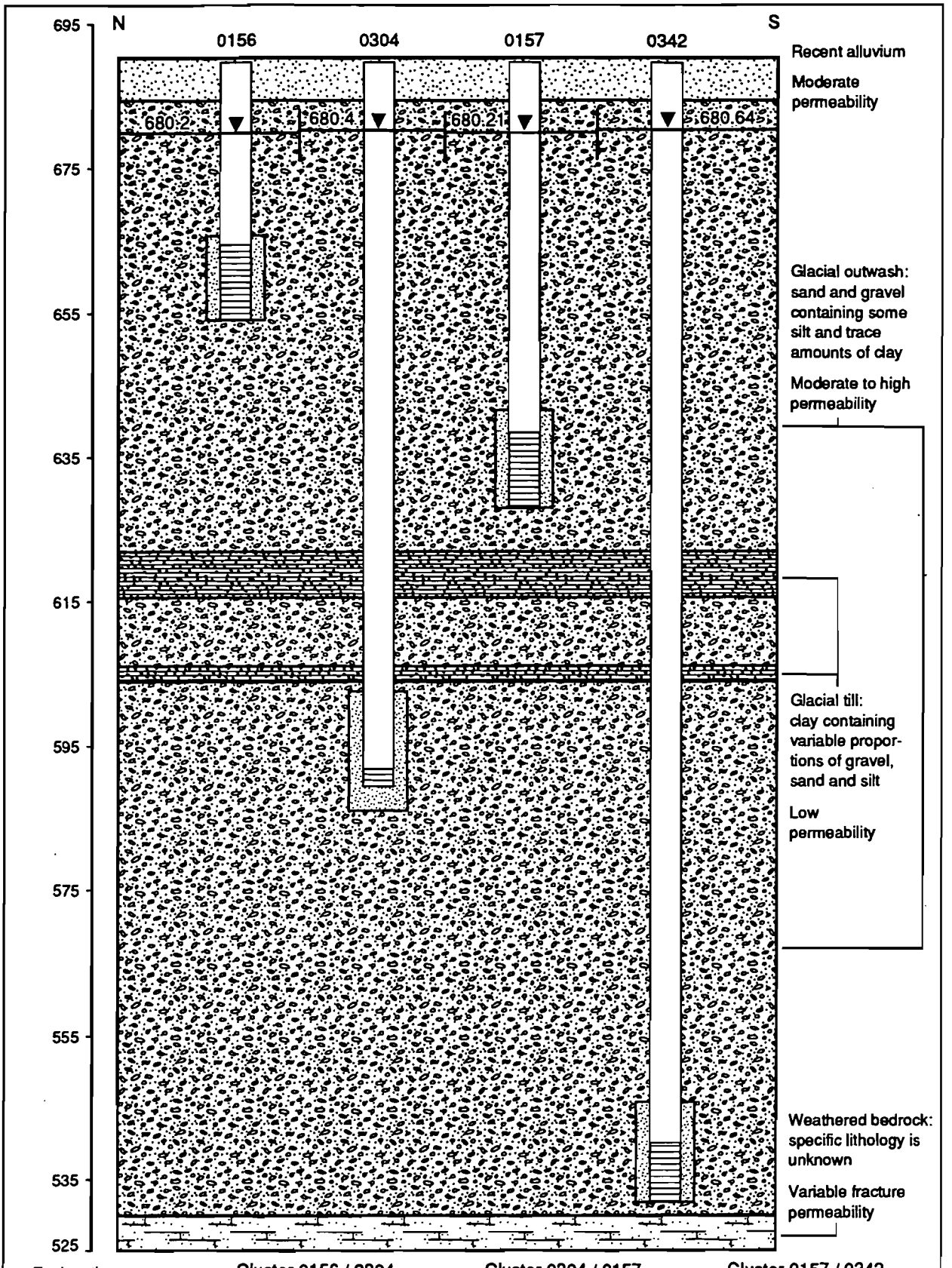
MND OU1/01/10-05-93

Figure F1a. Vertical gradient calculation at well cluster 0127, 0128 and 0302.



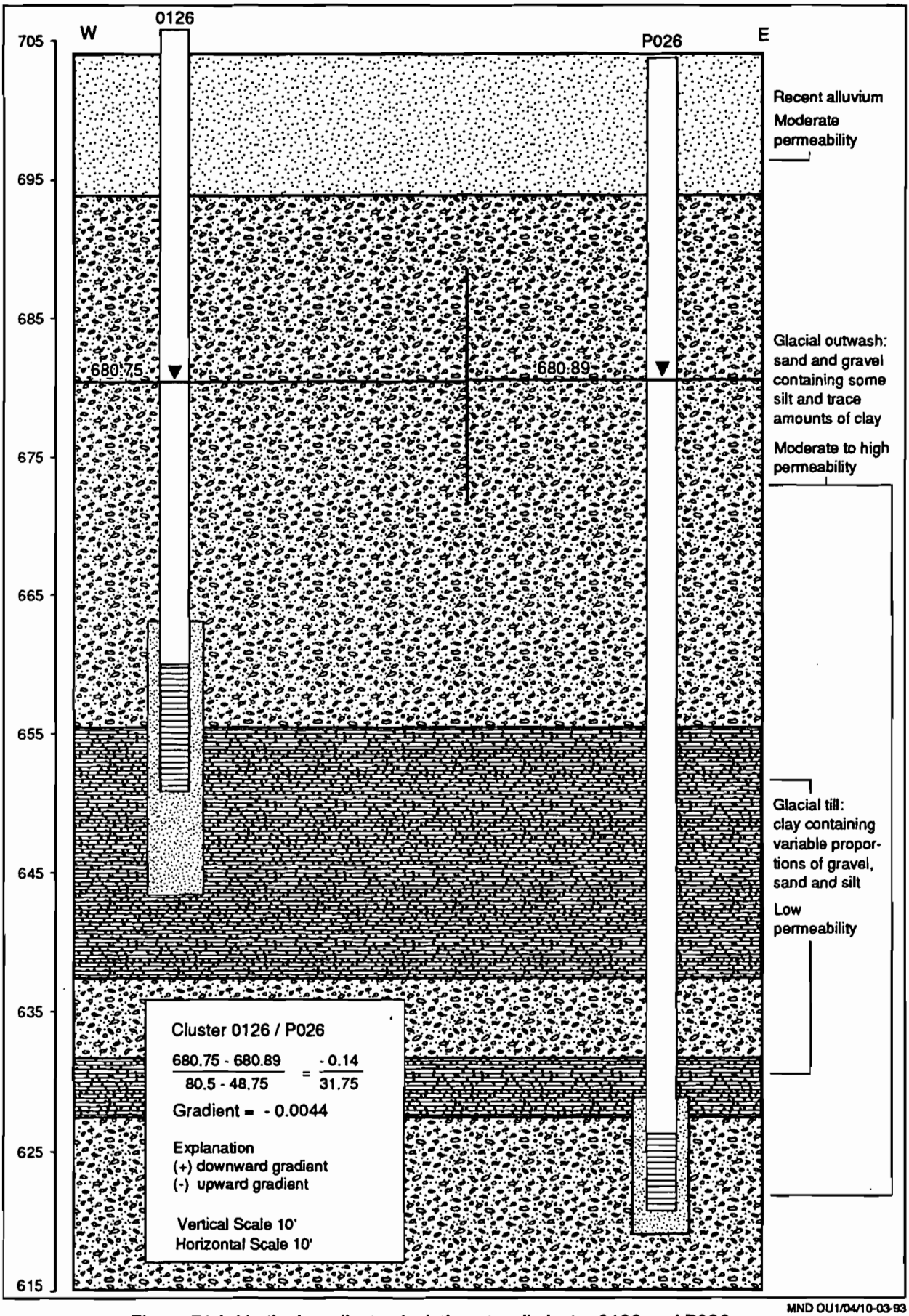
MND OU1/02/10-05-93

Figure F1b. Vertical gradient calculation at well cluster 0343, 0383 and 0303.



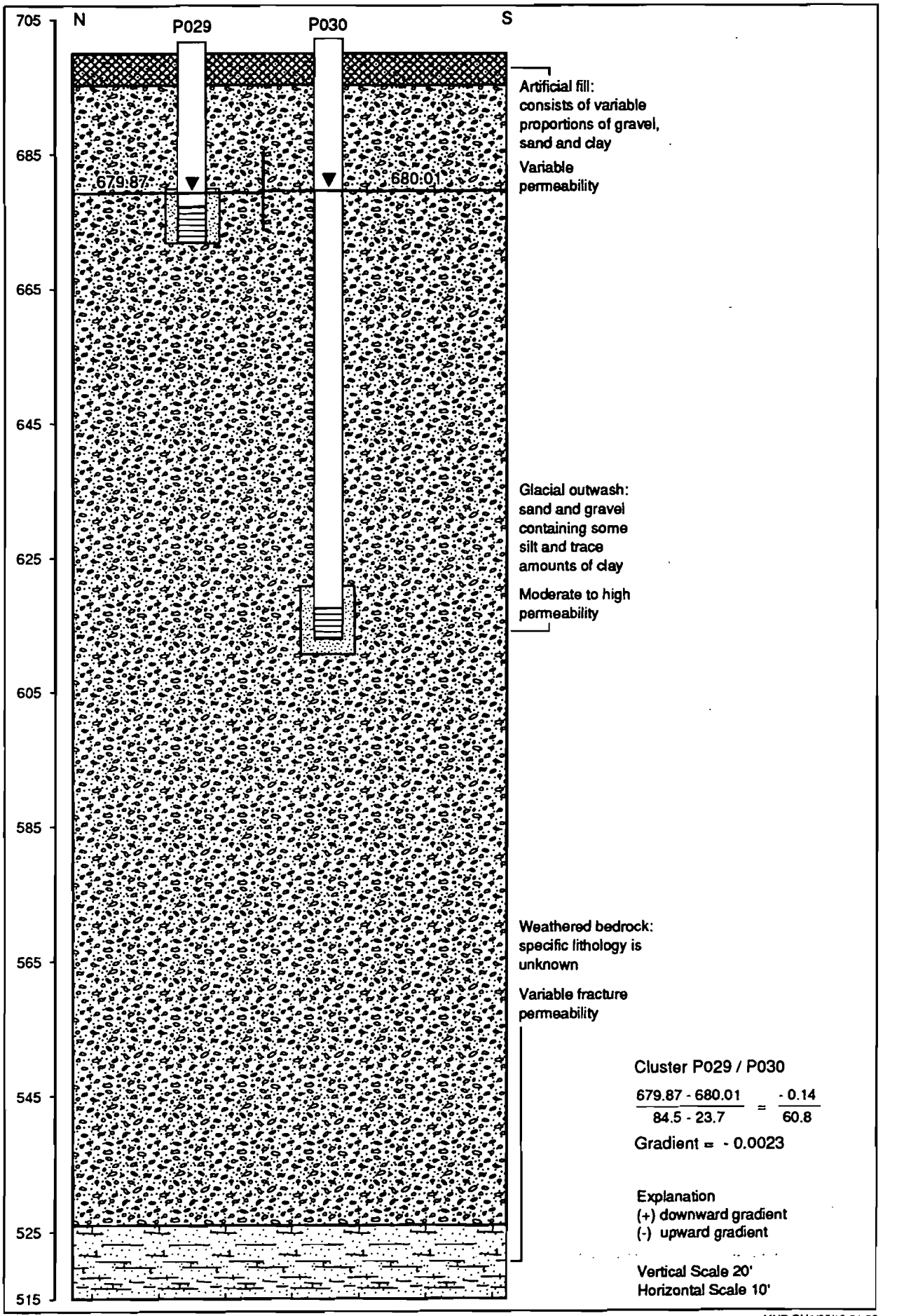
MND OU1/03/10-05-93

Figure F1c. Vertical gradient calculation at well cluster 0156, 0304, 0157 and 0342.



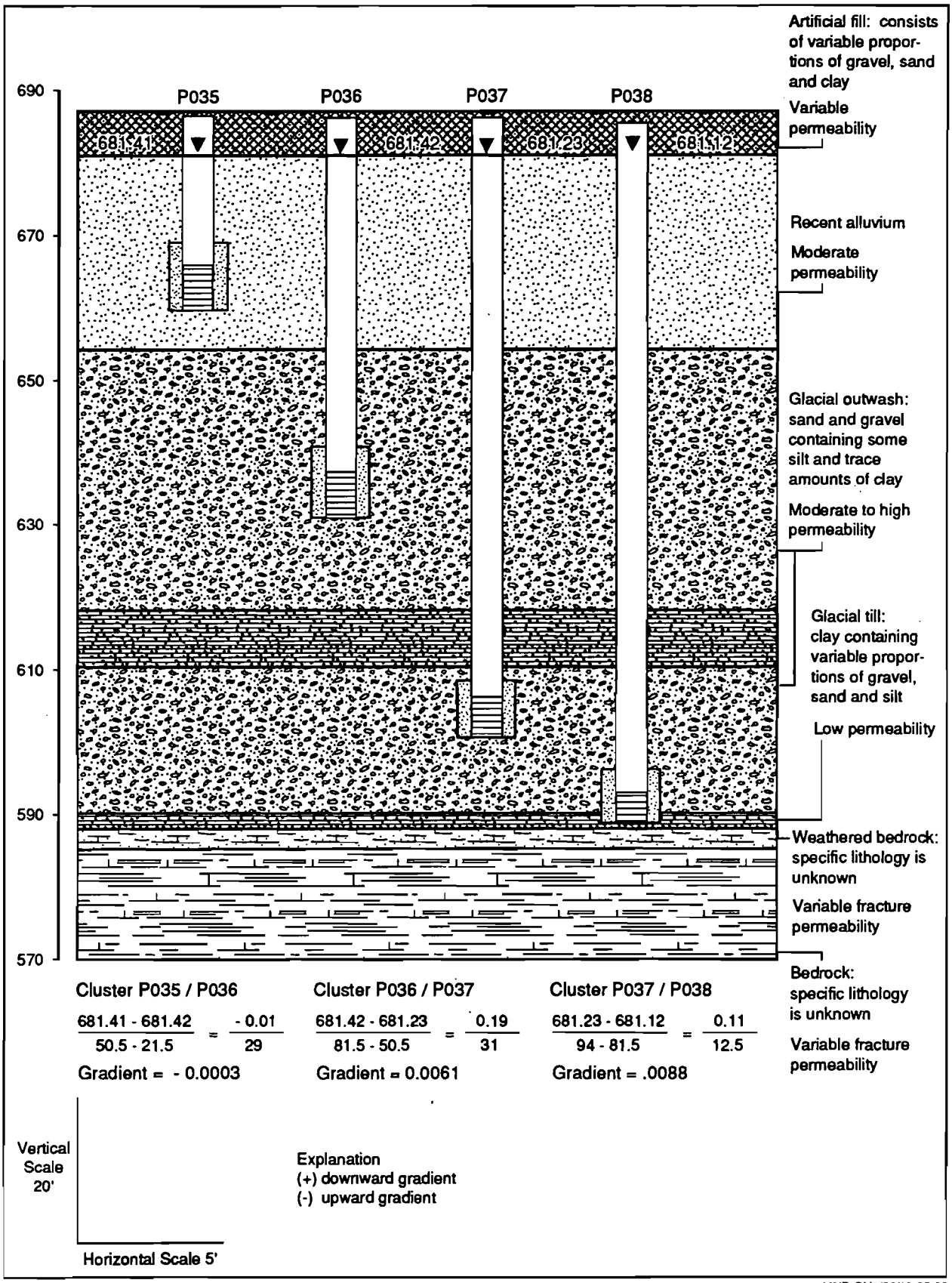
MND OU1/04/10-03-93

Figure F1d. Vertical gradient calculation at well cluster 0126 and P026.



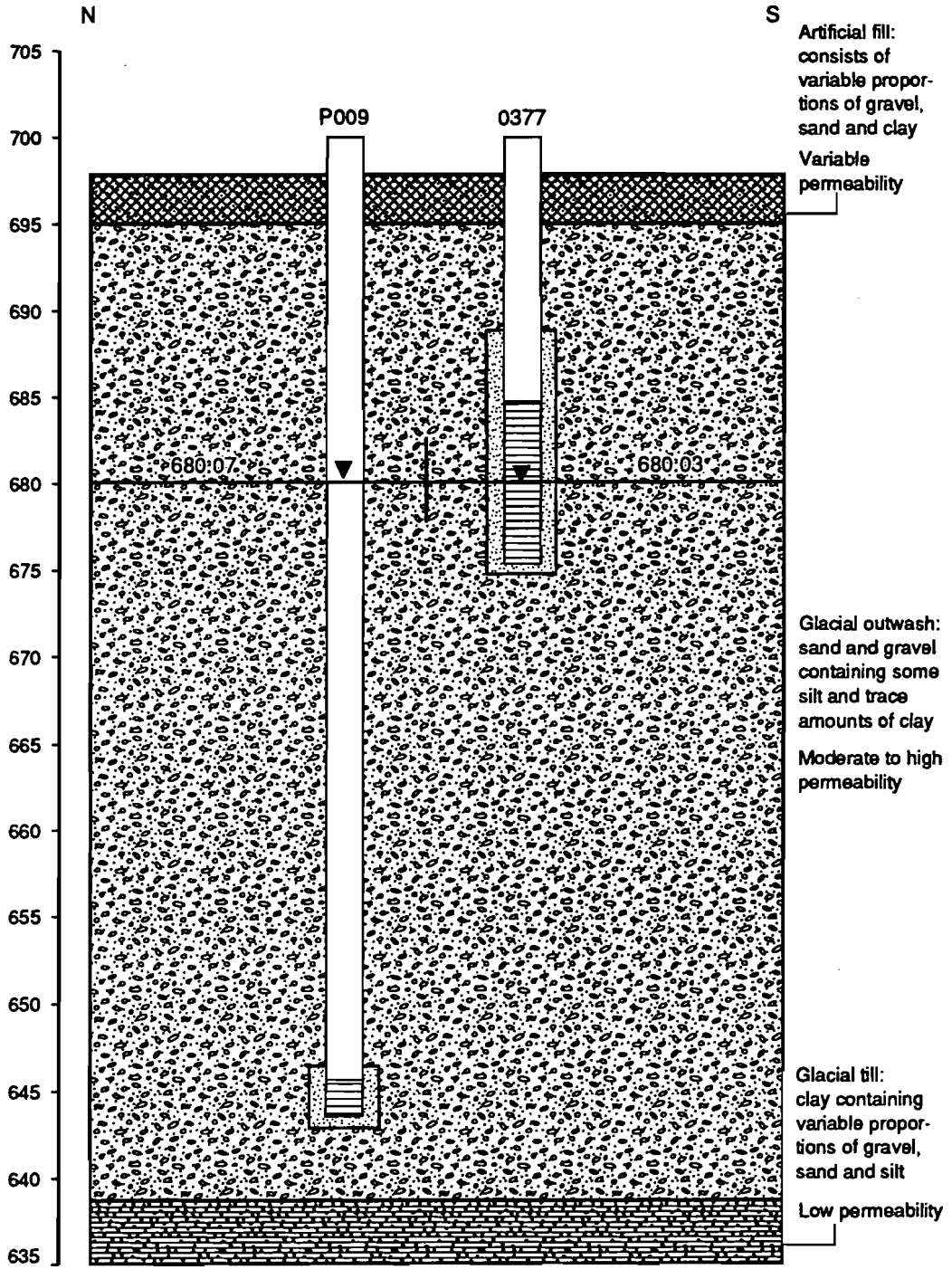
MND OU1/05/10-04-93

Figure F1e. Vertical gradient calculation at well cluster P029 and P030.



MND OU1/06/10-05-93

Figure F1f. Vertical gradient calculation at well cluster P035, P036, P037 and P038.



Explanation
(+) downward gradient
(-) upward gradient

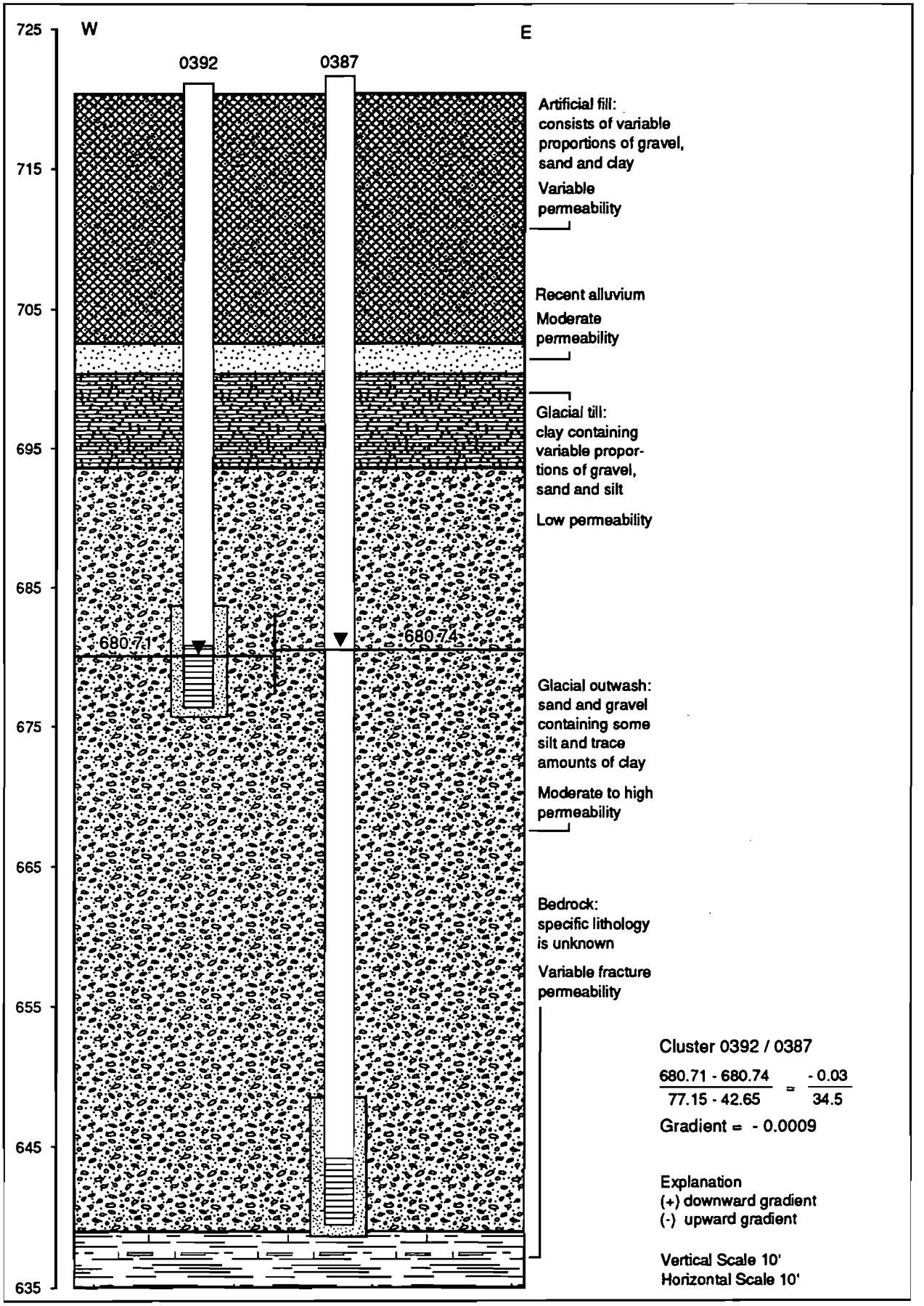
Cluster P009 / 0377

$$\frac{680.03 - 680.07}{55.15 - 21.3} = \frac{-0.04}{33.85}$$

Gradient = - 0.0012

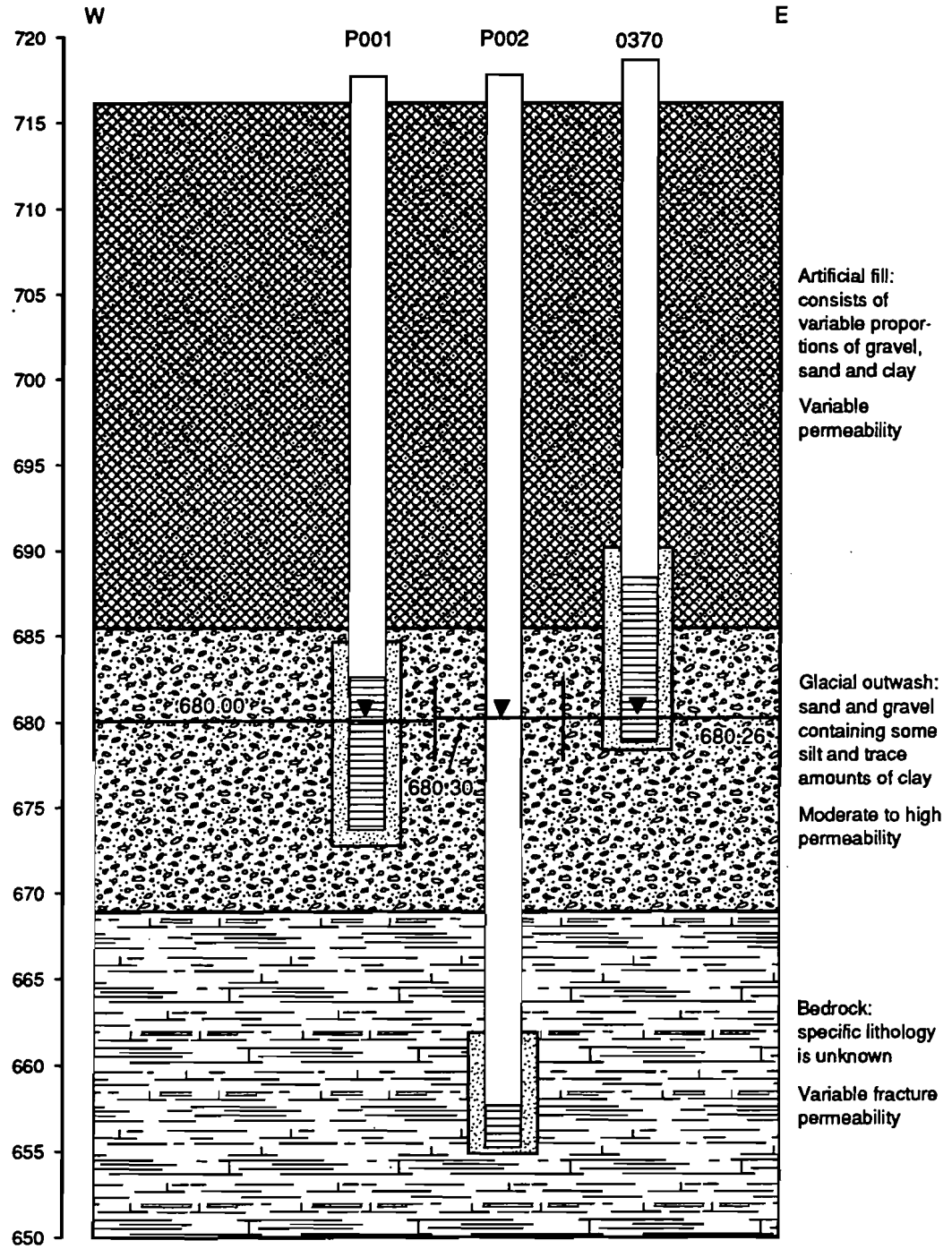
MND OU1/07/10-04-93

Figure F1g. Vertical gradient calculation at well cluster P009 and 0377.



MND OU1/08/10-01-93

Figure F1h. Vertical gradient calculation at well cluster 0392 and 0387.



Explanation
(+) downward gradient
(-) upward gradient

Cluster P001 / P002

$$\frac{680.00 - 680.30}{59.2 - 40.47} = \frac{-0.30}{18.73}$$

Gradient = - 0.016

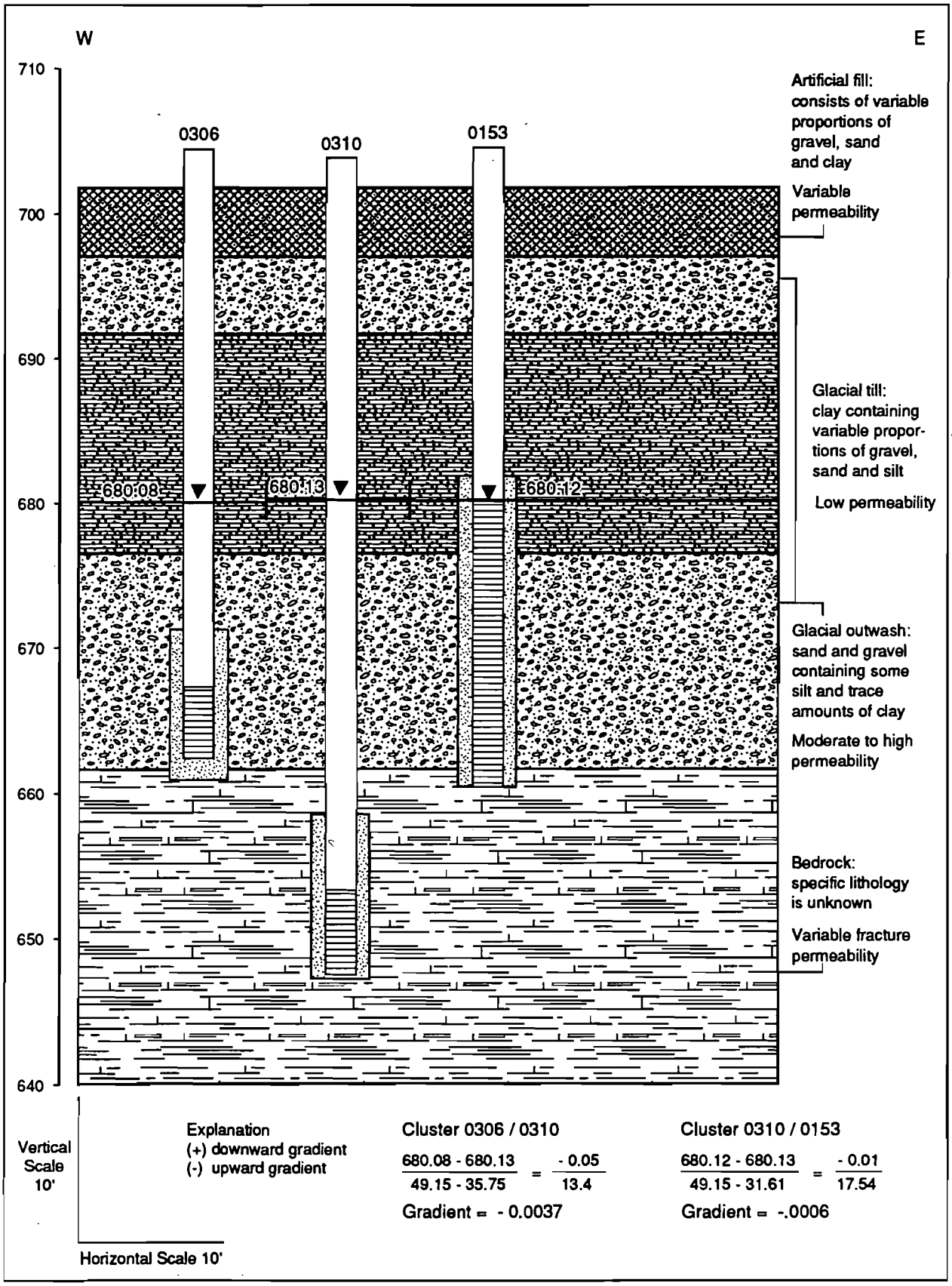
Cluster 0370 / P002

$$\frac{680.26 - 680.30}{59.2 - 37.84} = \frac{-0.04}{21.36}$$

Gradient = - 0.002

MND OU1/09/10-01-93

Figure F1i. Vertical gradient calculation at well cluster P001, P002 and 0370.



Explanation
(+) downward gradient
(-) upward gradient

Cluster 0306 / 0310

$$\frac{680.08 - 680.13}{49.15 - 35.75} = \frac{-0.05}{13.4}$$

Gradient = - 0.0037

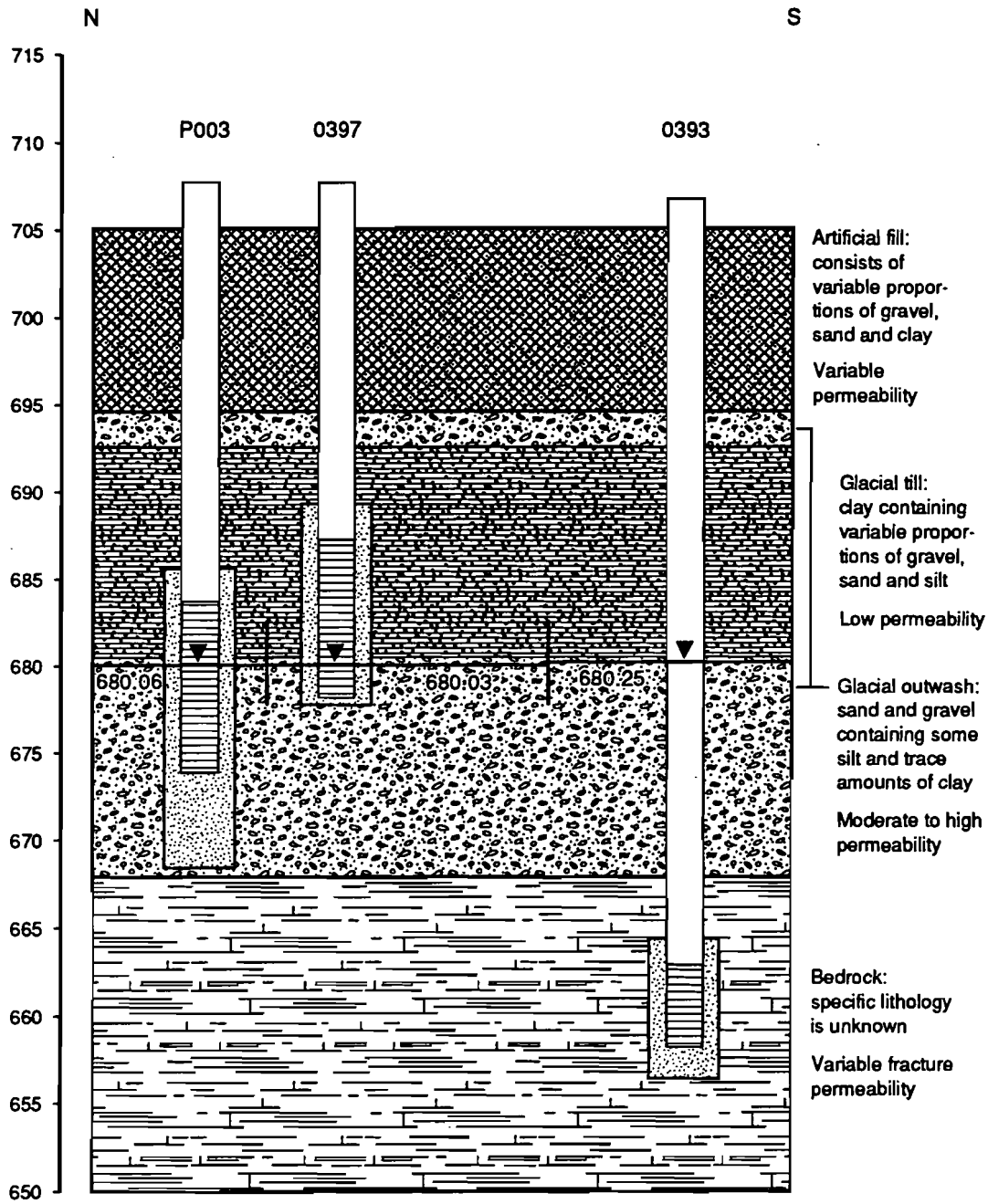
Cluster 0310 / 0153

$$\frac{680.12 - 680.13}{49.15 - 31.61} = \frac{-0.01}{17.54}$$

Gradient = -.0006

MND OU1/10/10-03-93

Figure F1j. Vertical gradient calculation at well cluster 0306, 0310 and 0153.



Explanation
(+) downward gradient
(-) upward gradient

Cluster P003 / 0397

$$\frac{680.03 - 680.06}{31.98 - 27.49} = \frac{-0.03}{4.49}$$

Gradient = - 0.007

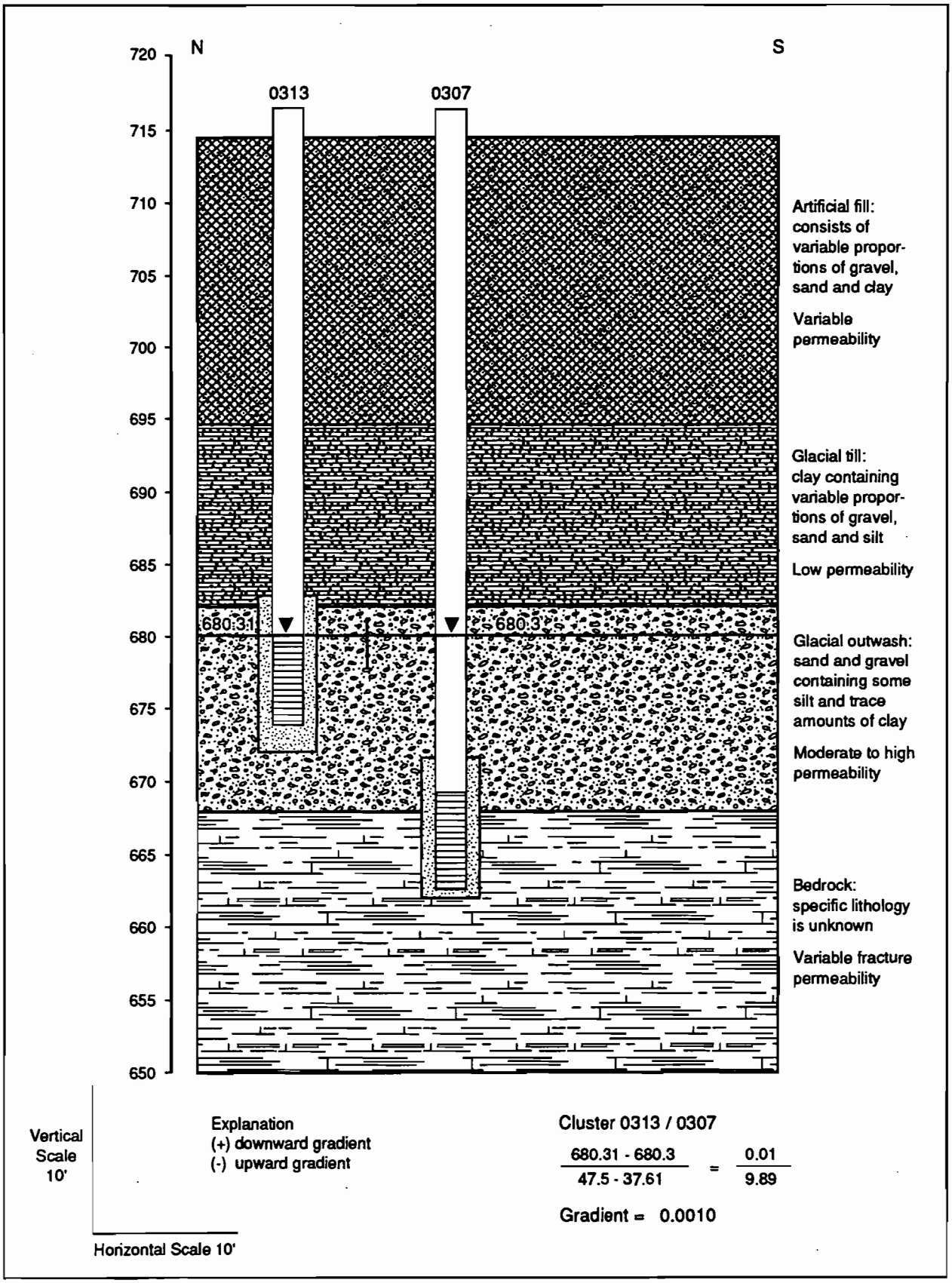
Cluster 0397 / 0393

$$\frac{680.03 - 680.25}{46.0 - 27.49} = \frac{-0.22}{18.51}$$

Gradient = - 0.012

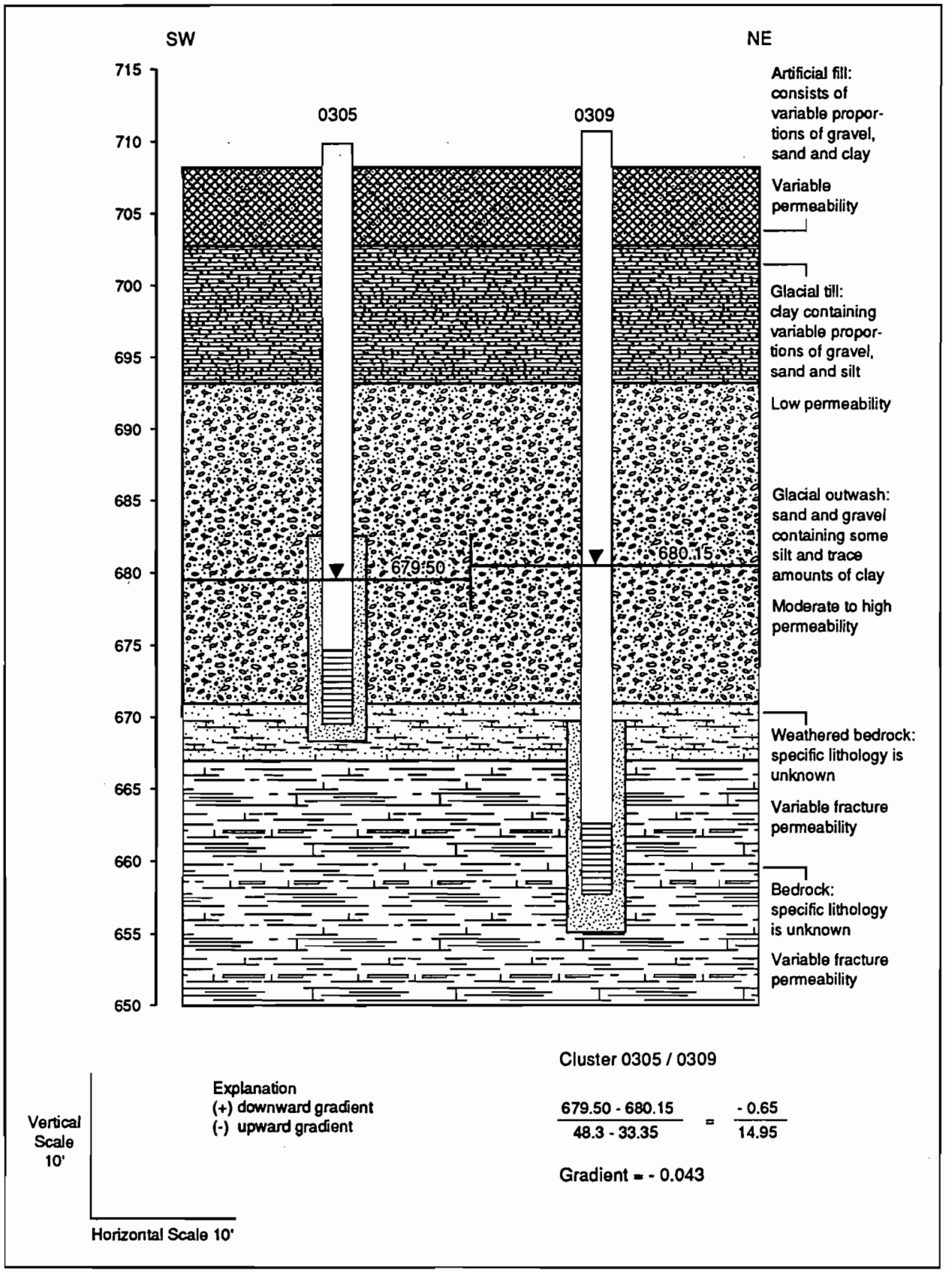
MND OU1/11/10-05-93

Figure F1k. Vertical gradient calculation at well cluster P003, 0397 and 0393.



MND OU1/12/10-01-93

Figure F1l. Vertical gradient calculation at well cluster 0313 and 0307.



MND OU1/14/10-04-93

Figure F1m. Vertical gradient calculation at well cluster 0305 and 0309.

APPENDIX G

AQUIFER TEST DATA

G1. ARITHMATIC DRAWDOWN PLOTS

G2. PRECIPITATION, BAROMETRIC PRESSURE, RIVER STAGE AND WELL 0076 DISCHARGE MONITORING DATA

G3. CORRECTED ARITHMATIC DRAWDOWN PLOTS

G4. NEUMAN TEST ANALYSIS PLOTS

G5. TRANSIMISSIVITY AND STORATIVITY VALUES CALCULATED FROM PREVIOUS AQUIFER TESTS

G6. DISTANCE DRAWDOWN PLOTS

G7. PUMPING AT MIAMISBURG WELLS AND DAYTON POWER AND LIGHT WELLS

G8. MOUND PLANT PUMPING

G1. ARITHMATIC DRAWDOWN PLOTS

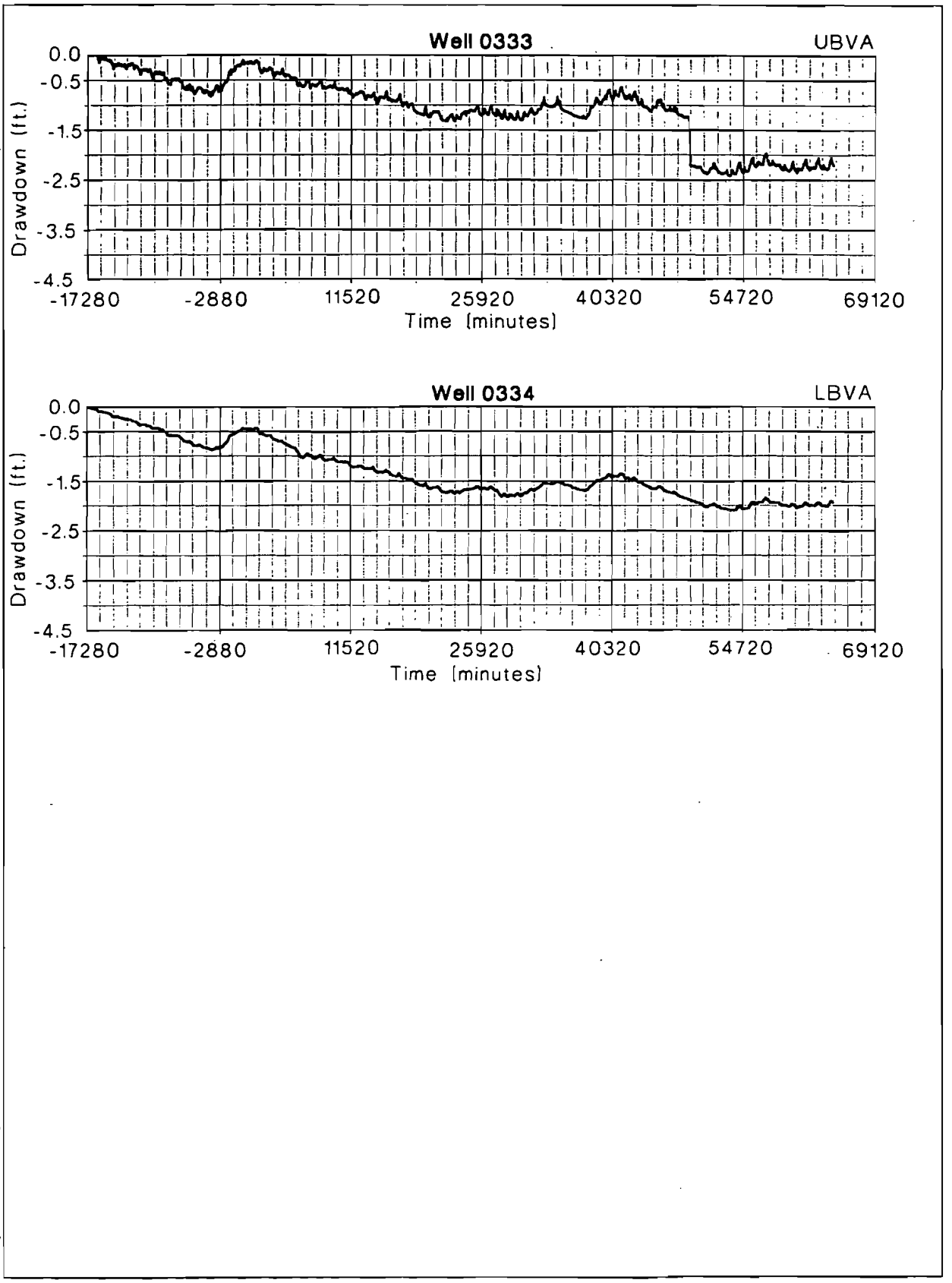


Figure G1a. Drawdown in 0333 and 0334, May 1993 aquifer test.

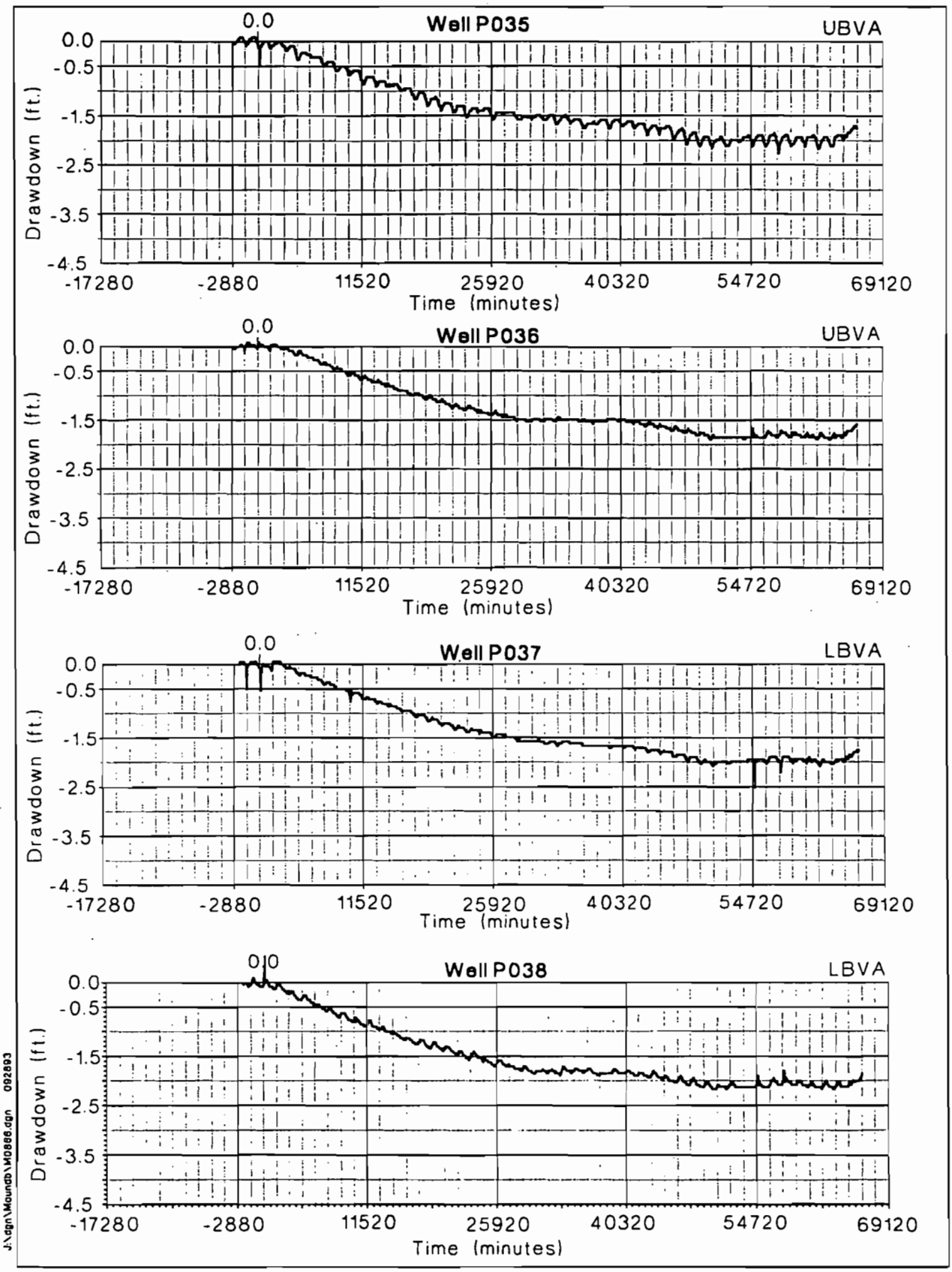


Figure G1b. Drawdown in P035, P036, P037, and P038, May 1993 aquifer test.

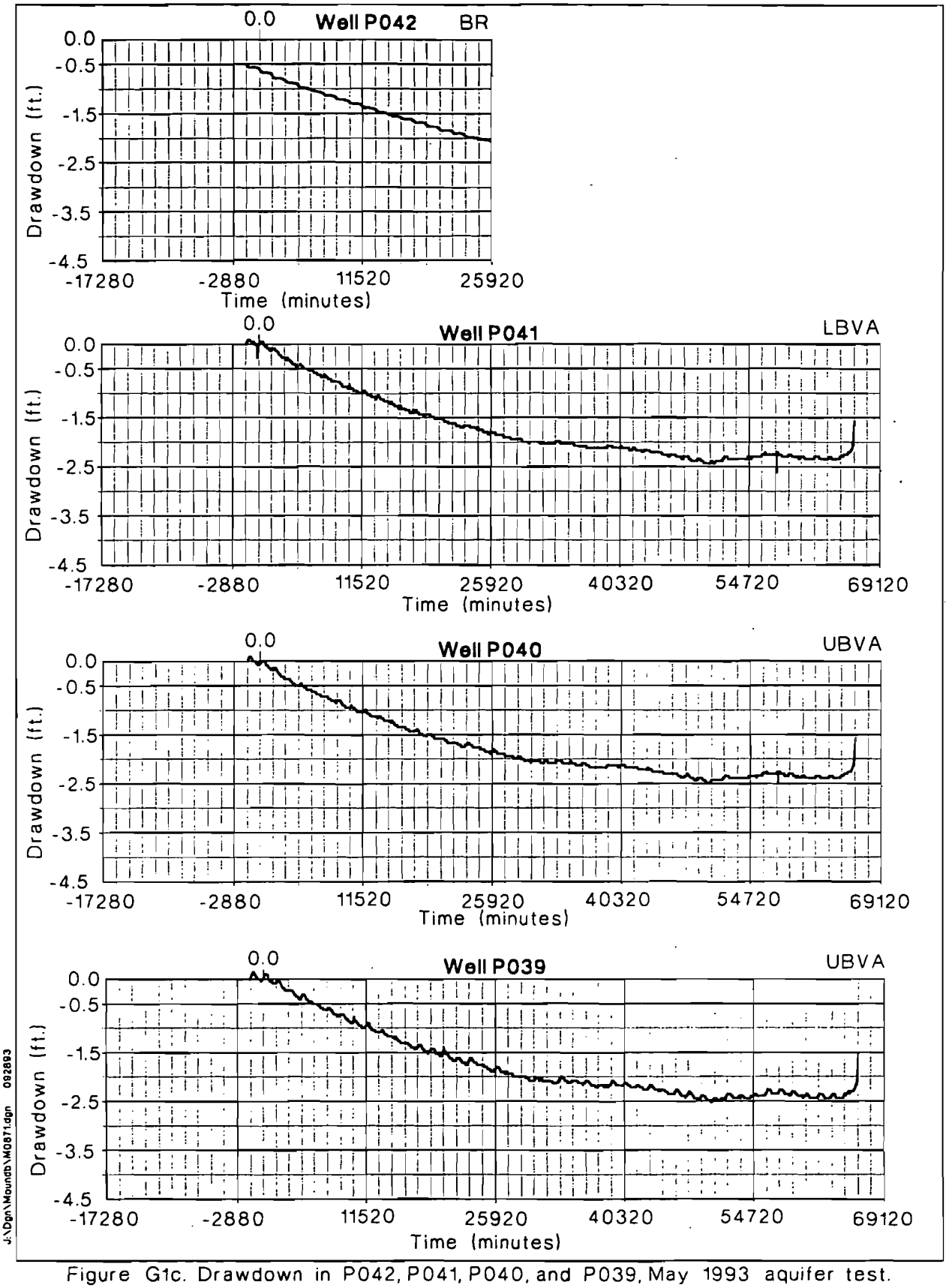


Figure G1c. Drawdown in P042, P041, P040, and P039, May 1993 aquifer test.

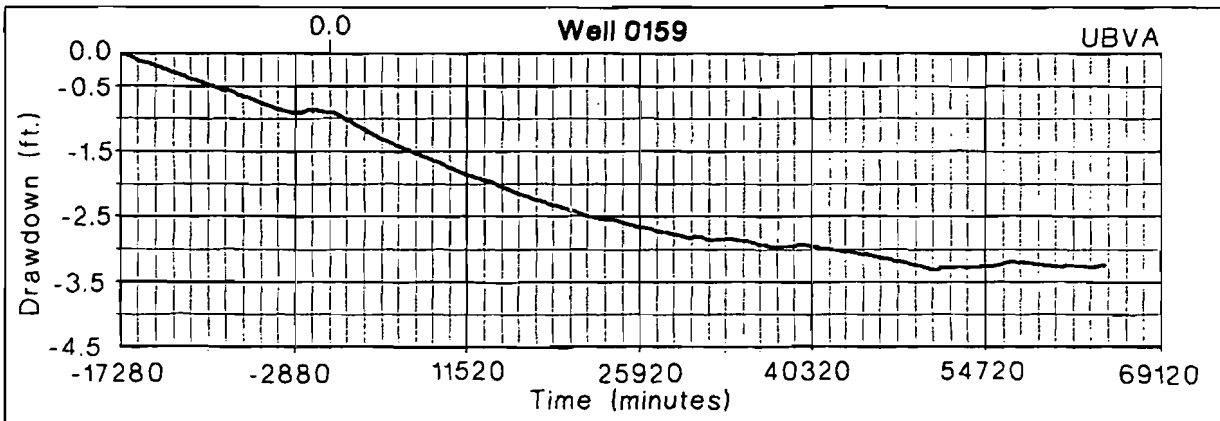


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Figure G1d. Drawdown in 0159, May 1993 aquifer test.

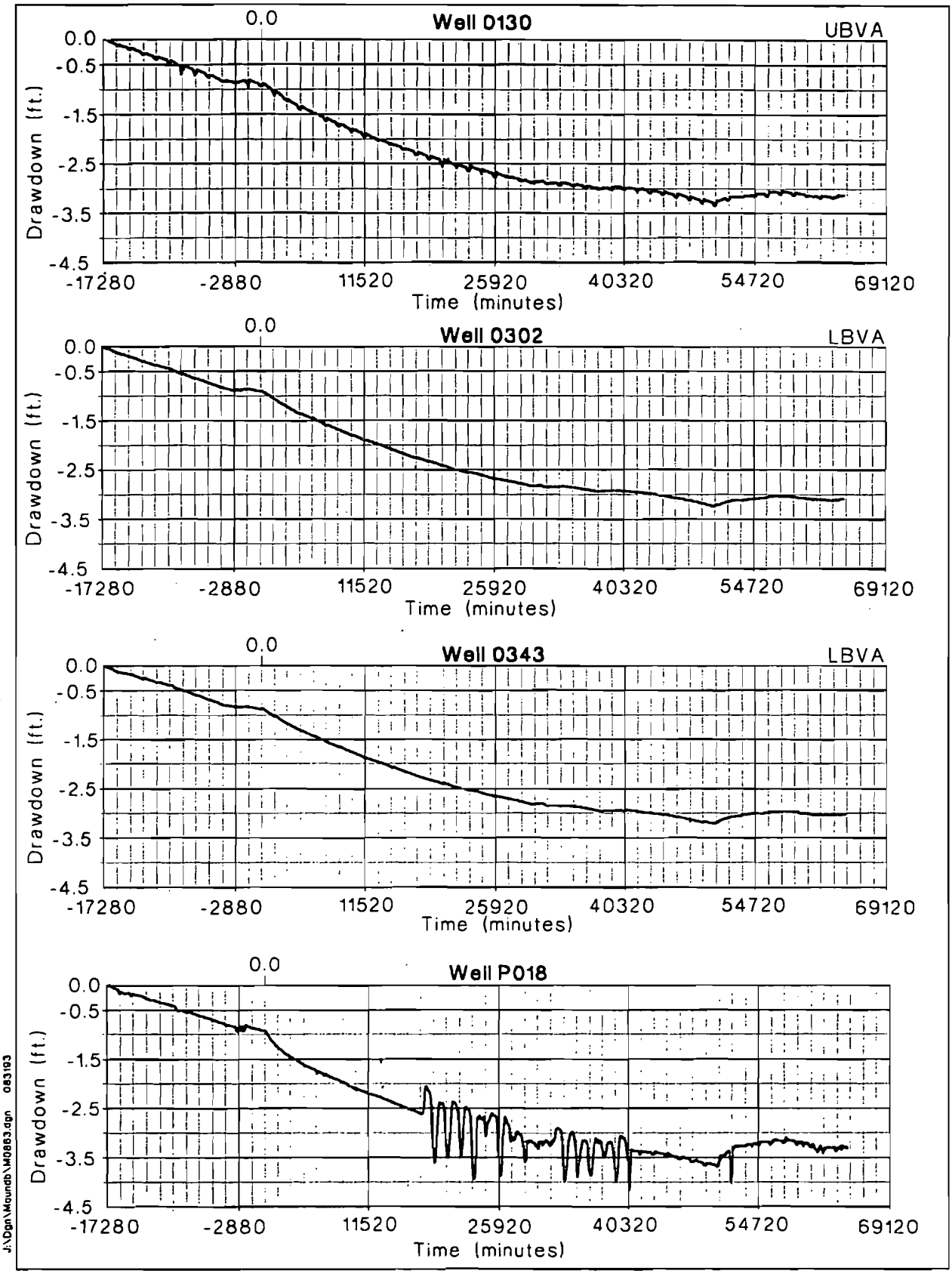

Figure G1e. Drawdown in 0130, 0302, 0343, and P018, May 1993 aquifer test.

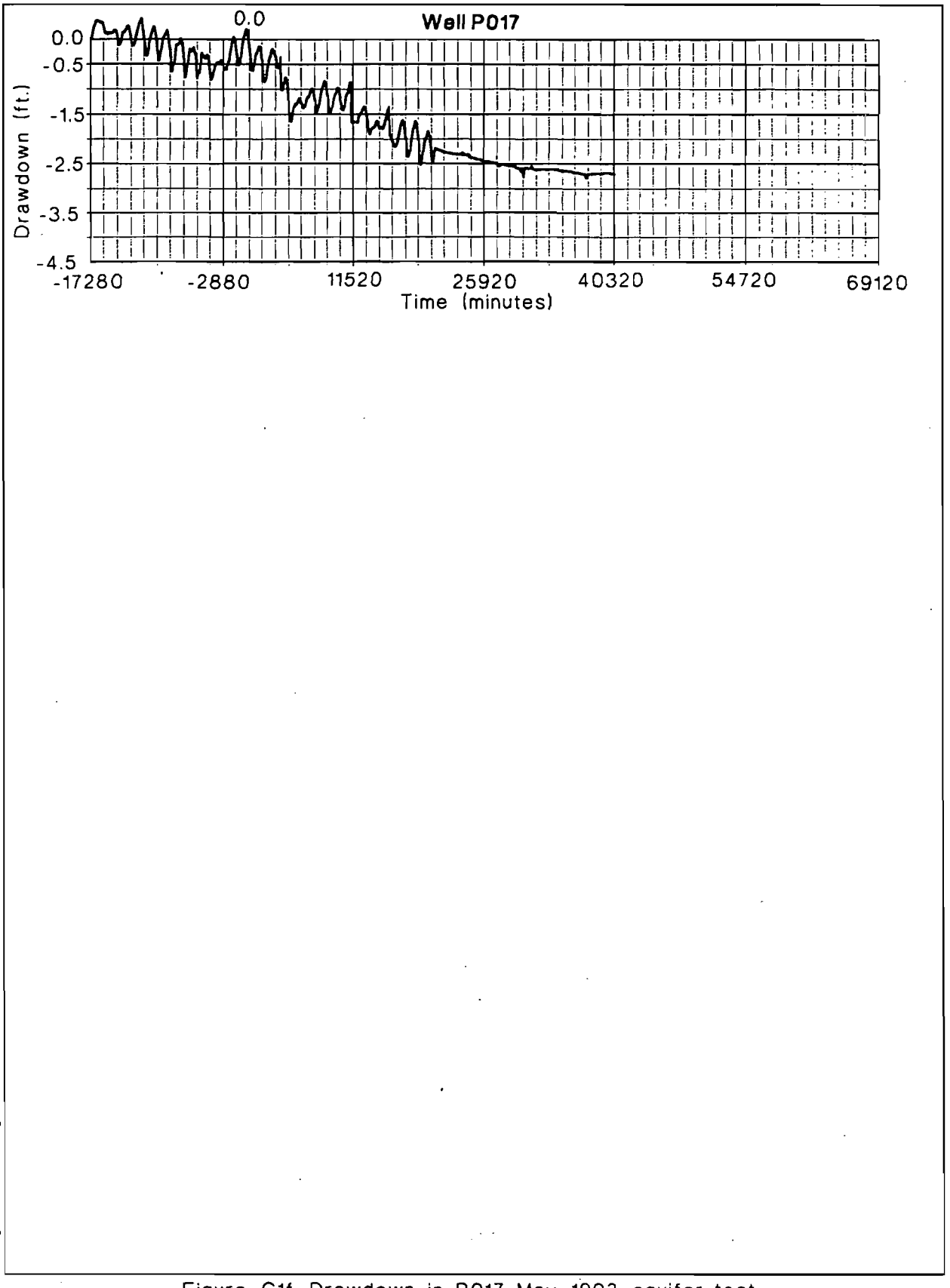

Figure G1f. Drawdown in P017, May 1993 aquifer test.

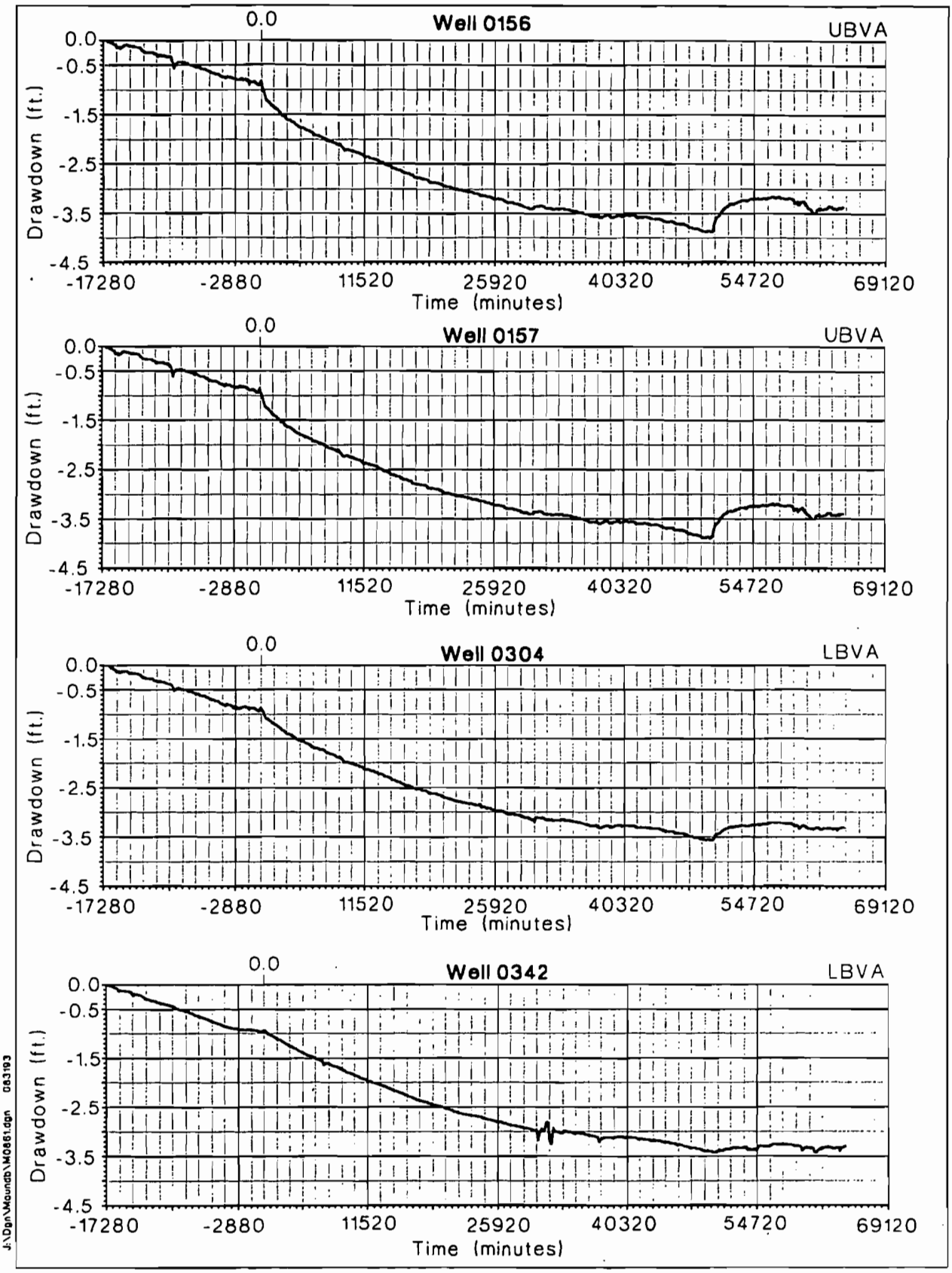

Figure G1g. Drawdown in 0156, 0157, 0304, and 0342, May 1993 aquifer test.

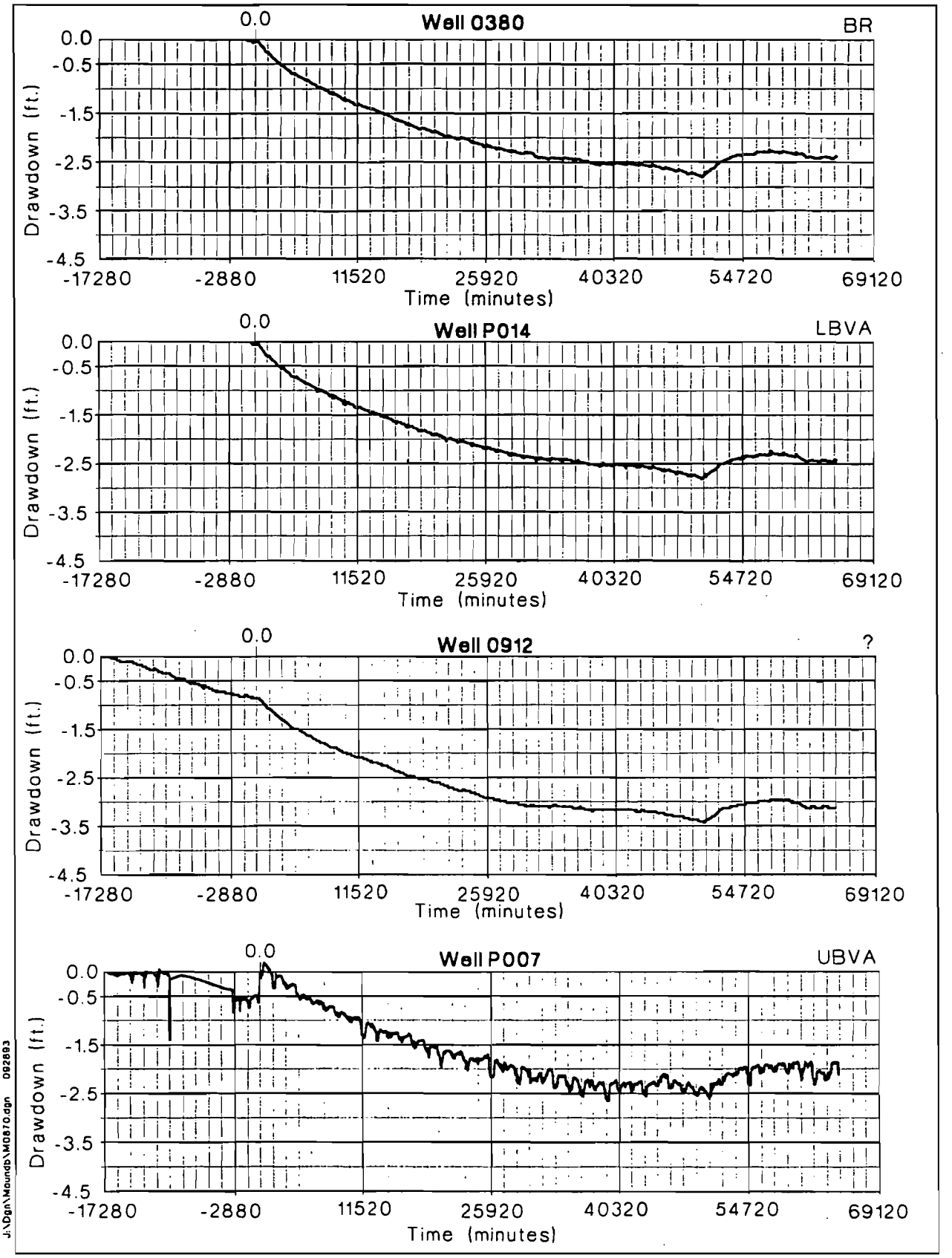

Figure G1h. Drawdown in 0380, P014, 0912, and P007, May 1993 aquifer test.

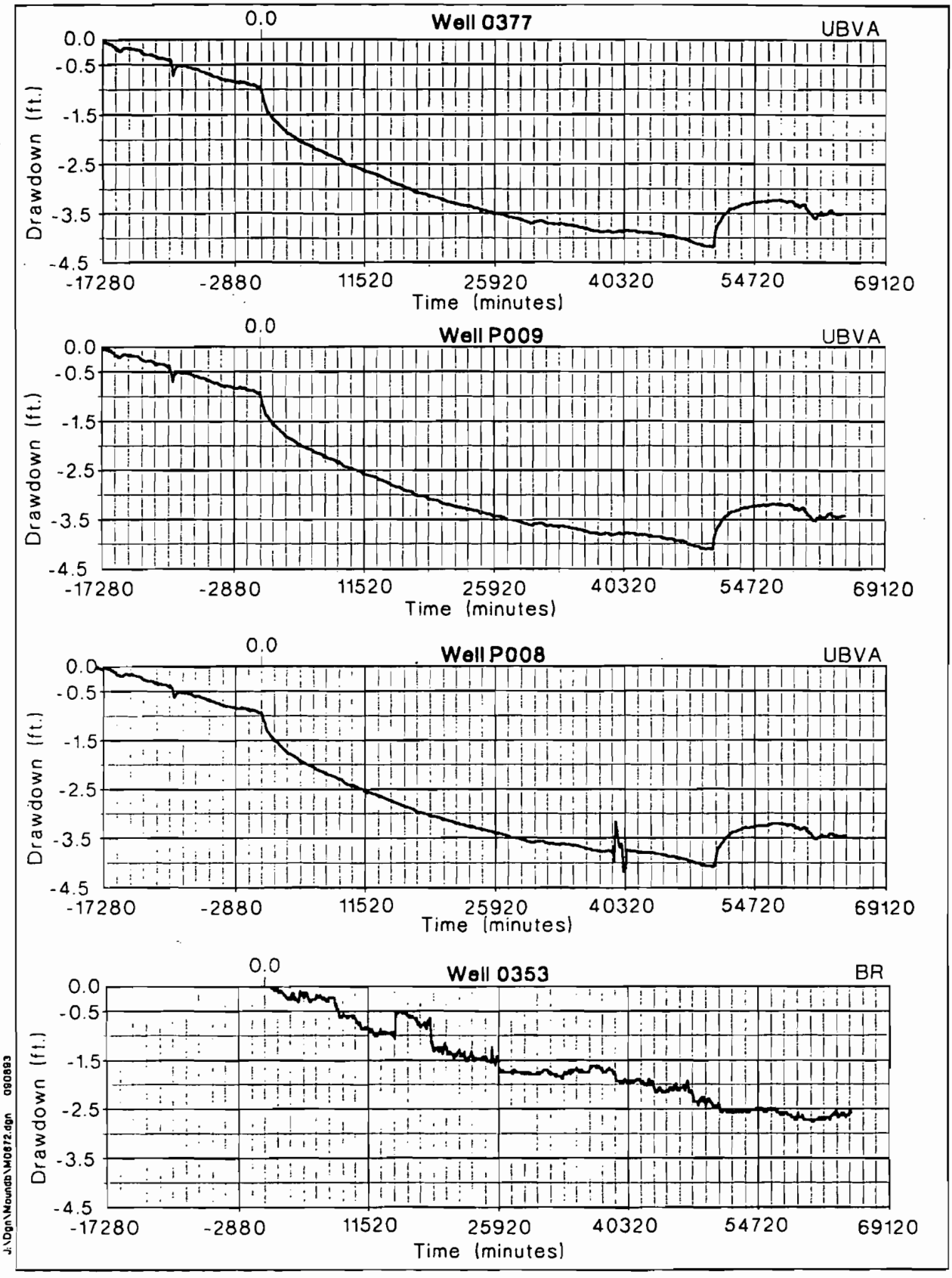

Figure G1i. Drawdown in 0377, P009, P008, and 0353, May 1993 aquifer test.

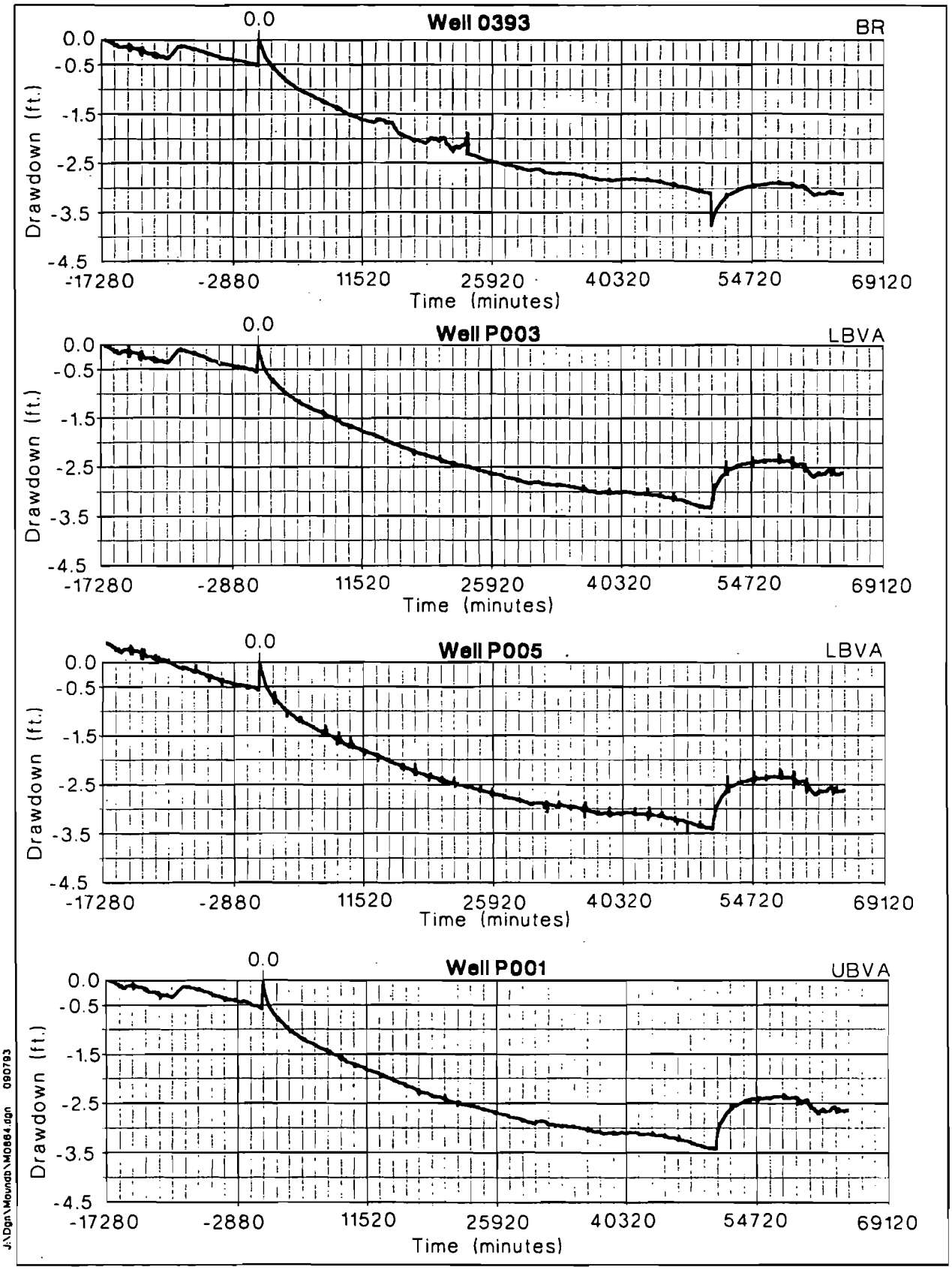

Figure G1j. Drawdown in 0393, P003, P005, and P001, May 1993 aquifer test.

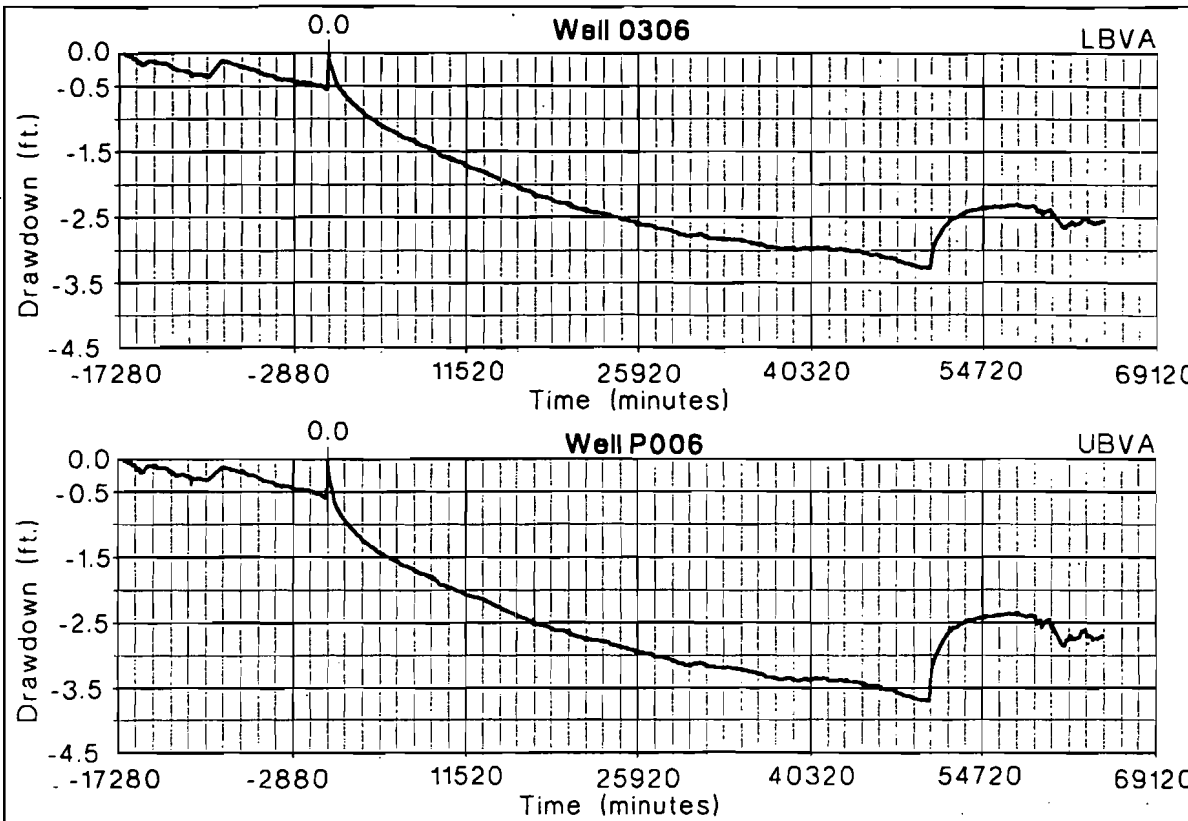

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Figure G1k. Drawdown in 0306 and P006, May 1993 aquifer test.

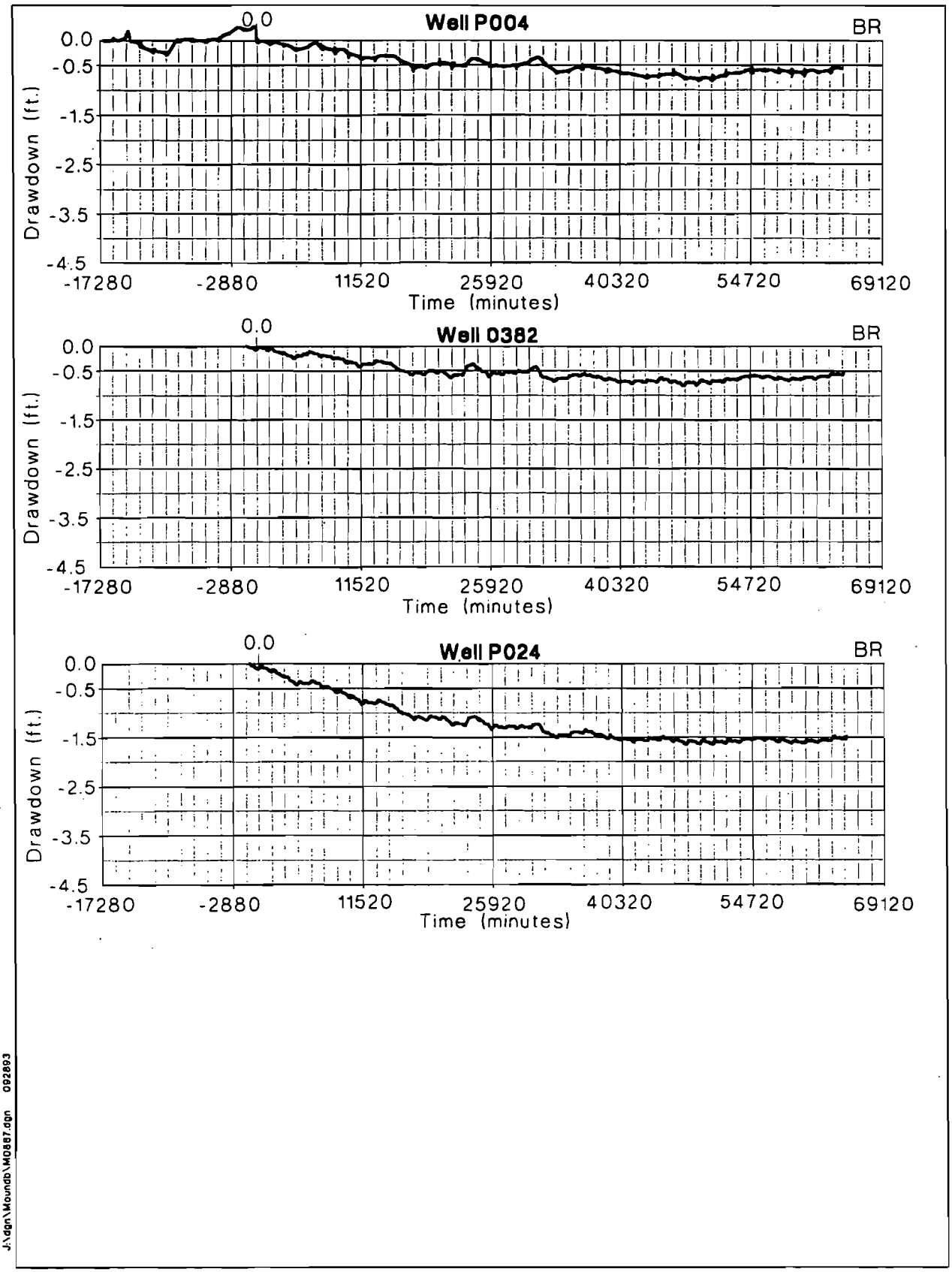

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Figure G11. Drawdown in P004, 0382, and P024, May 1993 aquifer test.

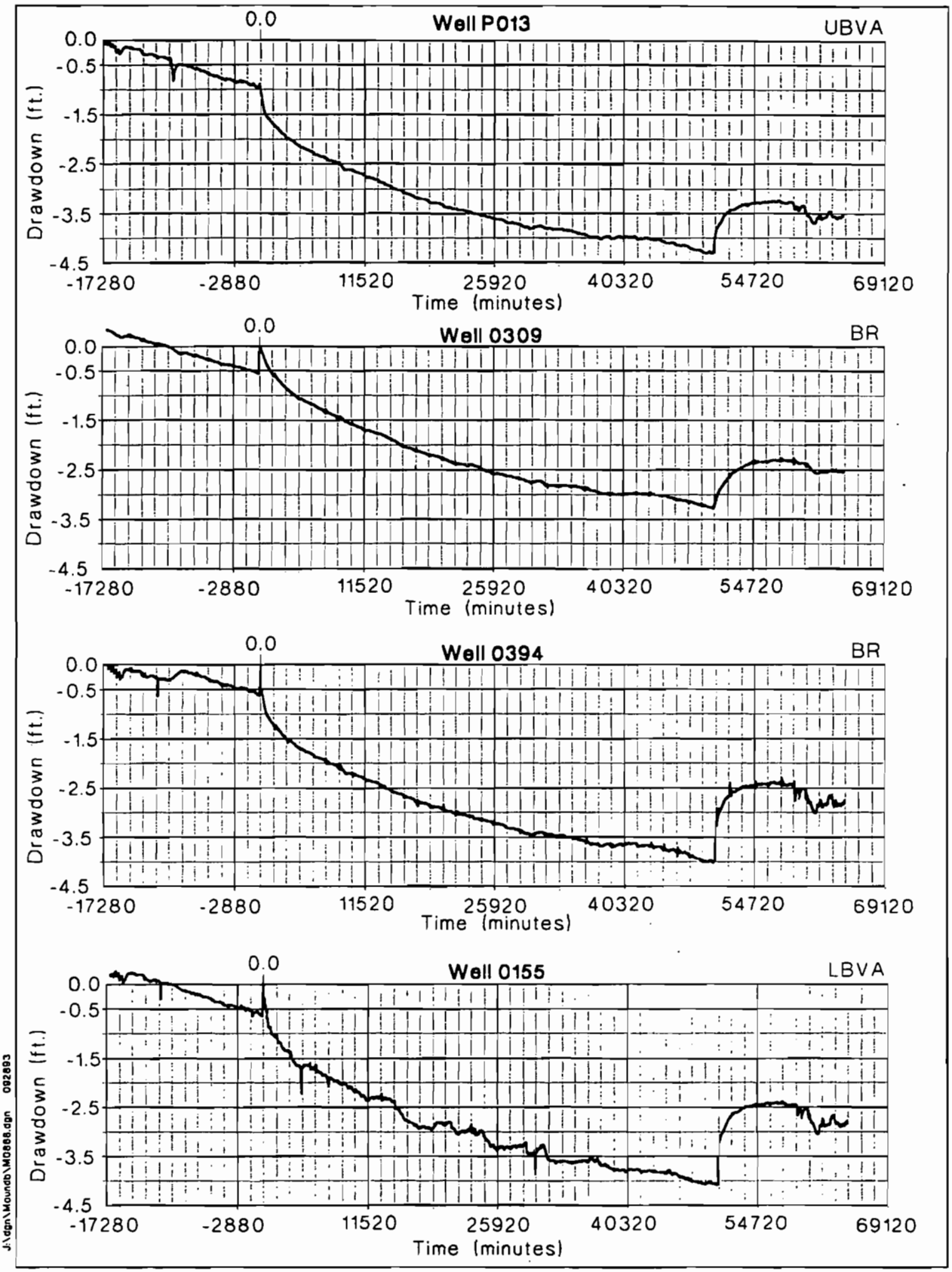

Figure G1m. Drawdown in P013, 0309, 0394, and 0155, May 1993 aquifer test.

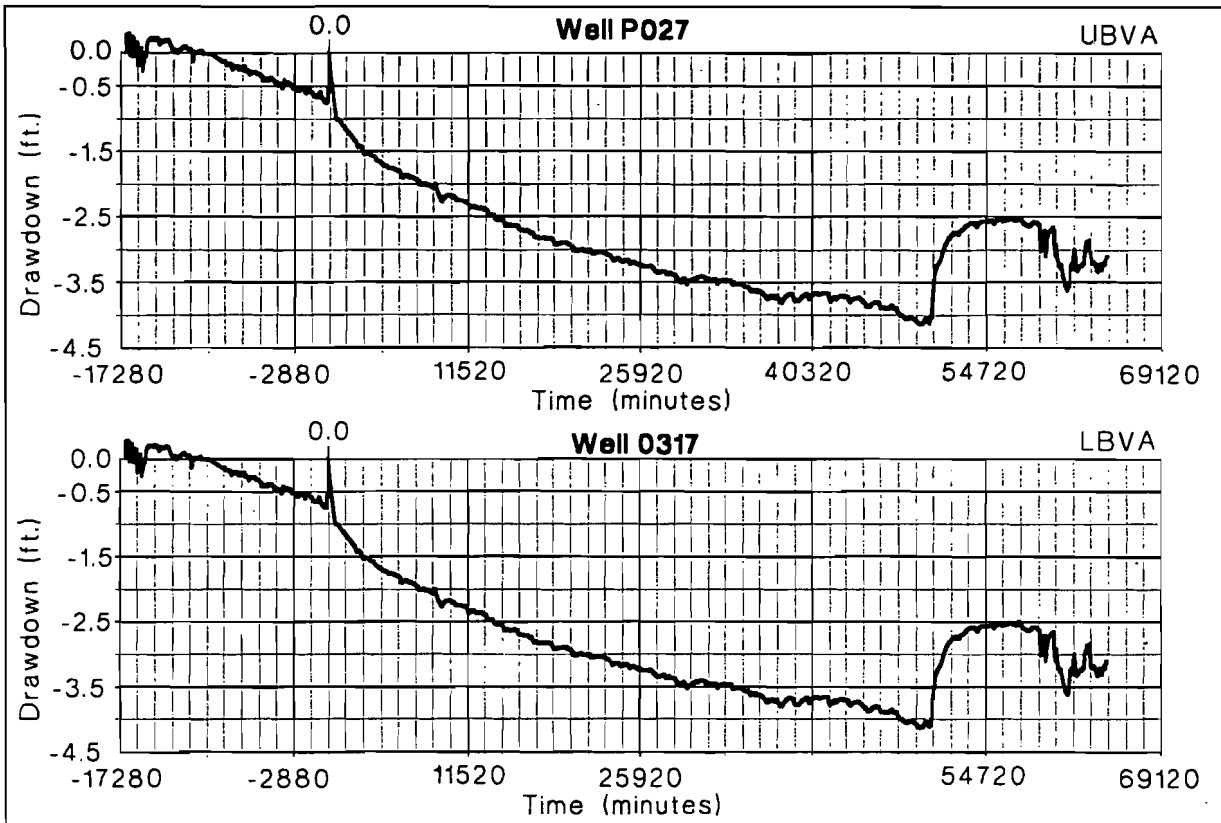

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Figure G1n. Drawdown in P027 and 0317, May 1993 aquifer test.

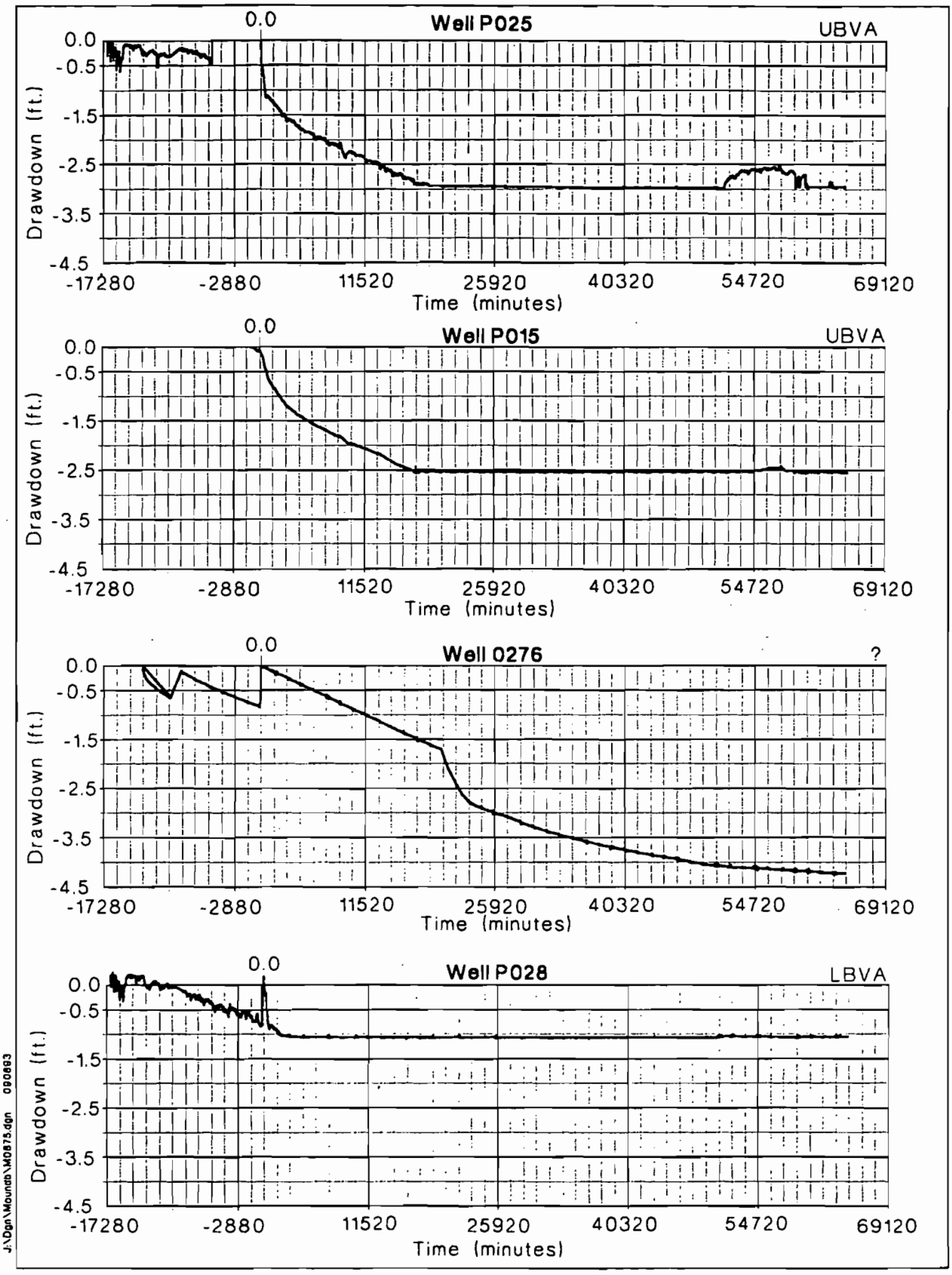

Figure G1o. Drawdown in P025, P015, 0276, and P028, May 1993 aquifer test.

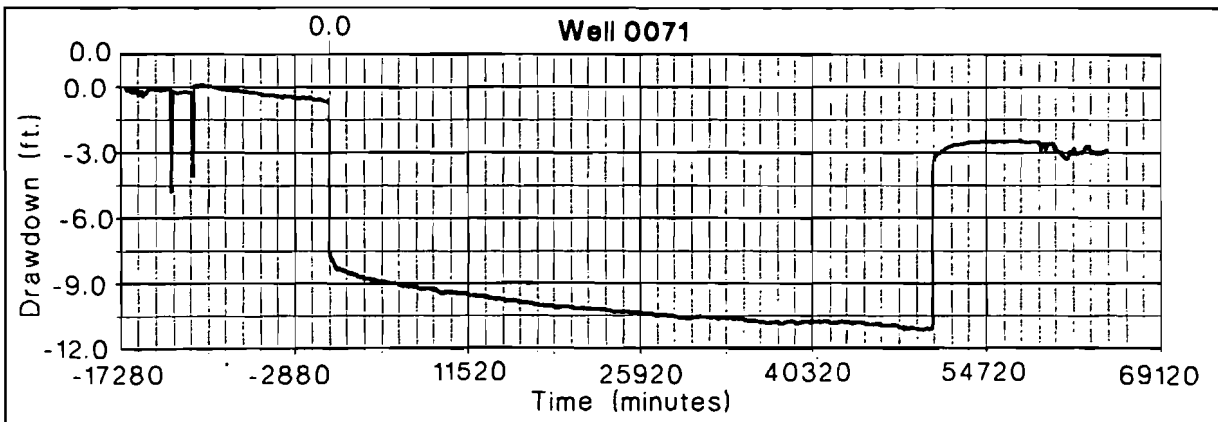

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Figure G1p. Drawdown in 0071, May 1993 aquifer test.

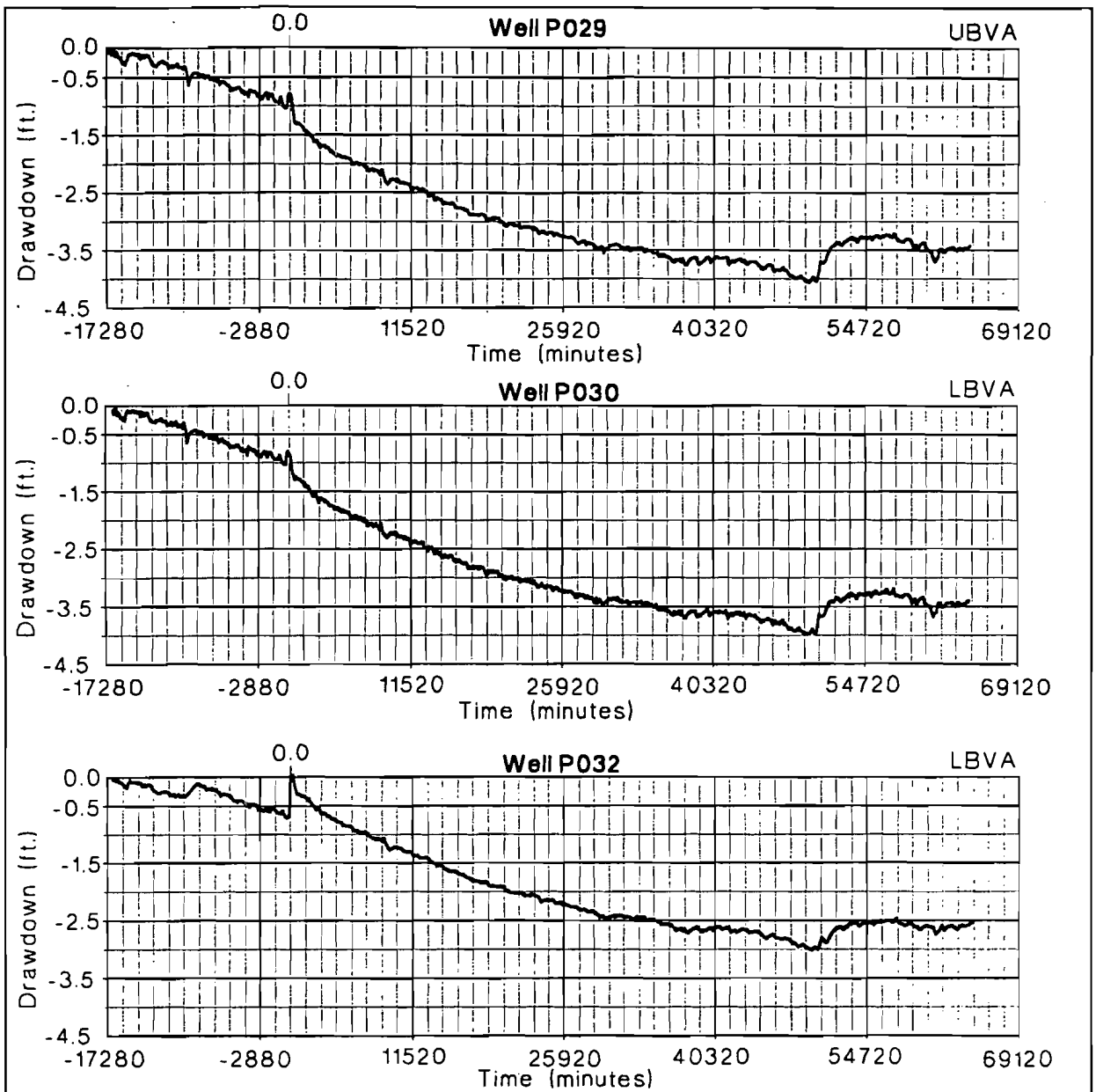

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Figure G1q. Drawdown in P029, P030, and P032, May 1993 aquifer test.

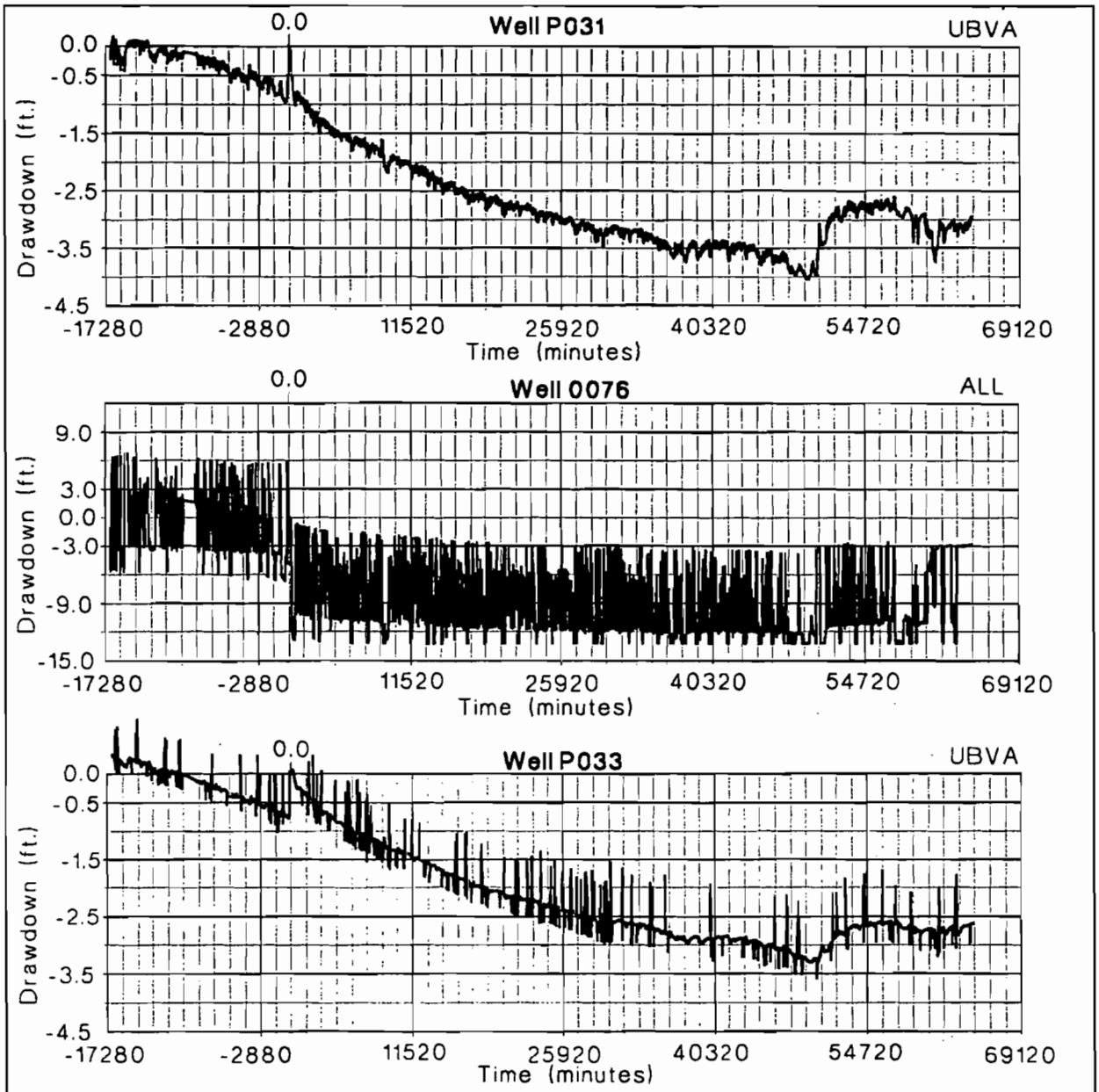

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Figure G1r. Drawdown in P031, 0076, and P033, May 1993 aquifer test.

G2. PRECIPITATION, BAROMETRIC PRESSURE, RIVER STAGE AND WELL 0076 DISCHARGE MONITORING DATA

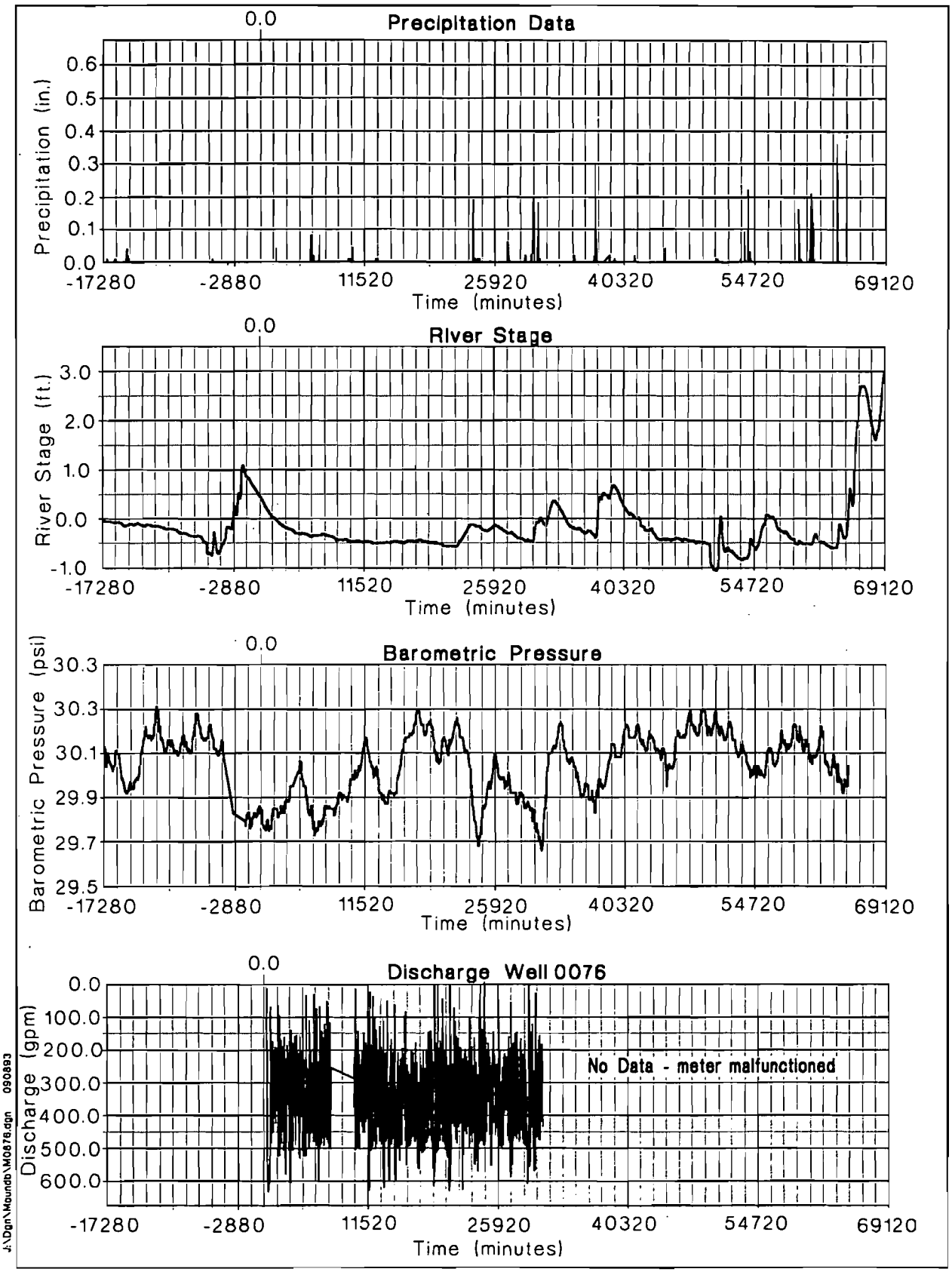

Figure G2. Precipitation, river stage, barometric pressure, and discharge for well 0076 data collected during May 1993 aquifer test.

G3. CORRECTED ARITHMATIC DRAWDOWN PLOTS

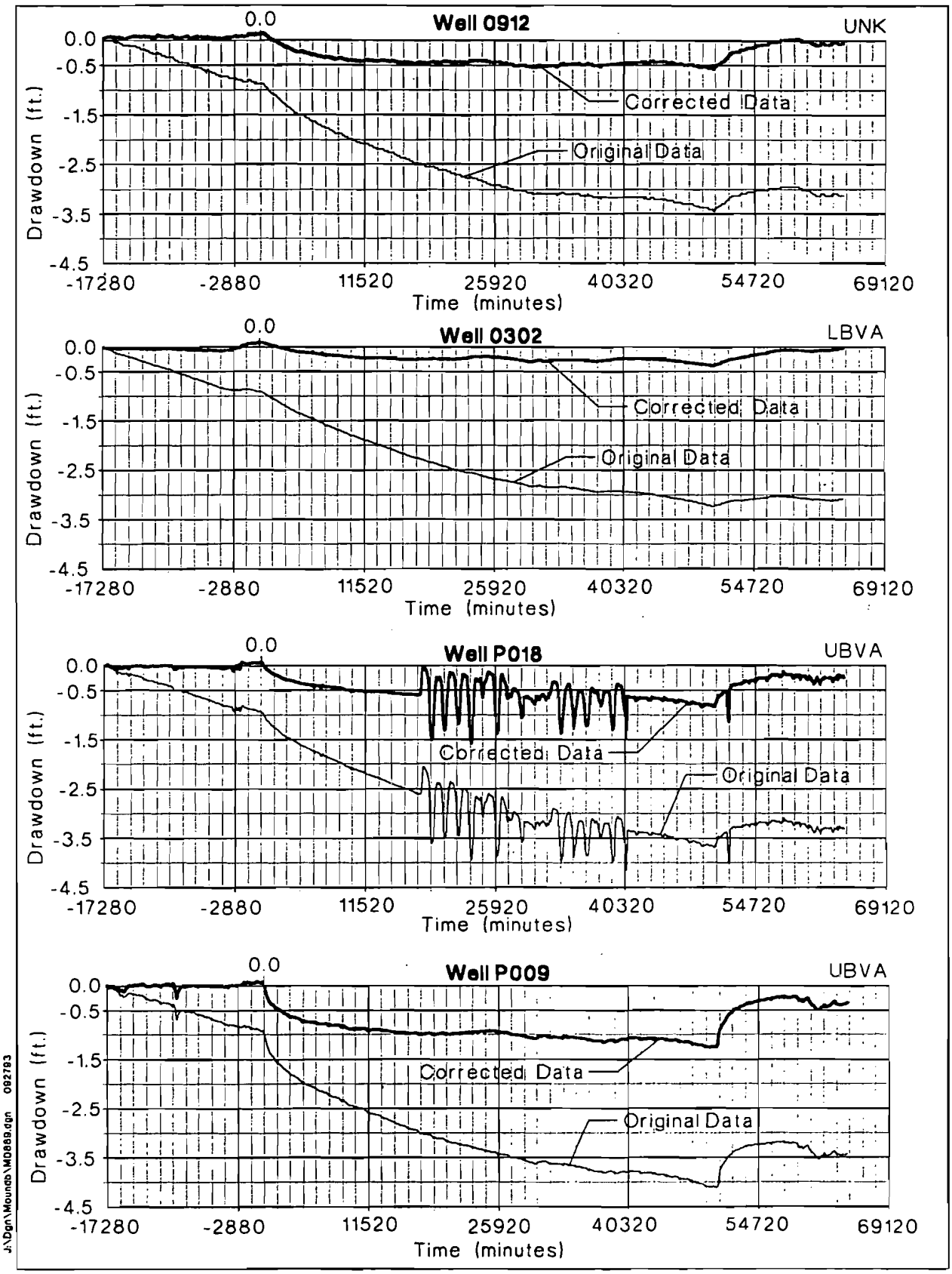

Figure G3a. Comparison of corrected and uncorrected drawdown for 0912, 0302, P018, and P009 from May 1993 aquifer test.

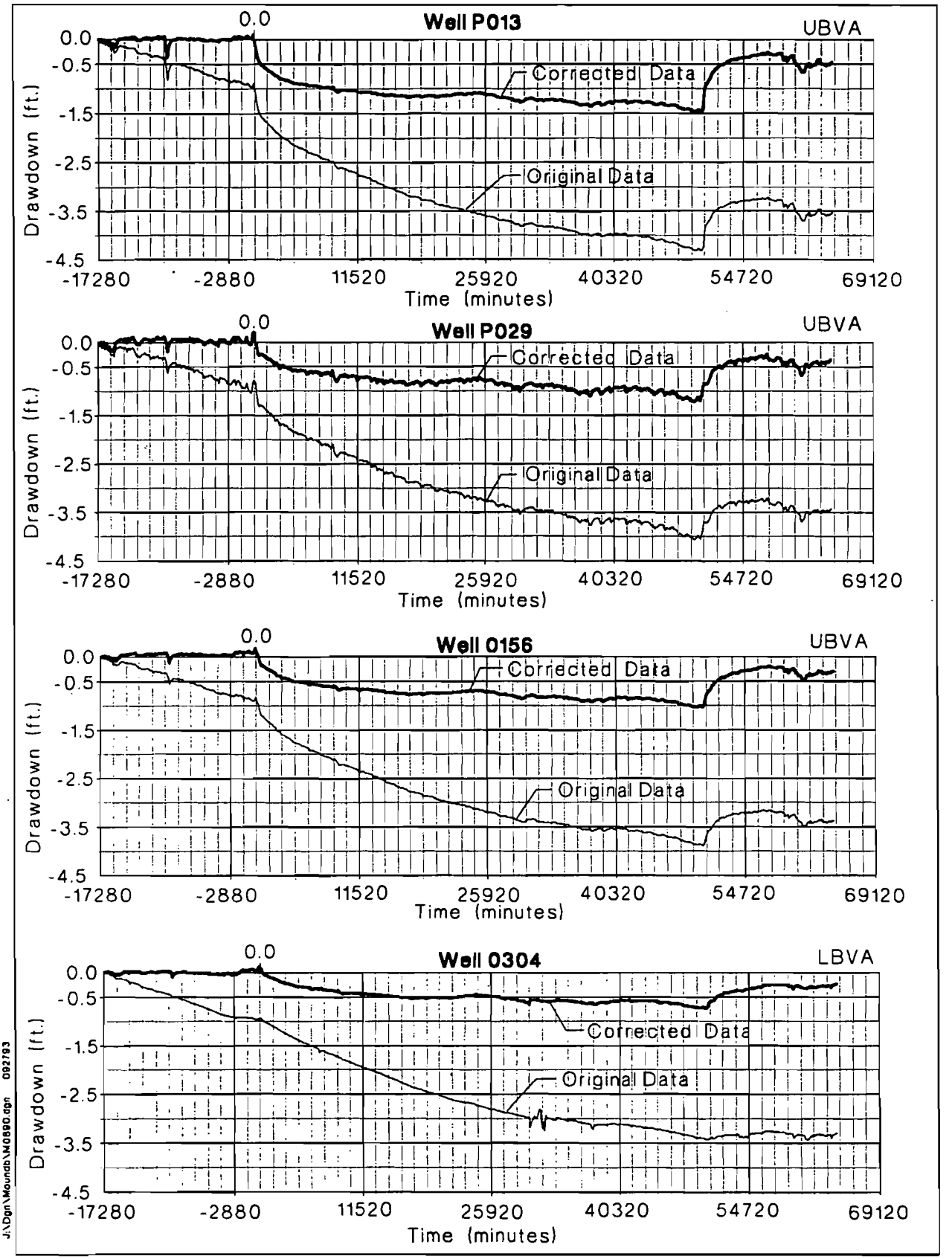

Figure G3b. Comparison of corrected and uncorrected drawdown for P013, P029, 0156, and 0304 from May 1993 aquifer test.

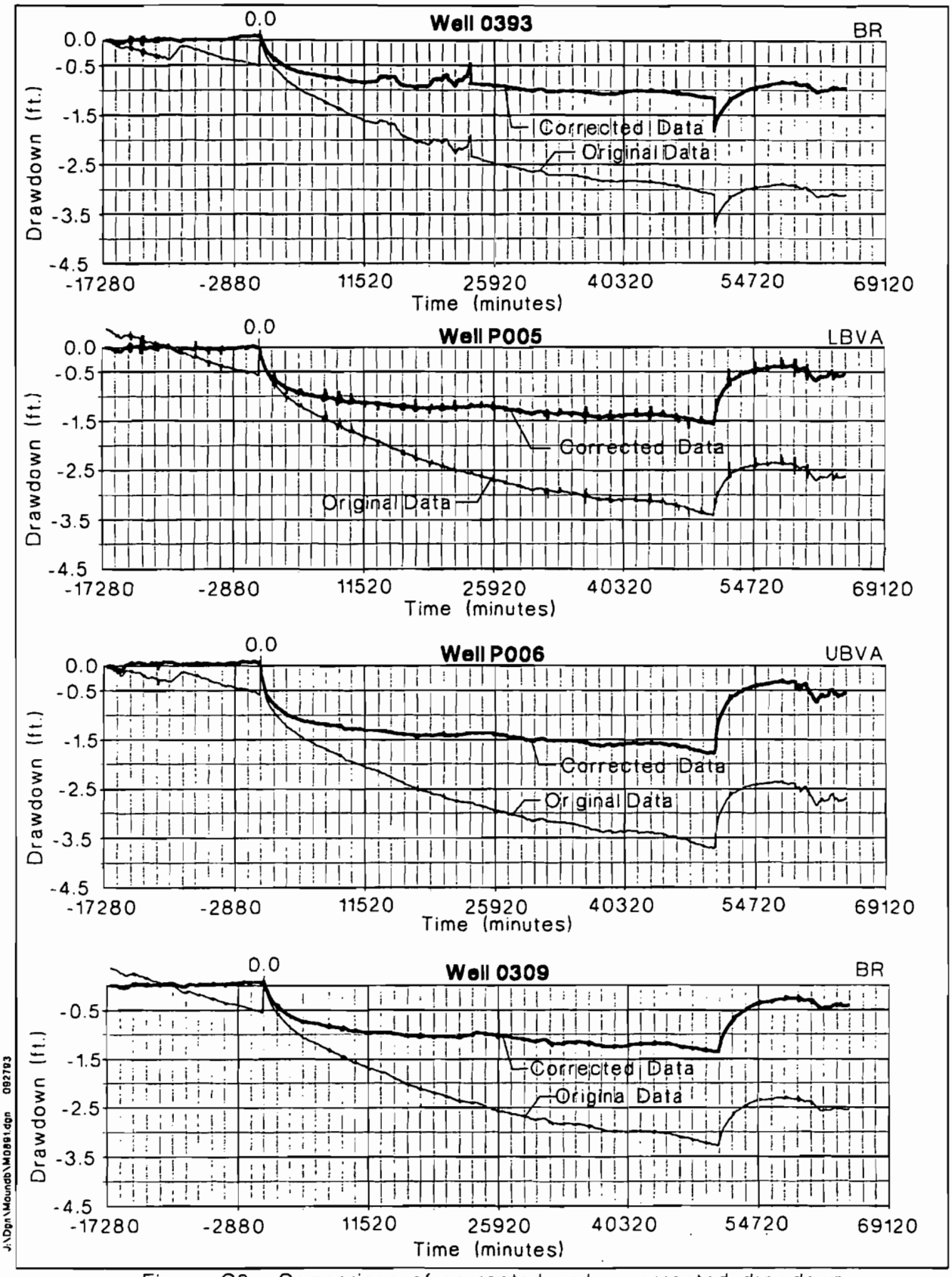

Figure G3c. Comparison of corrected and uncorrected drawdown for 0393, P005, P006, and 0309 from May 1993 aquifer test.

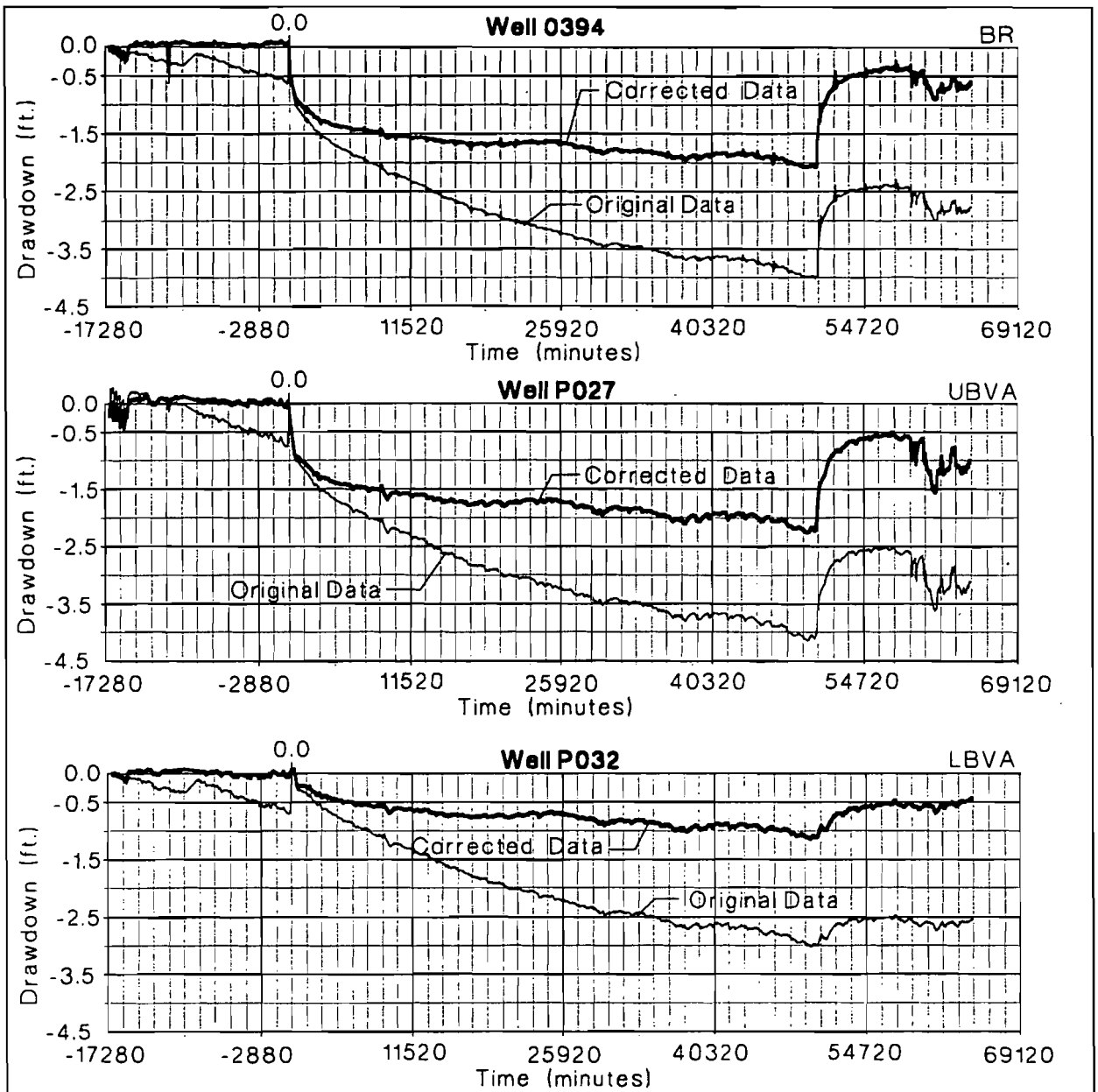

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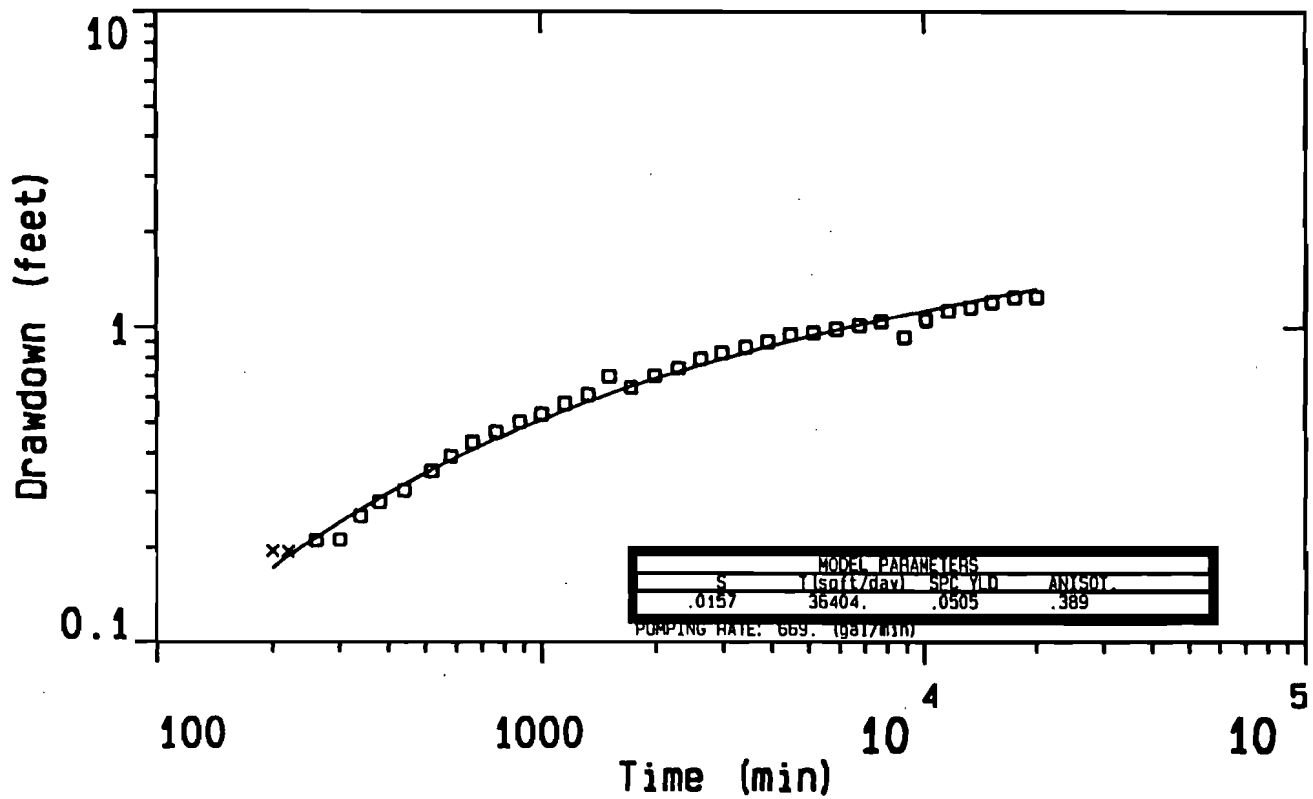
Figure G3d. Comparison of corrected and uncorrected drawdown for 0394, P027, and P032 from May 1993 aquifer test.

G4. NEUMAN TEST ANALYSIS PLOTS



for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 63.2 Depth: 62.9 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 396. feet	Date: 18-Jun-93 Well No.: P005

Figure G4a. Neuman analysis of early time data, P005.

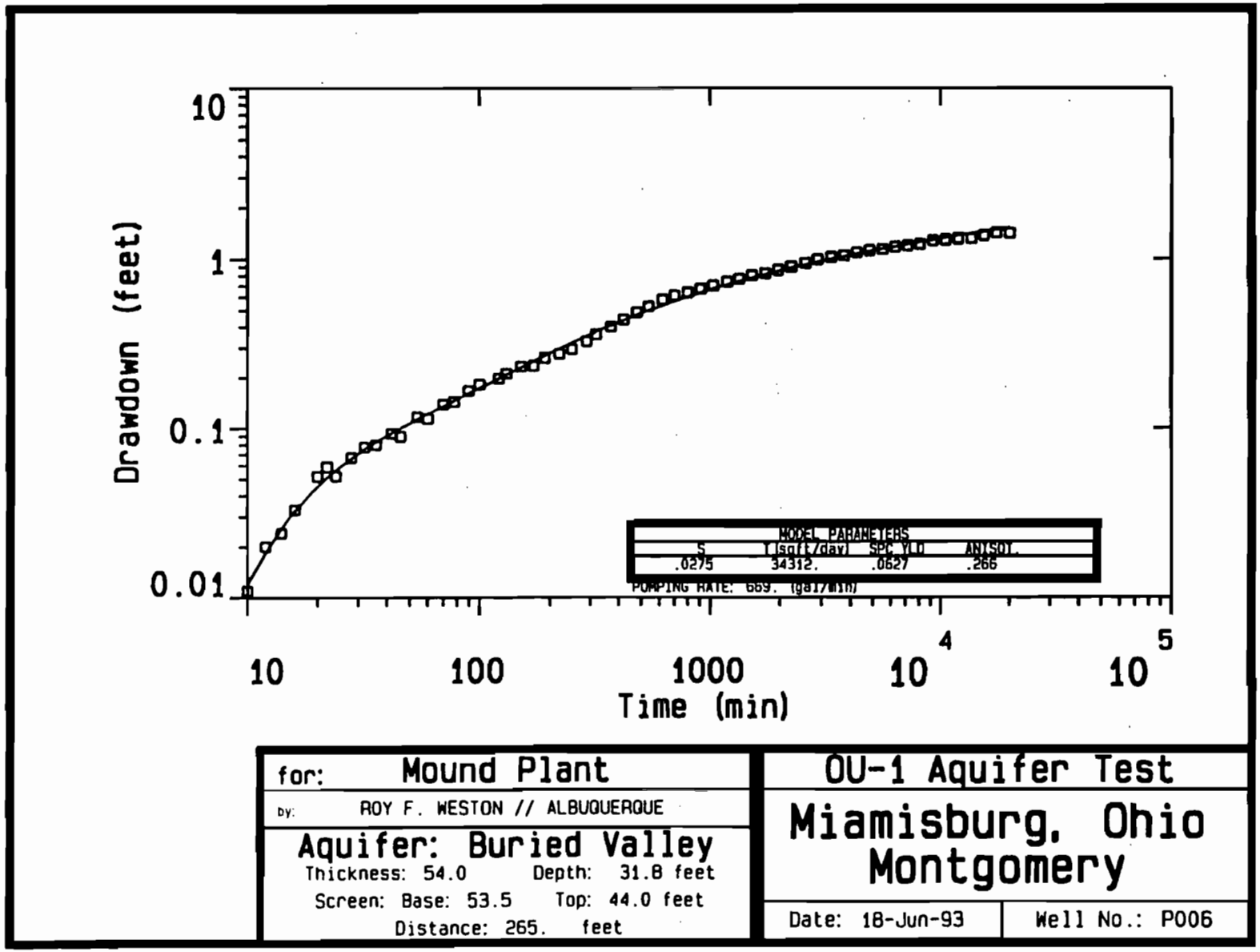
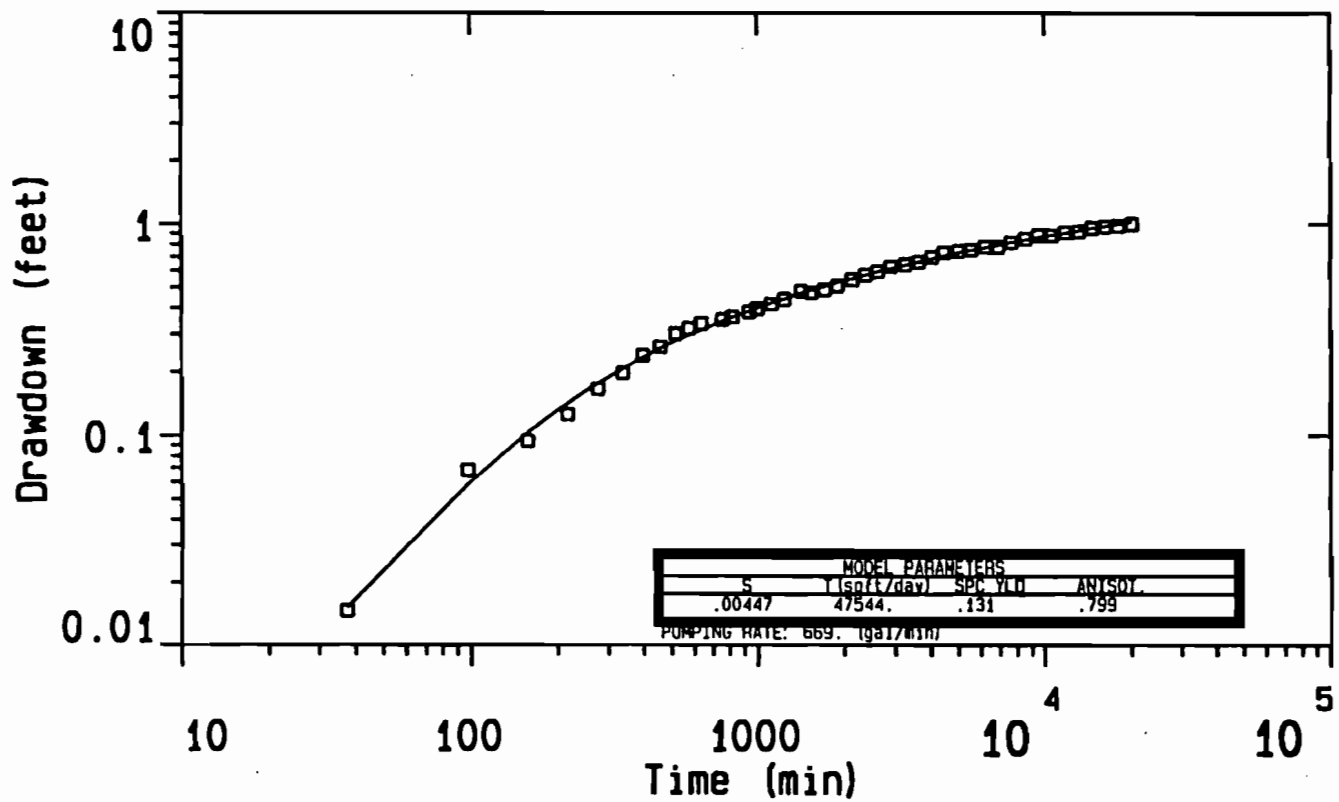
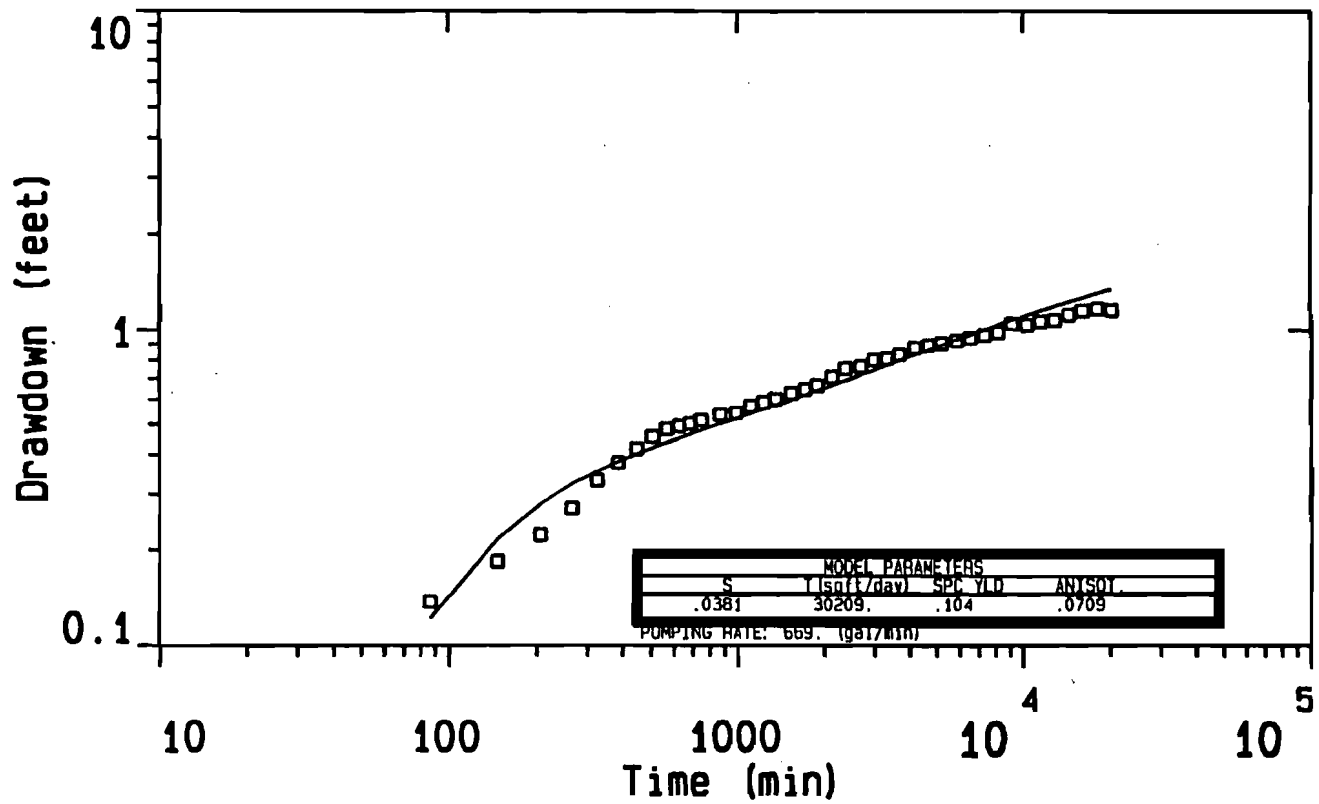


Figure G4b. Neuman analysis of early time data, P006.



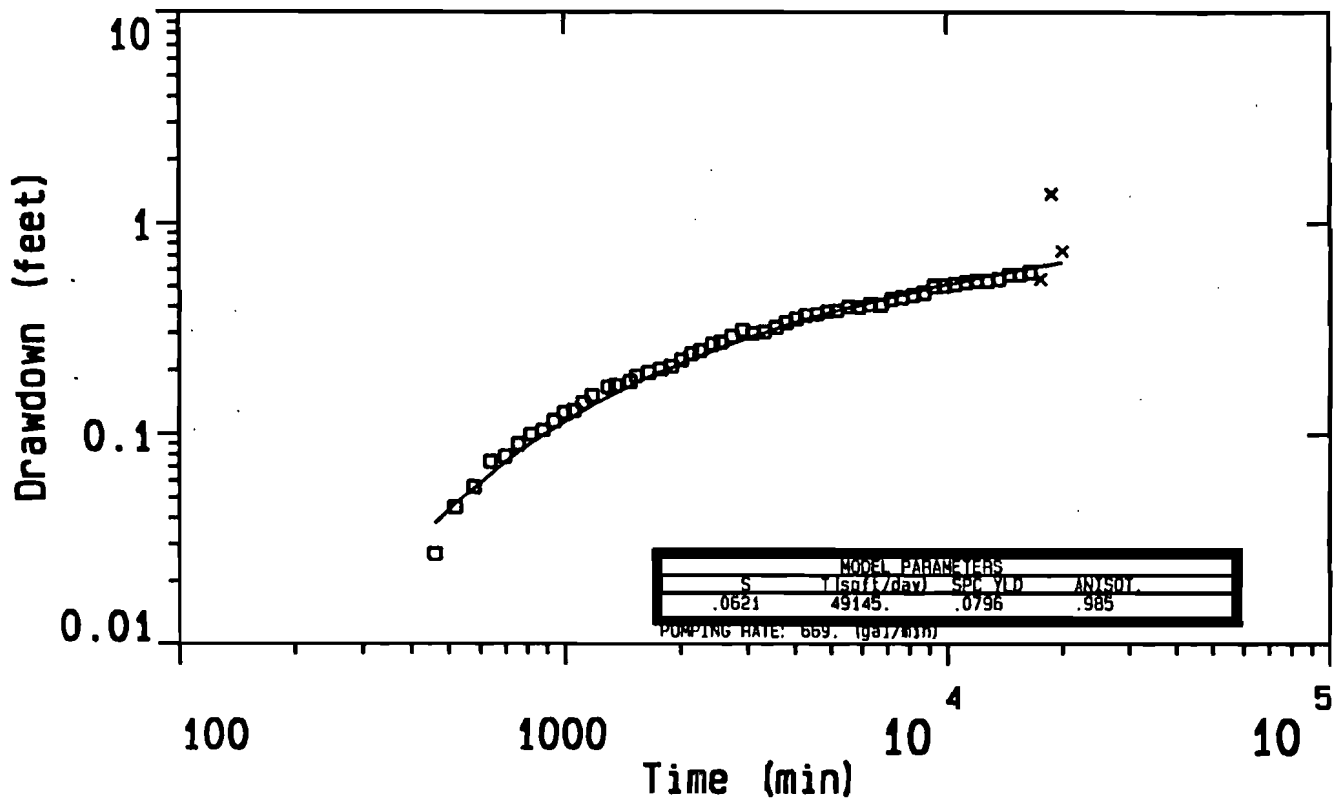
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 59.0 Depth: 57.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 306. feet	Date: 18-Jun-93 Well No.: P009

Figure G4c. Neuman analysis of early time data, P009.



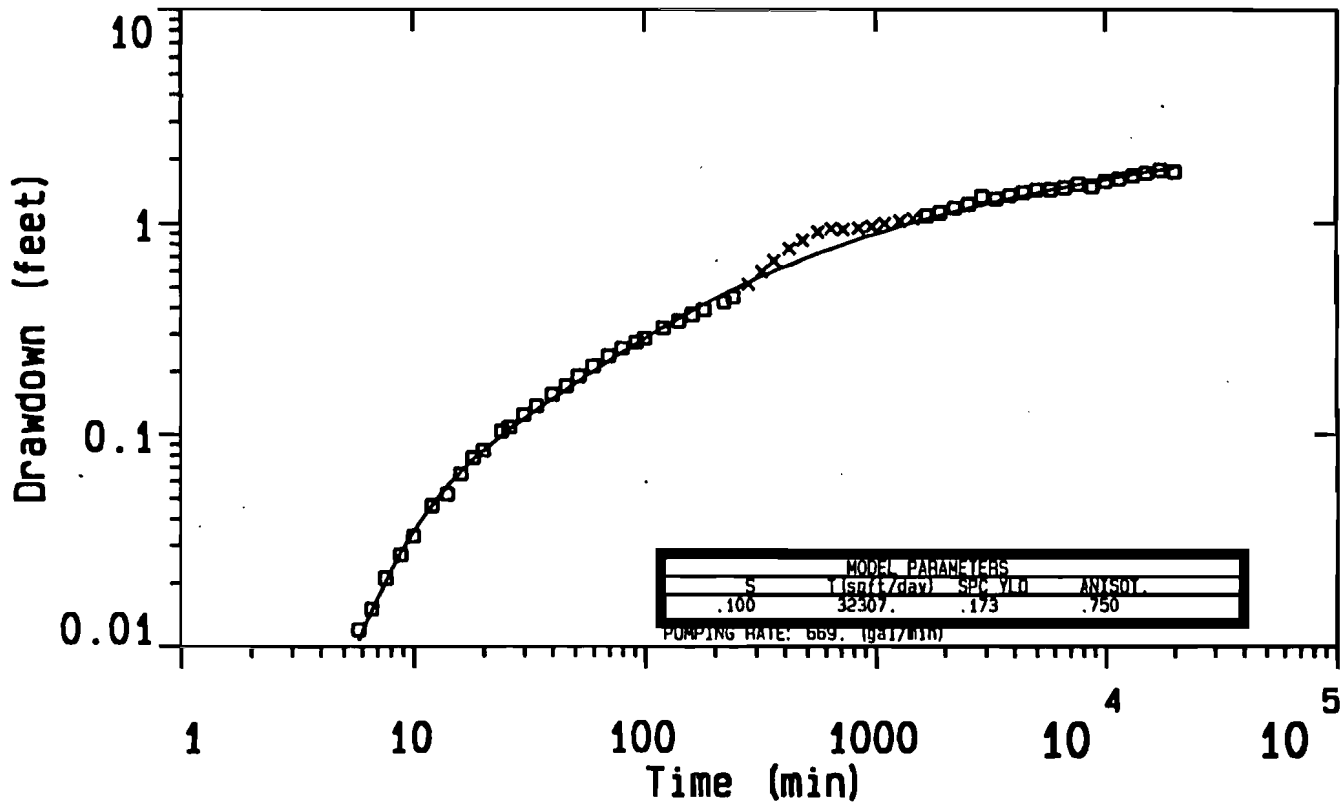
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 86.4 Depth: 59.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 213. feet	Date: 18-Jun-93 Well No.: P013

Figure G4d. Neuman analysis of early time data, P013.



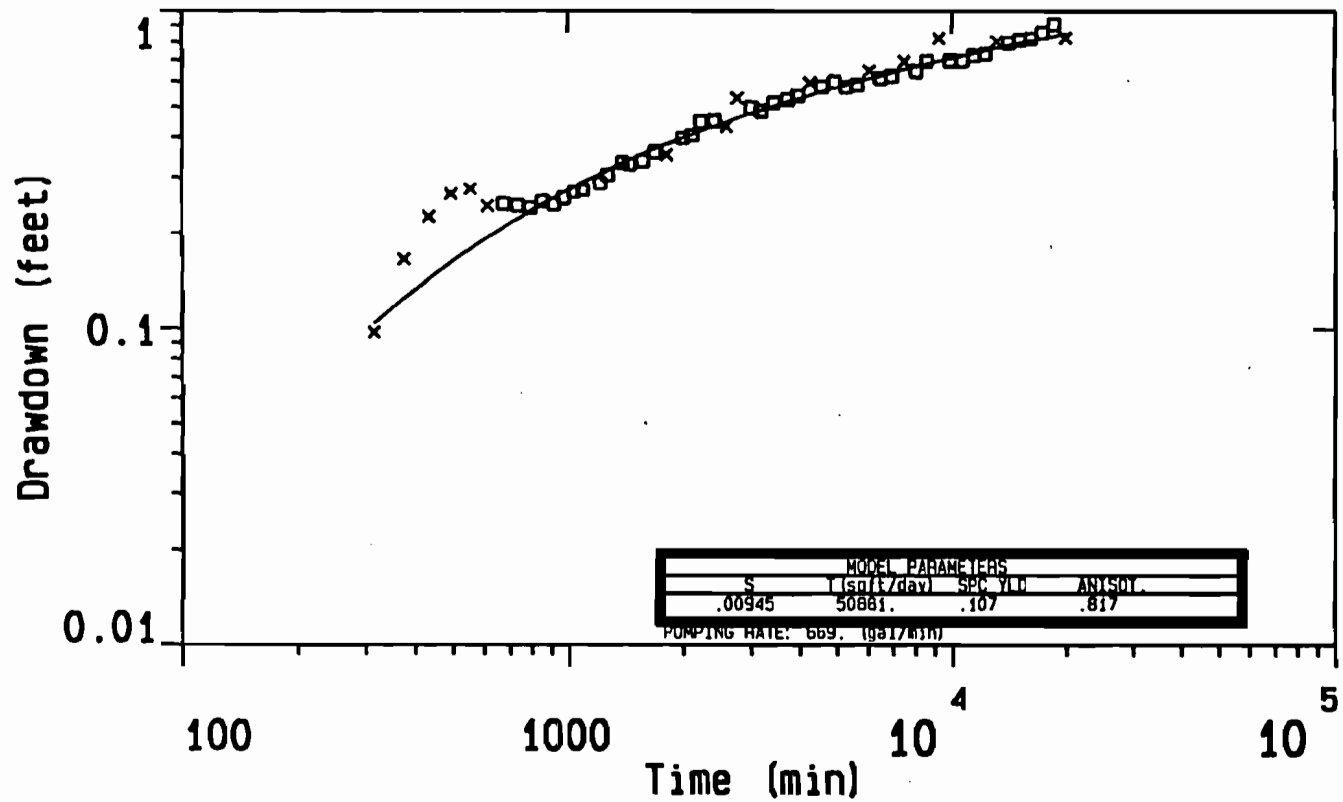
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 148. Depth: 19.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 698. feet	Date: 18-Jun-93 Well No.: P018

Figure G4e. Neuman analysis of early time data, P018.



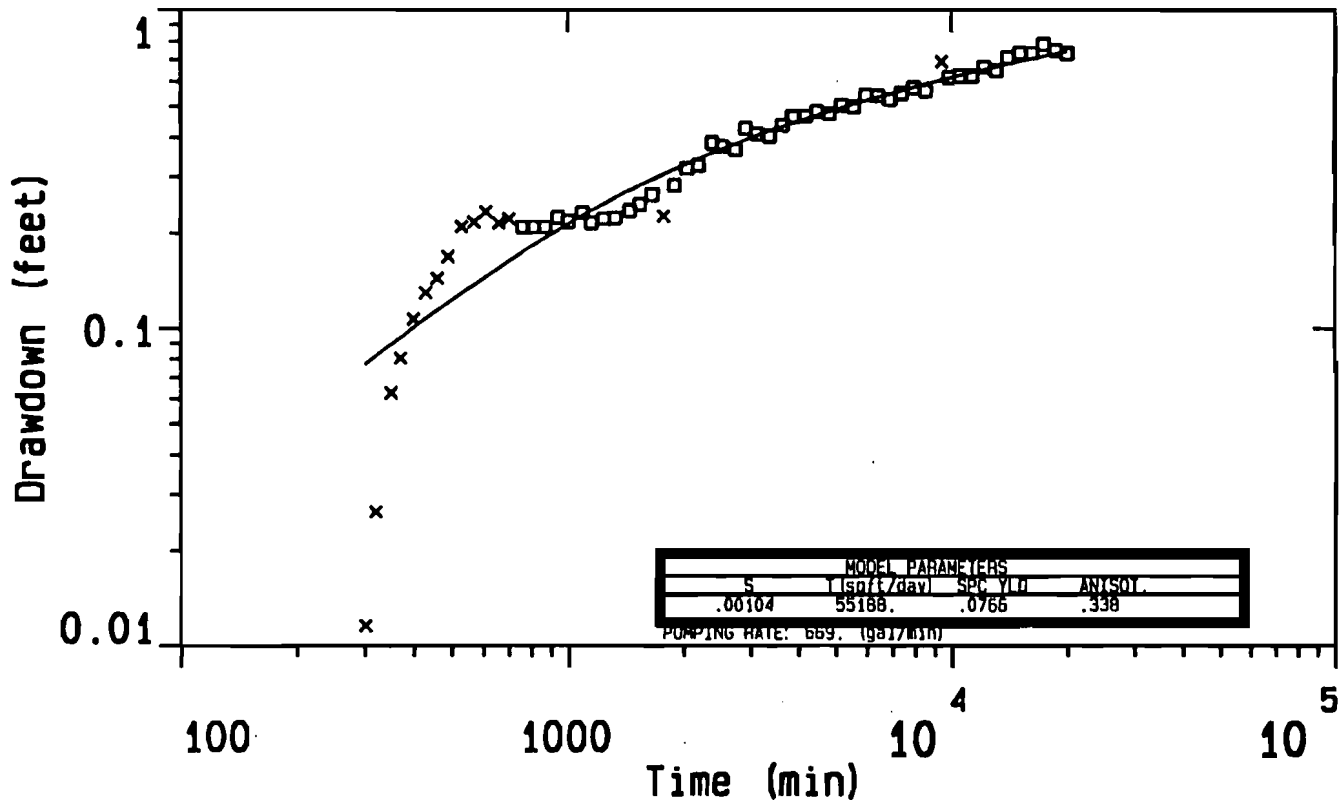
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 62.0 Depth: 35.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 107. feet	Date: 18-Jun-93 Well No.: P027

Figure G4f. Neuman analysis of early time data, P027.



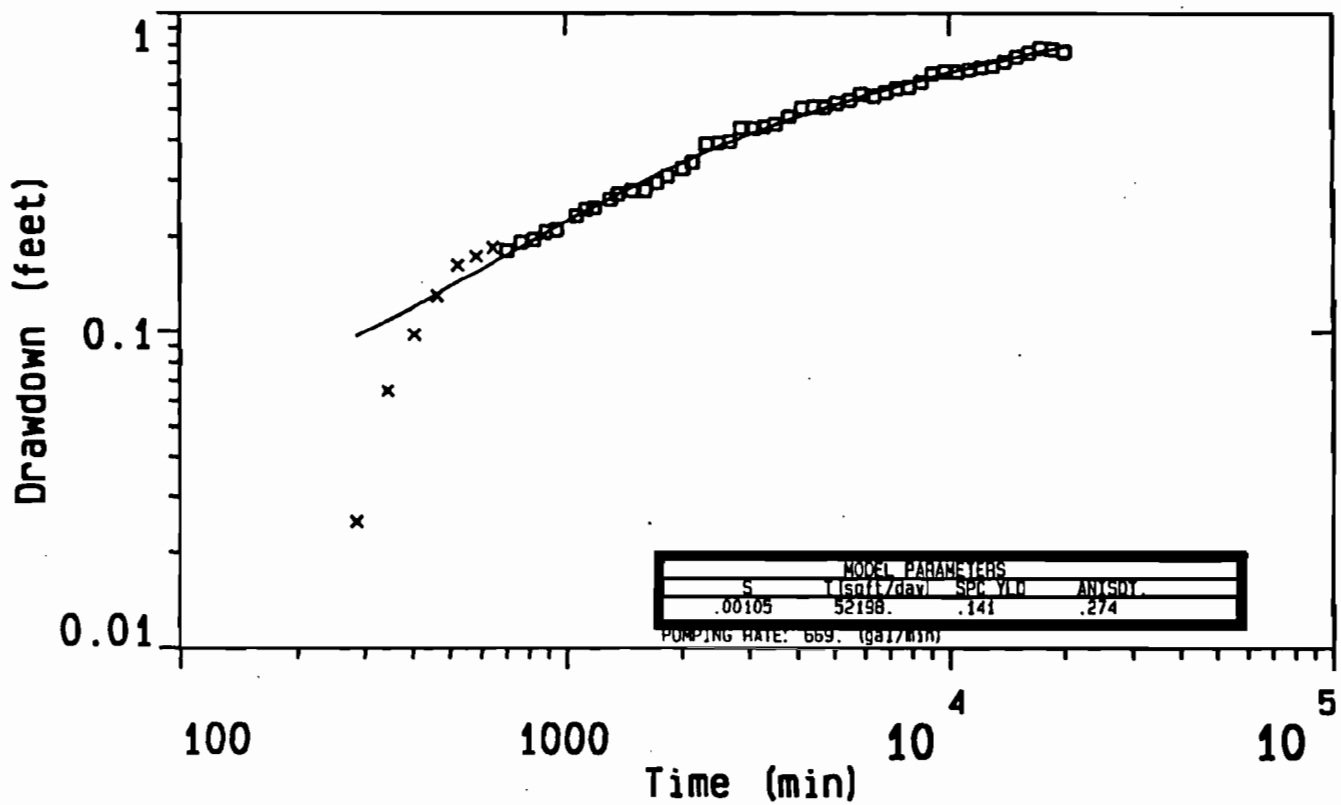
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 176. Depth: 28.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 443. feet	Date: 18-Jun-93 Well No.: P029

Figure G4g. Neuman analysis of early time data, P029.



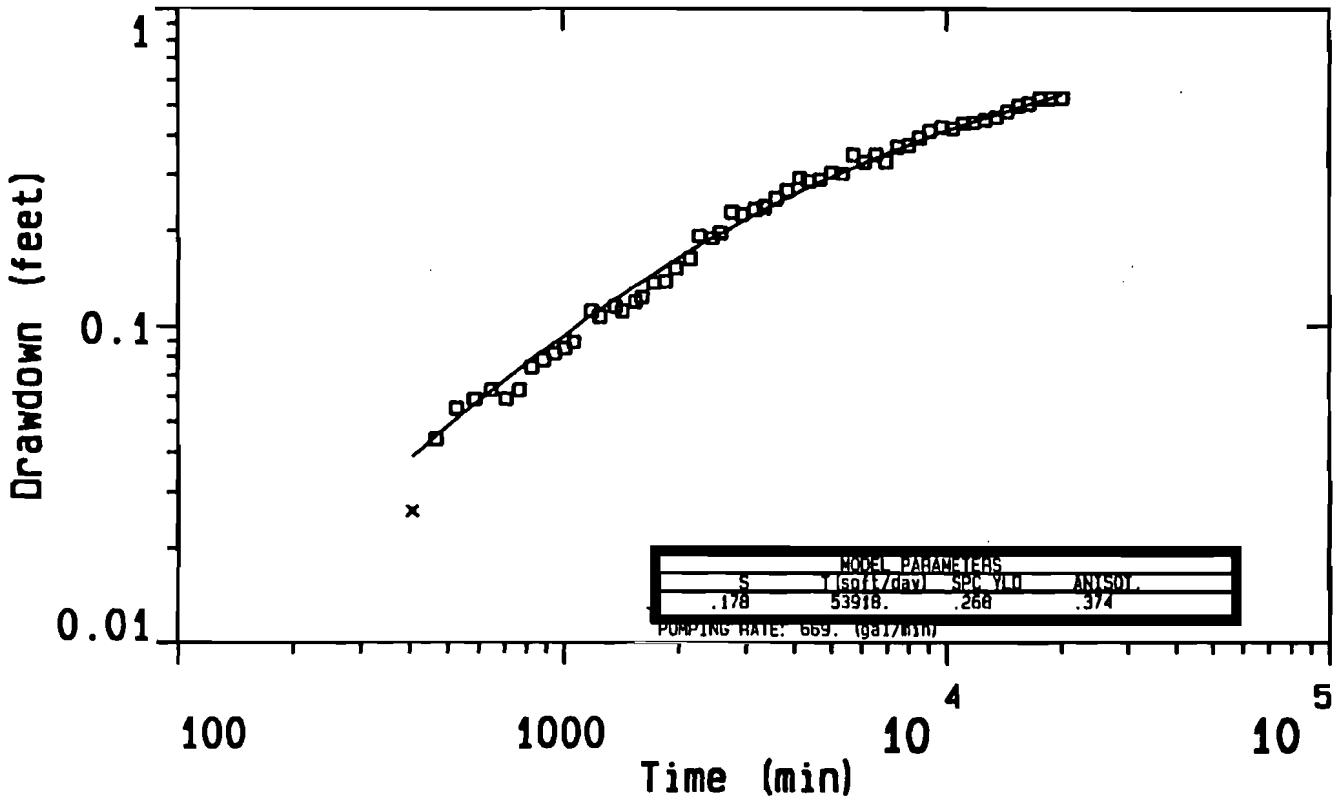
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 160. Depth: 34.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 639. feet	Date: 18-Jun-93 Well No.: P032

Figure G4h. Neuman analysis of early time data, P032.



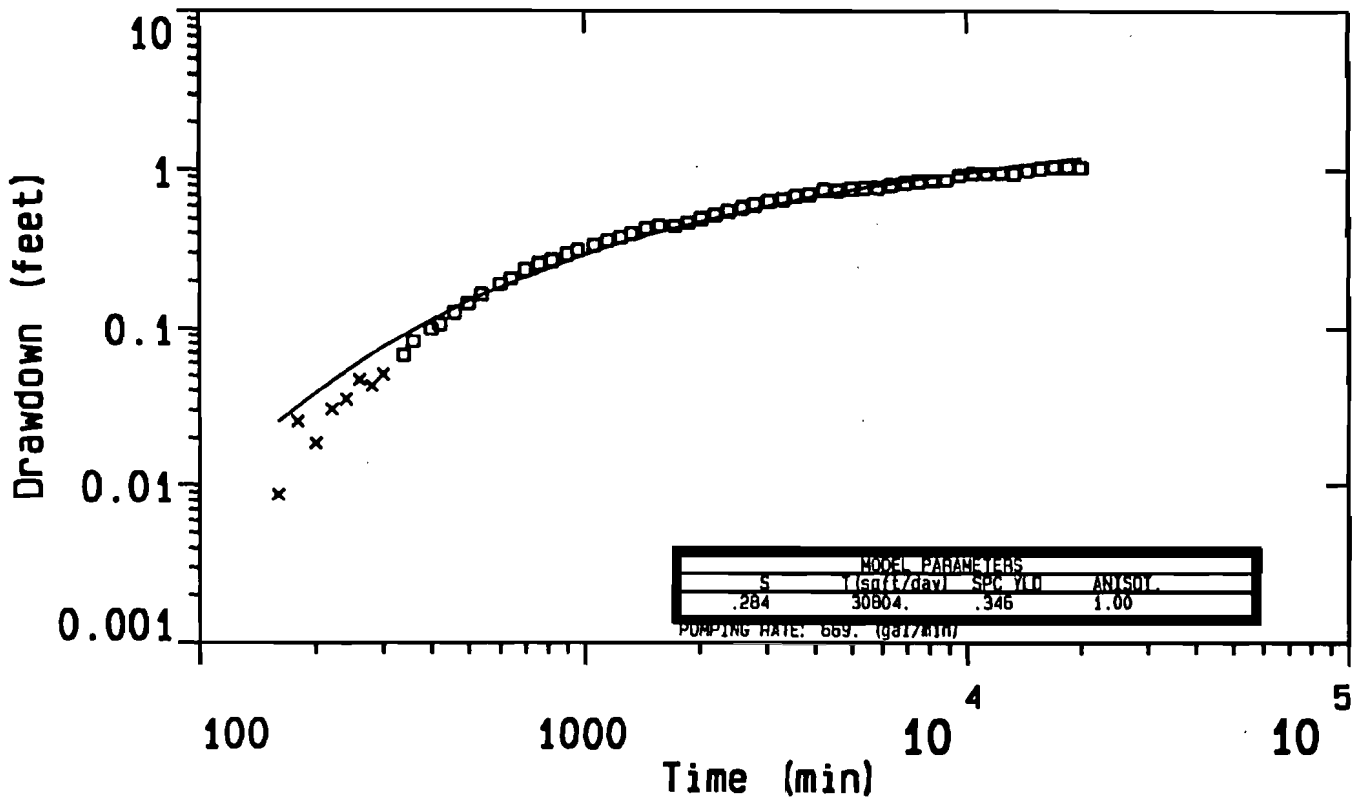
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 160. Depth: 36.2 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 472. feet	Date: 18-Jun-93 Well No.: 0156

Figure G4i. Neuman analysis of early time data, 0156.



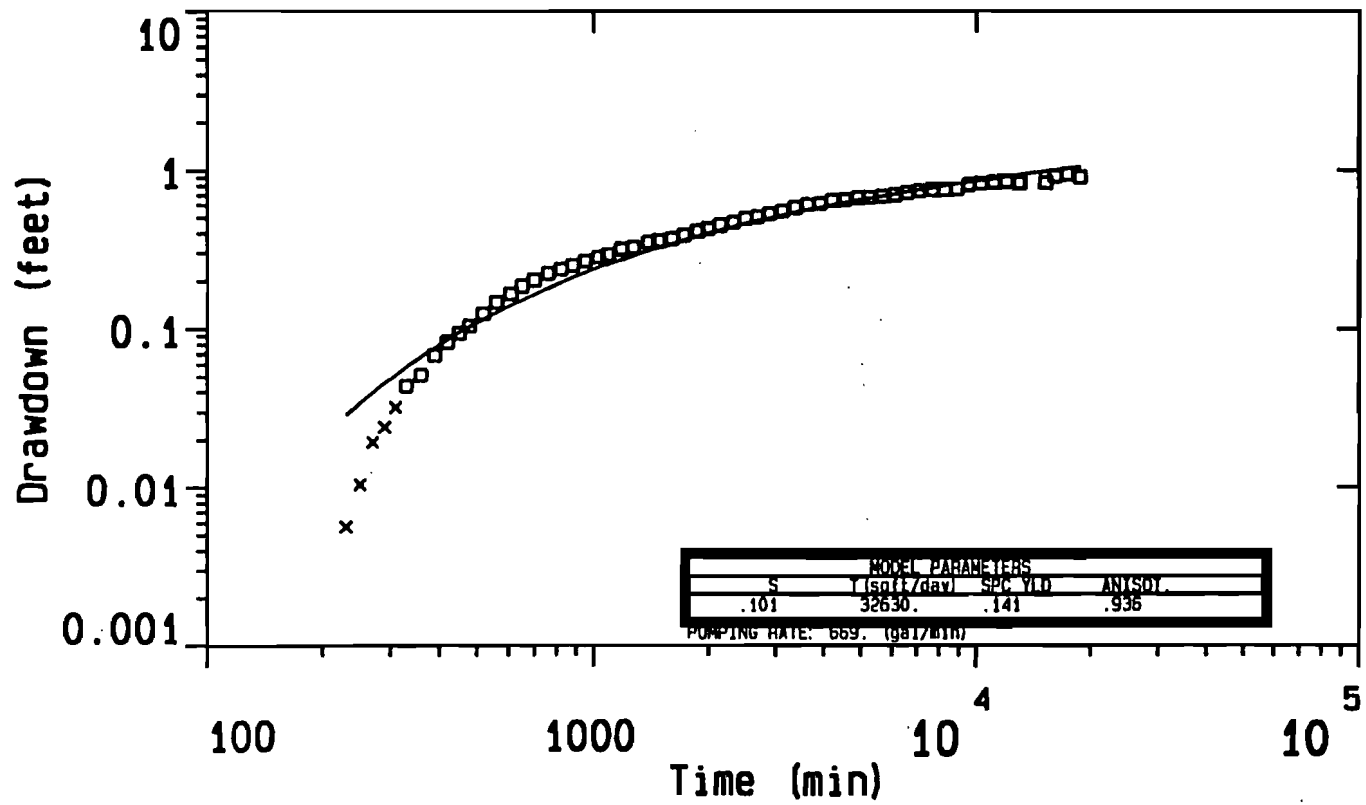
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 160. Depth: 102. feet Screen: Base: 53.5 Top: 44.0 feet Distance: 473. feet	Date: 18-Jun-93 Well No.: 0304

Figure G4j. Neuman analysis of early time data, 0304.



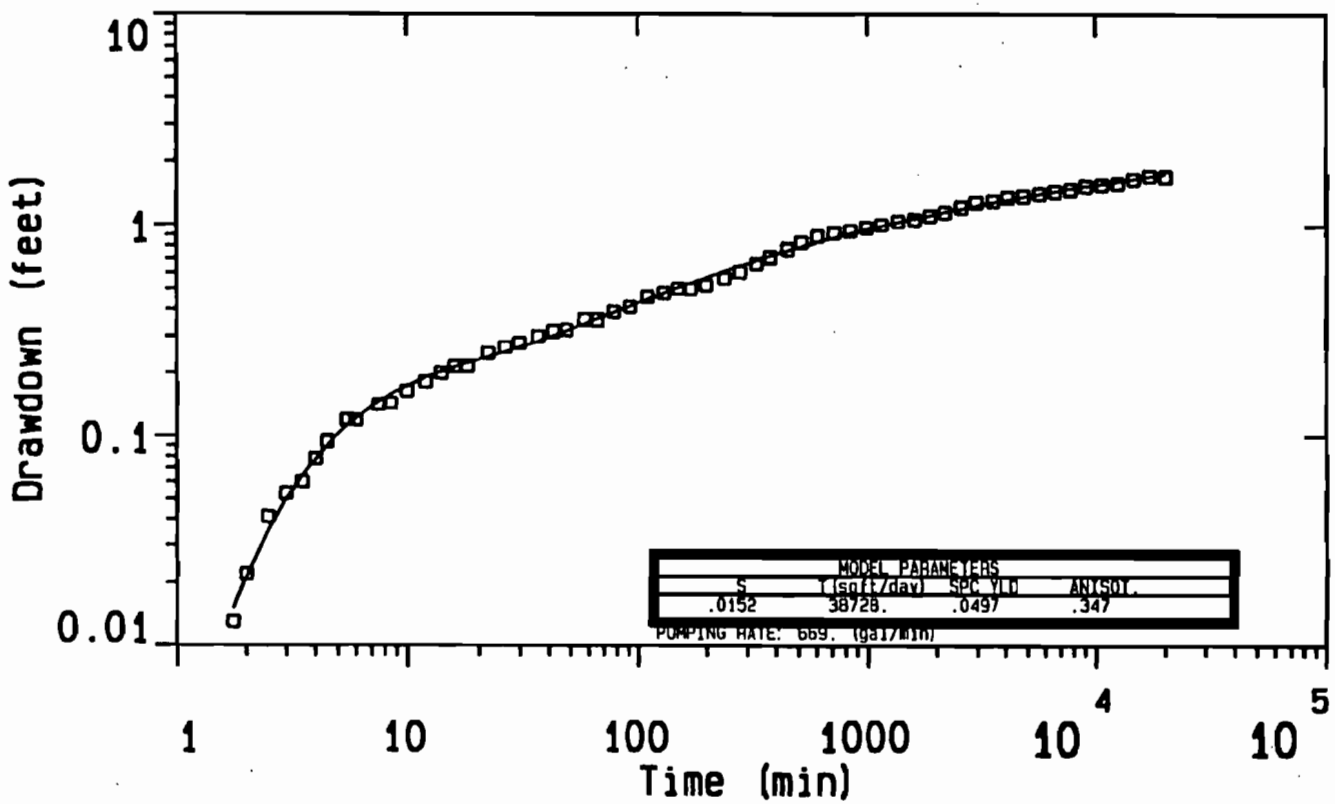
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 53.1 Depth: 50.2 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 207. feet	Date: 18-Jun-93 Well No.: 0309

Figure G4k. Neuman analysis of early time data, 0309.



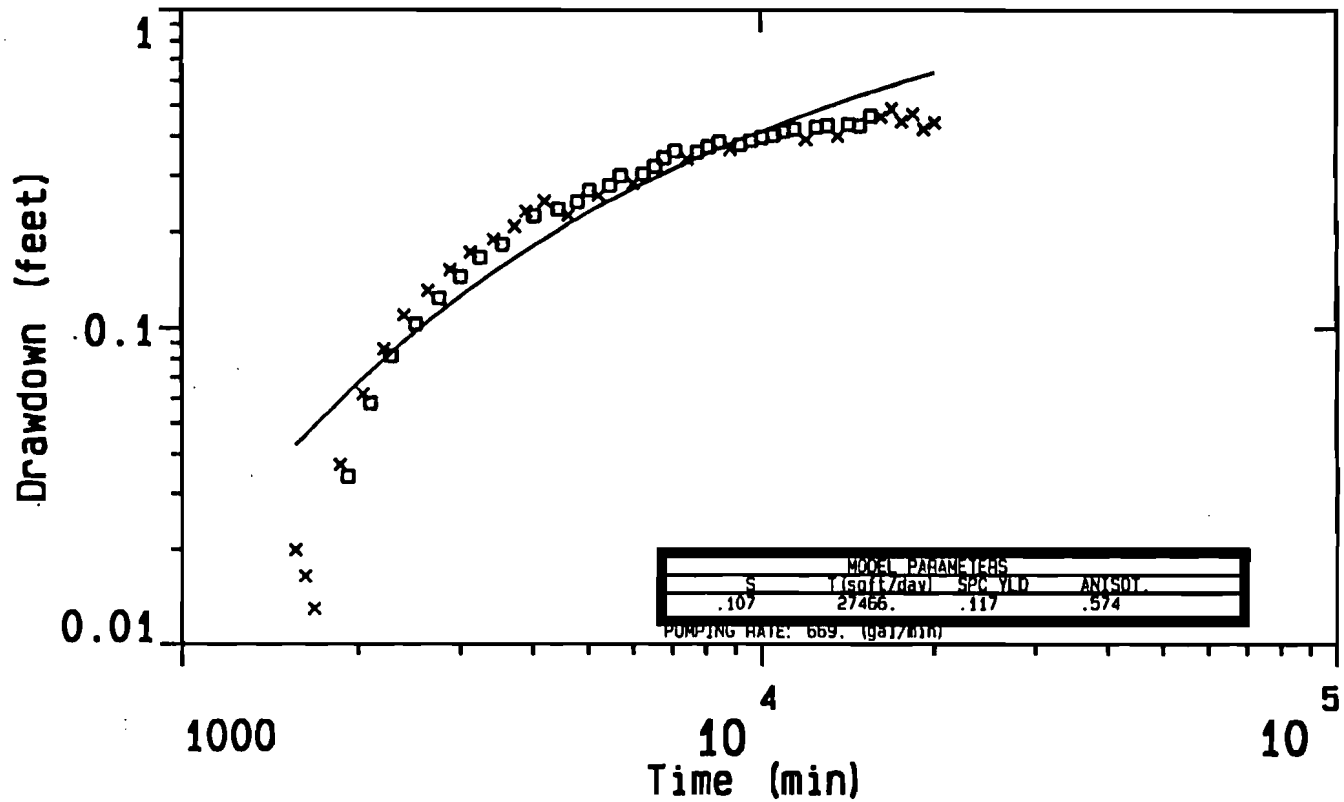
for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 50.0 Depth: 49.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 374. feet	Date: 18-Jun-93 Well No.: 0393

Figure G4I. Neuman analysis of early time data, 0393.



for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 60.0 Depth: 59.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 168. feet	Date: 18-Jun-93 Well No.: 0394

Figure G4m. Neuman analysis of early time data, 0394.



for: Mound Plant	OU-1 Aquifer Test
by: ROY F. WESTON // ALBUQUERQUE	Miamisburg, Ohio Montgomery
Aquifer: Buried Valley Thickness: 140. Depth: 50.0 feet Screen: Base: 53.5 Top: 44.0 feet Distance: 879. feet	Date: 18-Jun-93 Well No.: 0912

Figure G4n. Neuman analysis of early time data, 0912.

G5. TRANSIMISSIVITY AND STORATIVITY VALUES CALCULATED FROM PREVIOUS AQUIFER TESTS

Table G5a. Previous Pump Test Data - May 1990 Aquifer Test

 # - data set generated by pressure transducers
+ - data set generated by sounder measurement

WELL	DISTANCE FROM PROD. WELL 71-1 (feet)	SCREENED INTERVAL (ft below TOC)	SCREENED LITHOLOGY	DRAWDOWN	
				T (ft^2/day)	S *
0063	255.04'	34' - 37'	GC, GP Clay and gravel, gravel over shale	NA #	*NA #*
				67,000 +	*0.05 +*
0071	NA	44' - 53.5'	GW Sand and gravel	71,000 #	*0.20 #*
				63,000 +	*0.19 +*
0271	168.35'	43' - 59'	GW, GC, GP Gravel, sand and gravel with clay, sand and gravel	76,000 #	*0.08 #*
				NA +	*NA +*
0076	462.85'	47' - 62'	GW, SP, GW Sand and gravel, fine sand, sand and gravel	72,000 #	*0.13 #*
				83,000 +	*0.10 +*
0152	659.10'	27' - 47'	CL, GP, GC, SH Dry dense clay, sand and gravel with small clay lenses, clayey sand and gravel, dry weathered shale	NA #	*NA #*
				37,000 +	*0.09 +*
0153	369.49'	21.5' - 41.5'	CL, SC, GC, GW, SH Moist silty clay with trace gravel, clayey gravelly (1") sand, clayey gravel (2"), clean sand and gravel, hard shale	53,000 #	*0.11 #*
				47,000 +	*0.12 +*

Table G5a. (page 2 of 3)

- data set generated by pressure transducers
+ - data set generated by sounder measurement

WELL	DISTANCE FROM PROD. WELL 71-1 (feet)	SCREENED INTERVAL (ft below TOC)	SCREENED LITHOLOGY	DRAWDOWN	
				T (ft^2/day)	S *
0154	98.90'	37' - 47'	GP, CL Sandy gravel (medium grained, subrounded), silty clay (stiff, homogeneous)	74,000 #	*0.04 #*
				64,000 +	*0.06 +*
0155	87.77'	22.7' - 32.7'	SP, SW Sand (medium grained, homogeneous), gravelly sand (30% gravel, subrounded)	62,000 #	*0.08 #*
				52,000 +	*0.15 +*
0305	187.80'	33.7' - 38.7'	GC, GM, CL Gravel with silt, clay, and sand, and clay with gravel, sand, and silt	43,000 #	*0.07 #*
				42,000 +	*0.09 +*
0306	351.04'	34.4' - 39.4'	GC Clayey, sandy gravel over shale	51,000 #	*0.11 #*
				46,000 +	*0.12 +*
0307	524.57'	45.5' - 49.5'	GW, SH Sandy gravel, weathered shale	NA #	*NA #*
				45,000 +	*0.06 +*

Table G5a. (page 3 of 3)

 # - data set generated by pressure transducers
+ - data set generated by sounder measurement

WELL	DISTANCE FROM PROD. WELL 71-1 (feet)	SCREENED INTERVAL (ft below TOC)	SCREENED LITHOLOGY	DRAWDOWN	
				T (ft^2/day)	S *
0309	202.63'	45.7' - 50.7'	SH	37,000 #	*0.24 #*
			Blue shale	42,000 +	*0.19 +*
0310	360.87'	49.2' - 54.2'	LS	55,000 #	*0.11 #*
			Limestone	50,000 +	*0.10 +*
0313	525.77'	34.5' - 39.5'	CL, GW Silty clay trace gravel, sandy gravel trace clay	NA #	*NA #*
				61,000 +	*0.08 +*
0317	120.59'	50.8' - 60.8'	GM, SC, SM, SP Gravel (up to .3'), clayey fine silty sand to coarse gravel	37,000 #	*0.09 #*
				NA +	*NA +*

* *The calculated storage values shown are best approximation values. Calculations for the storage coefficient are sensitive to the curve matching technique used to model the data and the time frame from which the analyzed data was taken.*

Table G5b. Previous Pump Test Data

04/13/61 - 04/14/61

Pumped Well:	Pumping Rate:
0271	400 - 1075 gpm

Observation Well ID	Distance From Pumped Well (feet)	Screened Interval (ft below TOC)	Screened Lithology	Transmissivity (ft^2/d)	Storage	Method of Analysis
0271	NA	43' - 59'	GW, GC, GP Gravel, sand and gravel with clay, sand and gravel	78,000	NA	Theis Distance - Drawdown
				46,000	0.002	WHIP
0371	94.54	UNK	UNK	64,000	0.0006	WHIP
0471	163.17	UNK	UNK	71,000	0.003	WHIP
0571	350.12	UNK	UNK	96,000	0.04	WHIP
0276	45.64	UNK	UNK	NA	NA	NA
0076	904.45	47' - 62'	GW, SP Sand and gravel, fine sand	27,000	NA	Theis Distance - Drawdown

Note: WHIP data analyzed by WESTON in 1990.

Reference: Earth Science Laboratories, Inc., 1961

09/09/76 - 09/13/76

Poor data quality, no analysis performed

Reference: Dames and Moore 1976

10/11/76 - 11/03/76

Pumped Well:	Pumping Rate:
0912	510 - 525 gpm

Observation Well ID	Distance From Pumped Well (feet)	Screened Interval (ft below TOC)	Screened Lithology	Transmissivity (ft^2/d)	Storage	Method of Analysis
0101	31.62	43' - 45'	GW	13,000	0.7	Modified Theis
			Sand and gravel	13,000	0.8	Theis
0002	190.01	47' - 62'	GW Sand and gravel	13,000	0.9	Modified Theis
		65' - 67'	TI Till	11,000	0.2	Theis
0003	327.71	32' - 34'	GW	16,000	0.03	Modified Theis
			Sand and gravel	13,000	0.04	Theis
0004	217.43	57' - 59'	GW	19,000	0.02	Modified Theis
			Sand and gravel	17,000	0.02	Theis
0005	516.21	53.5' - 55.5'	GW	24,000	0.09	Modified Theis
			Sand and gravel	23,000	0.1	Theis
0008	1465.01	140.5'-142.5'	GW, SH Sand and gravel, shale	NA	NA	NA
0106	816.37	48' - 50'	GW	27,000	0.06	Modified Theis
			Sand and gravel	20,000	0.08	Theis
0137	396.04	73' - 75'	GW	16,000	0.01	Modified Theis
			Sand and gravel	8,000	0.02	Theis
0904	614.59	50' - 53'	GW Sand and gravel	NA	NA	NA

Reference: Dames and Moore 1976

12/29/86 - 01/05/87

Pumped Well:	Pumping Rate:
0071	@ 600 gpm

Observation Well ID	Distance From Pumped Well (feet)	Screened Interval (ft below TOC)	Screened Lithology	Transmissivity (ft^2/d)	Storage	Method of Analysis
0071	NA	44' - 53.5'	GW Sand and gravel	5,300	NA	Cooper - Jacob
0063	160.87	34' - 37'	GC, GP Clay and gravel over shale	25,000	0.05	Cooper - Jacob
0471	159.46	UNK	UNK	28,000	0.03	Cooper - Jacob
				25,000	0.04	Theis
0063 0271 0371 0471	160.87 410.56 228.64 159.46	34' - 37' 43' - 59' UNK UNK	GC, GP GW, GC, GP UNK UNK	31,000	0.03	Cooper - Jacob Distance - Drawdown (4 wells)

Reference: Terran Corporation 1987

Table G5b. (page 4 of 5)

11/03/87 - 11/05/87

Pumped Well:	Pumping Rate:
0912	584 - 603 gpm

Observation Well ID	Distance from Pumped Well (feet)	Screened Interval (ft below TOC)	Screened Lithology	Transmissivity (ft^2/d)	Storage	Method of Analysis
0912	NA	UNK	UNK	NA	NA	NA
0004	217.43	57' - 59'	GW Sand and gravel	57,000 - 76,000	0.1 - 0.3*	Theis
				52,000	0.5	Cooper - Jacob
0123	319.09	50' - 56'	GW Dense sand and gravel, rock fragments	11,00	0.1*	Theis
				16,000	0.05	Cooper - Jacob
0124	192.34	45' - 55'	SM, SP, GP Silty, gravelly sand, sandy gravel	13,000	0.09*	Theis
				27,000	.2	Cooper - Jacob
0126	17.32	44' - 53.5'	SM, SP, GM Silty gravelly sand, silty, sandy gravel	60,000	.013*	Neuman
				13,000	0.4	Cooper - Jacob
0004	217.43	57' - 59'	GW	12,000	NA	Theis Distance - Drawdown
0123	319.09	50' - 56'	GW			
0124	192.34	45' - 55'	SM, SP, GP			
0126	17.32	44' - 53.5'	SM SP, GM			

*Calculated from early time confined storage.

References: DOE 1989

12/16/87 - 11/18/87

Pumped Well:	Pumping Rate:
0913	1252 - 1280 gpm

Observation Well ID	Distance from Pumped Well (feet)	Screened Interval (ft below TOC)	Screened Lithology	Transmissivity (ft^2/d)	Storage	Method of Analysis
0913	NA	UNK	UNK	27,000	NA	Theis Recovery
0118	602.70	30.63'- 40.63'	SM, SP Silty, gravelly sand	48,000 - 52,000	0.007 NA	Theis Theis Recovery
0138	93.27	31' - 41'	SP Gravelly sand (up to 1.5 in)	27,000 40,000	.0034*	Theis Recovery Neuman

*Calculated from early time confined storage.

Abreviations: NA - not applicable or not analyzed
UNK - unknown

Method References:

Boulton, N. S., and T. D. Streltsova. 1975. "New Equations for Determining the Formation Constants of an Aquifer from Pumping Test Data." *Water Resources Research* 11:148-53.

Cooper, H. H., Jr., and C. E. Jacob. 1946. "A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History." *Transactions of the American Geophysical Union* 27:534-36.

Hydro Geo Chem Inc. 1988. "WHIP™: Well Hydraulics Interpretation Program, Users Manual," Version 3.22, Tucson, Arizona. July 1988.

Theis, C. V. 1935. "The Lowering of the Piezometric Surface and the Rate and Discharge of a Well Using Ground-Water Storage." *Transactions of the American Geophysical Union* 16:519-24.

Walton, W. C. 1969. "Selected Analytical Methods for Well and Aquifer Evaluation." Illinois State Water Survey Bulletin 49. Illinois State Water Survey, Urbana, Illinois.

G6. DISTANCE DRAWDOWN PLOTS

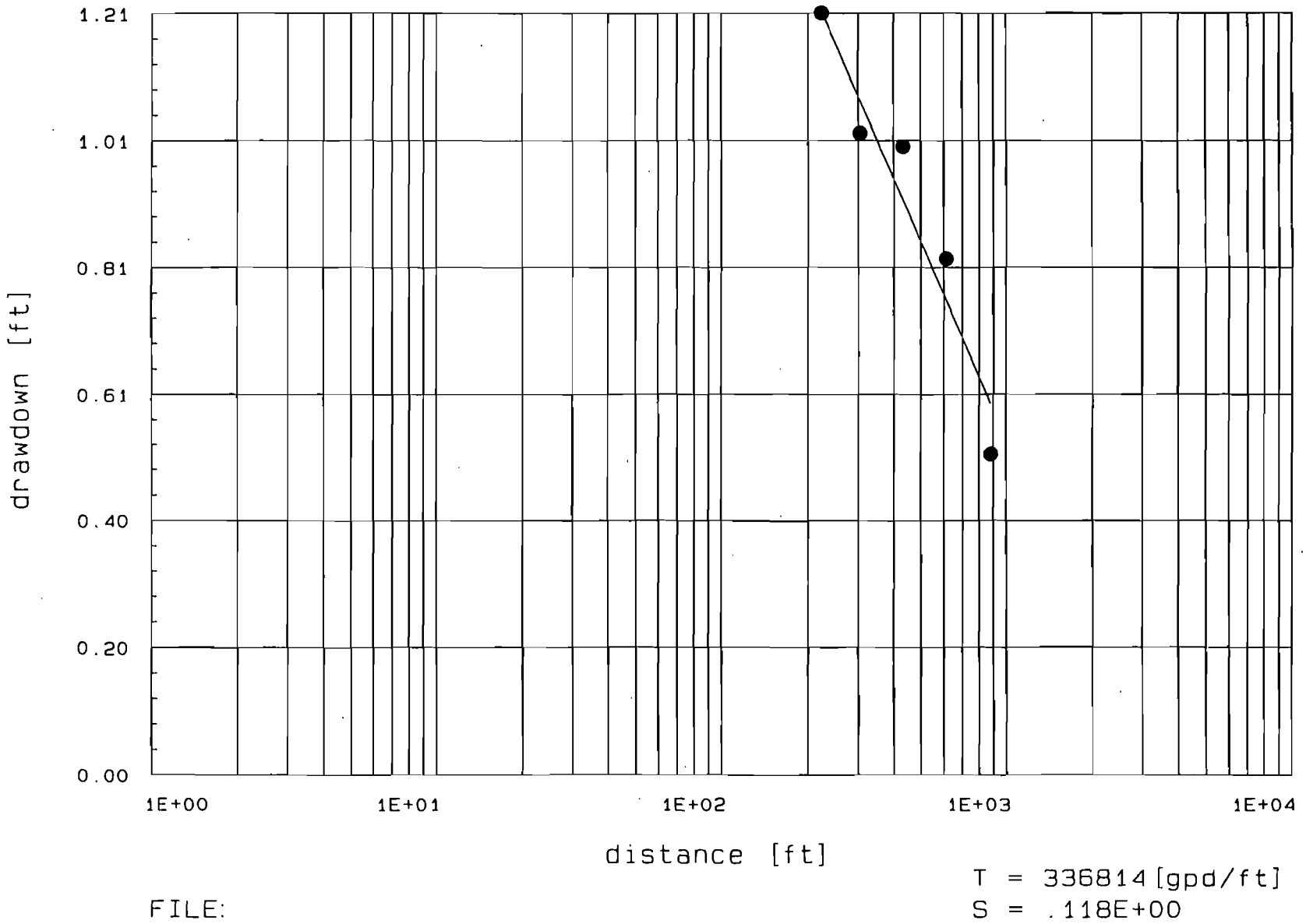


Figure G6a. Operable Unit 1 aquifer test distance drawdown analyses including locations P013, P009, P008, 0129, and 0912.

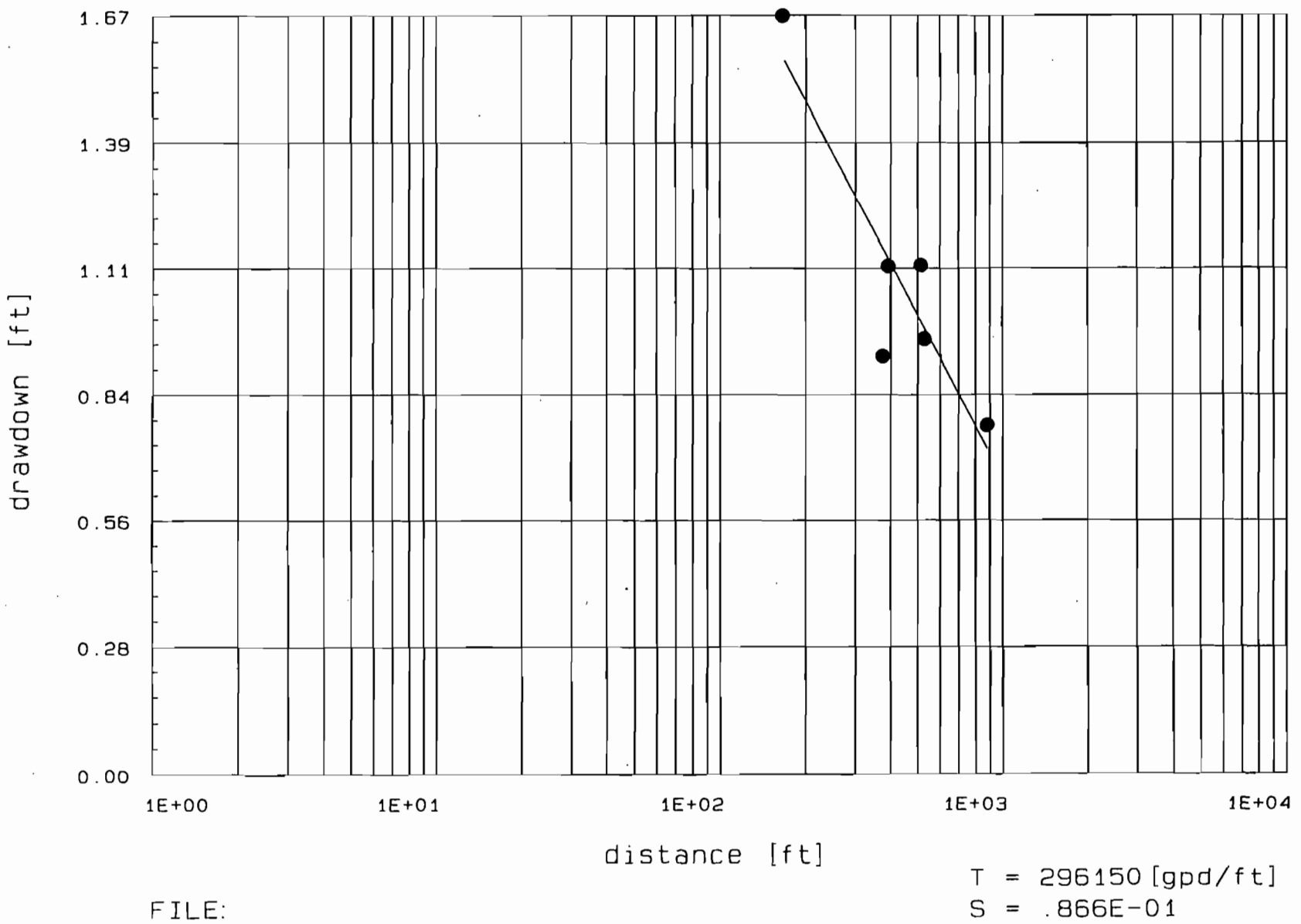


Figure G6b. Operable Unit 1 aquifer test distance drawdown analyses including locations 0394, 0393, P003, 0313, P001, and P014.

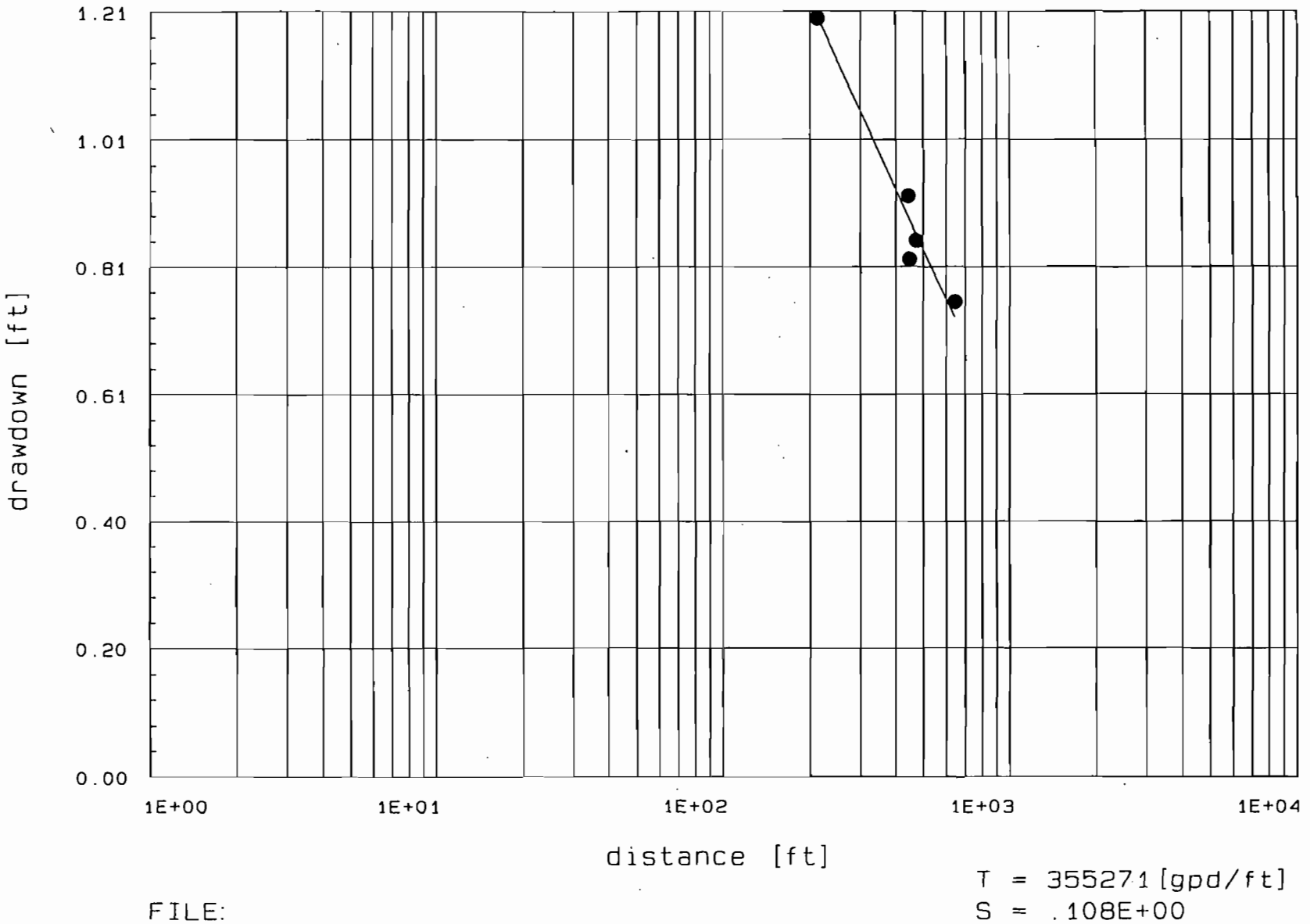


Figure G6c. Operable Unit 1 aquifer test distance drawdown analyses including locations P029, P030, P032, P013, and 0157.

G7. PUMPING AT MIAMISBURG WELLS AND DAYTON POWER AND LIGHT WELLS

Table G7a. Pumping Rates for the Miamisbury Water Treatment Plant, January 1991 through June 1993

Month/Year	Water Treated (millions of gallons)
01-91	65.86
02-91	52.41
03-91	27.07
04-91	65.78
05-91	64.48
06-91	87.40
07-91	99.84
08-91	68.54
09-91	39.88
10-91	35.01
11-91	34.61
12-91	51.91
Total	692.79
01-92	29.96
02-92	55.60
03-92	48.47
04-92	56.88
05-92	71.06
06-92	74.54
07-92	66.36
08-92	67.49
09-92	59.73
10-92	53.42
11-92	54.54
12-92	53.52
Total	691.57
01-93	45.00
02-93	41.15
03-93	51.56
04-93	48.91
05-93	61.01
06-93	77.85
Total	325.48
Total Water Treated	1,709,840,000

Table G7b. Dayton Power and Light Hutching Power Station Production Well Pumping Rates, January 1991 through June 1993

Time Period	Groundwater Pumped (millions of gallons)
January - December 1991	283.8
January - December 1992	208.0
January - June 1993	127.9
Total Gallons Pumped 619,700,000	

G8. MOUND PLANT PUMPING

Table G8. Mound Plant Production Well Pumping Rates

Month/Year	Groundwater Pumped (millions of gallons)		
	Well No. 1 (0071)	Well No. 2 (0271)	Well No. 3 (0076)
01-92			16.58
02-92			17.33
03-92			19.34
04-92			17.63
05-92			15.70
06-92		17.18	
07-92			19.50
08-92			13.27
09-92			14.18
10-92			14.60
11-92			14.73
12-92			16.08
Totals	**0.0**	**17.18**	**178.94**
Total Gallons Pumped 196,120,000			
Month/Year	**Water Treated (millions of gallons)***		
01-93	15.83		
02-93	12.36		
03-93	16.29		
04-93	13.87		
05-93	17.50		
06-93	17.91		
Totals	**93.76**		
Total Gallons Treated 93,760,000			

*Mound Plant production well pumping totals are not officially recorded until the end of the year. Mound Plant monthly water softening totals were used to estimate production well pumping rates for the period of January — June 1993.

APPENDIX H

CHEMICAL DATA

H1. pH, ELECTIRCAL CONDUCTANCE, DISSOLVED OXYGEN, ALKALINITY

H2. TRILINEAR DIAGRAMS

H1. pH, ELECTRICAL CONDUCTANCE, DISSOLVED OXYGEN, ALKALINITY

Table H1a. pH Values for Select Wells Between October 1990 and March 1993

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0046	11/06/90	0001	SU		7	RWL
0046	02/05/91	0001	SU		7.19	RWL
0046	05/06/91	0001	SU		7.46	RWL
0046	08/05/91	0001	SU		7.1	RWL
0046	12/16/91	0001	SU		6.85	RWL
0046	03/23/92	0001	SU		6.91	RWL
0046	06/22/92	0001	SU		7.1	RWL
0046	09/16/92	0001	SU		7.05	RWL
0063	11/01/90	0001	SU		7.41	RWL
0063	02/05/91	0001	SU		7.36	RWL
0063	05/06/91	0001	SU		7.01	RWL
0063	08/05/91	0001	SU		7.23	RWL
0063	12/16/91	0001	SU		7.19	RWL
0063	03/23/92	0001	SU		7.16	RWL
0063	06/22/92	0001	SU		7.06	RWL
0063	09/16/92	0001	SU		7.39	RWL
0071	11/06/90	0001	SU		7.17	RWL
0071	02/01/91	0001	SU		7.46	RWL
0071	05/06/91	0001	SU		7.39	RWL
0071	08/05/91	0001	SU		7.29	RWL
0071	12/16/91	0001	SU		7.38	RWL
0071	03/23/92	0001	SU		7.12	RWL
0071	06/23/92	0001	SU		7.2	RWL
0071	09/16/92	0001	SU		7.15	RWL
0076	11/06/90	0001	SU		7.19	RWL
0076	02/01/91	0001	SU		7.29	RWL
0076	05/06/91	0001	SU		7.37	RWL
0076	12/16/91	0001	SU		7.12	RWL
0076	03/23/92	0001	SU		6.95	RWL
0076	06/22/92	0001	SU		7.2	RWL
0076	09/16/92	0001	SU		6.95	RWL
0118	11/07/90	0001	SU		7.13	RWL
0118	02/04/91	0001	SU		7.39	RWL
0118	04/30/91	0001	SU		7.16	RWL
0118	05/08/91	0001	SU		7.12	RWL
0118	07/30/91	0001	SU		7.34	RWL
0118	12/10/91	0001	SU		7.41	RWL
0118	03/17/92	0001	SU		6.72	RWL
0118	06/17/92	0001	SU		7.49	RWL

Table H1a. (page 2 of 6)

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0118	09/14/92	0001	SU		7.57	RWL
0119	06/19/92	0001	SU		7.21	RWL
0123	11/03/90	0001	SU		7.5	RWL
0123	05/01/91	0001	SU		7.29	RWL
0123	12/11/91	0001	SU		7.54	RWL
0123	06/16/92	0001	SU		7.3	RWL
0124	11/03/90	0001	SU		6.89	RWL
0124	05/02/91	0001	SU		7.06	RWL
0124	12/12/91	0001	SU		7.03	RWL
0124	06/16/92	0001	SU		8.01	RWL
0125	06/20/92	0001	SU		7.64	RWL
0126	11/06/90	0001	SU		7.05	RWL
0126	02/05/91	0001	SU		7.12	RWL
0126	05/01/91	0001	SU		7.19	RWL
0126	07/31/91	0001	SU		7.08	RWL
0126	12/12/91	0001	SU		7.03	RWL
0126	03/18/92	0001	SU		6.85	RWL
0126	06/16/92	0001	SU		7.32	RWL
0126	09/14/92	0001	SU		7.15	RWL
0127	11/02/90	0001	SU		7.32	RWL
0127	05/02/91	0001	SU		7.44	RWL
0127	12/11/91	0001	SU		7.11	RWL
0129	11/05/90	0001	SU		6.99	RWL
0129	02/04/91	0001	SU		7.28	RWL
0129	04/30/91	0001	SU		7.17	RWL
0129	05/08/91	0001	SU		6.92	RWL
0129	07/30/91	0001	SU		7.65	RWL
0129	12/17/91	0001	SU		7.19	RWL
0129	03/17/92	0001	SU		6.85	RWL
0129	06/16/92	0001	SU		6.84	RWL
0129	09/15/92	0001	SU		7.46	RWL
0137	11/02/90	0001	SU		7.19	RWL
0137	05/03/91	0001	SU		6.79	RWL
0137	12/19/91	0001	SU		7.05	RWL
0138	05/02/91	0001	SU		7.12	RWL
0138	07/30/91	0001	SU		7.31	RWL
0138	12/11/91	0001	SU		7.1	RWL
0138	03/17/92	0001	SU		7.02	RWL
0138	06/17/92	0001	SU		7.22	RWL

Table H1a. (page 3 of 6)

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0138	09/14/92	0001	SU		7.49	RWL
0151	11/04/90	0001	SU		7.2	RWL
0151	05/06/91	0001	SU		7.46	RWL
0151	12/18/91	0001	SU		7.12	RWL
0152	10/30/90	0001	SU		6.9	RWL
0152	01/30/91	0001	SU		7.08	RWL
0152	05/03/91	0001	SU		7.08	RWL
0152	08/03/91	0001	SU		7.1	RWL
0152	12/14/91	0001	SU		7.31	RWL
0152	03/20/92	0001	SU		6.77	RWL
0152	06/18/92	0001	SU		7.12	RWL
0152	09/17/92	0001	SU		7.11	RWL
0153	10/30/90	0001	SU		6.88	RWL
0153	05/03/91	0001	SU		7.03	RWL
0153	12/14/91	0001	SU		7.31	RWL
0153	06/18/92	0001	SU		7.02	RWL
0154	11/02/90	0001	SU		7.09	RWL
0154	01/30/91	0001	SU		7.17	RWL
0154	05/04/91	0001	SU		7.67	RWL
0154	08/02/91	0001	SU		7.23	RWL
0154	12/14/91	0001	SU		7.17	RWL
0154	03/21/92	0001	SU		6.86	RWL
0154	06/18/92	0001	SU		7.04	RWL
0154	09/17/92	0001	SU		7.03	RWL
0155	10/31/90	0001	SU		6.98	RWL
0155	01/29/91	0001	SU		7.31	RWL
0155	05/04/91	0001	SU		7.24	RWL
0155	08/02/91	0001	SU		6.97	RWL
0155	12/13/91	0001	SU		7	RWL
0155	03/21/92	0001	SU		6.71	RWL
0155	06/18/92	0001	SU		6.89	RWL
0155	09/17/92	0001	SU		6.89	RWL
0156	11/04/90	0001	SU		7.21	RWL
0156	05/01/91	0001	SU		7.64	RWL
0156	12/11/91	0001	SU		7.01	RWL
0156	06/17/92	0001	SU		7.16	RWL
0158	11/03/90	0001	SU		7.32	RWL
0158	05/07/91	0001	SU		7.28	RWL
0158	12/19/91	0001	SU		7.39	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0158	06/20/92	0001	SU		7.13	RWL
0159	11/03/90	0001	SU		7.45	RWL
0159	02/02/91	0001	SU		8	RWL
0159	05/02/91	0001	SU		7.54	RWL
0159	08/01/91	0001	SU		7.67	RWL
0159	12/12/91	0001	SU		7.1	RWL
0159	03/18/92	0001	SU		7.39	RWL
0159	06/17/92	0001	SU		7.24	RWL
0159	09/15/92	0001	SU		7.71	RWL
0160	11/03/90	0001	SU		7.78	RWL
0160	02/05/91	0001	SU		7.71	RWL
0160	05/03/91	0001	SU		8.1	RWL
0160	07/31/91	0001	SU		7.77	RWL
0160	12/12/91	0001	SU		7.34	RWL
0160	03/24/92	0001	SU		7.37	RWL
0160	06/17/92	0001	SU		7.57	RWL
0160	09/15/92	0001	SU		7.91	RWL
0271	11/06/90	0001	SU		7.2	RWL
0271	02/01/91	0001	SU		7.65	RWL
0271	05/06/91	0001	SU		7.07	RWL
0271	08/05/91	0001	SU		7.14	RWL
0271	12/16/91	0001	SU		7.2	RWL
0271	06/22/92	0001	SU		7.32	RWL
0271	09/16/92	0001	SU		7.28	RWL
0301	11/05/90	0001	SU		7.35	RWL
0301	04/30/91	0001	SU		7.71	RWL
0301	05/08/91	0001	SU		7.87	RWL
0301	12/10/91	0001	SU		7.73	RWL
0302	11/05/90	0001	SU		7.26	RWL
0302	04/30/91	0001	SU		7.51	RWL
0302	05/08/91	0001	SU		7.41	RWL
0302	12/10/91	0001	SU		7.33	RWL
0303	11/07/90	0001	SU		7.55	RWL
0303	05/02/91	0001	SU		7.88	RWL
0303	12/10/91	0001	SU		7.35	RWL
0303	06/16/92	0001	SU		8.18	RWL
0304	11/07/90	0001	SU		7.57	RWL
0304	05/01/91	0001	SU		7.76	RWL
0304	12/11/91	0001	SU		7.24	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0304	06/16/92	0001	SU		7.34	RWL
0305	11/01/90	0001	SU		6.81	RWL
0305	01/31/91	0001	SU		7.34	RWL
0305	05/05/91	0001	SU		7.59	RWL
0305	08/01/91	0001	SU		7.12	RWL
0305	12/17/91	0001	SU		6.95	RWL
0305	03/19/92	0001	SU		6.84	RWL
0305	06/22/92	0001	SU		6.81	RWL
0305	09/16/92	0001	SU		7.13	RWL
0306	10/30/90	0001	SU		7.1	RWL
0306	02/06/91	0001	SU		7.03	RWL
0306	05/04/91	0001	SU		6.34	RWL
0306	08/03/91	0001	SU		7.07	RWL
0306	12/15/91	0001	SU		7.01	RWL
0306	03/21/92	0001	SU		6.62	RWL
0306	06/18/92	0001	SU		7.42	RWL
0306	09/17/92	0001	SU		7.36	RWL
0307	10/31/90	0001	SU		6.92	RWL
0307	02/03/91	0001	SU		7.52	RWL
0307	05/07/91	0001	SU		7.14	RWL
0307	08/04/91	0001	SU		7.3	RWL
0307	12/15/91	0001	SU		7.31	RWL
0307	03/23/92	0001	SU		6.77	RWL
0307	06/21/92	0001	SU		7.27	RWL
0307	09/17/92	0001	SU		7.31	RWL
0309	11/02/90	0001	SU		7.56	RWL
0309	05/05/91	0001	SU		7.74	RWL
0309	12/14/91	0001	SU		7.37	RWL
0309	03/21/92	0001	SU		7.27	RWL
0309	06/19/92	0001	SU		7.27	RWL
0309	09/16/92	0001	SU		7.2	RWL
0310	10/30/90	0001	SU		7.23	RWL
0310	05/04/91	0001	SU		7.43	RWL
0310	12/14/91	0001	SU		7.07	RWL
0310	06/20/92	0001	SU		7.13	RWL
0311	11/05/90	0001	SU		8.82	RWL
0311	05/02/91	0001	SU		7.36	RWL
0311	12/13/91	0001	SU		7.87	RWL
0311	06/17/92	0001	SU		7.39	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0313	10/31/90	0001	SU		6.92	RWL
0313	02/03/91	0001	SU		7.44	RWL
0313	05/07/91	0001	SU		7.27	RWL
0313	08/04/91	0001	SU		7.25	RWL
0313	12/17/91	0001	SU		6.95	RWL
0313	03/22/92	0001	SU		6.46	RWL
0313	06/21/92	0001	SU		7.28	RWL
0313	09/17/92	0001	SU		7.5	RWL
0314	11/07/90	0001	SU		7.21	RWL
0314	05/04/91	0001	SU		6.95	RWL
0314	12/15/91	0001	SU		6.96	RWL
0314	06/19/92	0001	SU		7.22	RWL
0315	10/31/90	0001	SU		6.85	RWL
0315	01/31/91	0001	SU		7.26	RWL
0315	05/05/91	0001	SU		7.27	RWL
0315	08/02/91	0001	SU		7.2	RWL
0315	12/17/91	0001	SU		6.87	RWL
0315	03/20/92	0001	SU		6.74	RWL
0315	06/20/92	0001	SU		6.81	RWL
0315	09/16/92	0001	SU		6.95	RWL
0317	11/06/90	0001	SU		7.26	RWL
0317	05/08/91	0001	SU		7.28	RWL
0317	12/16/91	0001	SU		7.4	RWL
0317	06/20/92	0001	SU		7.45	RWL
0319	11/04/90	0001	SU		6.75	RWL
0319	05/07/91	0001	SU		7.26	RWL
0319	12/18/91	0001	SU		7.78	RWL
0319	06/19/92	0001	SU		7.23	RWL
0320	11/01/90	0001	SU		7.28	RWL
0320	05/07/91	0001	SU		7.44	RWL
0320	12/18/91	0001	SU		7.39	RWL
0320	06/19/92	0001	SU		7.19	RWL

Table H1b. Specific Conductance Values for Select Wells Between October 1990 and March 1993

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0046	11/06/90	0001	UMHOS/CM		1020	RWL
0046	02/05/91	0001	UMHOS/CM		780	RWL
0046	05/06/91	0001	UMHOS/CM		1050	RWL
0046	08/05/91	0001	UMHOS/CM		940	RWL
0046	12/16/91	0001	UMHOS/CM		990	RWL
0046	03/23/92	0001	UMHOS/CM		1005	RWL
0046	06/22/92	0001	UMHOS/CM		1110	RWL
0046	09/16/92	0001	UMHOS/CM		1100	RWL
0063	11/01/90	0001	UMHOS/CM		1300	RWL
0063	02/05/91	0001	UMHOS/CM		1290	RWL
0063	05/06/91	0001	UMHOS/CM		1260	RWL
0063	08/05/91	0001	UMHOS/CM		1450	RWL
0063	12/16/91	0001	UMHOS/CM		1200	RWL
0063	03/23/92	0001	UMHOS/CM		1130	RWL
0063	06/22/92	0001	UMHOS/CM		1290	RWL
0063	09/16/92	0001	UMHOS/CM		1300	RWL
0071	11/06/90	0001	UMHOS/CM		990	RWL
0071	02/01/91	0001	UMHOS/CM		980	RWL
0071	05/06/91	0001	UMHOS/CM		1030	RWL
0071	08/05/91	0001	UMHOS/CM		1060	RWL
0071	12/16/91	0001	UMHOS/CM		800	RWL
0071	03/23/92	0001	UMHOS/CM		820	RWL
0071	06/23/92	0001	UMHOS/CM		830	RWL
0071	09/16/92	0001	UMHOS/CM		1050	RWL
0076	11/06/90	0001	UMHOS/CM		890	RWL
0076	02/01/91	0001	UMHOS/CM		780	RWL
0076	05/06/91	0001	UMHOS/CM		720	RWL
0076	12/16/91	0001	UMHOS/CM		680	RWL
0076	03/23/92	0001	UMHOS/CM		730	RWL
0076	06/22/92	0001	UMHOS/CM		750	RWL
0076	09/16/92	0001	UMHOS/CM		820	RWL
0118	11/07/90	0001	UMHOS/CM		1130	RWL
0118	02/04/91	0001	UMHOS/CM		800	RWL
0118	04/30/91	0001	UMHOS/CM		770	RWL
0118	05/08/91	0001	UMHOS/CM		790	RWL
0118	07/30/91	0001	UMHOS/CM		800	RWL
0118	12/10/91	0001	UMHOS/CM		700	RWL
0118	03/17/92	0001	UMHOS/CM		760	RWL
0118	06/17/92	0001	UMHOS/CM		790	RWL
0118	09/14/92	0001	UMHOS/CM		820	RWL
0119	06/19/92	0001	UMHOS/CM		1410	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0123	11/03/90	0001	UMHOS/CM		2590	RWL
0123	05/01/91	0001	UMHOS/CM		2590	RWL
0123	12/11/91	0001	UMHOS/CM		2500	RWL
0123	06/16/92	0001	UMHOS/CM		2600	RWL
0124	11/03/90	0001	UMHOS/CM		880	RWL
0124	05/02/91	0001	UMHOS/CM		980	RWL
0124	12/12/91	0001	UMHOS/CM		730	RWL
0124	06/16/92	0001	UMHOS/CM		800	RWL
0125	06/20/92	0001	UMHOS/CM		680	RWL
0126	11/06/90	0001	UMHOS/CM		1000	RWL
0126	02/05/91	0001	UMHOS/CM		890	RWL
0126	05/01/91	0001	UMHOS/CM		8100	RWL
0126	07/31/91	0001	UMHOS/CM		1110	RWL
0126	12/12/91	0001	UMHOS/CM		800	RWL
0126	03/18/92	0001	UMHOS/CM		870	RWL
0126	06/16/92	0001	UMHOS/CM		900	RWL
0126	09/14/92	0001	UMHOS/CM		900	RWL
0127	11/02/90	0001	UMHOS/CM		780	RWL
0127	05/02/91	0001	UMHOS/CM		900	RWL
0127	12/11/91	0001	UMHOS/CM		670	RWL
0129	11/05/90	0001	UMHOS/CM		820	RWL
0129	02/04/91	0001	UMHOS/CM		830	RWL
0129	04/30/91	0001	UMHOS/CM		9000	RWL
0129	05/08/91	0001	UMHOS/CM		910	RWL
0129	07/30/91	0001	UMHOS/CM		1190	RWL
0129	12/17/91	0001	UMHOS/CM		780	RWL
0129	03/17/92	0001	UMHOS/CM		840	RWL
0129	06/16/92	0001	UMHOS/CM		870	RWL
0129	09/15/92	0001	UMHOS/CM		930	RWL
0137	11/02/90	0001	UMHOS/CM		1090	RWL
0137	05/03/91	0001	UMHOS/CM		1010	RWL
0137	12/19/91	0001	UMHOS/CM		880	RWL
0138	05/02/91	0001	UMHOS/CM		1030	RWL
0138	07/30/91	0001	UMHOS/CM		880	RWL
0138	12/11/91	0001	UMHOS/CM		750	RWL
0138	03/17/92	0001	UMHOS/CM		820	RWL
0138	06/17/92	0001	UMHOS/CM		850	RWL
0138	09/14/92	0001	UMHOS/CM		890	RWL
0151	11/04/90	0001	UMHOS/CM		610	RWL
0151	05/06/91	0001	UMHOS/CM		570	RWL
0151	12/18/91	0001	UMHOS/CM		550	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0152	10/30/90	0001	UMHOS/CM		1100	RWL
0152	01/30/91	0001	UMHOS/CM		1080	RWL
0152	05/03/91	0001	UMHOS/CM		1090	RWL
0152	08/03/91	0001	UMHOS/CM		1070	RWL
0152	12/14/91	0001	UMHOS/CM		1000	RWL
0152	03/20/92	0001	UMHOS/CM		1020	RWL
0152	06/18/92	0001	UMHOS/CM		1040	RWL
0152	09/17/92	0001	UMHOS/CM		1050	RWL
0153	10/30/90	0001	UMHOS/CM		3200	RWL
0153	05/03/91	0001	UMHOS/CM		1050	RWL
0153	12/14/91	0001	UMHOS/CM		900	RWL
0153	06/18/92	0001	UMHOS/CM		1000	RWL
0154	11/02/90	0001	UMHOS/CM		980	RWL
0154	01/30/91	0001	UMHOS/CM		950	RWL
0154	05/04/91	0001	UMHOS/CM		1030	RWL
0154	08/02/91	0001	UMHOS/CM		960	RWL
0154	12/14/91	0001	UMHOS/CM		1060	RWL
0154	03/21/92	0001	UMHOS/CM		830	RWL
0154	06/18/92	0001	UMHOS/CM		960	RWL
0154	09/17/92	0001	UMHOS/CM		1000	RWL
0155	10/31/90	0001	UMHOS/CM		1040	RWL
0155	01/29/91	0001	UMHOS/CM		1020	RWL
0155	05/04/91	0001	UMHOS/CM		1050	RWL
0155	08/02/91	0001	UMHOS/CM		990	RWL
0155	12/13/91	0001	UMHOS/CM		880	RWL
0155	03/21/92	0001	UMHOS/CM		870	RWL
0155	06/18/92	0001	UMHOS/CM		1000	RWL
0155	09/17/92	0001	UMHOS/CM		1100	RWL
0156	11/04/90	0001	UMHOS/CM		410	RWL
0156	05/01/91	0001	UMHOS/CM		610	RWL
0156	12/11/91	0001	UMHOS/CM		650	RWL
0156	06/17/92	0001	UMHOS/CM		630	RWL
0158	11/03/90	0001	UMHOS/CM		510	RWL
0158	05/07/91	0001	UMHOS/CM		710	RWL
0158	12/19/91	0001	UMHOS/CM		710	RWL
0158	06/20/92	0001	UMHOS/CM		750	RWL
0159	11/03/90	0001	UMHOS/CM		470	RWL
0159	02/02/91	0001	UMHOS/CM		660	RWL
0159	05/02/91	0001	UMHOS/CM		570	RWL
0159	08/01/91	0001	UMHOS/CM		590	RWL
0159	12/12/91	0001	UMHOS/CM		720	RWL

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Location ID	Log Date	Sample ID	Units of Measure	Parameter Value	Lab Code
0159	03/18/92	0001	UMHOS/CM	2290	RWL
0159	06/17/92	0001	UMHOS/CM	670	RWL
0159	09/15/92	0001	UMHOS/CM	550	RWL
0160	11/03/90	0001	UMHOS/CM	480	RWL
0160	02/05/91	0001	UMHOS/CM	520	RWL
0160	05/03/91	0001	UMHOS/CM	600	RWL
0160	07/31/91	0001	UMHOS/CM	790	RWL
0160	12/12/91	0001	UMHOS/CM	690	RWL
0160	03/24/92	0001	UMHOS/CM	720	RWL
0160	06/17/92	0001	UMHOS/CM	710	RWL
0160	09/15/92	0001	UMHOS/CM	550	RWL
0271	11/06/90	0001	UMHOS/CM	870	RWL
0271	02/01/91	0001	UMHOS/CM	920	RWL
0271	05/06/91	0001	UMHOS/CM	900	RWL
0271	08/05/91	0001	UMHOS/CM	950	RWL
0271	12/16/91	0001	UMHOS/CM	760	RWL
0271	06/22/92	0001	UMHOS/CM	910	RWL
0271	09/16/92	0001	UMHOS/CM	1000	RWL
0301	11/05/90	0001	UMHOS/CM	840	RWL
0301	04/30/91	0001	UMHOS/CM	840	RWL
0301	05/08/91	0001	UMHOS/CM	800	RWL
0301	12/10/91	0001	UMHOS/CM	820	RWL
0302	11/05/90	0001	UMHOS/CM	900	RWL
0302	04/30/91	0001	UMHOS/CM	780	RWL
0302	05/08/91	0001	UMHOS/CM	750	RWL
0302	12/10/91	0001	UMHOS/CM	790	RWL
0303	11/07/90	0001	UMHOS/CM	830	RWL
0303	05/02/91	0001	UMHOS/CM	1810	RWL
0303	12/10/91	0001	UMHOS/CM	710	RWL
0303	06/16/92	0001	UMHOS/CM	710	RWL
0304	11/07/90	0001	UMHOS/CM	1030	RWL
0304	05/01/91	0001	UMHOS/CM	440	RWL
0304	12/11/91	0001	UMHOS/CM	520	RWL
0304	06/16/92	0001	UMHOS/CM	510	RWL
0305	11/01/90	0001	UMHOS/CM	910	RWL
0305	01/31/91	0001	UMHOS/CM	1180	RWL
0305	05/05/91	0001	UMHOS/CM	1190	RWL
0305	08/01/91	0001	UMHOS/CM	1310	RWL
0305	12/17/91	0001	UMHOS/CM	1270	RWL
0305	03/19/92	0001	UMHOS/CM	1320	RWL
0305	06/22/92	0001	UMHOS/CM	1110	RWL

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Location ID	Log Date	Sample ID	Units of Measure	FVI	Parameter Value	Lab Code
0305	09/16/92	0001	UMHOS/CM		1150	RWL
0306	10/30/90	0001	UMHOS/CM		710	RWL
0306	02/06/91	0001	UMHOS/CM		20	RWL
0306	05/04/91	0001	UMHOS/CM		1130	RWL
0306	08/03/91	0001	UMHOS/CM		1080	RWL
0306	12/15/91	0001	UMHOS/CM		940	RWL
0306	03/21/92	0001	UMHOS/CM		910	RWL
0306	06/18/92	0001	UMHOS/CM		1005	RWL
0306	09/17/92	0001	UMHOS/CM		1030	RWL
0307	10/31/90	0001	UMHOS/CM		820	RWL
0307	02/03/91	0001	UMHOS/CM		1190	RWL
0307	05/07/91	0001	UMHOS/CM		1200	RWL
0307	08/04/91	0001	UMHOS/CM		1220	RWL
0307	12/15/91	0001	UMHOS/CM		1090	RWL
0307	03/23/92	0001	UMHOS/CM		1090	RWL
0307	06/21/92	0001	UMHOS/CM		1130	RWL
0307	09/17/92	0001	UMHOS/CM		1140	RWL
0309	11/02/90	0001	UMHOS/CM		1120	RWL
0309	05/05/91	0001	UMHOS/CM		1450	RWL
0309	12/14/91	0001	UMHOS/CM		1420	RWL
0309	03/21/92	0001	UMHOS/CM		1390	RWL
0309	06/19/92	0001	UMHOS/CM		1510	RWL
0309	09/16/92	0001	UMHOS/CM		1500	RWL
0310	10/30/90	0001	UMHOS/CM		910	RWL
0310	05/04/91	0001	UMHOS/CM		880	RWL
0310	12/14/91	0001	UMHOS/CM		980	RWL
0310	06/20/92	0001	UMHOS/CM		850	RWL
0311	11/05/90	0001	UMHOS/CM		710	RWL
0311	05/02/91	0001	UMHOS/CM		690	RWL
0311	12/13/91	0001	UMHOS/CM		530	RWL
0311	06/17/92	0001	UMHOS/CM		830	RWL
0313	10/31/90	0001	UMHOS/CM		1180	RWL
0313	02/03/91	0001	UMHOS/CM		1200	RWL
0313	05/07/91	0001	UMHOS/CM		1190	RWL
0313	08/04/91	0001	UMHOS/CM		1220	RWL
0313	12/17/91	0001	UMHOS/CM		1030	RWL
0313	03/22/92	0001	UMHOS/CM		1070	RWL
0313	06/21/92	0001	UMHOS/CM		1120	RWL
0313	09/17/92	0001	UMHOS/CM		1090	RWL
0314	11/07/90	0001	UMHOS/CM		1600	RWL
0314	05/04/91	0001	UMHOS/CM		1430	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0314	12/15/91	0001	UMHOS/CM		1330	RWL
0314	06/19/92	0001	UMHOS/CM		1520	RWL
0315	10/31/90	0001	UMHOS/CM		1280	RWL
0315	01/31/91	0001	UMHOS/CM		1340	RWL
0315	05/05/91	0001	UMHOS/CM		1370	RWL
0315	08/02/91	0001	UMHOS/CM		1320	RWL
0315	12/17/91	0001	UMHOS/CM		1260	RWL
0315	03/20/92	0001	UMHOS/CM		1210	RWL
0315	06/20/92	0001	UMHOS/CM		1190	RWL
0315	09/16/92	0001	UMHOS/CM		1350	RWL
0317	11/06/90	0001	UMHOS/CM		1010	RWL
0317	05/08/91	0001	UMHOS/CM		880	RWL
0317	12/16/91	0001	MVOLTS		750	RWL
0317	06/20/92	0001	UMHOS/CM		790	RWL
0319	11/04/90	0001	UMHOS/CM		680	RWL
0319	05/07/91	0001	UMHOS/CM		660	RWL
0319	12/18/91	0001	UMHOS/CM		550	RWL
0319	06/19/92	0001	UMHOS/CM		640	RWL
0320	11/01/90	0001	UMHOS/CM		680	RWL
0320	05/07/91	0001	UMHOS/CM		600	RWL
0320	12/18/91	0001	UMHOS/CM		530	RWL
0320	06/19/92	0001	UMHOS/CM		620	RWL

Table H1c. Dissolved Oxygen Values for Select Wells Between October 1990 and March 1993

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0046	05/06/91	0001	MG/L		6.19	RWL
0046	08/05/91	0001	MG/L		7.24	RWL
0046	12/16/91	0001	MG/L		4.66	RWL
0046	03/23/92	0001	MG/L		2.59	RWL
0046	06/22/92	0001	MG/L		3.43	RWL
0046	09/16/92	0001	MG/L		4.02	RWL
0063	05/06/91	0001	MG/L		7.88	RWL
0063	08/05/91	0001	MG/L		6.33	RWL
0063	12/16/91	0001	MG/L		5.35	RWL
0063	03/23/92	0001	MG/L		2.96	RWL
0063	06/22/92	0001	MG/L		3.94	RWL
0063	09/16/92	0001	MG/L		3.3	RWL
0071	05/06/91	0001	MG/L		7.94	RWL
0071	08/05/91	0001	MG/L		6.08	RWL
0071	12/16/91	0001	MG/L		3.47	RWL
0071	03/23/92	0001	MG/L		2.26	RWL
0071	06/23/92	0001	MG/L		4.44	RWL
0071	09/16/92	0001	MG/L		4.03	RWL
0076	05/06/91	0001	MG/L		8.9	RWL
0076	12/16/91	0001	MG/L		6.52	RWL
0076	03/23/92	0001	MG/L		2.04	RWL
0076	06/22/92	0001	MG/L		3.03	RWL
0076	09/16/92	0001	MG/L		3.78	RWL
0118	02/04/91	0001	MG/L		5.71	RWL
0118	04/30/91	0001	MG/L		7.78	RWL
0118	05/08/91	0001	MG/L		3.83	RWL
0118	12/10/91	0001	MG/L		9.76	RWL
0118	03/17/92	0001	MG/L		7.42	RWL
0118	06/17/92	0001	MG/L		3.55	RWL
0118	09/14/92	0001	MG/L		3.68	RWL
0119	06/19/92	0001	MG/L		0.22	RWL
0123	05/01/91	0001	MG/L		6.63	RWL
0123	12/11/91	0001	MG/L		15.97	RWL
0123	06/16/92	0001	MG/L		0.42	RWL
0124	12/12/91	0001	MG/L		0.15	RWL
0124	06/16/92	0001	MG/L		0.13	RWL
0125	06/20/92	0001	MG/L		1.82	RWL
0126	02/05/91	0001	MG/L		2.06	RWL
0126	07/31/91	0001	MG/L		3.83	RWL
0126	12/12/91	0001	MG/L		0.19	RWL
0126	03/18/92	0001	MG/L		1.39	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0126	06/16/92	0001	MG/L		0.91	RWL
0126	09/14/92	0001	MG/L		0.66	RWL
0129	02/04/91	0001	MG/L		3.5	RWL
0129	04/30/91	0001	MG/L		9.15	RWL
0129	05/08/91	0001	MG/L		1.35	RWL
0129	12/17/91	0001	MG/L		1.18	RWL
0129	03/17/92	0001	MG/L		2.24	RWL
0129	06/16/92	0001	MG/L		1.46	RWL
0129	09/15/92	0001	MG/L		2.03	RWL
0137	05/03/91	0001	MG/L		10.47	RWL
0137	12/19/91	0001	MG/L		2.91	RWL
0138	07/30/91	0001	MG/L		2.3	RWL
0138	12/11/91	0001	MG/L		10.65	RWL
0138	03/17/92	0001	MG/L		4.64	RWL
0138	06/17/92	0001	MG/L		2.01	RWL
0138	09/14/92	0001	MG/L		2.64	RWL
0151	12/18/91	0001	MG/L		3.84	RWL
0152	05/03/91	0001	MG/L		6.25	RWL
0152	08/03/91	0001	MG/L		7.58	RWL
0152	12/14/91	0001	MG/L		2.02	RWL
0152	03/20/92	0001	MG/L		1.29	RWL
0152	06/18/92	0001	MG/L		2.73	RWL
0152	09/17/92	0001	MG/L		2.06	RWL
0153	05/03/91	0001	MG/L		7.63	RWL
0153	12/14/91	0001	MG/L		2.91	RWL
0153	06/18/92	0001	MG/L		3.79	RWL
0154	05/04/91	0001	MG/L		9.01	RWL
0154	08/02/91	0001	MG/L		8.9	RWL
0154	12/14/91	0001	MG/L		0.75	RWL
0154	03/21/92	0001	MG/L		0.55	RWL
0154	06/18/92	0001	MG/L		1.27	RWL
0154	09/17/92	0001	MG/L		1.95	RWL
0155	08/02/91	0001	MG/L		7.5	RWL
0155	12/13/91	0001	MG/L		1.97	RWL
0155	03/21/92	0001	MG/L		0.59	RWL
0155	06/18/92	0001	MG/L		1.91	RWL
0155	09/17/92	0001	MG/L		3.47	RWL
0156	06/17/92	0001	MG/L		0.29	RWL
0158	12/19/91	0001	MG/L		0.42	RWL
0158	06/20/92	0001	MG/L		0.45	RWL
0159	02/02/91	0001	MG/L		3.48	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0159	08/01/91	0001	MG/L		6.2	RWL
0159	12/12/91	0001	MG/L		0.06	RWL
0159	03/18/92	0001	MG/L		0.9	RWL
0159	06/17/92	0001	MG/L		0.2	RWL
0159	09/15/92	0001	MG/L		0.18	RWL
0160	02/05/91	0001	MG/L		4.8	RWL
0160	07/31/91	0001	MG/L		1	RWL
0160	12/12/91	0001	MG/L		0.01	RWL
0160	03/24/92	0001	MG/L		0.04	RWL
0160	06/17/92	0001	MG/L		0.14	RWL
0160	09/15/92	0001	MG/L		0.1	RWL
0271	05/06/91	0001	MG/L		6.85	RWL
0271	08/05/91	0001	MG/L		7.14	RWL
0271	12/16/91	0001	MG/L		3.42	RWL
0271	06/22/92	0001	MG/L		4.1	RWL
0271	09/16/92	0001	MG/L		3.3	RWL
0301	12/10/91	0001	MG/L		9	RWL
0302	12/10/91	0001	MG/L		4.48	RWL
0303	12/10/91	0001	MG/L		13.11	RWL
0303	06/16/92	0001	MG/L		2.35	RWL
0304	12/11/91	0001	MG/L		3.58	RWL
0304	06/16/92	0001	MG/L		0.2	RWL
0305	05/05/91	0001	MG/L		10.42	RWL
0305	08/01/91	0001	MG/L		6.5	RWL
0305	12/17/91	0001	MG/L		1.74	RWL
0305	03/19/92	0001	MG/L		1.99	RWL
0305	06/22/92	0001	MG/L		1.53	RWL
0305	09/16/92	0001	MG/L		2.07	RWL
0306	02/06/91	0001	MG/L		2.83	RWL
0306	05/04/91	0001	MG/L		8.37	RWL
0306	08/03/91	0001	MG/L		11.66	RWL
0306	12/15/91	0001	MG/L		2.7	RWL
0306	03/21/92	0001	MG/L		1.53	RWL
0306	06/18/92	0001	MG/L		4.52	RWL
0306	09/17/92	0001	MG/L		3.16	RWL
0307	02/03/91	0001	MG/L		6.9	RWL
0307	05/07/91	0001	MG/L		8.47	RWL
0307	08/04/91	0001	MG/L		4.7	RWL
0307	12/15/91	0001	MG/L		1.15	RWL
0307	03/23/92	0001	MG/L		0.59	RWL
0307	06/21/92	0001	MG/L		0.86	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0307	09/17/92	0001	MG/L		2.05	RWL
0309	12/14/91	0001	MG/L		0.98	RWL
0309	03/21/92	0001	MG/L		0.34	RWL
0309	06/19/92	0001	MG/L		0.27	RWL
0309	09/16/92	0001	MG/L		0.43	RWL
0310	12/14/91	0001	MG/L		1.02	RWL
0310	06/20/92	0001	MG/L		0.32	RWL
0311	12/13/91	0001	MG/L		3.27	RWL
0311	06/17/92	0001	MG/L		0.56	RWL
0313	02/03/91	0001	MG/L		7.01	RWL
0313	05/07/91	0001	MG/L		8.68	RWL
0313	08/04/91	0001	MG/L		9.73	RWL
0313	12/17/91	0001	MG/L		5.82	RWL
0313	03/22/92	0001	MG/L		2.06	RWL
0313	06/21/92	0001	MG/L		4.13	RWL
0313	09/17/92	0001	MG/L		3.69	RWL
0314	05/04/91	0001	MG/L		5.85	RWL
0314	12/15/91	0001	MG/L		3.35	RWL
0314	06/19/92	0001	MG/L		2.24	RWL
0315	08/02/91	0001	MG/L		8	RWL
0315	12/17/91	0001	MG/L		3.43	RWL
0315	03/20/92	0001	MG/L		1.55	RWL
0315	06/20/92	0001	MG/L		2.99	RWL
0315	09/16/92	0001	MG/L		3.54	RWL
0317	12/16/91	0001	MG/L		1.98	RWL
0317	06/20/92	0001	MG/L		3.41	RWL
0319	12/18/91	0001	MG/L		1.06	RWL
0319	06/19/92	0001	MG/L		0.91	RWL
0320	12/18/91	0001	MG/L		3.41	RWL
0320	06/19/92	0001	MG/L		3.04	RWL

Table H1d. Alkalinity Values for Select Wells Between October 1990 and March 1993

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0046	11/06/90	0001	MG/L		348	RWL
0046	02/05/91	0001	MG/L		377	RWL
0046	05/06/91	0001	MG/L		394	RWL
0046	08/05/91	0001	MG/L		308	RWL
0046	12/16/91	0001	MG/L		366	RWL
0046	03/23/92	0001	MG/L		386	RWL
0046	06/22/92	0001	MG/L		394	RWL
0046	09/16/92	0001	MG/L		390	RWL
0063	11/01/90	0001	MG/L		358	RWL
0063	02/05/91	0001	MG/L		374.5	RWL
0063	05/06/91	0001	MG/L		364.5	RWL
0063	08/05/91	0001	MG/L		348	RWL
0063	12/16/91	0001	MG/L		360.5	RWL
0063	03/23/92	0001	MG/L		349	RWL
0063	06/22/92	0001	MG/L		383.5	RWL
0063	09/16/92	0001	MG/L		279	RWL
0071	11/06/90	0001	MG/L		352	RWL
0071	02/01/91	0001	MG/L		348	RWL
0071	05/06/91	0001	MG/L		362	RWL
0071	08/05/91	0001	MG/L		349	RWL
0071	12/16/91	0001	MG/L		349	RWL
0071	03/23/92	0001	MG/L		299	RWL
0071	06/23/92	0001	MG/L		335	RWL
0071	09/16/92	0001	MG/L		243	RWL
0076	11/06/90	0001	MG/L		330	RWL
0076	02/01/91	0001	MG/L		305.2	RWL
0076	05/06/91	0001	MG/L		303	RWL
0076	12/16/91	0001	MG/L		312	RWL
0076	03/23/92	0001	MG/L		318.5	RWL
0076	06/22/92	0001	MG/L		313	RWL
0076	09/16/92	0001	MG/L		316	RWL
0118	11/07/90	0001	MG/L		340	RWL
0118	02/04/91	0001	MG/L		342	RWL
0118	04/30/91	0001	MG/L		349.5	RWL
0118	05/08/91	0001	MG/L		354	RWL
0118	07/30/91	0001	MG/L		334.5	RWL
0118	12/10/91	0001	MG/L		298	RWL
0118	03/17/92	0001	MG/L		315	RWL
0118	06/17/92	0001	MG/L		203.5	RWL
0118	09/14/92	0001	MG/L		335.5	RWL
0123	11/03/90	0001	MG/L		325	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0123	05/01/91	0001	MG/L		320	RWL
0123	12/11/91	0001	MG/L		309	RWL
0123	06/16/92	0001	MG/L		323	RWL
0124	11/03/90	0001	MG/L		355	RWL
0124	05/02/91	0001	MG/L		402.5	RWL
0124	12/12/91	0001	MG/L		327	RWL
0124	06/16/92	0001	MG/L		314.5	RWL
0125	06/20/92	0001	MG/L		349	RWL
0126	11/06/90	0001	MG/L		388	RWL
0126	02/05/91	0001	MG/L		372	RWL
0126	05/01/91	0001	MG/L		391.5	RWL
0126	07/31/91	0001	MG/L		380	RWL
0126	12/12/91	0001	MG/L		364.5	RWL
0126	03/18/92	0001	MG/L		339	RWL
0126	06/16/92	0001	MG/L		342.5	RWL
0126	09/14/92	0001	MG/L		309	RWL
0127	11/02/90	0001	MG/L		301	RWL
0127	05/02/91	0001	MG/L		290	RWL
0127	12/11/91	0001	MG/L		291	RWL
0129	11/05/90	0001	MG/L		248.5	RWL
0129	02/04/91	0001	MG/L		352	RWL
0129	04/30/91	0001	MG/L		372	RWL
0129	05/08/91	0001	MG/L		362	RWL
0129	07/30/91	0001	MG/L		375	RWL
0129	12/17/91	0001	MG/L		336.5	RWL
0129	03/17/92	0001	MG/L		344	RWL
0129	06/16/92	0001	MG/L		339.5	RWL
0129	09/15/92	0001	MG/L		331	RWL
0137	11/02/90	0001	MG/L		319	RWL
0137	05/03/91	0001	MG/L		321	RWL
0137	12/19/91	0001	MG/L		395.5	RWL
0138	05/02/91	0001	MG/L		310.5	RWL
0138	07/30/91	0001	MG/L		333	RWL
0138	12/11/91	0001	MG/L		331.5	RWL
0138	03/17/92	0001	MG/L		339.5	RWL
0138	06/17/92	0001	MG/L		343	RWL
0138	09/14/92	0001	MG/L		310.5	RWL
0151	11/04/90	0001	MG/L		281	RWL
0151	05/06/91	0001	MG/L		355	RWL
0151	12/18/91	0001	MG/L		3.89	RWL
0152	10/30/90	0001	MG/L		409	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0152	01/30/91	0001	MG/L		401	RWL
0152	05/03/91	0001	MG/L		402.5	RWL
0152	08/03/91	0001	MG/L		425	RWL
0152	12/14/91	0001	MG/L		409	RWL
0152	03/20/92	0001	MG/L		425	RWL
0152	06/18/92	0001	MG/L		429	RWL
0152	09/17/92	0001	MG/L		427	RWL
0153	10/30/90	0001	MG/L		412.5	RWL
0153	05/03/91	0001	MG/L		409.5	RWL
0153	12/14/91	0001	MG/L		406	RWL
0153	06/18/92	0001	MG/L		405	RWL
0154	11/02/90	0001	MG/L		363	RWL
0154	01/30/91	0001	MG/L		363	RWL
0154	05/04/91	0001	MG/L		357	RWL
0154	08/02/91	0001	MG/L		339	RWL
0154	12/14/91	0001	MG/L		333	RWL
0154	03/21/92	0001	MG/L		336	RWL
0154	06/18/92	0001	MG/L		345	RWL
0154	09/17/92	0001	MG/L		327	RWL
0155	10/31/90	0001	MG/L		370	RWL
0155	01/29/91	0001	MG/L		384	RWL
0155	05/04/91	0001	MG/L		384	RWL
0155	08/02/91	0001	MG/L		378.5	RWL
0155	12/13/91	0001	MG/L		354	RWL
0155	03/21/92	0001	MG/L		349	RWL
0155	06/18/92	0001	MG/L		364.5	RWL
0155	09/17/92	0001	MG/L		340	RWL
0156	11/04/90	0001	MG/L		299	RWL
0156	05/01/91	0001	MG/L		313	RWL
0156	12/11/91	0001	MG/L		292.5	RWL
0156	06/17/92	0001	MG/L		311	RWL
0158	11/03/90	0001	MG/L		212.5	RWL
0158	05/07/91	0001	MG/L		294	RWL
0158	12/19/91	0001	MG/L		306	RWL
0158	06/20/92	0001	MG/L		315	RWL
0159	11/03/90	0001	MG/L		280	RWL
0159	02/02/91	0001	MG/L		280	RWL
0159	05/02/91	0001	MG/L		250	RWL
0159	08/01/91	0001	MG/L		283	RWL
0159	12/12/91	0001	MG/L		264.5	RWL
0159	03/18/92	0001	MG/L		365.5	RWL

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Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0159	06/17/92	0001	MG/L		290	RWL
0159	09/15/92	0001	MG/L		244	RWL
0160	11/03/90	0001	MG/L		291	RWL
0160	02/05/91	0001	MG/L		277	RWL
0160	05/03/91	0001	MG/L		270	RWL
0160	07/31/91	0001	MG/L		280	RWL
0160	12/12/91	0001	MG/L		275	RWL
0160	03/24/92	0001	MG/L		255.5	RWL
0160	06/17/92	0001	MG/L		259.5	RWL
0160	09/15/92	0001	MG/L		225	RWL
0271	11/06/90	0001	MG/L		322	RWL
0271	02/01/91	0001	MG/L		326.5	RWL
0271	05/06/91	0001	MG/L		337	RWL
0271	08/05/91	0001	MG/L		325	RWL
0271	12/16/91	0001	MG/L		334.5	RWL
0271	06/22/92	0001	MG/L		337	RWL
0271	09/16/92	0001	MG/L		299	RWL
0301	11/05/90	0001	MG/L		323	RWL
0301	04/30/91	0001	MG/L		230	RWL
0301	05/08/91	0001	MG/L		234	RWL
0301	12/10/91	0001	MG/L		228	RWL
0302	11/05/90	0001	MG/L		284	RWL
0302	04/30/91	0001	MG/L		276	RWL
0302	05/08/91	0001	MG/L		286	RWL
0302	12/10/91	0001	MG/L		281	RWL
0303	11/07/90	0001	MG/L		302	RWL
0303	05/02/91	0001	MG/L		287	RWL
0303	12/10/91	0001	MG/L		292.5	RWL
0303	06/16/92	0001	MG/L		277.5	RWL
0304	11/07/90	0001	MG/L		346	RWL
0304	05/01/91	0001	MG/L		391	RWL
0304	12/11/91	0001	MG/L		427.5	RWL
0304	06/16/92	0001	MG/L		286	RWL
0305	11/01/90	0001	MG/L		371	RWL
0305	01/31/91	0001	MG/L		379.5	RWL
0305	05/05/91	0001	MG/L		378	RWL
0305	08/01/91	0001	MG/L		371	RWL
0305	12/17/91	0001	MG/L		379.5	RWL
0305	03/19/92	0001	MG/L		398.5	RWL
0305	06/22/92	0001	MG/L		401.5	RWL
0305	09/16/92	0001	MG/L		378.5	RWL

Table H1d. (page 5 of 6)

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0306	10/30/90	0001	MG/L		386	RWL
0306	02/06/91	0001	MG/L		390.5	RWL
0306	05/04/91	0001	MG/L		396.5	RWL
0306	08/03/91	0001	MG/L		409	RWL
0306	12/15/91	0001	MG/L		400	RWL
0306	03/21/92	0001	MG/L		384	RWL
0306	06/18/92	0001	MG/L		417	RWL
0306	09/17/92	0001	MG/L		402.5	RWL
0307	10/31/90	0001	MG/L		377.5	RWL
0307	02/03/91	0001	MG/L		429.5	RWL
0307	05/07/91	0001	MG/L		381	RWL
0307	08/04/91	0001	MG/L		370	RWL
0307	12/15/91	0001	MG/L		378.5	RWL
0307	03/23/92	0001	MG/L		389	RWL
0307	06/21/92	0001	MG/L		400.5	RWL
0307	09/17/92	0001	MG/L		382.5	RWL
0309	11/02/90	0001	MG/L		282.5	RWL
0309	05/05/91	0001	MG/L		277	RWL
0309	12/14/91	0001	MG/L		269.5	RWL
0309	03/21/92	0001	MG/L		269	RWL
0309	06/19/92	0001	MG/L		276	RWL
0309	09/16/92	0001	MG/L		229	RWL
0310	10/30/90	0001	MG/L		275	RWL
0310	05/04/91	0001	MG/L		279	RWL
0310	12/14/91	0001	MG/L		283.5	RWL
0310	06/20/92	0001	MG/L		285.5	RWL
0311	11/05/90	0001	MG/L		233	RWL
0311	05/02/91	0001	MG/L		278.5	RWL
0311	12/13/91	0001	MG/L		211.5	RWL
0311	06/17/92	0001	MG/L		260.5	RWL
0313	10/31/90	0001	MG/L		413.5	RWL
0313	02/03/91	0001	MG/L		404.5	RWL
0313	05/07/91	0001	MG/L		432	RWL
0313	08/04/91	0001	MG/L		423	RWL
0313	12/17/91	0001	MG/L		429.5	RWL
0313	03/22/92	0001	MG/L		472	RWL
0313	06/21/92	0001	MG/L		415	RWL
0313	09/17/92	0001	MG/L		425	RWL
0314	11/07/90	0001	MG/L		330	RWL
0314	05/04/91	0001	MG/L		326	RWL
0314	12/15/91	0001	MG/L		439	RWL

Table H1d. (page 6 of 6)

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0314	06/19/92	0001	MG/L		352	RWL
0315	10/31/90	0001	MG/L		358	RWL
0315	01/31/91	0001	MG/L		314.5	RWL
0315	05/05/91	0001	MG/L		317	RWL
0315	08/02/91	0001	MG/L		374.5	RWL
0315	12/17/91	0001	MG/L		388	RWL
0315	03/20/92	0001	MG/L		360	RWL
0315	06/20/92	0001	MG/L		396.5	RWL
0315	09/16/92	0001	MG/L		301	RWL
0317	11/06/90	0001	MG/L		331	RWL
0317	05/08/91	0001	MG/L		328	RWL
0317	12/16/91	0001	MG/L		315.5	RWL
0317	06/20/92	0001	MG/L		326	RWL
0319	11/04/90	0001	MG/L		310	RWL
0319	05/07/91	0001	MG/L		314	RWL
0319	12/18/91	0001	MG/L		334	RWL
0319	06/19/92	0001	MG/L		329	RWL
0320	11/01/90	0001	MG/L		308	RWL
0320	05/07/91	0001	MG/L		304.5	RWL
0320	12/18/91	0001	MG/L		312.5	RWL
0320	06/19/92	0001	MG/L		320	RWL

Table H1e. Redox Potential Values for Select Wells Between October 1990 and March 1993

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0046	12/16/91	0001	MVOLTS		22.1	RWL
0046	03/23/92	0001	MVOLTS		-62.6	RWL
0046	06/22/92	0001	MVOLTS		-44.2	RWL
0046	09/16/92	0001	MVOLTS		-6.9	RWL
0063	12/16/91	0001	MVOLTS		52	RWL
0063	06/22/92	0001	MVOLTS		-87	RWL
0063	09/16/92	0001	MVOLTS		-35.3	RWL
0071	12/16/91	0001	MVOLTS		95	RWL
0071	03/23/92	0001	MVOLTS		-63.8	RWL
0071	06/23/92	0001	MVOLTS		155.7	RWL
0071	09/16/92	0001	MVOLTS		-5	RWL
0076	12/16/91	0001	MVOLTS		48.7	RWL
0076	03/23/92	0001	MVOLTS		-76.2	RWL
0076	06/22/92	0001	MVOLTS		88.3	RWL
0076	09/16/92	0001	MVOLTS		-19.9	RWL
0118	12/10/91	0001	MVOLTS		-66.1	RWL
0118	03/17/92	0001	MVOLTS		-145.2	RWL
0118	06/17/92	0001	MVOLTS		-88.2	RWL
0118	09/14/92	0001	MVOLTS		-18.5	RWL
0119	06/19/92	0001	MVOLTS		-140.2	RWL
0123	12/11/91	0001	MVOLTS		33	RWL
0123	06/16/92	0001	MVOLTS		-137	RWL
0124	12/12/91	0001	MVOLTS		204	RWL
0124	06/16/92	0001	MVOLTS		-23.5	RWL
0125	06/20/92	0001	MVOLTS		-72.8	RWL
0126	12/12/91	0001	MVOLTS		161	RWL
0126	03/18/92	0001	MVOLTS		-59.5	RWL
0126	06/16/92	0001	MVOLTS		-53.8	RWL
0126	09/14/92	0001	MVOLTS		70.2	RWL
0127	12/11/91	0001	MVOLTS		-88.2	RWL
0129	12/17/91	0001	MVOLTS		162	RWL
0129	03/17/92	0001	MVOLTS		-82.5	RWL
0129	06/16/92	0001	MVOLTS		-86.5	RWL
0129	09/15/92	0001	MVOLTS		19.1	RWL
0137	12/19/91	0001	MVOLTS		-255.6	RWL
0138	12/11/91	0001	MVOLTS		206.4	RWL
0138	03/17/92	0001	MVOLTS		-110.6	RWL
0138	06/17/92	0001	MVOLTS		-63.2	RWL
0138	09/14/92	0001	MVOLTS		-53.3	RWL
0151	12/18/91	0001	MVOLTS		57.1	RWL
0152	12/14/91	0001	MVOLTS		110	RWL

Table H1e. (page 2 of 3)

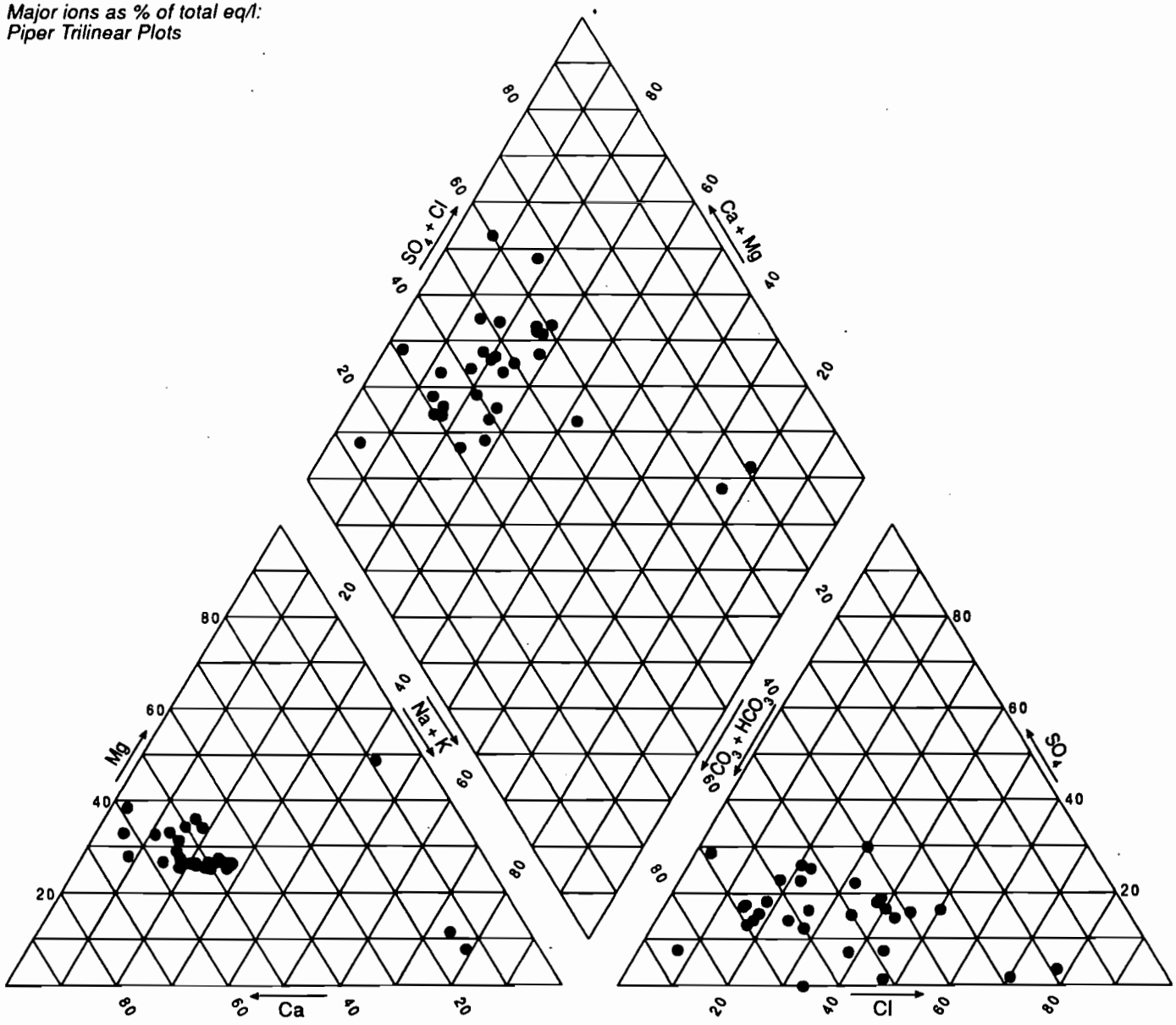
Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0152	03/20/92	0001	MVOLTS		-125.5	RWL
0152	06/18/92	0001	MVOLTS		-78	RWL
0152	09/17/92	0001	MVOLTS		38.8	RWL
0153	12/14/91	0001	MVOLTS		158	RWL
0153	06/18/92	0001	MVOLTS		-27.6	RWL
0154	12/14/91	0001	MVOLTS		-39.2	RWL
0154	03/21/92	0001	MVOLTS		-79.7	RWL
0154	06/18/92	0001	MVOLTS		67.8	RWL
0154	09/17/92	0001	MVOLTS		92.7	RWL
0155	12/13/91	0001	MVOLTS		126	RWL
0155	03/21/92	0001	MVOLTS		-160.5	RWL
0155	06/18/92	0001	MVOLTS		-64.5	RWL
0155	09/17/92	0001	MVOLTS		60.9	RWL
0156	12/11/91	0001	MVOLTS		-98.1	RWL
0156	06/17/92	0001	MVOLTS		-84	RWL
0158	12/19/91	0001	MVOLTS		125	RWL
0158	06/20/92	0001	MVOLTS		-60.9	RWL
0159	12/12/91	0001	MVOLTS		-305.5	RWL
0159	03/18/92	0001	MVOLTS		-342.2	RWL
0159	06/17/92	0001	MVOLTS		-290	RWL
0159	09/15/92	0001	MVOLTS		-206.8	RWL
0160	12/12/91	0001	MVOLTS		-285.9	RWL
0160	03/24/92	0001	MVOLTS		-347.2	RWL
0160	06/17/92	0001	MVOLTS		-347	RWL
0160	09/15/92	0001	MVOLTS		-205.3	RWL
0271	12/16/91	0001	MVOLTS		123	RWL
0271	06/22/92	0001	MVOLTS		0.3	RWL
0271	09/16/92	0001	MVOLTS		-0.6	RWL
0301	12/10/91	0001	MVOLTS		-116.1	RWL
0302	12/10/91	0001	MVOLTS		-247.8	RWL
0303	12/10/91	0001	MVOLTS		-265.7	RWL
0303	06/16/92	0001	MVOLTS		-267.7	RWL
0304	12/11/91	0001	MVOLTS		-157.6	RWL
0304	06/16/92	0001	MVOLTS		296.8	RWL
0305	12/17/91	0001	MVOLTS		-104.9	RWL
0305	03/19/92	0001	MVOLTS		-134.6	RWL
0305	06/22/92	0001	MVOLTS		-81.6	RWL
0305	09/16/92	0001	MVOLTS		-70.1	RWL
0306	12/15/91	0001	MVOLTS		-26	RWL
0306	03/21/92	0001	MVOLTS		-142.6	RWL
0306	06/18/92	0001	MVOLTS		-56.9	RWL

Table H1e. (page 3 of 3)

Location ID	Log Date	Sample ID	Units of Measure	PVI	Parameter Value	Lab Code
0306	09/17/92	0001	MVOLTS		-79	RWL
0307	12/15/91	0001	MVOLTS		42	RWL
0307	03/23/92	0001	MVOLTS		-139.9	RWL
0307	06/21/92	0001	MVOLTS		-105.9	RWL
0307	09/17/92	0001	MVOLTS		-118.4	RWL
0309	12/14/91	0001	MVOLTS		-113.7	RWL
0309	03/21/92	0001	MVOLTS		-161.8	RWL
0309	06/19/92	0001	MVOLTS		-115	RWL
0309	09/16/92	0001	MVOLTS		-50.9	RWL
0310	12/14/91	0001	MVOLTS		-90.7	RWL
0310	06/20/92	0001	MVOLTS		-165.7	RWL
0311	12/13/91	0001	MVOLTS		178	RWL
0311	06/17/92	0001	MVOLTS		11.1	RWL
0313	12/17/91	0001	MVOLTS		202	RWL
0313	03/22/92	0001	MVOLTS		-40.1	RWL
0313	06/21/92	0001	MVOLTS		8.3	RWL
0313	09/17/92	0001	MVOLTS		-12.7	RWL
0314	12/15/91	0001	MVOLTS		-62.8	RWL
0314	06/19/92	0001	MVOLTS		-136.5	RWL
0315	12/17/91	0001	MVOLTS		4.5	RWL
0315	03/20/92	0001	MVOLTS		-122.3	RWL
0315	06/20/92	0001	MVOLTS		-62.9	RWL
0315	09/16/92	0001	MVOLTS		51.4	RWL
0317	12/16/91	0001	MVOLTS		147	RWL
0317	06/20/92	0001	MVOLTS		-44.7	RWL
0319	12/18/91	0001	MVOLTS		90	RWL
0319	06/19/92	0001	MVOLTS		24.1	RWL
0320	12/18/91	0001	MVOLTS		158	RWL
0320	06/19/92	0001	MVOLTS		32.2	RWL

H2. TRILINEAR DIAGRAMS

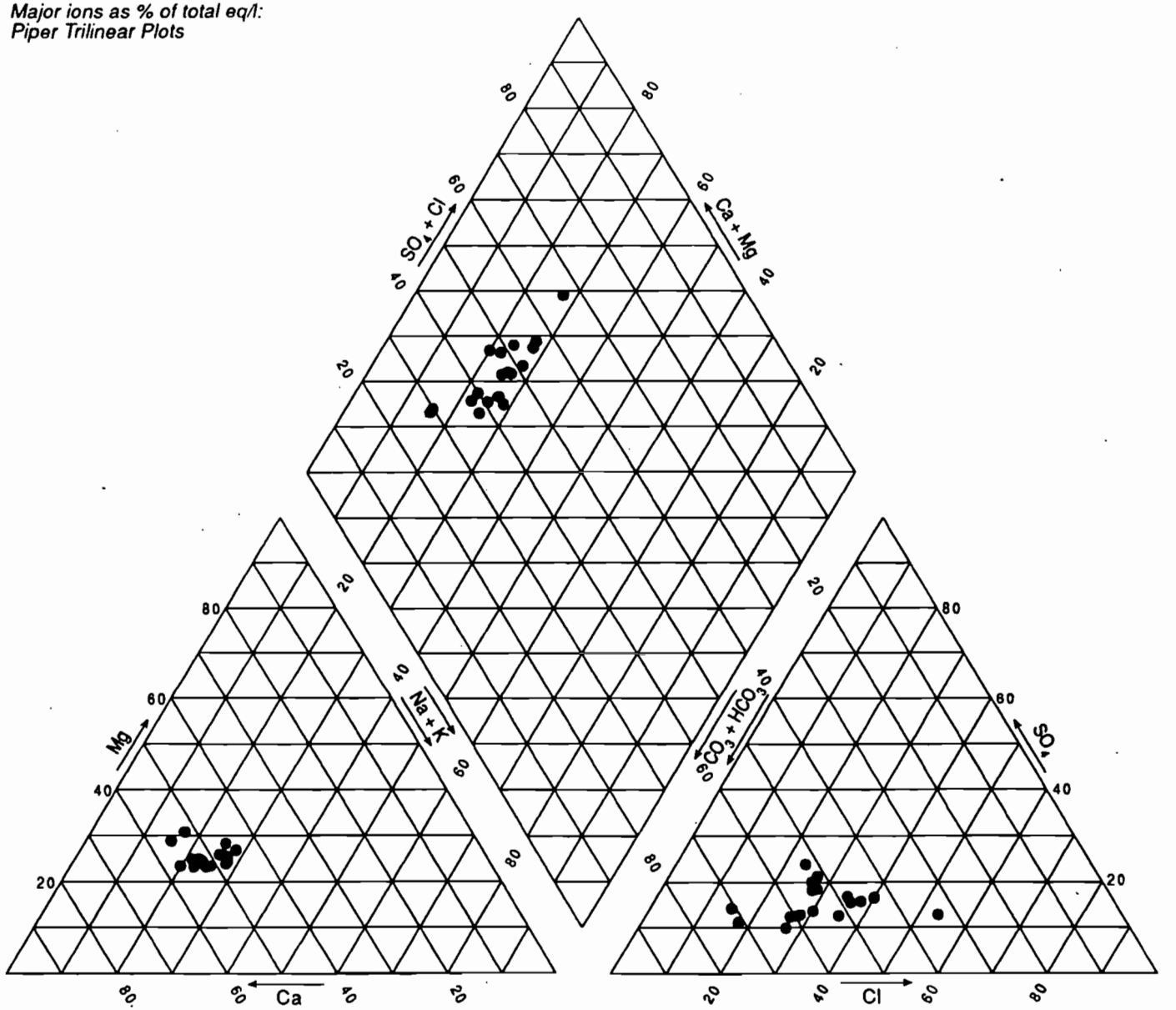
Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/11-90 (9-93)

Figure H2a. Trilinear plots November 1990.

Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/2-91 (9-93)

Figure H2b. Trilinear plots February 1991.

Major ions as % of total eq/l:
Piper Trilinear Plots

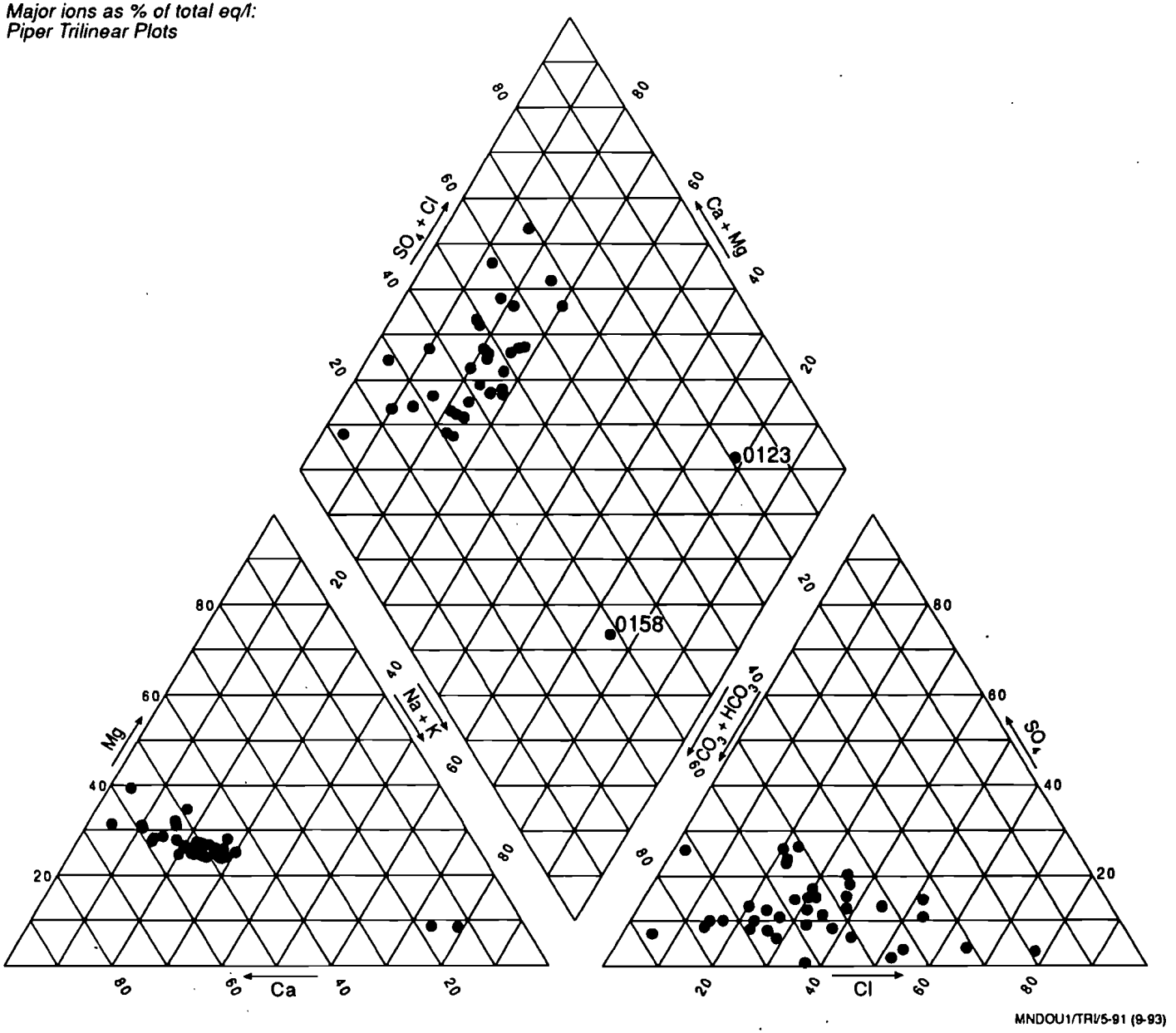
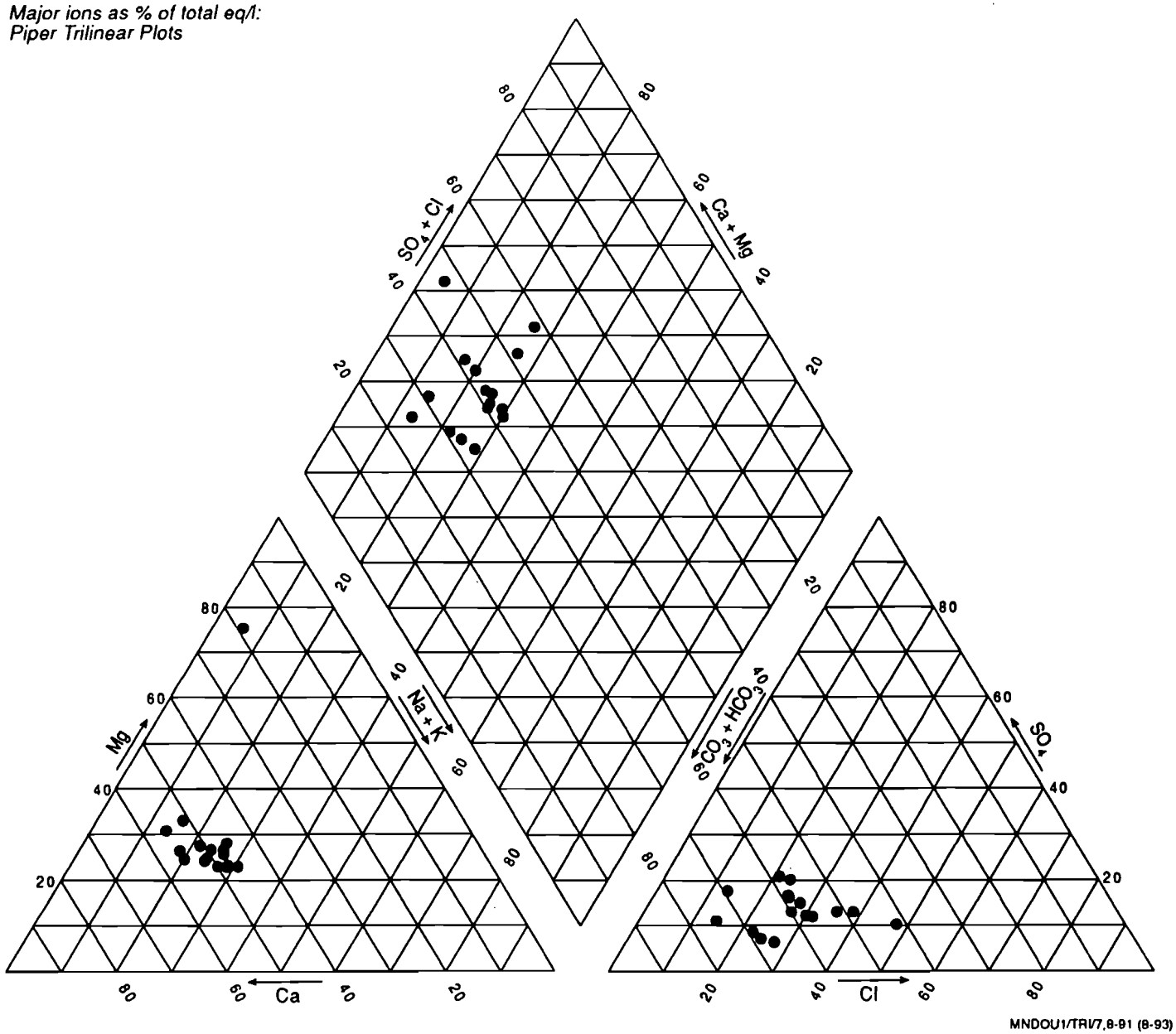


Figure H2c. Trilinear plots May 1991.

Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/7,8-91 (8-93)

Figure H2d. Trilinear plots July, August 1991.

Major ions as % of total eq/l:
Piper Trilinear Plots

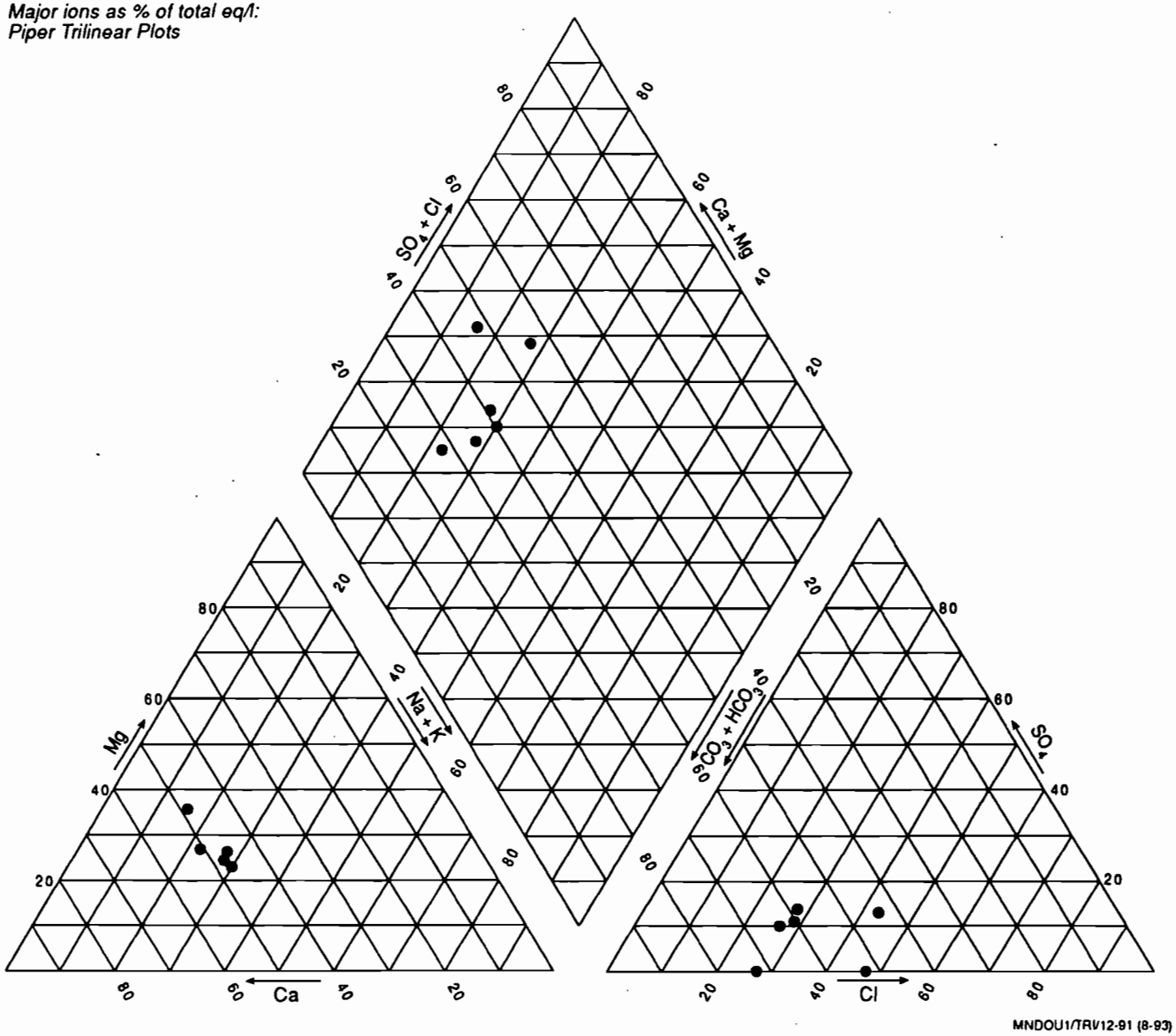
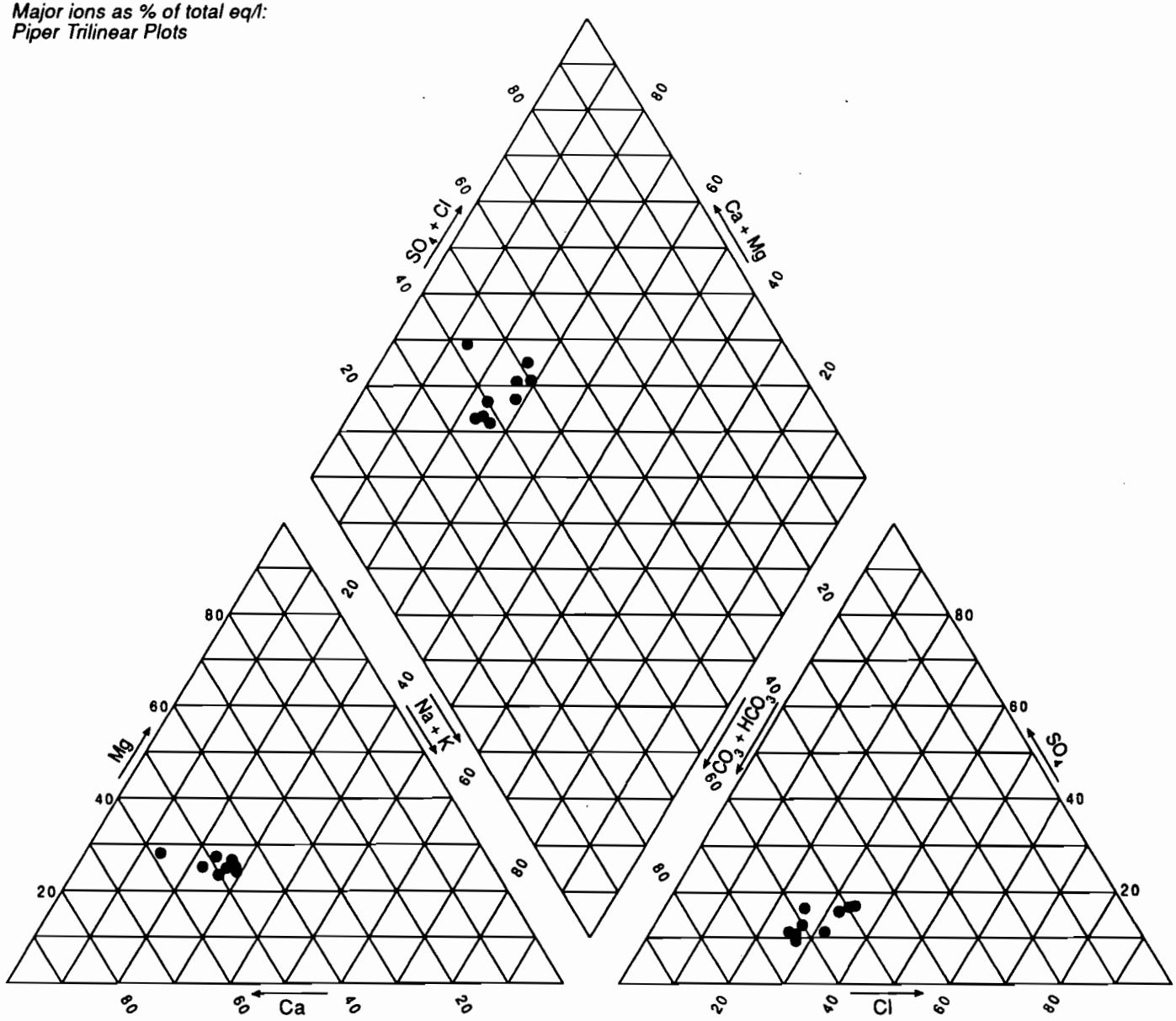


Figure H2e. Trilinear plots December 1991.

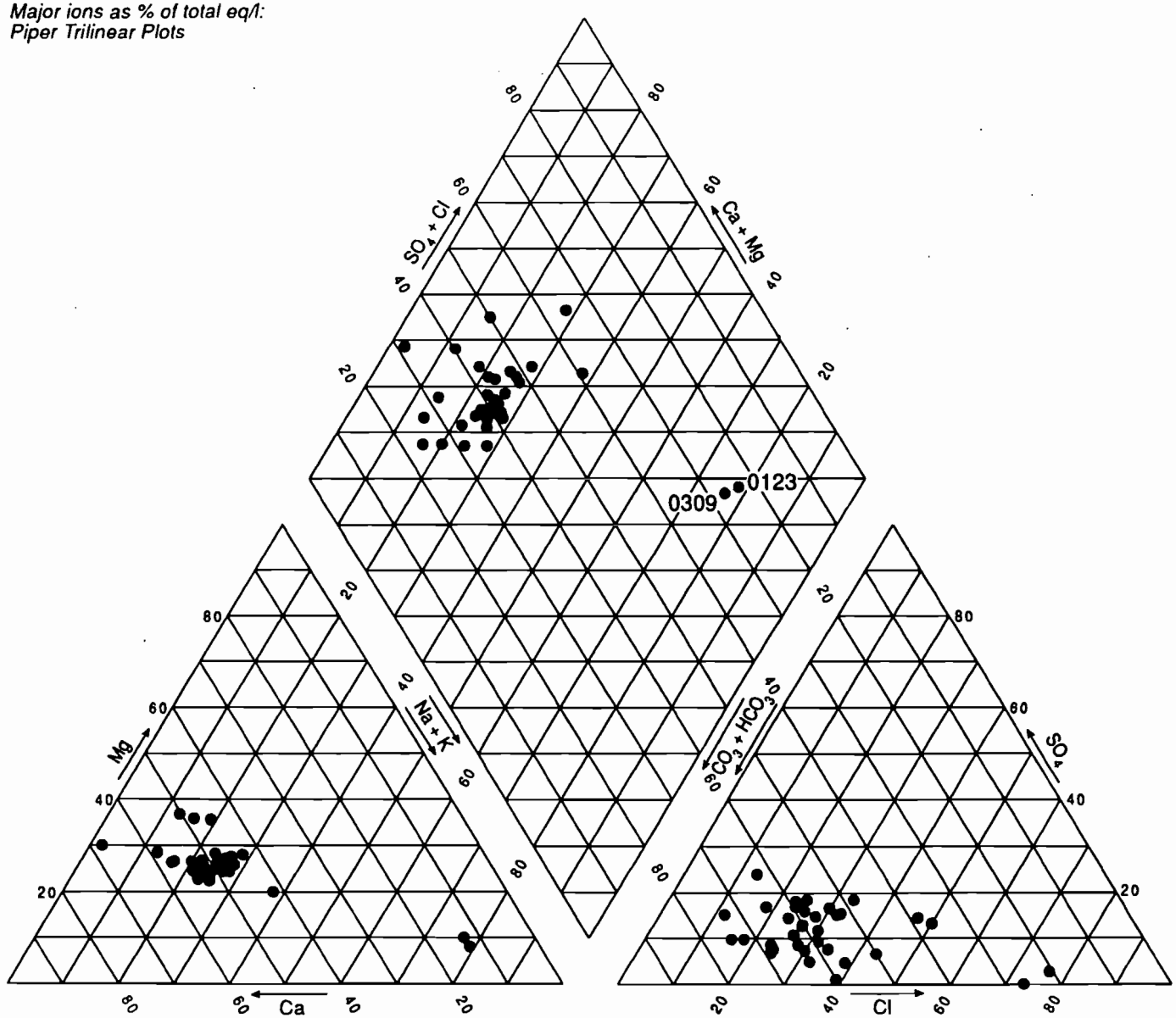
Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/3-92 (8-93)

Figure H2f. Trilinear plots March 1992.

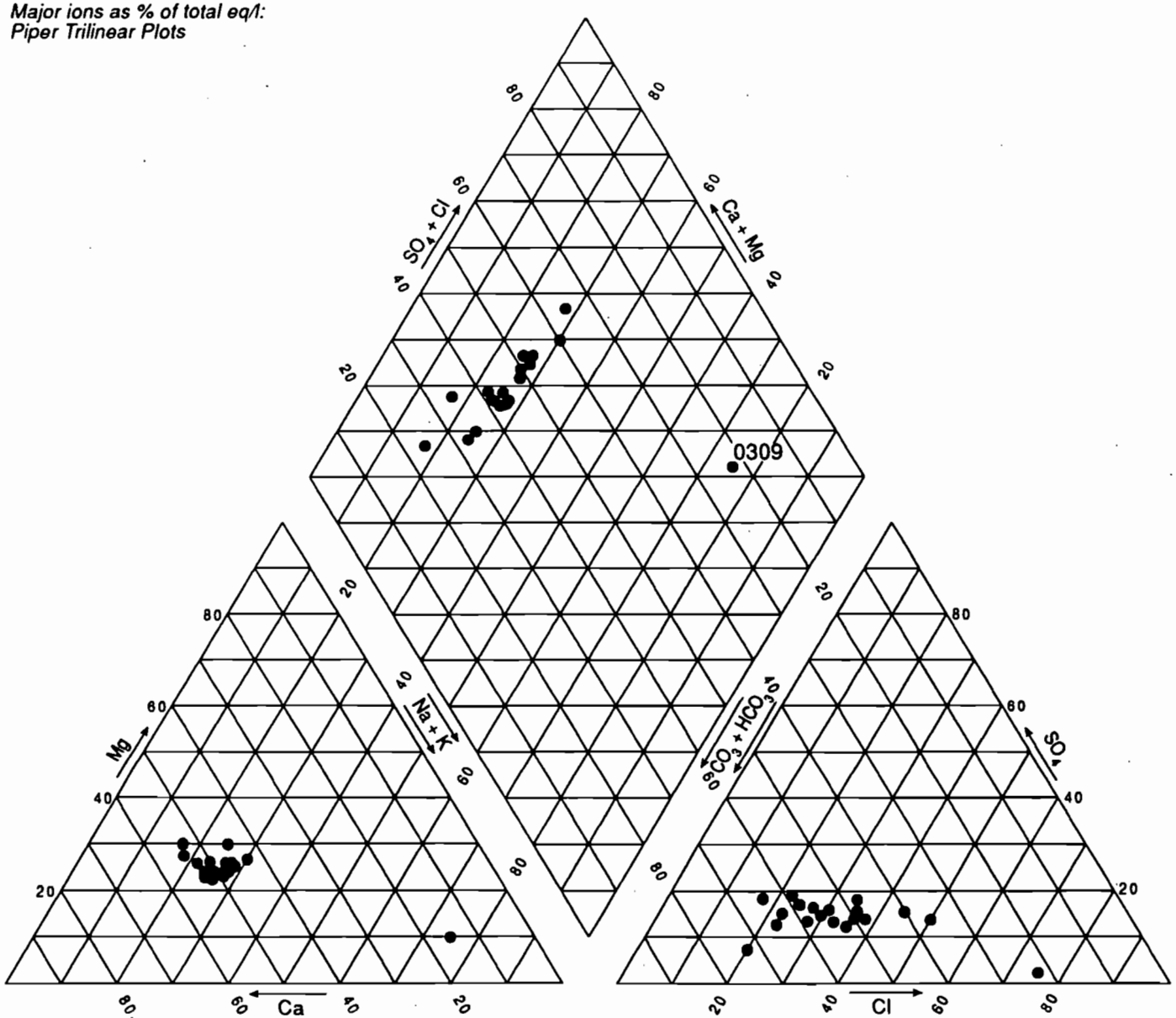
Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/6-92 (8-93)

Figure H2g. Trilinear plots June 1992.

Major ions as % of total eq/l:
Piper Trilinear Plots



MNDOU1/TRI/9-92 (8-93)

Figure H2h. Trilinear plots September 1992.

APPENDIX I

EXPOSURE AND RISK RESULTS

EXPOSURE CONCENTRATION/CHEMICAL INTAKE TABLES

FUTURE FARMER RESIDENT SCENARIO

Table I.1 - Chemical Intakes Reasonable Maximum Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	1.6E-05	------	------	------	------	3.6E-07	1.4E-06	2.2E-08	------
1,2-cis-Dichloroethene	2.8E-03	------	------	------	------	5.9E-05	1.5E-04	3.8E-06	------
1,2-trans-Dichloroethene	2.3E-05	------	------	------	------	4.8E-07	1.4E-06	3.1E-08	------
1,2-Dichloroethane	1.0E-05	------	------	------	------	2.1E-07	4.5E-07	1.4E-08	------
1,2-Dichloroethene	------	------	------	7.4E-07	1.9E-06	------	------	------	1.2E-08
2,3,7,8-TCDD	------	------	------	8.6E-14	3.1E-11	------	------	------	1.8E-11
4-MethylPhenol	------	------	------	1.3E-05	3.3E-05	------	------	------	2.9E-07
Aroclor-1248 (PCB)	------	------	------	2.9E-09	6.1E-07	------	------	------	1.2E-07
Benzo(a)anthracene	------	------	------	2.4E-09	4.4E-07	------	------	------	2.9E-07
Benzo(a)Pyrene	------	------	------	9.1E-09	1.9E-06	------	------	------	2.8E-07
Benzo(b)Fluoranthene	------	------	------	1.2E-08	3.9E-06	------	------	------	3.1E-07
Benzo(k)Fluoranthene	------	------	------	1.2E-09	5.0E-07	------	------	------	1.9E-07
Benzoic Acid	------	------	------	1.7E-05	4.4E-05	------	------	------	1.5E-06
Bis(2-ethylhexyl)phthalate	1.6E-05	8.1E-09	9.3E-09	3.5E-08	2.9E-06	1.0E-06	8.7E-05	2.2E-06	4.9E-07
Chlordane (alpha)	1.1E-06	8.8E-10	1.0E-09	------	------	9.4E-08	1.2E-05	1.5E-09	------
Chrysene	------	------	------	1.0E-08	1.4E-06	------	------	------	2.8E-07
Dichloromethane	------	------	------	7.8E-07	1.5E-06	------	------	------	1.0E-08
Diethyl Phthalate	2.5E-05	------	------	------	------	5.4E-07	2.1E-06	3.3E-08	------
Endosulfan (sulfate)	------	------	------	3.8E-09	5.6E-08	------	------	------	3.0E-09
Fluoranthene	------	------	------	4.8E-08	4.5E-06	------	------	------	2.9E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	4.1E-10	3.0E-07	------	------	------	1.8E-07
Phenol	------	------	------	2.0E-05	4.2E-05	------	------	------	1.5E-07
Pyrene	1.9E-05	9.2E-09	1.1E-08	2.3E-08	1.9E-06	1.2E-06	9.8E-05	2.6E-08	2.8E-07
Tetrachloroethene	4.3E-03	------	------	6.5E-08	7.0E-07	1.2E-04	1.3E-03	5.8E-06	5.7E-09
Tetrachloromethane	7.6E-05	------	------	------	------	1.8E-06	9.8E-06	1.0E-07	------
Toluene	------	------	------	1.4E-07	8.8E-07	------	------	------	5.6E-09
Trichloroethene	1.5E-03	------	------	3.3E-07	1.2E-06	3.4E-05	1.3E-04	2.1E-06	1.6E-08
Trichlorofluoromethane	7.7E-05	------	------	------	------	1.7E-06	7.0E-06	1.0E-07	------
Trichloromethane	5.9E-04	------	------	------	------	1.2E-05	3.3E-05	7.9E-07	------
Vinyl Chloride	3.7E-05	------	------	8.7E-08	1.8E-07	8.0E-07	1.6E-06	5.0E-08	5.5E-09
Fluoride	------	------	------	------	------	------	------	------	8.0E-06
Nitrate	------	------	------	------	------	------	------	------	8.7E-06
Silver	------	------	------	------	------	------	------	------	5.8E-06

Table I.1 - Chemical Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	2.4E-07	3.0E-06	5.9E-04	9.3E-06	------	------	5.9E-03	------
1,2-cis-Dichloroethene	1.8E-05	6.5E-05	1.0E-01	1.6E-03	------	------	1.0E+00	------
1,2-trans-Dichloroethene	2.6E-07	2.8E-06	6.2E-04	1.3E-05	------	------	6.3E-03	------
1,2-Dichloroethane	4.2E-08	4.5E-07	3.7E-04	5.8E-06	------	------	3.7E-03	------
1,2-Dichloroethene	------	------	------	------	2.9E-10	4.9E-10	------	3.3E-08
2,3,7,8-TCDD	------	------	------	------	4.3E-13	7.1E-13	------	1.9E-11
4-MethylPhenol	------	------	------	------	7.0E-09	1.2E-08	------	3.1E-07
Aroclor-1248 (PCB)	------	------	------	------	2.8E-09	4.7E-09	------	1.3E-07
Benzo(a)anthracene	------	------	------	------	6.8E-09	1.1E-08	------	3.1E-07
Benzo(a)Pyrene	------	------	------	------	6.7E-09	1.1E-08	------	3.0E-07
Benzo(b)Fluoranthene	------	------	------	------	7.4E-09	1.2E-08	------	3.3E-07
Benzo(k)Fluoranthene	------	------	------	------	4.6E-09	7.7E-09	------	2.1E-07
Benzoic Acid	------	------	------	------	3.6E-08	6.0E-08	------	1.6E-06
Bis(2-ethylhexyl)phthalate	2.6E-06	3.5E-05	5.9E-04	9.5E-06	1.2E-08	1.9E-08	6.0E-03	5.3E-07
Chlordane (alpha)	3.1E-07	4.2E-06	3.9E-05	6.3E-07	------	------	4.0E-04	------
Chrysene	------	------	------	------	6.6E-09	1.1E-08	------	3.0E-07
Dichloromethane	------	------	------	------	2.4E-10	4.0E-10	------	2.7E-08
Diethyl Phthalate	1.7E-07	2.4E-06	8.9E-04	1.4E-05	------	------	9.0E-03	------
Endosulfan (sulfate)	------	------	------	------	7.1E-11	1.2E-10	------	8.0E-09
Fluoranthene	------	------	------	------	7.0E-09	1.2E-08	------	3.1E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	------	4.3E-09	7.3E-09	------	2.0E-07
Phenol	------	------	------	------	3.6E-09	6.0E-09	------	1.6E-07
Pyrene	1.1E-05	1.5E-04	6.9E-04	1.1E-05	6.6E-09	1.1E-08	7.0E-03	3.0E-07
Tetrachloroethene	2.1E-04	2.8E-03	1.6E-01	2.5E-03	1.4E-10	2.3E-10	1.6E+00	1.5E-08
Tetrachloromethane	1.6E-06	2.1E-05	2.7E-03	4.4E-05	------	------	2.8E-02	------
Toluene	------	------	------	------	1.3E-10	2.2E-10	------	1.5E-08
Trichloroethene	2.1E-05	2.6E-04	5.8E-02	8.8E-04	3.8E-10	6.4E-10	5.8E-01	4.3E-08
Trichlorofluoromethane	1.2E-06	1.4E-05	2.8E-03	4.4E-05	------	------	2.8E-02	------
Trichloromethane	4.4E-06	5.1E-05	2.1E-02	3.4E-04	------	------	2.1E-01	------
Vinyl Chloride	1.9E-07	1.8E-06	1.3E-03	2.1E-05	1.3E-10	2.2E-10	1.4E-02	1.5E-08
Fluoride	------	------	------	------	1.4E-07	2.4E-07	------	6.5E-07
Nitrate	------	------	------	------	2.1E-07	3.5E-07	------	9.4E-07
Silver	------	------	------	------	1.4E-07	2.3E-07	------	6.2E-07

Table I.2 - Chemicals Intakes Adjusted for Cancer Risk - Reasonable Maximum Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	5.5E-06	------	------	------	------	1.2E-07	4.8E-07	7.5E-09	------
1,2-cis-Dichloroethene	9.6E-04	------	------	------	------	2.0E-05	5.1E-05	1.3E-08	------
1,2-trans-Dichloroethene	7.9E-06	------	------	------	------	1.6E-07	4.8E-07	1.1E-08	------
1,2-Dichloroethane	3.4E-06	------	------	------	------	7.2E-08	1.5E-07	4.8E-09	------
1,2-Dichloroethene	------	------	------	2.5E-07	6.5E-07	------	------	------	4.1E-09
2,3,7,8-TCDD	------	------	------	2.9E-14	1.1E-11	------	------	------	6.2E-12
4-MethylPhenol	------	------	------	4.5E-06	1.1E-05	------	------	------	9.9E-08
Aroclor-1248 (PCB)	------	------	------	9.9E-10	2.1E-07	------	------	------	4.1E-08
Benzo(a)anthracene	------	------	------	8.2E-10	1.5E-07	------	------	------	9.9E-08
Benzo(a)Pyrene	------	------	------	3.1E-09	6.5E-07	------	------	------	9.8E-08
Benzo(b)Fluoranthene	------	------	------	4.1E-09	1.3E-06	------	------	------	1.1E-07
Benzo(k)Fluoranthene	------	------	------	4.1E-10	1.7E-07	------	------	------	6.5E-08
Benzoic Acid	------	------	------	5.8E-06	1.5E-05	------	------	------	5.1E-07
Bis(2-ethylhexyl)phthalate	5.5E-06	2.8E-09	3.2E-09	1.2E-08	9.9E-07	3.4E-07	3.0E-05	7.5E-09	1.7E-07
Chlordane (alpha)	3.8E-07	3.0E-10	3.4E-10	------	------	3.2E-08	4.1E-06	5.1E-10	------
Chrysene	------	------	------	3.4E-09	4.8E-07	------	------	------	9.8E-08
Dichloromethane	------	------	------	2.7E-07	5.1E-07	------	------	------	3.4E-09
Diethyl Phthalate	8.6E-06	------	------	------	------	1.9E-07	7.2E-07	1.1E-08	------
Endosulfan (sulfate)	------	------	------	1.3E-09	1.9E-08	------	------	------	1.0E-09
Fluoranthene	------	------	------	1.6E-08	1.5E-06	------	------	------	9.9E-08
Indeno(1,2,3-cd)Pyrene	------	------	------	1.4E-10	1.0E-07	------	------	------	6.2E-08
Phenol	------	------	------	6.9E-06	1.4E-05	------	------	------	5.1E-08
Pyrene	6.5E-06	3.2E-09	3.8E-09	7.9E-09	6.5E-07	4.1E-07	3.4E-05	8.9E-09	9.8E-08
Tetrachloroethene	1.5E-03	------	------	2.2E-08	2.4E-07	4.1E-05	4.5E-04	2.0E-06	2.0E-09
Tetrachloromethane	2.6E-05	------	------	------	------	6.2E-07	3.4E-06	3.4E-08	------
Toluene	------	------	------	4.8E-08	2.3E-07	------	------	------	1.9E-09
Trichloroethene	5.1E-04	------	------	1.1E-07	4.1E-07	1.2E-05	4.5E-05	7.2E-07	5.5E-09
Trichlorofluoromethane	2.6E-05	------	------	------	------	5.8E-07	2.4E-06	3.4E-08	------
Trichloromethane	2.0E-04	------	------	------	------	4.1E-06	1.1E-05	2.7E-07	------
Vinyl Chloride	1.3E-05	------	------	3.0E-08	6.2E-08	2.7E-07	5.5E-07	1.7E-08	1.9E-09
Fluoride	------	------	------	------	------	------	------	------	2.1E-08
Nitrate	------	------	------	------	------	------	------	------	3.0E-06
Silver	------	------	------	------	------	------	------	------	2.0E-06

Table I.2 - Chemicals Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	8.2E-08	1.0E-06	1.4E-01	5.8E-04	------	------	1.8E-02	------
1,2-cis-Dichloroethene	6.2E-08	2.2E-05	2.5E+01	1.0E-01	------	------	------	------
1,2-trans-Dichloroethene	8.9E-08	9.6E-07	2.0E-01	8.0E-04	------	------	2.4E-02	------
1,2-Dichloroethane	1.4E-06	1.5E-07	9.0E-02	3.6E-04	------	------	1.1E-02	------
1,2-Dichloroethene	------	------	------	------	7.2E-08	3.0E-08	------	1.1E-08
2,3,7,8-TCDD	------	------	------	------	1.0E-10	4.4E-11	------	6.5E-12
4-MethylPhenol	------	------	------	------	1.7E-06	7.2E-07	------	1.1E-07
Aroclor-1248 (PCB)	------	------	------	------	6.9E-07	2.9E-07	------	4.5E-08
Benzo(a)anthracene	------	------	------	------	1.7E-06	7.1E-07	------	1.1E-07
Benzo(a)Pyrene	------	------	------	------	1.7E-06	7.0E-07	------	1.0E-07
Benzo(b)Fluoranthene	------	------	------	------	1.8E-06	7.8E-07	------	1.1E-07
Benzo(k)Fluoranthene	------	------	------	------	1.1E-06	4.7E-07	------	7.2E-08
Benzoic Acid	------	------	------	------	8.6E-06	3.7E-06	------	5.5E-07
Bis(2-ethylhexyl)phthalate	8.9E-07	1.2E-05	1.5E-01	5.8E-04	2.9E-06	1.2E-06	1.8E-02	1.8E-07
Chlordane (alpha)	1.1E-07	1.4E-06	9.7E-03	3.9E-05	------	------	1.2E-03	------
Chrysene	------	------	------	------	1.6E-06	6.8E-07	------	1.0E-07
Dichloromethane	------	------	------	------	5.9E-08	2.5E-08	------	9.3E-09
Diethyl Phthalate	5.8E-08	8.2E-07	2.2E-01	8.7E-04	------	------	2.7E-02	------
Endosulfan (sulfate)	------	------	------	------	1.7E-08	7.3E-09	------	2.7E-09
Fluoranthene	------	------	------	------	1.7E-06	7.2E-07	------	1.1E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	------	1.1E-06	4.5E-07	------	6.9E-08
Phenol	------	------	------	------	8.8E-07	3.7E-07	------	5.5E-08
Pyrene	3.8E-06	5.1E-05	1.7E-01	6.8E-04	1.8E-06	6.9E-07	2.1E-02	1.0E-07
Tetrachloroethene	7.2E-05	9.6E-04	3.8E+01	1.5E-01	3.3E-08	1.4E-08	4.7E+00	5.1E-09
Tetrachloromethane	5.5E-07	7.2E-06	8.7E-01	2.7E-03	------	------	8.2E-02	------
Toluene	------	------	------	------	3.3E-08	1.4E-08	------	5.1E-09
Trichloroethene	7.2E-06	8.9E-05	1.4E+01	5.5E-02	9.3E-08	3.9E-08	1.7E+00	1.5E-08
Trichlorofluoromethane	4.1E-07	4.8E-06	6.8E-01	2.7E-03	------	------	8.3E-02	------
Trichloromethane	1.5E-06	1.7E-05	5.2E+00	2.1E-02	------	------	6.3E-01	------
Vinyl Chloride	6.5E-08	6.2E-07	3.3E-01	1.3E-03	3.2E-08	1.4E-08	4.0E-02	5.1E-09
Fluoride	------	------	------	------	3.5E-05	1.5E-05	------	2.2E-07
Nitrate	------	------	------	------	5.1E-05	2.2E-05	------	3.2E-07
Silver	------	------	------	------	3.4E-05	1.4E-05	------	2.1E-07

Table I.3 - Radionuclide Intakes Reasonable Maximum Exposure - Future Farmer Resident - Adult

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INGESTION OF HOMEGROWN MEAT - SOIL (pCi)	INGESTION OF HOMEGROWN DAIRY - SOIL (pCi)	INGESTION OF HOMEGROWN MEAT - GW (pCi)	INGESTION OF HOMEGROWN DAIRY - GW (pCi)	INGESTION OF HOMEGROWN PRODUCE (pCi)
Actinium-227+D	3.8E+04	----	----	1.4E+00	5.7E+00	----
Plutonium-238	1.4E+04	1.3E+02	6.2E-01	2.7E+00	1.1E-01	4.1E+03
Plutonium-239/240	4.3E+04	3.7E+00	1.8E-02	8.0E+00	3.2E-01	1.2E+02
Strontium-90+D	1.4E+04	1.2E+04	1.1E+04	2.1E+02	2.1E+02	1.8E+05
Tritium	1.4E+08	9.8E+05	3.2E+06	3.2E+06	1.1E+07	1.1E+07
Uranium-235/236+D	2.0E+03	----	----	1.3E+00	8.9E+00	----
Uranium-238+D	2.4E+04	----	----	1.5E+01	1.1E+02	----

Table I.3 - Radionuclide Intakes

RADIONUCLIDE	INGESTION OF WATER WHILE SWIMMING (pCi)	INGESTION OF SOIL (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	5.2E+01	----	----	----	----
Plutonium-238	2.0E+01	3.3E+03	1.6E+01	6.9E+00	9.6E+01
Plutonium-239/240	5.8E+01	9.7E+01	4.8E-01	2.0E-01	2.8E+00
Strontium-90+D	1.9E+01	5.0E+02	2.4E+00	1.0E+00	1.4E+01
Tritium	1.9E+05	1.9E+03	9.1E+00	3.9E+00	5.4E+01
Uranium-235/236+D	2.7E+00	----	----	----	----
Uranium-238+D	3.2E+01	----	----	----	----

Table I.4 - Chemical Intakes Reasonable Maximum Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	3.8E-05	------	------	------	------	1.7E-06	6.6E-06	1.0E-07	------
1,2-cis-Dichloroethene	6.6E-03	------	------	------	------	2.8E-04	6.9E-04	1.8E-05	------
1,2-trans-Dichloroethene	5.3E-05	------	------	------	------	2.2E-06	6.5E-06	1.4E-07	------
1,2-Dichloroethane	2.4E-05	------	------	------	------	1.0E-06	2.1E-06	6.4E-08	------
1,2-Dichloroethene	------	------	------	3.5E-06	8.7E-06	------	------	------	1.2E-07
2,3,7,8-TCDD	------	------	------	4.0E-13	1.4E-10	------	------	------	1.7E-10
4-MethylPhenol	------	------	------	5.9E-05	1.5E-04	------	------	------	2.7E-06
Aroclor-1248 (PCB)	------	------	------	1.3E-08	2.8E-06	------	------	------	1.1E-06
Benzo(a)anthracene	------	------	------	1.1E-08	2.1E-06	------	------	------	2.7E-06
Benzo(a)Pyrene	------	------	------	4.2E-08	9.0E-06	------	------	------	2.6E-06
Benzo(b)Fluoranthene	------	------	------	5.4E-08	1.8E-05	------	------	------	2.9E-06
Benzo(k)Fluoranthene	------	------	------	5.6E-09	2.3E-06	------	------	------	1.8E-06
Benzoic Acid	------	------	------	6.1E-05	2.0E-04	------	------	------	1.4E-05
Bis(2-ethylhexyl)phthalate	3.8E-05	1.6E-08	5.4E-08	1.7E-07	1.4E-05	4.9E-06	4.0E-04	1.0E-07	4.6E-06
Chlordane (alpha)	2.5E-06	1.7E-09	5.9E-09	------	------	4.4E-07	5.7E-05	6.9E-09	------
Chrysene	------	------	------	4.7E-08	6.7E-06	------	------	------	2.6E-06
Dichloromethane	------	------	------	3.6E-06	7.2E-06	------	------	------	9.4E-08
Diethyl Phthalate	5.8E-05	------	------	------	------	2.5E-06	9.8E-06	1.6E-07	------
Endosulfan (sulfate)	------	------	------	1.6E-08	2.6E-07	------	------	------	2.8E-08
Fluoranthene	------	------	------	2.2E-07	2.1E-05	------	------	------	2.7E-06
Indeno(1,2,3-cd)Pyrene	------	------	------	1.9E-09	1.4E-06	------	------	------	1.7E-06
Phenol	------	------	------	9.3E-05	2.0E-04	------	------	------	1.4E-06
Pyrene	4.5E-05	1.8E-08	6.1E-08	1.1E-07	8.7E-06	5.6E-06	4.6E-04	1.2E-07	2.6E-06
Tetrachloroethene	1.0E-02	------	------	3.1E-07	3.3E-06	5.5E-04	5.9E-03	2.7E-05	5.3E-08
Tetrachloromethane	1.8E-04	------	------	------	------	8.3E-06	4.6E-05	4.8E-07	------
Toluene	------	------	------	6.3E-07	3.2E-06	------	------	------	5.2E-08
Trichloroethene	3.6E-03	------	------	1.6E-06	5.8E-06	1.6E-04	5.8E-04	9.7E-06	1.5E-07
Trichlorofluoromethane	1.8E-04	------	------	------	------	8.0E-06	3.3E-05	4.8E-07	------
Trichloromethane	1.4E-03	------	------	------	------	5.8E-05	1.5E-04	3.7E-06	------
Vinyl Chloride	8.7E-05	------	------	4.0E-07	6.2E-07	3.7E-06	7.6E-08	2.3E-07	5.1E-08
Fluoride	------	------	------	------	------	------	------	------	5.6E-05
Nitrate	------	------	------	------	------	------	------	------	8.1E-05
Silver	------	------	------	------	------	------	------	------	5.4E-05

Table I.4 - Chemical Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	3.5E-07	4.3E-06	5.9E-04	9.3E-06	------	------	5.9E-03	------
1,2-cis-Dichloroethene	2.6E-05	9.5E-05	1.0E-01	1.6E-03	------	------	1.0E+00	------
1,2-trans-Dichloroethene	3.8E-07	4.1E-06	8.2E-04	1.3E-05	------	------	8.3E-03	------
1,2-Dichloroethane	6.1E-08	6.6E-07	3.7E-04	5.8E-06	------	------	3.7E-03	------
1,2-Dichloroethene	------	------	------	------	2.9E-10	4.9E-10	------	7.0E-08
2,3,7,8-TCDD	------	------	------	------	4.3E-13	7.1E-13	------	4.1E-11
4-MethylPhenol	------	------	------	------	7.0E-09	1.2E-08	------	6.7E-07
Aroclor-1248 (PCB)	------	------	------	------	2.8E-09	4.7E-09	------	2.7E-07
Benzo(a)anthracene	------	------	------	------	6.8E-09	1.1E-08	------	6.5E-07
Benzo(a)Pyrene	------	------	------	------	6.7E-09	1.1E-08	------	6.4E-07
Benzo(b)Fluoranthene	------	------	------	------	7.4E-09	1.2E-08	------	7.0E-07
Benzo(k)Fluoranthene	------	------	------	------	4.6E-09	7.7E-09	------	4.4E-07
Benzoic Acid	------	------	------	------	3.6E-08	6.0E-08	------	3.4E-06
Bis(2-ethylhexyl)phthalate	3.8E-06	5.2E-05	5.9E-04	9.5E-06	1.2E-08	1.9E-08	6.0E-03	1.1E-06
Chlordane (alpha)	4.6E-07	6.2E-08	3.9E-05	6.3E-07	------	------	4.0E-04	------
Chrysene	------	------	------	------	6.6E-09	1.1E-08	------	6.3E-07
Dichloromethane	------	------	------	------	2.4E-10	4.0E-10	------	5.8E-08
Diethyl Phthalate	2.5E-07	3.5E-06	8.9E-04	1.4E-05	------	------	9.0E-03	------
Endosulfan (sulfate)	------	------	------	------	7.1E-11	1.2E-10	------	1.7E-08
Fluoranthene	------	------	------	------	7.0E-09	1.2E-08	------	6.7E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	------	4.3E-09	7.3E-09	------	4.2E-07
Phenol	------	------	------	------	3.6E-09	6.0E-09	------	3.4E-07
Pyrene	1.6E-05	2.2E-04	6.9E-04	1.1E-05	6.6E-09	1.1E-08	7.0E-03	6.3E-07
Tetrachloroethene	3.0E-04	4.1E-03	1.6E-01	2.5E-03	1.4E-10	2.3E-10	1.6E+00	3.3E-08
Tetrachloromethane	2.4E-06	3.0E-05	2.7E-03	4.4E-05	------	------	2.8E-02	------
Toluene	------	------	------	------	1.3E-10	2.2E-10	------	3.2E-08
Trichloroethene	3.1E-05	3.8E-04	5.6E-02	8.8E-04	3.8E-10	6.4E-10	5.6E-01	9.1E-08
Trichlorofluoromethane	1.7E-06	2.1E-05	2.8E-03	4.4E-05	------	------	2.8E-02	------
Trichloromethane	6.4E-06	7.4E-05	2.1E-02	3.4E-04	------	------	2.1E-01	------
Vinyl Chloride	2.8E-07	2.6E-06	1.3E-03	2.1E-05	1.3E-10	2.2E-10	1.4E-02	3.1E-08
Fluoride	------	------	------	------	1.4E-07	2.4E-07	------	1.4E-06
Nitrate	------	------	------	------	2.1E-07	3.5E-07	------	2.0E-06
Silver	------	------	------	------	1.4E-07	2.3E-07	------	1.3E-06

Table I.5 - Chemicals Intakes Adjusted for Cancer Risk - Reasonable Maximum Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	3.3E-06	------	------	------	------	1.5E-07	5.7E-07	8.6E-09	------
1,2-cis-Dichloroethene	5.7E-04	------	------	------	------	2.4E-05	5.9E-05	1.5E-06	------
1,2-trans-Dichloroethene	4.5E-06	------	------	------	------	1.9E-07	5.6E-07	1.2E-08	------
1,2-Dichloroethane	2.1E-06	------	------	------	------	8.6E-08	1.8E-07	5.5E-09	------
1,2-Dichloroethene	------	------	------	3.0E-07	7.5E-07	------	------	------	1.0E-08
2,3,7,8-TCDD	------	------	------	3.4E-14	1.2E-11	------	------	------	1.5E-11
4-MethylPhenol	------	------	------	5.1E-06	1.3E-05	------	------	------	2.3E-07
Aroclor-1248 (PCB)	------	------	------	1.1E-09	2.4E-07	------	------	------	9.4E-08
Benzo(a)anthracene	------	------	------	9.4E-10	1.8E-07	------	------	------	2.3E-07
Benzo(a)Pyrene	------	------	------	3.6E-09	7.7E-07	------	------	------	2.2E-07
Benzo(b)Fluoranthene	------	------	------	4.6E-09	1.5E-06	------	------	------	2.5E-07
Benzo(k)Fluoranthene	------	------	------	4.8E-10	2.0E-07	------	------	------	1.5E-07
Benzoic Acid	------	------	------	6.9E-06	1.7E-05	------	------	------	1.2E-06
Bis(2-ethylhexyl)phthalate	3.3E-06	1.4E-09	4.6E-09	1.5E-08	1.2E-06	4.2E-07	3.4E-05	8.6E-09	3.9E-07
Chlordane (alpha)	2.1E-07	1.5E-10	5.1E-10	------	------	3.6E-08	4.9E-06	5.9E-10	------
Chrysene	------	------	------	4.0E-09	5.7E-07	------	------	------	2.2E-07
Dichloromethane	------	------	------	3.1E-07	6.2E-07	------	------	------	8.1E-09
Diethyl Phthalate	5.0E-06	------	------	------	------	2.1E-07	8.4E-07	1.4E-08	------
Endosulfan (sulfate)	------	------	------	1.5E-09	2.2E-08	------	------	------	2.4E-09
Fluoranthene	------	------	------	1.9E-08	1.8E-06	------	------	------	2.3E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	1.6E-10	1.2E-07	------	------	------	1.5E-07
Phenol	------	------	------	8.0E-06	1.7E-05	------	------	------	1.2E-07
Pyrene	3.9E-06	1.5E-09	5.2E-09	9.4E-09	7.5E-07	4.8E-07	3.9E-05	1.0E-08	2.2E-07
Tetrachloroethene	8.6E-04	------	------	2.7E-08	2.8E-07	4.7E-05	5.1E-04	2.3E-06	4.5E-09
Tetrachloromethane	1.5E-05	------	------	------	------	7.1E-07	3.9E-06	4.1E-08	------
Toluene	------	------	------	5.4E-08	2.7E-07	------	------	------	4.5E-09
Trichloroethene	3.1E-04	------	------	1.4E-07	5.0E-07	1.4E-05	5.0E-05	8.3E-07	1.3E-08
Trichlorofluoromethane	1.5E-05	------	------	------	------	6.9E-07	2.8E-06	4.1E-08	------
Trichloromethane	1.2E-04	------	------	------	------	5.0E-06	1.3E-05	3.2E-07	------
Vinyl Chloride	7.5E-06	------	------	3.4E-08	7.0E-08	3.2E-07	6.5E-07	2.0E-08	4.4E-09
Fluoride	------	------	------	------	------	------	------	------	4.8E-06
Nitrate	------	------	------	------	------	------	------	------	6.9E-06
Silver	------	------	------	------	------	------	------	------	4.6E-06

Table I.5 - Chemicals Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	3.0E-08	3.7E-07	4.6E-03	1.0E-05	------	------	6.6E-04	------
1,2-cis-Dichloroethene	2.2E-06	8.1E-06	7.9E-01	1.8E-03	------	------	1.1E-01	------
1,2-trans-Dichloroethene	3.3E-08	3.5E-07	6.3E-03	1.4E-05	------	------	9.2E-04	------
1,2-Dichloroethane	5.2E-09	5.7E-08	2.8E-03	6.5E-06	------	------	4.1E-04	------
1,2-Dichloroethene	------	------	------	------	2.3E-09	5.5E-10	------	6.0E-09
2,3,7,8-TCDD	------	------	------	------	3.3E-12	7.9E-13	------	3.5E-12
4-MethylPhenol	------	------	------	------	5.4E-08	1.3E-08	------	5.7E-08
Aroclor-1248 (PCB)	------	------	------	------	2.2E-08	5.2E-09	------	2.3E-08
Benzo(a)anthracene	------	------	------	------	5.3E-08	1.3E-08	------	5.6E-08
Benzo(a)Pyrene	------	------	------	------	5.2E-08	1.3E-08	------	5.5E-08
Benzo(b)Fluoranthene	------	------	------	------	5.7E-08	1.4E-08	------	6.0E-08
Benzo(k)Fluoranthene	------	------	------	------	3.6E-08	8.5E-09	------	3.8E-08
Benzoic Acid	------	------	------	------	2.8E-07	6.7E-08	------	2.9E-07
Bis(2-ethylhexyl)phthalate	3.3E-07	4.5E-06	4.6E-03	1.0E-05	9.0E-08	2.2E-08	6.7E-04	9.4E-08
Chlordane (alpha)	3.9E-08	5.3E-07	3.1E-04	7.0E-07	------	------	4.4E-05	------
Chrysene	------	------	------	------	5.1E-08	1.2E-08	------	5.4E-08
Dichloromethane	------	------	------	------	1.9E-09	4.5E-10	------	5.0E-09
Diethyl Phthalate	2.1E-08	3.0E-07	6.9E-03	1.6E-05	------	------	1.0E-03	------
Endosulfan (sulfate)	------	------	------	------	5.5E-10	1.3E-10	------	1.5E-09
Fluoranthene	------	------	------	------	5.4E-08	1.3E-08	------	5.7E-08
Indeno(1,2,3-cd)Pyrene	------	------	------	------	3.4E-08	8.1E-09	------	3.6E-08
Phenol	------	------	------	------	2.8E-06	6.7E-09	------	2.9E-08
Pyrene	1.4E-06	1.9E-05	5.4E-03	1.2E-05	5.2E-08	1.2E-08	7.8E-04	5.4E-08
Tetrachloroethene	2.6E-05	3.5E-04	1.2E+00	2.8E-03	1.1E-09	2.5E-10	1.8E-01	2.8E-09
Tetrachloromethane	2.1E-07	2.6E-06	2.1E-02	4.8E-05	------	------	3.1E-03	------
Toluene	------	------	------	------	1.0E-09	2.5E-10	------	2.7E-09
Trichloroethene	2.7E-06	3.3E-05	4.3E-01	9.8E-04	2.9E-09	7.0E-10	6.2E-02	7.8E-09
Trichlorofluoromethane	1.5E-07	1.8E-06	2.2E-02	4.9E-05	------	------	3.1E-03	------
Trichloromethane	5.5E-07	6.3E-06	1.6E-01	3.7E-04	------	------	2.4E-02	------
Vinyl Chloride	2.4E-08	2.2E-07	1.0E-02	2.4E-05	1.0E-09	2.4E-10	1.5E-03	2.7E-09
Fluoride	------	------	------	------	1.1E-06	2.7E-07	------	1.2E-07
Nitrate	------	------	------	------	1.6E-06	3.9E-07	------	1.7E-07
Silver	------	------	------	------	1.1E-06	2.6E-07	------	1.1E-07

Table I.6 - Radionuclide Intakes Reasonable Maximum Exposure - Future Farmer Resident - Child

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INGESTION OF HOMEGROWN MEAT - SOIL (pCi)	INGESTION OF HOMEGROWN DAIRY - SOIL (pCi)	INGESTION OF HOMEGROWN MEAT - GW (pCi)	INGESTION OF HOMEGROWN DAIRY - GW (pCi)	INGESTION OF HOMEGROWN PRODUCE (pCi)
Actinium-227+D	4.8E+03	—	—	3.6E-01	1.4E+00	—
Plutonium-238	1.8E+03	3.2E+01	1.6E-01	6.8E-01	2.7E-02	1.0E+03
Plutonium-239/240	5.3E+03	9.4E-01	4.5E-03	2.0E+00	8.0E-02	2.8E+01
Strontium-90+D	1.8E+03	3.1E+03	2.7E+03	5.3E+01	5.3E+01	4.6E+04
Tritium	1.8E+07	2.5E+05	8.1E+05	7.9E+05	2.6E+06	2.7E+06
Uranium-235/236+D	2.5E+02	—	—	3.2E-01	2.2E+00	—
Uranium-238+D	3.0E+03	—	—	3.8E+00	2.7E+01	—

Table I.6 - Radionuclide Intakes

RADIONUCLIDE	INGESTION OF WATER WHILE SWIMMING (pCi)	INGESTION OF SOIL (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	1.3E+01	—	—	—	—
Plutonium-238	4.9E+00	1.7E+03	2.4E+00	5.8E-01	2.4E+01
Plutonium-239/240	1.4E+01	4.9E+01	7.0E-02	1.7E-02	7.0E-01
Strontium-90+D	4.8E+00	2.5E+02	3.6E-01	8.6E-02	3.6E+00
Tritium	4.7E+04	9.4E+02	1.4E+00	3.2E-01	1.3E+01
Uranium-235/236+D	6.7E-01	—	—	—	—
Uranium-238+D	8.0E+00	—	—	—	—

Table I.7 - Chemical Intakes Central Tendency Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	8.5E-06	------	------	------	------	5.0E-08	1.6E-07	2.2E-08	------
1,2-cis-Dichloroethene	1.5E-03	------	------	------	------	8.2E-06	1.9E-05	3.8E-06	------
1,2-trans-Dichloroethene	1.2E-05	------	------	------	------	6.7E-08	1.8E-07	3.1E-08	------
1,2-Dichloroethane	5.3E-06	------	------	------	------	3.0E-08	5.9E-08	1.4E-08	------
1,2-Dichloroethene	------	------	------	1.0E-07	2.4E-07	------	------	------	9.7E-09
2,3,7,8-TCDD	------	------	------	1.2E-14	4.0E-12	------	------	------	1.4E-11
4-MethylPhenol	------	------	------	1.7E-06	4.3E-06	------	------	------	2.3E-07
Aroclor-1248 (PCB)	------	------	------	4.0E-10	7.9E-08	------	------	------	9.2E-08
Benzo(a)anthracene	------	------	------	3.3E-10	5.7E-08	------	------	------	2.2E-07
Benzo[a]Pyrene	------	------	------	1.3E-09	2.5E-07	------	------	------	2.2E-07
Benzo(b)Fluoranthene	------	------	------	1.6E-09	5.1E-07	------	------	------	2.4E-07
Benzo(k)Fluoranthene	------	------	------	1.7E-10	6.5E-08	------	------	------	1.5E-07
Benzoic Acid	------	------	------	2.4E-06	5.7E-06	------	------	------	1.2E-06
Bis(2-ethylhexyl)phthalate	8.6E-06	4.8E-09	4.9E-09	4.9E-09	3.8E-07	1.5E-07	1.1E-05	2.2E-08	3.8E-07
Chlordane (alpha)	5.7E-07	5.2E-10	5.4E-10	------	------	1.3E-08	1.6E-06	1.5E-09	------
Chrysene	------	------	------	1.4E-09	1.9E-07	------	------	------	2.2E-07
Dichloromethane	------	------	------	1.1E-07	2.0E-07	------	------	------	7.9E-09
Diethyl Phthalate	1.3E-05	------	------	------	------	7.6E-08	2.8E-07	3.3E-08	------
Endosulfan (sulfate)	------	------	------	5.3E-10	7.3E-09	------	------	------	2.3E-09
Fluoranthene	------	------	------	6.7E-09	5.6E-07	------	------	------	2.3E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	5.7E-11	3.9E-08	------	------	------	1.4E-07
Phenol	------	------	------	2.8E-06	5.5E-06	------	------	------	1.2E-07
Pyrene	1.0E-05	5.4E-09	5.6E-09	3.2E-09	2.4E-07	1.7E-07	1.3E-05	2.6E-06	2.2E-07
Tetrachloroethene	2.3E-03	------	------	9.1E-09	9.2E-08	1.6E-05	1.7E-04	5.6E-06	4.5E-09
Tetrachloromethane	4.0E-05	------	------	------	------	2.5E-07	1.3E-06	1.0E-07	------
Toluene	------	------	------	1.9E-08	8.8E-08	------	------	------	4.4E-09
Trichloroethene	8.1E-04	------	------	4.6E-08	1.6E-07	4.7E-06	1.6E-05	2.1E-06	1.2E-08
Trichlorofluoromethane	4.0E-05	------	------	------	------	2.4E-07	9.1E-07	1.0E-07	------
Trichloromethane	3.1E-04	------	------	------	------	1.7E-06	4.3E-06	7.9E-07	------
Vinyl Chloride	2.0E-05	------	------	1.2E-08	2.3E-08	1.1E-07	2.1E-07	5.0E-08	4.3E-09
Fluoride	------	------	------	------	------	------	------	------	4.7E-06
Nitrate	------	------	------	------	------	------	------	------	6.8E-06
Silver	------	------	------	------	------	------	------	------	4.5E-06

Table I.7 - Chemical Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	2.1E-07	2.0E-06	5.9E-04	9.3E-06	------	------	3.6E-03	------
1,2-cis-Dichloroethene	1.5E-05	3.4E-05	1.0E-01	1.8E-03	------	------	6.2E-01	------
1,2-trans-Dichloroethene	2.3E-07	1.9E-06	8.2E-04	1.3E-05	------	------	4.9E-03	------
1,2-Dichloroethane	3.6E-08	3.0E-07	3.7E-04	5.8E-06	------	------	2.2E-03	------
1,2-Dichloroethene	------	------	------	------	2.9E-10	4.9E-10	------	9.8E-10
2,3,7,8-TCDD	------	------	------	------	4.3E-13	7.1E-13	------	5.6E-13
4-MethylPhenol	------	------	------	------	7.0E-09	1.2E-08	------	9.2E-09
Aroclor-1248 (PCB)	------	------	------	------	2.8E-09	4.7E-09	------	3.7E-09
Benzo(a)anthracene	------	------	------	------	6.8E-09	1.1E-08	------	9.0E-09
Benzo(a)Pyrene	------	------	------	------	8.7E-09	1.1E-08	------	8.9E-09
Benzo(b)Fluoranthene	------	------	------	------	7.4E-09	1.2E-08	------	9.7E-09
Benzo(k)Fluoranthene	------	------	------	------	4.6E-09	7.7E-09	------	6.1E-09
Benzoic Acid	------	------	------	------	3.6E-08	6.0E-08	------	4.8E-08
Bis(2-ethylhexyl)phthalate	2.3E-06	2.4E-05	5.9E-04	9.5E-06	1.2E-08	1.9E-08	3.6E-03	1.5E-08
Chlordane (alpha)	2.7E-07	2.9E-06	3.9E-05	6.3E-07	------	------	2.4E-04	------
Chrysene	------	------	------	------	6.6E-09	1.1E-08	------	8.7E-09
Dichloromethane	------	------	------	------	2.4E-10	4.0E-10	------	8.0E-10
Diethyl Phthalate	1.5E-07	1.6E-06	8.9E-04	1.4E-05	------	------	5.4E-03	------
Endosulfan (sulfate)	------	------	------	------	7.1E-11	1.2E-10	------	2.3E-10
Fluoranthene	------	------	------	------	7.0E-09	1.2E-08	------	9.2E-09
Indeno(1,2,3-cd)Pyrene	------	------	------	------	4.3E-09	7.3E-09	------	5.8E-09
Phenol	------	------	------	------	3.6E-09	6.0E-09	------	4.8E-09
Pyrene	9.7E-06	1.0E-04	6.9E-04	1.1E-05	6.6E-09	1.1E-08	4.2E-03	8.8E-09
Tetrachloroethene	1.8E-04	1.9E-03	1.6E-01	2.5E-03	1.4E-10	2.3E-10	9.5E-01	4.5E-10
Tetrachloromethane	1.4E-06	1.4E-05	2.7E-03	4.4E-05	------	------	1.7E-02	------
Toluene	------	------	------	------	1.3E-10	2.2E-10	------	4.4E-10
Trichloroethene	1.9E-05	1.7E-04	5.6E-02	8.8E-04	3.8E-10	6.4E-10	3.4E-01	1.3E-09
Trichlorofluoromethane	1.0E-06	9.7E-06	2.8E-03	4.4E-05	------	------	1.7E-02	------
Trichloromethane	3.8E-06	3.4E-05	2.1E-02	3.4E-04	------	------	1.3E-01	------
Vinyl Chloride	1.7E-07	1.2E-06	1.3E-03	2.1E-05	1.3E-10	2.2E-10	8.2E-03	4.3E-10
Fluoride	------	------	------	------	1.4E-07	2.4E-07	------	1.9E-08
Nitrate	------	------	------	------	2.1E-07	3.5E-07	------	2.8E-08
Silver	------	------	------	------	1.4E-07	2.3E-07	------	1.8E-08

Table I.8 - Chemicals Intakes Adjusted for Cancer Risk - Central Tendency Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	1.1E-06	------	------	------	------	8.4E-09	2.3E-08	2.8E-09	------
1,2-cis-Dichloroethene	1.9E-04	------	------	------	------	1.1E-06	2.4E-06	4.9E-07	------
1,2-trans-Dichloroethene	1.5E-06	------	------	------	------	8.6E-09	2.3E-08	4.0E-09	------
1,2-Dichloroethane	6.8E-07	------	------	------	------	3.9E-09	7.6E-09	1.8E-09	------
1,2-Dichloroethene	------	------	------	1.3E-08	3.1E-08	------	------	------	1.2E-09
2,3,7,8-TCDD	------	------	------	1.5E-15	5.1E-13	------	------	------	1.8E-12
4-MethylPhenol	------	------	------	2.2E-07	5.5E-07	------	------	------	3.0E-08
Aroclor-1248 (PCB)	------	------	------	5.1E-11	1.0E-08	------	------	------	1.2E-08
Benzo(a)anthracene	------	------	------	4.2E-11	7.3E-09	------	------	------	2.8E-08
Benzo(a)Pyrene	------	------	------	1.7E-10	3.2E-08	------	------	------	2.8E-08
Benzo(b)Fluoranthene	------	------	------	2.1E-10	6.6E-08	------	------	------	3.1E-08
Benzo(k)Fluoranthene	------	------	------	2.2E-11	8.4E-09	------	------	------	1.9E-08
Benzoic Acid	------	------	------	3.1E-07	7.3E-07	------	------	------	1.5E-07
Bis(2-ethylhexyl)phthalate	1.1E-06	6.2E-10	6.3E-10	6.3E-10	4.9E-08	1.9E-08	1.4E-06	2.8E-09	4.9E-08
Chlordane (alpha)	7.3E-08	6.7E-11	6.9E-11	------	------	1.7E-09	2.1E-07	1.9E-10	------
Chrysene	------	------	------	1.8E-10	2.4E-08	------	------	------	2.8E-08
Dichloromethane	------	------	------	1.4E-08	2.6E-08	------	------	------	1.0E-09
Diethyl Phthalate	1.7E-06	------	------	------	------	9.8E-09	3.6E-08	4.2E-09	------
Endosulfan (sulfate)	------	------	------	8.8E-11	9.4E-10	------	------	------	3.0E-10
Fluoranthene	------	------	------	8.6E-10	7.5E-08	------	------	------	3.0E-08
Indeno(1,2,3-cd)Pyrene	------	------	------	7.3E-12	5.0E-09	------	------	------	1.8E-08
Phenol	------	------	------	3.6E-07	7.1E-07	------	------	------	1.5E-08
Pyrene	1.3E-06	6.9E-10	7.2E-10	4.1E-10	3.1E-08	2.2E-08	1.7E-06	3.3E-09	2.8E-08
Tetrachloroethene	3.0E-04	------	------	1.2E-09	1.2E-08	2.1E-06	2.2E-05	7.5E-07	5.8E-10
Tetrachloromethane	5.1E-06	------	------	------	------	3.2E-08	1.7E-07	1.3E-08	------
Toluene	------	------	------	2.4E-09	1.1E-08	------	------	------	5.7E-10
Trichloroethene	1.0E-04	------	------	5.9E-09	2.1E-08	6.0E-07	2.1E-06	2.7E-07	1.5E-09
Trichlorofluoromethane	5.1E-06	------	------	------	------	3.1E-08	1.2E-07	1.3E-08	------
Trichloromethane	4.0E-05	------	------	------	------	2.2E-07	5.5E-07	1.0E-07	------
Vinyl Chloride	2.6E-06	------	------	1.5E-09	3.0E-09	1.4E-08	2.7E-08	8.4E-09	5.5E-10
Fluoride	------	------	------	------	------	------	------	------	6.0E-07
Nitrate	------	------	------	------	------	------	------	------	8.7E-07
Silver	------	------	------	------	------	------	------	------	5.8E-07

Table I.8 - Chemicals Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	2.7E-08	2.6E-07	3.7E-02	2.1E-05	------	------	3.4E-03	------
1,2-cis-Dichloroethene	1.9E-08	4.4E-08	6.5E+00	3.7E-03	------	------	5.9E-01	------
1,2-trans-Dichloroethene	3.0E-08	2.4E-07	5.2E-02	2.9E-05	------	------	4.8E-03	------
1,2-Dichloroethane	4.6E-09	3.9E-08	2.3E-02	1.3E-05	------	------	2.1E-03	------
1,2-Dichloroethene	------	------	------	------	1.9E-08	1.1E-09	------	1.3E-10
2,3,7,8-TCDD	------	------	------	------	2.7E-11	1.6E-12	------	7.2E-14
4-MethylPhenol	------	------	------	------	4.4E-07	2.6E-08	------	1.2E-09
Aroclor-1248 (PCB)	------	------	------	------	1.8E-07	1.1E-08	------	4.8E-10
Benzo(a)anthracene	------	------	------	------	4.4E-07	2.6E-08	------	1.2E-09
Benzo(a)Pyrene	------	------	------	------	4.3E-07	2.5E-08	------	1.1E-09
Benzo(b)Fluoranthene	------	------	------	------	4.7E-07	2.8E-08	------	1.2E-09
Benzo(k)Fluoranthene	------	------	------	------	2.9E-07	1.7E-08	------	7.8E-10
Benzoic Acid	------	------	------	------	2.3E-06	1.4E-07	------	6.2E-09
Bis(2-ethylhexyl)phthalate	3.0E-07	3.1E-06	3.8E-02	2.1E-05	7.4E-07	4.4E-08	3.5E-03	1.9E-09
Chlordane (alpha)	3.5E-08	3.7E-07	2.5E-03	1.4E-06	------	------	2.3E-04	------
Chrysene	------	------	------	------	4.2E-07	2.5E-08	------	1.1E-09
Dichloromethane	------	------	------	------	1.5E-08	9.1E-10	------	1.0E-10
Diethyl Phthalate	1.9E-08	2.1E-07	5.7E-02	3.2E-05	------	------	5.2E-03	------
Endosulfan (sulfate)	------	------	------	------	4.5E-09	2.7E-10	------	3.0E-11
Fluoranthene	------	------	------	------	4.4E-07	2.6E-08	------	1.2E-09
Indeno(1,2,3-cd)Pyrene	------	------	------	------	2.8E-07	1.6E-08	------	7.5E-10
Phenol	------	------	------	------	2.3E-07	1.4E-08	------	6.2E-10
Pyrene	1.2E-06	1.3E-05	4.4E-02	2.5E-05	4.2E-07	2.5E-08	4.0E-03	1.1E-09
Tetrachloroethene	2.3E-05	2.4E-04	1.0E+01	5.6E-03	8.7E-09	5.2E-10	9.1E-01	5.8E-11
Tetrachloromethane	1.8E-07	1.6E-06	1.7E-01	9.8E-05	------	------	1.6E-02	------
Toluene	------	------	------	------	8.5E-09	5.1E-10	------	5.7E-11
Trichloroethene	2.4E-08	2.2E-05	3.5E+00	2.0E-03	2.4E-08	1.4E-09	3.2E-01	1.7E-10
Trichlorofluoromethane	1.3E-07	1.2E-06	1.8E-01	1.0E-04	------	------	1.6E-02	------
Trichloromethane	4.9E-07	4.4E-06	1.4E+00	7.6E-04	------	------	1.2E-01	------
Vinyl Chloride	2.2E-08	1.5E-07	8.6E-02	4.8E-05	8.4E-09	5.0E-10	7.9E-03	5.5E-11
Fluoride	------	------	------	------	9.1E-08	5.4E-07	------	2.4E-09
Nitrate	------	------	------	------	1.3E-05	7.9E-07	------	3.6E-09
Silver	------	------	------	------	8.8E-06	5.2E-07	------	2.3E-09

Table I.9 - Radionuclide Intakes Central Tendency Exposure - Future Farmer Resident - Adult

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INGESTION OF HOMEGROWN MEAT - SOIL (pCi)	INGESTION OF HOMEGROWN DAIRY - SOIL (pCi)	INGESTION OF HOMEGROWN MEAT - GW (pCi)	INGESTION OF HOMEGROWN DAIRY - GW (pCi)	INGESTION OF HOMEGROWN PRODUCE (pCi)
Actinium-227+D	7.5E+03	----	-----	3.2E-01	1.1E+00	-----
Plutonium-238	2.8E+03	2.8E+01	1.2E-01	6.0E-01	2.2E-02	9.8E+02
Plutonium-239/240	8.4E+03	8.2E-01	3.6E-03	1.8E+00	6.4E-02	2.9E+01
Strontium-90+D	2.8E+03	2.7E+03	2.2E+03	4.7E+01	4.2E+01	4.4E+04
Tritium	2.8E+07	2.2E+05	6.5E+05	6.9E+05	2.1E+06	2.6E+06
Uranium-235/236+D	3.9E+02	----	-----	2.8E-01	1.8E+00	-----
Uranium-238+D	4.7E+03	----	-----	3.3E+00	2.1E+01	-----

Table I.9 - Radionuclide Intakes

RADIONUCLIDE	INGESTION OF WATER WHILE SWIMMING (pCi)	INGESTION OF SOIL (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	1.9E+01	----	----	----	----
Plutonium-238	7.3E+00	9.8E+02	4.2E+00	2.5E-01	3.6E+01
Plutonium-239/240	2.2E+01	2.9E+01	1.2E-01	7.3E-03	1.0E+00
Strontium-90+D	7.2E+00	1.5E+02	6.3E-01	3.8E-02	5.4E+00
Tritium	7.1E+04	5.5E+02	2.4E+00	1.4E-01	2.0E+01
Uranium-235/236+D	1.0E+00	----	----	----	----
Uranium-238+D	1.2E+01	----	----	----	----

Table I.10 - Chemical Intakes Central Tendency Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	2.0E-05	------	------	------	------	2.3E-07	8.6E-07	1.0E-07	------
1,2-cis-Dichloroethene	3.5E-03	------	------	------	------	3.8E-05	9.1E-05	1.8E-05	------
1,2-trans-Dichloroethene	2.8E-05	------	------	------	------	3.1E-07	8.4E-07	1.4E-07	------
1,2-Dichloroethane	1.2E-05	------	------	------	------	1.4E-07	2.8E-07	6.4E-08	------
1,2-Dichloroethene	------	------	------	4.8E-07	1.1E-06	------	------	------	1.2E-07
2,3,7,8-TCDD	------	------	------	5.6E-14	1.9E-11	------	------	------	1.7E-10
4-MethylPhenol	------	------	------	8.1E-06	2.0E-05	------	------	------	2.7E-06
Aroclor-1248 (PCB)	------	------	------	1.9E-09	3.7E-07	------	------	------	1.1E-06
Benzo(a)anthracene	------	------	------	1.5E-09	2.7E-07	------	------	------	2.7E-06
Benzo(a)Pyrene	------	------	------	5.9E-09	1.2E-06	------	------	------	2.6E-06
Benzo(b)Fluoranthene	------	------	------	7.5E-09	2.4E-06	------	------	------	2.9E-06
Benzo(k)Fluoranthene	------	------	------	7.8E-10	3.0E-07	------	------	------	1.8E-06
Benzoic Acid	------	------	------	1.1E-05	2.7E-05	------	------	------	1.4E-05
Bis(2-ethylhexyl)phthalate	2.0E-05	9.2E-09	2.9E-08	2.3E-08	1.8E-06	6.8E-07	5.3E-05	1.0E-07	4.6E-06
Chlordane (alpha)	1.3E-06	1.0E-09	3.1E-09	------	------	6.1E-08	7.5E-06	6.9E-09	------
Chrysene	------	------	------	6.6E-09	8.7E-07	------	------	------	2.6E-06
Dichloromethane	------	------	------	5.1E-07	9.3E-07	------	------	------	9.4E-08
Diethyl Phthalate	3.0E-05	------	------	------	------	3.5E-07	1.3E-06	1.6E-07	------
Endosulfan (sulfate)	------	------	------	2.5E-09	3.4E-06	------	------	------	2.8E-08
Fluoranthene	------	------	------	3.1E-08	2.7E-06	------	------	------	2.7E-06
Indeno(1,2,3-cd)Pyrene	------	------	------	2.6E-10	1.6E-07	------	------	------	1.7E-06
Phenol	------	------	------	1.3E-05	2.6E-05	------	------	------	1.4E-06
Pyrene	2.3E-05	1.0E-08	3.3E-08	1.5E-08	1.1E-06	7.8E-07	5.9E-05	1.2E-07	2.6E-06
Tetrachloroethene	5.3E-03	------	------	4.2E-08	4.3E-07	7.7E-05	7.7E-04	2.7E-05	5.3E-08
Tetrachloromethane	9.3E-05	------	------	------	------	1.2E-06	6.0E-06	4.8E-07	------
Toluene	------	------	------	8.8E-08	4.1E-07	------	------	------	5.2E-08
Trichloroethene	1.9E-03	------	------	2.2E-07	7.6E-07	2.2E-05	7.6E-05	9.7E-06	1.5E-07
Trichlorofluoromethane	9.4E-05	------	------	------	------	1.1E-06	4.3E-06	4.8E-07	------
Trichloromethane	7.2E-04	------	------	------	------	8.0E-06	2.0E-05	3.7E-06	------
Vinyl Chloride	4.6E-05	------	------	5.6E-08	1.1E-07	5.2E-07	9.9E-07	2.3E-07	5.1E-08
Fluoride	------	------	------	------	------	------	------	------	5.6E-05
Nitrate	------	------	------	------	------	------	------	------	8.1E-05
Silver	------	------	------	------	------	------	------	------	5.4E-05

Table I.10 - Chemical Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	3.4E-07	3.3E-06	5.9E-04	9.3E-06	------	------	3.6E-03	------
1,2-cis-Dichloroethene	2.5E-05	5.5E-05	1.0E-01	1.6E-03	------	------	6.2E-01	------
1,2-trans-Dichloroethene	3.7E-07	3.1E-06	8.2E-04	1.3E-05	------	------	4.9E-03	------
1,2-Dichloroethane	5.9E-08	5.0E-07	3.7E-04	5.8E-06	------	------	2.2E-03	------
1,2-Dichloroethene	------	------	------	------	2.9E-10	4.9E-10	------	2.1E-09
2,3,7,8-TCDD	------	------	------	------	4.3E-13	7.1E-13	------	1.2E-12
4-MethylPhenol	------	------	------	------	7.0E-09	1.2E-08	------	2.0E-08
Aroclor-1248 (PCB)	------	------	------	------	2.8E-09	4.7E-09	------	7.9E-09
Benzo(a)anthracene	------	------	------	------	6.8E-09	1.1E-08	------	1.9E-08
Benzo(a)Pyrene	------	------	------	------	6.7E-09	1.1E-08	------	1.9E-08
Benzo(b)Fluoranthene	------	------	------	------	7.4E-09	1.2E-08	------	2.1E-08
Benzo(k)Fluoranthene	------	------	------	------	4.6E-09	7.7E-09	------	1.3E-08
Benzoic Acid	------	------	------	------	3.6E-08	6.0E-08	------	1.0E-07
Bis(2-ethylhexyl)phthalate	3.7E-06	3.9E-05	5.9E-04	9.5E-06	1.2E-08	1.9E-08	3.6E-03	3.3E-08
Chlordane (alpha)	4.4E-07	4.7E-06	3.9E-05	6.3E-07	------	------	2.4E-04	------
Chrysene	------	------	------	------	6.6E-09	1.1E-08	------	1.8E-08
Dichloromethane	------	------	------	------	2.4E-10	4.0E-10	------	1.7E-09
Diethyl Phthalate	2.5E-07	2.6E-06	8.9E-04	1.4E-05	------	------	5.4E-03	------
Endosulfan (sulfate)	------	------	------	------	7.1E-11	1.2E-10	------	5.0E-10
Fluoranthene	------	------	------	------	7.0E-09	1.2E-08	------	2.0E-08
Indeno(1,2,3-cd)Pyrene	------	------	------	------	4.3E-09	7.3E-09	------	1.2E-08
Phenol	------	------	------	------	3.6E-09	6.0E-09	------	1.0E-08
Pyrene	1.6E-05	1.7E-04	6.9E-04	1.1E-05	6.6E-09	1.1E-08	4.2E-03	1.9E-08
Tetrachloroethene	2.9E-04	3.1E-03	1.6E-01	2.5E-03	1.4E-10	2.3E-10	9.5E-01	9.6E-10
Tetrachloromethane	2.3E-06	2.3E-05	2.7E-03	4.4E-05	------	------	1.7E-02	------
Toluene	------	------	------	------	1.3E-10	2.2E-10	------	9.4E-10
Trichloroethene	3.0E-05	2.9E-04	5.6E-02	8.8E-04	3.8E-10	6.4E-10	3.4E-01	2.7E-09
Trichlorofluoromethane	1.7E-06	1.6E-05	2.8E-03	4.4E-05	------	------	1.7E-02	------
Trichloromethane	6.2E-06	5.6E-05	2.1E-02	3.4E-04	------	------	1.3E-01	------
Vinyl Chloride	2.8E-07	2.0E-06	1.3E-03	2.1E-05	1.3E-10	2.2E-10	8.2E-03	9.2E-10
Fluoride	------	------	------	------	1.4E-07	2.4E-07	------	4.0E-08
Nitrate	------	------	------	------	2.1E-07	3.5E-07	------	5.8E-08
Silver	------	------	------	------	1.4E-07	2.3E-07	------	3.8E-08

Table I.11 - Chemicals Intakes Adjusted for Cancer Risk - Central Tendency Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	INGESTION OF HOMEGROWN MEAT (mg/kg/day)	INGESTION OF HOMEGROWN DAIRY PRODUCTS (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - SOIL (mg/kg/day)	INGESTION OF HOMEGROWN FRUITS - GW (mg/kg/day)	INGESTION OF HOMEGROWN VEG. - GW (mg/kg/day)	INGESTION OF WATER WHILE SWIMMING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)
1,1,1-Trichloroethane	8.6E-07	------	------	------	------	9.9E-09	3.7E-08	4.3E-09	------
1,2-cis-Dichloroethene	1.5E-04	------	------	------	------	1.6E-06	3.9E-08	7.7E-07	------
1,2-trans-Dichloroethene	1.2E-06	------	------	------	------	1.3E-08	3.8E-08	8.0E-09	------
1,2-Dichloroethane	5.1E-07	------	------	------	------	6.0E-09	1.2E-08	2.7E-09	------
1,2-Dichloroethene	------	------	------	2.1E-08	4.7E-08	------	------	------	5.1E-09
2,3,7,8-TCDD	------	------	------	2.4E-15	8.1E-13	------	------	------	7.3E-12
4-MethylPhenol	------	------	------	3.5E-07	8.6E-07	------	------	------	1.2E-07
Aroclor-1248 (PCB)	------	------	------	8.1E-11	1.6E-08	------	------	------	4.7E-08
Benzo(a)anthracene	------	------	------	6.4E-11	1.2E-08	------	------	------	1.2E-07
Benzo(a)Pyrene	------	------	------	2.5E-10	5.1E-08	------	------	------	1.1E-07
Benzo(b)Fluoranthene	------	------	------	3.2E-10	1.0E-07	------	------	------	1.2E-07
Benzo(k)Fluoranthene	------	------	------	3.3E-11	1.3E-08	------	------	------	7.7E-08
Benzoic Acid	------	------	------	4.7E-07	1.2E-06	------	------	------	8.0E-07
Bis(2-ethylhexyl)phthalate	8.8E-07	3.9E-10	1.2E-09	9.9E-10	7.7E-08	2.9E-08	2.3E-06	4.3E-09	2.0E-07
Chlordane (alpha)	5.6E-08	4.3E-11	1.3E-10	------	------	2.6E-09	3.2E-07	3.0E-10	------
Chrysene	------	------	------	2.8E-10	3.7E-08	------	------	------	1.1E-07
Dichloromethane	------	------	------	2.2E-08	4.0E-08	------	------	------	4.0E-09
Diethyl Phthalate	1.3E-06	------	------	------	------	1.5E-08	5.6E-08	6.9E-09	------
Endosulfan (sulfate)	------	------	------	1.1E-10	1.5E-09	------	------	------	1.2E-09
Fluoranthene	------	------	------	1.3E-09	1.2E-07	------	------	------	1.2E-07
Indeno(1,2,3-cd)Pyrene	------	------	------	1.1E-11	7.7E-09	------	------	------	7.3E-08
Phenol	------	------	------	5.6E-07	1.1E-06	------	------	------	6.0E-08
Pyrene	9.9E-07	4.3E-10	1.4E-09	6.4E-10	4.7E-08	3.3E-08	2.5E-06	5.1E-09	1.1E-07
Tetrachloroethene	2.3E-04	------	------	1.8E-09	1.8E-08	3.3E-06	3.3E-05	1.2E-06	2.3E-09
Tetrachloromethane	4.0E-06	------	------	------	------	5.1E-08	2.6E-07	2.1E-08	------
Toluene	------	------	------	3.8E-09	1.8E-08	------	------	------	2.2E-09
Trichloroethene	8.1E-05	------	------	9.4E-09	3.3E-08	9.4E-07	3.3E-06	4.2E-07	6.4E-09
Trichlorofluoromethane	4.0E-06	------	------	------	------	4.7E-08	1.8E-07	2.1E-08	------
Trichloromethane	3.1E-05	------	------	------	------	3.4E-07	8.6E-07	1.6E-07	------
Vinyl Chloride	2.0E-06	------	------	2.4E-09	4.7E-09	2.2E-08	4.2E-06	9.9E-09	2.2E-09
Fluoride	------	------	------	------	------	------	------	------	2.4E-06
Nitrate	------	------	------	------	------	------	------	------	3.5E-06
Silver	------	------	------	------	------	------	------	------	2.3E-06

Table I.11 - Chemicals Intakes

CHEMICAL	DERMAL ABSORPTION SWIMMING (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF VAPORS OUTSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)	DERMAL CONTACT SOIL (mg/kg/day)
1,1,1-Trichloroethane	1.5E-08	1.4E-07	8.8E-04	3.8E-07	------	------	8.5E-05	------
1,2-cis-Dichloroethene	1.1E-06	2.4E-06	1.5E-01	6.5E-05	------	------	1.5E-02	------
1,2-trans-Dichloroethene	1.6E-08	1.3E-07	1.2E-03	5.2E-07	------	------	1.2E-04	------
1,2-Dichloroethane	2.5E-09	2.1E-08	5.5E-04	2.3E-07	------	------	5.3E-05	------
1,2-Dichloroethene	------	------	------	------	4.4E-10	2.0E-11	------	9.0E-11
2,3,7,8-TCDD	------	------	------	------	6.4E-13	2.9E-14	------	5.1E-14
4-MethylPhenol	------	------	------	------	1.0E-08	4.7E-10	------	8.6E-10
Aroclor-1248 (PCB)	------	------	------	------	4.2E-09	1.9E-10	------	3.4E-10
Benzo(a)anthracene	------	------	------	------	1.0E-08	4.6E-10	------	8.1E-10
Benzo(a)Pyrene	------	------	------	------	1.0E-08	4.5E-10	------	8.1E-10
Benzo(b)Fluoranthene	------	------	------	------	1.1E-08	5.0E-10	------	9.0E-10
Benzo(k)Fluoranthene	------	------	------	------	6.9E-09	3.1E-10	------	5.6E-10
Benzoic Acid	------	------	------	------	5.4E-08	2.4E-09	------	4.3E-09
Bis(2-ethylhexyl)phthalate	1.8E-07	1.7E-06	8.9E-04	3.8E-07	1.8E-08	7.9E-10	8.6E-05	1.4E-09
Chlordane (alpha)	1.9E-08	2.0E-07	5.9E-05	2.5E-08	------	------	5.7E-06	------
Chrysene	------	------	------	------	9.9E-09	4.4E-10	------	7.7E-10
Dichloromethane	------	------	------	------	3.6E-10	1.6E-11	------	7.3E-11
Diethyl Phthalate	1.1E-08	1.1E-07	1.3E-03	5.7E-07	------	------	1.3E-04	------
Endosulfan (sulfate)	------	------	------	------	1.1E-10	4.8E-12	------	2.1E-11
Fluoranthene	------	------	------	------	1.0E-08	4.7E-10	------	8.6E-10
Indeno(1,2,3-cd)Pyrene	------	------	------	------	6.5E-09	2.9E-10	------	5.1E-10
Phenol	------	------	------	------	5.4E-09	2.4E-10	------	4.3E-10
Pyrene	6.9E-07	7.3E-06	1.0E-03	4.4E-07	1.0E-08	4.5E-10	1.0E-04	8.1E-10
Tetrachloroethene	1.2E-05	1.3E-04	2.4E-01	1.0E-04	2.1E-10	9.2E-12	2.3E-02	4.1E-11
Tetrachloromethane	9.9E-08	9.9E-07	4.1E-03	1.8E-06	------	------	3.9E-04	------
Toluene	------	------	------	------	2.0E-10	9.0E-12	------	4.0E-11
Trichloroethene	1.3E-06	1.2E-05	8.4E-02	3.6E-05	5.7E-10	2.6E-11	8.0E-03	1.2E-10
Trichlorofluoromethane	7.3E-08	6.9E-07	4.2E-03	1.8E-06	------	------	4.0E-04	------
Trichloromethane	2.7E-07	2.4E-06	3.2E-02	1.4E-05	------	------	3.1E-03	------
Vinyl Chloride	1.2E-08	8.6E-08	2.0E-03	8.6E-07	2.0E-10	8.8E-12	1.9E-04	3.9E-11
Fluoride	------	------	------	------	2.2E-07	9.7E-09	------	1.7E-09
Nitrate	------	------	------	------	3.1E-07	1.4E-08	------	2.5E-09
Silver	------	------	------	------	2.1E-07	9.3E-09	------	1.6E-09

Table I.12 - Radionuclide Intakes Central Tendency Exposure - Future Farmer Resident - Child

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INGESTION OF HOMEGROWN MEAT - SOIL (pCi)	INGESTION OF HOMEGROWN DAIRY - SOIL (pCi)	INGESTION OF HOMEGROWN MEAT - GW (pCi)	INGESTION OF HOMEGROWN DAIRY - GW (pCi)	INGESTION OF HOMEGROWN PRODUCE (pCi)
Actinium-227+D	1.3E+03	------	------	1.1E-01	3.8E-01	------
Plutonium-238	4.7E+02	9.4E+00	4.2E-02	2.0E-01	7.2E-03	3.3E+02
Plutonium-239/240	1.4E+03	2.7E-01	1.2E-03	5.9E-01	2.1E-02	9.5E+00
Strontium-90+D	4.6E+02	9.0E+02	7.3E+02	1.6E+01	1.4E+01	1.5E+04
Tritium	4.6E+06	7.2E+04	2.2E+05	2.3E+05	7.0E+05	8.8E+05
Uranium-235/236+D	6.5E+01	------	------	9.3E-02	6.0E-01	------
Uranium-238+D	7.8E+02	------	------	1.1E+00	7.1E+00	------

Table I.12 - Radionuclide Intakes

RADIONUCLIDE	INGESTION OF WATER WHILE SWIMMING (pCi)	INGESTION OF SOIL (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	6.4E+00	------	------	------	------
Plutonium-238	2.4E+00	6.5E+02	4.7E-01	2.1E-02	1.2E+01
Plutonium-239/240	7.2E+00	1.9E+01	1.4E-02	6.1E-04	3.5E-01
Strontium-90+D	2.4E+00	9.8E+01	7.0E-02	3.1E-03	1.8E+00
Tritium	2.4E+04	3.7E+02	2.6E-01	1.2E-02	6.7E+00
Uranium-235/236+D	3.4E-01	------	------	------	------
Uranium-238+D	4.0E+00	------	------	------	------

EXPOSURE CONCENTRATION/CHEMICAL INTAKE TABLES

FUTURE INDOOR INDUSTRIAL WORKER SCENARIO

Table I.13 - Chemical Intakes Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)
1,1,1-Trichloroethane	5.8E-06	2.1E-06	5.9E-04	----	5.9E-03
1,2-cis-Dichloroethene	1.0E-03	4.6E-05	1.0E-01	----	----
1,2-trans-Dichloroethene	8.1E-06	2.0E-06	8.2E-04	----	8.3E-03
1,2-Dichloroethane	3.6E-06	3.2E-07	3.7E-04	----	3.7E-03
1,2-Dichloroethene	----	----	----	2.9E-10	----
2,3,7,8-TCDD	----	----	----	4.3E-13	----
4-MethylPhenol	----	----	----	7.0E-09	----
Aroclor-1248 (PCB)	----	----	----	2.8E-09	----
Benzo(a)anthracene	----	----	----	6.8E-09	----
Benzo(a)Pyrene	----	----	----	6.7E-09	----
Benzo(b)Fluoranthene	----	----	----	7.4E-09	----
Benzo(k)Fluoranthene	----	----	----	4.6E-09	----
Benzoic Acid	----	----	----	3.6E-08	----
Bis(2-ethylhexyl)phthalate	5.9E-06	2.5E-05	5.9E-04	1.2E-08	6.0E-03
Chlordane (alpha)	3.9E-07	3.0E-06	3.9E-05	----	4.0E-04
Chrysene	----	----	----	6.6E-09	----
Dichloromethane	----	----	----	2.4E-10	----
Diethyl Phthalate	8.8E-06	1.7E-06	8.9E-04	----	9.0E-03
Endosulfan (sulfate)	----	----	----	7.1E-11	----
Fluoranthene	----	----	----	7.0E-09	----
Indeno(1,2,3-cd)Pyrene	----	----	----	4.3E-09	----
Phenol	----	----	----	3.6E-09	----
Pyrene	6.8E-06	1.1E-04	6.9E-04	6.6E-09	7.0E-03
Tetrachloroethene	1.5E-03	2.0E-03	1.6E-01	1.4E-10	1.6E+00
Tetrachloromethane	2.7E-05	1.5E-05	2.7E-03	----	2.8E-02
Toluene	----	----	----	1.3E-10	----
Trichloroethene	5.5E-04	1.9E-04	5.6E-02	3.8E-10	5.6E-01
Trichlorofluoromethane	2.7E-05	1.0E-05	2.8E-03	----	2.8E-02
Trichloromethane	2.1E-04	3.6E-05	2.1E-02	----	2.1E-01
Vinyl Chloride	1.3E-05	1.3E-06	1.3E-03	1.3E-10	1.4E-02
Fluoride	----	----	----	1.4E-07	----
Nitrate	----	----	----	2.1E-07	----
Silver	----	----	----	1.4E-07	----

Table I.14 - Chemical Intakes Adjusted for Cancer Risk - Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)
1,1,1-Trichloroethane	2.1E-06	7.5E-07	7.2E-02	—	1.3E-02
1,2-cis-Dichloroethene	3.6E-04	1.6E-05	1.2E+01	—	2.3E+00
1,2-trans-Dichloroethene	2.9E-06	7.1E-07	1.0E-01	—	1.8E-02
1,2-Dichloroethane	1.3E-06	1.1E-07	4.5E-02	—	8.1E-03
1,2-Dichloroethene	—	—	—	3.6E-08	—
2,3,7,8-TCDD	—	—	—	5.2E-11	—
4-MethylPhenol	—	—	—	8.5E-07	—
Aroclor-1248 (PCB)	—	—	—	3.4E-07	—
Benzo(a)anthracene	—	—	—	8.4E-07	—
Benzo(a)Pyrene	—	—	—	8.2E-07	—
Benzo(b)Fluoranthene	—	—	—	9.0E-07	—
Benzo(k)Fluoranthene	—	—	—	5.6E-07	—
Benzoic Acid	—	—	—	4.4E-06	—
Bis(2-ethylhexyl)phthalate	2.1E-06	8.9E-06	7.3E-02	1.4E-06	1.3E-02
Chlordane (alpha)	1.4E-07	1.1E-06	4.8E-03	—	8.8E-04
Chrysene	—	—	—	8.0E-07	—
Dichloromethane	—	—	—	3.0E-08	—
Diethyl Phthalate	3.1E-06	6.1E-07	1.1E-01	—	2.0E-02
Endosulfan (sulfate)	—	—	—	8.7E-09	—
Fluoranthene	—	—	—	8.5E-07	—
Indeno(1,2,3-cd)Pyrene	—	—	—	5.3E-07	—
Phenol	—	—	—	4.4E-07	—
Pyrene	2.4E-06	3.9E-05	8.5E-02	8.1E-07	1.5E-02
Tetrachloroethene	5.4E-04	7.1E-04	1.9E+01	1.7E-08	3.5E+00
Tetrachloromethane	9.6E-06	5.4E-06	3.3E-01	—	6.1E-02
Toluene	—	—	—	1.6E-08	—
Trichloroethene	2.0E-04	6.8E-05	6.8E+00	4.6E-08	1.2E+00
Trichlorofluoromethane	9.6E-06	3.6E-06	3.4E-01	—	6.2E-02
Trichloromethane	7.5E-05	1.3E-05	2.6E+00	—	4.7E-01
Vinyl Chloride	4.6E-06	4.6E-07	1.6E-01	1.6E-08	3.0E-02
Fluoride	—	—	—	1.8E-05	—
Nitrate	—	—	—	2.5E-05	—
Silver	—	—	—	1.7E-05	—

Table I.15 - Radionuclide Intakes Reasonable Maximum Exposure - Future Indoor Worker

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	1.4E+04	------	------
Plutonium-238	5.4E+03	8.1E+00	1.6E+01
Plutonium-239/240	1.6E+04	2.4E-01	4.7E-01
Strontium-90+D	5.3E+03	1.2E+00	2.4E+00
Tritium	5.2E+07	4.6E+00	9.1E+00
Uranium-235/236+D	7.4E+02	------	------
Uranium-238+D	8.8E+03	------	------

Table I.16 - Chemical Intakes Central Tendency Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (mg/m^3)	INHALATION OF PARTICULATES INDOOR (mg/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)
1,1,1-Trichloroethane	3.0E-06	1.4E-06	5.9E-04	—	3.6E-03
1,2-cis-Dichloroethene	5.3E-04	2.4E-05	1.0E-01	—	6.2E-01
1,2-trans-Dichloroethene	4.2E-06	1.3E-06	8.2E-04	—	4.9E-03
1,2-Dichloroethane	1.9E-06	2.2E-07	3.7E-04	—	2.2E-03
1,2-Dichloroethene	—	—	—	2.9E-10	—
2,3,7,8-TCDD	—	—	—	4.3E-13	—
4-MethylPhenol	—	—	—	7.0E-09	—
Aroclor-1248 (PCB)	—	—	—	2.8E-09	—
Benzo(a)anthracene	—	—	—	6.8E-09	—
Benzo(a)Pyrene	—	—	—	6.7E-09	—
Benzo(b)Fluoranthene	—	—	—	7.4E-09	—
Benzo(k)Fluoranthene	—	—	—	4.6E-09	—
Benzoic Acid	—	—	—	3.6E-08	—
Bis(2-ethylhexyl)phthalate	3.1E-06	1.7E-05	5.9E-04	1.2E-08	3.6E-03
Chlordane (alpha)	2.0E-07	2.0E-06	3.9E-05	—	2.4E-04
Chrysene	—	—	—	6.6E-09	—
Dichloromethane	—	—	—	2.4E-10	—
Diethyl Phthalate	4.6E-06	1.1E-06	8.9E-04	—	5.4E-03
Endosulfan (sulfate)	—	—	—	7.1E-11	—
Fluoranthene	—	—	—	7.0E-09	—
Indeno(1,2,3-cd)Pyrene	—	—	—	4.3E-09	—
Phenol	—	—	—	3.6E-09	—
Pyrene	3.6E-06	7.3E-05	6.9E-04	6.6E-09	4.2E-03
Tetrachloroethene	8.1E-04	1.3E-03	1.6E-01	1.4E-10	9.5E-01
Tetrachloromethane	1.4E-05	9.9E-06	2.7E-03	—	1.7E-02
Toluene	—	—	—	1.3E-10	—
Trichloroethene	2.9E-04	1.2E-04	5.6E-02	3.8E-10	3.4E-01
Trichlorofluoromethane	1.4E-05	6.9E-06	2.8E-03	—	1.7E-02
Trichloromethane	1.1E-04	2.4E-05	2.1E-02	—	1.3E-01
Vinyl Chloride	7.0E-06	8.5E-07	1.3E-03	1.3E-10	8.2E-03
Fluoride	—	—	—	1.4E-07	—
Nitrate	—	—	—	2.1E-07	—
Silver	—	—	—	1.4E-07	—

Table I.17 - Chemical Intakes Adjusted for Cancer Risk - Central Tendency Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INHALATION OF VAPORS INSIDE RESIDENCE (ug/m^3)	INHALATION OF PARTICULATES INDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)
1,1,1-Trichloroethane	3.9E-07	1.8E-07	1.7E-02	—	2.4E-03
1,2-cis-Dichloroethene	6.8E-05	3.1E-06	3.0E+00	—	4.2E-01
1,2-trans-Dichloroethene	5.4E-07	1.7E-07	2.4E-02	—	3.4E-03
1,2-Dichloroethane	2.4E-07	2.8E-08	1.1E-02	—	1.5E-03
1,2-Dichloroethene	—	—	—	8.7E-09	—
2,3,7,8-TCDD	—	—	—	1.2E-11	—
4-MethylPhenol	—	—	—	2.0E-07	—
Aroclor-1248 (PCB)	—	—	—	8.3E-08	—
Benzo(a)anthracene	—	—	—	2.0E-07	—
Benzo(a)Pyrene	—	—	—	2.0E-07	—
Benzo(b)Fluoranthene	—	—	—	2.2E-07	—
Benzo(k)Fluoranthene	—	—	—	1.3E-07	—
Benzoic Acid	—	—	—	1.1E-06	—
Bis(2-ethylhexyl)phthalate	4.0E-07	2.2E-06	1.7E-02	3.4E-07	2.5E-03
Chlordane (alpha)	2.6E-08	2.6E-07	1.2E-03	—	1.6E-04
Chrysene	—	—	—	1.9E-07	—
Dichloromethane	—	—	—	7.1E-09	—
Diethyl Phthalate	5.9E-07	1.4E-07	2.6E-02	—	3.7E-03
Endosulfan (sulfate)	—	—	—	2.1E-09	—
Fluoranthene	—	—	—	2.0E-07	—
Indeno(1,2,3-cd)Pyrene	—	—	—	1.3E-07	—
Phenol	—	—	—	1.1E-07	—
Pyrene	4.6E-07	9.4E-06	2.0E-02	1.9E-07	2.9E-03
Tetrachloroethene	1.0E-04	1.7E-04	4.6E+00	4.0E-09	6.5E-01
Tetrachloromethane	1.8E-06	1.3E-06	8.0E-02	—	1.1E-02
Toluene	—	—	—	3.9E-09	—
Trichloroethene	3.7E-05	1.5E-05	1.6E+00	1.1E-08	2.3E-01
Trichlorofluoromethane	1.8E-06	8.9E-07	8.1E-02	—	1.2E-02
Trichloromethane	1.4E-05	3.1E-06	6.2E-01	—	8.8E-02
Vinyl Chloride	9.0E-07	1.1E-07	4.0E-02	3.8E-09	5.6E-03
Fluoride	—	—	—	4.2E-06	—
Nitrate	—	—	—	6.1E-06	—
Silver	—	—	—	4.0E-06	—

Table I.18 - Radionuclide Intakes Central Tendency Exposure - Future Indoor Worker

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INHALATION OF PARTICULATES INDOOR (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	2.7E+03	------	------
Plutonium-238	1.0E+03	2.0E+00	5.8E+00
Plutonium-239/240	3.0E+03	5.7E-02	1.7E-01
Strontium-90+D	1.0E+03	2.9E-01	8.7E-01
Tritium	9.9E+06	1.1E+00	3.3E+00
Uranium-235/236+D	1.4E+02	------	------
Uranium-238+D	1.7E+03	------	------

EXPOSURE CONCENTRATION/CHEMICAL INTAKE TABLES

FUTURE OUTDOOR INDUSTRIAL WORKER SCENARIO

Table I.19 - Chemical Intakes Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)	DERMAL CONTACT SOIL (mg/kg/day)	INHALATION OF VAPORS OUTDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (mg/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)
1,1,1-Trichloroethane	5.8E-06	2.1E-06	—	—	9.3E-06	—	5.9E-03
1,2-cis-Dichloroethene	1.0E-03	4.6E-05	—	—	1.6E-03	—	1.0E+00
1,2-trans-Dichloroethene	8.1E-06	2.0E-06	—	—	1.3E-05	—	8.3E-03
1,2-Dichloroethane	3.6E-06	3.2E-07	—	—	5.8E-06	—	3.7E-03
1,2-Dichloroethene	—	—	4.4E-09	6.3E-08	—	4.9E-10	—
2,3,7,8-TCDD	—	—	6.4E-12	3.7E-11	—	7.1E-13	—
4-MethylPhenol	—	—	1.0E-07	6.0E-07	—	1.2E-08	—
Aroclor-1248 (PCB)	—	—	4.2E-08	2.4E-07	—	4.7E-09	—
Benzo(a)anthracene	—	—	1.0E-07	5.9E-07	—	1.1E-08	—
Benzo(a)Pyrene	—	—	1.0E-07	5.8E-07	—	1.1E-08	—
Benzo(b)Fluoranthene	—	—	1.1E-07	6.3E-07	—	1.2E-08	—
Benzo(k)Fluoranthene	—	—	6.8E-08	3.9E-07	—	7.7E-09	—
Benzoic Acid	—	—	5.4E-07	3.1E-06	—	6.0E-08	—
Bis(2-ethylhexyl)phthalate	5.9E-06	2.5E-05	1.7E-07	1.0E-06	9.5E-06	1.9E-08	6.0E-03
Chlordane (alpha)	3.9E-07	3.0E-06	—	—	6.3E-07	—	4.0E-04
Chrysene	—	—	9.8E-08	5.7E-07	—	1.1E-08	—
Dichloromethane	—	—	3.6E-09	5.2E-08	—	4.0E-10	—
Diethyl Phthalate	8.8E-06	1.7E-06	—	—	1.4E-05	—	9.0E-03
Endosulfan (sulfate)	—	—	1.1E-09	1.5E-08	—	1.2E-10	—
Fluoranthene	—	—	1.0E-07	6.0E-07	—	1.2E-08	—
Indeno(1,2,3-cd)Pyrene	—	—	6.5E-08	3.7E-07	—	7.3E-09	—
Phenol	—	—	5.4E-08	3.1E-07	—	6.0E-09	—
Pyrene	6.8E-06	1.1E-04	9.9E-08	5.7E-07	1.1E-05	1.1E-08	7.0E-03
Tetrachloroethene	1.5E-03	2.0E-03	2.0E-09	2.9E-08	2.5E-03	2.3E-10	1.6E+00
Tetrachloromethane	2.7E-05	1.5E-05	—	—	4.4E-05	—	2.8E-02
Toluene	—	—	2.0E-09	2.9E-08	—	2.2E-10	—
Trichloroethene	5.5E-04	1.9E-04	5.7E-09	8.2E-08	8.8E-04	6.4E-10	5.6E-01
Trichlorofluoromethane	2.7E-05	1.0E-05	—	—	4.4E-05	—	2.8E-02
Trichloromethane	2.1E-04	3.6E-05	—	—	3.4E-04	—	2.1E-01
Vinyl Chloride	1.3E-05	1.3E-06	2.0E-09	2.8E-08	2.1E-05	2.2E-10	1.4E-02
Fluoride	—	—	2.1E-06	1.2E-06	—	2.4E-07	—
Nitrate	—	—	3.1E-06	1.8E-06	—	3.5E-07	—
Silver	—	—	2.1E-06	1.2E-06	—	2.3E-07	—

Table I.20 - Chemical Intakes Adjusted for Cancer Risks - Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)	DERMAL CONTACT SOIL (mg/kg/day)	INHALATION OF VAPORS OUTDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)
1,1,1-Trichloroethane	2.1E-06	7.5E-07	—	—	1.1E-03	—	1.3E-02
1,2-cis-Dichloroethene	3.6E-04	1.6E-05	—	—	2.0E-01	—	2.3E+00
1,2-trans-Dichloroethene	2.9E-06	7.1E-07	—	—	1.6E-03	—	1.8E-02
1,2-Dichloroethane	1.3E-06	1.1E-07	—	—	7.1E-04	—	8.1E-03
1,2-Dichloroethene	—	—	1.6E-09	2.3E-08	—	6.0E-08	—
2,3,7,8-TCDD	—	—	2.3E-12	1.3E-11	—	8.7E-11	—
4-MethylPhenol	—	—	3.6E-08	2.1E-07	—	1.4E-06	—
Aroclor-1248 (PCB)	—	—	1.5E-08	8.6E-08	—	5.8E-07	—
Benzo(a)anthracene	—	—	3.6E-08	2.1E-07	—	1.4E-06	—
Benzo(a)Pyrene	—	—	3.6E-08	2.1E-07	—	1.4E-06	—
Benzo(b)Fluoranthene	—	—	3.9E-08	2.3E-07	—	1.5E-06	—
Benzo(k)Fluoranthene	—	—	2.4E-08	1.4E-07	—	9.4E-07	—
Benzoic Acid	—	—	1.9E-07	1.1E-06	—	7.4E-06	—
Bis(2-ethylhexyl)phthalate	2.1E-06	8.9E-06	6.1E-08	3.6E-07	1.2E-03	2.4E-06	1.3E-02
Chlordane (alpha)	1.4E-07	1.1E-06	—	—	7.7E-05	—	8.8E-04
Chrysene	—	—	3.5E-08	2.0E-07	—	1.3E-06	—
Dichloromethane	—	—	1.3E-09	1.9E-08	—	5.0E-08	—
Diethyl Phthalate	3.1E-06	6.1E-07	—	—	1.7E-03	—	2.0E-02
Endosulfan (sulfate)	—	—	3.9E-10	5.4E-09	—	1.5E-08	—
Fluoranthene	—	—	3.6E-08	2.1E-07	—	1.4E-06	—
Indeno(1,2,3-cd)Pyrene	—	—	2.3E-08	1.3E-07	—	8.9E-07	—
Phenol	—	—	1.9E-08	1.1E-07	—	7.4E-07	—
Pyrene	2.4E-06	3.9E-05	3.5E-08	2.0E-07	1.4E-03	1.4E-06	1.5E-02
Tetrachloroethene	5.4E-04	7.1E-04	7.1E-10	1.0E-08	3.0E-01	2.8E-08	3.5E+00
Tetrachloromethane	9.6E-06	5.4E-06	—	—	5.3E-03	—	6.1E-02
Toluene	—	—	7.1E-10	1.0E-08	—	2.7E-08	—
Trichloroethene	2.0E-04	6.8E-05	2.0E-09	2.9E-08	1.1E-01	7.8E-08	1.2E+00
Trichlorofluoromethane	9.6E-06	3.6E-06	—	—	5.4E-03	—	6.2E-02
Trichloromethane	7.5E-05	1.3E-05	—	—	4.1E-02	—	4.7E-01
Vinyl Chloride	4.6E-06	4.6E-07	7.1E-10	1.0E-08	2.6E-03	2.7E-08	3.0E-02
Fluoride	—	—	7.5E-07	4.3E-07	—	2.9E-05	—
Nitrate	—	—	1.1E-06	6.4E-07	—	4.3E-05	—
Silver	—	—	7.5E-07	4.3E-07	—	2.8E-05	—

Table I.21 - Radionuclide Intakes Reasonable Maximum Exposure - Future Outdoor Worker

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	INGESTION OF SOIL (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	1.4E+04	------	------	------
Plutonium-238	5.4E+03	1.4E+01	1.2E+03	1.6E+01
Plutonium-239/240	1.6E+04	4.0E-01	3.6E+01	4.7E-01
Strontium-90+D	5.3E+03	2.0E+00	1.9E+02	2.4E+00
Tritium	5.2E+07	7.6E+00	7.0E+02	9.1E+00
Uranium-235/236+D	7.4E+02	------	------	------
Uranium-238+D	8.8E+03	------	------	------

Table I.22 - Chemical Intakes Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)	DERMAL CONTACT SOIL (mg/kg/day)	INHALATION OF VAPORS OUTDOOR (mg/m^3)	INHALATION OF PARTICULATES OUTDOOR (mg/m^3)	INHALATION OF VAPORS SHOWERING (mg/m^3)
1,1,1-Trichloroethane	3.0E-06	1.4E-06	—	—	9.3E-06	—	3.6E-03
1,2-cis-Dichloroethene	5.3E-04	2.4E-05	—	—	1.6E-03	—	6.2E-01
1,2-trans-Dichloroethene	4.2E-06	1.3E-06	—	—	1.3E-05	—	4.9E-03
1,2-Dichloroethane	1.9E-06	2.2E-07	—	—	5.6E-06	—	2.2E-03
1,2-Dichloroethene	—	—	4.4E-09	1.3E-08	—	4.9E-10	—
2,3,7,8-TCDD	—	—	6.4E-12	7.3E-12	—	7.1E-13	—
4-MethylPhenol	—	—	1.0E-07	1.2E-07	—	1.2E-08	—
Aroclor-1248 (PCB)	—	—	4.2E-08	4.8E-08	—	4.7E-09	—
Benzo(a)anthracene	—	—	1.0E-07	1.2E-07	—	1.1E-08	—
Benzo(a)Pyrene	—	—	1.0E-07	1.2E-07	—	1.1E-08	—
Benzo(b)Fluoranthene	—	—	1.1E-07	1.3E-07	—	1.2E-08	—
Benzo(k)Fluoranthene	—	—	6.8E-08	7.9E-08	—	7.7E-09	—
Benzoic Acid	—	—	5.4E-07	6.2E-07	—	6.0E-08	—
Bis(2-ethylhexyl)phthalate	3.1E-06	1.7E-05	1.7E-07	2.0E-07	9.5E-06	1.9E-08	3.6E-03
Chlordane (alpha)	2.0E-07	2.0E-06	—	—	6.3E-07	—	2.4E-04
Chrysene	—	—	9.8E-08	1.1E-07	—	1.1E-08	—
Dichloromethane	—	—	3.6E-09	1.0E-08	—	4.0E-10	—
Diethyl Phthalate	4.6E-06	1.1E-06	—	—	1.4E-05	—	5.4E-03
Endosulfan (sulfate)	—	—	1.1E-09	3.1E-09	—	1.2E-10	—
Fluoranthene	—	—	1.0E-07	1.2E-07	—	1.2E-08	—
Indeno(1,2,3-cd)Pyrene	—	—	6.5E-08	7.5E-08	—	7.3E-09	—
Phenol	—	—	5.4E-08	6.2E-08	—	6.0E-09	—
Pyrene	3.6E-06	7.3E-05	9.9E-08	1.1E-07	1.1E-05	1.1E-08	4.2E-03
Tetrachloroethene	8.1E-04	1.3E-03	2.0E-09	5.9E-09	2.5E-03	2.3E-10	9.5E-01
Tetrachloromethane	1.4E-05	9.9E-06	—	—	4.4E-05	—	1.7E-02
Toluene	—	—	2.0E-09	5.7E-09	—	2.2E-10	—
Trichloroethene	2.9E-04	1.2E-04	5.7E-09	1.6E-08	8.8E-04	6.4E-10	3.4E-01
Trichlorofluoromethane	1.4E-05	6.9E-06	—	—	4.4E-05	—	1.7E-02
Trichloromethane	1.1E-04	2.4E-05	—	—	3.4E-04	—	1.3E-01
Vinyl Chloride	7.0E-06	8.5E-07	2.0E-09	5.6E-09	2.1E-05	2.2E-10	8.2E-03
Fluoride	—	—	2.1E-06	2.5E-07	—	2.4E-07	—
Nitrate	—	—	3.1E-06	3.6E-07	—	3.5E-07	—
Silver	—	—	2.1E-06	2.4E-07	—	2.3E-07	—

Table I.23 - Chemical Intakes Adjusted for Cancer Risks - Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER (mg/kg/day)	DERMAL ABSORPTION SHOWERING (mg/kg/day)	INGESTION OF SOIL (mg/kg/day)	DERMAL CONTACT SOIL (mg/kg/day)	INHALATION OF VAPORS OUTDOOR (ug/m^3)	INHALATION OF PARTICULATES OUTDOOR (ug/m^3)	INHALATION OF VAPORS SHOWERING (ug/m^3)
1,1,1-Trichloroethane	3.9E-07	1.8E-07	—	—	2.7E-04	—	2.4E-03
1,2-cis-Dichloroethene	6.8E-05	3.1E-06	—	—	4.7E-02	—	4.2E-01
1,2-trans-Dichloroethene	5.4E-07	1.7E-07	—	—	3.8E-04	—	3.4E-03
1,2-Dichloroethane	2.4E-07	2.8E-08	—	—	1.7E-04	—	1.5E-03
1,2-Dichloroethene	—	—	5.7E-10	1.7E-09	—	1.4E-08	—
2,3,7,8-TCDD	—	—	8.2E-13	9.4E-13	—	2.1E-11	—
4-MethylPhenol	—	—	1.3E-08	1.5E-08	—	3.4E-07	—
Aroclor-1248 (PCB)	—	—	5.4E-09	6.2E-09	—	1.4E-07	—
Benzo(a)anthracene	—	—	1.3E-08	1.5E-08	—	3.3E-07	—
Benzo(a)Pyrene	—	—	1.3E-08	1.5E-08	—	3.3E-07	—
Benzo(b)Fluoranthene	—	—	1.4E-08	1.7E-08	—	3.6E-07	—
Benzo(k)Fluoranthene	—	—	8.7E-09	1.0E-08	—	2.2E-07	—
Benzoic Acid	—	—	6.9E-08	8.0E-08	—	1.8E-06	—
Bis(2-ethylhexyl)phthalate	4.0E-07	2.2E-06	2.2E-08	2.6E-08	2.8E-04	5.7E-07	2.5E-03
Chlordane (alpha)	2.6E-08	2.6E-07	—	—	1.8E-05	—	1.6E-04
Chrysene	—	—	1.3E-08	1.4E-08	—	3.2E-07	—
Dichloromethane	—	—	4.6E-10	1.3E-09	—	1.2E-08	—
Diethyl Phthalate	5.9E-07	1.4E-07	—	—	4.1E-04	—	3.7E-03
Endosulfan (sulfate)	—	—	1.4E-10	4.0E-10	—	3.5E-09	—
Fluoranthene	—	—	1.3E-08	1.5E-08	—	3.4E-07	—
Indeno(1,2,3-cd)Pyrene	—	—	8.4E-09	9.6E-09	—	2.1E-07	—
Phenol	—	—	6.9E-09	8.0E-09	—	1.8E-07	—
Pyrene	4.6E-07	9.4E-06	1.3E-08	1.4E-08	3.2E-04	3.3E-07	2.9E-03
Tetrachloroethene	1.0E-04	1.7E-04	2.6E-10	7.6E-10	7.3E-02	6.7E-09	6.5E-01
Tetrachloromethane	1.8E-06	1.3E-06	—	—	1.3E-03	—	1.1E-02
Toluene	—	—	2.6E-10	7.3E-10	—	6.5E-09	—
Trichloroethene	3.7E-05	1.5E-05	7.3E-10	2.1E-09	2.6E-02	1.9E-08	2.3E-01
Trichlorofluoromethane	1.8E-06	8.9E-07	—	—	1.3E-03	—	1.2E-02
Trichloromethane	1.4E-05	3.1E-06	—	—	9.9E-03	—	8.8E-02
Vinyl Chloride	9.0E-07	1.1E-07	2.6E-10	7.2E-10	6.3E-04	6.4E-09	5.6E-03
Fluoride	—	—	2.7E-07	3.2E-08	—	7.0E-06	—
Nitrate	—	—	4.0E-07	4.6E-08	—	1.0E-05	—
Silver	—	—	2.7E-07	3.1E-08	—	6.7E-06	—

Table I.24 - Radionuclide Intakes Central Tendency Exposure - Future Outdoor Worker

RADIONUCLIDE	INGESTION OF DRINKING WATER (pCi)	INHALATION OF PARTICULATES OUTDOOR (pCi)	INGESTION OF SOIL (pCi)	EXTERNAL RADIATION TERM (pCi-yr/g)
Actinium-227+D	2.7E+03	------	------	------
Plutonium-238	1.0E+03	3.3E+00	4.5E+02	5.8E+00
Plutonium-239/240	3.0E+03	9.5E-01	1.3E+01	1.7E-01
Strontium-90+D	1.0E+03	4.9E-01	6.7E+01	8.7E-01
Tritium	9.9E+06	1.8E+00	2.5E+02	3.3E+00
Uranium-235/236+D	1.4E+02	------	------	------
Uranium-238+D	1.7E+03	------	------	------

CARCINOGENIC/NONCARCINOGENIC RISK TABLES

FUTURE FARMER RESIDENT SCENARIO

Table I.25 - Noncarcinogenic Risk Hazard Quotients/Indices - Reasonable Maximum Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING
1,1,1-Trichloroethane	1.8E-04	—	—	2.0E-05	2.4E-07	—	2.7E-06	3.3E-05
1,2-cis-Dichloroethene	2.8E-01	—	—	2.1E-02	3.8E-04	—	1.8E-03	6.5E-03
1,2-trans-Dichloroethene	1.2E-03	—	—	9.4E-05	1.6E-06	—	1.3E-05	1.4E-04
1,2-Dichloroethane	—	—	—	—	—	—	—	—
1,2-Dichloroethene	—	—	—	2.9E-04	—	1.3E-06	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—	—
4-MethylPhenol	—	—	—	9.2E-03	—	5.8E-05	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—	—
Benzoic Acid	—	—	—	1.5E-05	—	3.8E-07	—	—
Bis(2-ethylhexyl)phthalate	8.0E-04	4.1E-07	4.7E-07	4.5E-03	1.1E-06	2.5E-05	1.3E-04	1.8E-03
Chlordane (alpha)	1.8E-02	1.5E-05	1.7E-05	2.0E-01	2.5E-05	—	5.2E-03	7.0E-02
Chrysene	—	—	—	—	—	—	—	—
Dichloromethane	—	—	—	3.8E-05	—	1.7E-07	—	—
Diethyl Phthalate	3.1E-05	—	—	3.3E-06	4.1E-08	—	2.1E-07	3.0E-06
Endosulfan (sulfate)	—	—	—	1.0E-05	—	5.0E-07	—	—
Fluoranthene	—	—	—	1.1E-04	—	7.3E-06	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—	—
Phenol	—	—	—	1.0E-04	—	2.5E-07	—	—
Pyrene	6.3E-04	3.1E-07	3.7E-07	3.4E-03	8.7E-07	9.3E-06	3.7E-04	5.0E-03
Tetrachloroethene	4.3E-01	—	—	1.4E-01	5.8E-04	5.7E-07	2.1E-02	2.8E-01
Tetrachloromethane	1.1E-01	—	—	1.7E-02	1.4E-04	—	2.3E-03	3.0E-02
Toluene	—	—	—	4.1E-06	—	2.8E-08	—	—
Trichloroethene	2.5E-01	—	—	2.8E-02	3.5E-04	2.7E-06	3.5E-03	4.3E-02
Trichlorofluoromethane	2.6E-04	—	—	2.9E-05	3.3E-07	—	4.0E-06	4.7E-05
Trichloromethane	5.9E-02	—	—	4.5E-03	7.9E-05	—	4.4E-04	5.1E-03
Vinyl Chloride	—	—	—	—	—	—	—	—
Fluoride	—	—	—	—	—	1.0E-04	—	—
Nitrate	—	—	—	—	—	5.4E-06	—	—
Silver	—	—	—	—	—	1.2E-03	—	—
TOTAL HAZARD INDEX	1.1E+00	1.5E-05	1.7E-05	4.3E-01	1.6E-03	1.4E-03	3.5E-02	4.4E-01
RELATIVE HAZARD INDEX	6.4%	0.0%	0.0%	2.4%	0.0%	0.0%	0.2%	2.5%

Table I.25 - Noncarcinogenic Risk

CHEMICAL	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL
1,1,1-Trichloroethane	5.9E-04	9.3E-06	—	—	5.9E-03	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	3.7E-02	5.8E-04	—	—	3.7E-01	—
1,2-Dichloroethene	—	—	—	—	—	3.7E-06
2,3,7,8-TCDD	—	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—	6.2E-05
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—
Benzoic Acid	—	—	—	—	—	4.0E-07
Bis(2-ethylhexyl)phthalate	—	—	—	—	—	2.7E-05
Chlordane (alpha)	—	—	—	—	—	—
Chrysene	—	—	—	—	—	—
Dichloromethane	—	—	8.0E-11	1.3E-10	—	4.5E-07
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	1.3E-06
Fluoranthene	—	—	—	—	—	7.8E-06
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—
Phenol	—	—	—	—	—	2.7E-07
Pyrene	—	—	—	—	—	1.0E-05
Tetrachloroethene	—	—	—	—	—	1.5E-06
Tetrachloromethane	1.4E+00	2.2E-02	—	—	1.4E+01	—
Toluene	—	—	3.3E-10	5.5E-10	—	7.5E-08
Trichloroethene	—	—	—	—	—	7.2E-06
Trichlorofluoromethane	4.0E-03	6.3E-05	—	—	4.0E-02	—
Trichloromethane	—	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—
Fluoride	—	—	—	—	—	1.1E-05
Nitrate	—	—	—	—	—	5.9E-07
Silver	—	—	—	—	—	1.2E-04
TOTAL HAZARD INDEX	1.4E+00	2.3E-02	4.0E-10	6.8E-10	1.4E+01	2.6E-04
RELATIVE HAZARD INDEX	7.8%	0.1%	0.0%	0.0%	80.6%	0.0%

Table I.26 - Carcinogenic Risks Reasonable Maximum Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-Dichloroethane	3E-07	—	—	2E-08	4E-10	—	1E-09	1E-08	2E-06
1,2-Dichloroethene	—	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	2E-06	—	9E-07	—	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	2E-06	—	3E-07	—	—	—
Benzo(a)anthracene	—	—	—	1E-07	—	7E-08	—	—	—
Benzo(a)Pyrene	—	—	—	5E-06	—	7E-07	—	—	—
Benzo(b)Fluoranthene	—	—	—	1E-06	—	8E-08	—	—	—
Benzo(k)Fluoranthene	—	—	—	1E-07	—	5E-08	—	—	—
Benzoic Acid	—	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	8E-08	4E-11	4E-11	4E-07	1E-10	2E-09	1E-08	2E-07	—
Chlordane (alpha)	5E-07	4E-10	4E-10	5E-06	7E-10	—	1E-07	2E-06	4E-06
Chrysene	—	—	—	4E-08	—	7E-09	—	—	—
Dichloromethane	—	—	—	6E-09	—	3E-11	—	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	8E-08	—	5E-08	—	—	—
Phenol	—	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—	—
Tetrachloroethene	8E-05	—	—	3E-05	1E-07	1E-10	4E-06	5E-05	2E-05
Tetrachloromethane	3E-06	—	—	5E-07	4E-09	—	7E-08	9E-07	1E-05
Toluene	—	—	—	—	—	—	—	—	—
Trichloroethene	6E-06	—	—	6E-07	8E-09	6E-11	8E-08	1E-06	2E-05
Trichlorofluoromethane	—	—	—	—	—	—	—	—	—
Trichloromethane	1E-06	—	—	9E-08	2E-09	—	9E-09	1E-07	1E-04
Vinyl Chloride	2E-05	—	—	2E-06	3E-08	4E-09	1E-07	1E-06	3E-05
Fluoride	—	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—	—
Actinium-227+D	1E-05	5E-10	2E-09	—	2E-08	—	—	—	—
Plutonium-238	3E-06	3E-08	2E-10	9E-07	4E-09	7E-07	—	—	—
Plutonium-239/240	1E-05	3E-09	8E-11	3E-08	1E-08	2E-08	—	—	—
Strontium-90+D	5E-07	5E-07	4E-07	7E-06	7E-10	2E-08	—	—	—
Tritium	8E-06	2E-07	7E-07	6E-07	1E-08	1E-10	—	—	—
Uranium-235/236+D	3E-08	2E-11	1E-10	—	4E-11	—	—	—	—
Uranium-238+D	7E-07	4E-10	3E-09	—	9E-10	—	—	—	—
TOTAL PATHWAY RISK	1E-04	7E-07	1E-06	5E-05	2E-07	3E-06	4E-06	6E-05	2E-04
RELATIVE PATHWAY RISK	29.3%	0.1%	0.2%	10.3%	0.0%	0.6%	0.8%	11.0%	41.7%

Table I.26 - Carcinogenic Risks

CHEMICAL	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL	EXTERNAL RADIATION
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	9E-09	—	—	3E-07	—	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	3E-21	1E-21	—	1E-06	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	3E-07	—
Benzo(a)anthracene	—	3E-10	1E-10	—	8E-08	—
Benzo(a)Pyrene	—	3E-09	1E-09	—	8E-07	—
Benzo(b)Fluoranthene	—	3E-10	1E-10	—	8E-08	—
Benzo(k)Fluoranthene	—	2E-10	8E-11	—	5E-08	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	—	—	—	—	3E-09	—
Chlordane (alpha)	1E-08	—	—	4E-07	—	—
Chrysene	—	3E-11	1E-11	—	8E-09	—
Dichloromethane	—	3E-14	1E-14	—	7E-11	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	2E-10	8E-11	—	5E-08	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	9E-08	2E-14	8E-15	3E-06	3E-10	—
Tetrachloromethane	4E-08	—	—	1E-06	—	—
Toluene	—	—	—	—	—	—
Trichloroethene	9E-08	2E-13	7E-14	3E-06	2E-10	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	5E-07	—	—	1E-05	—	—
Vinyl Chloride	1E-07	3E-12	1E-12	3E-06	1E-08	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	—	—	—	—	—	—
Plutonium-238	—	6E-07	3E-07	—	—	3E-09
Plutonium-239/240	—	2E-08	6E-09	—	—	8E-11
Strontium-90+D	—	2E-10	6E-11	—	—	—
Tritium	—	7E-13	3E-13	—	—	—
Uranium-235/236+D	—	—	—	—	—	—
Uranium-238+D	—	—	—	—	—	—
TOTAL PATHWAY RISK	8E-07	7E-07	3E-07	3E-05	2E-06	3E-09
RELATIVE PATHWAY RISK	0.2%	0.1%	0.1%	5.1%	0.5%	0.0%

Table I.27 - Noncarcinogenic Risk Hazard Quotients/Indices - Reasonable Maximum Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING
1,1,1-Trichloroethane	4.2E-04	—	—	9.2E-05	1.1E-06	—	3.9E-06	4.8E-05
1,2-cis-Dichloroethene	6.6E-01	—	—	9.7E-02	1.8E-03	—	2.6E-03	9.5E-03
1,2-trans-Dichloroethene	2.7E-03	—	—	4.4E-04	7.0E-06	—	1.9E-05	2.0E-04
1,2-Dichloroethane	—	—	—	—	—	—	—	—
1,2-Dichloroethene	—	—	—	1.4E-03	—	1.3E-05	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—	—
4-MethylPhenol	—	—	—	4.2E-02	—	5.4E-04	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—	—
Benzoic Acid	—	—	—	7.0E-05	—	3.5E-06	—	—
Bis(2-ethylhexyl)phthalate	1.9E-03	8.0E-07	2.7E-06	2.1E-02	5.0E-06	2.3E-04	1.9E-04	2.6E-03
Chlordane (alpha)	4.2E-02	2.8E-05	9.8E-05	9.6E-01	1.2E-04	—	7.7E-03	1.0E-01
Chrysene	—	—	—	—	—	—	—	—
Dichloromethane	—	—	—	1.8E-04	—	1.6E-06	—	—
Diethyl Phthalate	7.3E-05	—	—	1.5E-05	2.0E-07	—	3.1E-07	4.4E-06
Endosulfan (sulfate)	—	—	—	4.6E-05	—	4.7E-06	—	—
Fluoranthene	—	—	—	5.3E-04	—	6.8E-05	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—	—
Phenol	—	—	—	4.9E-04	—	2.3E-06	—	—
Pyrene	1.5E-03	6.0E-07	2.0E-06	1.6E-02	4.0E-06	8.7E-05	5.3E-04	7.3E-03
Tetrachloroethene	1.0E+00	—	—	6.5E-01	2.7E-03	5.3E-06	3.0E-02	4.1E-01
Tetrachloromethane	2.6E-01	—	—	7.8E-02	6.9E-04	—	3.4E-03	4.3E-02
Toluene	—	—	—	1.9E-05	—	2.6E-07	—	—
Trichloroethene	6.0E-01	—	—	1.2E-01	1.6E-03	2.5E-05	5.2E-03	6.3E-02
Trichlorofluoromethane	6.0E-04	—	—	1.4E-04	1.6E-06	—	5.7E-06	7.0E-05
Trichloromethane	1.4E-01	—	—	2.1E-02	3.7E-04	—	6.4E-04	7.4E-03
Vinyl Chloride	—	—	—	—	—	—	—	—
Fluoride	—	—	—	—	—	9.3E-04	—	—
Nitrate	—	—	—	—	—	5.1E-05	—	—
Silver	—	—	—	—	—	1.1E-02	—	—
TOTAL HAZARD INDEX	2.7E+00	3.0E-05	1.0E-04	2.0E+00	7.3E-03	1.3E-02	5.0E-02	6.5E-01
RELATIVE HAZARD INDEX	12.7%	0.0%	0.0%	9.4%	0.0%	0.1%	0.2%	3.0%

Table I.27 - Noncarcinogenic Risk

CHEMICAL	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL
1,1,1-Trichloroethane	5.9E-04	9.3E-06	—	—	5.9E-03	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	3.7E-02	5.8E-04	—	—	3.7E-01	—
1,2-Dichloroethene	—	—	—	—	—	7.8E-06
2,3,7,8-TCDD	—	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—	1.3E-04
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—
Benzoic Acid	—	—	—	—	—	8.5E-07
Bis(2-ethylhexyl)phthalate	—	—	—	—	—	5.5E-05
Chlordane (alpha)	—	—	—	—	—	—
Chrysene	—	—	—	—	—	—
Dichloromethane	—	—	8.0E-11	1.3E-10	—	9.7E-07
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	2.8E-06
Fluoranthene	—	—	—	—	—	1.7E-05
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—
Phenol	—	—	—	—	—	5.7E-07
Pyrene	—	—	—	—	—	2.1E-05
Tetrachloroethene	—	—	—	—	—	3.3E-06
Tetrachloromethane	1.4E+00	2.2E-02	—	—	1.4E+01	—
Toluene	—	—	3.3E-10	5.5E-10	—	1.6E-07
Trichloroethene	—	—	—	—	—	1.5E-05
Trichlorofluoromethane	4.0E-03	6.3E-05	—	—	4.0E-02	—
Trichloromethane	—	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—
Fluoride	—	—	—	—	—	2.3E-05
Nitrate	—	—	—	—	—	1.3E-06
Silver	—	—	—	—	—	2.6E-04
TOTAL HAZARD INDEX	1.4E+00	2.3E-02	4.0E-10	6.8E-10	1.4E+01	5.4E-04
RELATIVE HAZARD INDEX	6.5%	0.1%	0.0%	0.0%	67.8%	0.0%

Table I.28 - Carcinogenic Risks Reasonable Maximum Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-Dichloroethane	2E-07	—	—	2E-08	5E-10	—	5E-10	5E-09	7E-08
1,2-Dichloroethene	—	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	2E-06	—	2E-06	—	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	2E-06	—	7E-07	—	—	—
Benzo(a)anthracene	—	—	—	1E-07	—	2E-07	—	—	—
Benzo(a)Pyrene	—	—	—	6E-06	—	2E-06	—	—	—
Benzo(b)Fluoranthene	—	—	—	1E-06	—	2E-07	—	—	—
Benzo(k)Fluoranthene	—	—	—	1E-07	—	1E-07	—	—	—
Benzoic Acid	—	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	5E-08	2E-11	6E-11	5E-07	1E-10	6E-09	5E-09	6E-08	—
Chlordane (alpha)	3E-07	2E-10	7E-10	6E-06	8E-10	—	5E-08	7E-07	1E-07
Chrysene	—	—	—	4E-08	—	2E-08	—	—	—
Dichloromethane	—	—	—	7E-09	—	6E-11	—	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	9E-08	—	1E-07	—	—	—
Phenol	—	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—	—
Tetrachloroethene	4E-05	—	—	3E-05	1E-07	2E-10	1E-06	2E-05	7E-07
Tetrachloromethane	2E-06	—	—	6E-07	5E-09	—	3E-08	3E-07	3E-07
Toluene	—	—	—	—	—	—	—	—	—
Trichloroethene	3E-06	—	—	7E-07	9E-09	1E-10	3E-08	4E-07	7E-07
Trichlorofluoromethane	—	—	—	—	—	—	—	—	—
Trichloromethane	7E-07	—	—	1E-07	2E-09	—	3E-09	4E-08	4E-06
Vinyl Chloride	1E-05	—	—	2E-06	4E-08	8E-09	5E-08	4E-07	8E-07
Fluoride	—	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—	—
Actinium-227+D	2E-06	1E-10	5E-10	—	5E-09	—	—	—	—
Plutonium-238	4E-07	7E-09	4E-11	2E-07	1E-09	4E-07	—	—	—
Plutonium-239/240	1E-06	7E-10	2E-11	6E-09	3E-09	1E-08	—	—	—
Strontium-90+D	6E-08	1E-07	1E-07	2E-06	2E-10	9E-09	—	—	—
Tritium	9E-07	6E-08	2E-07	1E-07	3E-09	5E-11	—	—	—
Uranium-235/236+D	4E-09	5E-12	4E-11	—	1E-11	—	—	—	—
Uranium-238+D	8E-08	1E-10	7E-10	—	2E-10	—	—	—	—
TOTAL PATHWAY RISK	7E-05	2E-07	3E-07	5E-05	2E-07	6E-06	1E-06	2E-05	6E-06
RELATIVE PATHWAY RISK	44.0%	0.1%	0.2%	32.8%	0.1%	3.5%	0.9%	12.7%	4.1%

Table I.28 - Carcinogenic Risks

CHEMICAL	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL	EXTERNAL RADIATION
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	2E-10	—	—	1E-08	—	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	1E-22	3E-23	—	5E-07	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	2E-07	—
Benzo(a)anthracene	—	9E-12	2E-12	—	4E-08	—
Benzo(a)Pyrene	—	9E-11	2E-11	—	4E-07	—
Benzo(b)Fluoranthene	—	1E-11	2E-12	—	4E-08	—
Benzo(k)Fluoranthene	—	6E-12	1E-12	—	3E-08	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	—	—	—	—	1E-09	—
Chlordane (alpha)	3E-10	—	—	2E-08	—	—
Chrysene	—	9E-13	2E-13	—	4E-09	—
Dichloromethane	—	9E-16	2E-16	—	4E-11	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	6E-12	1E-12	—	3E-08	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	2E-09	6E-16	1E-16	1E-07	1E-10	—
Tetrachloromethane	7E-10	—	—	5E-08	—	—
Toluene	—	—	—	—	—	—
Trichloroethene	2E-09	5E-15	1E-15	1E-07	9E-11	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	9E-09	—	—	6E-07	—	—
Vinyl Chloride	2E-09	8E-14	2E-14	1E-07	5E-09	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	—	—	—	—	—	—
Plutonium-238	—	9E-08	2E-08	—	—	7E-10
Plutonium-239/240	—	3E-09	6E-10	—	—	2E-11
Strontium-90+D	—	2E-11	5E-12	—	—	—
Tritium	—	1E-13	3E-14	—	—	—
Uranium-235/236+D	—	—	—	—	—	—
Uranium-238+D	—	—	—	—	—	—
TOTAL PATHWAY RISK	1E-08	1E-07	2E-08	1E-06	1E-06	7E-10
RELATIVE PATHWAY RISK	0.0%	0.1%	0.0%	0.6%	0.8%	0.0%

Table I.29 - Noncarcinogenic Risk Hazard Quotients/Indices - Central Tendency Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING
1,1,1-Trichloroethane	9.4E-05	—	—	2.6E-06	2.4E-07	—	2.3E-06	2.2E-05
1,2-cis-Dichloroethene	1.5E-01	—	—	2.7E-03	3.8E-04	—	1.5E-03	3.4E-03
1,2-trans-Dichloroethene	6.0E-04	—	—	1.2E-05	1.6E-06	—	1.2E-05	9.5E-05
1,2-Dichloroethane	—	—	—	—	—	—	—	—
1,2-Dichloroethene	—	—	—	3.8E-05	—	1.1E-06	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—	—
4-MethylPhenol	—	—	—	1.2E-03	—	4.6E-05	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—	—
Benzoic Acid	—	—	—	2.0E-06	—	3.0E-07	—	—
Bis(2-ethylhexyl)phthalate	4.3E-04	2.4E-07	2.5E-07	5.8E-04	1.1E-06	1.9E-05	1.2E-04	1.2E-03
Chlordane (alpha)	9.5E-03	8.7E-06	9.0E-06	2.7E-02	2.5E-05	—	4.5E-03	4.8E-02
Chrysene	—	—	—	—	—	—	—	—
Dichloromethane	—	—	—	5.2E-06	—	1.3E-07	—	—
Diethyl Phthalate	1.6E-05	—	—	4.5E-07	4.1E-08	—	1.9E-07	2.0E-06
Endosulfan (sulfate)	—	—	—	1.3E-06	—	3.8E-07	—	—
Fluoranthene	—	—	—	1.5E-05	—	5.8E-06	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—	—
Phenol	—	—	—	1.4E-05	—	2.0E-07	—	—
Pyrene	3.3E-04	1.8E-07	1.9E-07	4.5E-04	8.7E-07	7.3E-06	3.2E-04	3.3E-03
Tetrachloroethene	2.3E-01	—	—	1.9E-02	5.8E-04	4.5E-07	1.8E-02	1.9E-01
Tetrachloromethane	5.7E-02	—	—	2.2E-03	1.4E-04	—	2.0E-03	2.0E-02
Toluene	—	—	—	5.4E-07	—	2.2E-08	—	—
Trichloroethene	1.4E-01	—	—	3.5E-03	3.5E-04	2.0E-06	3.2E-03	2.8E-02
Trichlorofluoromethane	1.3E-04	—	—	3.8E-06	3.3E-07	—	3.3E-06	3.2E-05
Trichloromethane	3.1E-02	—	—	6.0E-04	7.9E-05	—	3.8E-04	3.4E-03
Vinyl Chloride	—	—	—	—	—	—	—	—
Fluoride	—	—	—	—	—	7.8E-05	—	—
Nitrate	—	—	—	—	—	4.3E-06	—	—
Silver	—	—	—	—	—	9.0E-04	—	—
TOTAL HAZARD INDEX	6.1E-01	9.1E-06	9.4E-06	5.7E-02	1.6E-03	1.1E-03	3.0E-02	3.0E-01
RELATIVE HAZARD INDEX	5.5%	0.0%	0.0%	0.5%	0.0%	0.0%	0.3%	2.7%

Table I.29 - Noncarcinogenic Risk

CHEMICAL	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL
1,1,1-Trichloroethane	5.9E-04	9.3E-06	—	—	3.6E-03	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	3.7E-02	5.8E-04	—	—	2.2E-01	—
1,2-Dichloroethene	—	—	—	—	—	1.1E-07
2,3,7,8-TCDD	—	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—	1.8E-06
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—
Benzoic Acid	—	—	—	—	—	1.2E-08
Bis(2-ethylhexyl)phthalate	—	—	—	—	—	7.5E-07
Chlordane (alpha)	—	—	—	—	—	—
Chrysene	—	—	—	—	—	—
Dichloromethane	—	—	8.0E-11	1.3E-10	—	1.3E-08
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	3.8E-08
Fluoranthene	—	—	—	—	—	2.3E-07
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—
Phenol	—	—	—	—	—	8.0E-09
Pyrene	—	—	—	—	—	2.9E-07
Tetrachloroethene	—	—	—	—	—	4.5E-08
Tetrachloromethane	1.4E+00	2.2E-02	—	—	8.5E+00	—
Toluene	—	—	3.3E-10	5.5E-10	—	2.2E-09
Trichloroethene	—	—	—	—	—	2.2E-07
Trichlorofluoromethane	4.0E-03	6.3E-05	—	—	2.4E-02	—
Trichloromethane	—	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—
Fluoride	—	—	—	—	—	3.2E-07
Nitrate	—	—	—	—	—	1.8E-08
Silver	—	—	—	—	—	3.6E-06
TOTAL HAZARD INDEX	1.4E+00	2.3E-02	4.0E-10	6.8E-10	8.7E+00	7.5E-06
RELATIVE HAZARD INDEX	12.5%	0.2%	0.0%	0.0%	78.4%	0.0%

Table I.30 - Carcinogenic Risks Central Tendency Exposure - Future Farmer Resident - Adult

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-Dichloroethane	6E-08	—	—	1E-09	2E-10	—	4E-10	4E-09	6E-07
1,2-Dichloroethene	—	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	8E-08	—	3E-07	—	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	8E-08	—	9E-08	—	—	—
Benzo(a)anthracene	—	—	—	5E-09	—	2E-08	—	—	—
Benzo(a)Pyrene	—	—	—	2E-07	—	2E-07	—	—	—
Benzo(b)Fluoranthene	—	—	—	5E-08	—	2E-08	—	—	—
Benzo(k)Fluoranthene	—	—	—	6E-09	—	1E-08	—	—	—
Benzoic Acid	—	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	2E-08	9E-12	9E-12	2E-08	4E-11	7E-10	4E-09	4E-08	—
Chlordane (alpha)	1E-07	9E-11	9E-11	3E-07	3E-10	—	5E-08	5E-07	9E-07
Chrysene	—	—	—	2E-09	—	2E-09	—	—	—
Dichloromethane	—	—	—	3E-10	—	8E-12	—	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	4E-09	—	1E-08	—	—	—
Phenol	—	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—	—
Tetrachloroethene	2E-05	—	—	1E-06	4E-08	3E-11	1E-06	1E-05	6E-06
Tetrachloromethane	7E-07	—	—	3E-08	2E-09	—	2E-08	2E-07	3E-06
Toluene	—	—	—	—	—	—	—	—	—
Trichloroethene	1E-06	—	—	3E-08	3E-09	2E-11	3E-08	2E-07	6E-06
Trichlorofluoromethane	—	—	—	—	—	—	—	—	—
Trichloromethane	2E-07	—	—	5E-09	6E-10	—	3E-09	3E-08	3E-05
Vinyl Chloride	5E-06	—	—	9E-08	1E-08	1E-09	4E-08	3E-07	7E-06
Fluoride	—	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—	—
Actinium-227+D	3E-06	1E-10	4E-10	—	7E-09	—	—	—	—
Plutonium-238	6E-07	6E-09	3E-11	2E-07	2E-09	2E-07	—	—	—
Plutonium-239/240	2E-06	6E-10	2E-11	7E-09	5E-09	7E-09	—	—	—
Strontium-90+D	1E-07	1E-07	8E-08	2E-06	3E-10	5E-09	—	—	—
Tritium	1E-06	5E-08	1E-07	1E-07	4E-09	3E-11	—	—	—
Uranium-235/236+D	6E-09	4E-12	3E-11	—	2E-11	—	—	—	—
Uranium-238+D	1E-07	9E-11	6E-10	—	3E-10	—	—	—	—
TOTAL PATHWAY RISK	3E-05	2E-07	2E-07	4E-06	7E-08	9E-07	1E-06	1E-05	6E-05
RELATIVE PATHWAY RISK	26.6%	0.1%	0.2%	3.7%	0.1%	0.8%	1.2%	12.7%	50.0%

Table I.30 - Carcinogenic Risks

CHEMICAL	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL	EXTERNAL RADIATION
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	3E-10	—	—	5E-08	—	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	9E-22	5E-23	—	1E-08	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	4E-09	—
Benzo(a)anthracene	—	8E-11	5E-12	—	8E-10	—
Benzo(a)Pyrene	—	7E-10	4E-11	—	8E-09	—
Benzo(b)Fluoranthene	—	8E-11	5E-12	—	9E-10	—
Benzo(k)Fluoranthene	—	5E-11	3E-12	—	6E-10	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	—	—	—	—	3E-11	—
Chlordane (alpha)	5E-10	—	—	9E-08	—	—
Chrysene	—	7E-12	4E-13	—	8E-11	—
Dichloromethane	—	7E-15	4E-16	—	8E-13	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	5E-11	3E-12	—	5E-10	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	3E-09	5E-15	3E-16	5E-07	3E-12	—
Tetrachloromethane	1E-09	—	—	2E-07	—	—
Toluene	—	—	—	—	—	—
Trichloroethene	3E-09	4E-14	2E-15	5E-07	2E-12	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	2E-08	—	—	3E-06	—	—
Vinyl Chloride	4E-09	7E-13	4E-14	7E-07	1E-10	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	—	—	—	—	—	—
Plutonium-238	—	2E-07	1E-08	—	—	1E-09
Plutonium-239/240	—	5E-09	3E-10	—	—	3E-11
Strontium-90+D	—	4E-11	2E-12	—	—	—
Tritium	—	2E-13	1E-14	—	—	—
Uranium-235/236+D	—	—	—	—	—	—
Uranium-238+D	—	—	—	—	—	—
TOTAL PATHWAY RISK	3E-08	2E-07	1E-08	5E-06	3E-08	1E-09
RELATIVE PATHWAY RISK	0.0%	0.2%	0.0%	4.4%	0.0%	0.0%

Table I.31 - Noncarcinogenic Risk Hazard Quotients/Indices - Central Tendency Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING
1,1,1-Trichloroethane	2.2E-04	—	—	1.2E-05	1.1E-06	—	3.8E-06	3.7E-05
1,2-cis-Dichloroethene	3.5E-01	—	—	1.3E-02	1.8E-03	—	2.5E-03	5.5E-03
1,2-trans-Dichloroethene	1.4E-03	—	—	5.8E-05	7.0E-06	—	1.9E-05	1.6E-04
1,2-Dichloroethane	—	—	—	—	—	—	—	—
1,2-Dichloroethene	—	—	—	1.8E-04	—	1.3E-05	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—	—
4-MethylPhenol	—	—	—	5.6E-03	—	5.4E-04	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—	—
Benzoic Acid	—	—	—	9.5E-06	—	3.5E-06	—	—
Bis(2-ethylhexyl)phthalate	1.0E-03	4.6E-07	1.5E-06	2.8E-03	5.0E-06	2.3E-04	1.9E-04	2.0E-03
Chlordane (alpha)	2.2E-02	1.7E-05	5.2E-05	1.3E-01	1.2E-04	—	7.3E-03	7.8E-02
Chrysene	—	—	—	—	—	—	—	—
Dichloromethane	—	—	—	2.4E-05	—	1.6E-06	—	—
Diethyl Phthalate	3.8E-05	—	—	2.1E-06	2.0E-07	—	3.1E-07	3.3E-06
Endosulfan (sulfate)	—	—	—	6.1E-06	—	4.7E-06	—	—
Fluoranthene	—	—	—	6.8E-05	—	6.8E-05	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—	—
Phenol	—	—	—	6.5E-05	—	2.3E-06	—	—
Pyrene	7.7E-04	3.3E-07	1.1E-06	2.0E-03	4.0E-06	8.7E-05	5.3E-04	5.7E-03
Tetrachloroethene	5.3E-01	—	—	8.5E-02	2.7E-03	5.3E-06	2.9E-02	3.1E-01
Tetrachloromethane	1.3E-01	—	—	1.0E-02	6.9E-04	—	3.3E-03	3.3E-02
Toluene	—	—	—	2.5E-06	—	2.6E-07	—	—
Trichloroethene	3.2E-01	—	—	1.6E-02	1.6E-03	2.5E-05	5.0E-03	4.8E-02
Trichlorofluoromethane	3.1E-04	—	—	1.8E-05	1.6E-06	—	5.7E-06	5.3E-05
Trichloromethane	7.2E-02	—	—	2.8E-03	3.7E-04	—	6.2E-04	5.6E-03
Vinyl Chloride	—	—	—	—	—	—	—	—
Fluoride	—	—	—	—	—	9.3E-04	—	—
Nitrate	—	—	—	—	—	5.1E-05	—	—
Silver	—	—	—	—	—	1.1E-02	—	—
TOTAL HAZARD INDEX	1.4E+00	1.7E-05	5.4E-05	2.6E-01	7.3E-03	1.3E-02	4.8E-02	4.9E-01
RELATIVE HAZARD INDEX	11.5%	0.0%	0.0%	2.1%	0.1%	0.1%	0.4%	3.9%

Table I.31 - Noncarcinogenic Risk

CHEMICAL	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL
1,1,1-Trichloroethane	5.9E-04	9.3E-06	—	—	3.6E-03	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	3.7E-02	5.8E-04	—	—	2.2E-01	—
1,2-Dichloroethene	—	—	—	—	—	2.3E-07
2,3,7,8-TCDD	—	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—	4.0E-06
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—
Benzoic Acid	—	—	—	—	—	2.5E-08
Bis(2-ethylhexyl)phthalate	—	—	—	—	—	1.7E-06
Chlordane (alpha)	—	—	—	—	—	—
Chrysene	—	—	—	—	—	—
Dichloromethane	—	—	8.0E-11	1.3E-10	—	2.8E-08
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	8.3E-08
Fluoranthene	—	—	—	—	—	5.0E-07
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—
Phenol	—	—	—	—	—	1.7E-08
Pyrene	—	—	—	—	—	6.3E-07
Tetrachloroethene	—	—	—	—	—	9.6E-08
Tetrachloromethane	1.4E+00	2.2E-02	—	—	8.5E+00	—
Toluene	—	—	3.3E-10	5.5E-10	—	4.7E-09
Trichloroethene	—	—	—	—	—	4.5E-07
Trichlorofluoromethane	4.0E-03	6.3E-05	—	—	2.4E-02	—
Trichloromethane	—	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—
Fluoride	—	—	—	—	—	6.7E-07
Nitrate	—	—	—	—	—	3.6E-08
Silver	—	—	—	—	—	7.6E-06
TOTAL HAZARD INDEX	1.4E+00	2.3E-02	4.0E-10	6.8E-10	8.7E+00	1.6E-05
RELATIVE HAZARD INDEX	11.2%	0.2%	0.0%	0.0%	70.5%	0.0%

Table I.32 - Carcinogenic Risks Central Tendency Exposure - Future Farmer Resident - Child

CHEMICAL	INGESTION OF DRINKING WATER	INGESTION OF HOMEGROWN MEAT	INGESTION OF HOMEGROWN DAIRY PRODUCTS	INGESTION OF HOMEGROWN PRODUCE	INGESTION OF WATER WHILE SWIMMING	INGESTION OF SOIL	DERMAL ABSORPTION SWIMMING	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—	—
1,2-Dichloroethane	5E-08	—	—	2E-09	2E-10	—	2E-10	2E-09	1E-08
1,2-Dichloroethene	—	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	1E-07	—	1E-06	—	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	1E-07	—	4E-07	—	—	—
Benzo(a)anthracene	—	—	—	8E-09	—	8E-08	—	—	—
Benzo(a)Pyrene	—	—	—	4E-07	—	8E-07	—	—	—
Benzo(b)Fluoranthene	—	—	—	8E-08	—	9E-08	—	—	—
Benzo(k)Fluoranthene	—	—	—	9E-09	—	6E-08	—	—	—
Benzoic Acid	—	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	1E-08	6E-12	2E-11	3E-08	6E-11	3E-09	2E-09	2E-08	—
Chlordane (alpha)	7E-08	6E-11	2E-10	4E-07	4E-10	—	2E-08	3E-07	2E-08
Chrysene	—	—	—	3E-09	—	8E-09	—	—	—
Dichloromethane	—	—	—	5E-10	—	3E-11	—	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	6E-09	—	5E-08	—	—	—
Phenol	—	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—	—
Tetrachloroethene	1E-05	—	—	2E-06	6E-08	1E-10	6E-07	7E-06	1E-07
Tetrachloromethane	5E-07	—	—	4E-08	3E-09	—	1E-08	1E-07	6E-08
Toluene	—	—	—	—	—	—	—	—	—
Trichloroethene	9E-07	—	—	5E-08	5E-09	7E-11	1E-08	1E-07	1E-07
Trichlorofluoromethane	—	—	—	—	—	—	—	—	—
Trichloromethane	2E-07	—	—	7E-09	1E-09	—	2E-09	1E-08	7E-07
Vinyl Chloride	4E-06	—	—	1E-07	2E-08	4E-09	2E-08	2E-07	2E-07
Fluoride	—	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—	—
Actinium-227+D	4E-07	4E-11	1E-10	—	2E-09	—	—	—	—
Plutonium-238	1E-07	2E-09	1E-11	7E-08	5E-10	1E-07	—	—	—
Plutonium-239/240	3E-07	2E-10	5E-12	2E-09	2E-09	4E-09	—	—	—
Strontium-90+D	2E-08	3E-08	3E-08	5E-07	9E-11	4E-09	—	—	—
Tritium	2E-07	2E-08	5E-08	5E-08	1E-09	2E-11	—	—	—
Uranium-235/238+D	1E-09	1E-12	1E-11	—	5E-12	—	—	—	—
Uranium-238+D	2E-08	3E-11	2E-10	—	1E-10	—	—	—	—
TOTAL PATHWAY RISK	2E-05	5E-08	8E-08	4E-06	9E-08	3E-06	7E-07	8E-06	1E-06
RELATIVE PATHWAY RISK	52.5%	0.1%	0.2%	11.2%	0.3%	7.7%	2.1%	21.7%	3.7%

Table I.32 - Carcinogenic Risks

CHEMICAL	INHALATION OF VAPORS OUTSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	DERMAL CONTACT SOIL	EXTERNAL RADIATION
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	6E-12	—	—	1E-09	—	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	2E-23	1E-24	—	8E-09	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	3E-09	—
Benzo(a)anthracene	—	2E-12	8E-14	—	6E-10	—
Benzo(a)Pyrene	—	2E-11	8E-13	—	6E-09	—
Benzo(b)Fluoranthene	—	2E-12	9E-14	—	7E-10	—
Benzo(k)Fluoranthene	—	1E-12	5E-14	—	4E-10	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	—	—	—	—	2E-11	—
Chlordane (alpha)	9E-12	—	—	2E-09	—	—
Chrysene	—	2E-13	7E-15	—	6E-11	—
Dichloromethane	—	2E-16	8E-18	—	5E-13	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	1E-12	5E-14	—	4E-10	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	6E-11	1E-16	5E-18	1E-08	2E-12	—
Tetrachloromethane	3E-11	—	—	6E-09	—	—
Toluene	—	—	—	—	—	—
Trichloroethene	6E-11	1E-15	4E-17	1E-08	1E-12	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	3E-10	—	—	7E-08	—	—
Vinyl Chloride	7E-11	2E-14	7E-16	2E-08	7E-11	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	—	—	—	—	—	—
Plutonium-238	—	2E-08	8E-10	—	—	3E-10
Plutonium-239/240	—	5E-10	2E-11	—	—	9E-12
Strontium-90+D	—	4E-12	2E-13	—	—	—
Tritium	—	2E-14	9E-16	—	—	—
Uranium-235/236+D	—	—	—	—	—	—
Uranium-238+D	—	—	—	—	—	—
TOTAL PATHWAY RISK	6E-10	2E-08	8E-10	1E-07	2E-08	3E-10
RELATIVE PATHWAY RISK	0.0%	0.1%	0.0%	0.4%	0.1%	0.0%

Table I.33 - Summary of Noncarcinogenic Hazard Indices - Reasonable Maximum Exposure - Future Farmer Resident

CHEMICAL	SOIL HAZARD INDEX	GROUNDWATER HAZARD INDEX	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	0.0E+00	1.4E-02	1.4E-02	0.0%
1,2-cis-Dichloroethene	0.0E+00	1.1E+00	1.1E+00	2.8%
1,2-trans-Dichloroethene	0.0E+00	4.7E-03	4.7E-03	0.0%
1,2-Dichloroethane	0.0E+00	8.2E-01	8.2E-01	2.1%
1,2-Dichloroethene	1.7E-03	0.0E+00	1.7E-03	0.0%
2,3,7,8-TCDD	0.0E+00	0.0E+00	0.0E+00	0.0%
4-MethylPhenol	5.2E-02	0.0E+00	5.2E-02	0.1%
Aroclor-1248 (PCB)	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(a)anthracene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(a)Pyrene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(b)Fluoranthene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(k)Fluoranthene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzoic Acid	9.1E-05	0.0E+00	9.1E-05	0.0%
Bis(2-ethylhexyl)phthalate	1.2E-03	3.2E-02	3.3E-02	0.1%
Chlordane (alpha)	0.0E+00	1.4E+00	1.4E+00	3.6%
Chrysene	0.0E+00	0.0E+00	0.0E+00	0.0%
Dichloromethane	2.2E-04	0.0E+00	2.2E-04	0.0%
Diethyl Phthalate	0.0E+00	1.3E-04	1.3E-04	0.0%
Endosulfan (sulfate)	6.6E-05	0.0E+00	6.6E-05	0.0%
Fluoranthene	7.4E-04	0.0E+00	7.4E-04	0.0%
Indeno(1,2,3-cd)Pyrene	0.0E+00	0.0E+00	0.0E+00	0.0%
Phenol	6.0E-04	0.0E+00	6.0E-04	0.0%
Pyrene	4.8E-04	3.4E-02	3.5E-02	0.1%
Tetrachloroethene	4.5E-04	3.0E+00	3.0E+00	7.6%
Tetrachloromethane	0.0E+00	3.1E+01	3.1E+01	79.9%
Toluene	2.4E-05	0.0E+00	2.4E-05	0.0%
Trichloroethene	1.5E-03	1.1E+00	1.1E+00	2.9%
Trichlorofluoromethane	0.0E+00	8.9E-02	8.9E-02	0.2%
Trichloromethane	0.0E+00	2.4E-01	2.4E-01	0.6%
Vinyl Chloride	0.0E+00	0.0E+00	0.0E+00	0.0%
Fluoride	1.1E-03	0.0E+00	1.1E-03	0.0%
Nitrate	5.8E-05	0.0E+00	5.8E-05	0.0%
Silver	1.2E-02	0.0E+00	1.2E-02	0.0%
HAZARD INDEX	7.2E-02	3.9E+01		
RELATIVE HAZARD INDEX	0.2%	99.8%		

Table I.34 - Summary of Carcinogenic Risks - Reasonable Maximum Exposure - Future Farmer Resident

CHEMICAL	SOIL CANCER RISK	GROUNDWATER CANCER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	0E+00	0E+00	0E+00	0.0%
1,2-cis-Dichloroethene	0E+00	0E+00	0E+00	0.0%
1,2-trans-Dichloroethene	0E+00	0E+00	0E+00	0.0%
1,2-Dichloroethane	0E+00	3E-06	3E-06	0.5%
1,2-Dichloroethene	0E+00	0E+00	0E+00	0.0%
2,3,7,8-TCDD	8E-06	0E+00	8E-06	1.2%
4-MethylPhenol	0E+00	0E+00	0E+00	0.0%
Aroclor-1248 (PCB)	5E-06	0E+00	5E-06	0.8%
Benzo(a)anthracene	6E-07	0E+00	6E-07	0.1%
Benzo(a)Pyrene	1E-05	0E+00	1E-05	2.1%
Benzo(b)Fluoranthene	2E-06	0E+00	2E-06	0.4%
Benzo(k)Fluoranthene	5E-07	0E+00	5E-07	0.1%
Benzoic Acid	0E+00	0E+00	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	4E-08	1E-06	1E-06	0.2%
Chlordane (alpha)	0E+00	2E-05	2E-05	3.0%
Chrysene	1E-07	0E+00	1E-07	0.0%
Dichloromethane	1E-08	0E+00	1E-08	0.0%
Diethyl Phthalate	0E+00	0E+00	0E+00	0.0%
Endosulfan (sulfate)	0E+00	0E+00	0E+00	0.0%
Fluoranthene	0E+00	0E+00	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	4E-07	0E+00	4E-07	0.1%
Phenol	0E+00	0E+00	0E+00	0.0%
Pyrene	0E+00	0E+00	0E+00	0.0%
Tetrachloroethene	3E-08	3E-04	3E-04	41.6%
Tetrachloromethane	0E+00	2E-05	2E-05	3.0%
Toluene	0E+00	0E+00	0E+00	0.0%
Trichloroethene	1E-08	4E-05	4E-05	6.0%
Trichlorofluoromethane	0E+00	0E+00	0E+00	0.0%
Trichloromethane	0E+00	1E-04	1E-04	21.4%
Vinyl Chloride	4E-07	8E-05	8E-05	11.5%
Fluoride	0E+00	0E+00	0E+00	0.0%
Nitrate	0E+00	0E+00	0E+00	0.0%
Silver	0E+00	0E+00	0E+00	0.0%
Actinium-227+D	0E+00	2E-05	2E-05	2.3%
Plutonium-238	3E-06	4E-06	7E-06	1.0%
Plutonium-239/240	1E-07	1E-05	1E-05	1.7%
Strontium-90+D	9E-06	6E-07	1E-05	1.5%
Tritium	1E-06	9E-06	1E-05	1.6%
Uranium-235/236+D	0E+00	4E-08	4E-08	0.0%
Uranium-238+D	0E+00	8E-07	8E-07	0.1%
TOTAL PATHWAY RISK	5E-05	6E-04		
RELATIVE PATHWAY RISK	6.9%	93.1%		

Table I.35 - Summary of Noncarcinogenic Hazard Indices - Central Tendency Exposure - Future Farmer Resident

CHEMICAL	SOIL HAZARD INDEX	GROUNDWATER HAZARD INDEX	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	0.0E+00	8.8E-03	8.8E-03	0.0%
1,2-cis-Dichloroethene	0.0E+00	5.3E-01	5.3E-01	2.3%
1,2-trans-Dichloroethene	0.0E+00	2.4E-03	2.4E-03	0.0%
1,2-Dichloroethane	0.0E+00	5.2E-01	5.2E-01	2.2%
1,2-Dichloroethene	2.3E-04	0.0E+00	2.3E-04	0.0%
2,3,7,8-TCDD	0.0E+00	0.0E+00	0.0E+00	0.0%
4-MethylPhenol	7.4E-03	0.0E+00	7.4E-03	0.0%
Aroclor-1248 (PCB)	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(a)anthracene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(a)Pyrene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(b)Fluoranthene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzo(k)Fluoranthene	0.0E+00	0.0E+00	0.0E+00	0.0%
Benzoic Acid	1.5E-05	0.0E+00	1.5E-05	0.0%
Bis(2-ethylhexyl)phthalate	3.6E-04	8.1E-03	8.5E-03	0.0%
Chlordane (alpha)	0.0E+00	3.2E-01	3.2E-01	1.4%
Chrysene	0.0E+00	0.0E+00	0.0E+00	0.0%
Dichloromethane	3.1E-05	0.0E+00	3.1E-05	0.0%
Diethyl Phthalate	0.0E+00	6.2E-05	6.2E-05	0.0%
Endosulfan (sulfate)	1.3E-05	0.0E+00	1.3E-05	0.0%
Fluoranthene	1.6E-04	0.0E+00	1.6E-04	0.0%
Indeno(1,2,3-cd)Pyrene	0.0E+00	0.0E+00	0.0E+00	0.0%
Phenol	8.1E-05	0.0E+00	8.1E-05	0.0%
Pyrene	1.4E-04	1.3E-02	1.4E-02	0.1%
Tetrachloroethene	6.3E-05	1.4E+00	1.4E+00	6.0%
Tetrachloromethane	0.0E+00	2.0E+01	2.0E+01	84.9%
Toluene	3.3E-06	0.0E+00	3.3E-06	0.0%
Trichloroethene	2.3E-04	5.6E-01	5.6E-01	2.4%
Trichlorofluoromethane	0.0E+00	5.7E-02	5.7E-02	0.2%
Trichloromethane	0.0E+00	1.2E-01	1.2E-01	0.5%
Vinyl Chloride	0.0E+00	0.0E+00	0.0E+00	0.0%
Fluoride	1.0E-03	0.0E+00	1.0E-03	0.0%
Nitrate	5.5E-05	0.0E+00	5.5E-05	0.0%
Silver	1.2E-02	0.0E+00	1.2E-02	0.0%
HAZARD INDEX	2.2E-02	2.4E+01		
RELATIVE HAZARD INDEX	0.1%	99.9%		

Table I.36 - Summary of Carcinogenic Risks - Central Tendency Exposure - Future Farmer Resident

CHEMICAL	SOIL CANCER RISK	GROUNDWATER CANCER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	0E+00	0E+00	0E+00	0.0%
1,2-cis-Dichloroethene	0E+00	0E+00	0E+00	0.0%
1,2-trans-Dichloroethene	0E+00	0E+00	0E+00	0.0%
1,2-Dichloroethane	0E+00	8E-07	8E-07	0.5%
1,2-Dichloroethene	0E+00	0E+00	0E+00	0.0%
2,3,7,8-TCDD	2E-06	0E+00	2E-06	1.1%
4-MethylPhenol	0E+00	0E+00	0E+00	0.0%
Aroclor-1248 (PCB)	7E-07	0E+00	7E-07	0.5%
Benzo(a)anthracene	1E-07	0E+00	1E-07	0.1%
Benzo(a)Pyrene	2E-06	0E+00	2E-06	1.1%
Benzo(b)Fluoranthene	2E-07	0E+00	2E-07	0.2%
Benzo(k)Fluoranthene	9E-08	0E+00	9E-08	0.1%
Benzoic Acid	0E+00	0E+00	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	5E-09	2E-07	2E-07	0.1%
Chlordane (alpha)	0E+00	3E-06	3E-06	1.9%
Chrysene	1E-08	0E+00	1E-08	0.0%
Dichloromethane	8E-10	0E+00	8E-10	0.0%
Diethyl Phthalate	0E+00	0E+00	0E+00	0.0%
Endosulfan (sulfate)	0E+00	0E+00	0E+00	0.0%
Fluoranthene	0E+00	0E+00	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	8E-08	0E+00	8E-08	0.1%
Phenol	0E+00	0E+00	0E+00	0.0%
Pyrene	0E+00	0E+00	0E+00	0.0%
Tetrachloroethene	2E-09	6E-05	6E-05	40.1%
Tetrachloromethane	0E+00	5E-06	5E-06	3.1%
Toluene	0E+00	0E+00	0E+00	0.0%
Trichloroethene	8E-10	9E-06	9E-06	6.3%
Trichlorofluoromethane	0E+00	0E+00	0E+00	0.0%
Trichloromethane	0E+00	4E-05	4E-05	24.9%
Vinyl Chloride	3E-08	2E-05	2E-05	12.0%
Fluoride	0E+00	0E+00	0E+00	0.0%
Nitrate	0E+00	0E+00	0E+00	0.0%
Silver	0E+00	0E+00	0E+00	0.0%
Actinium-227+D	0E+00	3E-06	3E-06	2.1%
Plutonium-238	8E-07	7E-07	2E-06	1.1%
Plutonium-239/240	3E-08	2E-06	2E-06	1.6%
Strontium-90+D	2E-06	1E-07	2E-06	1.7%
Tritium	3E-07	2E-06	2E-06	1.5%
Uranium-235/236+D	0E+00	7E-09	7E-09	0.0%
Uranium-238+D	0E+00	2E-07	2E-07	0.1%
TOTAL PATHWAY RISK	8E-06	1E-04		
RELATIVE PATHWAY RISK	5.4%	94.6%		

CARCINOGENIC/NONCARCINOGENIC RISK TABLES

FUTURE INDOOR INDUSTRIAL WORKER SCENARIO

Table I.37 - Noncarcinogenic Risk Hazard Quotients/Indices - Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF VAPORS SHOWERING
1,1,1-Trichloroethane	6.4E-05	2.3E-05	5.9E-04	—	5.9E-03
1,2-cis-Dichloroethene	1.0E-01	4.6E-03	—	—	—
1,2-trans-Dichloroethene	4.1E-04	1.0E-04	—	—	—
1,2-Dichloroethane	—	—	3.7E-02	—	3.7E-01
1,2-Dichloroethene	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—
Benzoic Acid	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	3.0E-04	1.3E-03	—	—	—
Chlordane (alpha)	6.5E-03	5.0E-02	—	—	—
Chrysene	—	—	—	—	—
Dichloromethane	—	—	—	8.0E-11	—
Diethyl Phthalate	1.1E-05	2.1E-06	—	—	—
Endosulfan (sulfate)	—	—	—	—	—
Fluoranthene	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—
Phenol	—	—	—	—	—
Pyrene	2.3E-04	3.7E-03	—	—	—
Tetrachloroethene	1.5E-01	2.0E-01	—	—	—
Tetrachloromethane	3.9E-02	2.1E-02	1.4E+00	—	1.4E+01
Toluene	—	—	—	3.3E-10	—
Trichloroethene	9.2E-02	3.2E-02	—	—	—
Trichlorofluoromethane	9.0E-05	3.3E-05	4.0E-03	—	4.0E-02
Trichloromethane	2.1E-02	3.6E-03	—	—	—
Vinyl Chloride	—	—	—	—	—
Fluoride	—	—	—	—	—
Nitrate	—	—	—	—	—
Silver	—	—	—	—	—
TOTAL HAZARD INDEX	4.1E-01	3.2E-01	1.4E+00	4.0E-10	1.4E+01
RELATIVE HAZARD INDEX	2.5%	1.9%	8.4%	0.0%	87.2%

Table I.38 - Carcinogenic Risks Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF VAPORS SHOWERING	EXTERNAL RADIATION EXPOSURE
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	1E-07	1E-08	1E-06	—	2E-07	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	2E-21	—	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	1E-10	—	—
Benzo(a)Pyrene	—	—	—	1E-09	—	—
Benzo(b)Fluoranthene	—	—	—	2E-10	—	—
Benzo(k)Fluoranthene	—	—	—	1E-10	—	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	3E-08	1E-07	—	—	—	—
Chlordane (alpha)	2E-07	1E-06	2E-06	—	3E-07	—
Chrysene	—	—	—	1E-11	—	—
Dichloromethane	—	—	—	1E-14	—	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	9E-11	—	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	3E-05	4E-05	1E-05	1E-14	2E-06	—
Tetrachloromethane	1E-06	7E-07	5E-06	—	9E-07	—
Toluene	—	—	—	—	—	—
Trichloroethene	2E-06	7E-07	1E-05	8E-14	2E-06	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	5E-07	8E-08	6E-05	—	1E-05	—
Vinyl Chloride	9E-06	9E-07	1E-05	1E-12	3E-06	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	5E-06	—	—	—	—	—
Plutonium-238	1E-06	2E-09	6E-07	3E-07	—	5E-10
Plutonium-239/240	4E-06	5E-11	2E-08	9E-09	—	1E-11
Strontium-90+D	2E-07	4E-11	2E-10	8E-11	—	—
Tritium	3E-06	2E-13	7E-13	4E-13	—	—
Uranium-235/236+D	1E-08	—	—	—	—	—
Uranium-238+D	2E-07	—	—	—	—	—
TOTAL PATHWAY RISK	5E-05	4E-05	1E-04	3E-07	2E-05	5E-10
RELATIVE PATHWAY RISK	24.7%	18.8%	47.8%	0.2%	8.6%	0.0%

Table I.39 - Noncarcinogenic Risk Hazard Quotients/Indices - Central Tendency Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF VAPORS SHOWERING
1,1,1-Trichloroethane	3.3E-05	1.6E-05	5.9E-04	—	3.6E-03
1,2-cis-Dichloroethene	5.3E-02	2.4E-03	—	—	—
1,2-trans-Dichloroethene	2.1E-04	6.5E-05	—	—	—
1,2-Dichloroethane	—	—	3.7E-02	—	2.2E-01
1,2-Dichloroethene	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	—	—
4-MethylPhenol	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—
Benzoic Acid	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	1.6E-04	8.5E-04	—	—	—
Chlordane (alpha)	3.3E-03	3.3E-02	—	—	—
Chrysene	—	—	—	—	—
Dichloromethane	—	—	—	8.0E-11	—
Diethyl Phthalate	5.8E-06	1.4E-06	—	—	—
Endosulfan (sulfate)	—	—	—	—	—
Fluoranthene	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—
Phenol	—	—	—	—	—
Pyrene	1.2E-04	2.4E-03	—	—	—
Tetrachloroethene	8.1E-02	1.3E-01	—	—	—
Tetrachloromethane	2.0E-02	1.4E-02	1.4E+00	—	8.5E+00
Toluene	—	—	—	3.3E-10	—
Trichloroethene	4.8E-02	2.0E-02	—	—	—
Trichlorofluoromethane	4.7E-05	2.3E-05	4.0E-03	—	2.4E-02
Trichloromethane	1.1E-02	2.4E-03	—	—	—
Vinyl Chloride	—	—	—	—	—
Fluoride	—	—	—	—	—
Nitrate	—	—	—	—	—
Silver	—	—	—	—	—
TOTAL HAZARD INDEX	2.2E-01	2.1E-01	1.4E+00	4.0E-10	8.7E+00
RELATIVE HAZARD INDEX	2.1%	1.9%	13.2%	0.0%	82.8%

Table I.40 - Carcinogenic Risks Central Tendency Exposure - Future Indoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INHALATION OF VAPORS INSIDE RESIDENCE	INHALATION OF PARTICULATES INDOOR	INHALATION OF VAPORS SHOWERING	EXTERNAL RADIATION EXPOSURE
1,1,1-Trichloroethane	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—
1,2-Dichloroethane	2E-08	3E-09	3E-07	—	4E-08	—
1,2-Dichloroethene	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	—	4E-22	—	—
4-MethylPhenol	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	3E-11	—	—
Benzo(a)Pyrene	—	—	—	3E-10	—	—
Benzo(b)Fluoranthene	—	—	—	4E-11	—	—
Benzo(k)Fluoranthene	—	—	—	2E-11	—	—
Benzoic Acid	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	6E-09	3E-08	—	—	—	—
Chlordane (alpha)	3E-08	3E-07	4E-07	—	6E-08	—
Chrysene	—	—	—	3E-12	—	—
Dichloromethane	—	—	—	3E-15	—	—
Diethyl Phthalate	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	2E-11	—	—
Phenol	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—
Tetrachloroethene	5E-06	9E-06	3E-06	2E-15	4E-07	—
Tetrachloromethane	2E-07	2E-07	1E-06	—	2E-07	—
Toluene	—	—	—	—	—	—
Trichloroethene	4E-07	2E-07	3E-06	2E-14	4E-07	—
Trichlorofluoromethane	—	—	—	—	—	—
Trichloromethane	9E-08	2E-08	1E-05	—	2E-06	—
Vinyl Chloride	2E-06	2E-07	3E-06	3E-13	5E-07	—
Fluoride	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—
Silver	—	—	—	—	—	—
Actinium-227+D	9E-07	—	—	—	—	—
Plutonium-238	2E-07	4E-10	2E-07	8E-08	—	2E-10
Plutonium-239/240	7E-07	1E-11	6E-09	2E-09	—	5E-12
Strontium-90+D	4E-08	1E-11	5E-11	2E-11	—	—
Tritium	5E-07	6E-14	3E-13	9E-14	—	—
Uranium-235/236+D	2E-09	—	—	—	—	—
Uranium-238+D	5E-08	—	—	—	—	—
TOTAL PATHWAY RISK	1E-05	1E-05	3E-05	8E-08	4E-06	2E-10
RELATIVE PATHWAY RISK	21.3%	19.7%	51.6%	0.2%	7.2%	0.0%

Table I.41 - Summary of Noncarcinogenic Hazard Indices - Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	SOIL HI	GROUNDWATER HI	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	—	6.6E-03	6.6E-03	0.0%
1,2-cis-Dichloroethene	—	1.0E-01	1.0E-01	0.6%
1,2-trans-Dichloroethene	—	5.1E-04	5.1E-04	0.0%
1,2-Dichloroethane	—	4.1E-01	4.1E-01	2.5%
1,2-Dichloroethene	—	—	0.0E+00	0.0%
2,3,7,8-TCDD	—	—	0.0E+00	0.0%
4-MethylPhenol	—	—	0.0E+00	0.0%
Aroclor-1248 (PCB)	—	—	0.0E+00	0.0%
Benzo(a)anthracene	—	—	0.0E+00	0.0%
Benzo(a)Pyrene	—	—	0.0E+00	0.0%
Benzo(b)Fluoranthene	—	—	0.0E+00	0.0%
Benzo(k)Fluoranthene	—	—	0.0E+00	0.0%
Benzoic Acid	—	—	0.0E+00	0.0%
Bis(2-ethylhexyl)phthalate	—	1.5E-03	1.5E-03	0.0%
Chlordane (alpha)	—	5.7E-02	5.7E-02	0.3%
Chrysene	—	—	0.0E+00	0.0%
Dichloromethane	8.0E-11	—	8.0E-11	0.0%
Diethyl Phthalate	—	1.3E-05	1.3E-05	0.0%
Endosulfan (sulfate)	—	—	0.0E+00	0.0%
Fluoranthene	—	—	0.0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	—	—	0.0E+00	0.0%
Phenol	—	—	0.0E+00	0.0%
Pyrene	—	3.9E-03	3.9E-03	0.0%
Tetrachloroethene	—	3.5E-01	3.5E-01	2.1%
Tetrachloromethane	—	1.5E+01	1.5E+01	93.2%
Toluene	3.3E-10	—	3.3E-10	0.0%
Trichloroethene	—	1.2E-01	1.2E-01	0.7%
Trichlorofluoromethane	—	4.4E-02	4.4E-02	0.3%
Trichloromethane	—	2.5E-02	2.5E-02	0.1%
Vinyl Chloride	—	—	0.0E+00	0.0%
Fluoride	—	—	0.0E+00	0.0%
Nitrate	—	—	0.0E+00	0.0%
Silver	—	—	0.0E+00	0.0%
MEDIUM HAZARD INDEX	4.0E-10	1.7E+01		
RELATIVE HAZARD INDEX	0.0%	100.0%		

OVERALL HAZARD INDEX = 1.7E+01

Table I.42 - Summary of Carcinogenic Risks - Reasonable Maximum Exposure - Future Indoor Worker

CHEMICAL	SOIL RISK	GROUNDWATER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	—	—	0E+00	0.0%
1,2-cis-Dichloroethene	—	—	0E+00	0.0%
1,2-trans-Dichloroethene	—	—	0E+00	0.0%
1,2-Dichloroethane	—	2E-06	2E-06	0.7%
1,2-Dichloroethene	—	—	0E+00	0.0%
2,3,7,8-TCDD	2E-21	—	2E-21	0.0%
4-MethylPhenol	—	—	0E+00	0.0%
Aroclor-1248 (PCB)	—	—	0E+00	0.0%
Benzo(a)anthracene	1E-10	—	1E-10	0.0%
Benzo(a)Pyrene	1E-09	—	1E-09	0.0%
Benzo(b)Fluoranthene	2E-10	—	2E-10	0.0%
Benzo(k)Fluoranthene	1E-10	—	1E-10	0.0%
Benzoic Acid	—	—	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	—	2E-07	2E-07	0.1%
Chlordane (alpha)	—	4E-06	4E-06	1.7%
Chrysene	1E-11	—	1E-11	0.0%
Dichloromethane	1E-14	—	1E-14	0.0%
Diethyl Phthalate	—	—	0E+00	0.0%
Endosulfan (sulfate)	—	—	0E+00	0.0%
Fluoranthene	—	—	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	9E-11	—	9E-11	0.0%
Phenol	—	—	0E+00	0.0%
Pyrene	—	—	0E+00	0.0%
Tetrachloroethene	1E-14	8E-05	8E-05	35.7%
Tetrachloromethane	—	8E-06	8E-06	3.6%
Toluene	—	—	0E+00	0.0%
Trichloroethene	8E-14	2E-05	2E-05	7.6%
Trichlorofluoromethane	—	—	0E+00	0.0%
Trichloromethane	—	7E-05	7E-05	32.5%
Vinyl Chloride	1E-12	3E-05	3E-05	11.7%
Fluoride	—	—	0E+00	0.0%
Nitrate	—	—	0E+00	0.0%
Silver	—	—	0E+00	0.0%
Actinium-227+D	—	5E-06	5E-06	2.3%
Plutonium-238	3E-07	2E-06	2E-06	1.0%
Plutonium-239/240	9E-09	4E-06	4E-06	1.7%
Strontium-90+D	8E-11	2E-07	2E-07	0.1%
Tritium	4E-13	3E-06	3E-06	1.3%
Uranium-235/236+D	—	1E-08	1E-08	0.0%
Uranium-238+D	—	2E-07	2E-07	0.1%
TOTAL MEDIUM RISK	3E-07	2E-04		
RELATIVE PATHWAY RISK	0.2%	99.8%		

OVERALL CARCINOGENIC RISK 2E-04

Table I.43 - Summary of Noncarcinogenic Hazard Indices - Central Tendency Exposure - Future Indoor Worker

CHEMICAL	SOIL HI	GROUNDWATER HI	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	—	4.2E-03	4.2E-03	0.0%
1,2-cis-Dichloroethene	—	5.5E-02	5.5E-02	0.5%
1,2-trans-Dichloroethene	—	2.8E-04	2.8E-04	0.0%
1,2-Dichloroethane	—	2.6E-01	2.6E-01	2.4%
1,2-Dichloroethene	—	—	0.0E+00	0.0%
2,3,7,8-TCDD	—	—	0.0E+00	0.0%
4-MethylPhenol	—	—	0.0E+00	0.0%
Aroclor-1248 (PCB)	—	—	0.0E+00	0.0%
Benzo(a)anthracene	—	—	0.0E+00	0.0%
Benzo(a)Pyrene	—	—	0.0E+00	0.0%
Benzo(b)Fluoranthene	—	—	0.0E+00	0.0%
Benzo(k)Fluoranthene	—	—	0.0E+00	0.0%
Benzoic Acid	—	—	0.0E+00	0.0%
Bis(2-ethylhexyl)phthalate	—	1.0E-03	1.0E-03	0.0%
Chlordane (alpha)	—	3.7E-02	3.7E-02	0.3%
Chrysene	—	—	0.0E+00	0.0%
Dichloromethane	8.0E-11	—	8.0E-11	0.0%
Diethyl Phthalate	—	7.1E-06	7.1E-06	0.0%
Endosulfan (sulfate)	—	—	0.0E+00	0.0%
Fluoranthene	—	—	0.0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	—	—	0.0E+00	0.0%
Phenol	—	—	0.0E+00	0.0%
Pyrene	—	2.6E-03	2.6E-03	0.0%
Tetrachloroethene	—	2.1E-01	2.1E-01	2.0%
Tetrachloromethane	—	9.9E+00	9.9E+00	93.6%
Toluene	3.3E-10	—	3.3E-10	0.0%
Trichloroethene	—	6.8E-02	6.8E-02	0.6%
Trichlorofluoromethane	—	2.8E-02	2.8E-02	0.3%
Trichloromethane	—	1.3E-02	1.3E-02	0.1%
Vinyl Chloride	—	—	0.0E+00	0.0%
Fluoride	—	—	0.0E+00	0.0%
Nitrate	—	—	0.0E+00	0.0%
Silver	—	—	0.0E+00	0.0%
MEDIUM HAZARD INDEX	4.0E-10	1.1E+01		
RELATIVE HAZARD INDEX	0.0%	100.0%		

OVERALL HAZARD INDEX = 1.1E+01

Table I.44 - Summary of Carcinogenic Risks - Central Tendency Exposure - Future Indoor Worker

CHEMICAL	SOIL RISK	GROUNDWATER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	—	—	0E+00	0.0%
1,2-cis-Dichloroethene	—	—	0E+00	0.0%
1,2-trans-Dichloroethene	—	—	0E+00	0.0%
1,2-Dichloroethane	—	3E-07	3E-07	0.7%
1,2-Dichloroethene	—	—	0E+00	0.0%
2,3,7,8-TCDD	4E-22	—	4E-22	0.0%
4-MethylPhenol	—	—	0E+00	0.0%
Aroclor-1248 (PCB)	—	—	0E+00	0.0%
Benzo(a)anthracene	3E-11	—	3E-11	0.0%
Benzo(a)Pyrene	3E-10	—	3E-10	0.0%
Benzo(b)Fluoranthene	4E-11	—	4E-11	0.0%
Benzo(k)Fluoranthene	2E-11	—	2E-11	0.0%
Benzoic Acid	—	—	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	—	4E-08	4E-08	0.1%
Chlordane (alpha)	—	9E-07	9E-07	1.8%
Chrysene	3E-12	—	3E-12	0.0%
Dichloromethane	3E-15	—	3E-15	0.0%
Diethyl Phthalate	—	—	0E+00	0.0%
Endosulfan (sulfate)	—	—	0E+00	0.0%
Fluoranthene	—	—	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	2E-11	—	2E-11	0.0%
Phenol	—	—	0E+00	0.0%
Pyrene	—	—	0E+00	0.0%
Tetrachloroethene	2E-15	2E-05	2E-05	35.1%
Tetrachloromethane	—	2E-06	2E-06	3.6%
Toluene	—	—	0E+00	0.0%
Trichloroethene	2E-14	4E-06	4E-06	7.6%
Trichlorofluoromethane	—	—	0E+00	0.0%
Trichloromethane	—	2E-05	2E-05	33.6%
Vinyl Chloride	3E-13	6E-06	6E-06	11.8%
Fluoride	—	—	0E+00	0.0%
Nitrate	—	—	0E+00	0.0%
Silver	—	—	0E+00	0.0%
Actinium-227+D	—	9E-07	9E-07	1.9%
Plutonium-238	8E-08	5E-07	5E-07	1.1%
Plutonium-239/240	2E-09	7E-07	7E-07	1.4%
Strontium-90+D	2E-11	4E-08	4E-08	0.1%
Tritium	9E-14	5E-07	5E-07	1.1%
Uranium-235/236+D	—	2E-09	2E-09	0.0%
Uranium-238+D	—	5E-08	5E-08	0.1%
TOTAL MEDIUM RISK	8E-08	5E-05		
RELATIVE PATHWAY RISK	0.2%	99.8%		

OVERALL CARCINOGENIC RISK 5E-05

CARCINOGENIC/NONCARCINOGENIC RISK TABLES

FUTURE OUTDOOR INDUSTRIAL WORKER SCENARIO

Table I.45 - Noncarcinogenic Risk Hazard Quotients/Indices - Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INGESTION OF SOIL	DERMAL CONTACT SOIL	INHALATION OF VAPORS OUTDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING
1,1,1-Trichloroethane	6.4E-05	2.3E-05	—	—	9.3E-06	—	5.9E-03
1,2-cis-Dichloroethene	1.0E-01	4.6E-03	—	—	—	—	—
1,2-trans-Dichloroethene	4.1E-04	1.0E-04	—	—	—	—	—
1,2-Dichloroethane	—	—	—	—	5.8E-04	—	3.7E-01
1,2-Dichloroethene	—	—	4.9E-07	7.0E-06	—	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—
4-MethylPhenol	—	—	2.0E-05	1.2E-04	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—
Benzoic Acid	—	—	1.4E-07	7.8E-07	—	—	—
Bis(2-ethylhexyl)phthalate	3.0E-04	1.3E-03	8.5E-06	5.0E-05	—	—	—
Chlordane (alpha)	6.5E-03	5.0E-02	—	—	—	—	—
Chrysene	—	—	—	—	—	—	—
Dichloromethane	—	—	6.0E-08	8.7E-07	—	1.3E-10	—
Diethyl Phthalate	1.1E-05	2.1E-06	—	—	—	—	—
Endosulfan (sulfate)	—	—	1.8E-07	2.5E-06	—	—	—
Fluoranthene	—	—	2.5E-06	1.5E-05	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—
Phenol	—	—	9.0E-08	5.2E-07	—	—	—
Pyrene	2.3E-04	3.7E-03	3.3E-06	1.9E-05	—	—	—
Tetrachloroethene	1.5E-01	2.0E-01	2.0E-07	2.9E-06	—	—	—
Tetrachloromethane	3.9E-02	2.1E-02	—	—	2.2E-02	—	1.4E+01
Toluene	—	—	1.0E-08	1.5E-07	—	5.5E-10	—
Trichloroethene	9.2E-02	3.2E-02	9.5E-07	1.4E-05	—	—	—
Trichlorofluoromethane	9.0E-05	3.3E-05	—	—	6.3E-05	—	4.0E-02
Trichloromethane	2.1E-02	3.6E-03	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—	—
Fluoride	—	—	3.5E-05	2.0E-05	—	—	—
Nitrate	—	—	1.9E-06	1.1E-06	—	—	—
Silver	—	—	4.2E-04	2.4E-04	—	—	—
TOTAL HAZARD INDEX	4.1E-01	3.2E-01	4.9E-04	4.9E-04	2.3E-02	6.8E-10	1.4E+01
RELATIVE HAZARD INDEX	2.7%	2.1%	0.0%	0.0%	0.1%	0.0%	95.1%

Table I.46 - Carcinogenic Risks Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INGESTION OF SOIL	DERMAL CONTACT SOIL	INHALATION OF VAPORS OUTDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	EXTERNAL RADIATION EXPOSURE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—
1,2-Dichloroethane	1E-07	1E-08	—	—	2E-08	—	2E-07	—
1,2-Dichloroethene	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	3E-07	2E-06	—	3E-21	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	1E-07	7E-07	—	—	—	—
Benzo(a)anthracene	—	—	3E-08	2E-07	—	2E-10	—	—
Benzo(a)Pyrene	—	—	3E-07	2E-06	—	2E-09	—	—
Benzo(b)Fluoranthene	—	—	3E-08	2E-07	—	3E-10	—	—
Benzo(k)Fluoranthene	—	—	2E-08	1E-07	—	2E-10	—	—
Benzoic Acid	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	3E-08	1E-07	8E-10	5E-09	—	—	—	—
Chlordane (alpha)	2E-07	1E-06	—	—	3E-08	—	3E-07	—
Chrysene	—	—	3E-09	1E-08	—	2E-11	—	—
Dichloromethane	—	—	1E-11	1E-10	—	2E-14	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	2E-08	1E-07	—	2E-10	—	—
Phenol	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—
Tetrachloroethene	3E-05	4E-05	4E-11	5E-10	2E-07	2E-14	2E-06	—
Tetrachloromethane	1E-06	7E-07	—	—	8E-08	—	9E-07	—
Toluene	—	—	—	—	—	—	—	—
Trichloroethene	2E-06	7E-07	2E-11	3E-10	2E-07	1E-13	2E-06	—
Trichlorofluoromethane	—	—	—	—	—	—	—	—
Trichloromethane	5E-07	8E-08	—	—	9E-07	—	1E-05	—
Vinyl Chloride	9E-06	9E-07	1E-09	2E-08	2E-07	2E-12	3E-06	—
Fluoride	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—
Actinium-227+D	5E-06	—	—	—	—	—	—	—
Plutonium-238	1E-06	3E-09	3E-07	—	—	5E-07	—	5E-10
Plutonium-239/240	4E-06	9E-11	8E-09	—	—	2E-08	—	1E-11
Strontium-90+D	2E-07	7E-11	7E-09	—	—	1E-10	—	—
Tritium	3E-06	4E-13	4E-11	—	—	6E-13	—	—
Uranium-235/236+D	1E-08	—	—	—	—	—	—	—
Uranium-238+D	2E-07	—	—	—	—	—	—	—
TOTAL PATHWAY RISK	5E-05	4E-05	1E-06	5E-06	2E-06	5E-07	2E-05	5E-10
RELATIVE PATHWAY RISK	44.3%	33.7%	0.9%	3.9%	1.4%	0.5%	15.5%	0.0%

Table I.47 - Noncarcinogenic Risk Hazard Quotients/Indices - Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INGESTION OF SOIL	DERMAL CONTACT SOIL	INHALATION OF VAPORS OUTDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING
1,1,1-Trichloroethane	3.3E-05	1.6E-05	—	—	9.3E-06	—	3.6E-03
1,2-cis-Dichloroethene	5.3E-02	2.4E-03	—	—	—	—	—
1,2-trans-Dichloroethene	2.1E-04	6.5E-05	—	—	—	—	—
1,2-Dichloroethane	—	—	—	—	5.8E-04	—	2.2E-01
1,2-Dichloroethene	—	—	4.9E-07	1.4E-06	—	—	—
2,3,7,8-TCDD	—	—	—	—	—	—	—
4-MethylPhenol	—	—	2.0E-05	2.4E-05	—	—	—
Aroclor-1248 (PCB)	—	—	—	—	—	—	—
Benzo(a)anthracene	—	—	—	—	—	—	—
Benzo(a)Pyrene	—	—	—	—	—	—	—
Benzo(b)Fluoranthene	—	—	—	—	—	—	—
Benzo(k)Fluoranthene	—	—	—	—	—	—	—
Benzoic Acid	—	—	1.4E-07	1.6E-07	—	—	—
Bis(2-ethylhexyl)phthalate	1.6E-04	8.5E-04	8.5E-06	1.0E-05	—	—	—
Chlordane (alpha)	3.3E-03	3.3E-02	—	—	—	—	—
Chrysene	—	—	—	—	—	—	—
Dichloromethane	—	—	6.0E-08	1.7E-07	—	1.3E-10	—
Diethyl Phthalate	5.8E-06	1.4E-06	—	—	—	—	—
Endosulfan (sulfate)	—	—	1.8E-07	5.2E-07	—	—	—
Fluoranthene	—	—	2.5E-06	3.0E-06	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	—	—	—	—	—
Phenol	—	—	9.0E-08	1.0E-07	—	—	—
Pyrene	1.2E-04	2.4E-03	3.3E-06	3.7E-06	—	—	—
Tetrachloroethene	8.1E-02	1.3E-01	2.0E-07	5.9E-07	—	—	—
Tetrachloromethane	2.0E-02	1.4E-02	—	—	2.2E-02	—	8.5E+00
Toluene	—	—	1.0E-08	2.9E-08	—	5.5E-10	—
Trichloroethene	4.8E-02	2.0E-02	9.5E-07	2.7E-06	—	—	—
Trichlorofluoromethane	4.7E-05	2.3E-05	—	—	6.3E-05	—	2.4E-02
Trichloromethane	1.1E-02	2.4E-03	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—	—
Fluoride	—	—	3.5E-05	4.2E-06	—	—	—
Nitrate	—	—	1.9E-06	2.3E-07	—	—	—
Silver	—	—	4.2E-04	4.8E-05	—	—	—
TOTAL HAZARD INDEX	2.2E-01	2.1E-01	4.9E-04	9.9E-05	2.3E-02	6.8E-10	8.7E+00
RELATIVE HAZARD INDEX	2.4%	2.2%	0.0%	0.0%	0.2%	0.0%	95.1%

Table I.48 ; Carcinogenic Risks Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	INGESTION OF DRINKING WATER	DERMAL ABSORPTION SHOWERING	INGESTION OF SOIL	DERMAL CONTACT SOIL	INHALATION OF VAPORS OUTDOOR	INHALATION OF PARTICULATES OUTDOOR	INHALATION OF VAPORS SHOWERING	EXTERNAL RADIATION EXPOSURE
1,1,1-Trichloroethane	—	—	—	—	—	—	—	—
1,2-cis-Dichloroethene	—	—	—	—	—	—	—	—
1,2-trans-Dichloroethene	—	—	—	—	—	—	—	—
1,2-Dichloroethane	2E-08	3E-09	—	—	4E-09	—	4E-08	—
1,2-Dichloroethene	—	—	—	—	—	—	—	—
2,3,7,8-TCDD	—	—	1E-07	1E-07	—	7E-22	—	—
4-MethylPhenol	—	—	—	—	—	—	—	—
Aroclor-1248 (PCB)	—	—	4E-08	5E-08	—	—	—	—
Benzo(a)anthracene	—	—	9E-09	1E-08	—	6E-11	—	—
Benzo(a)Pyrene	—	—	9E-08	1E-07	—	6E-10	—	—
Benzo(b)Fluoranthene	—	—	1E-08	1E-08	—	6E-11	—	—
Benzo(k)Fluoranthene	—	—	6E-09	7E-09	—	4E-11	—	—
Benzoic Acid	—	—	—	—	—	—	—	—
Bis(2-ethylhexyl)phthalate	6E-09	3E-08	3E-10	4E-10	—	—	—	—
Chlordane (alpha)	3E-08	3E-07	—	—	7E-09	—	6E-08	—
Chrysene	—	—	9E-10	1E-09	—	5E-12	—	—
Dichloromethane	—	—	3E-12	1E-11	—	6E-15	—	—
Diethyl Phthalate	—	—	—	—	—	—	—	—
Endosulfan (sulfate)	—	—	—	—	—	—	—	—
Fluoranthene	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)Pyrene	—	—	6E-09	7E-09	—	4E-11	—	—
Phenol	—	—	—	—	—	—	—	—
Pyrene	—	—	—	—	—	—	—	—
Tetrachloroethene	5E-06	9E-06	1E-11	4E-11	4E-08	4E-15	4E-07	—
Tetrachloromethane	2E-07	2E-07	—	—	2E-08	—	2E-07	—
Toluene	—	—	—	—	—	—	—	—
Trichloroethene	4E-07	2E-07	8E-12	2E-11	4E-08	3E-14	4E-07	—
Trichlorofluoromethane	—	—	—	—	—	—	—	—
Trichloromethane	9E-08	2E-08	—	—	2E-07	—	2E-06	—
Vinyl Chloride	2E-06	2E-07	5E-10	1E-09	5E-08	5E-13	5E-07	—
Fluoride	—	—	—	—	—	—	—	—
Nitrate	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—
Actinium-227+D	9E-07	—	—	—	—	—	—	—
Plutonium-238	2E-07	7E-10	1E-07	—	—	1E-07	—	2E-10
Plutonium-239/240	7E-07	2E-10	3E-09	—	—	4E-08	—	5E-12
Strontium-90+D	4E-08	2E-11	2E-09	—	—	3E-11	—	—
Tritium	5E-07	1E-13	1E-11	—	—	1E-13	—	—
Uranium-235/238+D	2E-09	—	—	—	—	—	—	—
Uranium-238+D	5E-08	—	—	—	—	—	—	—
TOTAL PATHWAY RISK	1E-05	1E-05	4E-07	3E-07	4E-07	2E-07	4E-06	2E-10
RELATIVE PATHWAY RISK	41.8%	38.7%	1.6%	1.4%	1.6%	0.7%	14.2%	0.0%

Table I.49 - Summary of Noncarcinogenic Hazard Indices - Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	SOIL HI	GROUNDWATER HI	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	—	6.0E-03	6.0E-03	0.0%
1,2-cis-Dichloroethene	—	1.0E-01	1.0E-01	0.7%
1,2-trans-Dichloroethene	—	5.1E-04	5.1E-04	0.0%
1,2-Dichloroethane	—	3.7E-01	3.7E-01	2.4%
1,2-Dichloroethene	7.5E-06	—	7.5E-06	0.0%
2,3,7,8-TCDD	—	—	0.0E+00	0.0%
4-MethylPhenol	1.4E-04	—	1.4E-04	0.0%
Aroclor-1248 (PCB)	—	—	0.0E+00	0.0%
Benzo(a)anthracene	—	—	0.0E+00	0.0%
Benzo(a)Pyrene	—	—	0.0E+00	0.0%
Benzo(b)Fluoranthene	—	—	0.0E+00	0.0%
Benzo(k)Fluoranthene	—	—	0.0E+00	0.0%
Benzoic Acid	9.1E-07	—	9.1E-07	0.0%
Bis(2-ethylhexyl)phthalate	5.9E-05	1.5E-03	1.6E-03	0.0%
Chlordane (alpha)	—	5.7E-02	5.7E-02	0.4%
Chrysene	—	—	0.0E+00	0.0%
Dichloromethane	9.3E-07	—	9.3E-07	0.0%
Diethyl Phthalate	—	1.3E-05	1.3E-05	0.0%
Endosulfan (sulfate)	2.7E-06	—	2.7E-06	0.0%
Fluoranthene	1.8E-05	—	1.8E-05	0.0%
Indeno(1,2,3-cd)Pyrene	—	—	0.0E+00	0.0%
Phenol	6.1E-07	—	6.1E-07	0.0%
Pyrene	2.2E-05	3.9E-03	3.9E-03	0.0%
Tetrachloroethene	3.1E-06	3.5E-01	3.5E-01	2.3%
Tetrachloromethane	—	1.4E+01	1.4E+01	92.9%
Toluene	1.6E-07	—	1.6E-07	0.0%
Trichloroethene	1.5E-05	1.2E-01	1.2E-01	0.8%
Trichlorofluoromethane	—	4.0E-02	4.0E-02	0.3%
Trichloromethane	—	2.5E-02	2.5E-02	0.2%
Vinyl Chloride	—	—	0.0E+00	0.0%
Fluoride	5.5E-05	—	5.5E-05	0.0%
Nitrate	3.1E-06	—	3.1E-06	0.0%
Silver	6.6E-04	—	6.6E-04	0.0%
MEDIUM HAZARD INDEX	9.9E-04	1.5E+01		
RELATIVE HAZARD INDEX	0.0%	100.0%		

OVERALL HAZARD INDEX = 1.5E+01

Table I.50 - Summary of Carcinogenic Risks - Reasonable Maximum Exposure - Future Outdoor Worker

CHEMICAL	SOIL RISK	GROUNDWATER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	—	—	0E+00	0.0%
1,2-cis-Dichloroethene	—	—	0E+00	0.0%
1,2-trans-Dichloroethene	—	—	0E+00	0.0%
1,2-Dichloroethane	—	4E-07	4E-07	0.3%
1,2-Dichloroethene	—	—	0E+00	0.0%
2,3,7,8-TCDD	2E-06	—	2E-06	1.9%
4-MethylPhenol	—	—	0E+00	0.0%
Aroclor-1248 (PCB)	8E-07	—	8E-07	0.6%
Benzo(a)anthracene	2E-07	—	2E-07	0.1%
Benzo(a)Pyrene	2E-06	—	2E-06	1.5%
Benzo(b)Fluoranthene	2E-07	—	2E-07	0.2%
Benzo(k)Fluoranthene	1E-07	—	1E-07	0.1%
Benzoic Acid	—	—	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	6E-09	2E-07	2E-07	0.1%
Chlordane (alpha)	—	2E-06	2E-06	1.6%
Chrysene	2E-08	—	2E-08	0.0%
Dichloromethane	1E-10	—	1E-10	0.0%
Diethyl Phthalate	—	—	0E+00	0.0%
Endosulfan (sulfate)	—	—	0E+00	0.0%
Fluoranthene	—	—	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	1E-07	—	1E-07	0.1%
Phenol	—	—	0E+00	0.0%
Pyrene	—	—	0E+00	0.0%
Tetrachloroethene	6E-10	7E-05	7E-05	55.0%
Tetrachloromethane	—	3E-06	3E-06	2.4%
Toluene	—	—	0E+00	0.0%
Trichloroethene	3E-10	5E-06	5E-06	4.2%
Trichlorofluoromethane	—	—	0E+00	0.0%
Trichloromethane	—	1E-05	1E-05	10.1%
Vinyl Chloride	2E-08	1E-05	1E-05	10.2%
Fluoride	—	—	0E+00	0.0%
Nitrate	—	—	0E+00	0.0%
Silver	—	—	0E+00	0.0%
Actinium-227+D	—	5E-06	5E-06	4.1%
Plutonium-238	8E-07	1E-06	2E-06	1.9%
Plutonium-239/240	2E-08	4E-06	4E-06	3.0%
Strontium-90+D	7E-09	2E-07	2E-07	0.2%
Tritium	4E-11	3E-06	3E-06	2.3%
Uranium-235/236+D	—	1E-08	1E-08	0.0%
Uranium-238+D	—	2E-07	2E-07	0.2%
TOTAL MEDIUM RISK	6E-06	1E-04		
RELATIVE PATHWAY RISK	5.2%	94.8%		

OVERALL CARCINOGENIC RISK 1E-04

Table I.51 - Summary of Noncarcinogenic Hazard Indices - Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	SOIL HI	GROUNDWATER HI	TOTAL HAZARD INDEX	RELATIVE HAZARD INDEX
1,1,1-Trichloroethane	—	3.7E-03	3.7E-03	0.0%
1,2-cis-Dichloroethene	—	5.5E-02	5.5E-02	0.6%
1,2-trans-Dichloroethene	—	2.8E-04	2.8E-04	0.0%
1,2-Dichloroethane	—	2.2E-01	2.2E-01	2.4%
1,2-Dichloroethene	1.9E-06	—	1.9E-06	0.0%
2,3,7,8-TCDD	—	—	0.0E+00	0.0%
4-MethylPhenol	4.4E-05	—	4.4E-05	0.0%
Aroclor-1248 (PCB)	—	—	0.0E+00	0.0%
Benzo(a)anthracene	—	—	0.0E+00	0.0%
Benzo(a)Pyrene	—	—	0.0E+00	0.0%
Benzo(b)Fluoranthene	—	—	0.0E+00	0.0%
Benzo(k)Fluoranthene	—	—	0.0E+00	0.0%
Benzoic Acid	2.9E-07	—	2.9E-07	0.0%
Bis(2-ethylhexyl)phthalate	1.9E-05	1.0E-03	1.0E-03	0.0%
Chlordane (alpha)	—	3.7E-02	3.7E-02	0.4%
Chrysene	—	—	0.0E+00	0.0%
Dichloromethane	2.3E-07	—	2.3E-07	0.0%
Diethyl Phthalate	—	7.1E-06	7.1E-06	0.0%
Endosulfan (sulfate)	7.0E-07	—	7.0E-07	0.0%
Fluoranthene	5.5E-06	—	5.5E-06	0.0%
Indeno(1,2,3-cd)Pyrene	—	—	0.0E+00	0.0%
Phenol	1.9E-07	—	1.9E-07	0.0%
Pyrene	7.0E-06	2.6E-03	2.6E-03	0.0%
Tetrachloroethene	7.9E-07	2.1E-01	2.1E-01	2.3%
Tetrachloromethane	—	8.6E+00	8.6E+00	93.1%
Toluene	3.9E-08	—	3.9E-08	0.0%
Trichloroethene	3.6E-06	6.8E-02	6.8E-02	0.7%
Trichlorofluoromethane	—	2.4E-02	2.4E-02	0.3%
Trichloromethane	—	1.3E-02	1.3E-02	0.1%
Vinyl Chloride	—	—	0.0E+00	0.0%
Fluoride	3.9E-05	—	3.9E-05	0.0%
Nitrate	2.2E-06	—	2.2E-06	0.0%
Silver	4.7E-04	—	4.7E-04	0.0%
MEDIUM HAZARD INDEX	5.9E-04	9.2E+00		
RELATIVE HAZARD INDEX	0.0%	100.0%		

OVERALL HAZARD INDEX = 9.2E+00

Table I.52 - Summary of Carcinogenic Risks - Central Tendency Exposure - Future Outdoor Worker

CHEMICAL	SOIL RISK	GROUNDWATER RISK	TOTAL RISK	RELATIVE RISK
1,1,1-Trichloroethane	—	—	0E+00	0.0%
1,2-cis-Dichloroethene	—	—	0E+00	0.0%
1,2-trans-Dichloroethene	—	—	0E+00	0.0%
1,2-Dichloroethane	—	7E-08	7E-08	0.3%
1,2-Dichloroethene	—	—	0E+00	0.0%
2,3,7,8-TCDD	3E-07	—	3E-07	1.1%
4-MethylPhenol	—	—	0E+00	0.0%
Aroclor-1248 (PCB)	9E-08	—	9E-08	0.4%
Benzo(a)anthracene	2E-08	—	2E-08	0.1%
Benzo(a)Pyrene	2E-07	—	2E-07	0.8%
Benzo(b)Fluoranthene	2E-08	—	2E-08	0.1%
Benzo(k)Fluoranthene	1E-08	—	1E-08	0.1%
Benzoic Acid	—	—	0E+00	0.0%
Bis(2-ethylhexyl)phthalate	7E-10	4E-08	4E-08	0.1%
Chlordane (alpha)	—	4E-07	4E-07	1.7%
Chrysene	2E-09	—	2E-09	0.0%
Dichloromethane	1E-11	—	1E-11	0.0%
Diethyl Phthalate	—	—	0E+00	0.0%
Endosulfan (sulfate)	—	—	0E+00	0.0%
Fluoranthene	—	—	0E+00	0.0%
Indeno(1,2,3-cd)Pyrene	1E-08	—	1E-08	0.1%
Phenol	—	—	0E+00	0.0%
Pyrene	—	—	0E+00	0.0%
Tetrachloroethene	5E-11	1E-05	1E-05	58.2%
Tetrachloromethane	—	6E-07	6E-07	2.3%
Toluene	—	—	0E+00	0.0%
Trichloroethene	3E-11	1E-06	1E-06	4.1%
Trichlorofluoromethane	—	—	0E+00	0.0%
Trichloromethane	—	2E-06	2E-06	9.4%
Vinyl Chloride	2E-09	2E-06	2E-06	9.8%
Fluoride	—	—	0E+00	0.0%
Nitrate	—	—	0E+00	0.0%
Silver	—	—	0E+00	0.0%
Actinium-227+D	—	9E-07	9E-07	3.8%
Plutonium-238	2E-07	3E-07	5E-07	2.2%
Plutonium-239/240	4E-08	7E-07	7E-07	2.9%
Strontium-90+D	2E-09	4E-08	4E-08	0.2%
Tritium	1E-11	5E-07	5E-07	2.1%
Uranium-235/236+D	—	2E-09	2E-09	0.0%
Uranium-238+D	—	5E-08	5E-08	0.2%
TOTAL MEDIUM RISK	9E-07	2E-05		
RELATIVE PATHWAY RISK	3.6%	96.4%		

OVERALL CARCINOGENIC RISK 2E-05

APPENDIX J

FATE AND TOXICITY PROFILES OF THE CONTAMINANTS OF CONCERN

J1. CHLOROETHENE

Fate and Transport

The chloroethene monomer is used primarily in the manufacture of polychloroethene. Small amounts are used as a refrigerant gas and as an intermediate in the production of chlorinated compounds. End-use products include polychloroethene pipes, wire and cable coatings, packing materials, furniture and automobile upholstery, floor coverings, and flexible film (ATSDR 1988).

Chloroethene has a vapor pressure of 2,660 mm of mercury at 25°C (Verschueren 1983). Thus, its major environmental fate process is volatilization. Essentially all chloroethene in the atmosphere is expected to exist in the vapor state. Chloroethene is not removed from the atmosphere by either dry or wet deposition (ATSDR 1988).

The dominant removal process for chloroethene from natural waters is volatilization to the atmosphere. The volatilization half-life for chloroethene in rivers and ponds is reported to be 8.7 hours and 43.3 hours, respectively. Photodegradation may be an important removal process in waters containing humic substances (ATSDR 1988).

Volatilization is also the dominant removal process for chloroethene from soil. The volatilization half-life of chloroethene, placed in 10-cm-deep dry soil, is 12 hours. Chloroethene is expected to readily volatilize from wet soil because since it does not adsorb strongly to soil and volatilizes easily from water (ATSDR 1988). The soil adsorption coefficient (K_{oc}) for chloroethene is estimated to range from 17 to 131 and, thus, is expected to be highly mobile in soil and may leach into groundwater (ATSDR 1988). Based on the K_{oc}, chloroethene is not expected to adsorb to stream sediments (Howard 1989).

Aquatic Toxicity

Ambient water quality criteria for the protection of fresh-water aquatic life have not been developed for chloroethene (EPA 1986). Median tolerance limits, which designate the concentration of toxicant at which 50 percent of the test organisms survive, have been developed for several fish species. The 24- to 96-hour median tolerance limit values range from 18.0 mg/L for bluegill to 42.3 mg/L for goldfish (Verschueren 1983). Chloroethene is not expected to bioaccumulate in aquatic organisms (Howard 1989).

Mammalian Toxicity

Systemic effects following chronic exposure to chloroethene in humans and animals include impaired liver function and biochemical and histological evidence of liver damage. Inhalation exposure in the workplace also has been associated with increased fetal loss. Wives of exposed workers under the age of 30 experienced a 20 percent fetal loss rate, while wives of unexposed rubber workers in a control group had a fetal loss rate of 5.3 percent (ATSDR 1988).

Inhalation exposure to chloroethene also has been associated with congenital malformations in humans. A statistically significant increase in the incidence of malformations per 1,000 live births was found in cities with chloroethene plants as compared to cities without plants. The malformations were observed primarily in the central nervous system, upper alimentary tract, and the urogenital system (ATSDR 1988). No data regarding developmental toxicity of dermally or orally exposed humans were located.

Rats were administered chloroethene in soybean oil by gavage at 0, 30, 100, or 300 mg/kg, 6 days/week, for 13 weeks, in a study of hepatic effects. No effects were observed in the controls or at 30 mg/kg, equivalent to 26 mg/kg/day. Slightly altered hepatocytes and reduced blood sugar were observed at 100 and 300 mg/kg (ATSDR 1988).

Rats and mice were exposed by the inhalation route to 50, 250, or 1,000 ppm, 6 hours/day, 5 days/week, for up to 12 months. Lethality associated with toxic hepatitis and tubular necrosis of the renal cortex occurred in mice after 5 to 9 days at 1000 ppm. Shortened life span, attributed to noncarcinogenic effects of chloroethene, occurred in all exposed groups (ATSDR 1988).

Chloroethene has been classified in Group A (human carcinogen), based on evidence from epidemiological studies involving workers exposed via the inhalation pathway. Those affected typically develop a rare type of liver cancer. Other cancers associated with exposure to chloroethene include tumors of the central nervous system, the respiratory tract, the digestive tract, and the hematopoietic (blood forming) system. No data exist regarding the carcinogenicity of chloroethene in orally or dermally exposed humans (ATSDR 1988).

References

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J2. CHROMIUM

Fate and Transport

Hexavalent chromium is quite soluble, existing in solution as a component of a complex anion. It is not sorbed to any significant degree by clays or hydrous metal oxides. The anionic form varies according to pH and may be a chromate, hydrochromate, or dichromate. Because all anionic forms are so soluble, they are quite mobile in the aquatic environment. Chromium VI is efficiently removed by activated carbon and thus may have some affinity for organic materials in natural water. Chromium VI is a moderately strong oxidizing agent and reacts with reducing materials to form trivalent chromium. Most chromium III in the aquatic environment is hydrolyzed and precipitates as chromium hydroxide. Sorption to sediments and bioaccumulation will remove much of the remaining chromium III from solution. Chromium III is adsorbed only weakly to inorganic materials. Chromium III and chromium VI are readily interconvertible in nature, depending on microenvironmental conditions such as pH, hardness, and the types of other compounds present. Soluble forms of chromium accumulate if ambient conditions favor chromium VI. Conditions favorable for conversion to chromium III lead to precipitation and adsorption of chromium in sediments. (This information was compiled from the National Institute for Occupational Safety and Health [NIOSH] [1975] and the EPA [1984a, 1984b, and 1984c]).

In air, chromium is associated almost entirely with particulate matter. Sources of chromium in air include windblown soil and particulate emissions from industrial processes. Little information is available concerning the relative amounts of chromium III and chromium VI in various aerosols. Relatively small particles can form stable aerosols and can be transported many miles before settling out.

Chromium III tends to be adsorbed strongly onto clay particles and organic particulate matter, but can be mobilized if it is complexed with organic molecules. Chromium III present in minerals is mobilized to different events depending on the weatherability and solubility of the mineral in which it is contained. Hexavalent compounds are not strongly adsorbed by soil components and chromium VI is mobile in groundwater. Chromium VI is quickly reduced to chromium III in poorly drained soils having a high content of organic matter. Chromium VI of natural origin is rarely found in soils.

Aquatic Toxicity

Chromium is an essential nutrient and is accumulated in a variety of aquatic and marine biota, especially benthic organisms, to levels much higher than in ambient water. Levels in biota, however,

usually are lower than levels in the sediments. Passage of chromium through the food chain can be demonstrated. The food chain appears to be a more efficient pathway for chromium uptake than direct uptake from seawater.

Water hardness, temperature, dissolved oxygen, species, and age of the test organism all modify the toxic effects of chromium on aquatic life. Chromium III appears to be more acutely toxic to fish than chromium VI; the reverse is true in long-term chronic exposure studies.

Mammalian Toxicity

The hexavalent form of chromium is of major toxicological importance in higher organisms. A variety of chromate (chromium VI) salts is carcinogenic in rats, and an excess of lung cancer has been observed among workers in the chromate-producing industry. Chromium VI compounds can cause DNA and chromosome damage in animals and humans, and chromium (VI) trioxide is teratogenic in the hamster. Inhalation of hexavalent chromium salts causes irritation and inflammation of the nasal mucosa and ulceration and perforation of the nasal septum. Chromium VI also produces kidney damage in animals and humans. The liver is also sensitive to the toxic effects of hexavalent chromium, but apparently less so than the kidneys or respiratory system. Chromium III is less toxic than chromium VI; its main effect in humans is a form of contact dermatitis in sensitive individuals.

References

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J3. DIOXINS

Halogenated aromatic hydrocarbons, including polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) have received much attention from the public and scientific community over the past several decades. There are 75 PCDD and 135 PCDF isomers in existence (Lippmann 1992). These chemicals exhibit varying degrees of toxicity. Of these, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is of most interest to most scientific, regulatory, and public groups due to its extreme toxicity in some animals.

TCDD has become a notorious environmental pollutant as a result of possible emission from municipal incineration and widespread distribution in the environment from improper waste disposal or discharge from industrial accidents. However, there is uncertainty in the degree and nature of its toxicity to humans.

The numerous sources of PCDDs and PCDFs have led to low background levels of these compounds in the environment. These compounds strongly absorb to particulate matter and are transported in the environment via soil, atmospheric particles, and sediment in addition to the vapor phase. The main degradation process for PCDDs and presumably PCDFs is photolysis, which requires ultraviolet light and the presence of an organic hydrogen donor. However, the photo- or biodegradation of TCDD is slow in soil and water.

TCDD is essentially insoluble in water. However, aquatic environments have high levels of the compound due to its adsorption to sediments. Surface water sediments are thought to be the ultimate sink or environmental reservoir of PCDDs and PCDFs (Lippmann 1992). The persistence of these compounds in water bodies results in bioaccumulation in aquatic organisms (Lippmann 1992).

The application of pesticides in soil, atmospheric deposition of fly ash and other particulates, leakage from waste sites, and gaseous-phase transport have led to an accumulation of PCDDs and PCDFs in soil. PCDDs and PCDFs strongly adhere to soil particulates, and the losses of these compounds through leaching are very slow. These compounds degrade or are naturally removed from the soil by volatilization, photolysis, biological breakdown, and wind erosion (Lippmann 1992). The half-life of TCDD is estimated to be 1 to 3 years on the soil surface and 10 to 12 years in the subsurface soil (Lippmann 1992).

PCDD and PCDF concentrations in vegetation are typically very low and are thought to result from particulate deposition rather than root uptake from soil (Lippmann 1992). Livestock exposure occurs by ingestion of contaminated feed and soil, which results in bioaccumulation of PCDDs and PCDFs in

milk and meat. Levels of the compounds were found to be higher in cow milk collected in the vicinity of municipal waste incinerators in Switzerland than in commercial milk samples (Lippmann 1992).

TCDD is classified as a supertoxic compound. For male guinea pigs, its acute LD_{50} is only 0.6 μg/kg of body mass (Manahan 1989). The LD_{50}s for TCDD have been found to range between 0.0006 and 0.115 mg/kg in different species of animals (Lu 1991). TCDD is a potent carcinogen (2 ppb in rats), inducing cancers in a variety of organs such as the liver, respiratory tract, and oral cavity (Lu 1991). It is hepatoxic, immunosuppressive, and fetotoxic at somewhat higher doses. The effects of TCDD are similar to those for polychlorinated biphenyls, including the manifestation of a human skin condition known as chloracne. However, it has not been reported to be carcinogenic in humans despite its extreme potent carcinogenicity in rats (Lu 1991).

The biggest industrial accident involving TCDD occurred at the Givaudan-La Roche Icmesa manufacturing plant near Seveso, Italy, in 1976. The plant emitted a cloud of chemicals that spread over a densely populated 3-square-mile area. Thousands of animals died as a result of the release. Based on a 1988 report by Catholic University (Rome) and the Italian Birth Defects Monitoring Program, no evidence of any increase in malformations among 15,291 children born in the area within 6 years after the release was found (Manahan 1989). These findings applied as well to children born within 9 months after the release (Manahan 1989). In addition, no major malformation was found in children from the most highly contaminated area (Manahan 1989). However, health effects including chloracne and liver toxicity have been reported (Lippmann 1992).

References

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J4. BIS(2-ETHYLHEXYL)PHTHALATE

Fate and Transport

Sufficient information is not available to determine the fate and transport of bis(2-ethylhexyl)phthalate.

Aquatic Toxicity

Sufficient information is not available to determine the aquatic toxicity of bis(2-ethylhexyl)phthalate.

Mammalian Toxicity

Bis(2-ethylhexyl)phthalate has a low acute toxicity. The main acute effect is mild irritation at the site of administration (NAS 1986). The oral lethal doses for 50 percent of the exposure group (LD_{50}s) of approximately 30 g/kg have been reported in rats and rabbits; dermal LD_{50}s of greater than 10 to 25 mg/kg have been observed in guinea pigs and rabbits (Clayton and Clayton 1981; EPA 1980).

Liver enlargement has been observed in rats that were administered bis(2-ethylhexyl)phthalate in corn oil at 2,000 mg/kg/day for 21 days (Carpenter et al. 1953). Changes in liver enzyme activity and alterations in subcellular morphology (increase in microbodies, swelling of the smooth endoplasmic reticulum) were also noted. Increased liver size and an increase in the smooth endoplasmic reticulum were also reported in rats fed 5,000 ppm bis(2-ethylhexyl)phthalate in their diet for 35 or 49 days (Daniel and Bratt 1974).

Numerous studies have indicated adverse effects of high doses of bis(2-ethylhexyl)phthalate on the testes of rodents. Testicular atrophy has been reported in rats fed 0.2 percent bis(2-ethylhexyl)phthalate for 90 days or 1.0 percent bis(2-ethylhexyl)phthalate for 2 weeks (Carter et al.1977) and in rats dosed with approximately 0.9 and 1.9 g/kg/day for 90 days (Shaffer et al.1945). A slight decrease in growth was noted in the Shaffer study in animals dosed at 0.4 to 1.9 g/kg/day.

Decreases in testicular weight have also been seen in rats fed 2 percent bis(2-ethylhexyl)phthalate in their diet (approximately 1,200 mg/kg/day) for 6 or 17 weeks (Gray et al.1977). Histological changes were noted at concentrations as low as 0.2 percent. Testicular sensitivity appears to be age dependent. Testicular lesions have been found in 4- and 10-week-old rats fed 2 percent bis(2-ethylhexyl)phthalate in the diet, but not in 15-week-old rats (Gray and Butterworth 1980). Male rats fed bis(2-ethylhexyl)phthalate in their diet at 5,000 and 20,000 ppm for 60 days exhibited a

decrease in total body weight and decreased weight of the testes, epididymis, and prostate; a decreased sperm count and an increase in abnormal sperm were noted in the 20,000 ppm group (Agarwal et al.1985).

Decreases in the weight of female reproductive organs have also been reported in rodents exposed to high doses of bis(2-ethylhexyl)phthalate. Decreased ovary weights were observed in female rats fed 2 percent bis(2-ethylhexyl)phthalate in their diet for 17 weeks, although no histological changes were noted (Gray et al.1977). Decreases in uterine and ovarian weights and suppression of fertility occurred in female mice exposed to 0.3 percent bis(2-ethylhexyl)phthalate in the diet for 18 weeks (Reel et al.1985).

Liver enlargement is a consistent finding in animals that have been chronically exposed to bis(2-ethylhexyl)phthalate. Increased liver size has been reported in guinea pigs fed 0.04 and 0.13 percent bis(2-ethylhexyl)phthalate in their diet for 1 year (Carpenter et al.1953). An increase in both kidney and liver size was seen in rats that received 0.5 percent bis(2-ethylhexyl)phthalate in their feed for 3 and 6 months (Harris et al.1956) and in parental and first generation rats that had received 0.4 percent bis(2-ethylhexyl)phthalate in their feed for 2 and 1 years, respectively (Carpenter et al. 1953).

Decreased body weight has been seen in rats fed 0.5 percent bis(2-ethylhexyl)phthalate in their feed for up to 2 years (Harris et al.1956) and in rats fed 0.35 percent bis(2-ethylhexyl)phthalate in their feed for 1 year (Nikonorow et al. 1973).

Because of its ubiquity, the teratogenic potential of bis(2-ethylhexyl)phthalate has been the subject of numerous reproductive studies. A few of the oral studies are summarized below.

Teratogenic and fetotoxic effects have been produced in laboratory animals at dosages much higher than those that would normally be ingested by humans or those that would be expected to result from clinical practices (e.g., intravenous administration of blood products stored in containers that were manufactured using bis(2-ethylhexyl)phthalate as a plasticizer). A decrease in fetal body weight and increased resorptions were observed in the pups of rat dams that were orally administered 340 or 1,700 mg/kg/day bis(2-ethylhexyl)phthalate throughout gestation (Nikonorow et al.1973). Gross and skeletal abnormalities were seen in fetuses when pregnant mice were given 2,450 or 7,360 mg/kg bis(2-ethylhexyl)phthalate on day 7 or 8 of gestation. Doses of 4,905 or 9,810 mg/kg on day 7 resulted in 100 percent fetal mortality (Yagi et al.1980). In a study in which bis(2-ethylhexyl)phthalate was administered in the diet at 70 to 2,200 mg/kg/day, decreased maternal weight gain and increased fetal resorptions were seen in all treatment groups (Shiota et al. 1980). One hundred percent mortality

was observed in the 830 and 2,200 mg/kg/day groups. An increase in neural tube malformations and other defects were reported in the 830 mg/kg/day group.

Bis(2-ethylhexyl)phthalate has been classified by the EPA's Carcinogen Assessment Group as a category B2 carcinogen (i.e., sufficient evidence of carcinogenicity in animals and inadequate data in humans). Bis(2-ethylhexyl)phthalate has been shown to produce liver tumors in rats and mice when exposed by the oral route (NTP 1983). It has also been reported to have second stage promoting activity and weak complete promoting activity in Sencar mouse skin, but to be inactive as a promoter in CD1 mice (Ward et al.1986).

Bis(2-ethylhexyl)phthalate has been extensively tested for mutagenicity in short-term tests. However, positive results have been reported in only a few cases. It has been observed to be a weak inducer of sister chlorinated exchange, to induce aneuploidy in cell cultures, and to induce cell transformation in the Syrian hamster embryo (NAS 1986).

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J5. FLUORIDE

The naturally occurring concentration levels of fluoride in water varies greatly depending on the location. Fluoride concentrations in water at industrial locations may be elevated above background levels as a result of operations and processes. Fluoride has been added to drinking water (1 ppm) to help reduce dental cavity formation. However, intake of water with excessive fluoride levels (10 ppm) may cause fluorosis. Intake of water with high concentrations of fluoride can weaken tooth enamel, which results in surface pitting.

Excessive intake of fluoride can cause changes in the bones, including osteosclerosis and exostoses. These changes usually affect the spine and cause the knee deformity known as genu valgum. At fluoride intake levels, chalky-white patches appear on the surface of dental enamel. These patches are then stained yellow or brown, giving rise to the characteristic "mottled" appearance.

The information presented for fluoride has been entirely derived from Lu (1991).

<u>Reference</u>

Lu, F. 1991. *Basic Toxicology - Fundamentals, Target Organs, and Risk Assessment, Second Edition.* Hemisphere Publishing Corporation, Washington, D.C. 1991.

J6. 4-METHYLPHENOL (P-CRESOL)

Fate and Transport

From the available information, it appears that cresol is not very volatile and that the main transport process in the environment is movement in water (Clement Associates 1985). In aerated surface waters it is photooxidized, and it may also be non-photolytically oxidized by a metal-catalyzed reaction in some of these environments. In addition, biodegradation by water and soil microorganisms is apparently an important fate process. Because of the two competing fate processes, cresol probably is not very persistent in the environment.

Aquatic Toxicity

Waterborne cresol isomers are toxic to fish and other forms of aquatic life. Trout embryos are one of the most sensitive species, with 24-hour median threshold limits (TL_m) of 2 mg/L for o-cresol, 7 mg/L for p-cresol, and 4 mg/L for m-cresol (Clement Associates 1985). The 24- to 96-hour TL_m for the bluegill is approximately 21.5 mg/L for o-cresol and 11.8 mg/L for the p-isomer. The LD_{50} value for the alga Scenedesmus is 40 mg/L for o- and p- isomers, but 6 mg/L for m-cresol. No evidence is available that the cresols bioaccumulate in the tissues of wildlife species. No alterations in reproductive capabilities or other subtle changes in wildlife species have been attributed to these compounds.

Mammalian Toxicity

None of the cresol isomers is regarded as a carcinogenic initiator (Clement Associates 1985). However, it has been reported that o-, p-, and m-cresol administered to mice as 20 percent solutions in benzene twice weekly for 20 weeks promoted papillomas initiated by a single dermal application of 9,10-dimethyl-1,2-benzanthracene (DMBA) (Boutwell and Bosch 1959). The mutagenicity and teratogenicity of the cresols have not been adequately assessed.

Cresols are highly irritating to the skin, mucous membranes, and eyes (Clement Associates 1985). Occupational exposure to cresols has caused severe burns and eczema. Although cresol isomers have relatively low vapor pressures, airborne cresols have reportedly caused headache, vomiting, and digestive disorders.

In addition to being strong irritants, cresols may impair kidney and liver functioning and cause central nervous system and cardiovascular disturbances (Clement Associates 1985). The rat oral LD_{50} values or o-, p-, and m-cresol are 135 mg/kg, 180 mg/kg, and 202 mg/kg, respectively. The dermal LD_{50} values for rabbits are 1,380 mg/kg and 2,050 mg/kg for the o- and m- isomers of cresol, respectively.

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J7. NITRATE

Elevated levels of nitrates in soils and water generally result from intensive application of fertilizers for farming and cropping activities. However, nitrates also come from wastes excreted by humans and farm animals. Nitrates form into nitrites in soil, water, and the gastrointestinal tract through microbial action. Nitrite intake can induce methemoglobinemia, resulting in the reduction of the oxygen-carrying capacity of hemoglobin. In addition, it may react with certain amines to form nitrosamines, in which most are carcinogenic.

The information listed above was derived in its entirety from Lu (1991).

<u>Reference</u>

Lu, F. 1991. *Basic Toxicology - Fundamentals, Target Organs, and Risk Assessment, Second Edition.* Hemisphere Publishing Corporation, Washington, D.C. 1991.

J8. PHENOL

Fate and Transport

The information provided here comes primarily from Clement Associates (1985). The main mode of transport for phenol is in water. Phenol would be rapidly photooxidized in the troposphere, making atmospheric transport unlikely. Photooxidation may be an important degradative process, especially in aerated, clear, surface waters. Phenol may also be non-photolytically oxidized in highly aerated waters that contain iron and copper in solution or as part of the suspended particulates. The relatively low log octanol/water partition coefficient of phenol, as well as the available experimental evidence, suggest that sorption and bioaccumulation are not important environmental fate processes. Biodegradation can be a significant fate pathway in aquatic systems and soil when significant concentrations of microorganisms are present. In addition to microorganisms, at least one species of fish is reported to be able to biotransform phenol.

The dominance of photooxidation, metal-catalyzed oxidation, or biodegradation as destructive pathways depends on the particular environmental conditions, but the degradation products are similar for all fate pathways (Clement Associates 1985). The first step usually involves further hydroxylation of the aromatic ring, followed by oxidation to benzoquinone and cleavage of the ring structure. There is a possibility that when phenol is present in surface waters, it can volatilize into the atmosphere.

Aquatic Toxicity

The acute toxicity of phenol to freshwater species is expressed over a range of 2 to 3 orders of magnitude (Clement Associates 1985). Acute values for fish species range from 5,020 μg/L for juvenile rainbow trout to 67,500 μg/L for the fathead minnow. The acute value for the rainbow trout, and a value of 5,000 μg/L for *Daphnia magna* are the lowest acute values observed. An early life stage test on the fathead minnow resulted in a chronic value of 2,560 μg/L, with an acute-chronic ratio of 14. Median effect concentrations for oyster and clam embryos are approximately 55,000 μg/L. For the grass shrimp and the mountain bass, LC_{50} values of 5,800 and 11,000 μg/L, respectively, are reported. Reported bioconcentration factors of 1.2 to 2.3 for goldfish suggest that no residue problem should occur from exposure to phenol.

Mammalian Toxicity

Phenol appears to have tumor-promoting activity in many strains of mice when repeatedly applied to the shaved skin after initiation with known carcinogens (Clement Associates 1985). Although there is equivocal evidence that phenol may be weakly carcinogenic when applied to the skin of one sensitive strain of mice, it does not appear to be carcinogenic when applied to the skin of standard strains of

mice. The National Cancer Institute reported that phenol was not carcinogenic when administered in drinking water to rats and mice. There is equivocal evidence that phenol may have mutagenic effects, although further evaluation is needed. There are no reports of teratogenic effects caused by exposure to phenol.

Subchronic inhalation exposure to phenol is reported to cause liver, kidney, lung, and heart damage in guinea pigs (Clement Associates 1985). Slight liver and kidney damage was seen in rats exposed by gavage to 100 mg/kg/day of phenol for 20 days. The lethal dose to 50 percent of the population (LD_{50}) for the rat are 414 and 669 mg/kg, for oral and skin dose, respectively. The inhalation lethal concentration to 50 percent of the population (LC_{50}) is 316 mg/m^3. Phenol is an eye, nose, and throat irritant and can cause systemic damage to the nervous system in humans following dermal, oral, or inhalation exposure.

Reference

Clement Associates. 1985. "Chemical, Physical, and Biologic Properties of Compounds Present at Hazardous Waste Sites." Prepared for U.S. EPA, Office of Waste Programs, Enforcement, under subcontract to GCA Corp., Bedford, Massachusetts. OSWER DIR. 98503.

J9. PLUTONIUM

Plutonium-238 undergoes radioactive decay with a half-life of 87 years to uranium 234 by the emission of alpha particles. Low energy x-rays are also emitted from the electron shells of the uranium-234 daughter. Because it is an alpha emitter, plutonium-238 represents a hazard to man primarily from internal deposition. The alpha particles from plutonium-238 cannot penetrate the external dead layer of the skin and do not represent an external radiation hazard. Plutonium may be taken into the body by inhalation of airborne particles; ingestion of contaminated food, water, or soil; and through absorption through the skin or wounds. Once inside the body, the alpha radiation from plutonium-238 may deposit energy in specific organs causing cellular damage, some of which could result in the development of cancer. Because of the long half-life of uranium-234, its concentration from the decay of plutonium-238 never exceeds 0.00036 times that of the original concentration of plutonium-238. Thus, uranium-234 and further progeny of plutonium-238 are not of concern at Mound Plant.

The fraction of plutonium that, upon ingestion, will be systemically distributed is dependent on the chemical form of the plutonium. The International Commission on Radiological Protection (ICRP) has suggested absorption fractions of 10^{-5} for plutonium dioxides and hydroxides, 10^{-4} for nitrates, and 10^{-3} for all other compounds of plutonium; the latter value (10^{-3}) is recommended for evaluating population exposures via food chains for all compounds (ICRP 1986). The ICRP has also noted that uptake from the gastrointestinal tract may be greatly increased in the very young and has recommended that an absorption fraction of 10^{-2} be used for the first year of life. These uptake factors are based upon studies with laboratory animals and a limited amount of epidemiological data.

The distribution of inhaled plutonium is determined by the chemical form of the nuclide as well as the physical properties of the inhaled aerosol. The rate of removal of plutonium compounds from the lung is highly dependent upon the pattern of deposition in the lung and the particle size distribution of the aerosol. Particles deposited in the nasal and upper bronchial regions are cleared relatively quickly by the mucociliary and phagocytic mechanisms in the lung. The plutonium deposited in the deep alveolar regions of the lung is cleared from the lungs by transfer into the bloodstream and lymphatic systems at a much lower rate. Also, insoluble forms of plutonium will have long residence times in the lungs, whereas soluble forms will undergo more rapid systemic distribution. For insoluble forms of plutonium, the pulmonary lymph nodes receive the greatest concentration of any tissue.

For the material that is systemically distributed from the lungs, the gastrointestinal tract, or the skin, the primary locations of final deposition are the liver and the skeleton. After review of all available animal experiments and limited human epidemiological data from workers exposed to plutonium, the ICRP has determined distribution fractions from the blood to the liver and skeleton of 30 percent and 50 percent, respectively (ICRP 1986). The remaining 20 percent is distributed throughout the other

tissues of the body and eliminated through early excretion. For radiation protection purposes, however, the ICRP recommends continued use of the former distribution fractions of 45 percent each to the liver and skeleton, with 10 percent eliminated by early excretion (ICRP 1979). The fractional amount of plutonium taken into the human gonads is very small: 3.5×10^{-4} for males and 1.0×10^{-4} for females (ICRP 1979). Plutonium is retained in the body for long time periods and will continue to irradiate tissue in the liver and skeleton long after intake. The biological half-lives for the liver and skeleton are estimated as 20 and 50 years, respectively (ICRP 1986). Plutonium has been assumed to remain in the gonads indefinitely (ICRP 1986).

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J10. POLYCHLORINATED BIPHENYLS

Polychlorinated biphenyls (PCBs) commercially produced in the United States until 1977 were created as mixtures of congeners identified under the trade name of Aroclor. Each individual Aroclor was identified by a four-digit number in which the first two digits referred to the number of carbon atoms and the last two digits reflect the percentage, by weight, of chlorine in the mixture. Although they are no longer produced commercially, these compounds are still in use as dielectric fluids in some transformers and capacitors. PCBs were also produced for use as lubricants, plasticizers, and adhesives. The manufacture of PCBs ceased in 1977 after the environmental impacts of these compounds were recognized.

PCBs are widely distributed in air and water and bioaccumulation in fish, birds, and mammals as a result of its environmental persistence. PCBs do not occur naturally; as a result, their concentrations are found to be higher in urban and heavily industrialized areas. Atmospheric concentrations of PCBs in urban areas have been found to be an order of magnitude higher than in nonurban areas (Lippmann 1992). The ambient concentrations of PCBs are influenced by several factors including source emissions strength and meteorological conditions.

As with dioxins, surface waterways are major environmental sinks or reservoirs for PCBs. The National Academy of Sciences reports that 50 percent to 80 percent of the PCBs in the environment are contained within the waters of the North Atlantic (Lippmann 1992). PCBs predominately sorb on sediment or accumulate in biota. A significant route of exposure to PCBs in humans is fish ingestion.

PCBs strongly adhere to surface soil constituents. Their levels in soil vary with concentration ranges of less than 10 ppb to over 100 ppb (Lippmann 1992). Based on surveys conducted in 1972, only 0.1 percent of agricultural soils throughout the United States contained detectable levels of PCBs (Lippmann 1992). However, 60 percent of soil samples collected in metropolitan areas contained detectable levels of PCBs. (Lippmann 1992).

Because they are lipophilic, PCBs are stored in adipose tissue secreted in milk. PCBs are potent inducers of microsomal enzymes; thus; they enhance the metabolism of steroids such as estradiol and androsterone, which may account for some of their effect on the reproductive function. This effect on enzymes can modify the toxicity of other chemicals and promote carcinogenesis.

PCBs have a variety of toxic effects. They induce neoplasia and adenofibrosis in the liver. PCBs effect on reproductive functions include lengthened estrus cycles and decreased frequency of implanted ova in mice, lowered fertility in mink and rhesus monkey, and reduced hatchability of eggs in birds (Lu

1991). On the immune system, PCBs cause atrophy of lymphoid tissue in chickens and rabbits. They suppress a variety of humoral and cell-mediated immunity.

PCBs have been found to be carcinogenic in rodents, producing hepatocellular carcinomas in rats and hepatomas in mice (Lippmann 1992). The generation of liver tumors within these species appears to be related to the degree of chlorination of the PCB mixture (Lippmann 1992).

Two outbreaks of PCB poisoning resulting from ingestion of contaminated rice oil occurred in Japan and Taiwan in 1968 and 1979, respectively. Over 1000 persons were poisoned with exposures averaging 633 mg PCB in the first episode (Lippmann 1992). The onset of chloracne in exposed individuals was identified in both incidents (Lu 1991). Pigmentation of the skin, general weakness, numbness of the limbs, respiratory symptoms, and impaired immune response were also reported (Lippmann 1992). No adequate studies have been conducted to determine whether chronic exposure to PCBs is associated with human carcinogenesis or adverse reproductive outcome (Lippmann 1992). In addition, no chronic health effects have been associated with the PCB exposure.

References

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J11. TETRACHLOROETHENE

Tetrachloroethene or perchloroethene is a colorless liquid that is used primarily as a solvent. Tetrachloroethene is used in dry cleaning operations; as a metal degreaser; as a solvent for fats, grease, and waxes; and to remove caffeine from coffee (Verschueren 1983). Tetrachloroethene is additionally used as a dielectric fluid for power transformers, a heat transfer medium, and a pesticide intermediate (ATSDR 1987).

Tetrachloroethene has a vapor pressure of 14 mm of mercury at 20sp°C and is reported to volatilize rapidly from water. Volatilization of tetrachloroethene from surface water depends on temperature, water movement and depth, and the movement of air above the water surface. Volatilization half-lives have been estimated to be 1.4 days for rivers, 5.6 days for lakes, and 7 days for ponds (ATSDR 1987).

Tetrachloroethene is expected to have medium-to-high mobility in soil. The organic carbon partition coefficient (Koc) for tetrachloroethene is estimated to range from 137 to 363. The Koc for tetrachloroethene indicates that tetrachloroethene will not partition significantly from the water column to sediments. Given the mobility of tetrachloroethene in soil, it readily leaches into groundwater (ATSDR 1987).

The most important transformation processes for tetrachloroethene in natural water systems and soils are biodegradation and hydrolysis, although neither process appears to occur rapidly in the environment. The hydrolysis half-life of tetrachloroethene in water at room temperature is approximately nine months. Since transformation occurs slowly, tetrachloroethene in surface water is expected to volatilize into the atmosphere. Tetrachloroethene may slowly biodegrade in groundwater under anaerobic conditions with acclimated microorganisms (ATSDR 1987).

Aquatic Toxicity

Ambient water quality criteria for tetrachloroethene have been established for freshwater species. The criteria for acute and chronic exposure are 5,280≤g/L and 840≤g/L, respectively (EPA 1986). Ninety-six-hour LC_{50} values have been established for the fathead minnow. The static and flow-through concentrations for the fathead minnow are 21.4 mg/L and 18.4 mg/L, respectively (Verschueren1983). Tetrachloroethene has a low potential to bioaccumulate in fish. The experimentally measured bioconcentration factor for tetrachloroethene is reported to range from 39 to 49 (ATSDR 1987).

Mammalian Toxicity

Tetrachloroethene is readily absorbed by humans through the lungs into the blood. Pulmonary uptake is proportional to ventilation rate, duration of exposure, and the concentration of tetrachloroethene in inspired air. Absorption via the ingestion route is rapid and almost complete following oral administration in rats and mice. Dermal absorption in humans is apparently minor (ATSDR 1987).

A number of systemic health effects have been reported in humans following exposure to tetrachloroethene. These effects include but are not limited to neurological, hepatic, renal, and cardiotoxic. Exposure to low levels of tetrachloroethene following accidental exposure via inhalation has resulted in central nervous system effects that include dizziness, confusion, headache, and nausea. Exposure to higher concentrations has intensified these symptoms and produced unconsciousness and death (ATSDR 1987).

Several documented cases of liver damage in humans have followed accidental exposure via inhalation. The reported hepatotoxic effects include cirrhosis of the liver, toxic hepatitis, liver cell necrosis, hepatomegaly, and altered liver enzyme levels. Similar effects have been reported in humans after acute tetrachloroethene ingestion (ATSDR 1987).

Hepatic effects were studied by administering tetrachloroethene in drinking water to both sexes of rats for 90 consecutive days. Significantly increased relative liver weights were observed in both sexes at 1,400 mg/kg/day. A significant increase in an enzyme, indicating possible liver damage, was observed at 400 and 1,400 mg/kg/day in males and at 1,400 mg/kg/day in females (ATSDR 1987).

Renal effects in humans following inhalation exposure include diminished excretion of urine, uremia, elevated serum creatine, proteinuria, and hematuria. Acute renal failure and glomerulonephritis may possibly occur in humans as a consequence of acute tetrachloroethene ingestion. Cardiotoxic effects include premature ventricular beats and skipped beats (ATSDR 1987).

Both sexes of rats were administered tetrachloroethene doses of 15, 400, or 1,400 mg/kg/day via drinking water for 90 consecutive days. Relative kidney weights were significantly increased in males at 400 mg/kg/day and in both sexes at 1,400 mg/kg/day. No treatment-related effects on urinalysis indices or gross kidney pathology were observed in this study (ATSDR 1987).

Significant increases in mortality due to cancer of the lung, cervix, kidney, skin, and colon have been reported for dry-cleaning and laundry workers in epidemiological studies. The results are not considered to be conclusive since confounding factors such as smoking and exposure to other solvents were not controlled. Significant increases in hepatocellular adenomas and hepatocellular carcinomas

were observed in mice following administration of tetrachloroethene via the inhalation route (ATSDR 1987).

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J12. STRONTIUM

Strontium-90 is a beta-emitting radionuclide that distributes itself into bones after intake. It is considered a highly dangerous carcinogen. Strontium-90 and its daugher product, yttrium-90, produce high-energy beta particles that irradiate the bone structure, which could result in bone cancer if sufficient quantities are inhaled or ingested.

J13. TETRACHLOROMETHANE

Tetrachloromethane is used as an industrial solvent and chemical intermediate. It is classified as an alkyl halide and has a notorious history of human toxicity. It has been widely used in consumer products as a degreasing solvent in home fire extinguishers and for other applications. However, the United States Food and Drug Administration banned the sale of tetrachloromethane and formulations of it for home use in 1970 after numerous toxic effects, including some fatalities, were observed (Manahan 1989).

Tetrachloromethane is toxic through both the inhalation and ingestion exposure routes. The toxic symptoms from inhalation of the compound are associated with the nervous system. Ingestion of tetrachloromethane, on the other hand, affects the gastrointestinal tract and liver. Intake of tetrachloromethane can substantially damage the liver and kidneys.

Dermatitis may result following long or repeated dermal contact with the chemical. Tetrachloromethane helps remove the skin oils, and the skin becomes red, cracked, and dry. Dermal contact of the liquid or vapor form of tetrachloromethane with the eyes results in burning irritation.

Tetrachloromethane has a narcotic action that resembles trichloromethane, though not as strong. A person may become unconscious following exposure to high concentrations (> 1000 ppm) of the chemical. Continued exposure to the high concentration could result in death due to respiratory failure.

Many tetrachloromethane poisonings have occurred as a result of accidental or suicidal ingestion. The vast majority of poisonings, however, has resulted from the inhalation of its vapors when used as a solvent or dry cleaning agent (EPA 1980). Other poisonings have occurred as a result of dermal exposures through the use of the compound in shampoos (EPA 1980). Some poisonings have resulted from use of fire extinguishers containing tetrachloromethane.

Tetrachloromethane is a confirmed carcinogen. Liver tumors, including hepatocellular carcinomas, were observed in various strains of rats after inhalation, subcutaneous, and intramuscular administration (Searle 1984). Weak embryotoxicity has been observed in rats, mice, and hamsters (Searle 1984). Only one case of liver cell carcinoma has been described in humans, which occurred 7 years after acute poisoning (Searle 1984).

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J14. THORIUM

The potential toxicity of thorium is due mainly to its radiological effects. Almost all of the thorium that enters the body due to ingestion leaves within a few days in the feces and urine. The small fraction deposited in the body concentrates on the bone surfaces, where it remains for many years. It only slowly distributes throughout the bone volume by processes such as resorption and bone remodeling.

Thorium-232 constitutes more than 99.99% of natural thorium. It has a half-life of 1.4×10^{10} years and heads a decay chain that attains secular equilibrium within a few years. Thorium-232 decays by emission of an alpha particle to radium-228, which has a half-life of 5.8 years. The various progeny of thorium-232 emit alpha and beta particles and gamma radiation.

Thorium-230 results from the chain decay of plutonium-238 to uranium-234 and decays by emission of an alpha particle to form radium-226 from the chain decay of uranium. Because of the long half-life of uranium-234, the activity of thorium-230 will never exceed more than 0.00021 times the original concentration of plutonium-238, and it does not contribute significantly to radiological risks at Mound Plant.

Studies of occupational exposure to thorium have indicated an increased incidence of lung, pancreatic, and hematopoietic cancers. However, the workers involved in the studies were also exposed to other toxic substances, so the higher incidence of cancer cannot be directly attributed to thorium. Rats chronically exposed to thorium via inhalation showed a dose-dependent increase in lung tumors. Intravenous injection of thorotrast (colloidal thorium-232 dioxide) in humans resulted in increased incidence of bone sarcoma and liver cancers.

J15. TOLUENE

Fate and Transport

Toluene is used widely in industry in the refining of gasoline, chemical manufacturing, and manufacture of lacquers, adhesives, paints, and rubber (ATSDR 1988). Owing to a moderately high vapor pressure, 22 mm of mercury at 20°C, volatilization to the atmosphere is expected to be the dominant environmental transport process (Verschueren 1983). Atmospheric toluene is rapidly degraded by reaction with hydroxyl radicals, yielding cresol and benzaldehyde, which undergo further degradation to simple hydrocarbons. The half-life of this degradation process has been estimated at 13 hours (ATSDR 1988).

Toluene exhibits moderate solubility in water, 515 mg/L at 20°C. Based on its high Henry's Law constant, 6.64 x 10-3 atm m3/mole, volatilization from water to the atmosphere is expected to be a dominant aquatic removal process (EPA 1989). The volatilization half-life of toluene from surface water, depending on the flow characteristics of the water body, ranges from 5 hours to 16 days. Biodegradation is of significant importance as a removal mechanism in water. Depending on the physico/chemical characteristics of the water body, removal half-lives for biodegradation under favorable conditions are typically less than one day. Rapid biodegradation (>90% loss within 7 days) was also reported for toluene in shallow groundwater (ATSDR 1988).

Volatilization and biodegradation are expected to be the dominant removal processes for toluene in the soil. Biodegradation, mediated by Pseudomonas and Achromobacter, is known to be rapid with a half-life under laboratory conditions ranging from one hour to several days. Owing to a moderate log octanol/water partition coefficient, 2.73, adsorption to soil and sediments is not expected to be of significance (ATSDR 1988). Based on this coefficient, however, migration to groundwater may be of concern.

Aquatic Toxicology

Available data for the freshwater toxicity of toluene indicate acute toxicity occurs at concentrations as low as 17,500 ≤g/L and is likely to occur at lower concentrations in more sensitive species (EPA 1986). The LD_{50} (24-hour) for toluene in goldfish was found to be 58 mg/L. LC_{50} values ranged from 7.3 mg/L (96-hour) in bass to 68 mg/L (14-day) in the guppy. Median threshold limits (24- to 96-hour) ranged from 24 mg/L in bluegills to 1,340 mg/L in mosquito fish. Data on the chronic toxicity of toluene are lacking (Verschueren 1983).

Based on the moderately low log octanol/water partition coefficient, bioaccumulation in aquatic life is not expected to be of concern. The infiltration ratio (flesh/water) of toluene in eels was found to be

0.53. A bioconcentration factor of 13.2 and a tissue half-life of 1.4 days was also determined in eels (Verschueren 1983).

Mammalian Toxicology

Much of the available data concerning the adverse health effects of toluene in humans result from case studies of solvent abusers or occupationally exposed individuals. In humans, acute inhalation exposure to toluene results primarily in a reversible depression of the central nervous system. Levels as low as 100 ppm for 6 hours have reportedly resulted in mild intoxication. Exposures to levels producing unconsciousness in humans have generally failed to produce residual organ damage (ATSDR 1988). Limited oral data exist for acute exposure to toluene in animals. The LD_{50} for toluene in rats ranges from 2,600 to 7,000 mg/kg, classifying it as only slightly toxic to practically non-toxic. Significantly more data are available for the inhalation route of exposure in laboratory animals. Generally, the most noted effect of toluene in animals is also central nervous system depression. Rats exposed to concentrations as low as 100 ppm for 8 days showed evidence of decreased locomotor activity (ATSDR 1988).

Prolonged exposure to high levels of toluene in humans (e.g., glue sniffers) is associated with permanent central nervous system effects including tremors; ataxia; impaired speech, hearing, and vision. Other than these central nervous system effects, adverse effects of long-term toluene exposure in humans are generally limited to causing irritation of the respiratory tract without other organ impacts. Toluene has not been found to cause cancer in humans or animals (ATSDR 1988).

Long-term inhalation studies in laboratory animals have identified adverse effects targeting primarily the liver, kidney, and hematopoietic system. Many of the kidney and liver effects have not been verified by more current studies. A recent chronic inhalation study in rats identified reduced hematocrit levels and reduced mean corpuscular hemoglobin concentrations at doses as low as 100 ppm (ATSDR 1988).

Conflicting data for acute exposure to toluene in humans and laboratory animals have implicated toluene with developmental toxicity. Skeletal abnormalities and retarded growth have been demonstrated in mice, rats, and rabbits exposed to toluene with LOAELs ranging from 200 to 267 ppm. In these studies, fetal toxicity generally occurred at levels resulting in maternal toxicity. Other animal studies have failed to reveal any developmental effects at exposure levels as high as 400 ppm during critical days of gestation (ATSDR 1988).

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J16. 1,1,1-TRICHLOROETHANE (CASRN 71-55-6)

Fate and Transport

Due to its high vapor pressure, 1,1,1-trichloroethane has a high volatilization rate relative to many other organic chemicals, even though its solubility is low. The primary fate pathway for this chemical is volatilization from surface water or soil, followed by slow photooxidation in the atmosphere. Atmospheric lifetime due to photooxidation for 1,1,1-trichloroethane is on the order of 6 to 10 years. Studies conducted in static cultures indicate the potential for 1,1,1-trichloroethane to biodegrade in the environment and in waste treatment processes (Clement Associates 1985).

Aquatic Toxicology

The acute toxicity of 1,1,1-trichloroethane to aquatic species is rather low, with the LC_{50} concentration for the most sensitive species tested being 52.8 mg/L. No chronic toxicity studies have been done on 1,1,1-trichloroethane, but acute-chronic ratios for the other chlorinated ethanes ranged from 2.8 to 8.7. 1,1,1-Trichloroethane was only slightly bioaccumulated with a steady-state bioconcentration factor of nine and an elimination half-life of two days.

Mammalian Toxicology

1,1,1-Trichloroethane (methyl chloroform, 1,1,1-TCA) is widely used as an industrial solvent and as an aerosol propellant. 1,1,1-TCA has a fairly low toxicity via inhalation due to rapid and almost total elimination of the compound unchanged from the lungs. 1,1,1-TCA is rapidly and completely absorbed from the gastrointestinal tract of humans and preferentially distributed to the central nervous system. Significant amounts of 1,1,1-TCA can be absorbed through intact skin (EPA 1984).

Principal effects of acute exposure in laboratory animals are depression of the central nervous system and disturbances in cardiac function. Subchronic exposure of animals to 1,1,1-TCA via inhalation produces a reduction in the number of white blood cells, body weight, and nonspecific inflammatory changes. 1,1,1-TCA has been shown to be a mutagen in microbial assays and causes transformation in cultured embryo cells (Clement Associates 1985). No significant results were detected when mice and rats were exposed to 1,1,1-TCA via oral ingestion (EPA 1984). Chronic inhalation exposure of rats to 1,1,1-TCA produced no significant effects (EPA 1984).

1,1,1-TCA is an animal and human skin irritant (Sax and Lewis 1989). In humans acute exposure to 1,1,1-TCA (350 ppm for 3 hours) results in alterations in reaction time, perceptual speed, manual dexterity, and equilibrium. Several studies have examined chronic occupational exposure to 1,1,1-TCA. The levels of exposure ranged from 4 to 53 ppm and the duration was from 5 to 7 years.

Chronic occupational exposure to 1,1,1-TCA was not associated with any significant negative outcomes in any of these studies. EPA has designated 1,1,1-TCA as a Group D (not classified) chemical (EPA 1984).

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EPA. 1984. Health Effects Assessment for 1,1,1-Trichlorethane. Office of Emergency and Remedial Response, Washington, D.C., EPA 540/186/005.

Sax, N.I., and R.J. Lewis. 1989. *Dangerous Properties of Industrial Material.* Seventh edition, Van Nostrand Reinhold Co., New York, NY.

J17. TRICHLOROETHENE

Fate and Transport

Trichloroethene is used in dry cleaning operations; as a metal degreaser; as a solvent for fats, greases, and waxes; as a refrigerant and heat exchange liquid; as a fumigant; and to remove caffeine from coffee (Verschueren 1983).

The dominant removal process of trichloroethene from surface water and soil is volatilization into the atmosphere (vapor pressure of 60 mm of mercury at 20°C). Once in the atmosphere, trichloroethene is degraded through reaction with hydroxyl radicals. The half-live of trichloroethene in the atmosphere is estimated to be approximately 7 days. The water solubility of trichloroethene is 1.1 mg/L at 25°C (Verschueren 1983). The volatilization half-life for trichloroethene ranges from 4 to 12 days for a lake, 1 to 12 days for a river, and approximately 11 days for a pond. Actual volatilization rates will depend on water temperature and movement, depth, and air movement above the water surface. Trichloroethene, which does not volatilize from natural water systems, may biodegrade, although the process does not occur significantly in the aquatic environment (EPA 1979).

The experimentally measured soil adsorption coefficient (K_{oc}) for trichloroethene is estimated to range from 41 to 42. This K_{oc} value indicates that trichloroethene will be highly mobile in soil and that little will partition into sediments. Trichloroethene is not expected to biodegrade significantly in surface soils. Trichloroethene is expected to leach into groundwater once it enters the soil. Volatilization of trichloroethene is not expected to occur from groundwater. Trichloroethene may slowly biodegrade under anaerobic conditions. In the absence of biodegradation or volatilization, trichloroethene may be relatively persistent in the environment.

Aquatic Toxicity

The EPA has established water quality criteria for the protection of freshwater species. The acute and chronic criteria for exposure to trichloroethene are 45,000 µg/L and 21,900 µg/L, respectively (EPA 1986). Ninety-six-hour LC_{50} values for the fathead minnow are 40.7 mg/L and 66.8 mg/L for flow-through and static tests, respectively (Verschueren 1983).

The low bioconcentration factor of 17 for trichloroethene shows that the compound has limited bioaccumulation potential in fish. The log octanol/water partition coefficient of trichloroethene is 2.29 and provides further evidence that trichloroethene has a limited tendency to partition into organic substances (EPA 1979).

Mammalian Toxicity

Much of the data describing health effects of trichloroethene in humans are derived from studies of individuals exposed in occupational settings (Clement Associates 1985). Target organs and systems affected by exposure to trichloroethene include the central nervous system, liver, and kidney.

Inhalation studies using human subjects have demonstrated a number of central nervous system effects following exposure to trichloroethene. Irritation of the eyes and throat and drowsiness were reported at a concentration of 27 ppm. Subjects experienced headaches when exposed to 81 ppm and dizziness and anorexia at 101 ppm.

Short-term exposure to high concentrations of trichloroethene resulted in dizziness, headache, nausea, confusion, facial numbness, blurred vision, and unconsciousness at very high (unquantified) levels. No studies describing the neurological effects of orally administered trichloroethene are available.

Severe liver damage was reported following acute exposure to trichloroethene in occupational settings. Longer-term exposure to lower concentrations of trichloroethene did not result in hepatic effects in humans. Histological changes, increased liver weight, and increased hepatic DNA synthesis were reported in a study where mice were exposed by gavage to 2400 mg/kg/day for 3 or 5 days/week for 3 weeks.

Both sexes of mice were administered trichloroethene in drinking water for 6 months. Reported doses ranged from 0 to 660 mg/kg/day for males and 0 to 793 mg/kg/day for females. Increased ketone and protein levels in urine were observed at 393 mg/kg/day in males. Both sexes experienced increased kidney weights at the high doses.

Rats exposed to 0, 50, 200, or 800 ppm of trichloroethene for 12 weeks, via the inhalation route, experienced increases in liver weight and hepatic indices. Hepatic indices that showed increases included total protein, albumin/globulin ratio, triglycerides, cholesterol, and cholinesterase.

Mice were treated with trichloroethene by gavage in a cancer bioassay by the National Toxicology Program (NTP 1989). Male and female mice treated with trichloroethene had a significantly higher incidence ($p<0.002$) of hepatocellular carcinomas over untreated controls.

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J18. TRICHLOROMETHANE

Fate and Transport

Sufficient information is not available to evaluate fate and transport of trichloromethane (chloroform).

Aquatic Toxicity

Sufficient information is not available to evaluate fate and transport of trichloromethane.

Mammalian Toxicity

Trichloromethane may be toxic by the inhalation, dermal absorption, and oral routes of exposure. Acutely and chronically, overexposure to trichloromethane may result in damage to the central nervous system, heart, liver, and kidneys. Fatalities in humans result from cardiac failure or, if survival is prolonged, kidney damage and failure.

Chronically, trichloromethane overexposure, either when used as an anesthetic or occupationally, has been found to cause liver enlargement and liver damage manifested clinically as jaundice, toxic hepatitis, or fatty liver. In experimental animals, trichloromethane has produced liver and kidney tumors in mice and rats. It also is embryotoxic and weakly teratogenic in animals. The teratogenic dose is not significantly lower than the maternally toxic and fetotoxic dose.

Acute Toxicity

The LC_{50} for trichloromethane is about 10,000 ppm in rats but may be lethal at concentrations as low as 1,000 ppm (mice). Fatty infiltration of the liver has been observed in mice exposed to trichloromethane vapors at a concentration of 100 ppm for 4 hours (ATSDR 1987). Higher concentrations resulted in a dose-related increase in fatty infiltration and frank necrosis (ATSDR 1987). In contrast, Sax (1984), relates that experimental animals may tolerate 5,000 to 6,000 ppm for 1 hour without ill effects. The mouse may be particularly sensitive to trichloromethane.

In humans, trichloromethane at high concentrations has caused death by cardiac arrest (IARC 1979). If survival is prolonged, fatality may result from liver and kidney damage (IARC 1979). Trichloromethane may cause anesthesia in humans at concentrations above 1,500 ppm (ATSDR 1987). When previously used as an anesthetic, concentrations more typically ranged between 20,000 and 40,000 ppm to initiate anesthesia and 1,500 to 2,000 ppm to maintain light anesthesia (2,000 to 15,000 ppm for maintenance of deep anesthesia) during the course of a surgical procedure (ASTDR 1987). Use of trichloromethane ended due to its cardiac sensitizing properties (to endogenous

catecholamines). Consistent with this observation, death in humans from overdose during anesthesia usually resulted from cardiac fibrillation (ASTDR 1987). Humans appear to be more resistant than mice to the hepatotoxic effects of trichloromethane.

In humans, trichloromethane exhibits an acute no observed adverse effect level (NOAEL) of 390 ppm for a 30-minute exposure (ATSDR 1987). Thirty minutes is not a sufficient length of time, however, to establish equilibrium. Therefore, a longer exposure might result in an adverse effect.

Subchronic Toxicity

Inhalation

The inhalation toxicity of trichloromethane in animals and humans is summarized in the Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile for trichloromethane. Target organs, toxic effects, NOAELs, and lowest observed adverse effect levels (LOAELs) are reported. In a 6-month inhalation study by Torkelson, liver damage (fatty infiltration) was observed at concentrations of 25, 50, or 85 ppm in rats exposed for 7 hours/day, 5 days/week (ACGIH 1986; ATSDR 1987; Torkelson and Rowe 1981). No effects were noted when exposures were 25 ppm/4 hours/day, representing a NOAEL. The same dose-related findings were observed for kidney effects (cloudy swelling) in rats, guinea pigs, and rabbits. Central nervous system effects (usually reversible) have also been observed in subchronic inhalation studies with trichloromethane but usually at significantly higher concentrations than those causing liver and kidney damage. Effects in humans are described under "Chronic Effects" since most of the information relates to occupational settings with average exposures in excess of 6 months.

Chronic Effects (Noncarcinogenic)

Humans

Challen, as reported by Torkelson and Rowe (1981), conducted a survey of an industrial population exposed to trichloromethane vapors at concentrations estimated to range between 77 and 237 ppm for one cohort and between 21 and 71 ppm for a second cohort with a shorter exposure history. The more severely exposed group exhibited signs of gastrointestinal distress and psychological depression (Torkelson and Rowe 1981). Other signs included thirst, irritability, lassitude, and frequent and burning urination (ATSDR 1987). The less severely exposed group showed similar but less dramatic symptoms. No abnormal results were seen in either group for the medical examination liver function tests. Temporary (and perhaps dramatic) excursions in trichloromethane concentrations may have contributed to the effects found. Other occupational surveys have been conducted that show similar

results as well as definite signs of hepatic injury including jaundice and liver enlargement (of the spleen as well). Uncertainty regarding exposure concentrations and the possibility of co-exposure to other toxic agents limits the utility of these studies in determining a NOAEL or LOAEL.

Experimental Animals

No long-term chronic inhalation studies in animals have been conducted with trichloromethane. In animals, the effects from oral exposure are similar to those found in subchronic inhalation studies. One study established a LOAEL of 12.9 mg/kg/day in dogs exposed orally to trichloromethane for 7.5 years. This dose resulted in fatty cyst formation in the liver.

Reproductive Toxicity

In a study by Land, sperm abnormalities were observed in rats exposed for 4 hours/day for 5 days at concentrations of 400 to 800 ppm (ATSDR 1987). The lower concentration represents a LOAEL.

No effects from inhalation of trichloromethane were found for humans.

Developmental Toxicity

Schwetz found that exposure to 100 ppm of trichloromethane (7 hours/day; days 6-15 of gestation) caused an increased incidence of missing ribs, short or missing tails, imperforate anus, subcutaneous edema, and delayed ossification of sternebrae in the offspring of rats (ATSDR 1987). Concentrations of 300 ppm, the highest tested, were fetotoxic and teratogenic. Thirty ppm, the lowest tested, represents a NOAEL for developmental effects. Murray found that 100 ppm was fetotoxic and teratogenic at 100 ppm, the only concentration tested in mice (ATSDR 1987).

No effects from inhalation of trichloromethane were found for humans.

Carcinogenicity

Humans

At least three occupational surveys have been conducted that did not indicate excess malignancies (ATSDR 1987). However, these studies are flawed by uncertainty of exposure concentrations and co-exposures to other potentially toxic agents. Moreover, these surveys were not designed to evaluate cancer rates in the manner of a modern epidemiological study.

Experimental Animals

No animal data were found relating to the carcinogenic potential of trichloromethane by the inhalation route of exposure. Many animal studies are available regarding oral exposure, however. These have been extensively reviewed by the International Agency for Research on Cancer (IARC) in 1979 and by ATSDR (1987). Briefly, trichloromethane is carcinogenic in rats and mice by the oral route of administration, producing hepatomas and hepatocellular carcinomas of the liver and epithelial malignancies of the kidneys and thyroid gland.

IARC (1979) concluded that evidence for carcinogenicity to humans was inadequate but was sufficient for animals.

Mutagenicity

A variety of genetic toxicity studies has been reviewed by ATSDR (1987) and yields largely negative results in both in vitro and in vivo systems.

IARC (1979) concluded that evidence for activity in short-term tests was inadequate.

References

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J19. URANIUM

The information presented for uranium has been taken in its entirety from "Health Risks of Radon and Other Internally Deposited Alpha-Emitters, BEIR IV" (NRC 1988).

Natural uranium consists mainly of uranium-238 (over 99% by weight) with smaller amounts of uranium-234 and -235. Natural uranium has a low specific activity; however, uranium-234 and -235 have shorter half-lives and account for about 50% of the radioactivity in natural uranium. Uranium can be found in rocks and soils and is a trace element in foods, particularly in crops, cereals, and drinking water. The geographical differences of uranium levels are wide. Gastrointestinal absorption from food or water is the primary source of internally deposited uranium in the general population. It is mainly stored in bones, where it is uniformly distributed. Inhalation of aerosols containing depleted or enriched uranium is a hazard of industrial exposure. The distribution and retention of uranium in the body after being inhaled depends upon the aerodynamic size of the particles and on their solubility in biological fluids. Inhalation of insoluble compounds is associated with uranium retention in lung tissue and hilar lymph glands.

Detrimental health effects could occur from intake of uranium compounds due to both chemical toxicity and alpha-radiation damage. Toxic effects of uranium on the kidney have been demonstrated through animal experiments; however, there is little evidence of toxic effects on other organs. The toxic effect of uranium differ based on the sensitivities of different species. The dog is believed to be the animal with the greatest similarity to humans with respect to uranium sensitivity. Intake of uranium isotopes with high specific activity (uranium-232 and -233) can cause bone sarcomas in mice, and massive doses of uranium oxide have resulted in lung fibrosis and lung cancer in primates, dogs, and rodents. These effects are seen as a result of alpha-particle irradiation of the lung.

Epidemiological surveys of uranium millers and miners have been conducted to determine the effects of exposure to dusts containing relatively high concentrations of natural uranium. These surveys did not yield convincing evidence of serious renal damage or of increased rates of malignant tumors. However, the studies conducted had limited power to detect increased rates of disease, and confounding factors obscured the interpretations. As a result, the emphasis has been on animal data to determine the toxic effects of uranium.

Based on observations of animals exposed to high-specific-activity uranium, a small excess of bone sarcomas in human populations could result from exposure to natural uranium. However, the magnitude of the excess depends on which mathematical model is chosen. Virtually no effect is expected at environmental natural uranium concentrations if the dose-response relationship is quadratic. Ingestion of food and water at an environmental rate of 1 pCi/day could be associated with

a lifetime risk of 1.5 bone sarcomas per million persons exposed if a linear dose-response relationship is used. This can be compared to the 750 naturally occurring bone sarcomas per million persons in the United States. Based on the present evidence, it has been concluded that the general population risk associated with natural uranium is very low and might be negligible. Higher risks could be associated with higher uranium concentrations in drinking water supplies.

Reference

NRC. 1988. Health Risks of Radon and Other Internally Deposited Alpha-Emitters, BEIR IV. Committee on the Biological Effects of Ionizing Radiations Board on Radiation Effects Research Commission on Life Sciences, National Research Council. National Academy Press, Washington, D.C. 1988.

J20. SILVER (CASRN 7440-22-4)

Fate and Transport

Silver can exist in several chemical forms in aqueous systems. Metallic silver, which has very low solubility, is stable over much of the Eh-pH range for water. Concentrations of hydrated silver cations, usually present as the univalent species, may be controlled by reaction with chloride, bromide, and iodide ions to give insoluble silver halides. Precipitation of AgCl may exert a major control on solubility of silver where chloride concentrations are relatively high. Under the reducing conditions often found in bed sediments, formation of insoluble silver sulfides and metallic silver may also control levels of soluble silver species. Silver is strongly sorbed by manganese dioxide, ferric hydroxide, and clay minerals. Sorption is probably the dominant process leading to removal of dissolved silver from the water column. In general, concentrations of silver are higher in the bed sediments than in overlying waters. For example these concentrations were reported to differ by a factor of 1,000 in an alpine lake. (This information was compiled from EPA (1980).)

Bioaccumulation of silver by aquatic plants, invertebrates, and vertebrates occurs readily and appears to depend primarily on sorption/desorption from sediments. However, the amount of silver partitioned to the biota appears to be minor in comparison with the amount partitioned to the sediments. Little food-chain magnification seems to occur. Photolysis, volatilization, atmospheric transport, and biotransformation do not appear to be important fate or transport processes for silver.

Aquatic Toxicology

Acute toxicity values for freshwater invertebrates range from 0.25 µg/L for Daphnia magna to 4,500 µg/L for the scud Gammarus pseudolimnaeus. Acute values for fish range from 3.9 µg/L for the fathead minnow in soft water to 280 µg/L for rainbow trout in hard water. In freshwater, the acute toxicity of silver appears to decrease as hardness increases. Soluble compounds, such as silver nitrate, are generally much more toxic than insoluble compounds. Chronic values ranging from 2.6 to 29 µg/L are reported for Daphnia magna. Two early life-stage studies with rainbow trout report chronic values of 0.12 µg/L. Acute-chronic ratios for Daphnia magna and rainbow trout are 2.0 and 54, respectively. Freshwater aquatic plants appear to be more resistant to silver than the more sensitive animals.

Acute values for saltwater organisms range from 4.7 µg/L for the summer flounder to 1,400 µg/L for the sheepshead minnow. A chronic value of 18 µg/L,and an acute-chronic ratio of 14 is reported for the mysid shrimp.

Reduced cell numbers are observed in the saltwater alga Skeletonema costatum after exposure to 130 µg/L of silver.

Mammalian Toxicology

Only equivocal evidence exists to suggest that silver has carcinogenic activity in experimental animals. Silver implants and injected colloidal suspensions are reported to produce tumors or hyperplasia at the site of application in several studies. However, it is suggested that the effects are due to the physical form of the metal or to its action as an exogenous irritant. There are no studies to suggest that silver is carcinogenic in humans. Silver does not appear to have significant mutagenic or teratogenic activity in humans or experimental animals.

Silver can be absorbed in humans by inhalation or ingestion. The most common and most noticeable effects of excessive absorption are a local or generalized impregnation of the tissues referred to as argyria. In cases of argyria, accumulation of silver can result in a blue-gray pigmentation of the skin, hair, internal organs, and conjunctiva of the eye. Large oral doses of silver compounds may produce serious effects in humans. For example, silver nitrate can cause violent abdominal pain, vomiting, and convulsions, and ingestion of 10 grams is reported to usually be fatal. Lesions of the liver, kidney, bone marrow, and lungs have also been attributed to industrial or medicinal exposure.

Intravenous administration of silver nitrate is reported to produce pulmonary edema and congestion in experimental animals. Liver and kidney damage, central nervous system effects, and death have also been reported in experimental animals exposed to various silver compounds. The intraperitoneal LD_{50} (30 days) for Ag as the nitrate in male Swiss albino mice is 13.9 mg/kg. Rats exposed to silver in their drinking water for 11 months showed no toxic effects at concentrations less than 0.4 mg/L. Hemorrhaging occurred in the kidneys at 0.4 mg/L. Conditioned reflex activity and immunological resistance were lowered, and brain nucleic acid content was increased at 0.5 mg/L. Numerous physiological changes, including growth depression, and pathomorphological changes in the liver, kidney, stomach, and small intestine were evident in rats exposed to 20 mg/L for 5 months.

References

EPA. 1980. Abient Water Quality Criteria for Silver." U.S. Environmental Protection Agency, Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C. October 1980. EPA-440/5-80-071.

J21. TRICHLOROFLUOROMETHANE (CAS NO. 75-69-4)

Fate and Transport

Trichlorofluoromethane has been used as a refrigerant, propellant, and blowing agent for polymeric foams (ACGIH1986). Owing to high volatility, 0.904 atm at 20°C, and a relatively low boiling point, 23.8°C, environmental releases are expected to favor atmospheric transport and dispersion (Verschueren 1983). In the atmosphere, trichlorofluoromethane is highly persistent, exhibiting a half-life of 15 to 30 years (EPA 1980).

In water, trichlorofluoromethane exhibits relatively high solubility, 1,100 mg/L at 25°C (Verschueren 1983). It has a high Henry's Law constant, 5.83×10^{-2} atm m^3/mole at 25°C, suggesting that it will rapidly volatilize from water having access to the atmosphere (EPA 1989).

Releases to the soil are also expected to result in quick volatilization to the atmosphere. Trichlorofluoromethane exhibits a relatively low octanol/water partition coefficient, 2.53, and is not expected to be significantly adsorbed by soil (EPA 1989). Based on this coefficient, however, it is expected to percolate to groundwater in which it will exhibit high mobility.

Aquatic Toxicology

While specific data on the aquatic toxicity of trichlorofluoromethane are limited, the available data for the halomethanes in general indicate that acute toxicity to freshwater aquatic life occurs at concentrations as low as 11,000 μg/L. This level is expected to be lower with sensitive species. Data on the chronic effects of trichlorofluoromethane were unavailable (EPA 1986).

Considering its relatively low log octanol/water partition coefficient, trichlorofluoromethane is not expected to bioaccumulate in aquatic organisms or to be adsorbed to sediments to any significant level.

Mammalian Toxicology

Health effects studies on trichlorofluoromethane have focused primarily on inhalation exposures. Acute inhalation exposure, either by intentional misuse of aerosol products or overuse of propellant bronchodilators, is associated primarily with cardiac arrhythmias in humans. Several animal studies have suggested that pre-existing cardiac or pulmonary disease may enhance this toxic effect (EPA 1980).

Longer-term inhalation studies of 42 and 90 days of trichlorofluoromethane in a number of animal species at levels of 5,610 and 57,500 mg/m^3, respectively, noted pneumonitic changes, liver changes, and elevated serum urea nitrogen as the primary effects (EPA 1980).

References

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J22. DICHLOROMETHANE (CASRN 75-09-2)

Fate and Transport

Volatilization to the atmosphere appears to be the major mechanism for removal of dichloromethane (methylene chloride) from aquatic systems and its primary environmental transport process (EPA 1979). Photooxidation in the troposphere appears to be the dominant environmental fate of methylene chloride. Once in the troposphere, the compound is attacked by hydroxyl radicals, resulting in the formation of carbon dioxide, and to a lesser extent, carbon monoxide and phosgene. Phosgene is readily hydrolyzed to HCl and CO_2. About one percent of tropospheric methylene chloride would be expected to reach the stratosphere where it would probably undergo photodissociation resulting from interaction with high energy ultraviolet radiation. Aerial transport of methylene chloride is partly responsible for its relatively wide environmental distribution. Atmospheric methylene chloride may be returned to the earth in precipitation.

Photolysis, oxidation, and hydrolysis do not appear to be significant environmental fate processes for methylene chloride, and there is no evidence to suggest that either adsorption or bioaccumulation are important fate processes for this chemical. Although methylene chloride is potentially biodegradable, especially by acclimatized microorganisms, biodegradation probably only occurs at a very slow rate.

Aquatic Toxicology

Very little information concerning the toxicity of methylene chloride to domestic animals and wildlife exists (EPA 1980). Acute values for the freshwater species, fathead minnow (Daphnia magna), and bluegill are 224,000 and 193,000 µg/liter, respectively. Acute values for the saltwater species, mysid shrimp and sheepshead minnow, are 256,000 and 331,000 µg/liter, respectively. No data concerning chronic toxicity are available. The 96-hour EC_{50} values for both freshwater and saltwater algae are greater than the highest test concentration, 662,000 µg/liter.

Aquatic Life

The available data are not adequate for establishing criteria.

Mammalian Toxicology

Methylene chloride is currently under review by the National Toxicology Program (NTP 1984, EPA 1985). Preliminary results indicate that it produced an increased incidence of lung and liver tumors in mice and mammary tumors in female and male rats. In a chronic inhalation study, male rats exhibited an increased incidence of sarcomas in the ventral neck region (Burek et al. 1984). However,

the authors suggested that the relevance and toxicological significance of this finding were uncertain in light of available toxicity data. Methylene chloride is reported to be mutagenic in bacterial test systems. It also has produced positive results in the Fischer rat embryo cell transformation test. However, it has been suggested that the observed cell-transforming capability may have been due to impurities in the test material. There is no conclusive evidence that methylene chloride can produce teratogenic effects.

Methylene chloride increased the incidence of lung and liver tumors and sarcomas in rats and mice. It was found to be mutagenic in bacterial test systems. In humans, methylene chloride irritates the eyes, mucous membranes, and skin. Exposure to high levels adversely affects the central and peripheral nervous systems and the heart. In experimental animals, methylene chloride is reported to cause kidney and liver damage, convulsions, and paresis.

In humans, direct contact with methylene chloride produces eye, respiratory passage, and skin irritation (EPA 1985). Mild poisonings due to inhalation exposure produce somnolence, lassitude, numbness and tingling of the limbs, anorexia, and lightheadedness, followed by rapid and complete recovery. More severe poisonings generally involve correspondingly greater disturbances of the central and peripheral nervous systems. Methylene chloride also has acute toxic effects on the heart, including the induction of arrhythmia.

References

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EPA. 1985. Health Assessment Document for Chloroform. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, D.C. September 1985. EPA 600/8-84/004F.

J23. 1,2-DICHLOROETHENE (CAS NO. 156-69-2 (*CIS*) 156-60-5 (*TRANS*) 540-59-0 (MIXTURE)

Fate and Transport

1,2-Dichloroethene occurs in *cis* and *trans* isomeric forms. It is a synthetic chemical with no known natural sources. There are limited data concerning its environmental fate. However, the behavior of 1,2-dichloroethene in the environment can be predicted on the basis of information for chemically related compounds. Based on their physical properties, the two isomers are expected to behave similarly in the environment (EPA 1987).

Because of its high volatility (vapor pressures of 208 mm of mercury (*cis*) and 324 mm of mercury (*trans*) at 25°C), 1,2-dichloroethene is expected to volatilize rapidly from surface soils. Biodegradation in soil is expected to be a slow process (EPA 1984a; EPA 1984b). 1,2-Dichloroethene is mobile in soils and is expected to leach into and migrate with groundwater, in which it is stable. 1,2-Dichloroethene, particularly the *cis* isomer, may occur in groundwater as a degradation product of trichloroethene, tetrachloroethene, or vinyl chloride (EPA 1987). The dominant removal process of 1,2-dichloroethene in surface waters appears to be volatilization. Photodissociation, hydrolysis, sorption, and oxidation are unlikely to be significant fate processes in surface water (EPA 1987).

Aerial transport may play a major role in the distribution of 1,2-dichloroethene. It has been predicted that 1,2-dichloroethene would be transported to the troposphere where photooxidation resulting from attack by hydroxyl radicals is expected to rapidly degrade 1,2-dichloroethene to products such as formic acid, hydrochloric acid, and carbon monoxide. Its lifetime in the troposphere is estimated at less than one day. It is unlikely that 1,2-dichloroethene is transported to the stratosphere to undergo photodissociation (EPA 1979).

Aquatic Toxicology

Specific data on the aquatic toxicity of 1,2-dichloroethene are limited. The available data for dichloroethenes in general indicate that acute toxicity to freshwater aquatic life occurs at concentrations as low as 11,600 ≤ g/L and as low as 224,000 ≤ g/L for saltwater aquatic life. These concentrations are expected to be lower in more sensitive species (EPA 1986).

Bioconcentration factors of 0.5 (*trans*) and 0.8 (*cis*) have been estimated (EPA 1984a, EPA 1984b). These relatively low values suggest that bioaccumulation of 1,2-dichloroethene in aquatic organisms will probably be insignificant.

Mammalian Toxicology

The major source of exposure to 1,2-dichloroethene is from ingestion of contaminated water, except in areas near production sites where inhalation exposure may be more significant (EPA 1987).

In humans, acute exposure to low levels of 1,2-dichloroethene may produce nausea, vomiting, weakness, and tremors, while high concentrations will cause more severe depression of the central nervous system (Gosselin et al.1984). The *trans* isomer has been found to be about twice as potent as the *cis* isomer with respect to central nervous system depression (EPA 1987). 1,2-Dichloroethene can also act as a primary irritant in humans, producing dermatitis and irritation of the mucous membranes and irritation of the eyes (Sittig 1985; Hazline 1989).

Acute exposure to 1,2-dichloroethene may also produce changes in liver enzyme activity. It was reported that a single 8-hour inhalation exposure to 200 ppm of either *cis*- or 1,2-*trans*-dichloroethene inhibited mixed function oxidases in rats, with the *cis* isomer exhibiting greater activity than the *trans* isomer (EPA 1984b). It has also been reported that acute exposure at 200 ppm may cause slight degeneration of liver lobules and fatty deposition in the Kupffer cells of rats (EPA 1989).

Oral LD_{50} values for 1,2-dichloroethene in rats range from 770 mg/kg to 2000 mg/kg for the isomeric mixture (RTECS 1988; ACGIH 1986).

Long-term exposure to 1,2-dichloroethene can produce a variety of toxic effects. Repeated exposure of cats and rabbits to vapor concentrations of 0.16 to 0.19 percent 1,2-*trans*-dichloroethene caused a loss of appetite and respiratory irritation while the *cis* isomer additionally produced pathological changes in the lungs, liver, and kidneys (Clayton and Clayton 1981).

In a 90-day drinking water study using concentrations of 0.1, 1.0, and 2.0 mg/ml in mice, it was shown that 1,2-*trans*-dichloroethene produced significant increases in serum alkaline phosphatase at the 1.0 and 2.0 mg/ml levels as well as decreases in liver glutathione at 2.0 mg/ml. In a 90-day study of the immunotoxicity of 1,2-*trans*-dichloroethene in mice, dose levels of 17, 175, and 387 mg/kg/day were shown to produce a significant decrease in levels of antibody-forming cells in the spleen (EPA 1989).

1,2-*trans*-Dichloroethene failed to produce chromosomal aberrations in mouse bone marrow cells. 1,2—*cis*—Dichloroethene was found to produce a dose-dependent increase in mutations using the host-media bioassay. It was also shown to induce chromosomal aberrations, as indicated by cytogenic analysis of bone marrow cells isolated from mice given repeated intraperitoneal injections. Both isomers were non-mutagenic in E.coli and Salmonella (EPA 1984a; EPA 1984b).

No information concerning the reproductive or developmental toxicity of 1,2-dichloroethene was located in the surveyed literature.

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J24. CHLORDANE

Fate and Transport

Chlordane is a pesticide that was available for use in the United States from 1948 to 1988. It was used mainly to stop termites but was also used on corn and other crops. Chlordane was phased out of use due to concern over cancer risk, evidence of human exposure and accumulation in body fat, persistence in the environment, and danger to wildlife (ATSDR 1989).

Chlordane in water will both adsorb to sediments and volatilize. Studies indicate that chlordane does not degrade rapidly in water; these transport mechanisms will probably account for more removal than degradation.

In soil, chlordane adsorbs to organic matter and volatilizes slowly over time. It does not leach significantly nor is it readily degraded. It has been shown to remain in the top 20 centimeters of soil for periods over 20 years.

In outdoor air, chlordane is expected to occur predominantly in the vapor phase. Chlordane will degrade in air both by photolysis and oxidation. Reaction with hydroxyl radicals is expected to remove chlordane with an estimated atmospheric half-life of 1.3 days.

Aquatic Toxicity

Chlordane will bioconcentrate in both marine and freshwater species, as well as bacteria. A bioconcentration factor of 18,500 has been reported for rainbow trout (ATSDR 1989).

There is no ambient water quality criteria for chlordane specifically for the protection of aquatic life; however, because of its bioconcentration potential, the ambient water quality criteria for the ingestion of water, fish, and shellfish is 0.0046 μg/L to correspond with a cancer risk of one in 100,000.

Mammalian Toxicity

The acute, oral lethal dose of chlordane in humans is estimated at 25 to 50 mg/kg-day, whereas animal studies have shown oral LD50s in the range of 83 mg/kg for rats to 1720 mg/kg for hamsters. There are no reported human deaths from dermal exposures; however, the dermal LD50s in animals were reported at 690 mg/kg (rats) and 1100 mg/kg (rabbits). Epidemiologic studies and case reports of acute exposure indicate that inhalation exposure by humans does not result in death. Similarly, animal studies with air concentrations of 25 to 50 percent chlordane did not show increased mortality (ATSDR 1989).

Systemic effects of chlordane exposure are primarily limited to effects on the nervous system, digestive system and liver. Central nervous system (CNS) effects including headache, confusion, muscle tremors, seizures, convulsions, and coma have been reported following acute human oral exposures. The lowest dose estimated to cause CNS effects in humans is 0.15 mg/kg. The lowest-observed-adverse-effect level (LOAEL) reported for CNS effects in animals is 1.25 mg/kg-day.

Chlordane is considered a probable human carcinogen. Three strains of mice developed hepatocellular carcinoma following oral exposures of 1.21, 3.25, and 6.25 mg/kg-day. An increase incidence of hepatocellular adenoma was reported for rats ingesting 1.175 mg/kg-day. In another study on mice, chlordane was shown to promote the carcinogenicity of dimethylnitrosamine.

<u>Reference</u>

ATSDR. 1989. "Toxicological Profile for Chlordane." Agency for Toxic Substances and Disease Registry.

APPENDIX K

EG&G STAFF AQUIFER TEST ANALYSIS

February 9, 1994

Roy F. Weston
Attention: Mr. William Little
6501 Americas Parkway, N.E.
Albuquerque, NM 87110-1517

RE: Additional Analysis of OU-1 Pump Test Data

Dear Mr Little:

The time-drawdown (Jacob) analysis and the recovery analysis of the OU-1 pump test data are complete and enclosed for inclusion into the RIR pump test data appendix. The calculated Transmissivities do not materially differ from earlier calculations. The inclusion of several different analysis techniques, however, provides a more complete basis to support the estimated aquifer hydraulic parameters.

Sincerely,

EG&G Mound Applied Technologies

Alexander G. Bray, C.P.G.
Senior Hydrogeologist

Enc

JACOB ANALYSIS

Time-drawdown plots were analyzed using the Jacob assumptions for wells which lie relatively close to the pumping well (071). Wells that lie farther than 500 feet from the pumping well were not analyzed as they do not satisfy the Jacob requirement that $u < 0.02$.

There are two separate response types observed in the wells. First, the majority of the wells (P005, P009, 156, 304, 309, 393) respond to pumping at 071 with water levels declining in the expected straight-line relationship after some early time perturbations. Second, several of the wells (P006, P013, P027, 394) display a sharp increase in the drawdown rate from approximately 280 min after the start of the aquifer test to approximately 600 min after the start of the test. This period of increased drawdown in the affected wells corresponds to the time in which the Mound Plant Production well 076 was pumped at an average flow of 566 gpm to fill the Mound Plant water supply system. The data from P027 displays this effect the most clearly, including a slight decrease in drawdown, (recovery of water levels) after the pumping rate from well 076 was reduced.

All wells display influence from the river in the latter stages of the test. After 20,000 minutes there is a slight rise in water levels in the wells before declining again. The influence is relatively minor and the general trend of the water level decline can be interpolated.

Transmissivities and storativities were calculated for all the wells. Wells which displayed the increased drawdown rate were also used to calculate an additional transmissivity value based on the assumption that this was caused by the combined effects of well 071 and Mound Production well 076. These transmissivity values were then averaged to determine a most likely value. The standard deviation of the data from all the wells was used to determine a reasonable maximum and minimum value.

RECOVERY ANALYSIS

The data from the recovery portion of the pump test is quite good. The aquifer rapidly recovered over an approximately 5-day period. Although there is some influence on aquifer water levels by river stage fluctuations, the duration of these perturbations is longer than several days. Since the majority of the information on aquifer hydraulic parameters comes from the first day of recovery, these river caused water levels fluctuations can be safely discounted.

The technique for recovery analysis is developed in Driscoll, Groundwater & Wells 2nd ed. pp255-260. The time-recovery technique was used. The residual drawdown technique is not applicable due to the long duration of the pumping interval and the regional water level decline during the test duration.

Several of the wells and piezometers (P009, 156, 304,309, and 393) displayed a possible range of transmissivities. The time recovery plots showed a possible double straight line

effect. The calculated recovery is greater than would be expected from an extrapolation of the earlier time data. 700 minutes after the pump was switched off the time recovery plots in these wells display a non-ideal response in that water levels appear to be increasing faster than theory would predict.

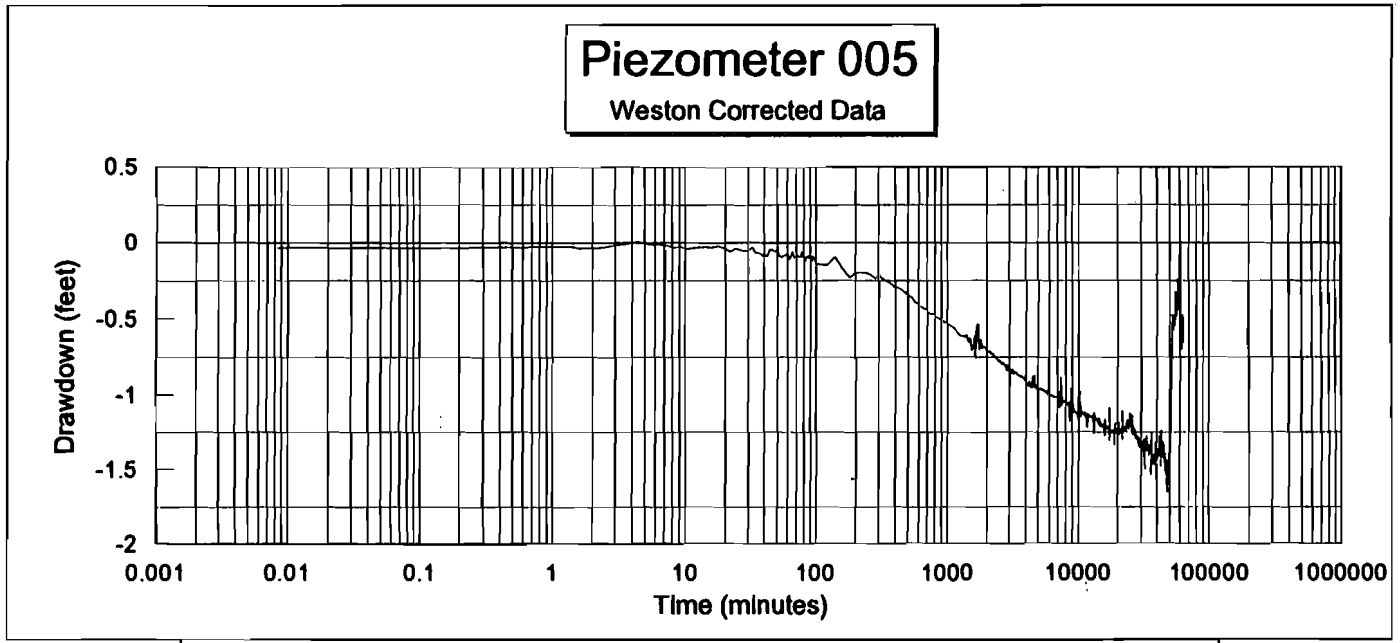
As there is no method of determining which part of the plotted curve (before 700 min or after 700 min) is correct we must make several assumptions which may counterbalance one another: 1.) The latter data is a result of recharge from the river or canal; 2.) the earlier time data (<700 min) is recovering more slowly than predicted (possibly due to the unquantified pumping at the Mound Production well). Since both of these effects are quite plausible, a reasonable method to treat the data is to average the estimated values to get an approximate transmissivity and storativity.

The remaining well and piezometer (p005, p006, p013, p027, and 394) data displays a straight line on the time recovery plots.

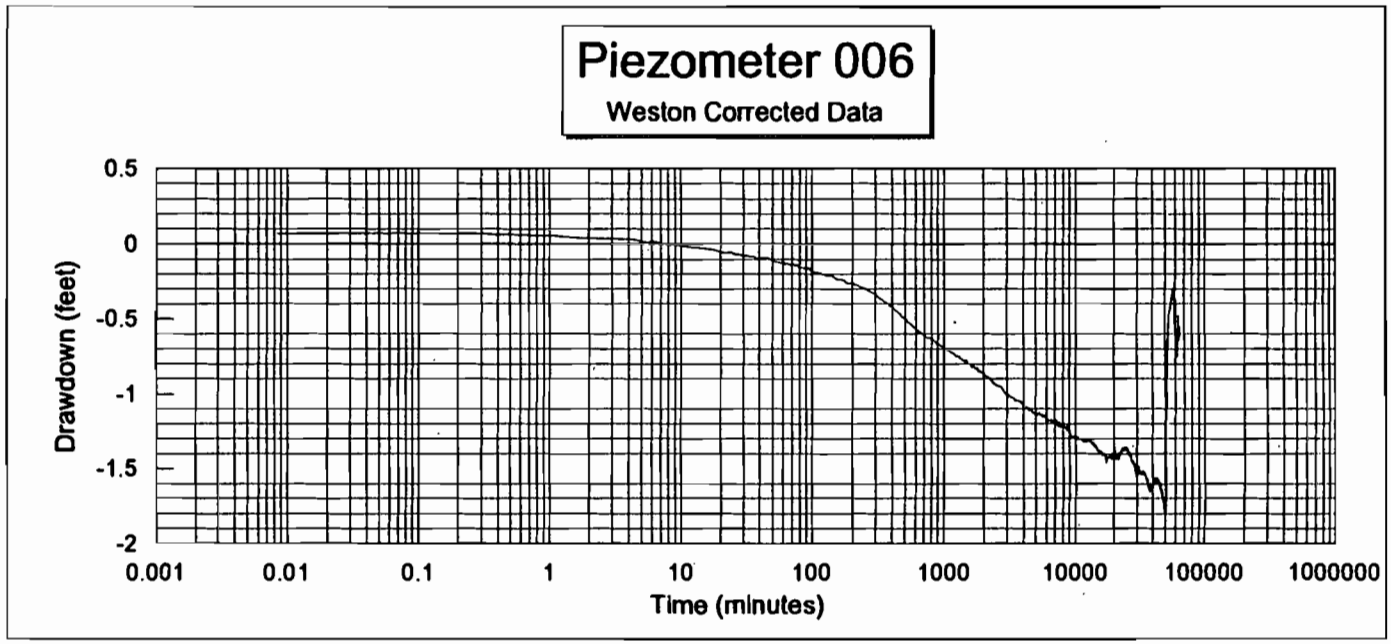
The average transmissivity value is estimated to be 40,500 ft^2/day with a standard deviation of 12,000 ft^2/day. Storativities average 0.01, which is consistent for an unconfined aquifer. Storativities estimated from recovery data may have a tendency to be smaller than those estimated from other techniques due to the possibility that air bubbles remain entrapped in the pore spaces of a recovering unconfined aquifer.

JACOB PLOTS

Well ID	Distance to PW (FEET)	Sat Thickness At PW	Sat Thickness At Obs well	Average Sat Thickness	Formation of Completion	Q = 670 gpm T	K ft*ft/day	S	Q = 1236 gpm T	K ft*ft/day
P027	107	61	40	50.5	BVA	43000	851	0.080	33500	663
P006	266	61	9	35	BVA	39000	1114	0.050		
P005	396	61	6	33.5	BVA	31500	940	0.040		
P009	307	61	61	61	BVA	52500	861	0.150		
P013	214	61	94	77.5	BVA	49000	632		66000	852
156	472	61	149	105	BVA	53500	510			
304	474	61	150	105.5	BVA	62000	588	0.170		
309	208	61	20	40.5	Bedrock	39500	975	0.330		
393	375	61	25	43	Bedrock	43000	1000	0.100		
394	169	61	40	50.5	Bedrock	42000	832	0.040	48000	950
					average	46346	828	0.120		
					std dev	10238	180	0.098		
					reasonable max	56584	1008	0.218		
					resonable min	36109	649	0.022		

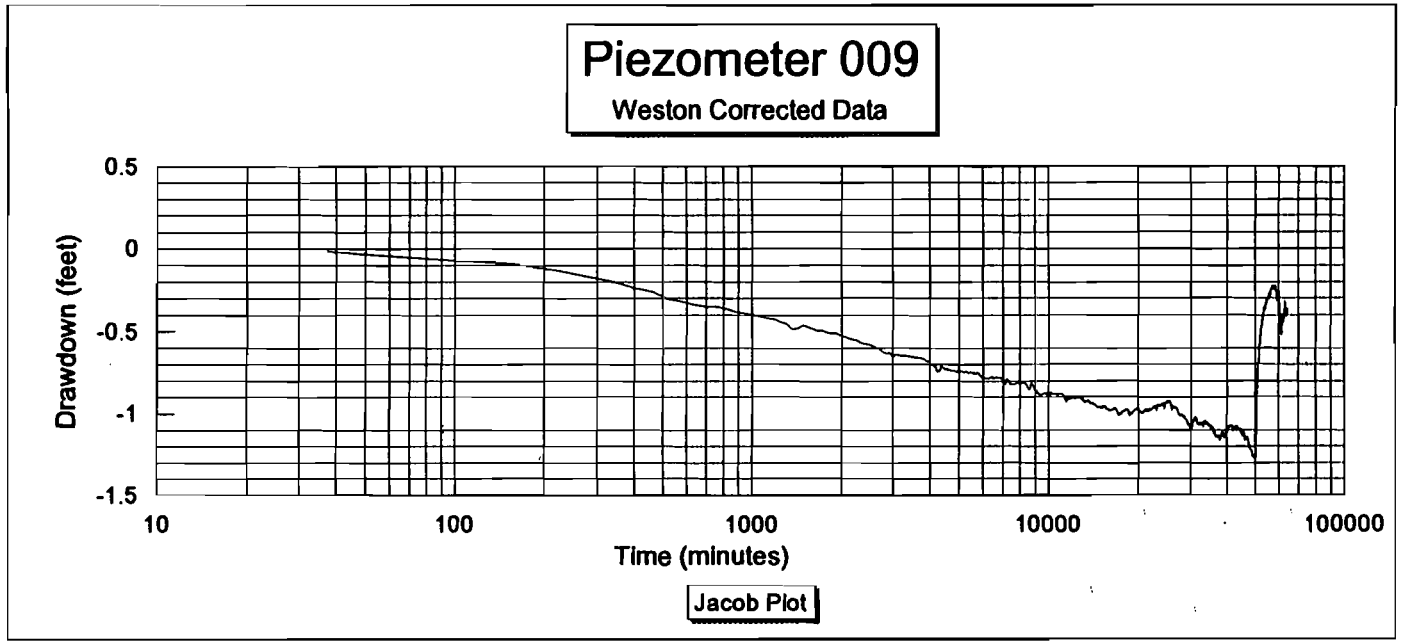


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	396	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.75	feet (over one log cycle)	
Time intcp	tmin	120	min	
Time intcpt	to	0.083333	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.037636		
Transmiss	T	31476.96	ft*ft/day	

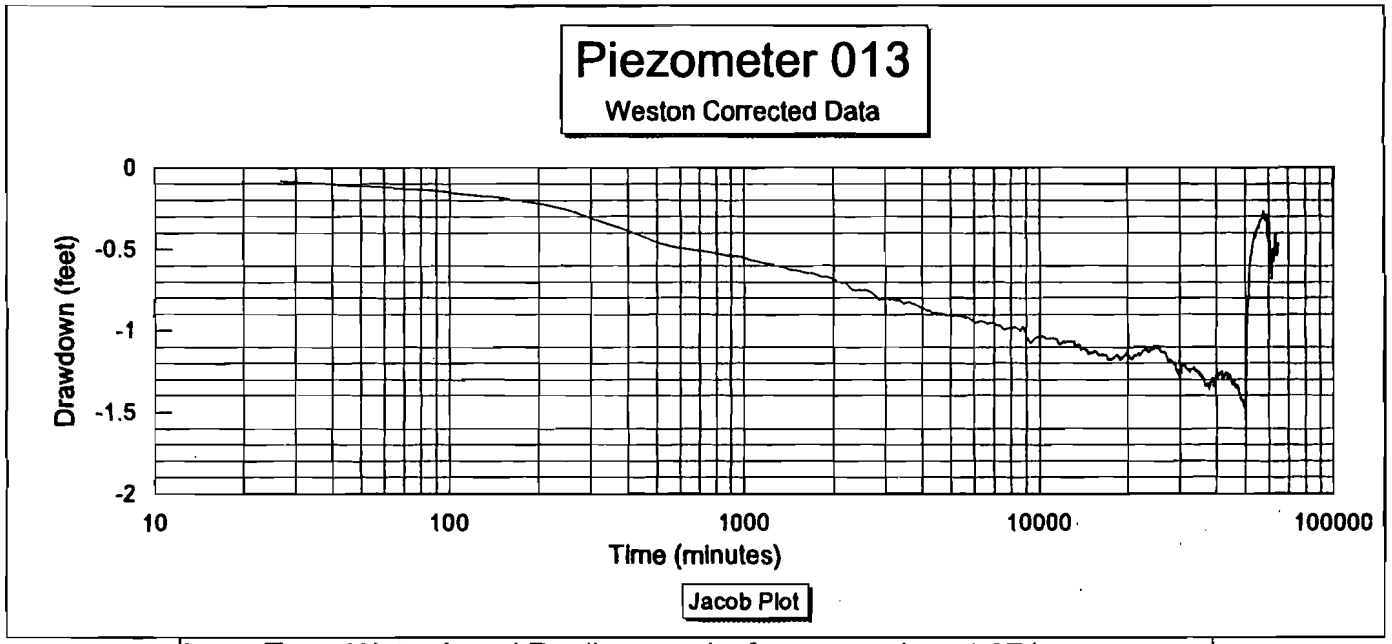


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	266	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.6	feet (over one log cycle)	
Time intcp	tmin	60	min	
Time intcpt	to	0.041667	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.052133		
Transmiss	T	39346.2	ft*ft/day	

Water Level Decline results from combined pumping at 071 & 076			
Dist. to PW	r	266	feet
Flow Rate	Qgpm	1010	gpm
Flow Rate	Q	194438.5	cu ft/day
delta s	ds	0.6	feet

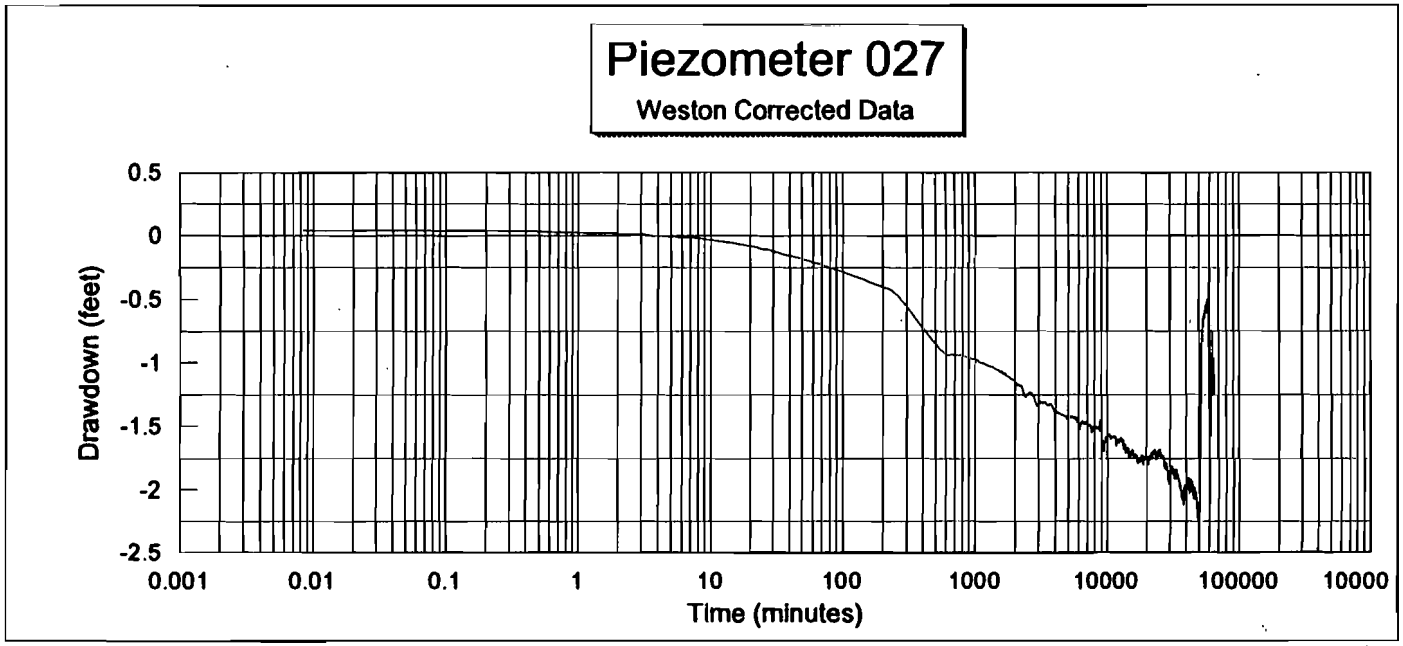


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	307	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.45	feet (over one log cycle)	
Time intcp	tmin	170	min	
Time intcpt	to	0.118056	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.147854		
Transmiss	T	52461.6	ft*ft/day	



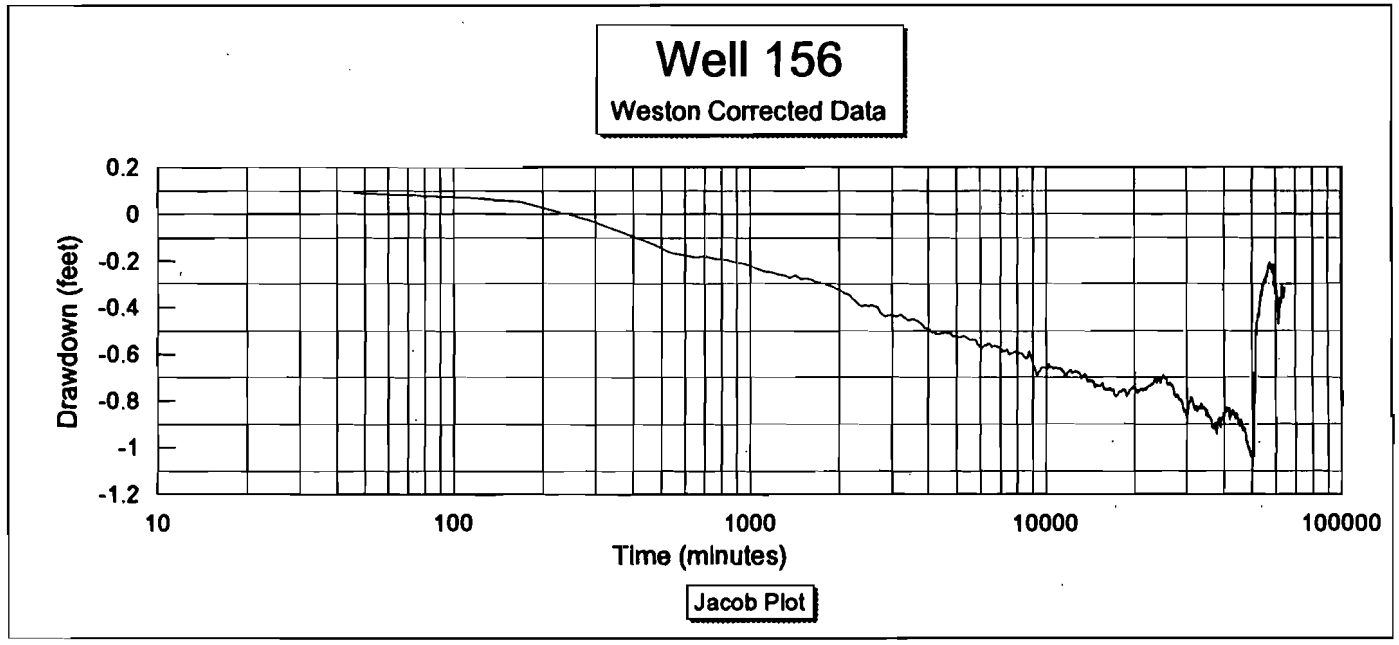
Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	214	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.48	feet (over one log cycle)	
Time intcp	tmin	0	min	
Time intcpt	to	0	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0		
Transmiss	T	49182.75	ft*ft/day	

Steep Water Level Decline from combined pumping at 071 & 076				
Flow Rate	Qgpm	1236	gpm	
Flow Rate	Q	237946.5	cu ft/day	
delta s	ds	0.66	feet	
pi	pi =	3.14159		
Transmiss	T	65986.3	ft*ft/day	T=2.3*Q/(4* pi*ds)

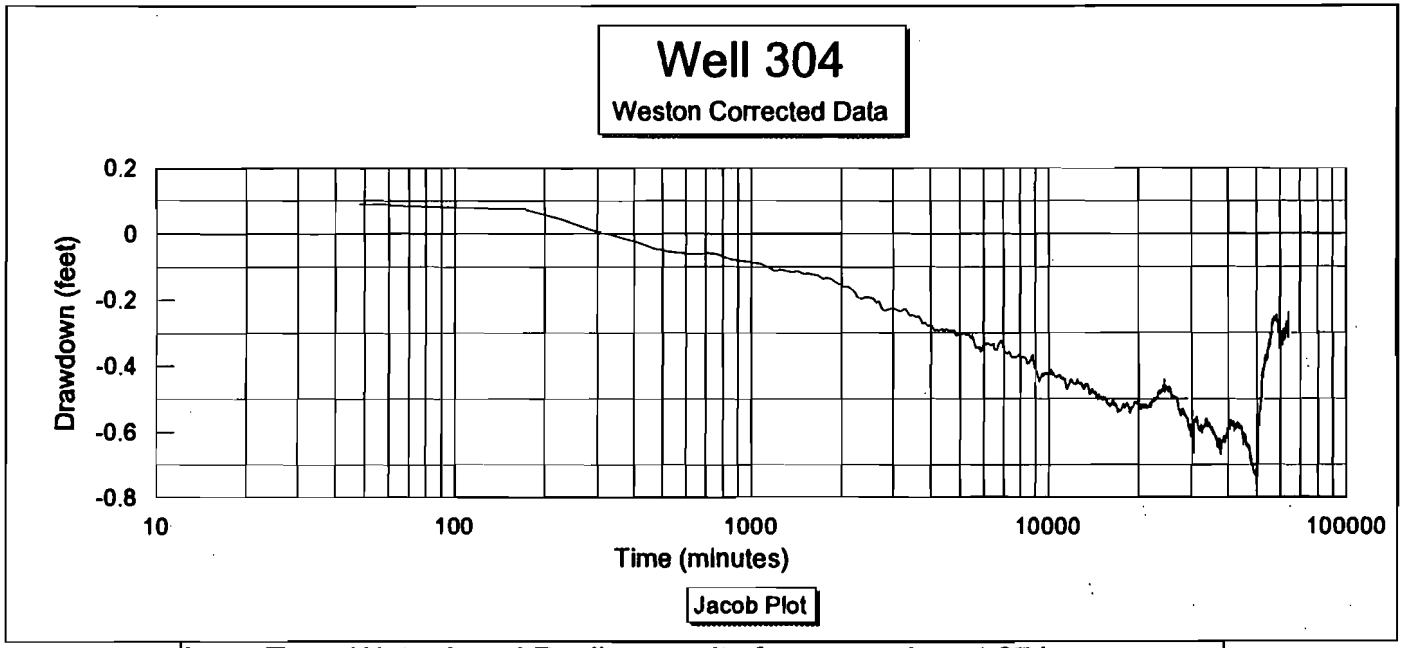


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	107	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.55	feet (over one log cycle)	
Time intcp	tmin	14	min	
Time intcpt	to	0.009722	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.082011		
Transmiss	T	42923.13	ft*ft/day	

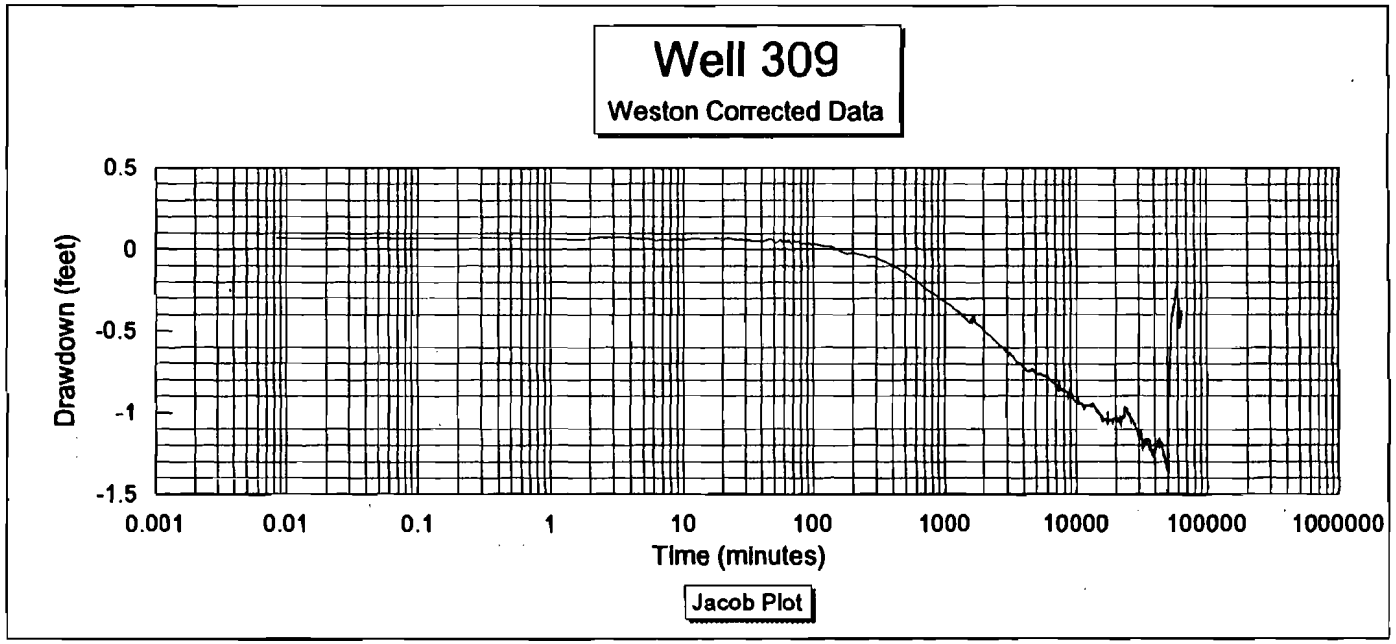
Steep Water Level Decline from combined pumping at 071 & 076				
Flow Rate	Qgpm	1236	gpm	
Flow Rate	Q	237946.5	cu ft/day	
delta s	ds	1.3	feet	
pi	pi =	3.14159		
Transmiss	T	33500.74	ft*ft/day	T=2.3*Q/(4* pi*ds)



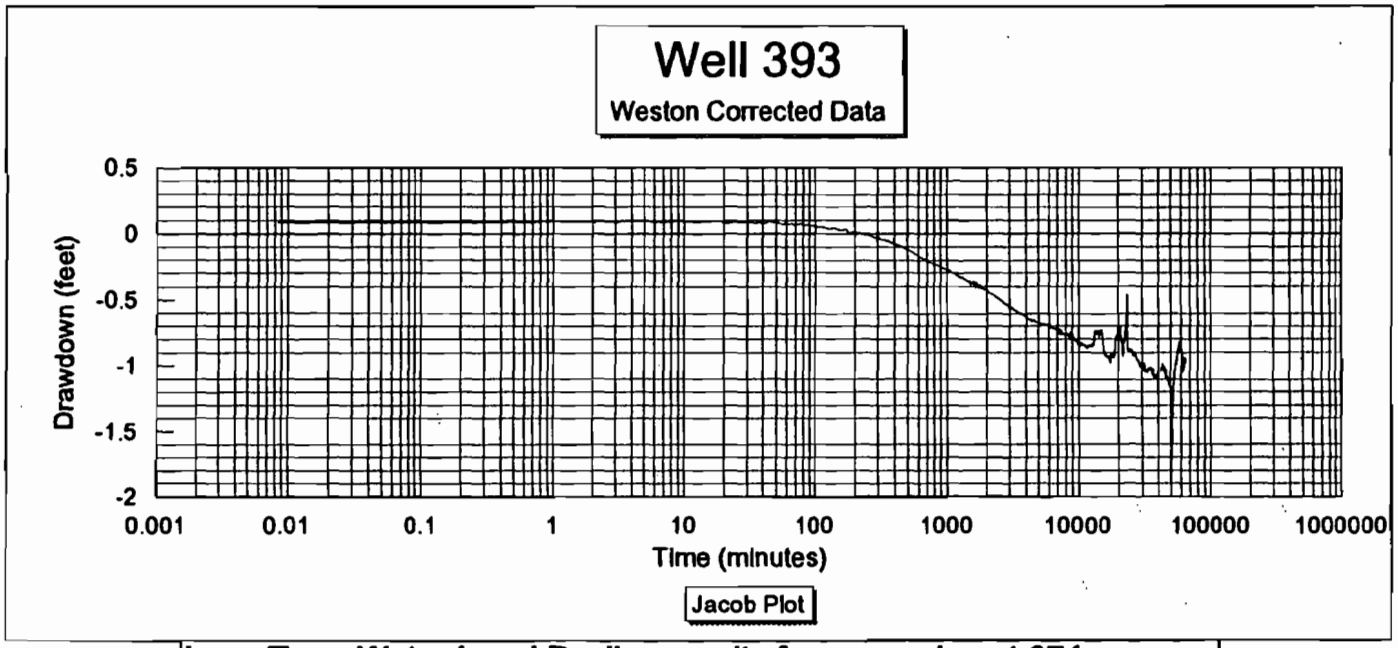
Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	472	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.44	feet (over one log cycle)	
Time intcp	tmin	0	min	
Time intcpt	to	0	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0		
Transmiss	T	53653.91	ft*ft/day	



Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	474	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.38	feet (over one log cycle)	
Time intcp	tmin	400	min	
Time intcpt	to	0.277778	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.17282		
Transmiss	T	62125.58	ft*ft/day	

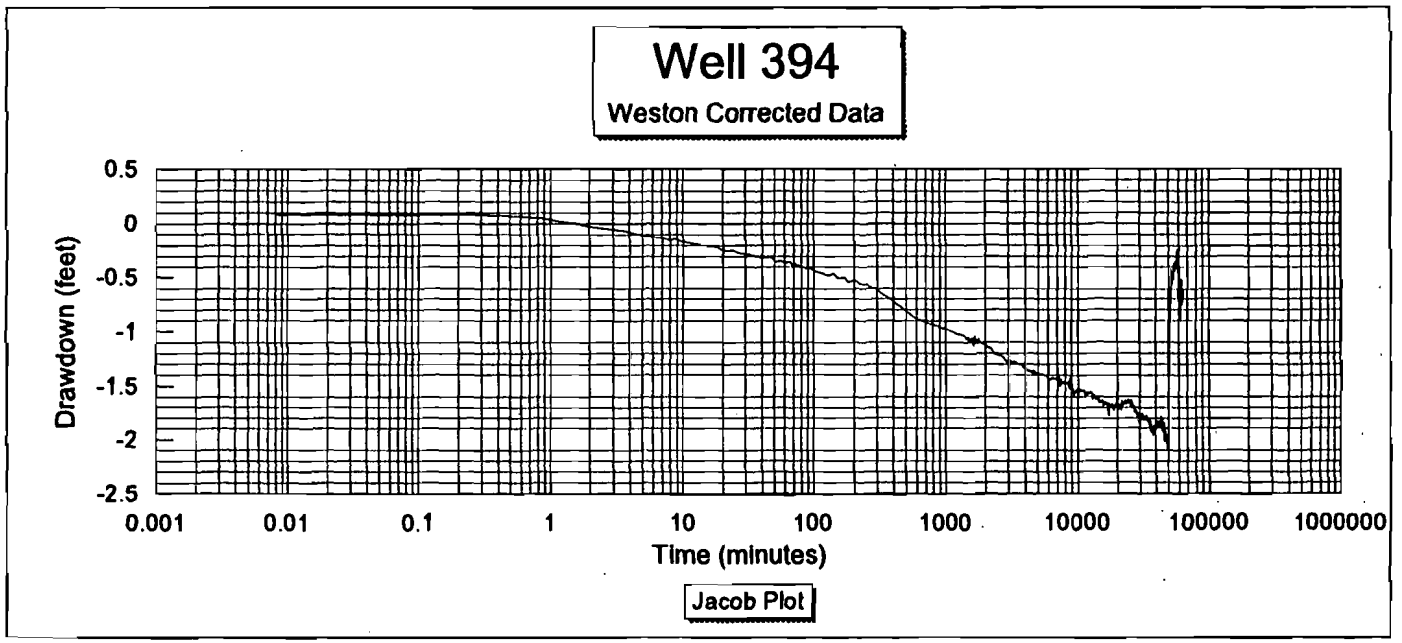


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	208	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.6	feet (over one log cycle)	
Time intcp	tmin	230	min	
Time intcpt	to	0.159722	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.326832		
Transmiss	T	39346.2	ft*ft/day	



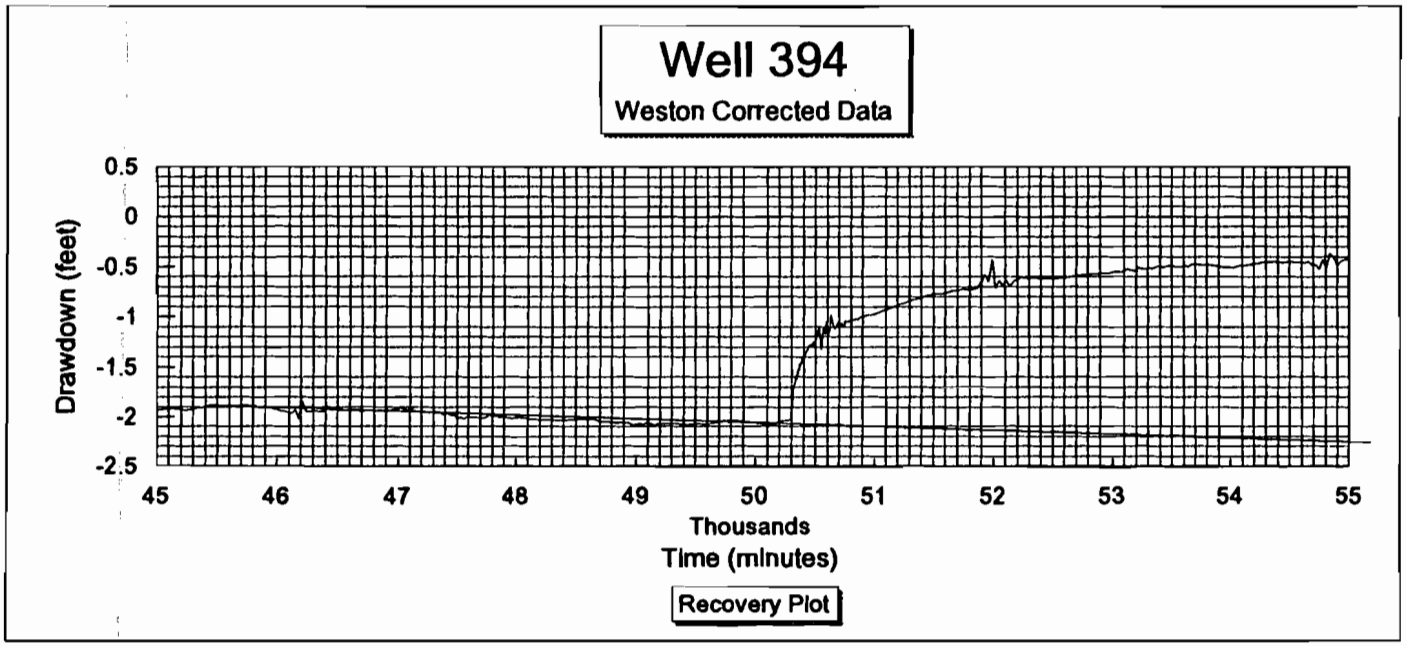
Long Term Water Level Decline results from pumping at 071

Dist. to PW	r	375	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.55	feet (over one log cycle)	
Time intcp	tmin	210	min	
Time intcpt	to	0.145833	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.100154		
Transmiss	T	42923.13	ft*ft/day	

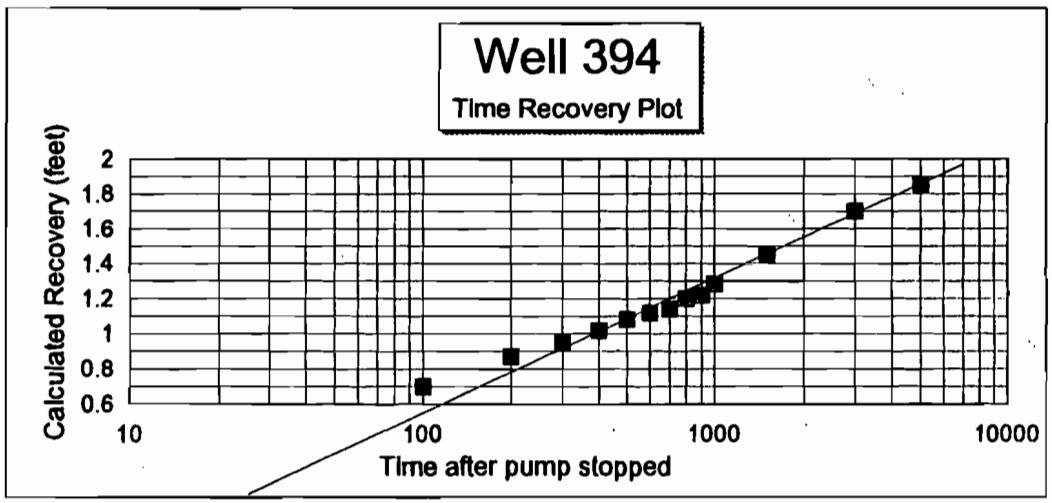


Long Term Water Level Decline results from pumping at 071				
Dist. to PW	r	169	feet	
Flow Rate	Qgpm	670	gpm	
Flow Rate	Q	128984	cu ft/day	
delta s	ds	0.56	feet (over one log cycle)	
Time intcp	tmin	15	min	
Time intcpt	to	0.010417	day	S=(2.25*T*to)/r*r
pi	pi =	3.14159		T=2.3*Q/(4* pi*ds)
Storativity	S	0.034594		
Transmiss	T	42156.64	ft*ft/day	

Steep Water Level Decline from combined pumping at 071 & 076				
Flow Rate	Qgpm	1236	gpm	
Flow Rate	Q	237946.5	cu ft/day	
delta s	ds	0.9	feet	
pi	pi =	3.14159		
Transmiss	T	48389.95	ft*ft/day	T=2.3*Q/(4* pi*ds)



Time Since Pump stop	effective recovery
100	0.7
200	0.87
300	0.95
400	1.02
500	1.08
600	1.12
700	1.14
800	1.2
900	1.22
1000	1.28
1500	1.45
3000	1.7
5000	1.85

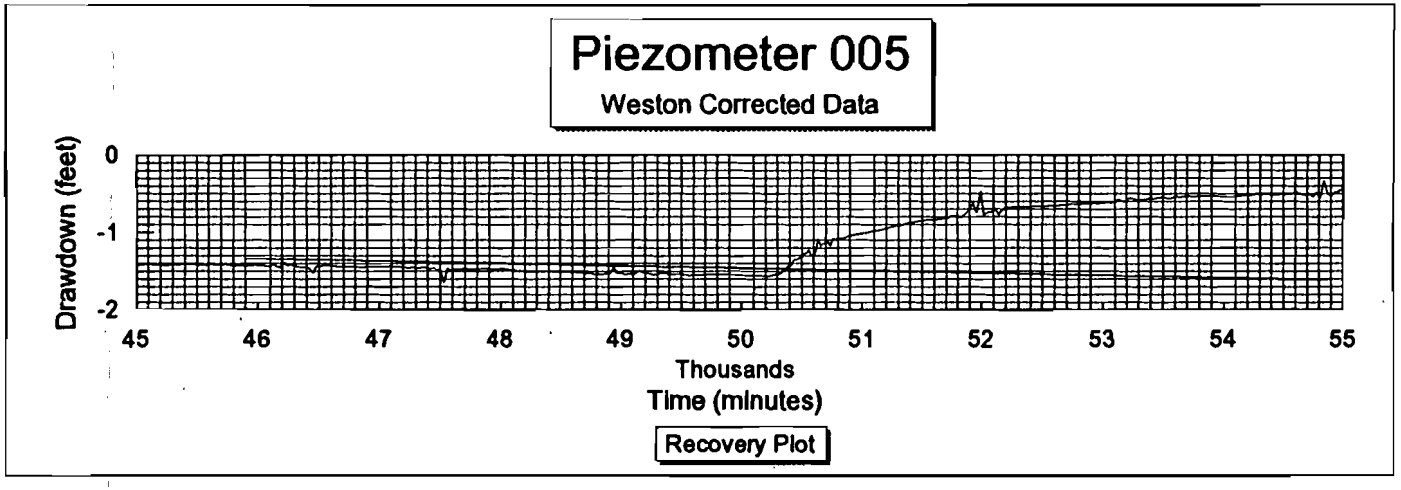


T=264Q/7.48(one log cycle)

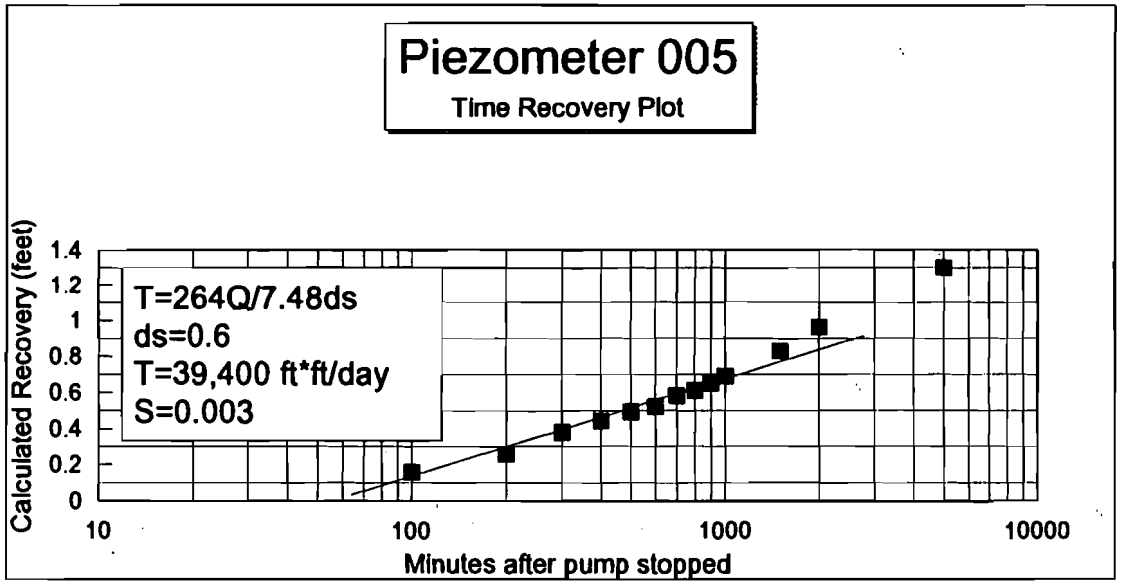
T= 31529.41 S= 0.025298 110 169

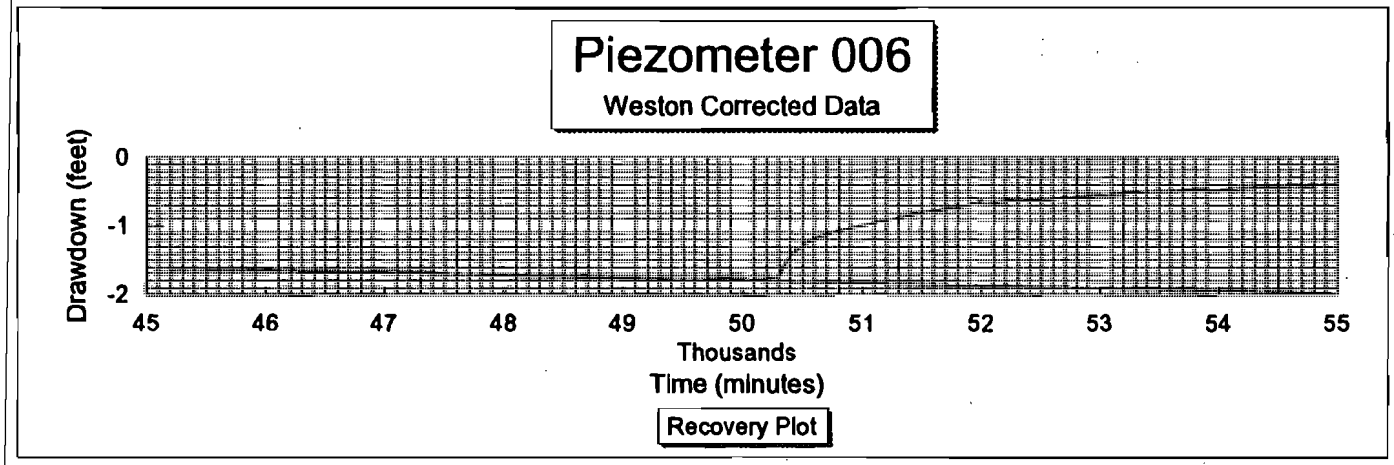
Recovery Plots

Well ID	Sat Thickness At PW	Sat Thickness At Obs well	Average Sat Thickness	Formation of Completion	T	S	Alternate T	Alternate S	K	Alternate K
P027	61	40	50.5	BVA	31500	0.030			624	
P006	61	9	35	BVA	31500	0.004			900	
P005	61	6	33.5	BVA	39400	0.003			1176	
P009	61	61	61	BVA	47000	0.008	37000		770	607
P013	61	94	77.5	BVA	39500	0.010			510	
156	61	149	105	BVA	62000	0.005	27000	0.004	590	257
304	61	150	105.5	BVA	59500	0.002	29500	0.006	564	280
309	61	20	40.5	Bedrock	59000	0.030	26500	0.040	1457	654
393	61	25	43	Bedrock	52500	0.008	34000	0.010	1221	791
394	61	40	50.5	Bedrock	31500	0.030			624	
				average	**40493**	**0.014**			**949**	
				sid dev	12394	0.013			371	
				reasonable max	**52888**	**0.026**			**1320**	
				resonable min	**28099**	**0.001**			**579**	

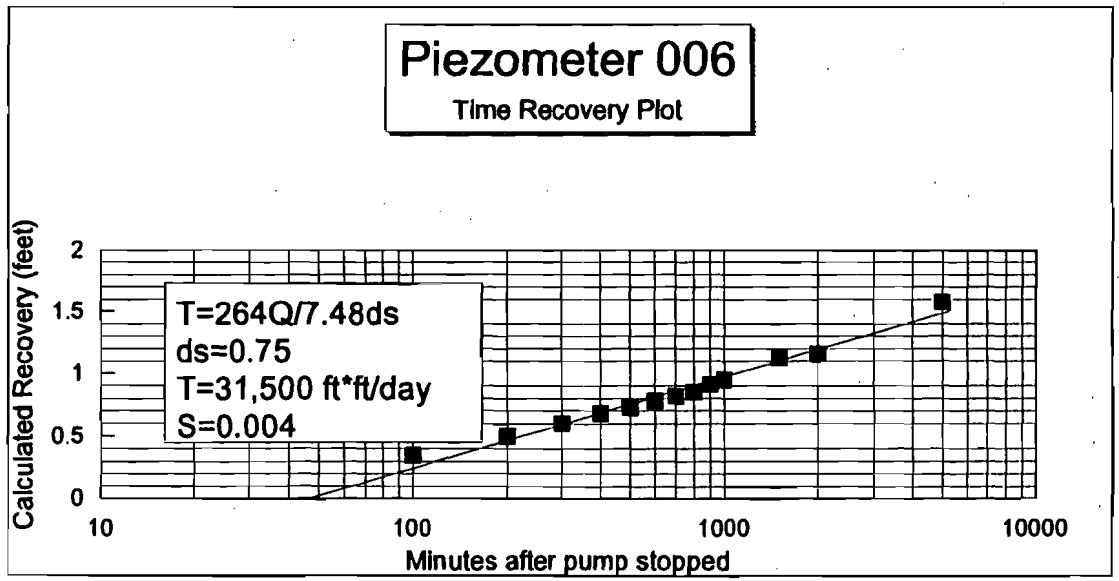


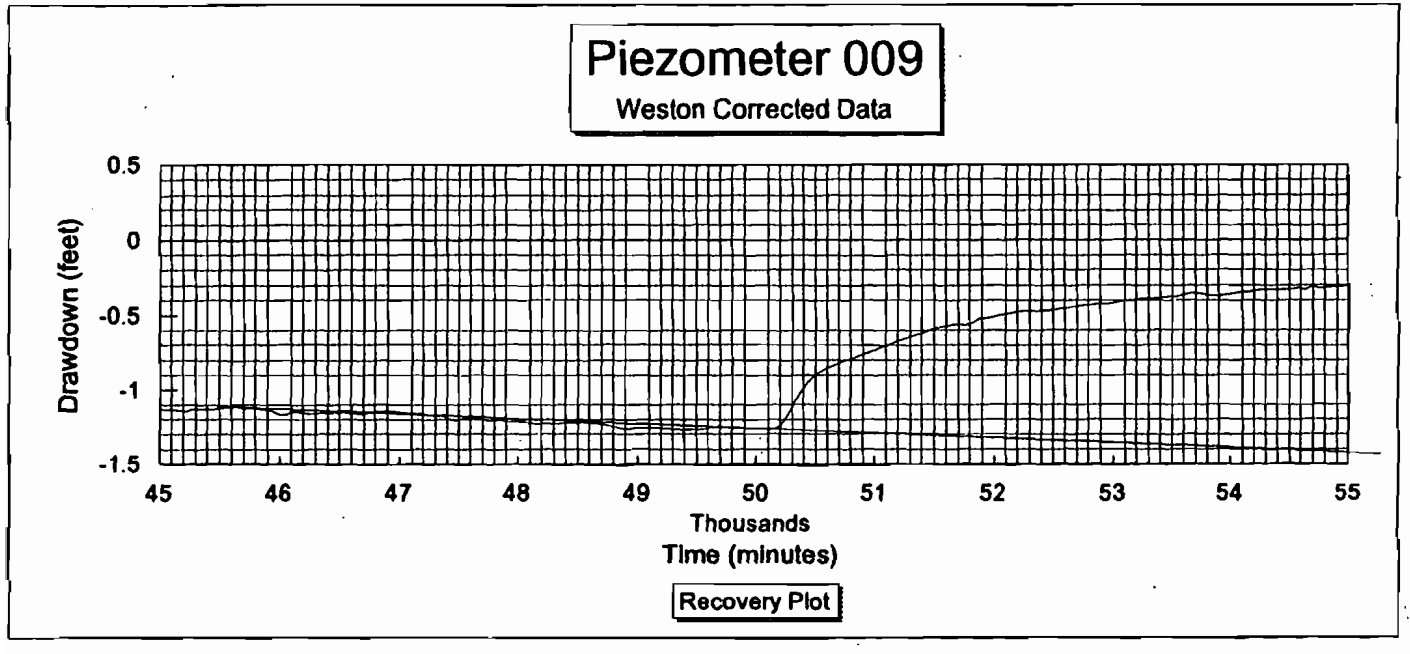
Pump Stop	Recovery
100	0.16
200	0.26
300	0.38
400	0.44
500	0.49
600	0.52
700	0.58
800	0.61
900	0.65
1000	0.69
1500	0.83
2000	0.96
5000	1.3



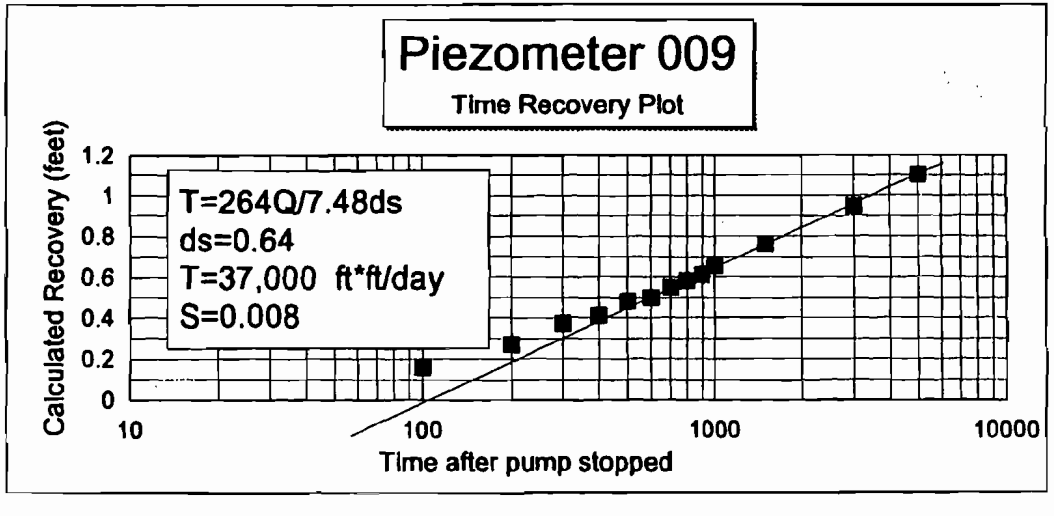


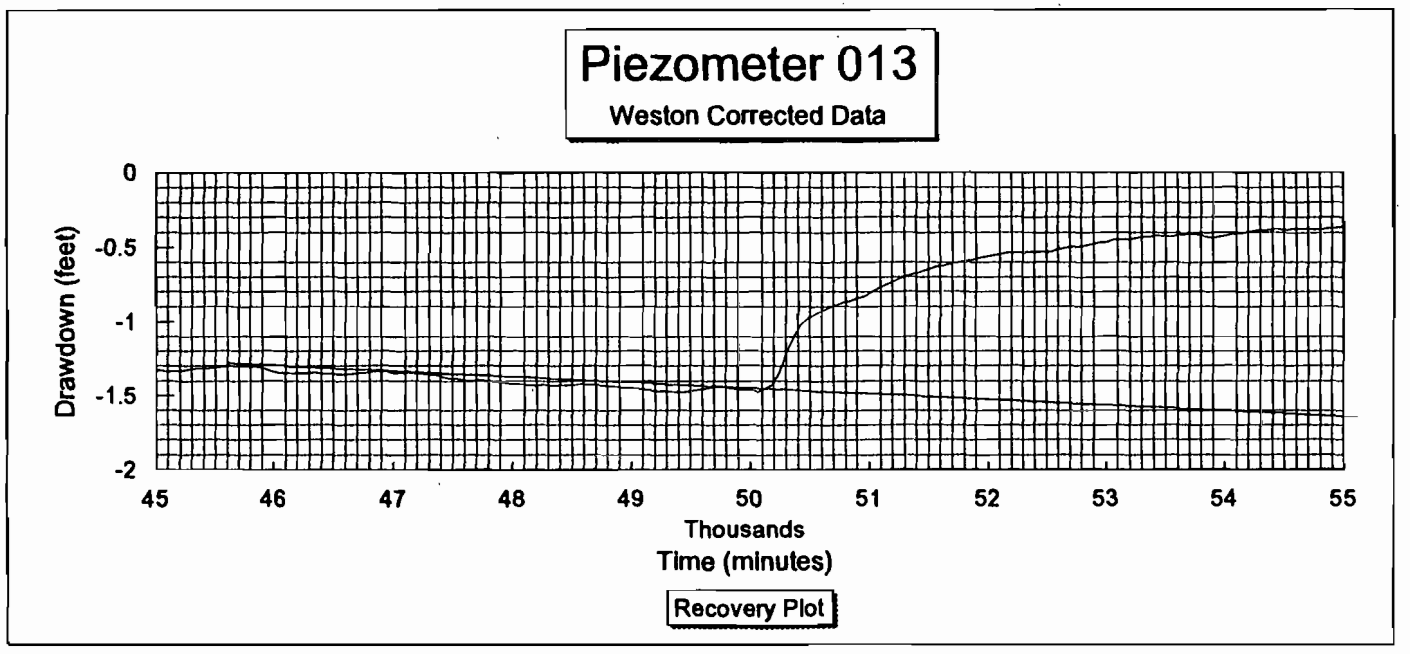
time since Pump Stop	water level Recovery
100	0.35
200	0.5
300	0.6
400	0.68
500	0.73
600	0.78
700	0.82
800	0.85
900	0.91
1000	0.95
1500	1.13
2000	1.16
5000	1.58



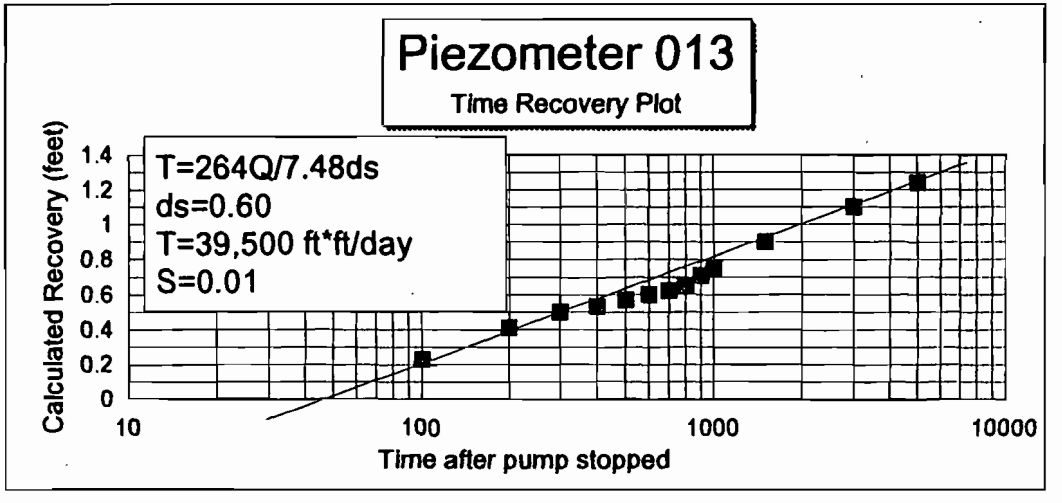


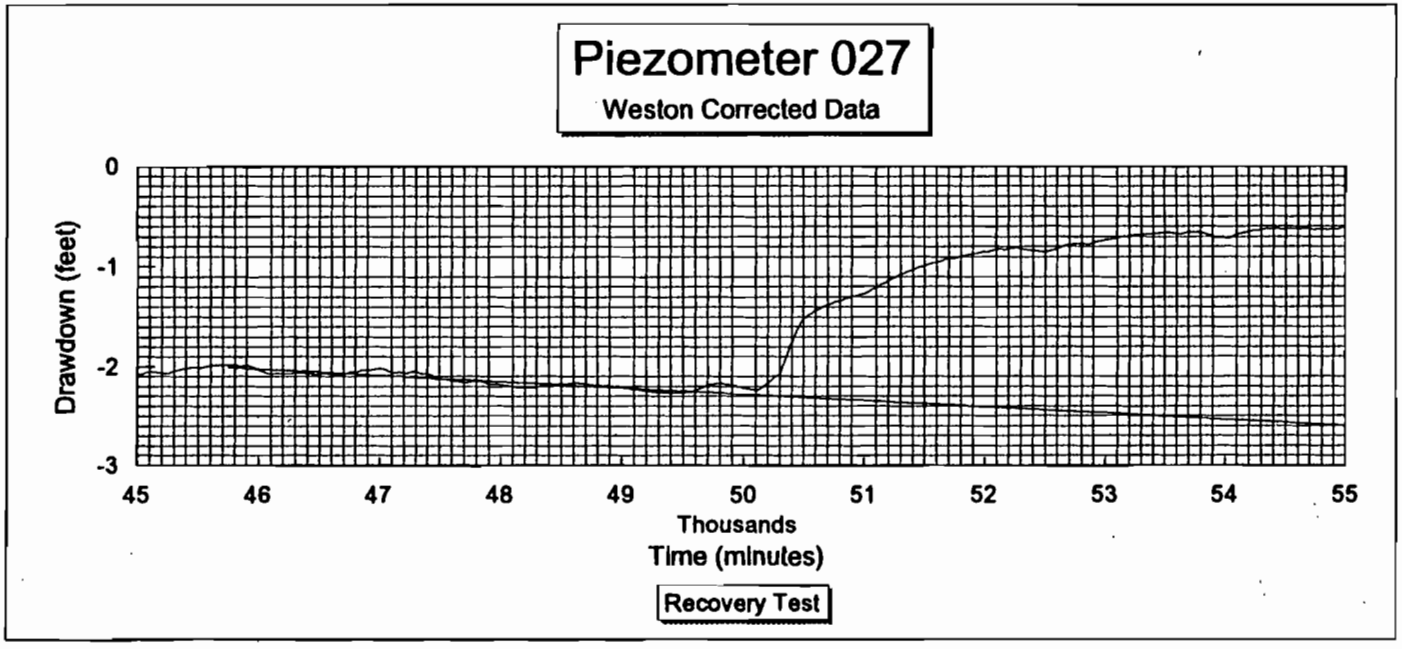
Time Since Pump stop	effective recovery
100	0.16
200	0.27
300	0.37
400	0.41
500	0.48
600	0.5
700	0.55
800	0.58
900	0.61
1000	0.65
1500	0.76
3000	0.95
5000	1.1





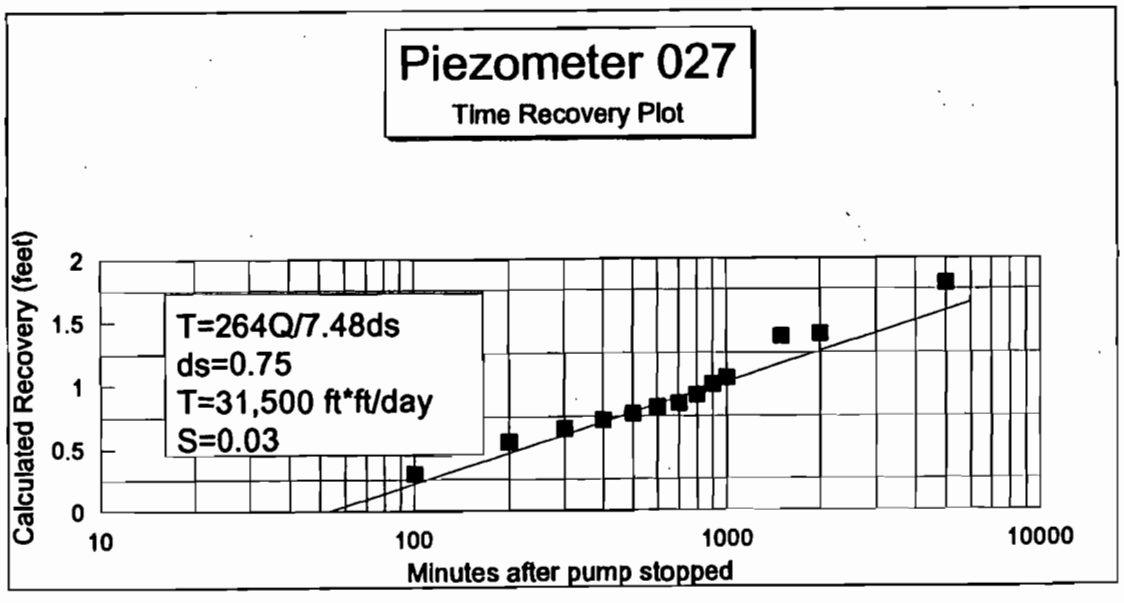
Time Since Pump stop	effective recovery
100	0.23
200	0.41
300	0.5
400	0.53
500	0.57
600	0.6
700	0.62
800	0.65
900	0.71
1000	0.75
1500	0.9
3000	1.1
5000	1.24

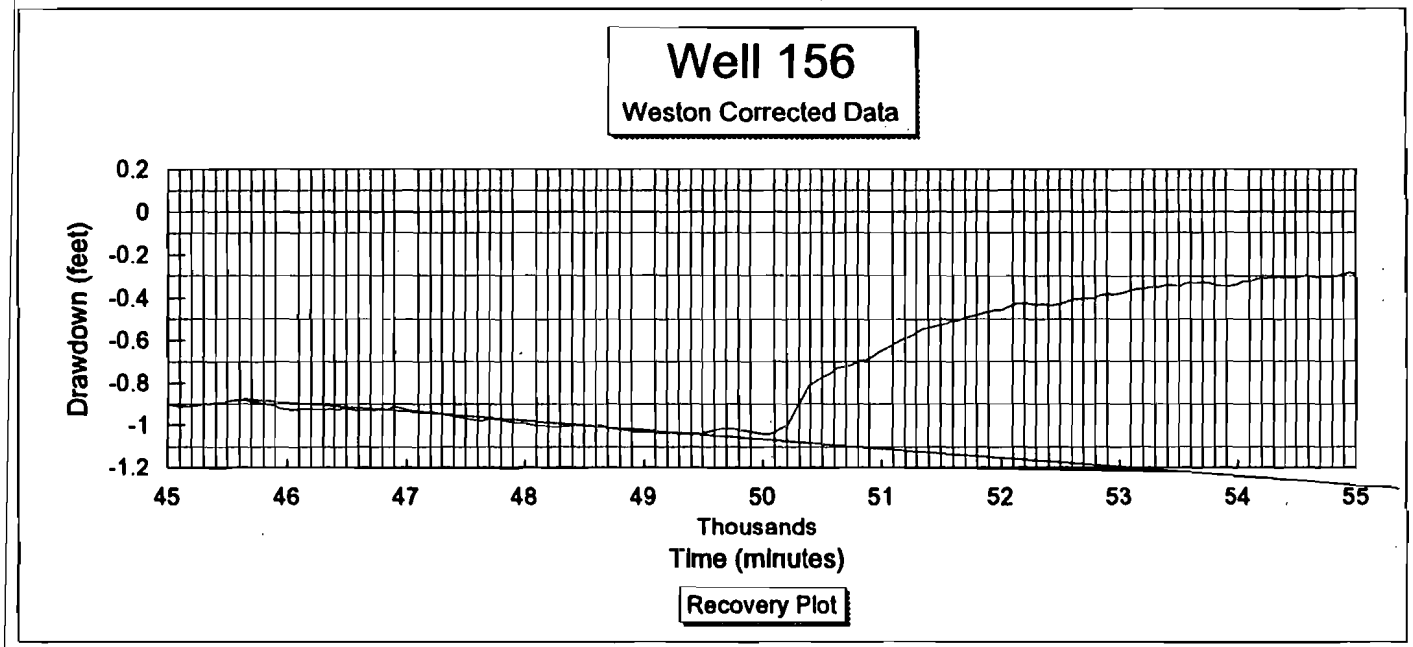




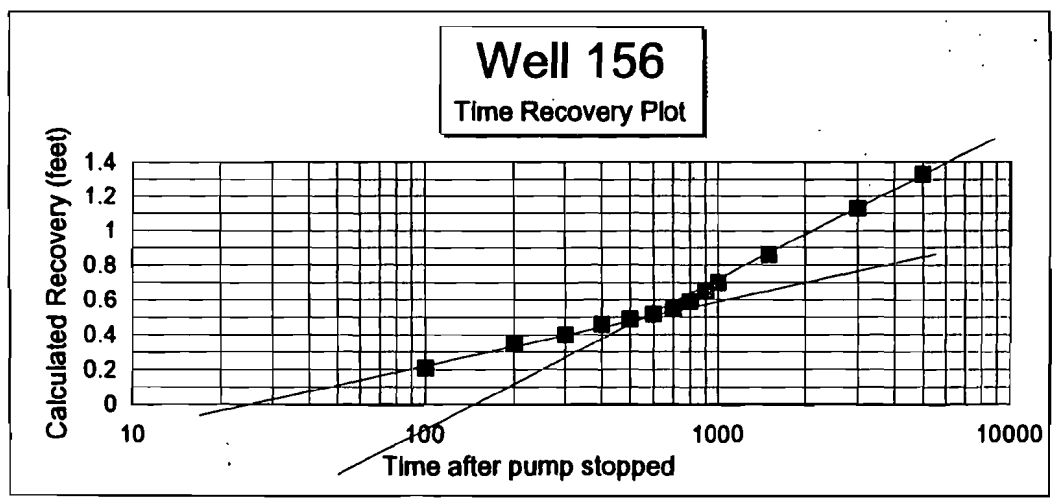
Recovery Data

Time Since Pump Stop	Calculated Recovery
100	0.3
200	0.55
300	0.65
400	0.72
500	0.77
600	0.82
700	0.85
800	0.92
900	1
1000	1.05
1500	1.38
2000	1.4
5000	1.8



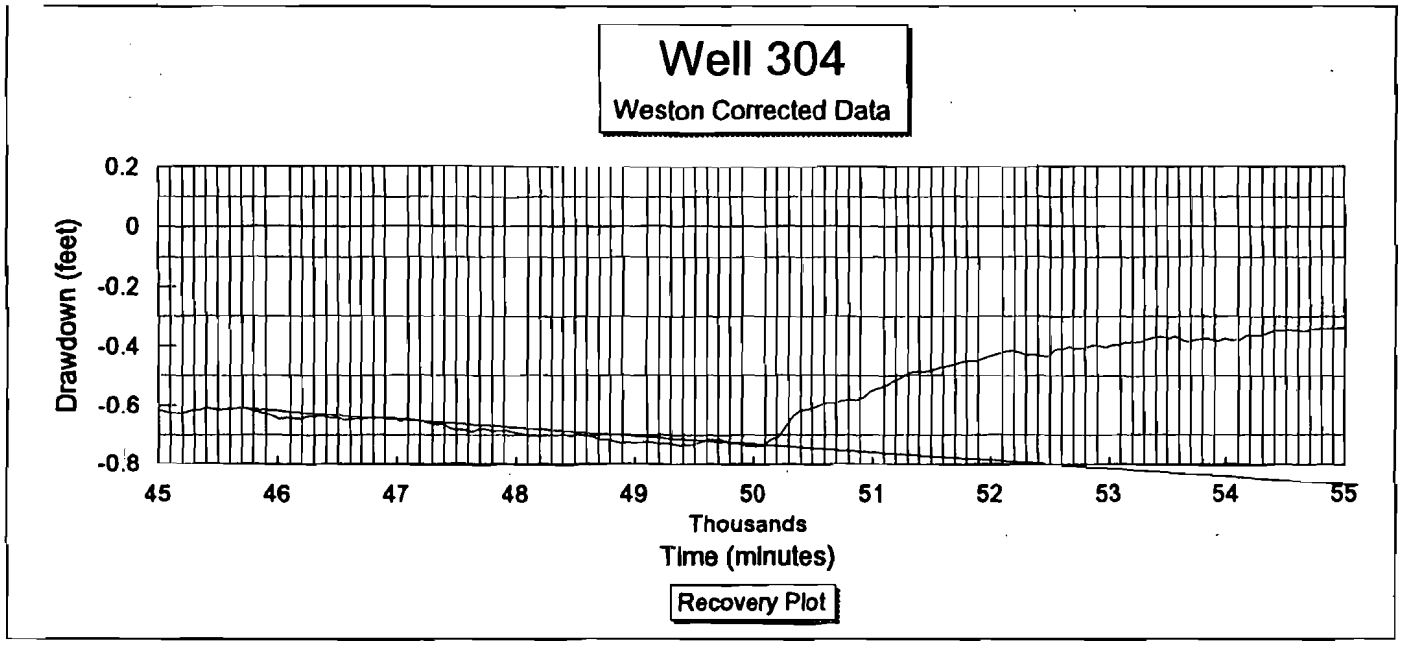


Time Since Pump stop	effective recovery
100	0.21
200	0.35
300	0.4
400	0.46
500	0.49
600	0.52
700	0.55
800	0.59
900	0.65
1000	0.7
1500	0.86
3000	1.13
5000	1.33

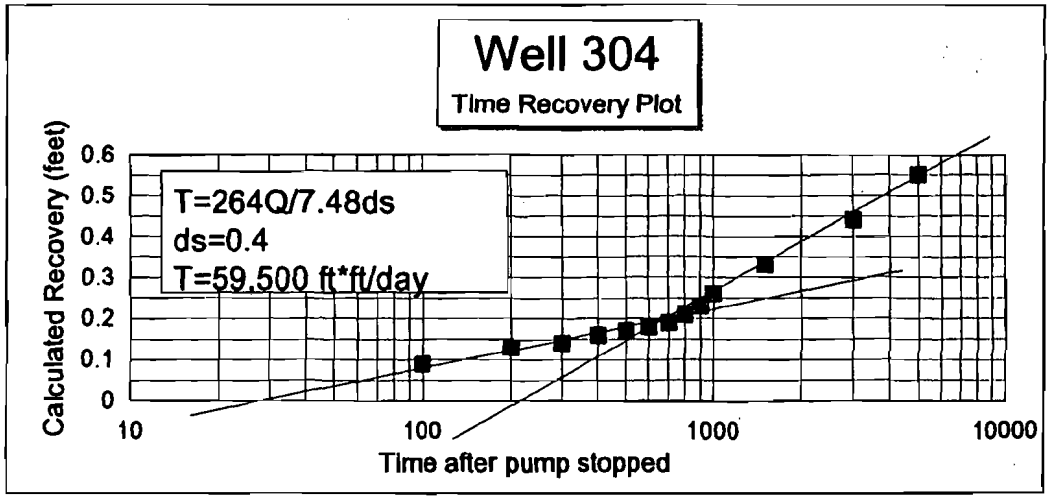


T=264Q/7.48(one log cycle)

				to	dist toPW
T=	62229.1	S=	0.001455	25	472
T=	26871.66	S=	0.003769	150	472

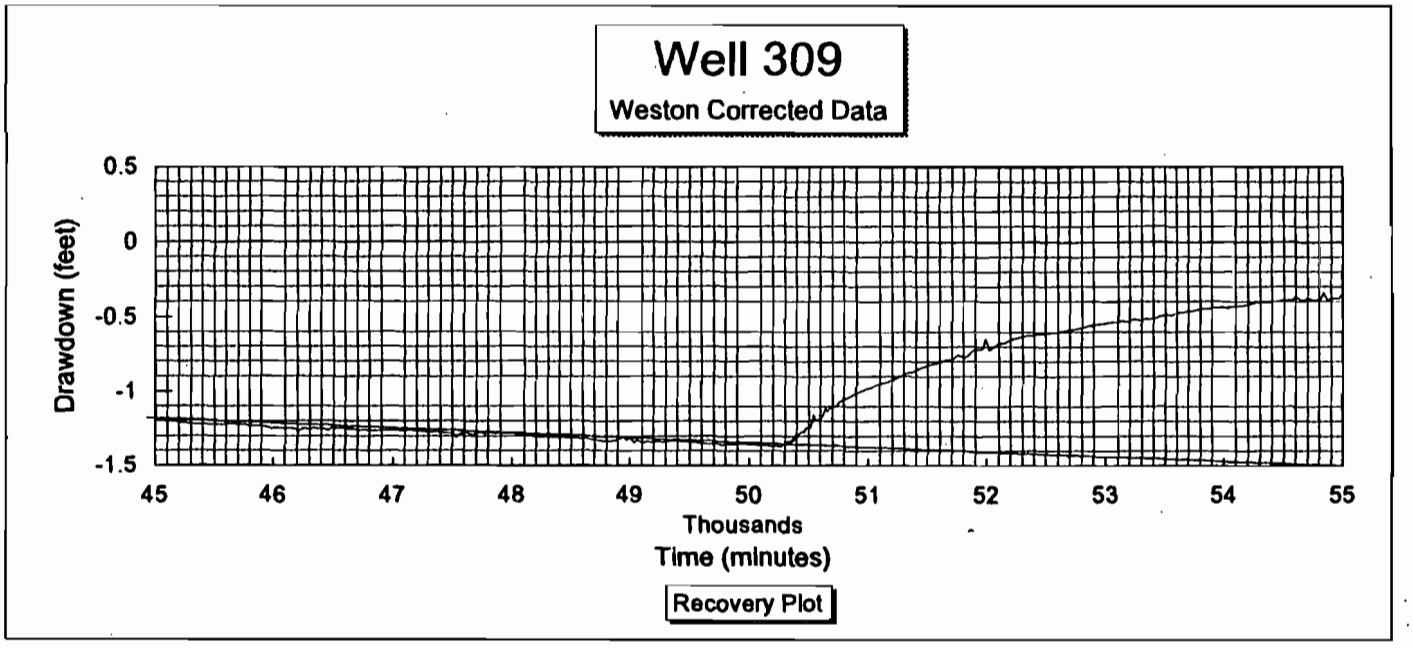


Time Since Pump stop	effective recovery
100	0.09
200	0.13
300	0.14
400	0.16
500	0.17
600	0.18
700	0.19
800	0.21
900	0.23
1000	0.26
1500	0.33
3000	0.44
5000	0.55

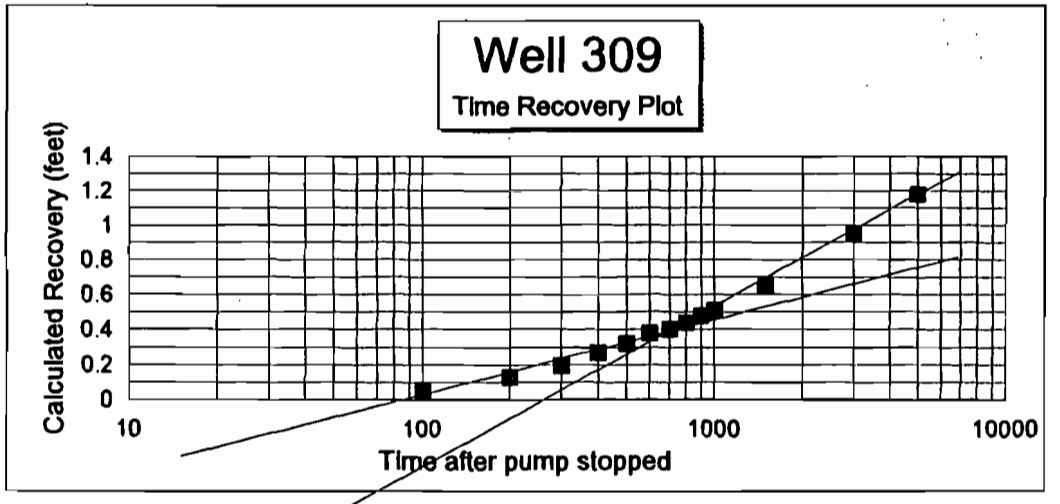


T=264Q/7.48(one log cycle)

T=	59355.7	S=	0.001651	30	474
T=	29677.85	S=	0.005779	210	474

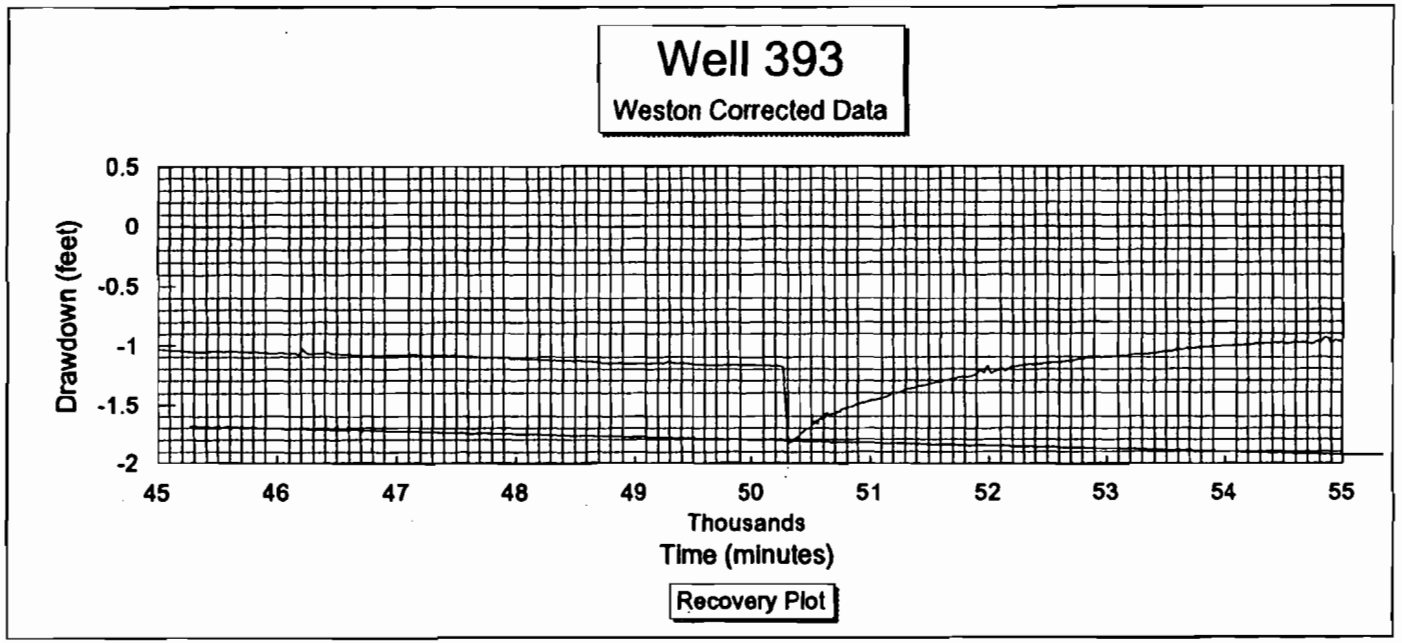


Time Since Pump stop	effective recovery
100	0.05
200	0.13
300	0.19
400	0.27
500	0.32
600	0.38
700	0.4
800	0.44
900	0.48
1000	0.51
1500	0.65
3000	0.95
5000	1.18

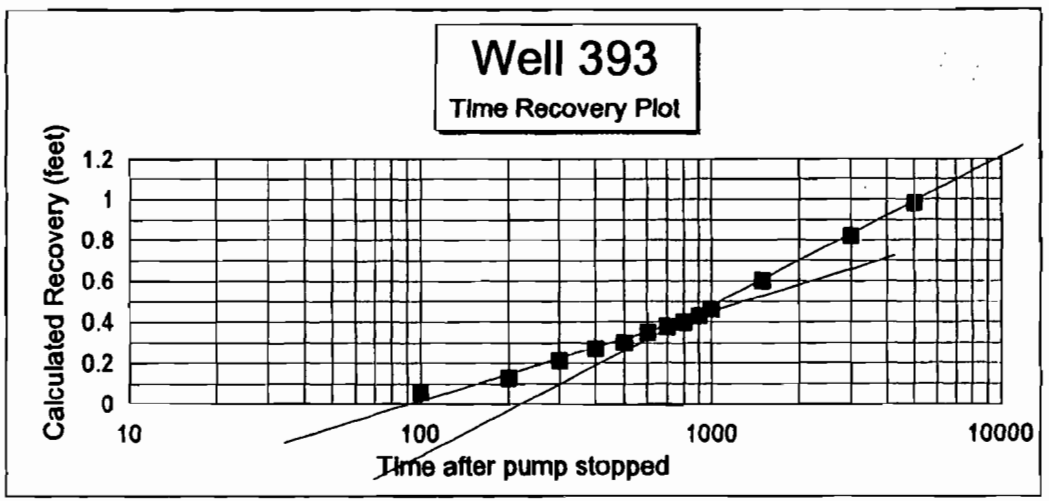


T=264Q/7.48(one log cycle)

T=	59117.65	S=	0.025621	90	208
T=	26274.51	S=	0.034161	270	208



Time Since Pump stop	effective recovery
100	0.06
200	0.13
300	0.21
400	0.27
500	0.3
600	0.35
700	0.38
800	0.4
900	0.43
1000	0.46
1500	0.6
3000	0.82
5000	0.98



T=264Q/7.48(one log cycle)

T=	52549.02	S=	0.007785	100	375
T=	33781.51	S=	0.011511	230	375

APPENDIX L

RELATIONSHIPS AMONG VARIOUS CONTAMINANT CONCENTRATIONS AND WATER LEVELS

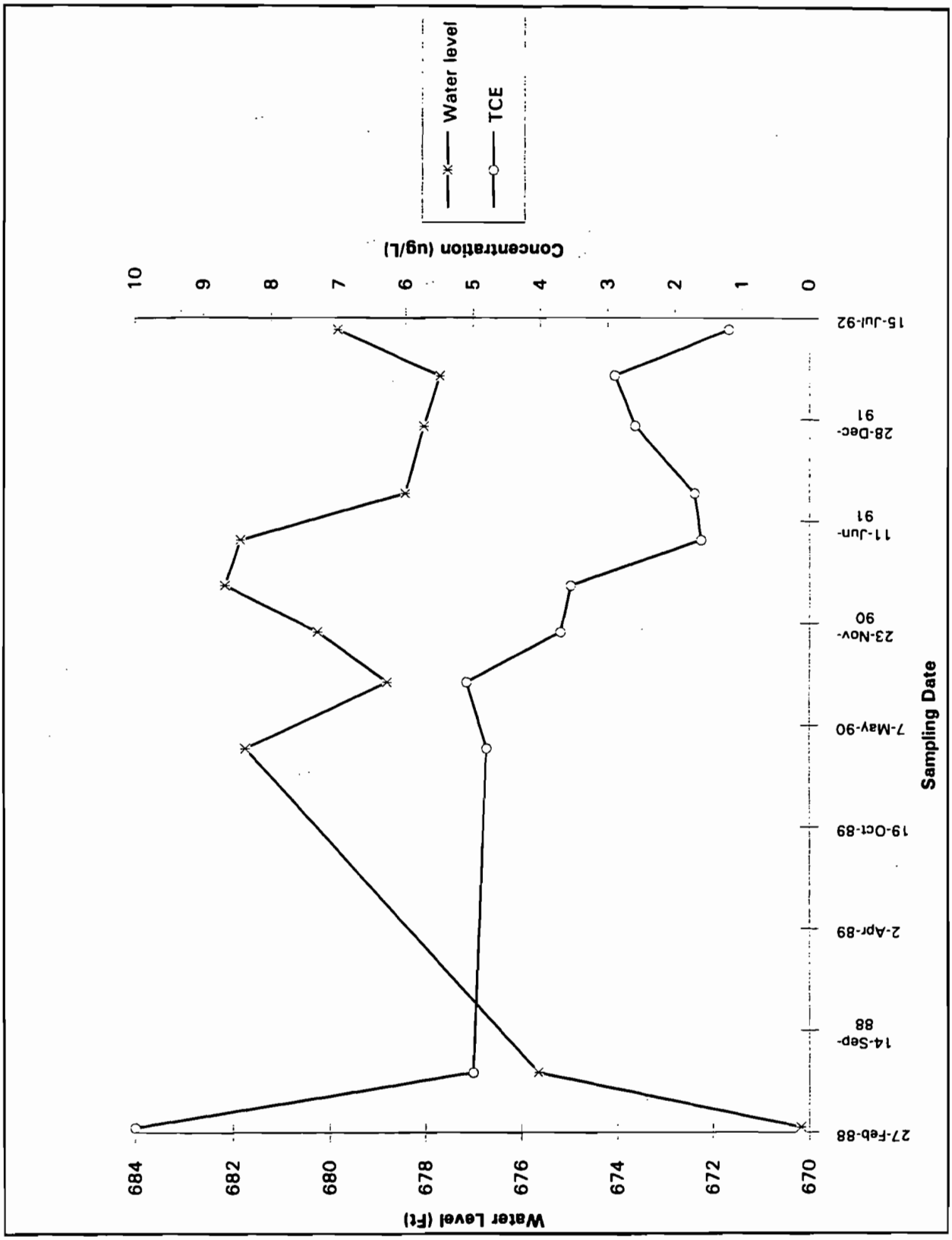


Figure L.1. Correlation of TCE concentration and water level – well 0046.

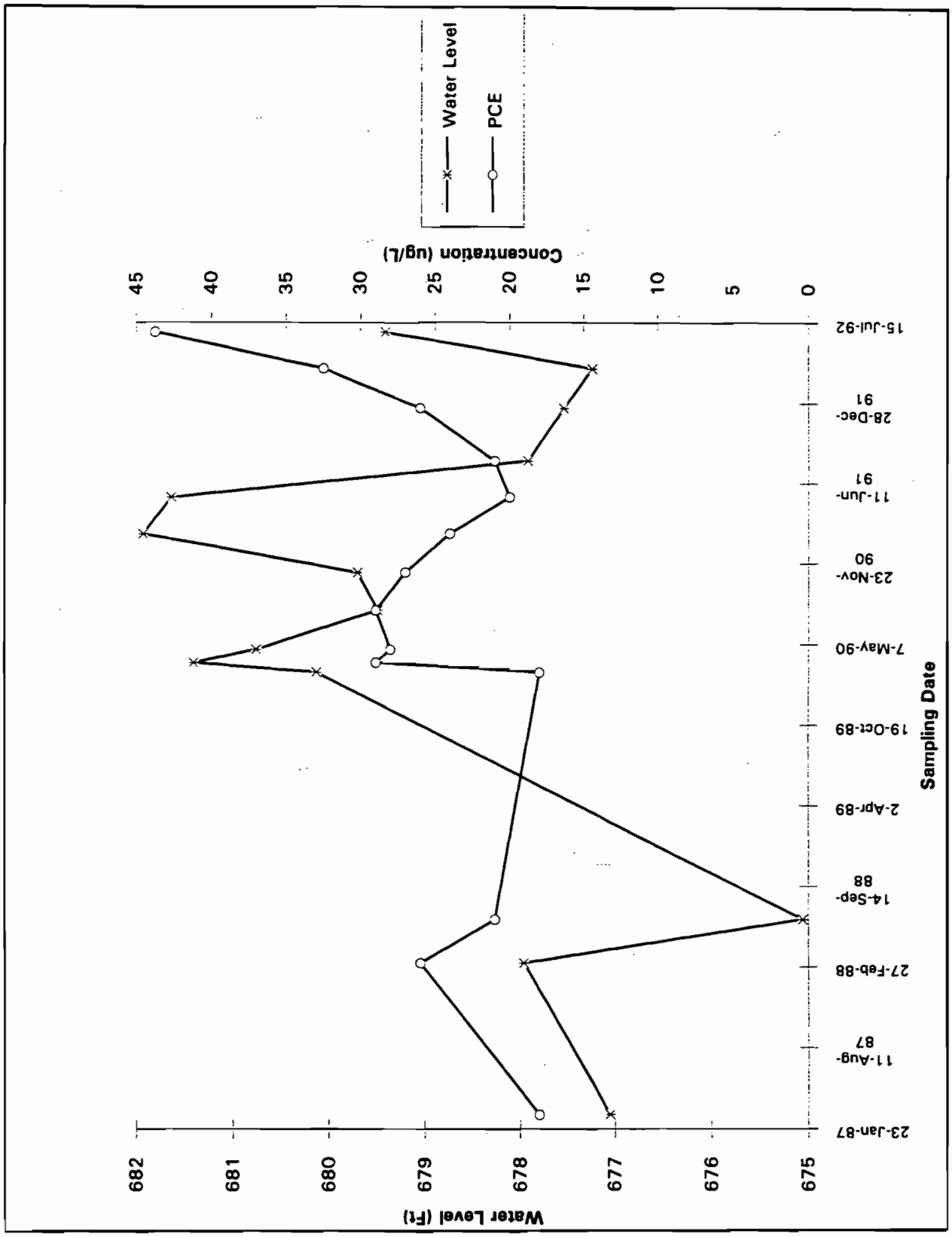


Figure L.2. Correlation of PCE concentration and water level – well 0063.

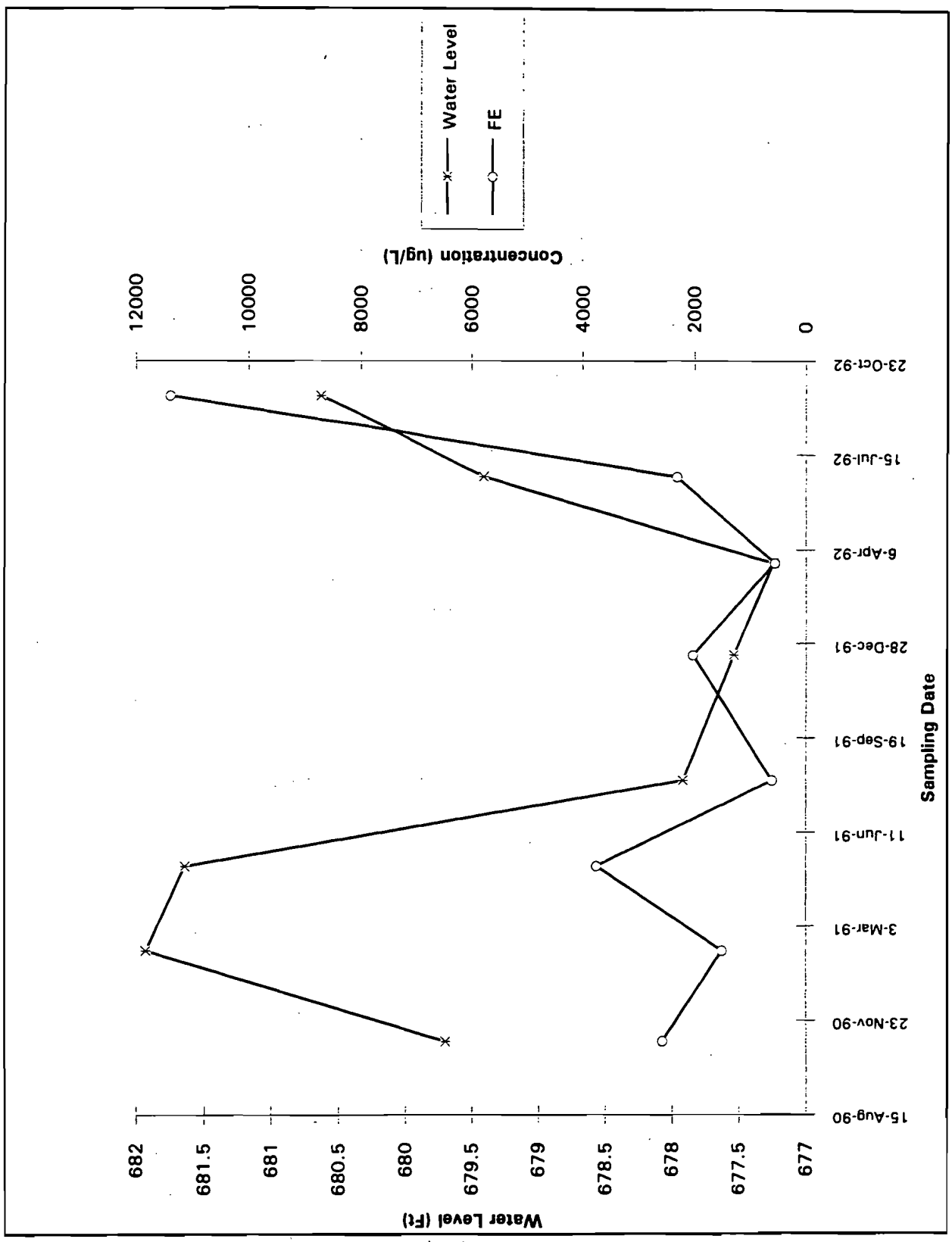


Figure L.3. Correlation of iron concentration and water level – well 0063.

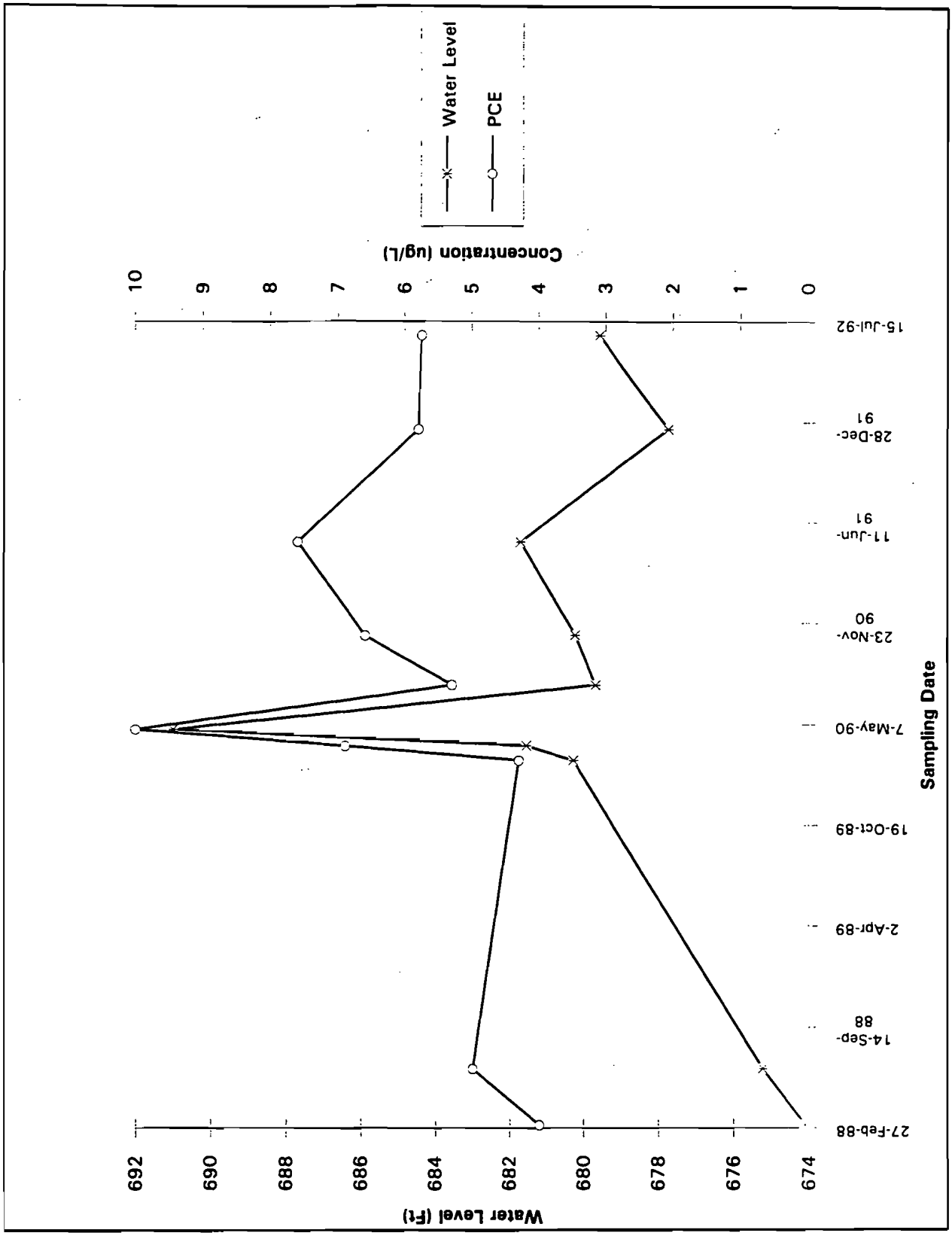


Figure L.4. Correlation of PCE concentration and water level – well 0153.

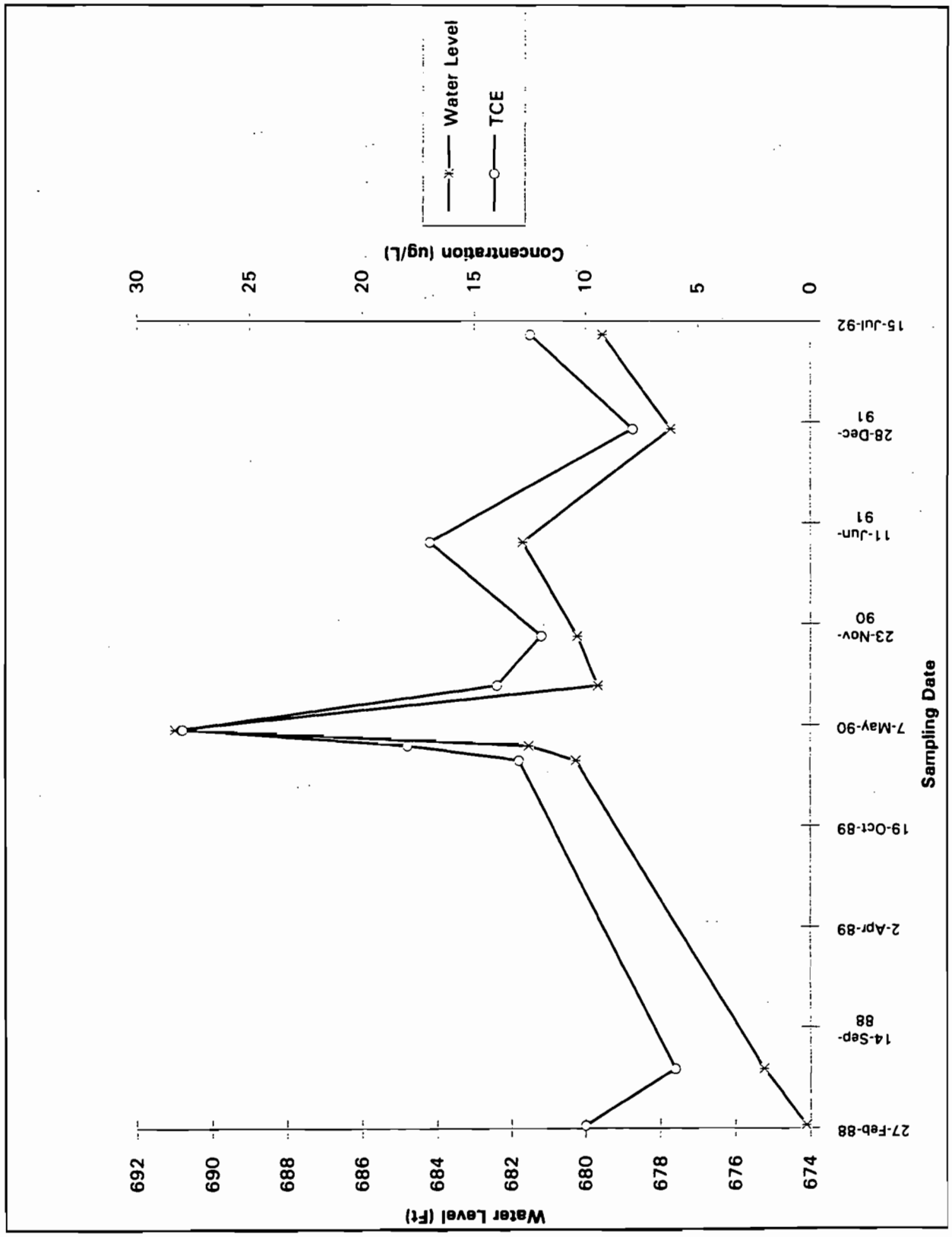


Figure L.5. Correlation of TCE concentration and water level – well 0153.

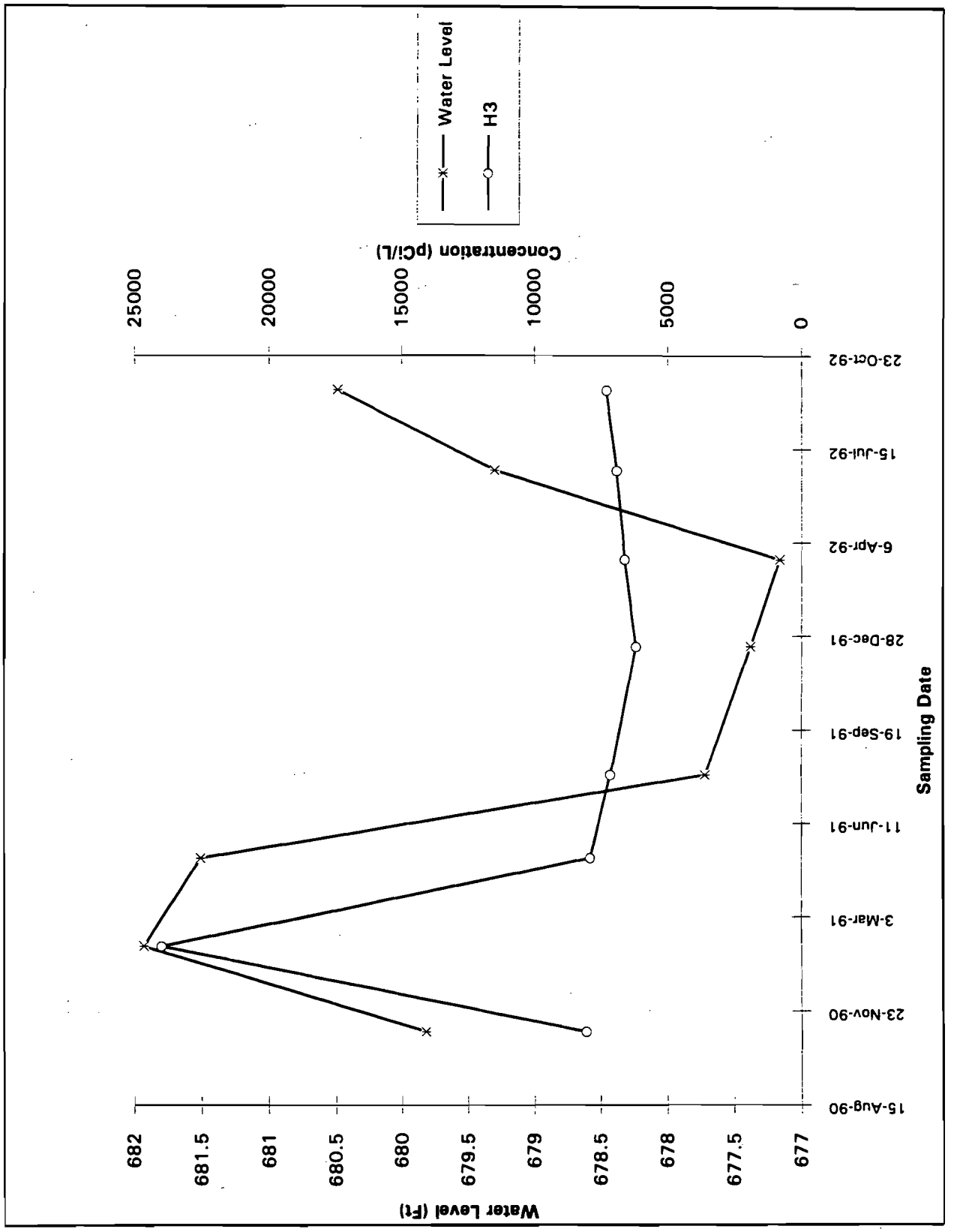


Figure L.6. Correlation of tritium concentration and water level – well 0305.

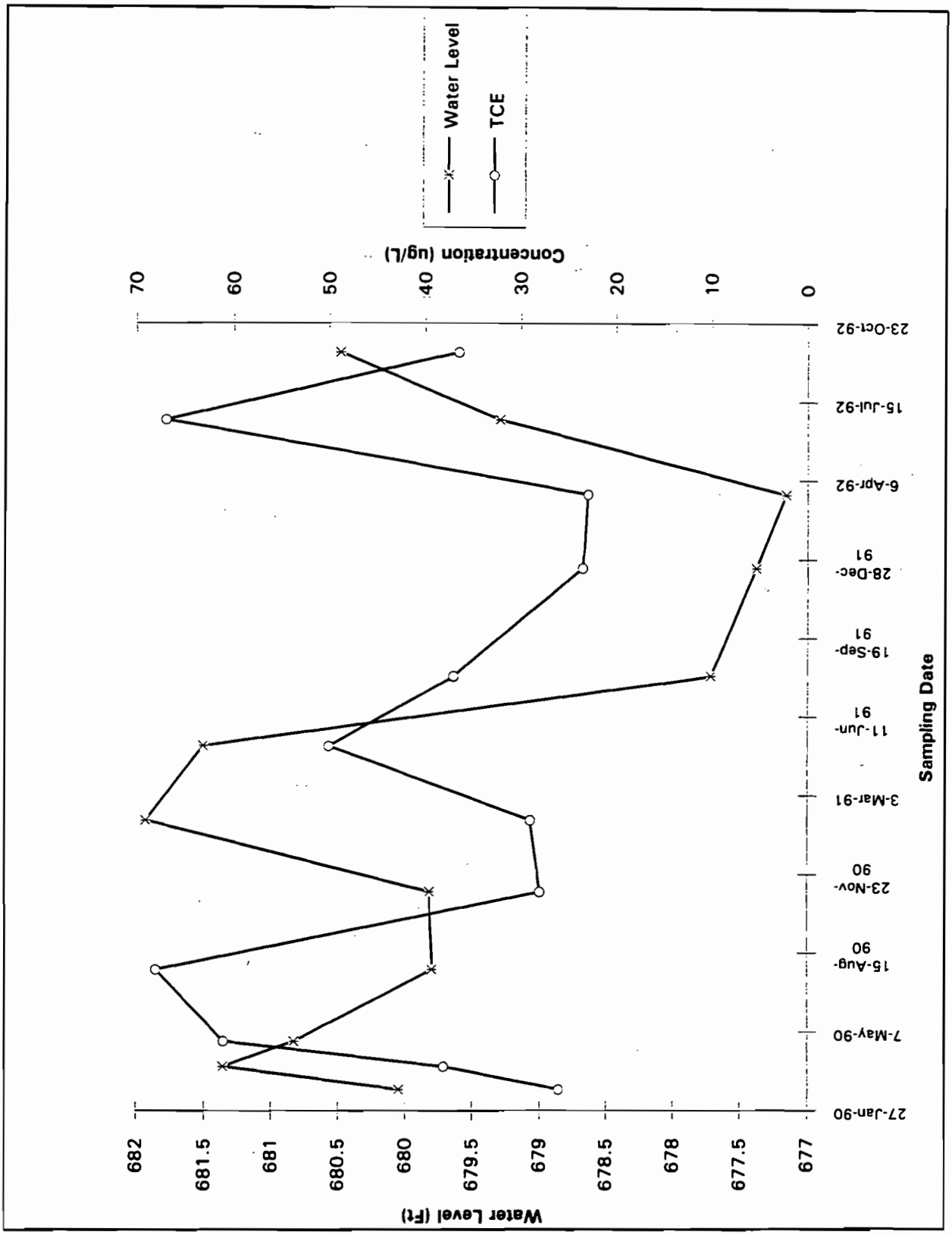


Figure L.7. Correlation of TCE concentration and water level – well 0305.

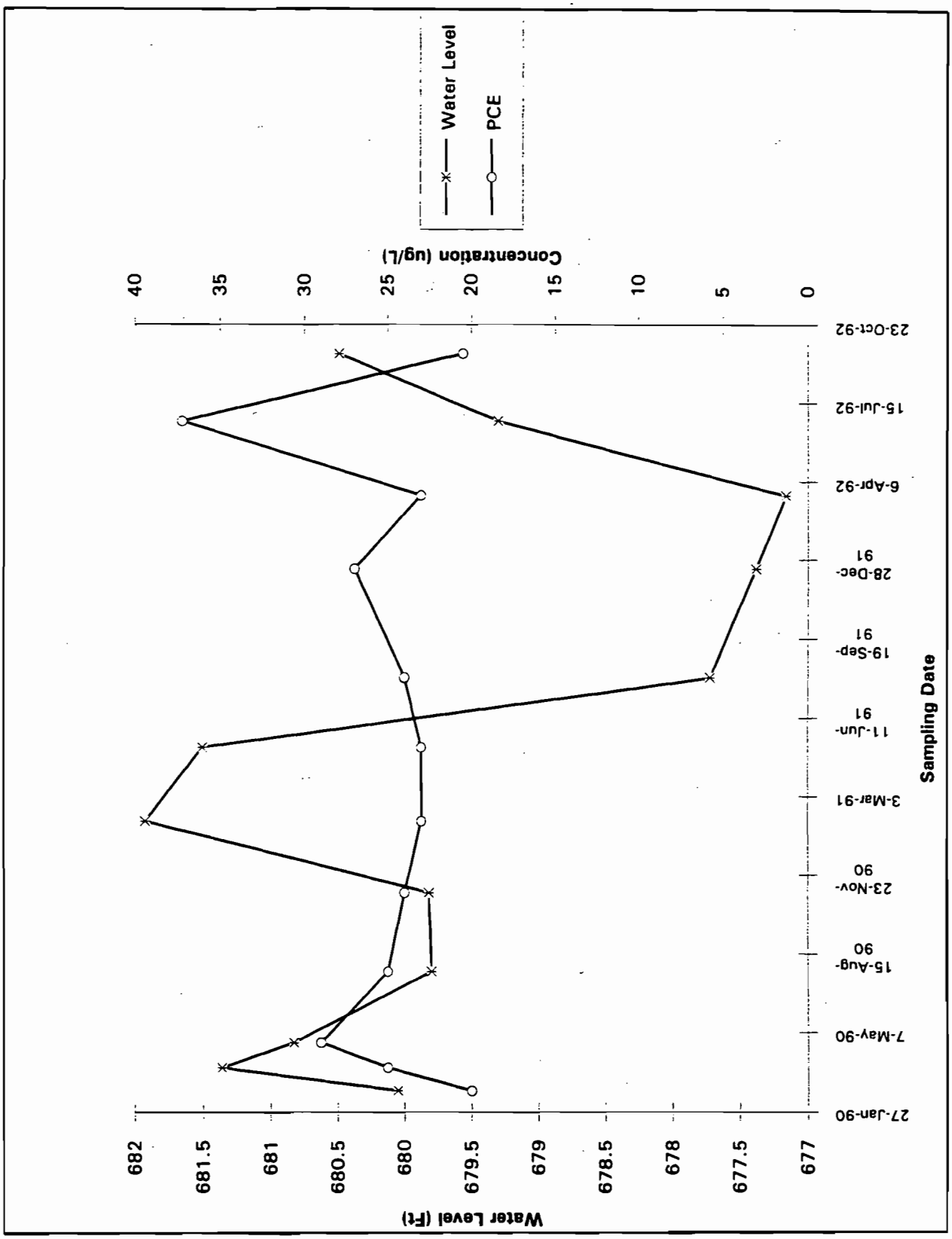


Figure L.8. Correlation of PCE concentration and water level – well 0305.

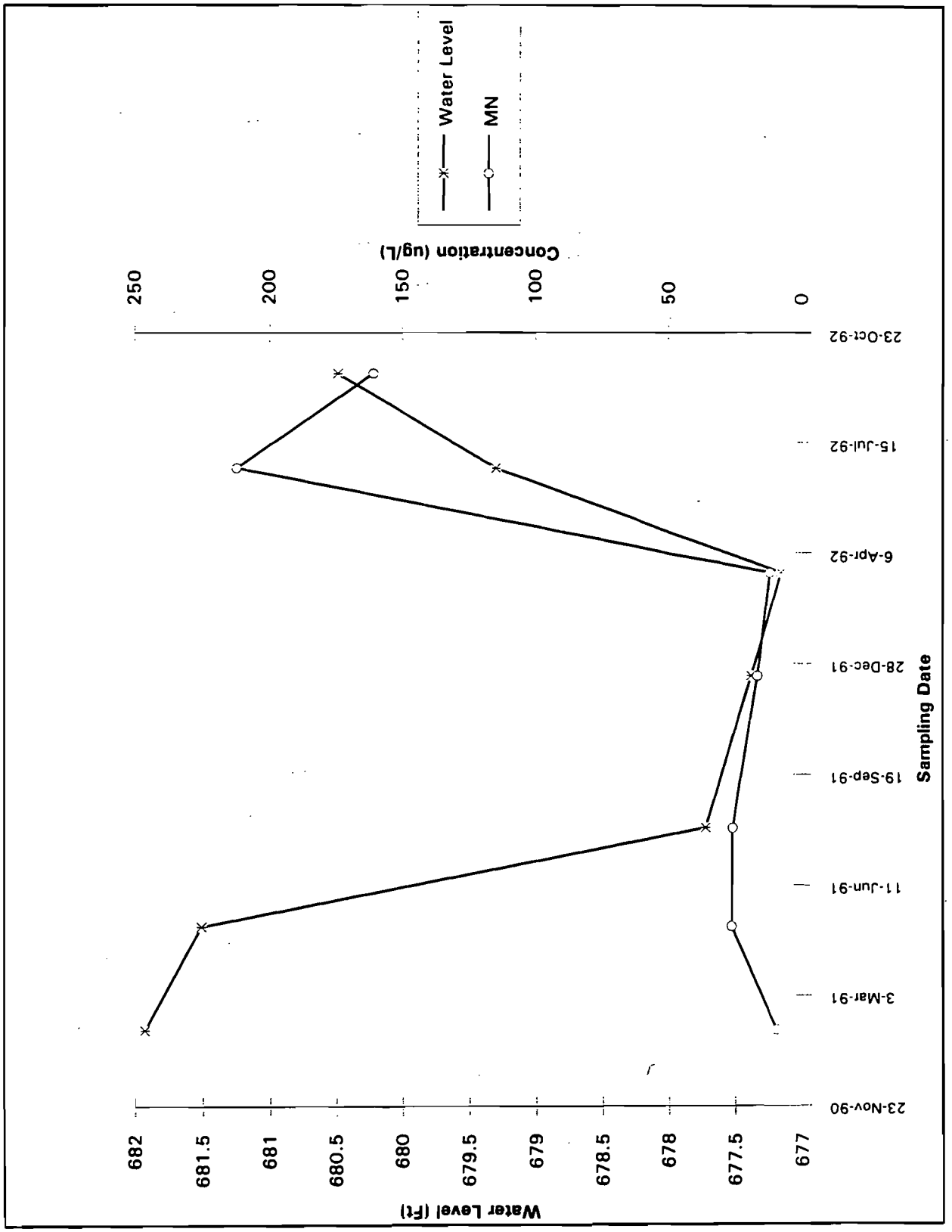


Figure L.9. Correlation of manganese concentration and water level – well 0305.

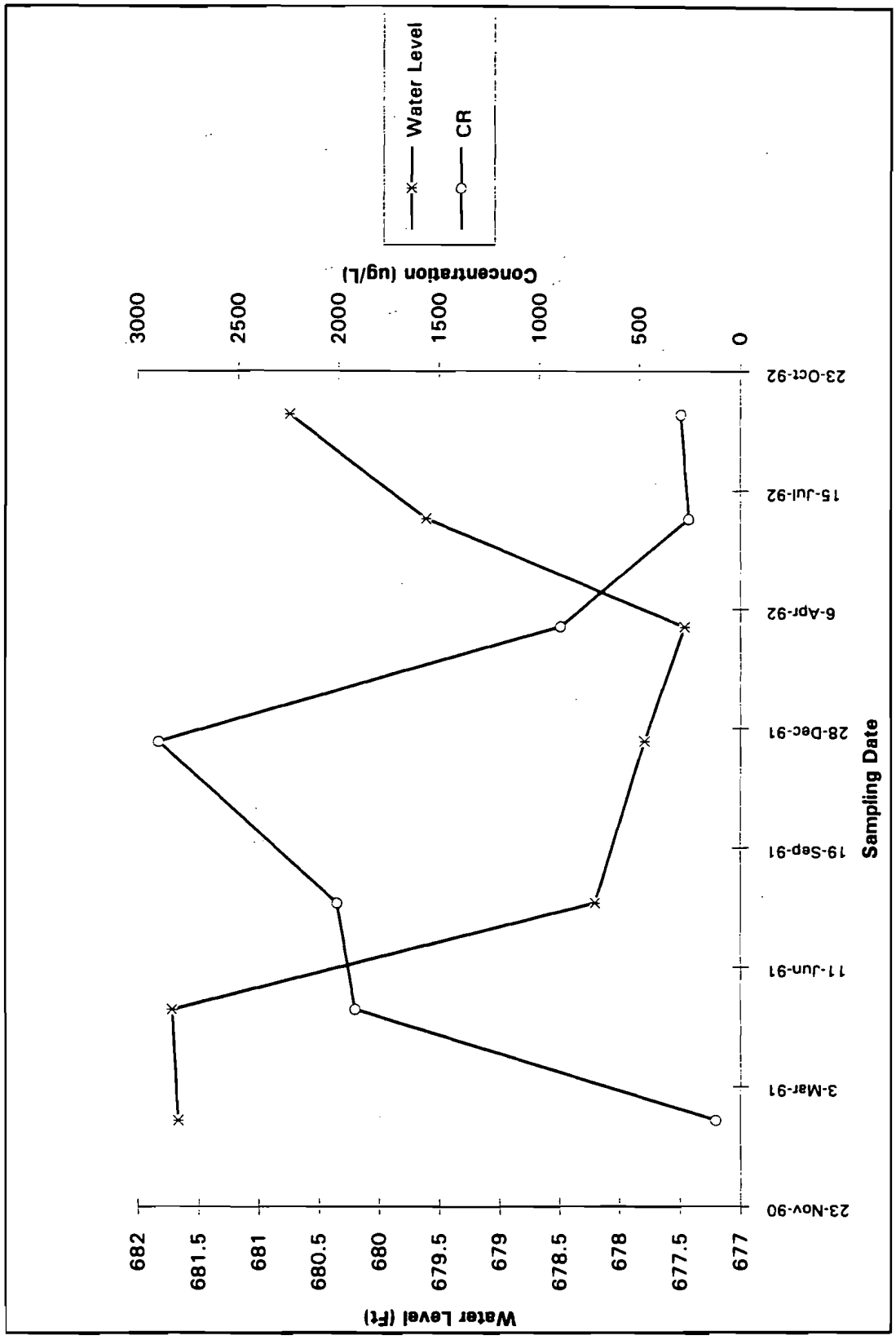


Figure L.10. Correlation of chromium concentration and water level – well 0313.

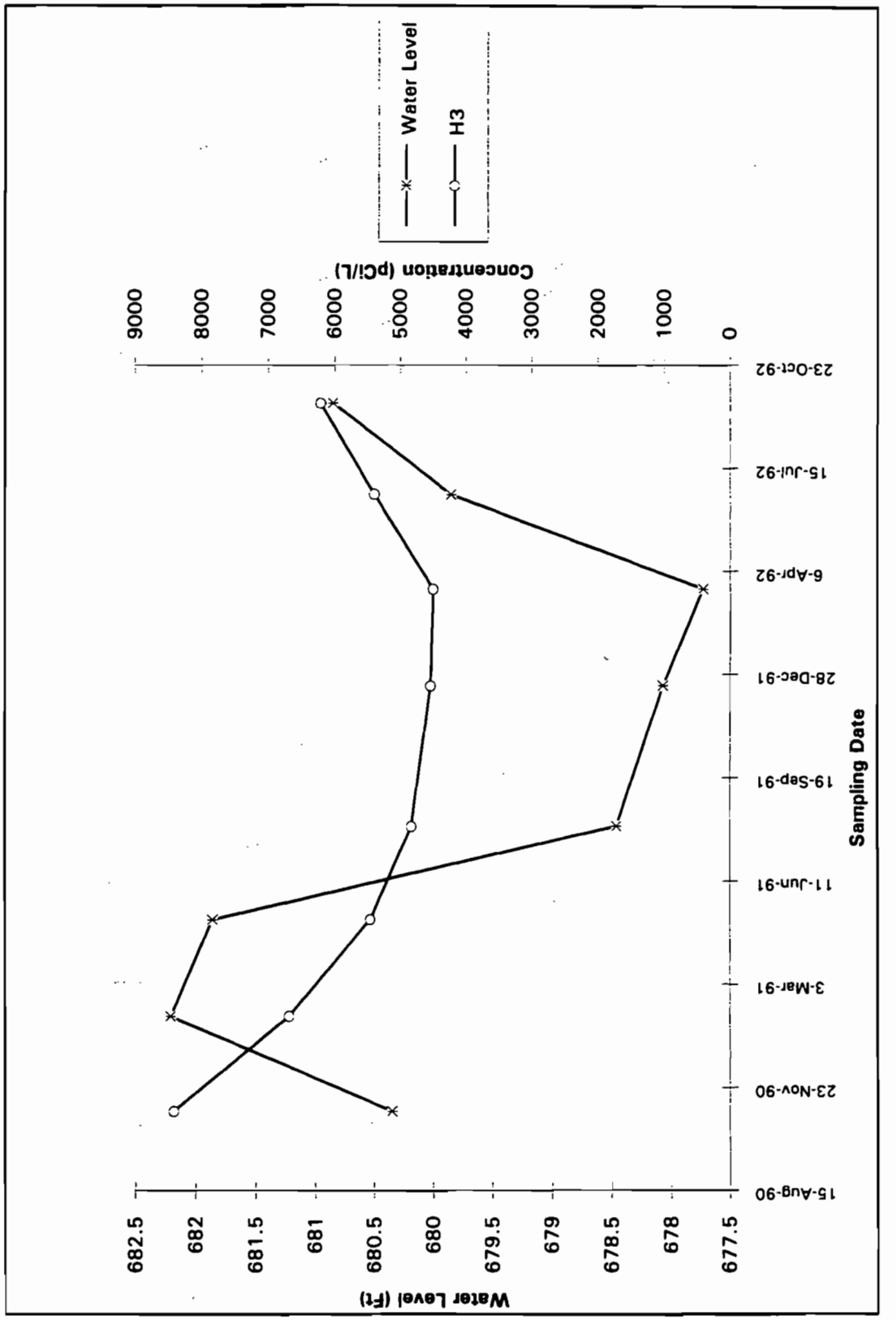


Figure L.11. Correlation of tritium concentration and water level – well 0315.

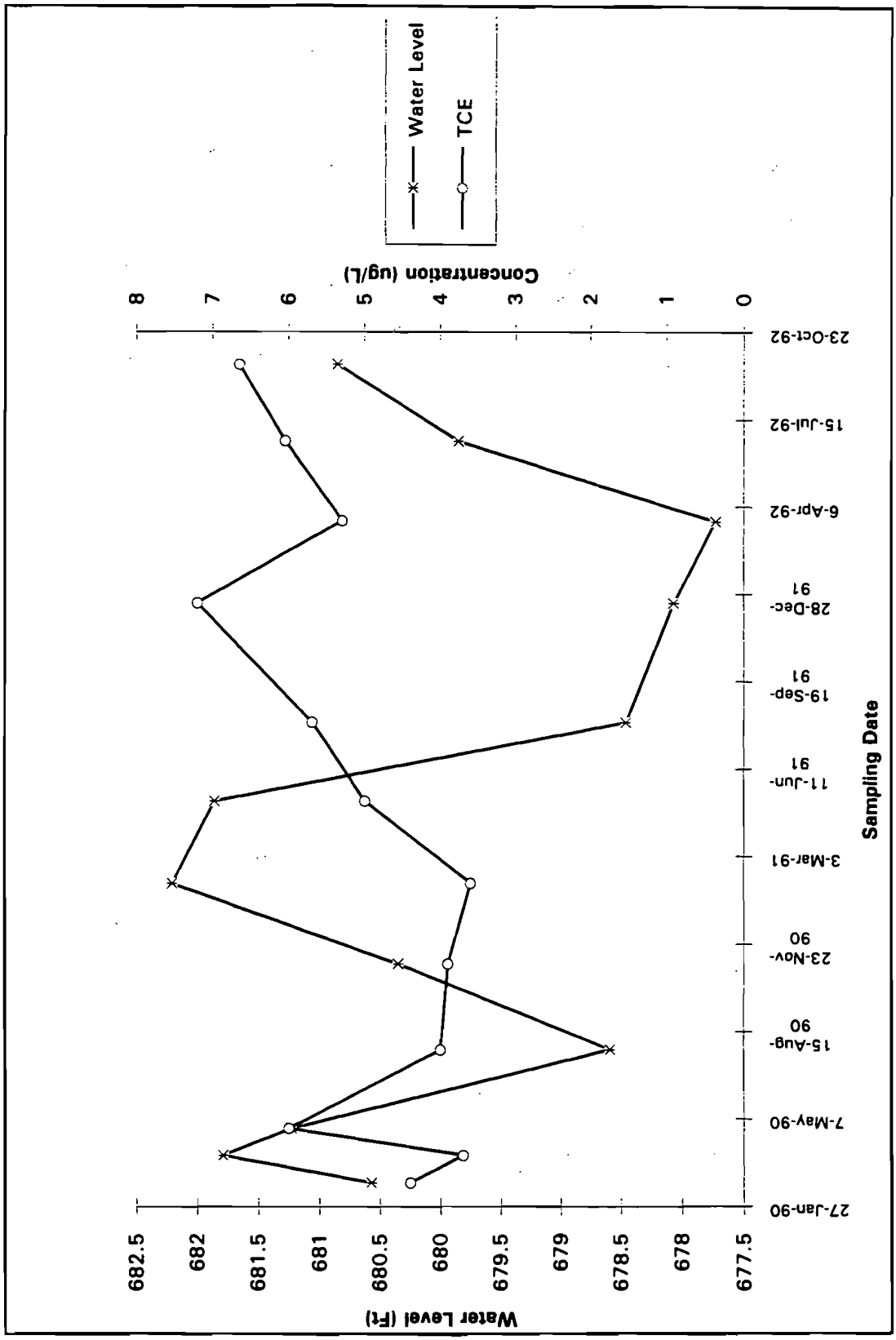


Figure L.12. Correlation of TCE concentration and water level – well 0315.

APPENDIX M

OU 9 BACKGROUND GROUNDWATER DATA

TO BE PROVIDED AFTER OU1 GROUNDWATER DATA ARE PROMULGATED.

APPENDIX N
CHEMICAL/RADIONUCLIDE PROPERTIES

Food Transfer Factors for Various Radionuclides

Radionuclide	Plant Uptake Factor (Unitless)	Beef/Livestock-Intake Ratio (pCi/kg/pCi/d)	Milk/Livestock-Intake Ratio (pCi/L/pCi/d)
Actinium-227	2.5E-03	2.0E-05	2.0E-05
Plutonium-238	1.0E-03	1.0E-04	1.0E-06
Plutonium-239	1.0E-03	1.0E-04	1.0E-06
Plutonium-240	1.0E-03	1.0E-04	1.0E-06
Radium-226	4.0E-02	1.0E-03	1.0E-03
Strontium-90	3.0E-01	8.0E-03	2.0E-03
Thorium-228	1.0E-03	1.0E-04	5.0E-06
Thorium-230	1.0E-03	1.0E-04	5.0E-06
Thorium-232	1.0E-03	1.0E-04	5.0E-06
Tritium	4.8E+00	1.2E-02	1.0E-02
Uranium-234	2.5E-03	3.4E-04	6.0E-04
Uranium-235	2.5E-03	3.4E-04	6.0E-04
Uranium-236	2.5E-03	3.4E-04	6.0E-04
Uranium-238	2.5E-03	3.4E-04	6.0E-04

Reference: DOE 1989. **A Manual for Implementing Radioactive Material Guidelines.** ANL/ES-160, DOE/CH/8901, Department of Energy, 1989.

71-55-6 1,1,1-TRICHLOROETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.334E+002		313
Water Solubility (mg/l)	1.495E+003	25	313
Vapor Pressure (torr)	1.240E+002	25	313
Henry's Constant (atm-m3/mol)	1.720E-002		313
Octanol-Water partition [Kow]	3.090E+002		313
Organic Carbon partition [Koc]	1.790E+002		313
Bioconcentration Factor	8.910E+000		313
Specific Gravity	1.337E+000	20	26
Melting Point (degrees C)	3.040E+001		313
Boiling Point (degrees C)	7.408E+001		313

156-59-2 CIS-1,2-DICHLOROETHYLENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.695E+001		210
Water Solubility (mg/l)	8.000E+002	20	210
Vapor Pressure (torr)	2.000E+002	25	210
Henry's Constant (atm-m3/mol)			
Octanol-Water partition [Kow]			
Organic Carbon partition [Koc]			
Bioconcentration Factor			
Specific Gravity	1.280E+000		210
Melting Point (degrees C)	-8.100E+001		210
Boiling Point (degrees C)	6.000E+001		210

540-59-0 1,2-DICHLOROETHYLENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.695E+001		313
Water Solubility (mg/l)	3.500E+003	25	313
Vapor Pressure (torr)	2.010E+002	25	313
Henry's Constant (atm-m3/mol)	4.080E-003		313
Octanol-Water partition [Kow]	7.244E+001		313
Organic Carbon partition [Koc]	3.500E+001		313
Bioconcentration Factor	1.510E+001		313
Specific Gravity	1.280E+000	-1	26
Melting Point (degrees C)	-5.700E+001		313
Boiling Point (degrees C)	4.800E+001		313

1746-01-6 2,3,7,8-TCDD (DIOXIN)

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	3.219E+002		300
Water Solubility (mg/l)			
Vapor Pressure (torr)	7.200E-010	25	300
Henry's Constant (atm-m3/mol)	5.400E-023		300
Octanol-Water partition [Kow]	4.365E+006		300
Organic Carbon partition [Koc]	4.571E+006		300
Bioconcentration Factor			
Specific Gravity	1.827E+000	-1	300
Melting Point (degrees C)	3.030E+002		300
Boiling Point (degrees C)	4.122E+002		300

106-44-5 P-CRESOL (4-Methylphenol)

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.080E+002		313
Water Solubility (mg/l)	2.152E+004	25	313
Vapor Pressure (torr)	1.100E-001	25	313
Henry's Constant (atm-m3/mol)	7.920E-007		313
Octanol-Water partition [Kow]	8.710E+001		313
Organic Carbon partition [Koc]	4.900E+001		313
Bioconcentration Factor	1.760E+001		313
Specific Gravity	1.030E+000	20	26
Melting Point (degrees C)	3.470E+001		313
Boiling Point (degrees C)	2.019E+002		313

1336-36-3 POLYCHLORINATED BIPHENYLS (Aroclor-1248)

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	3.280E+002		
Water Solubility (mg/l)	3.100E-002	25	212
Vapor Pressure (torr)	7.700E-005	25	212
Henry's Constant (atm-m3/mol)	1.070E-003		991
Octanol-Water partition [Kow]	1.100E+006		212
Organic Carbon partition [Koc]	5.300E+005		212
Bioconcentration Factor	1.000E+005		997
Specific Gravity	1.440E+000	25	195
Melting Point (degrees C)			
Boiling Point (degrees C)	3.400E+002		195

56-55-3 BENZO(A)ANTHRACENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.283E+002		300
Water Solubility (mg/l)	1.400E-002	25	300
Vapor Pressure (torr)	1.100E-007	25	300
Henry's Constant (atm-m3/mol)	6.600E-007		300
Octanol-Water partition [Kow]	7.940E+005		300
Organic Carbon partition [Koc]	1.380E+006		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	1.620E+002		300
Boiling Point (degrees C)	4.376E+002		300

50-32-8 3,4-BENZ(A)PYRENE (Benzo(a)pyrene)

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.523E+002		300
Water Solubility (mg/l)	3.800E-003	25	300
Vapor Pressure (torr)	5.490E-009	25	300
Henry's Constant (atm-m3/mol)	2.400E-006		300
Octanol-Water partition [Kow]	1.096E+006		300
Organic Carbon partition [Koc]	3.980E+005		300
Bioconcentration Factor			
Specific Gravity	1.351E+000	0	300
Melting Point (degrees C)	1.770E+002		300
Boiling Point (degrees C)	4.950E+002		300

205-99-2 BENZO(B)FLUORANTHENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.523E+002		300

Water Solubility (mg/l)	1.200E-003	25	300
Vapor Pressure (torr)	5.000E-007	20	300
Henry's Constant (atm-m3/mol)	1.200E-005		300
Octanol-Water partition [Kow]	3.715E+006		300
Organic Carbon partition [Koc]	5.495E+005		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	1.680E+002		300
Boiling Point (degrees C)			

207-08-9 BENZO(K)FLUORANTHENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.523E+002		300
Water Solubility (mg/l)	5.500E-004	25	300
Vapor Pressure (torr)	9.590E-011	25	300
Henry's Constant (atm-m3/mol)	1.040E-003		300
Octanol-Water partition [Kow]	7.079E+006		300
Organic Carbon partition [Koc]	4.365E+006		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	2.170E+002		300
Boiling Point (degrees C)	4.800E+002		300

65-85-0 BENZOIC ACID

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.221E+002		300
Water Solubility (mg/l)	3.400E+003	25	300
Vapor Pressure (torr)	4.500E-003	25	300
Henry's Constant (atm-m3/mol)	7.020E-008		300
Octanol-Water partition [Kow]	7.400E+001		300
Organic Carbon partition [Koc]	1.819E+002		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	1.221E+002		300
Boiling Point (degrees C)	2.492E+002		300

117-81-7 BIS(2-ETHYLHEXYL)PHTHALATE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	3.900E+002		313
Water Solubility (mg/l)	3.400E-001	25	313
Vapor Pressure (torr)	9.750E-005	25	313
Henry's Constant (atm-m3/mol)	1.470E-005		313
Octanol-Water partition [Kow]	1.288E+005		313
Organic Carbon partition [Koc]	8.742E+004		313
Bioconcentration Factor	1.140E+002		313
Specific Gravity	1.593E-001	20	79
Melting Point (degrees C)	-5.000E+001		313
Boiling Point (degrees C)	3.840E+002		313

57-74-9 CHLORDANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	4.098E+002		313
Water Solubility (mg/l)	5.600E-002	25	313
Vapor Pressure (torr)	9.800E-006	25	313
Henry's Constant (atm-m3/mol)	4.860E-005		313

Octanol-Water partition [Kow]	3.467E+005		313
Organic Carbon partition [Koc]	3.800E+004		313
Bioconcentration Factor	3.802E+004		313
Specific Gravity	1.570E+000	25	999
Melting Point (degrees C)	1.050E+002		313
Boiling Point (degrees C)	1.750E+002		313

218-01-9 CHRYSENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.283E+002		300
Water Solubility (mg/l)	1.800E-003	25	300
Vapor Pressure (torr)	6.300E-009	25	300
Henry's Constant (atm-m3/mol)	7.260E-020		300
Octanol-Water partition [Kow]	4.074E+005		300
Organic Carbon partition [Koc]	2.455E+005		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	2.550E+002		300
Boiling Point (degrees C)	4.480E+002		300

75-09-2 DICHLOROMETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	8.494E+001		313
Water Solubility (mg/l)	1.303E+004	25	313
Vapor Pressure (torr)	4.350E+002	25	313
Henry's Constant (atm-m3/mol)	2.190E-003		313
Octanol-Water partition [Kow]	1.778E+001		313
Organic Carbon partition [Koc]	2.800E+001		313
Bioconcentration Factor	5.250E+000		313
Specific Gravity	1.330E+000	20	26
Melting Point (degrees C)	-9.492E+001		313
Boiling Point (degrees C)	3.964E+001		313

84-66-2 DIETHYL PHTHALATE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.220E+002		313
Water Solubility (mg/l)	8.960E+002	25	313
Vapor Pressure (torr)	1.650E-003	25	313
Henry's Constant (atm-m3/mol)	4.500E-007		313
Octanol-Water partition [Kow]	2.951E+002		313
Organic Carbon partition [Koc]	9.800E+001		313
Bioconcentration Factor	1.170E+002		313
Specific Gravity	1.232E+000	14	26
Melting Point (degrees C)	-3.000E+000		313
Boiling Point (degrees C)	2.980E+002		313

206-44-0 FLUORANTHENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.023E+002		300
Water Solubility (mg/l)	2.650E-001	25	300
Vapor Pressure (torr)	5.000E-006	25	300
Henry's Constant (atm-m3/mol)	1.690E-002		300
Octanol-Water partition [Kow]	1.660E+005		300
Organic Carbon partition [Koc]	4.169E+004		300
Bioconcentration Factor			

Specific Gravity	1.252E+000	4	300
Melting Point (degrees C)	1.110E+002		300
Boiling Point (degrees C)	3.750E+002		300

193-39-5 INDENO(1,2,3-CD)PYRENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.763E+002		300
Water Solubility (mg/l)	6.200E-002	-1	300
Vapor Pressure (torr)	1.000E-010	25	300
Henry's Constant (atm-m3/mol)	2.960E-020		300
Octanol-Water partition [Kow]	5.012E+007		300
Organic Carbon partition [Koc]	3.090E+007		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	1.600E+002		300
Boiling Point (degrees C)	5.360E+002		300

108-95-2 PHENOL

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.400E+001		313
Water Solubility (mg/l)	8.280E+004	25	313
Vapor Pressure (torr)	3.500E-001	25	313
Henry's Constant (atm-m3/mol)	3.330E-007		313
Octanol-Water partition [Kow]	2.884E+001		313
Organic Carbon partition [Koc]	1.600E+001		313
Bioconcentration Factor	3.900E+001		313
Specific Gravity	1.070E+000	20	999
Melting Point (degrees C)	4.090E+001		313
Boiling Point (degrees C)	1.818E+002		313

129-00-0 PYRENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	2.023E+002		300
Water Solubility (mg/l)	1.300E-002	25	300
Vapor Pressure (torr)	6.850E-007	25	300
Henry's Constant (atm-m3/mol)	1.090E-005		300
Octanol-Water partition [Kow]	1.230E+005		300
Organic Carbon partition [Koc]	7.586E+004		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	1.490E+002		300
Boiling Point (degrees C)	3.930E+002		300

127-18-4 TETRACHLOROETHYLENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.660E+002		313
Water Solubility (mg/l)	2.000E+002	25	313
Vapor Pressure (torr)	1.855E+001	25	313
Henry's Constant (atm-m3/mol)	1.840E-002		313
Octanol-Water partition [Kow]	2.512E+003		313
Organic Carbon partition [Koc]	2.380E+002		313
Bioconcentration Factor	4.898E+001		313
Specific Gravity	1.586E+000	25	26
Melting Point (degrees C)	-2.235E+001		313

Boiling Point (degrees C)	1.211E+002		313

56-23-5 TETRACHLOROMETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.540E+002		313
Water Solubility (mg/l)	8.048E+002	20	313
Vapor Pressure (torr)	1.150E+002	25	313
Henry's Constant (atm-m3/mol)	1.600E-002		313
Octanol-Water partition [Kow]	6.761E+002		313
Organic Carbon partition [Koc]	1.100E+002		313
Bioconcentration Factor	1.995E+001		313
Specific Gravity	1.590E+000	25	26
Melting Point (degrees C)	-2.300E+001		313
Boiling Point (degrees C)	7.670E+001		313

108-88-3 TOLUENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.200E+001		313
Water Solubility (mg/l)	5.260E+002	25	313
Vapor Pressure (torr)	2.840E+001	25	313
Henry's Constant (atm-m3/mol)	6.640E-003		313
Octanol-Water partition [Kow]	5.370E+002		313
Organic Carbon partition [Koc]	9.500E+001		313
Bioconcentration Factor	3.700E+001		313
Specific Gravity	8.670E-001	20	243
Melting Point (degrees C)	-9.499E+001		313
Boiling Point (degrees C)	1.106E+002		313

79-01-6 TRICHLOROETHYLENE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.310E+002		313
Water Solubility (mg/l)	1.100E+003	25	313
Vapor Pressure (torr)	5.800E+001	25	313
Henry's Constant (atm-m3/mol)	1.030E-002		313
Octanol-Water partition [Kow]	2.630E+002		313
Organic Carbon partition [Koc]	1.040E+002		313
Bioconcentration Factor	1.700E+001		313
Specific Gravity	1.460E+000	20	26
Melting Point (degrees C)	-8.480E+001		313
Boiling Point (degrees C)	8.670E+001		313

75-69-4 TRICHLOROFLUOROMETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.374E+002		300
Water Solubility (mg/l)	1.240E+003	25	300
Vapor Pressure (torr)	7.920E+002	25	300
Henry's Constant (atm-m3/mol)	1.730E+000		300
Octanol-Water partition [Kow]	3.388E+002		300
Organic Carbon partition [Koc]	1.585E+002		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	-1.110E+002		300
Boiling Point (degrees C)	2.363E+001		300

67-66-3 TRICHLOROMETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.194E+002		313
Water Solubility (mg/l)	7.950E+003	25	313
Vapor Pressure (torr)	1.970E+002	25	313
Henry's Constant (atm-m3/mol)	3.670E-003		313
Octanol-Water partition [Kow]	9.333E+001		313
Organic Carbon partition [Koc]	4.500E+001		313
Bioconcentration Factor	8.300E+000		313
Specific Gravity	1.480E+000	20	999
Melting Point (degrees C)	-6.352E+001		313
Boiling Point (degrees C)	6.118E+001		313

75-01-4 VINYL CHLORIDE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	6.250E+001		313
Water Solubility (mg/l)	8.800E+003	25	313
Vapor Pressure (torr)	2.976E+003	25	313
Henry's Constant (atm-m3/mol)	2.700E-002		313
Octanol-Water partition [Kow]	2.291E+001		313
Organic Carbon partition [Koc]	1.350E+002		313
Bioconcentration Factor	1.000E+001		313
Specific Gravity	9.120E-001	15	79
Melting Point (degrees C)	-1.538E+002		313
Boiling Point (degrees C)	-1.337E+001		313

16984-48-8 FLUORIDE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	1.899E+001		319
Water Solubility (mg/l)			
Vapor Pressure (torr)			
Henry's Constant (atm-m3/mol)			
Octanol-Water partition [Kow]			
Organic Carbon partition [Koc]			
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)			
Boiling Point (degrees C)			

14797-55-8 NITRATE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight			
Water Solubility (mg/l)			
Vapor Pressure (torr)			
Henry's Constant (atm-m3/mol)			
Octanol-Water partition [Kow]			
Organic Carbon partition [Koc]			
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)			
Boiling Point (degrees C)			

7440-22-4 SILVER

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.

Molecular Weight	1.080E+002		26
Water Solubility (mg/l)	0.000E+000	-1	247
Vapor Pressure (torr)			
Henry's Constant (atm-m3/mol)			
Octanol-Water partition [Kow]			
Organic Carbon partition [Koc]			
Bioconcentration Factor	3.080E+003		998
Specific Gravity	1.050E+001	20	26
Melting Point (degrees C)	9.605E+002		26
Boiling Point (degrees C)	2.000E+003		26

107-06-2 1,2-DICHLOROETHANE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.900E+001		313
Water Solubility (mg/l)	8.608E+003	25	313
Vapor Pressure (torr)	7.890E+001	25	313
Henry's Constant (atm-m3/mol)	9.790E-004		313
Octanol-Water partition [Kow]	3.020E+001		313
Organic Carbon partition [Koc]	3.200E+001		313
Bioconcentration Factor	2.000E+000		313
Specific Gravity	1.250E+000	20	26
Melting Point (degrees C)	-3.566E+001		313
Boiling Point (degrees C)	8.348E+001		313

156-60-5 TRANS-1,2-DICHLOROETHYLEN

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	9.694E+001		300
Water Solubility (mg/l)	6.300E+003	25	300
Vapor Pressure (torr)	2.650E+002	20	300
Henry's Constant (atm-m3/mol)	6.740E-003		300
Octanol-Water partition [Kow]	1.230E+002		300
Organic Carbon partition [Koc]	5.888E+001		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	-5.000E+001		300
Boiling Point (degrees C)	4.750E+001		300

1031-07-8 ENDOSULFAN SULFATE

PROPERTY (units)	VALUE	TEMP.(C)	REFERENCE NO.
Molecular Weight	4.229E+002		300
Water Solubility (mg/l)	1.170E-001	-1	300
Vapor Pressure (torr)			
Henry's Constant (atm-m3/mol)			
Octanol-Water partition [Kow]	4.571E+003		300
Organic Carbon partition [Koc]	2.344E+003		300
Bioconcentration Factor			
Specific Gravity			
Melting Point (degrees C)	2.000E+002		300
Boiling Point (degrees C)			

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>>>>>>>>>>>>>>>>>>>>>>>>>>>>>END OF REPORT<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

APPENDIX O

STATISTICAL PROCEDURES

CHARACTERISTICS OF NORMAL AND LOGNORMAL DISTRIBUTIONS

REFERENCE: GILBERT 1987

Some Characteristics of Normal and Lognormal Populations

	x Is from a Normal Distribution with Parameters μ and σ^2	*x Is from a 3-Parameter Lognormal Distribution[a] with Parameters μ_y, σ_y^2, and τ*
Definitions of Distribution Parameters[b]	$\mu = N^{-1} \sum_{i=1}^{N} x_i$ $\sigma^2 = N^{-1} \sum_{i=1}^{N} (x_i - \mu)^2$	$\mu_y = N^{-1} \sum_{i=1}^{N} \ln(x_i - \tau)$, $\sigma_y^2 = N^{-1} \sum_{i=1}^{N} [\ln(x_i - \tau) - \mu_y]^2$
Mean	μ	$\mu = \exp(\mu_y + \sigma_y^2/2) + \tau$
Geometric mean (GM)	—	$\mu_g = \exp(\mu_y) + \tau$
Median	μ	$\mu_g = \exp(\mu_y) + \tau$
Mode	μ	$\exp(\mu_y - \sigma_y^2) + \tau$
Standard deviation	σ	$\sigma = \sqrt{\exp(2\mu_y + \sigma_y^2)[\exp(\sigma_y^2) - 1]}$
Geometric standard deviation	—	$\sigma_g = \exp(\sigma_y)$
Coefficient of variation	σ/μ	$\eta = \sqrt{\exp(\sigma_y^2) - 1}\left[1 + \frac{\tau}{\exp(\mu_y + \sigma_y^2/2)}\right]^{-1}$
Coefficient of skewness[c]	0	$\eta_1^3 + 3\eta_1$
Coefficient of kurtosis[c]	0	$\eta_1^8 + 6\eta_1^6 + 15\eta_1^4 + 16\eta_1^2$
Central 68% of the distribution	$\mu - \sigma$ to $\mu + \sigma$	μ_g/σ_g to $\mu_g \times \sigma_g$
Central 95% of the distribution	$\mu - 1.96\sigma$ to $\mu + 1.96\sigma$	$\mu_g/\sigma_g^{1.96}$ to $\mu_g \times \sigma_g^{1.96}$

Source: After Miesch, 1976, Table 1.

[a] N = number of population units in the target population.

x_i = datum for the ith population unit.

If $\tau = 0$, the three-parameter lognormal reduces to the two-parameter. Note that the expressions for μ, μ_g, η and the mode simplify when $\tau = 0$, that is, when the variable has the two-parameter lognormal distribution.

[b] Various notations have been used to denote the two parameters and the mean and variance of the lognormal distribution. Care must be taken to avoid confusion. For example, Aitchison and Brown (1969) use α and β^2 instead of our μ and σ^2 for the mean and variance of the untransformed (lognormal) variate. They use μ and σ^2 instead of our μ_y and σ_y^2 for the mean and variance of the log-transformed (normal) variate.

[c] $\eta_1 = \sqrt{\exp(\sigma_y^2) - 1}$

GOODNESS-OF-FIT TESTS

- Shapiro-Wilks Test (W-Test)

REFERENCE: GILBERT 1987

12 Skewed Distributions and Goodness-of-Fit Tests

In many cases pollution data sets are skewed (asymmetrical) so that the symmetric normal distribution discussed in Chapter 11 is not a suitable model for estimating quantiles, proportions, or means. In that case the nonparametric procedures given in Chapter 11 may be used. Another approach is to find a distribution model that adequately fits the skewed data set. Then statistical methods for that distribution can be used. This chapter describes the lognormal distribution and several methods for testing whether a data set is likely to have arisen from a normal distribution or a lognormal distribution.

12.1 LOGNORMAL DISTRIBUTION

The lognormal distribution is used to model many kinds of environmental contaminant data: for example, air quality data (see the reviews by Mage, 1981; Georgopoulos and Seinfeld, 1982), radionuclide data sets (Pinder and Smith, 1975; McLendon, 1975; and Horton et al., 1980), trace metals in fish (Giesy and Weiner, 1977), and strontium-90 and other fission-product concentrations in human tissues (Schubert, Brodsky, and Tyler, 1967).

Two-, three-, and four-parameter lognormal distributions can be defined. The *two-parameter lognormal* density function is given by

$$f(x) = \frac{1}{x\sigma_y\sqrt{2\pi}} \exp\left[-\frac{1}{2\sigma_y^2}(\ln x - \mu_y)^2\right] \qquad x > 0,\ -\infty < \mu_y < \infty,\ \sigma_y > 0 \tag{12.1}$$

where μ_y and σ_y^2, the two parameters of the distribution, are the true mean and variance, respectively, of the *transformed* random variable $Y = \ln X$. Some authors refer to the true geometric mean [exp (μ_y)] and the true geometric standard deviation [exp (σ_y)] as the parameters of the distribution. We shall use $\Lambda(\mu_y, \sigma_y^2)$ to denote a two-parameter lognormal distribution with parameters μ_y and σ_y^2.

Some two-parameter lognormal distributions are shown in Figure 12.1. The distribution is described in detail by Aitchison and Brown (1969) and Johnson and Kotz (1970*a*), who give several methods for estimating the parameters μ_y and σ_y^2. Mage and Ott (1984) evaluate several methods and demonstrate that

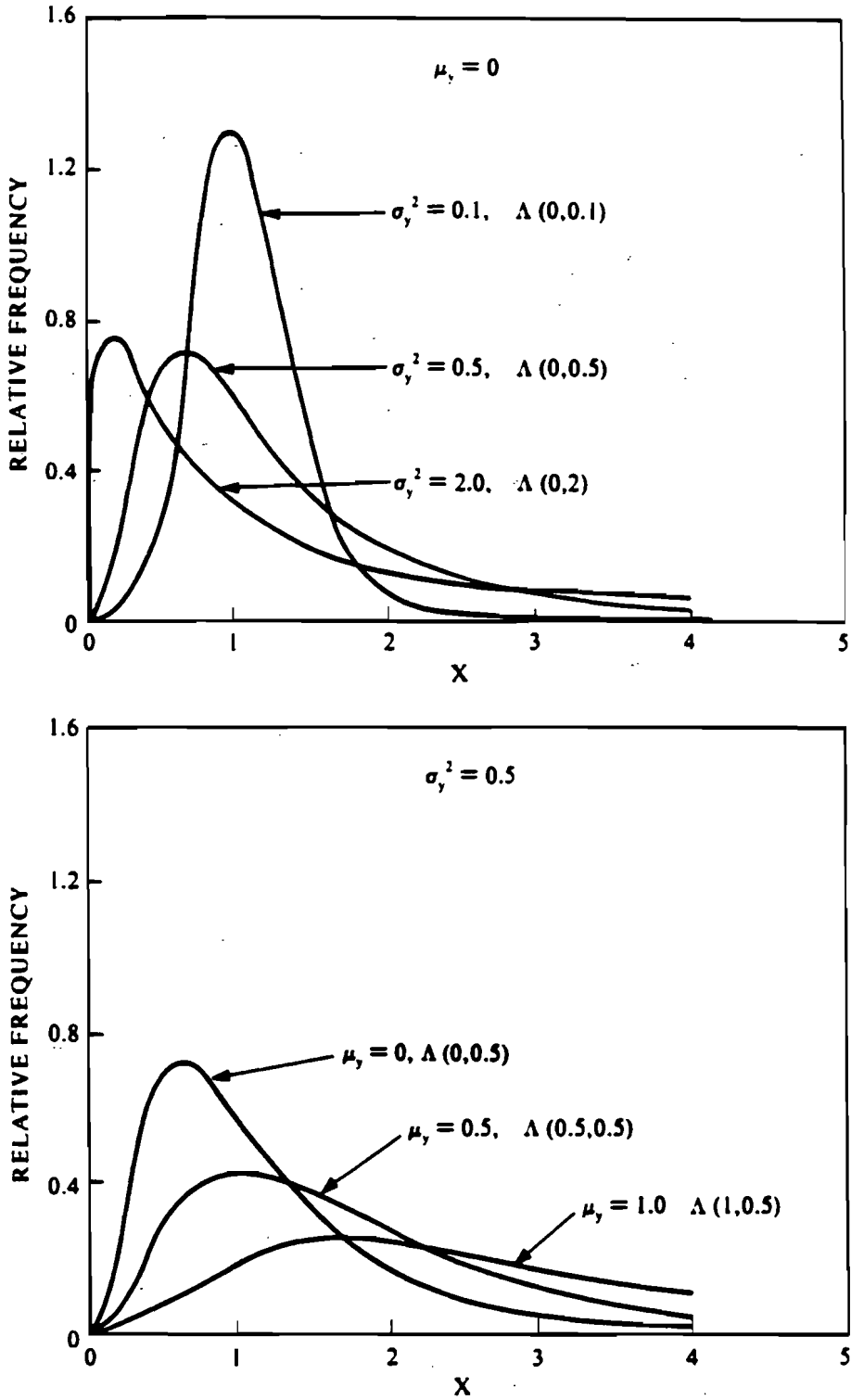


Figure 12.1 Lognormal distributions for different values of the parameters μ_y and σ_y^2, the mean and variance, respectively, of the log-transformed variate (after Aitchison and Brown, 1969, Figs. 2.2 and 2.3).

the method of maximum likelihood is preferred. This method leads to the estimators

$$\bar{y} = \frac{1}{n}\sum_{i=1}^{n} y_i \quad \text{and} \quad s_y^2 = \frac{1}{n}\sum_{i=1}^{n} (y_i - \bar{y})^2$$

where $y_i = \ln x_i$. Maximum likelihood estimation from a theoretical viewpoint is discussed in theoretical statistics books, such as Lindgren (1976). Georgopoulos and Seinfeld (1982) illustrate its application to statistical distributions of air pollution concentrations.

The *three-parameter lognormal* density function is given by

$$f(x) = \frac{1}{(x-\tau)\,\sigma_y\sqrt{2\pi}} \exp\left\{-\frac{1}{2\sigma_y^2}[\ln(x-\tau) - \mu_y]^2\right\}$$

$$x > \tau, \quad -\infty < \mu_y < \infty, \quad \sigma_y > 0, \quad -\infty < \tau < \infty \qquad 12.2$$

Comparing Eqs. 12.1 and 12.2, we see that $x - \tau$ has a two-parameter lognormal distribution. The third parameter, τ, which may be positive or negative, simply shifts the two-parameter distribution to the right or left by the amount τ without changing its shape.

Figure 12.2 shows a two-parameter $\Lambda(1, 1)$ distribution and the three-parameter lognormal distributions that result when τ is shifted from zero to

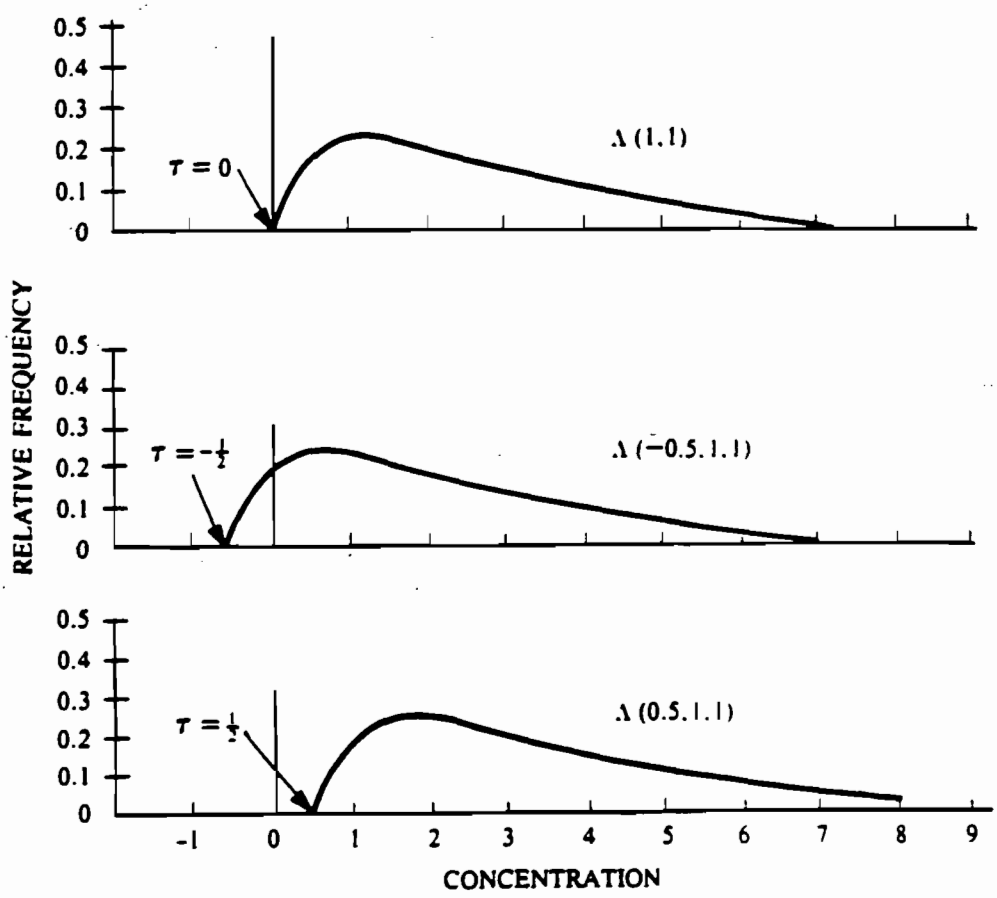


Figure 12.2 The two-parameter lognormal distribution $\Lambda(1, 1)$ and the three-parameter lognormal distributions that result when $\tau = -0.5$ and 0.5 (after Gilbert and Kinnison, 1981, Fig. 1).

-0.5 or to 0.5. The population mean μ and variance σ^2 of the three-parameter lognormal distribution are defined in Table 12.1 along with other characteristics of the distribution. Setting $\tau = 0$ in Table 12.1 gives the appropriate expressions for the two-parameter lognormal distribution.

Maximum likelihood estimates of the parameters μ_y, σ_y^2, and τ may be obtained by the Nelder–Mead simplex procedure (Olsson and Nelson, 1975), as discussed by Holland and Fitz-Simons (1982). One of the conditional maximum likelihood estimates discussed by Cohen and Whitten (1981) could also be used. If the value for τ is known a priori, then μ_y and σ_y^2 are estimated by computing $\bar{y}$ and s_y^2 from the data $y_i = \ln(x_i - \tau)$.

Since pollution concentrations cannot be negative, a three-parameter lognormal with negative τ may seem on first thought to be irrelevant. However, negative measurements can occur due to measurement errors when true concentrations are very near zero. For example, correcting environmental radionuclide measurements by subtracting naturally occurring (background) radiation can give negative data when concentrations are only slightly above background and large measurement errors are present.

The four-parameter lognormal is bounded by a lower bound and an upper bound on the possible values of the variable. Also, both right and left-skewed distribution shapes are possible. This distribution is discussed by Aitchison and Brown (1969) and Mage (1980) and has been applied to air quality data by Mage (1975).

12.2 WEIBULL, GAMMA, AND BETA DISTRIBUTIONS

The Weibull, gamma, and beta distributions are sometimes used to model environmental pollution data. Their density functions are given in Table 12.2 along with the two- and three-parameter lognormal density functions. Plots showing the many shapes these distributions can take are given by Hahn and Shapiro (1967). Georgopoulos and Seinfeld (1982) discuss the application of these distributions to air pollution concentrations.

The parameters γ, α, and β of the *three-parameter Weibull distribution* determine the location, shape, and scale, respectively, of the distribution. The distribution can take on a wide variety of shapes and can be used to model both right- and left-skewed data sets.

The three parameters can be estimated by several methods, including Weibull probability paper (illustrated by King, 1971 and Hahn and Shapiro, 1967) or the maximum likelihood method, discussed, for example, by Johnson and Kotz (1970*a*, p. 255) and Holland and Fitz-Simons (1982).

Pinder and Smith (1975) found that the Weibull distribution fit some radionuclide data sets better than the two-parameter lognormal. Apt (1976) recommends the Weibull distribution as being well suited for describing spatial and temporal distributions of atmospheric radioactivity. He suggests that the estimate of γ would be a reasonably good environmental "background" or "nonimpacted" value, since γ is a threshold or minimum-value parameter. Johnson (1979) reported that ambient ozone data appeared to be better fit by the two-parameter Weibull distribution (i.e., when $\gamma = 0$) than by the two-parameter lognormal.

Table 12.1 Some Characteristics of Normal and Lognormal Populations

	x Is from a Normal Distribution with Parameters μ and σ^2	*x Is from a 3-Parameter Lognormal Distribution[a] with Parameters μ_y, σ_y^2, and τ*
Definitions of Distribution Parameters[b]	$\mu = N^{-1} \sum_{i=1}^{N} x_i$ $\sigma^2 = N^{-1} \sum_{i=1}^{N} (x_i - \mu)^2$	$\mu_y = N^{-1} \sum_{i=1}^{N} \ln(x_i - \tau)$, $\sigma_y^2 = N^{-1} \sum_{i=1}^{N} [\ln(x_i - \tau) - \mu_y]^2$
Mean	μ	$\mu = \exp(\mu_y + \sigma_y^2/2) + \tau$
Geometric mean (GM)	—	$\mu_g = \exp(\mu_y) + \tau$
Median	μ	$\mu_g = \exp(\mu_y) + \tau$
Mode	μ	$\exp(\mu_y - \sigma_y^2) + \tau$
Standard deviation	σ	$\sigma = \sqrt{\exp(2\mu_y + \sigma_y^2)[\exp(\sigma_y^2) - 1]}$
Geometric standard deviation	—	$\sigma_g = \exp(\sigma_y)$
Coefficient of variation	σ/μ	$\eta = \sqrt{\exp(\sigma_y^2) - 1} \left[1 + \frac{\tau}{\exp(\mu_y + \sigma_y^2/2)}\right]^{-1}$
Coefficient of skewness[c]	0	$\eta_1^3 + 3\eta_1$
Coefficient of kurtosis[c]	0	$\eta_1^8 + 6\eta_1^6 + 15\eta_1^4 + 16\eta_1^2$
Central 68% of the distribution	$\mu - \sigma$ to $\mu + \sigma$	μ_g/σ_g to $\mu_g \times \sigma_g$
Central 95% of the distribution	$\mu - 1.96\sigma$ to $\mu + 1.96\sigma$	$\mu_g/\sigma_g^{1.96}$ to $\mu_g \times \sigma_g^{1.96}$

Source: After Miesch, 1976, Table 1.

[a] N = number of population units in the target population.

x_i = datum for the ith population unit.

If $\tau = 0$, the three-parameter lognormal reduces to the two-parameter. Note that the expressions for μ, μ_g, η and the mode simplify when $\tau = 0$, that is, when the variable has the two-parameter lognormal distribution.

[b] Various notations have been used to denote the two parameters and the mean and variance of the lognormal distribution. Care must be taken to avoid confusion. For example, Aitchison and Brown (1969) use α and β^2 instead of our μ and σ^2 for the mean and variance of the untransformed (lognormal) variate. They use μ and σ^2 instead of our μ_y and σ_y^2 for the mean and variance of the log-transformed (normal) variate.

[c] $\eta_1 = \sqrt{\exp(\sigma_y^2) - 1}$

Table 12.2 Probability Density Functions Sometimes Used to Model Environmental Pollutant Concentrations

Distribution	*Probability Density Function (pdf)*
Two-parameter lognormal[a]	$\frac{1}{x\sigma_y\sqrt{2\pi}}\exp\left[-\frac{(\ln x-\mu_y)^2}{2\sigma_y^2}\right]$ $x>0,\ -\infty<\mu_y<\infty,\ \sigma_y>0$
Three-parameter lognormal[a]	$\frac{1}{(x-\tau)\sigma_y\sqrt{2\pi}}\exp\left\{-\frac{[\ln(x-\tau)-\mu_y]^2}{2\sigma_y^2}\right\}$ $x>\tau,\ -\infty<\tau<\infty,\ -\infty<\mu_y<\infty,\ \sigma_y>0$
Three-parameter Weibull[b]	$\frac{\alpha}{\beta}\left(\frac{x-\gamma}{\beta}\right)^{\alpha-1}\exp\left[-\left(\frac{x-\gamma}{\beta}\right)^{\alpha}\right]$ $-\infty<\gamma<\infty,\ x>\gamma,\ \beta>0,\ \alpha>0$
Three-parameter gamma[b]	$\frac{1}{\beta\Gamma(\alpha)}\left(\frac{x-\gamma}{\beta}\right)^{\alpha-1}\exp\left[-\left(\frac{x-\gamma}{\beta}\right)\right]$ $-\infty<\gamma<\infty,\ x>\gamma,\ \alpha>0,\ \beta>0$
Four-parameter beta[c]	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)}(\theta-\gamma)^{1-\alpha-\beta}(x-\gamma)^{\alpha-1}(\theta-x)^{\beta-1}$ $\gamma<x<\theta,\ \alpha>0,\ \beta>0$

[a] μ_y and σ_y^2 are defined in Table 12.1.
[b] Reduces to two-parameter distributions when $\gamma = 0$.
[c] Reduces to three-parameter beta distribution when $\gamma = 0$.

The parameters γ, α, and β of the *three-parameter gamma distribution* are also location, shape, and scale parameters. The density function (given in Table 12.2) contains the gamma function $\Gamma(\alpha)$, which is defined to be

$$\Gamma(\alpha) = \int_0^\infty x^{\alpha-1}\exp(-x)\,dx$$

where $\Gamma(\alpha) = (\alpha - 1)!$ when α is a positive integer. The maximum likelihood estimates of the three parameters may be obtained as described by Johnson and Kotz (1970*a*, p. 185). Preliminary and easily computed estimates of the parameters can be obtained by using Eqs. 39.1, 39.2, and 39.3 in Johnson and Kotz (1970*a*, p. 186). However, these estimators are not as accurate as the maximum likelihood estimators.

The density function of the *beta distribution* given in Table 12.2 has four parameters: α, β, θ, and γ. The variable X is bounded below by γ and above by θ, a useful feature because such bounds may occur for some types of environmental data. Methods for estimating the parameters are given by Johnson and Kotz (1970*b*, pp. 41–46).

12.3 GOODNESS-OF-FIT TESTS

The previous section presented several density functions that might be used to model environmental contaminant data. The data analyst is faced with deciding

on the basis of data which of these probability distributions to use. Common ways to approach this problem are to construct a histogram, stem-and-leaf display, or normal and lognormal probability plots of the data. (See Section 13.1.3 for more on lognormal probability plots.) Histograms and stem-and-leaf displays (the latter are discussed and illustrated by Hoaglin, Mosteller, and Tukey, 1983) will give a visual impression of the shape of the data set, but they are not adequate tools for discrimination. If the normal probability plot is a straight line, it is evidence of an underlying normal distribution. A straight line on the lognormal probability plot suggests the lognormal distribution is a better model. Coefficients of skewness and kurtosis may also be computed from the n data values and used to test for normality (Bowman and Shenton, 1975). Most statistical packages of computer programs contain a code that will plot histograms and compute the coefficients of skewness or kurtosis, and some (e.g., Minitab; see Ryan, Joiner, and Ryan, 1982) will construct probability plots.

This section presents several statistical tests that test the null hypothesis that the distribution is in some specified form. We begin with the W test developed by Shapiro and Wilk (1965), one of the most powerful tests available for detecting departures from a hypothesized normal or lognormal density function. Shapiro and Wilk provided tables that allow the W test to be made if $n \leq 50$. This limitation on n was overcome somewhat by D'Agostino (1971), who developed a related test for when n is between 50 and 1000. D'Agostino's test and the W test are discussed and illustrated in this section. Royston (1982*a*) developed a computational procedure for the W test for n as large as 2000. His procedure is well suited for computation on a computer, and computer codes are available (Royston, 1982*a*, 1982*b*, 1982*c*, 1983; Königer, 1983).

Tests closely related to the W test with similar performance capabilities are those by Shapiro and Francia (1972) and Filliben (1975). Looney and Gulledge (1985) use the correlation coefficient applied to a probability plot to test for normality or lognormality. A table of critical values needed for the test is provided for n between 3 and 100. Their test is simple, and its performance is roughly the same as that of the W test.

The nonparametric Kolmogorov–Smirnov (KS) test and the related Lilliefors test may also be used to evaluate the fit of a hypothesized distribution. These tests, described by Conover (1980) are considered to be more powerful than the chi-square goodness-of-fit tests. The KS test is not valid if the parameters of the hypothesized distribution are estimated from the data set. The Lilliefors test (Lilliefors, 1967, 1969) was developed to surmount this problem when the hypothesized distribution is the normal or lognormal. Iman (1982) developed graphs that simplify the Lilliefors test procedure. Kurtz and Fields (1983*a*, 1983*b*) developed a computer code for computing the KS test. One can also use an IMSL (1982) subroutine as well as SAS (1982, 1985) software, but the Kurtz and Fields' code is valid for smaller n ($n > 3$).

12.3.1 The *W* Test

The W test developed by Shapiro and Wilk (1965) is an effective method for testing whether a data set has been drawn from an underlying normal distribution. Furthermore, by conducting the test on the logarithms of the data, it is an equally effective way of evaluating the hypothesis of a lognormal distribution.

We suppose that $n \leq 50$ data, $x_1, x_2, \ldots, x_n$, have been drawn at random from some population. The null hypothesis to be tested is

H_0: The population has a normal distribution

versus

H_A: The population does not have a normal distribution

If H_0 is rejected, then H_A is accepted. If H_0 is not rejected, the data set is consistent with the H_0 distribution, although a retest using additional data could result in rejecting H_0.

The W test of this H_0 is conducted as follows:

1. Compute the denominator d of the W test statistic, using the n data.

$$d = \sum_{i=1}^{n} (x_i - \bar{x})^2 = \sum_{i=1}^{n} x_i^2 - \frac{1}{n}\left(\sum_{i=1}^{n} x_i\right)^2 \qquad 12.3$$

2. Order the n data from smallest to largest to obtain the sample order statistics $x_{[1]} \leq x_{[2]} \leq \cdots \leq x_{[n]}$.
3. Compute k, where

$$k = \frac{n}{2} \qquad \text{if } n \text{ is even}$$

$$= \frac{n-1}{2} \qquad \text{if } n \text{ is odd}$$

4. Turn to Table A6 and for the observed n find the coefficients $a_1, a_2, \ldots, a_k$.
5. Then compute

$$W = \frac{1}{d}\left[\sum_{i=1}^{k} a_i(x_{[n-i+1]} - x_{[i]})\right]^2 \qquad 12.4$$

6. Reject H_0 at the α significance level if W is less than the quantile given in Table A7.

To test the null hypothesis

H_0: The population has a lognormal distribution

versus

H_A: The population does not have a lognormal distribution

the preceding procedure is used on the logarithms of the data. That is, we compute d (Eq. 12.3), using $y_1, y_2, \ldots, y_n$, where $y_i = \ln x_i$, and we use the sample order statistics of the logarithms $y_{[1]} \leq y_{[2]} \leq \cdots \leq y_{[n]}$ in place of the $x_{[i]}$ in Eq. 12.4.

EXAMPLE 12.1

Lee and Krutchkoff (1980) list mercury concentrations (ppm) in 115 samples of swordfish. We have selected 10 of these data at random

Table 12.3 Mercury Concentrations (ppm) in Ten Samples of Swordfish

x_i	0.13	0.45	0.60	0.76	1.05
$y_i = \ln x_i$	−2.0402	−0.7985	−0.5108	−0.2744	0.04879
x_i	1.12	1.20	1.37	1.69	2.06
$y_i = \ln x_i$	0.1133	0.1823	0.3148	0.5247	0.7227

Source: After Lee and Krutchkoff, 1980, Table 1.

to illustrate the W test. We test the null hypothesis

$$H_0\text{: The distribution is lognormal}$$

versus

$$H_A\text{: The distribution is not lognormal}$$

and we test at the $\alpha = 0.05$ level. The natural logarithms of the 10 randomly selected values are listed from smallest to largest in Table 12.3.

The denominator of the W statistic computed with the 10 y_i data is $d = 5.7865$ (by Eq. 12.3). Since $n = 10$, we have $k = 5$. Using the 5 coefficients $a_1, a_2, \ldots, a_5$ from Table A6 for $n = 10$, we use Eq. 12.4 to obtain

$$\begin{aligned} W = \frac{1}{5.7865} \{&0.5739\,[0.7227 - (-2.0402)] \\ &+ 0.3291\,[0.5247 - (-0.7985)] \\ &+ 0.2141\,[0.3148 - (-0.5108)] \\ &+ 0.1224\,[0.1823 - (-0.2744)] \\ &+ 0.0399\,[0.1133 - 0.04879]\}^2 \\ = 0.8798 \end{aligned}$$

From Table A7 we find this calculated W is greater than the 0.05 quantile 0.842. Hence, we cannot reject H_0, and we conclude that, based on the $n = 10$ data, the lognormal distribution may be a reasonable approximation to the true unknown distribution. Of course, if n were much greater than 10, the W test might lead to the opposite conclusion, since the additional data would provide more information about the shape of the target population distribution.

An alternative method of using W to test H_0 is to convert W to a standard normal variable and to use Table A1 to decide whether to reject H_0. This approach is illustrated by Hahn and Shapiro (1967) and by Conover (1980). One attractive feature of this approach is that it can be used to combine several independent W tests into one overall test of normality (or lognormality). This testing procedure is illustrated by Conover (1980, p. 365).

12.3.2 D'Agostino's Test

D'Agostino (1971) developed the D statistic to test the null hypothesis of normality or lognormality when $n \geq 50$. He shows that his test compares

favorably with other tests in its ability to reject H_0 when H_0 is actually false. This test complements the W test, since tables needed for the latter test are limited to $n \leq 50$.

Suppose we wish to test the null hypothesis that the underlying distribution is normal. Then the D test is conducted as follows:

1. Draw a random sample $x_1, x_2, \ldots, x_n$ of size $n \geq 50$ from the population of interest.
2. Order the n data from smallest to largest to obtain the sample order statistics $x_{[1]} \leq x_{[2]} \leq \cdots \leq x_{[n]}$.
3. Compute the statistic

$$D = \frac{\sum_{i=1}^{n} [i - \frac{1}{2}(n + 1)]x_{[i]}}{n^2 s}$$

where

$$s = \left[\frac{1}{n} \sum_{i=1}^{n} (x_i - \bar{x})^2\right]^{1/2}$$

4. Transform D to the statistic Y by computing

$$Y = \frac{D - 0.28209479}{0.02998598/\sqrt{n}}$$

[One should aim for five-place numerical accuracy in computing D (step 3), since the denominator of Y is so small.] If n is large and the data are drawn from a normal distribution, then the expected value of Y is zero. For nonnormal distributions Y will tend to be either less than or greater than zero, depending on the particular distribution. This fact necessitates a two-tailed test (step 5).

5. Reject at the α significance level the null hypothesis that the n data were drawn from a normal distribution if Y is less than the $\alpha/2$ quantile or greater than the $1 - \alpha/2$ quantile of the distribution of Y. These quantiles are given in Table A8 for selected values of n between 50 and 1000 (from D'Agostino, 1971).

The Y statistic can also be used to test the null hypothesis of a lognormal population by using $y_i = \ln x_i$ in place of x_i in the calculations.

EXAMPLE 12.2

We test at the $\alpha = 0.05$ significance level that the $n = 115$ mercury swordfish concentrations in Table 1 of Lee and Krutchkoff (1980) have been drawn from a normal distribution. That is, we test

H_0: The distribution is normal

versus

H_A: The distribution is not normal

and we assume that the data were drawn at random from the target population.

The value of s in the denominator of D is computed to be

$$s = \left[\frac{1}{115}\sum_{i=1}^{115}(x_i - \bar{x})^2\right]^{1/2} = 0.4978213$$

Hence the denominator is

$$(115)^2(0.4978213) = 6583.687$$

Since $(n + 1)/2 = 116/2 = 58$, the numerator of D is

$$(1 - 58)x_{[1]} + (2 - 58)x_{[2]} + \cdots + (114 - 58)x_{[114]} + (115 - 58)x_{[115]} = 1833.3$$

Therefore

$$D = \frac{1833.3}{6583.687} = 0.27846099$$

Hence

$$Y = \frac{0.27846099 - 0.28209479}{0.02998598/\sqrt{115}} = -1.30$$

Table A8 contains no quantiles of the Y statistic for $n = 115$. Hence, we must interpolate. If $n = 100$, the $\alpha/2 = 0.05/2 = 0.025$ quantile is -2.552, and the $1 - 0.025 = 0.975$ quantile is 1.303. If $n = 150$, Table A8 gives -2.452 and 1.423 for these quantiles. Linear interpolation between the 0.025 quantiles for $n = 100$ and 150 gives -2.522 as the approximate 0.025 quantile for $n = 115$. The 0.975 quantile when $n = 115$ is similarly approximated to be 1.339. Since $Y = -1.30$ is not less than -2.522 nor greater than 1.339, the null hypothesis of a normal distribution cannot be rejected. Hence, we tentatively accept the hypothesis that the population from which the data were obtained can be approximated by a normal distribution.

12.4 SUMMARY

This chapter introduced the most important frequency distributions used to model environmental data sets. The lognormal distribution is frequently used and will be discussed in more detail in Chapter 13.

Two statistical procedures for testing that a data set has been drawn (at random) from a hypothesized normal or lognormal distribution have also been described and illustrated. One of these, the W test, is recommended as a powerful general-purpose test for normality or lognormality when $n \leq 50$. The other test, by D'Agostino (1971), is appropriate for $n \geq 50$. Two easily used graphical tests are the Kolmogorov-Smirnov (KS) and Lilliefors tests discussed by Conover (1980). If the hypothesized distribution is normal or lognormal, the Lilliefors test is preferred to the KS test because the parameters of the distribution need not be known a priori. The simple correlation coefficient procedure discussed by Looney and Gulledge (1985) is recommended as a test for normal or lognormal distributions if $n \leq 100$.

EXERCISES

12.1 Use the data in Table 12.3 and the W test to test at the $\alpha = 0.05$ level the null hypothesis that mercury concentrations in swordfish are normally distributed. Compare your conclusion to that in Example 12.1, where we tested the null hypothesis that these data are from a lognormal distribution. Does the normal or lognormal seem to be the better choice?

12.2 The following mercury concentrations were drawn at random from the list of 115 values given by Lee and Krutchkoff (1980):

1.00	1.08	1.39	1.89	0.83
0.89	0.13	0.07	1.26	0.92

Combine these data with those in Table 12.3 and use the W test to test at the $\alpha = 0.05$ level that the sampled population is normal. Does the test result differ from that in Exercise 12.1?

ANSWERS

12.1 By Eq. 12.3, $d = 3.0520$. Using the 5 coefficients from Table A6 and Eq. 12.4, we obtain

$$\begin{aligned} W &= \frac{1}{3.0520}[0.5739\,(2.06 - 0.13) + 0.3291\,(1.69 - 0.45) \\ &\quad + 0.2141\,(1.37 - 0.60) + 0.1224\,(1.20 - 0.76) \\ &\quad + 0.0399\,(1.12 - 1.05)]^2 \\ &= \frac{3.01792}{3.0520} = 0.989 \end{aligned}$$

The critical value from Table A7 is 0.842. Since $W > 0.842$, we cannot reject the null hypothesis of a normal distribution. In Example 12.1 we could not reject the null hypothesis that the population is lognormal. Hence, the data are not sufficient to distinguish between normality and lognormality.

12.2 $n = 20$, $d = 5.757295$.

$$\begin{aligned} W &= \frac{1}{5.757295}[0.4734\,(2.06 - 0.07) + 0.3211\,(1.89 - 0.13) \\ &\quad + 0.2565\,(1.69 - 0.13) + 0.2085\,(1.39 - 0.45) \\ &\quad + 0.1686\,(1.37 - 0.60) + 0.1334\,(1.26 - 0.76) \\ &\quad + 0.1013\,(1.20 - 0.83) + 0.0711\,(1.12 - 0.89) \\ &\quad + 0.0422\,(1.08 - 0.92) + 0.0140\,(1.05 - 1.00)]^2 \\ &= 0.968 \end{aligned}$$

The critical value from Table A7 is 0.905. Since $W > 0.905$, we cannot reject the null hypothesis of normality, the same test result as in Exercise 12.1.

STATISTICAL COMPARISON TESTS

- T-Test
- Mann-Whitney (Wilcoxon) Test

REFERENCE: GILBERT 1987

18 Comparing Populations

An objective of many pollution monitoring and research studies is to make comparisons between pollution levels at different times or places or collected by different measurement techniques. This chapter provides simple nonparametric tests for making such comparisons. These tests do not require that data follow the normal distribution or any other specific distribution. Moreover, many of these tests can accommodate a few missing data or concentrations at the trace or ND (not detected) levels.

We begin with procedures for comparing two populations. The procedures are of two types: those for paired data, and those for independent data sets. Examples of paired data are (i) measurements of two pollutants on each of n field samples, (ii) measurements of a pollutant on air filters collected at two adjacent locations for n time periods, and (iii) measurements of a pollutant on both leaves and roots of the same n plants. The paired test we consider is the sign test. Friedman's test, an extension of the sign test to more than two populations, is also given.

Independent data sets are those for which there is no natural way to pair the data. For example, if n soil samples are collected at each of two hazardous waste sites, there may be no rational way to pair a pollution measurement from one site with a pollution measurement from the other site. For this type of data we illustrate Wilcoxon's rank sum test (also known as the Mann-Whitney test) for the comparison of two populations and the Kruskal-Wallis test for the comparison of more than two populations. The tests discussed in this chapter can be computed by using a statistical software computer package such as Biomedical Computer Programs P Series, (1983) and Statistical Package for the Social Sciences (1985). Additional information on the tests in this chapter and on related testing, parameter estimation, and confidence interval procedures are given in Lehmann (1975), Conover (1980) and/or Hollander and Wolfe (1973).

18.1 TESTS USING PAIRED DATA

Suppose n paired measurements have been made. Denote these pairs by $(x_{11}, x_{21}), (x_{12}, x_{22}), \ldots, (x_{1n}, x_{2n})$, where x_{1i} is the ith observation from population 1 and x_{2i} is the paired ith observation from population 2. When data are paired, we could compare the two populations by looking at the sign or the magnitudes

of the set of n differences $D_i = x_{2i} - x_{1i}$, $i = 1, 2, \ldots, n$. The sign test uses the signs and the Wilcoxon signed rank test uses the magnitudes. These two tests are alternatives to the commonly used paired t test described in many statistical methods books, e.g., Snedecor and Cochran (1980, p. 85). The latter test should be used if the differences are a random sample from a normal distribution.

18.1.1 Sign Test

The sign test is simple to compute and can be used no matter what the underlying distribution may be. It can also accommodate a few ND (not detected) concentrations. It is more versatile than the Wilcoxon signed rank test since the latter test requires that the underlying distribution be symmetric (though not necessarily normal) and that no NDs be present. However, the Wilcoxon test will usually have more power than the sign test to detect differences between the two populations. The sign test may be the better choice if ease of computation is an important consideration.

The sign test statistic, B, is the number of pairs (x_{1i}, x_{2i}) for which $x_{1i} < x_{2i}$, that is, the number of positive differences D_i. The magnitudes of the D_i are not considered; only their signs are. If any D_i is zero so that a + or − sign cannot be assigned, this data pair is dropped from the data set and n is reduced by 1. The statistic B is used to test the null hypothesis:

H_0: The median of the population of all possible differences is zero, that is, x_{1i} is as likely to be larger than x_{2i} as x_{2i} is likely to be larger than x_{1i} **18.1**

Clearly, if the number of + and − signs are about equal, there is little reason to reject H_0.

Two-Sided Test

If the number of paired data, n, is 75 or less, we may use Table A14 to test H_0 versus the alternative hypothesis

H_A: The median difference does not equal zero, that is, x_{1i} is more likely to exceed x_{2i} than x_{2i} is likely to exceed x_{1i}, or vice versa **18.2**

Then reject H_0 and accept H_A at the α significance level if

$$B \le l - 1 \quad \text{or} \quad B \ge u$$

where l and u are integers taken from Table A14 for the appropriate n and chosen α.

For example, suppose there are $n = 34$ differences, and we choose to test at the $\alpha = 0.05$ level. Then we see from Table A14 that we reject H_0 and accept H_A if $B \le 10$ or if $B \ge 24$.

EXAMPLE 18.1

Grivet (1980) reports average and maximum oxidant pollution concentrations at several air monitoring stations in California. The daily

maximum (of hourly average) oxidant concentrations (parts per hundred million) at 2 stations for the first 20 days in July 1972 are given in Table 18.1. The data at the 2 stations are paired and perhaps correlated because they were taken on the same day. This type of correlation is permitted, but correlation between the pairs, that is, between observations taken on different days, should not be present for the test to be completely valid. If this latter type of positive correlation is present, the test would indicate more than the allowed $100\alpha\%$ of the time a significant difference between the 2 stations when none actually exists. This problem is discussed by Gastwirth and Rubin (1971) and by Albers (1978*a*).

We test the null hypothesis that the median difference in maximum concentrations between the two stations is zero, that is, there is no tendency for the oxidant concentrations at one station to be larger than at the other station. Since concentrations are tied on 3 days, n equals 17 rather than 20. The number of + signs is $B = 9$, the number of days that the maximum concentration at station 41541 exceeds that at station 28783. Suppose we use $\alpha = 0.05$. Then from Table A14 for $n = 17$ we find $l = 6$ and $u = 15$. Since B is not less than or equal to $l - 1 = 5$ nor greater than or equal to 15, we cannot reject H_0.

Table A14 gives values of l and u for $n \leq 75$. When $n > 20$, we may use the following approximate test procedure:

1. Compute

$$Z_B = \frac{B - n/2}{\sqrt{n/4}} = \frac{2B - n}{\sqrt{n}} \qquad 18.3$$

2. Reject H_0 and accept H_A (Eq. 18.2) if $Z_B \leq -Z_{1-\alpha/2}$ or if $Z_B \geq Z_{1-\alpha/2}$, where $Z_{1-\alpha/2}$ is obtained from Table A1.

EXAMPLE 18.2

Using the data in Example 18.1, we test H_0 versus H_A, using Z_B. We have $Z_B = (18 - 17)/\sqrt{17} = 0.243$. For $\alpha = 0.05$, Table A1 gives $Z_{0.975} = 1.96$. Since Z_B is not less than or equal to -1.96

Table 18.1 Maximum Oxidant Concentrations[a] at Two Stations in July 1972

Day	*Station 28783*	*Station 41541*	*Sign of Difference*	*Day*	*Station 28783*	*Station 41541*	*Sign of Difference*
1	8	10	+	11	11	13	+
2	5	7	+	12	12	14	+
3	6	7	+	13	13	20	+
4	7	7	[b]	14	14	28	+
5	4	6	+	15	12	6	−
6	4	6	+	16	12	7	−
7	3	3	[b]	17	13	7	−
8	5	4	−	18	14	6	−
9	5	5	[b]	19	12	4	−
10	6	4	−	20	15	5	−

[a]Data are parts per hundred million.
[b]Tied concentrations.

nor greater than or equal to 1.96, we cannot reject H_0. This conclusion is the same as that obtained by using Table A14 in Example 18.1.

One-Sided Test

Thus far we have considered only a two-sided alternative hypothesis (Eq. 18.2). One-sided tests may also be used. There are two such tests:

1. Test H_0 versus the alternative hypothesis, H_A, that the x_2 measurements tend to exceed the x_1 measurements more often than the reverse. In this case reject H_0 and accept H_A if $B \geq u$, where u is obtained from Table A14. Alternatively, if $n > 20$, reject H_0 and accept H_A if $Z_B \geq Z_{1-\alpha}$, where Z_B is computed by Eq. 18.3 and $Z_{1-\alpha}$ is from Table A1.
2. Test H_0 versus the alternative hypothesis that the x_1 measurements tend to exceed the x_2 measurements more often than the reverse. If $n \leq 75$, use Table A14 and reject H_0 and accept H_A if $B \leq l - 1$. Alternatively, if $n > 20$, reject H_0 and accept H_A if $Z_B \leq -Z_{1-\alpha}$, where Z_B is computed by Eq. 18.3.

When one-sided tests are conducted with Table A14, the α levels indicated in the table are divided by 2. Hence, Table A14 may only be used to make one-sided tests at the 0.025 and 0.005 significance levels.

Trace Concentrations

The sign test can be conducted even though some data are missing or are ND concentrations. See Table 18.2 for a summary of the types of data that can occur, whether or not the sign can be determined, and the effect on n. The effect of decreasing n is to lower the power of the test to indicate differences between the two populations.

18.1.2 Wilcoxon Signed Rank Test

The *Wilcoxon signed rank test* can be used instead of the sign test if the underlying distribution is symmetric, though it need not be a normal distribution. This Wilcoxon test (not to be confused with the Wilcoxon rank sum test discussed in Section 18.2.1) is more complicated to compute than the sign test

Table 18.2 Determination of the Sign Test

Type of Data	*Can Sign Be Computed?*	*Decreases n?*
One or both members of a pair are absent	No	Yes
$x_{2i} = x_{1i}$	No	Yes
One member of a pair is ND	Yes[a]	No
Both members of a pair are ND	No	Yes

[a] If the numerical value is greater than the detection limit of the ND value.

because it requires computing and ranking the D_i. In most situations it should have greater power to find differences in two populations than does the sign test. The null and alternative hypotheses are the same as for the sign test. The test is described by Hollander and Wolfe (1973).

18.1.3 Friedman's Test

Friedman's test is an extension of the sign test from two paired populations to k related populations. The underlying distribution need not be normal or even symmetric. Also, a moderate number of ND values can be accommodated without seriously affecting the test conclusions. However, no missing values are allowed. The null hypothesis is

H_0: There is no tendency for one population to have larger or smaller values than any other of the k populations

The usual alternative hypothesis is

H_A: At least one population tends to have larger values than one or more of the other populations

Examples of "populations" appropriate for Friedman's test are (i) measurements of $k = 3$ or more pollutants on each of n field samples, (ii) measurements of a single pollutant on air filters collected at $k = 3$ or more air monitoring stations for n time periods, or (iii) measurements obtained by $k = 3$ or more analytical laboratories on a set of n identical spiked samples. The data are laid out as follows:

	Block				
	1	2	3	....	n
Population 1	x_{11}	x_{12}	x_{13}	...	x_{1n}
Population 2	x_{21}	x_{22}	x_{23}	...	x_{2n}
⋮					
Population k	x_{k1}	x_{k2}	x_{k3}	...	x_{kn}

The steps in the testing procedure are as follows:

1. For each block, assign the rank 1 to the smallest measurement, the rank 2 to the next largest measurement, . . . , and the rank k to the largest measurement. If two or more measurements in the block are tied, then assign to each the midrank for that tied group (illustrated Example 18.3).
2. Compute R_j, the sum of the ranks for the jth population.
3. If no tied values occur within any block, compute the Friedman test statistic as follows:

$$F_r = \left[\frac{12}{nk(k+1)} \sum_{j=1}^{k} R_j^2\right] - 3n(k+1) \qquad 18.4$$

4. If tied values are present within one or more blocks, compute the Friedman statistic as follows:

$$F_r = \frac{12 \sum_{j=1}^{k} \left[R_j - \frac{n(k+1)}{2} \right]^2}{nk(k+1) - \frac{1}{k-1} \sum_{i=1}^{n} \left\{ \left(\sum_{j=1}^{g_i} t_{i,j}^3 \right) - k \right\}} \qquad 18.5$$

where g_i is the number of tied groups in block i and $t_{i,j}$ is the number of tied data in the jth tied group in block i. Each untied value within block i is considered to be a "group" of ties of size 1. The quantity in braces { } in the denominator of Eq. 18.5 is zero for any block that contains no ties. This method of handling ties is illustrated in Example 18.3. Equation 18.5 reduces to Eq. 18.4 when there are no ties in any block.

5. For an α level test, reject H_0 and accept H_A if $F_r \geq \chi^2_{1-\alpha,k-1}$, where $\chi^2_{1-\alpha,k-1}$ is the $1 - \alpha$ quantile of the chi-square distribution with $k - 1$ df, as obtained from Table A19, where k is the number of populations. The chi-square distribution is appropriate only if n is reasonably large. Hollander and Wolfe provide exact critical values (their Table A.15) for testing F_r for the following combinations of k and n: $k = 3$, $n = 2, 3, \ldots, 13$; $k = 4$, $n = 2, 3, \ldots, 8$; $k = 5$, $n = 3, 4, 5$. Odeh et al. (1977) extend these tables to $k = 5$, $n = 6, 7, 8$; $k = 6$, $n = 2, 3, 4, 5, 6$. These tables will give only an approximate test if ties are present. The use of F_r computed by Eq. 18.5 and evaluated using the chi-square tables may be preferred in this situation. The foregoing tests are completely valid only if the observations in different blocks are not correlated.

In step 1, if there is one ND value within a block, assign it the rank 1. If there are two or more ND values within a block, treat them as tied values and assign them the midrank. For example, if three NDs are present within a block, each is assigned the rank of 2, the average of 1, 2, and 3. This method of handling NDs assumes all measurements in the block are greater than the detection limit of all the ND values in the block.

EXAMPLE 18.3

The data in Table 18.3 are daily maximum oxidant air concentrations (parts per hundred million) at $k = 5$ monitoring stations in California for the first $n = 6$ days in July 1973 (from Grivet, 1980). We shall use Friedman's procedure to test at the $\alpha = 0.025$ significance level the null hypothesis, H_0, that there is no tendency for any station to

Table 18.3 Daily Maximum Air Concentrations[a] in California During July 1973

Station Number	Day (Block) 1	2	3	4	5	6	Sum of Ranks (R_j)
28783	7 (2)[b]	5 (4)	7 (3.5)	12 (2)	4 (3)	4 (4)	18.5
41541	5 (1)	3 (1.5)	3 (1)	8 (1)	3 (1.5)	2 (1)	7
43382	11 (4)	4 (3)	7 (3.5)	17 (4)	5 (4.5)	4 (4)	23
60335	13 (5)	6 (5)	12 (5)	21 (5)	5 (4.5)	4 (4)	28.5
60336	8 (3)	3 (1.5)	4 (2)	13 (3)	3 (1.5)	3 (2)	13

[a]Data are parts per hundred millions.
[b]Rank of the measurement.

Table 18.4 Computing the Correction for Ties in Eq. 18.5 for Friedman's Test

Blocks	g_i	$t_{i,j}$	$\sum_{j=1}^{g_i} t_{i,j}^3 - k$
2	4	$t_{2,1} = 2,\ t_{2,2} = t_{2,3} = t_{2,4} = 1$	$11 - 5 = 6$
3	4	$t_{3,1} = 2,\ t_{3,2} = t_{3,3} = t_{3,4} = 1$	$11 - 5 = 6$
5	3	$t_{5,1} = t_{5,2} = 2,\ t_{5,3} = 1$	$17 - 5 = 12$
6	3	$t_{6,1} = 3,\ t_{6,2} = t_{6,3} = 1$	$29 - 5 = 24$
			Sum $= 48$

have oxidant levels greater or smaller than any other station. Also shown in Table 18.3 are the ranks of the measurements obtained as in step 1 and the sum of the ranks for each station (step 2).

Since there are ties in blocks 2, 3, 5, and 6, we must use Eq. 18.5 to compute F_r. First compute the quantity in braces { } in the denominator of Eq. 18.5 for all blocks that contain ties. This computation is done in Table 18.4.

Note that the values of all the $t_{i,j}$'s in each block must sum to k, the number of populations (stations). Since $k = 5$, $n = 6$, and Sum = 48, Eq. 18.5 is

$$F_r = \frac{12[(18.5 - 18)^2 + (7 - 18)^2 + \cdots + (13 - 18)^2]}{6(5)(6) - 48/4}$$

$$= 20.1$$

For $\alpha = 0.025$ we find from Table A19 that $\chi^2_{0.975,4} = 11.14$. Since $F_r > 11.14$, we reject H_0 and accept the H_A that at least 1 station tends to have daily maximum oxidant concentrations at a different level than the other stations. From Table 18.3 it appears that stations 41541 and 60336 have consistently lower concentrations than the other stations.

18.2 INDEPENDENT DATA SETS

We discuss two nonparametric tests for independent data sets: the Wilcoxon rank sum test (not to be confused with the Wilcoxon signed rank test discussed in Section 18.1.2) and the Kruskal-Wallis rank test, which generalizes the Wilcoxon rank sum test to more than two populations.

18.2.1 Wilcoxon Rank Sum Test

The Wilcoxon rank sum test may be used to test for a shift in location between two independent populations, that is, the measurements from one population tend to be consistently larger (or smaller) than those from the other population. This test is an easily computed alternative to the usual independent-sample t test discussed in most statistics methods books (see, e.g., Snedecor and Cochran, 1980, p. 83). (Do not confuse the independent-sample t test with the paired t test for paired data. The latter is discussed by Snedecor and Cochran, 1980, p. 85.)

The rank sum test has two main advantages over the independent-sample t test: (i) The two data sets need not be drawn from normal distributions, and (ii) the rank sum test can handle a moderate number of ND values by treating them as ties (illustrated in Example 18.4). However, both tests assume that the distributions of the two populations are identical in shape (variance), but the distributions need not be symmetric. Modifications to the t test to account for unequal variances can be made as described in Snedecor and Cochran (1980, p. 96). Evidently, no such modification exists for the rank sum test. Reckhow and Chapra (1983) illustrate the use of the rank sum test on chlorophyll data in two lakes.

Suppose there are n_1 and n_2 data in data sets 1 and 2, respectively (n_1 need not equal n_2). We test

H_0: The populations from which the two data sets have been drawn have the same mean **18.6**

versus the alternative hypothesis

H_A: The populations have different means **18.7**

The Wilcoxon rank sum test procedure is as follows:

1. Consider all $m = n_1 + n_2$ data as one data set. Rank the m data from 1 to m, that is, assign the rank 1 to the smallest datum, the rank 2 to the next largest datum, . . . , and the rank m to the largest datum. If several data have the same value, assign them the midrank, that is, the average of the ranks that would otherwise be assigned to those data.
2. Sum the ranks assigned to the n_1 measurements from population 1 Denote this sum by W_{rs}.
3. If $n_1 \leq 10$ and $n_2 \leq 10$, the test of H_0 may be made by referring W_{rs} to the appropriate critical value in Table A.5 in Hollander and Wolfe (1973) (see their pages 67–74 for the test method).
4. If $n_1 > 10$ and $n_2 > 10$ and no ties are present, compute the large sample statistic

$$Z_{rs} = \frac{W_{rs} - n_1(m + 1)/2}{[n_1 n_2(m + 1)/12]^{1/2}} \qquad \textbf{18.8}$$

5. If $n_1 > 10$ and $n_2 > 10$ and ties are present, do not compute Eq. 18.8. Instead, compute

$$Z_{rs} = \frac{W_{rs} - n_1(m + 1)/2}{\left\{\frac{n_1 n_2}{12}\left[m + 1 - \frac{\sum_{j=1}^{g} t_j(t_j^2 - 1)}{m(m - 1)}\right]\right\}^{1/2}} \qquad \textbf{18.9}$$

   where g is the number of tied groups and t_j is the number of tied data in the jth group. Equation 18.9 reduces to Eq. 18.8 when there are no ties.
6. For an α level two-tailed test, reject H_0 (Eq. 18.6) and accept H_A (Eq. 18.7) if $Z_{rs} \leq -Z_{1-\alpha/2}$ or if $Z_{rs} \geq Z_{1-\alpha/2}$.
7. For a one-tailed α level test of H_0 versus the H_A that the measurements from population 1 tend to exceed those from population 2, reject H_0 and accept H_A if $Z_{rs} \geq Z_{1-\alpha}$.

8. For a one-tailed α level test of H_0 versus the H_A that the measurements from population 2 tend to exceed those from population 1, reject H_0 and accept H_A if $Z_{rs} \leq -Z_{1-\alpha}$.

EXAMPLE 18.4

In Table 18.5 are ^{241}Am concentrations (pCi/g) in soil crust material collected within 2 plots, one near ("onsite") and one far ("offsite") from a nuclear reprocessing facility (Price, Gilbert, and Gano, 1981). Twenty measurements were obtained in each plot. We use the Wilcoxon rank sum test to test the null hypothesis that average concentrations at the 2 plots are equal versus the alternative hypothesis that the onsite plot (population 1) has larger concentrations than in the offsite plot (population 2). That is, we perform the test in step 7. We shall use $\alpha = 0.05$. The ranks of the combined data are shown in Table 18.5 and W_{rs} is computed to be 500.

There are $g = 6$ groups of ties. Four groups have length 2, that is, $t = 2$, and 2 groups have $t = 3$. Equation 18.9 gives

$$Z_{rs} = \frac{500 - 20(41)/2}{\{[20(20)/12]\,[41 - [(4)(2)(3) + (2)(3)(8)]/40(39)]\}^{1/2}} = 2.44$$

Performing the test in step 7, since $Z_{rs} > 1.645$, we reject H_0 and accept H_A that the onsite population has larger ^{241}Am concentrations than the offsite plot.

We note that the correction for ties, that is, using Eq. 18.9 instead of Eq. 18.8, will usually have a negligible effect on the value of Z_{rs}. The correction becomes more important if the t_j are large. Also, if NDs are present but occur in only one of the populations, it is still possible to rank all the data and perform the test. For instance in Example 18.4 if the negative concentrations had been reported by the analytical laboratory as ND values, they would still have been assigned the ranks 1, 2, and 3 if NDs were treated as being less in value than the smallest numerical value (0.0056). In addition, if the three ND values had been considered to be tied, all three would have been assigned the

Table 18.5 ^{241}Am Concentrations in (pCi/g) Soil Crust Material

Population 1 (onsite)				*Population 2 (offsite)*			
0.0059	(5)[a]	0.036	(28)	−0.011[b]	(1)	0.019	(16)
0.0074	(7)	0.040	(29)	−0.0088[b]	(2)	0.020	(18.5)
0.015	(9.5)	0.042	(30)	−0.0055[b]	(3)	0.020	(18.5)
0.018	(13.5)	0.045	(31)	0.0056	(4)	0.022	(20)
0.019	(16)	0.046	(32)	0.0063	(6)	0.025	(22)
0.019	(16)	0.053	(34)	0.013	(8)	0.030	(23)
0.024	(21)	0.062	(36)	0.015	(9.5)	0.031	(25)
0.031	(25)	0.066	(37)	0.016	(11.5)	0.050	(33)
0.031	(25)	0.069	(38)	0.016	(11.5)	0.057	(35)
0.034	(27)	0.081	(40)	0.018	(13.5)	0.073	(39)

$W_{rs} = 5 + 7 + 9.5 + \cdots + 38 + 40 = 500.$

[a] Rank of the datum.

[b] Negative measurements reported by the analytical laboratory.

average rank of 2, which would not have changed the value of W_n. If NDs occur in both populations, they can be treated as tied values all less than the smallest numerical value in the combined data set. Hence, they would each receive the average rank value for that group of NDs, and the Wilcoxon test could still be conducted. (See Exercise 18.4.)

18.2.2 Kruskal-Wallis Test

The Kruskal-Wallis test is an extension of the Wilcoxon rank sum test from two to k independent data sets. These data sets need not be drawn from underlying distributions that are normal or even symmetric, but the k distributions are assumed to be identical in shape. A moderate number of tied and ND values can be accommodated. The null hypothesis is

H_0: The populations from which the k data sets have been drawn have the same mean **18.10**

The alternative hypothesis is

H_A: At least one population has a mean larger or smaller than at least one other population **18.11**

The data take the form

Population				
1	*2*	*3*	$\cdots$	*k*
x_{11}	x_{21}	x_{31}	$\cdots$	x_{k1}
x_{12}	x_{22}	x_{32}	$\cdots$	x_{k2}
$\vdots$	$\vdots$	$\vdots$	$\vdots\vdots\vdots$	$\vdots$
x_{1n_1}	x_{2n_2}	x_{3n_3}		x_{kn_k}

The total number of data is $m = n_1 + n_2 + \cdots + n_k$, where the n_i need not be equal. The steps in the testing procedure are as follows:

1. Rank the m data from smallest to largest, that is, assign the rank 1 to the smallest datum, the rank 2 to the next largest, and so on. If ties occur, assign the midrank (illustrated in Example 18.5). If NDs occur, treat these as a group of tied values that are less than the smallest numerical value in the data set (assuming the detection limit of the ND values is less than the smallest numerical value).
2. Compute the sum of the ranks for each data set. Denote this sum for the jth data set by R_j.
3. If there are no tied or ND values, compute the Kruskal-Wallis statistic as follows:

$$K_w = \left[\frac{12}{m(m+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j}\right] - 3(m+1) \qquad \textbf{18.12}$$

4. If there are ties or NDs treated as ties, compute a modified Kruskal-Wallis statistic by dividing K_w (Eq. 18.12) by a correction for ties, that is, compute

$$K'_w = \frac{K_w}{1 - \frac{1}{m(m^2 - 1)} \sum_{j=1}^{g} t_j(t_j^2 - 1)} \qquad 18.13$$

where g is the number of tied groups and t_j is the number of tied data in the jth group. Equation 18.13 reduces to Eq. 18.12 when there are no ties.

5. For an α level test, reject H_0 and accept H_A if $K'_w \geq \chi^2_{1-\alpha,k-1}$, where $\chi^2_{1-\alpha,k-1}$ is the $1 - \alpha$ quantile of the chi-square distribution with $k - 1$ df, as obtained from Table A19, where k is the number of data sets. Iman, Quade, and Alexander (1975) provide exact significance levels for the following cases:

$$k = 3 \quad n_i \leq 6$$
$$n_1 = n_2 = n_3 = 7$$
$$n_1 = n_2 = n_3 = 8$$
$$k = 4 \quad n_i \leq 4$$
$$k = 5 \quad n_i \leq 3$$

Less extensive exact tables are given in Conover (1980) and Hollander and Wolfe (1973) for $k = 3$ data sets.

EXAMPLE 18.5

An aliquot-size variability study is conducted in which multiple soil aliquots of sizes 1 g, 10 g, 25 g, 50 g, and 100 g are analyzed for ^{241}Am. A portion of the data for aliquot sizes 1 g, 25 g, and 100 g is used in this example. (Two ND values are added for illustration.) The full data set is discussed by Gilbert and Doctor (1985). We test the null hypothesis that the concentrations from all 3 aliquot sizes have the same mean. The alternative hypothesis is that the concentrations for at least 1 aliquot size tend to be larger or smaller than those for at least 1 other aliquot size. We test at the $\alpha = 0.05$ level. The data, ranks, and rank sums are given in Table 18.6.

Table 18.6 Aliquot-Size Variability Study

^{241}Am Concentrations (nCi/g)		
1 g	*25 g*	*100 g*
1.45 (7)[a]	1.52 (8.5)	1.74 (13)
1.27 (6)	2.46 (22)	2.00 (17.5)
1.17 (4)	1.23 (5)	1.79 (14)
1.01 (3)	2.20 (20)	1.81 (15)
2.30 (21)	2.68 (23)	1.91 (16)
1.54 (10)	1.52 (8.5)	2.11 (19)
1.71 (11.5)	ND (1.5)	2.00 (17.5)
1.71 (11.5)		
ND (1.5)		
$\bar{R}_1 = 75.5$	$\bar{R}_2 = 88.5$	$\bar{R}_3 = 112$
$n_1 = 9$	$n_2 = 7$	$n_3 = 7$

[a]Rank of the datum.
ND = not detected.

There are $g = 4$ groups of ties and $t = 2$ for each group. The modified Kruskal-Wallis statistic (Eq. 18.13) is

$$K'_w = \frac{[12/23(24)](75.5^2/9 + 88.5^2/7 + 112^2/7) - 3(24)}{1 - 4(2)(3)/23(528)} = 5.06$$

From Table A19 we find $\chi^2_{0.95,2} = 5.99$. Since $K'_w < 5.99$, we cannot reject H_0 at the $\alpha = 0.05$ level.

Note that the correction for ties made a negligible difference in the test statistic. However, a bigger correction is obtained if t is large for one or more groups of ties. This could happen if there are many NDs, where t is the number of NDs.

18.3 SUMMARY

This chapter discussed simple nonparametric tests to determine whether observed differences in two or more populations are statistically significant, that is, of a greater magnitude than would be expected to occur by chance. We emphasize the correction for ties that these nonparametric tests provide, since a moderate number of trace or ND measurements can be accommodated by assuming they are a group of tied values. Hollander and Wolfe (1973) and Conover (1980) provide other uses for these tests and discuss related estimation and confidence interval procedures.

EXERCISES

18.1 Use the first 10 days of oxidant data in Example 18.1 to conduct a one-tailed sign test at the $\alpha = 0.025$ level. Use the alternative hypothesis H_A: Maximum oxidant concentrations at station 41541 tend to exceed those at station 28781 more than the reverse.

18.2 Suppose the following paired measurements have been obtained (ND = not detected; M = missing data):

	Pair										
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
x_1	ND	7	ND	M	3	M	3	7	12	10	15
x_2	ND	6	6	6	1	M	2	1	11	8	3

Conduct a one-tailed sign test of H_0 versus the H_A that x_1 measurements tend to exceed x_2 measurements more often than the reverse. Use $\alpha = 0.025$.

18.3 Compute Friedman's test, using the data in Example 18.3 and $\alpha = 0.025$. Ignore the correction for ties.

18.4 Suppose all ^{241}Am concentrations less than 0.02 pCi/g in the 2 populations in Example 18.4 were reported by the analytical laboratory as ND. Use the Wilcoxon rank sum test to test H_0: means of both populations are equal versus H_A: the offsite population has a smaller mean than the onsite

population. Use $\alpha = 0.025$. What effect do the large number of NDs have on Z_{rs}? Is it more difficult to reject H_0 if NDs are present?

18.5 Suppose that all ^{241}Am measurements less than 1.5 nCi/g in Example 18.5 were reported by the laboratory as ND. Use the Kruskal-Wallis test on the resulting data set. Use $\alpha = 0.05$. (Retain the 2 NDs in Example 18.5.)

ANSWERS

18.1 Denote station 28781 data as x_1 data, and station 41541 data as x_2 data. $B = 5$. From Table A14, $u = 7$. Since $B < 7$, we cannot reject H_0 at the $\alpha = 0.025$ level.

18.2 Delete pairs 1, 4, and 6. $n = 8$, $B = 1$. From Table A14, $l - 1 = 0$. Since $B = 1$, we cannot reject H_0.

18.3 Equation 18.4 gives $F_r = 18.77$. Reject H_0 and accept H_A, since $18.77 > 11.14$, the same result as when the correction for ties was made.

18.4 $W_{rs} = 487$. $g = 3$ with $t = 17$, 2, and 3. $Z_{rs} = 77/35.5163 = 2.168$. Since $Z_{rs} > 1.645$, reject H_0 and accept H_A. The NDs reduced Z_{rs} from 2.436 in Example 18.4 to 2.168. Yes!

18.5 $R_1 = 74$, $R_2 = 90$, $R_3 = 112$, $m = 23$, $K'_w = 5.339/0.97085 = 5.50$. Since $K'_w < 5.99$, we cannot reject H_0 at the $\alpha = 0.05$ level.

EQUATIONS FOR CALCULATING THE 95% UPPER CONFIDENCE LIMIT OF THE MEAN

United States Environmental Protection Agency
Office of Solid Waste and Emergency Response Washington, D.C. 20460
Publication 9285.7-08I May 1992

EPA

Supplemental Guidance to RAGS: Calculating the Concentration Term

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division, OS-230

Intermittent Bulletin
Volume 1 Number 1

The overarching mandate of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is to protect human health and the environment from current and potential threats posed by uncontrolled releases of hazardous substances. To help meet this mandate, the U.S. Environmental Protection Agency's (EPA's) Office of Emergency and Remedial Response has developed a human health risk assessment process as part of its remedial response program. This process is described in *Risk Assessment Guidance for Superfund: Volume I — Human Health Evaluation Manual* (RAGS/HHEM). Part A of RAGS/HHEM addresses the baseline risk assessment, and describes a general approach for estimating exposure to individuals from hazardous substance releases at Superfund sites.

This bulletin explains the concentration term in the exposure/intake equation to remedial project managers (RPMs), risk assessors, statisticians, and other personnel. This bulletin presents the general intake equation as presented in RAGS/HHEM Part A, discusses basic concepts concerning the concentration term, describes generally how to calculate the concentration term, presents examples to illustrate several important points, and, lastly, identifies where to get additional help.

THE CONCENTRATION TERM

How is the concentration term used?

RAGS/HHEM Part A presents the Superfund risk assessment process in four "steps": (1) data collection and evaluation; (2) exposure assessment; (3) toxicity assessment; and (4) risk characterization. The concentration term is calculated for use in the exposure assessment step. **Highlight 1** presents the general equation Superfund uses for calculating exposure, and illustrates that the concentration term (C) is one of several parameters needed to estimate contaminant intake for an individual.

For Superfund assessments, the concentration term (C) in the intake equation is an estimate of the arithmetic average concentration for a contaminant based on a set of site sampling results. Because of the uncertainty associated with estimating the true average concentration at a site, the 95 percent upper confidence limit (UCL) of the arithmetic mean should be used for this variable. The 95 percent UCL provides reasonable confidence that the true site average will not be underestimated.

Why use an average value for the concentration term?

An estimate of average concentration is used because:

Supplemental Guidance to RAGS is a bulletin series on risk assessment of Superfund sites. These bulletins serve as supplements to *Risk Assessment Guidance for Superfund: Volume I — Human Health Evaluation Manual*. The information presented is intended as guidance to EPA and other government employees. It does not constitute rulemaking by the Agency, and may not be relied on to create a substantive or procedural right enforceable by any other person. The Government may take action that is at variance with these bulletins.

Highlight 1
GENERAL EQUATION FOR ESTIMATING EXPOSURE TO A SITE CONTAMINANT

$$I = C \times \frac{CR \times EFD}{BW} \times \frac{1}{AT}$$

where:

I = intake (i.e., the quantitative measure of exposure in RAGS/HHEM)
C = contaminant concentration
CR = contact (intake) rate
EFD = exposure frequency and duration
BW = body weight
AT = averaging time

(1) carcinogenic and chronic noncarcinogenic toxicity criteria[1] are based on lifetime average exposures; and

(2) average concentration is most representative of the concentration that would be contacted at a site over time.

For example, if you assume that an exposed individual moves randomly across an exposure area, then the spatially averaged soil concentration can be used to estimate the true average concentration contacted over time. In this example, the average concentration contacted over time would equal the spatially averaged concentration over the exposure area. While an individual may not actually exhibit a truly random pattern of movement across an exposure area, the assumption of equal time spent in different parts of the area is a simple but reasonable approach.

When should an average concentration be used?

The two types of exposure estimates now being required for Superfund risk assessments, a reasonable maximum exposure (RME) and an average, should both use an average concentration. To be protective, the overall estimate of intake (see Highlight 1) used as a basis for action at Superfund sites should be an estimate in the high end of the intake/dose distribution. One high-end option is the RME used in the Superfund program. The RME, which is defined as the highest exposure that could reasonably be expected to occur for a given exposure pathway at a site, is intended to account for both uncertainty in the contaminant concentration and variability in exposure parameters (e.g., exposure frequency, averaging time). For comparative purposes, Agency guidance (U.S. EPA, *Guidance on Risk Characterization for Risk Managers and Risk Assessors*, February 26, 1992) states that an average estimate of exposure also should be presented in risk assessments. For decision-making purposes in the Superfund program, however, RME is used to estimate risk.[2]

Why use an estimate of the arithmetic mean rather than the geometric mean?

The choice of the arithmetic mean concentration as the appropriate measure for estimating exposure derives from the need to estimate an individual's long-term average exposure. Most Agency health criteria are based on the long-term average daily dose, which is simply the sum of all daily doses divided by the total number of days in the averaging period. This is the definition of an arithmetic mean. The

[1] When acute toxicity is of most concern, a long-term average concentration generally should not be used for risk assessment purposes, as the focus should be to estimate short-term, peak concentrations.

[2] For additional information on RME, see RAGS/HHEM Part A and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 55 *Federal Register* 8710, March 8, 1990.

arithmetic mean is appropriate regardless of the pattern of daily exposures over time or the type of statistical distribution that might best describe the sampling data. The geometric mean of a set of sampling results, however, bears no logical connection to the cumulative intake that would result from long-term contact with site contaminants, and it may differ appreciably from — and be much lower than — the arithmetic mean. Although the geometric mean is a convenient parameter for describing central tendencies of lognormal distributions, it is not an appropriate basis for estimating the concentration term used in Superfund exposure assessments. The following simple example may help clarify the difference between the arithmetic and geometric mean when used for an exposure assessment:

> Assume the daily exposure for a trespasser subject to random exposure at a site is 1.0, 0.01, 1.0, 0.01, 1.0, 0.01, 1.0, and 0.01 units/day over an 8-day period. Given these values, the cumulative exposure is simply their summation, or 4.04 units. Dividing this by 8 days of exposure results in an arithmetic mean of 0.505 units/day. This is the value we would want to use in a risk assessment for this individual, not the geometric mean of 0.1 units/day. Viewed another way, multiplication of the geometric mean by the number of days equals 0.8 units, considerably lower than the known cumulative exposure of 4.04 units.

UCL AS AN ESTIMATE OF THE AVERAGE CONCENTRATION

What is a 95 percent UCL?

The 95 percent UCL of a mean is defined as a value that, when calculated repeatedly for randomly drawn subsets of site data, equals or exceeds the true mean 95 percent of the time. Although the 95 percent UCL of the mean provides a conservative estimate of the average (or mean) concentration, it should not be confused with a 95th percentile of site concentration data (as shown in **Highlight 2**).

Why use the UCL as the average concentration?

Statistical confidence limits are the classical tool for addressing uncertainties of a distribution average. The 95 percent UCL of the arithmetic mean concentration is used as the average concentration because it is not possible to know the true mean. The 95 percent UCL therefore accounts for uncertainties due to limited sampling data at Superfund sites. As sampling data become less limited at a site, uncertainties decrease, the UCL moves closer to the true mean, and exposure evaluations using either the mean or the UCL produce similar results. This concept is illustrated in **Highlight 2**.

Should a value other than the 95 percent UCL be used for the concentration?

A value other than the 95 percent UCL can be used provided the risk assessor can document that high coverage of the true population mean occurs (i.e., the value equals or exceeds the true population mean with high probability). For exposure areas with limited amounts of data or extreme variability in measured or modeled data, the UCL can be greater than the highest measured or modeled concentration. In these cases, if additional data cannot practicably be obtained, the highest measured or modeled value could be used as the concentration term. Note, however, that the true mean still may be higher than this maximum value (i.e., the 95 percent UCL indicates a higher mean is possible), especially if the most contaminated portion of the site has not been sampled.

CALCULATING THE UCL

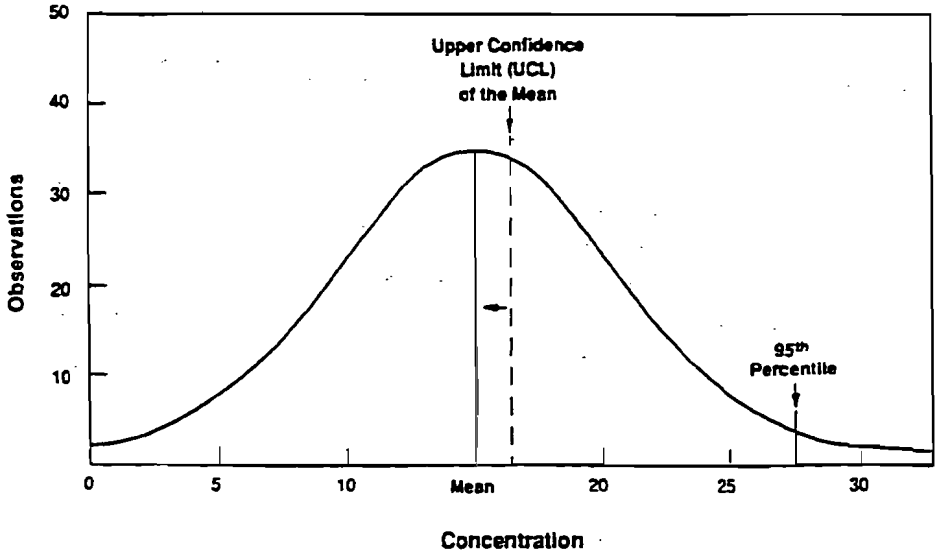
How many samples are necessary to calculate the 95 percent UCL?

Sampling data from Superfund sites have shown that data sets with fewer than 10 samples per exposure area provide poor estimates of the mean concentration (i.e., there is a large difference between the sample mean and the 95 percent UCL), while data sets with 10 to 20 samples per exposure area provide somewhat better estimates of the mean, and data sets with 20 to 30 samples provide fairly consistent estimates of the mean (i.e., the 95 percent UCL is close to the sample mean). Remember that, in general, the UCL approaches the true mean as more samples are included in the calculation.

Should the data be transformed?

EPA's experience shows that most large or "complete" environmental contaminant data sets

Highlight 2
COMPARISON OF UCL AND 95th PERCENTILE



As sample size increases, the UCL of the mean moves closer to the true mean, while the 95th percentile of the distribution remains at the upper end of the distribution.

from soil sampling are lognormally distributed rather than normally distributed (see **Highlights 3** and 4 for illustrations of lognormal and normal distributions). In most cases, it is reasonable to assume that Superfund soil sampling data are lognormally distributed. Because transformation is a necessary step in calculating the UCL of the arithmetic mean for a lognormal distribution, the data should be transformed by using the natural logarithm function (i.e., calculate ln(x), where x is the value from the data set). However, in cases where there is a question about the distribution of the data set, a statistical test should be used to identify the best distributional assumption for the data set. The W-test (Gilbert 1987) is one statistical method that can be used to determine if a data set is consistent with a normal or lognormal distribution. In all cases, it is valuable to plot the data to better understand the contaminant distribution at the site.

How do you calculate the UCL for a lognormal distribution?

To calculate the 95 percent UCL of the arithmetic mean for a lognormally distributed data set, first transform the data using the natural logarithm function as discussed previously (i.e., calculate ln(x)). After transforming the data, determine the 95 percent UCL for the data set by completing the following four steps:

(1) Calculate the arithmetic mean of the transformed data (which is also the log of the geometric mean);

(2) Calculate the standard deviation of the transformed data;

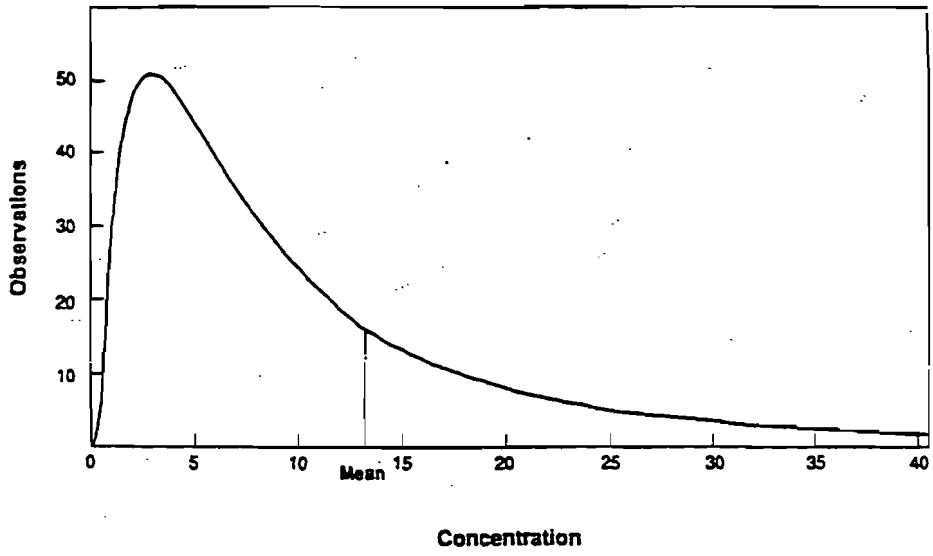
(3) Determine the H-statistic (e.g., see Gilbert 1987); and

(4) Calculate the UCL using the equation shown in **Highlight 5**.

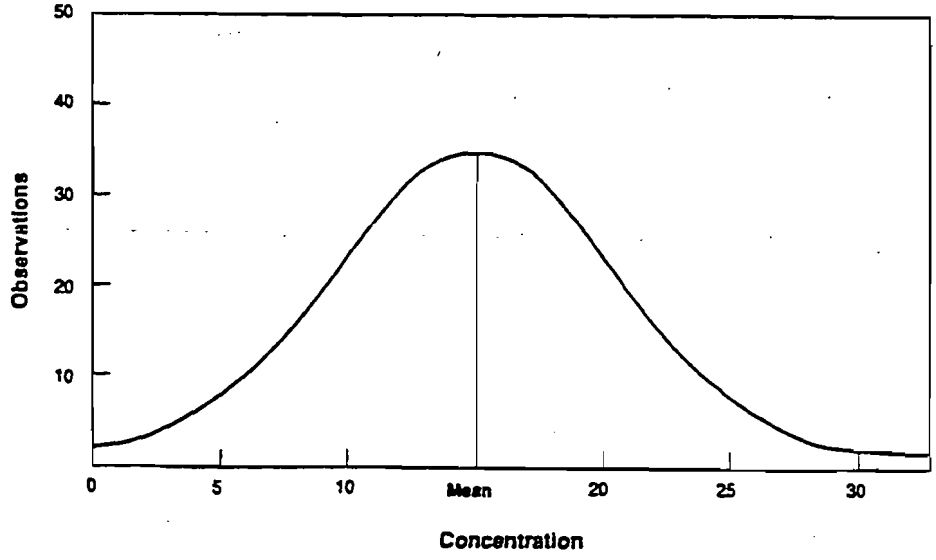
How do you calculate the UCL for a normal distribution?

If a statistical test supports the assumption that the data set is normally distributed, calculate the 95 percent UCL by completing the following four steps:

Highlight 3
EXAMPLE OF A LOGNORMAL DISTRIBUTION



Highlight 4
EXAMPLE OF A NORMAL DISTRIBUTION



Highlight 5
CALCULATING THE UCL OF THE ARITHMETIC MEAN FOR A LOGNORMAL DISTRIBUTION

$$UCL = e^{(\bar{x} + 0.5s^2 + sH/\sqrt{n-1})}$$

where:

UCL	=	upper confidence limit
e	=	constant (base of the natural log, equal to 2.718)
$\bar{x}$	=	mean of the transformed data
s	=	standard deviation of the transformed data
H	=	H-statistic (e.g., from table published in Gilbert 1987)
n	=	number of samples

Highlight 6
CALCULATING THE UCL OF THE ARITHMETIC MEAN FOR A NORMAL DISTRIBUTION

$$UCL = \bar{x} + t\,(s/\sqrt{n})$$

where:

UCL	=	upper confidence limit
$\bar{x}$	=	mean of the untransformed data
s	=	standard deviation of the untransformed data
t	=	Student-t statistic (e.g., from table published in Gilbert 1987)
n	=	number of samples

(1) Calculate the arithmetic mean of the untransformed data;

(2) Calculate the standard deviation of the untransformed data;

(3) Determine the one-tailed t-statistic (e.g., see Gilbert 1987); and

(4) Calculate the UCL using the equation presented in **Highlight 6**.

Use caution when applying normal distribution calculations if there is a possibility that heavily contaminated portions of the site have not been adequately sampled. In such cases, a UCL from normal distribution calculations could fall below the true mean, even if a limited data set at a site appears normally distributed.

EXAMPLES

The examples shown in **Highlights 7** and **8** address the exposure scenario where an individual at a Superfund site has equal opportunity to contact soil in any sector of the contaminated area over time. Even though the examples address only soil exposures, the UCL approach is applicable to all exposure pathways. Guidance and examples for other exposure pathways will be presented in forthcoming bulletins.

Highlight 7 presents a simple data set and provides a stepwise demonstration of transforming the data — assuming a lognormal distribution — and calculating the UCL. **Highlight 8** uses the same data set to show the difference between the UCLs that would result from assuming normal and lognormal distribution of the data. These

Highlight 7
EXAMPLE OF DATA TRANSFORMATION AND CALCULATION OF UCL

This example shows the calculation of a 95 percent UCL of the arithmetic mean concentration for chromium in soil at a Superfund site. This example is applicable only to a scenario in which a spatially random exposure pattern is assumed. The concentrations of chromium obtained from random sampling in soil at this site (in mg/kg) are 10, 13, 20, 36, 41, 59, 67, 110, 110, 136, 140, 160, 200, 230, and 1300. Using these data, the following steps are taken to calculate a concentration term for the intake equation:

(1) Plot the data and inspect the graph. (You may need the help of a statistician for this part [as well as other parts] of the calculation of the UCL.) The plot (not shown, but similar to **Highlight 3**) shows a skew to the right, consistent with a lognormal distribution.

(2) Transform the data by taking the natural log of the values (i.e., determine ln(x)). For this data set, the transformed values are: 2.30, 2.56, 3.00, 3.58, 3.71, 4.08, 4.20, 4.70, 4.70, 4.91, 4.94, 5.08, 5.30, 5.44, and 7.17.

(3) Apply the UCL equation in **Highlight 5**, where:

$\bar{x} = 4.38$
$s = 1.25$
$H = 3.163$ (based on 95 percent)
$n = 15$

The resulting 95 percent UCL of the arithmetic mean is thus found to equal $e^{(6.218)}$, or 502 mg/kg.

Highlight 8
COMPARING UCLS OF THE ARITHMETIC MEAN ASSUMING DIFFERENT DISTRIBUTIONS

In this example, the data presented in **Highlight 7** are used to demonstrate the difference in the UCL that is seen if the normal distribution approach were inappropriately applied to this data set (i.e., if, in this example, a normal distribution is assumed).

ASSUMED DISTRIBUTION:	Normal	Lognormal
TEST STATISTIC:	Student-t	H-statistic
95 PERCENT UCL (mg/kg):	325	502

examples demonstrate the importance of using the correct assumptions.

WHERE CAN I GET MORE HELP?

Additional information on Superfund's policy and approach to calculating the concentration term and estimating exposures at waste sites can be obtained in:

- U.S. EPA, *Risk Assessment Guidance for Superfund: Volume I — Human Health Evaluation Manual (Part A)*, EPA/540/1-89/002, December 1989.
- U.S. EPA, *Guidance for Data Useability in Risk Assessment*, EPA/540/G-90/008 (OSWER Directive 9285.7-05), October 1990.
- U.S. EPA, *Risk Assessment Guidance for Superfund (Part A — Baseline Risk Assessment) Supplemental Guidance/ Standard Exposure Factors*, OSWER Directive 9285.6-03, May 1991.

Useful statistical guidance can be found in many standard textbooks, including:

- Gilbert, R.O., *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York, New York, 1987.

Questions or comments concerning the concentration term can be directed to:

- Toxics Integration Branch
  Office of Emergency and Remedial Response
  401 M Street SW
  Washington, DC 20460
  Phone: 202-260-9486

EPA staff can obtain additional copies of this bulletin by calling EPA's Superfund Document Center at 202-260-9760. Others can obtain copies by contacting NTIS at 703-487-4650.

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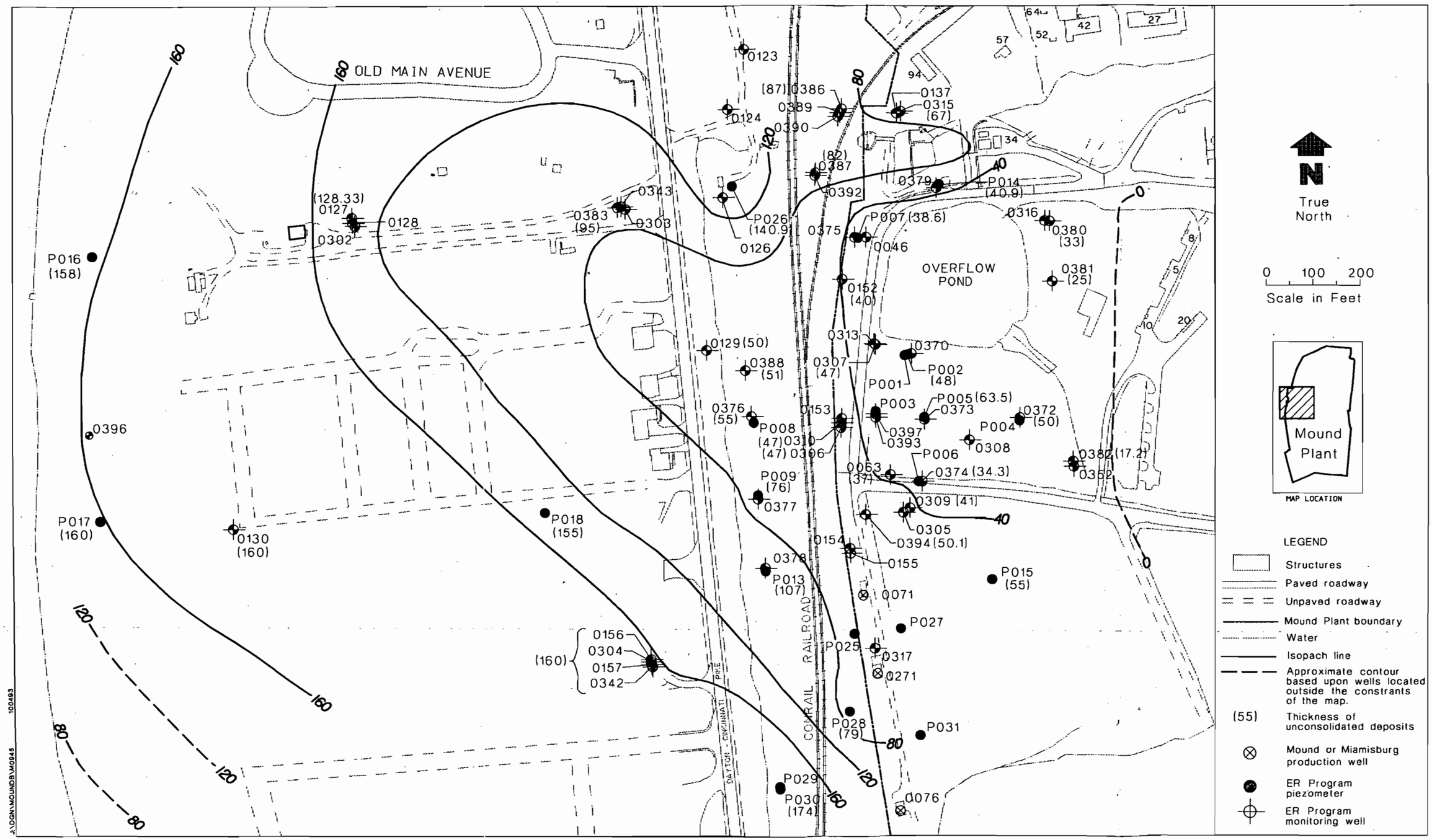
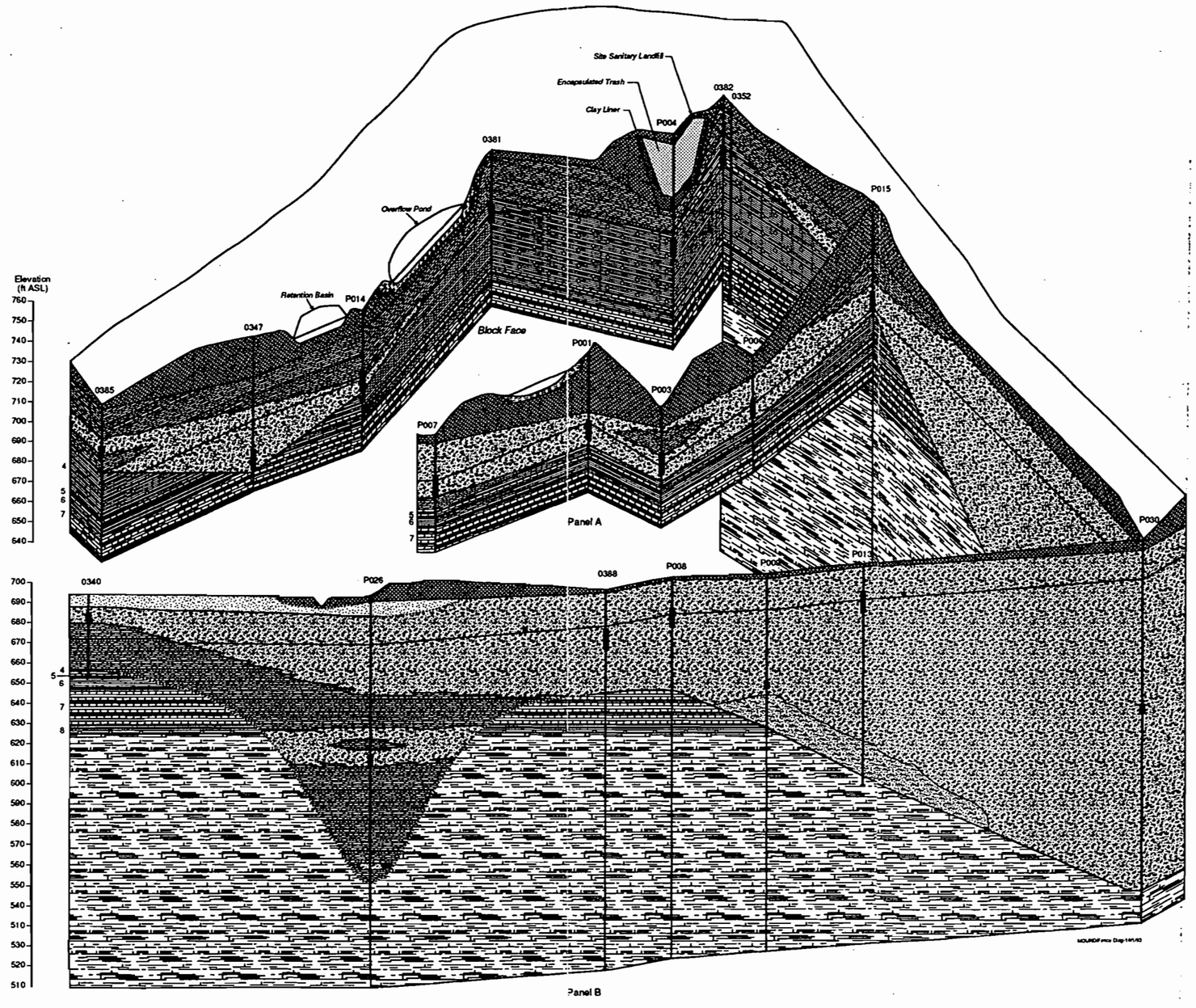


Figure C.12. Preliminary isopach map of unconsolidated sediments.



LEGEND

Unconsolidated Deposits

Impermeable		Natural clay: clay containing trace amounts of silt or sand
Variable permeability		Artificial fill: consists of variable proportions of gravel, sand and clay
Moderate permeability		Recent alluvium
Low permeability		Glacial till: clay containing variable proportions of gravel, sand and silt
Moderate to high permeability		Glacial outwash: sand and gravel containing some silt and trace amounts of clay
Low permeability		Competent alluvial deposit: clayey silt to silty clay containing numerous angular limestone and quartzite clasts

Bedrock Stratigraphy			Corresponding Unit No.
Low permeability		Shale	1
Low fracture permeability		Shale with limestone interbeds	2, 6
Low to moderate fracture permeability		Interbedded limestone and shale	3, 7
Low permeability		Shale with nodular limestone	4, 8
Moderate fracture permeability		Limestone with shale interbeds	5
Variable fracture permeability		Bedrock: specific lithology is unknown	

0153 Well borehole number
P004 Piezometer borehole number
Inferred contact
Inferred water level
Well borehole showing screened interval
Exploratory borehole
Static water

N

30
Vertical Scale in Feet
0
0 100
Horizontal Scale in Feet

Figure C.13. Area B fence diagram sketch.