RFP/ERM-95-00000

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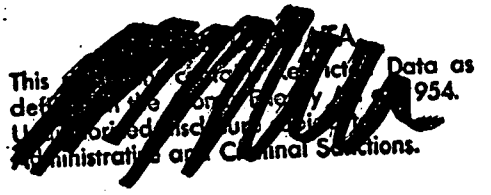
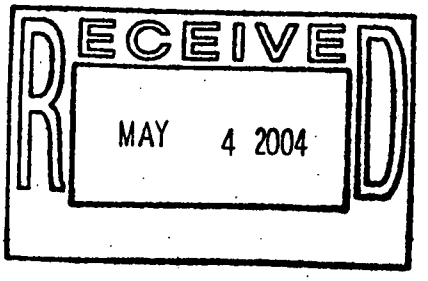
DATA SUMMARY 2
OPERABLE UNIT NO. 9
OUTSIDE TANKS



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

ENVIRONMENTAL RESTORATION PROGRAM



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THIS TARGET SHEET REPRESENTS AN
OVER-SIZED MAP / PLATE FOR THIS DOCUMENT:
(Ref: RFP/ERM-95-00000)

Data Summary 2
Operable Unit No. 9
Outside Tanks

October 1995

Plate 2:

Estimated HPGe Ranges
Am-241 pCi/g

Map ID: ou8

September 25, 1995

CERCLA Administrative Record Document, IA-A-002086

U.S. DEPARTEMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

GOLDEN, COLORADO

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LIST OF ACRONYMS AND ABBREVIATIONS

Am-241	americium-241
AST	Aboveground Storage Tank
BSCP	Background Soils Characterization Program
cm^2	square centimeter
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cpm	counts per minute
CRC	Chemical Rubber Company
Cs-137	cesium-137
DOE	U.S. Department of Energy
dpm	disintegrations per minute
EG&G	EG&G Rocky Flats Inc.
EPA	U.S. Environmental Protection Agency
ERPD	Environmental Restoration Program Division
FIDLER	Field Instrument for the Detection of Low-Energy Radiation
FO	Field Operation Procedure
GIS	Geographic Information System
GT	Geotechnical Procedure
GW	Groundwater Procedure
HPGe	high-purity germanium
HRR	Historical Release Report
IAG	Interagency Agreement
IDM	Investigative-Derived Material
IHSS	Individual Hazardous Substance Site
Jacobs	Jacobs Engineering Group Inc.
K-40	potassium-40
kg	kilogram

LIST OF ACRONYMS AND ABBREVIATIONS

L	liter
m^3	cubic meter
MDA	minimum detectable activity
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliter
NaI	sodium iodide
nCi/g	nanocuries per gram
OPWL	Original Process Waste Lines
OU	operable unit
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/g	picocuries per gram
pCi/L	picocuries per liter
pCi/lb	picocuries per pound
PID	photoionization detector
ppm	parts per million
PRE	Property Release Evaluation
PRG	preliminary remediation goal
Pu-239/240	plutonium-239/240
PVC	polyvinyl chloride
Ra-226	radium-226
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Data System
RFETS	Rocky Flats Environmental Technology Site
RFI	RCRA Facility Investigation

LIST OF ACRONYMS AND ABBREVIATIONS

RI	Remedial Investigation
RMRS	Rocky Mountain Remediation Services, L.L.C.
ROD	Record of Decision
SNP	Scientific Notebook Plan
SOP	Standard Operating Procedure
Sr-89/90	strontium-89/90
TAL	target analyte list
TCE	trichlorethylene
TCL	target compound list
TCLP	toxicity characteristic leaching procedure
Th-232	thorium-232
TOC	total organic carbon
UST	underground storage tank
U-233/234	uranium-233/234
U-235	uranium-235
U-238	uranium-238
VOC	volatile organic compound
%	percent
±	plus or minus
µg/kg	micrograms per kilogram
µg/L	micrograms per liter

1.0 INTRODUCTION

Preparation of this document partially fulfills the Stage 1 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation (RI) Work Plan requirements to present the results of the nonintrusive Stage 1 activities for Operable Unit No. 9 (OU9) at the U.S. Department of Energy (DOE) Rocky Flats Environmental Technology Site (RFETS) located in Golden, Colorado. Figure 1-1 illustrates the general location of RFETS. Plate 1 identifies the location of the Industrial Area and the 11 tank groups located throughout the Industrial Area. The Stage 1 (screening level) activities include visual inspections, surface radiological surveys (i.e., sodium iodide [NaI] surveys), surface-soil sampling, subsurface-soil sampling, and tank characterization.

The Stage 1 activity is the first of a three-stage RFI/RI. These activities are pursuant to an Interagency Agreement (IAG) among DOE, the U.S. Environmental Protection Agency (EPA), and the State of Colorado Department of Public Health and Environment (CDPHE), dated January 22, 1991 (DOE et al. 1991). The IAG program addresses both RCRA and CERCLA requirements. The purpose of this Data Summary is to report analytical data resulting from the Stage 1 activity.

1.1 BACKGROUND

OU9 consists of one Individual Hazardous Substances Site (IHSS) designated as Number 121, the Original Process Waste Lines (OWPL). The OPWL is a predominantly abandoned network of tanks and underground pipelines used for transport and temporary storage of aqueous process waste from Rocky Flats production activities. Eleven tank groups located throughout the RFETS Industrial Area (Plate 1) were the subject of this outside tank field

investigation. Complete documentation of these IHSSs is detailed in the OU9 RFI/RI Work Plan (DOE 1992a).

All IHSSs in the Industrial Area were evaluated according to criteria in the draft Proposed Plan for Reorganization and Remediation of the Industrial Area Operable Units (EG&G Rocky Flats, Inc. [EG&G] 1994a) to assist in identifying those IHSSs that are candidates for closure or accelerated cleanup. The intention of the categorization is to allow for the expedited risk-based closure of the Industrial Area IHSSs by issuing a decision matrix equivalent to a Record of Decision (ROD) for each IHSS or group of IHSSs. This would occur before RODs are issued for each Industrial Area OU. This categorization process is designed to manage potential changes of previously planned work scopes based on the collection and interpretation of new data. Data collected during the Stage 1 activity are compared with the remedial categories in this Data Summary.

Originally the results of this Stage 1 Work Plan were to be presented in a Technical Memorandum that would (1) present the Stage 1 findings and (2) provide data interpretation conclusions and follow-on recommendations. The Technical Memorandum also would have presented a Stage 2 and 3 Work Plan for determining those tank groups that required follow-on investigation. However, due to contractor transition and funding limitations, the OU9 Scope of Work was required to be modified to a Data Summary Report that eliminated data interpretation, conclusions, and recommendations for each tank group and the Stage 2/3 Work Plan.

Additionally, because of FY96 budget concerns, and RFETS needs to forecast the Industrial Area priorities for FY96, this Data Summary Report was required to be completed before receipt of a complete Rocky Flats Environmental Data System (RFEDS) data package for all tank groups. Compilation of the remaining data will be performed through an addendum, when funding is available.

1.2 PURPOSE AND SCOPE

The purposes of this Data Summary are as follows:

- Describe the activities implemented during the Stage 1 investigation and compare these activities to the outline in the OU9 RFI/RI Work Plan (DOE 1992a).
- Relate current data to the categorization of IHSSs in the draft Proposed Plan for Reorganization and Remediation of the Industrial Area Operable Units (EG&G 1994a).
- Present a summary of analytical data from the activities implemented during the Stage 1 investigation in order to further characterize the tanks.

The Stage 1 activities for OU9 were designed to detect contamination at each tank or tank group using screening-level surveys. These surveys provided an assessment of the presence of contamination, and also preliminarily indicated the nature and extent of the contamination that is present. The following is a list of the activities implemented during the Stage 1 investigations at each tank or tank group:

- visual inspections of the physical setting;
- surface radiological surveys using an NaI instrument;
- surface-soil sampling;
- subsurface-soil sampling; and
- tank characterization including visual inspection and tank sludge and/or liquids sample collection.

This document presents the results of these inspections, surveys, and sampling events for each individual tank or tank group. All results of the surface radiological survey are included as appendices or tables. Once the investigations for the Stage 1 activities are completed, the need for a comprehensive RFI/RI document to summarize all of the information and fulfill the initial objectives of the RFI/RI as defined in the OU9 RFI/RI Work Plan (DOE 1992a) will be evaluated.

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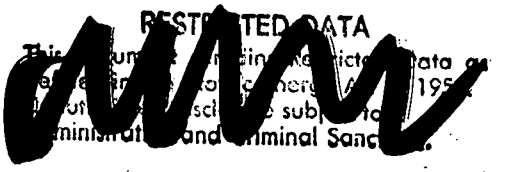

DATA SUMMARY REPORT NO. 2
OPERABLE UNIT NO. 9
OUTSIDE TANKS

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
GOLDEN, COLORADO

ENVIRONMENTAL RESTORATION PROGRAM

OCTOBER 1995
VOLUME 1 - TEXT

2.0 METHODS OF INVESTIGATION

This section describes the investigative methodologies used during implementation of the Stage 1 data collection activities pursuant to the OU9 RFI/RI Work Plan (DOE 1992a).

2.1 HIGH-PURITY GERMANIUM SURVEY

In situ high-purity germanium (HPGe) surveys were planned for all of the tanks in OU9, but postponement of the HPGe survey until late in the Stage 1 field program required that the survey be canceled. However, HPGe surveys were conducted near some of the tanks in adjacent OUs/IHSSs. These data were compiled before the start of Stage 1 field activities and evaluated to identify potential areas of high radiological contamination. These data are compared with the NaI surveys discussed in the following section.

2.2 SODIUM IODIDE SURVEYS

The NaI scintillation detector, also referred to as the Field Instrument for Detection of Low Energy Radiation (FIDLER), is used for detecting low-energy gamma photons and X rays that are characteristic of americium and plutonium (EG&G 1993a). The detector consists of a single crystal of NaI to which a small amount of thallium has been added. The detector has a narrow field of view of approximately 1 foot in diameter when held 2 inches above the ground. The procedure for use of the FIDLER at RFETS is outlined in Environmental Restoration Program Division (ERPD) Standard Operating Procedure (SOP) FO.16 (EG&G 1992a).

NaI surveys were conducted at each sampling location in OU9 for health and safety purposes and were intended to be compared with in situ HPGe survey results at each tank location. The NaI survey results are used to characterize the radiological activities at each

tank and are compared with the in situ HPGe survey data from adjacent IHSSs and available preliminary OU9 surveys.

2.3 VISUAL INSPECTIONS

A site reconnaissance, or visual inspection, was conducted at each of the tank groups in OU9 to accomplish the following: characterize and document the physical conditions of each area, identify health and safety hazards that may exist, identify potential overhead utility interference with the drill rig mast, identify special needs or requirements for drilling operations and for collecting samples at each area, and plan the OU sampling strategies. Tank photographs taken at the time of the site reconnaissance are presented in Appendix A.

Also identified during site reconnaissance were affected media such as stressed vegetation, soil staining, cracked concrete, and pavement/concrete staining. Surface-soil samples were specifically located based on these visual inspections in conjunction with the locations as indicated in the OU9 Technical Memorandum 1 (DOE 1994a). These locations were approved for sampling by DOE, EPA, and CDPHE as described in the OU9 Technical Memorandum 1.

2.4 SURFACE-SOIL SAMPLING

A total of 50 surface-soil sample locations were sampled in OU9. Thirty-seven of these surface-soil locations were co-located directly above borehole drilling locations, with the remaining 13 locations being independent. Table 2-1 summarizes the analytical parameters for surface-soil sampling.

Two methods of collecting surface-soil samples were employed during Phase I sampling at OU9 depending on whether the surface was paved. In unpaved areas, grab samples were

collected; in areas where asphalt pavement covered the ground surface, grab samples were collected after cutting a hole through the asphalt with an electric coring device. Both grab sampling methods were conducted in accordance with ERPD SOP GT.08 (EG&G 1993b).

Sample numbers and location codes for OU9 were assigned by the RFETS Sample Management Office. Sample numbers with the "SSG" prefix designate surface-soil material, and location codes are identified by a five-digit code ending in "95." All sampling information was entered into RFEDS on a weekly basis using the DataCap™ v3.0 program located at the Jacobs Engineering Group Inc. (Jacobs) onsite field trailer. Surface-soil samples were collected and handled in accordance with ERPD SOP FO.13 (EG&G 1994b). Data management was conducted in accordance with ERPD SOP FO.14 (EG&G 1994c).

2.5 SUBSURFACE SOIL SAMPLING

Subsurface-soil samples were collected from borehole locations specified in OU9 Technical Memorandum 1 (DOE 1994a). Subsurface-soil sampling was conducted in accordance with ERPD SOP GT.02 (EG&G 1992b) and ERPD SOP GT.08 (EG&G 1993b).

A total of 40 borehole locations were sampled in OU9. Four borehole locations were abandoned and 13 locations were offset because utilities were in the way. Several locations failed to produce a sufficient volume of soil to collect a complete analytical suite or failed to produce any yield at all, preventing sample collection. In general, large cobbles or excess fines, often found in the Rocky Flats alluvium, prevented consistent recovery. The priority of subsurface samples was determined on a case-by-case basis depending on the history of the tank in question. If necessary, the sample interval was extended in order to increase the sample volume so a complete analytical suite could be collected. Table 2-2 summarizes the analytical parameters for subsurface-soil sampling.

Sample numbers and location codes for OU9 were assigned by the RFETS Sample Management Department. Sample numbers with the "BHG" prefix designate borehole-sample material, and location codes are identified by a five-digit code ending in "95." All sampling information was entered into RFEDS on a weekly basis using the DataCap™ v3.0 program located at the Jacobs onsite field trailer. Borehole samples were collected and handled in accordance with ERPD SOP FO.13 (EG&G 1994b). Data management was conducted in accordance with ERPD SOP FO.14 (EG&G 1994c).

2.6 GEOLOGIC CORE LOGGING

Preliminary lithologic core logging was performed at the time of sample recovery by the site geologist and was recorded on GT.1B – Preliminary Wellsite Field Log. The core was then wrapped in plastic, boxed, and transported to the core-logging room. A detailed log was completed in accordance with ERPD SOP GT.01 (EG&G 1992c) and recorded on a GT.1A (Rev. 3) - Borehole Log. All of the core recovered was labeled and photographed in the core box. These photographs were previously turned in to EG&G along with all field records. Color originals and the negatives are on file at RFETS document control. The geologist performing these procedures received RFETS-specific core logging training.

Upon completion, the detailed core logs were reviewed by a logging supervisor and then entered into the LOGGER computer program to create graphic boreholes. The LOGGER-generated borehole logs are presented in Appendix B of this report.

2.7 GROUNDWATER SAMPLING

Groundwater samples, field parameters, and water-level measurements were collected from borehole locations as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater samples within the saturated zone were collected using a HydroPunch®

sampler and were used to characterize potential contamination of the groundwater. Table 2-3 summarizes the analytical parameters for groundwater sampling. Field parameter analysis of pH, conductivity, and temperature were performed with a Horiba U-10 meter. Water-level measurements were performed with a Solinst® water-level instrument. Groundwater sampling activities were conducted in accordance with ERPD SOPs GW.01 (EG&G 1992d), GW.05 (EG&G 1992e) and GW.06 (EG&G 1992f).

Groundwater was encountered in a total of 19 boreholes in OU9. The analytical suite varied depending on the yield of the water table. Groundwater samples were collected in the priority set forth in Section 3 of OU9 Technical Memorandum 1 (DOE 1994a). All groundwater sampling activities were recorded in the field on forms FO.14B – Groundwater Sample Collection Form; GW.6A, (Rev. 3) – Field Activity Daily Log; and GW.6B, (Rev. 3) – Groundwater Sample Collection Log; as well as in the field logbooks.

Sample numbers and location codes for OU9 were assigned by the RFETS Sample Management Office. Sample numbers with the "GWG" prefix designate groundwater samples, and location codes are identified by a five-digit code ending in "95." All sampling information was entered into RFEDS on a weekly basis using the DataCap™ v3.0 program located at the Jacobs onsite field trailer. Groundwater samples were collected and handled in accordance with ERPD SOP FO.13 (EG&G 1994b). Data management was conducted in accordance with ERPD SOP FO.14 (EG&G 1994c).

2.8 WASTE MANAGEMENT

All Investigative-Derived Material (IDM) generated during drilling operations was handled in accordance with ERPD SOP FO.8 (EG&G 1992g) and ERPD SOP FO.10 (EG&G 1992h) and is documented in form FO.10A (Rev. 4) - Drum Field Log Form. The information contained in FO.10A was entered into DataCap™ v3.0 and transmitted to RFEDS for drum characterization. Drill cuttings were field-screened for radioisotopes

and volatile organic compounds (VOCs) in accordance with ERPD SOP FO.15 (EG&G 1992i) and ERPD SOP FO.16 (EG&G 1992a). Field-screening data were documented on FO.8C (Rev. 2) – Record of Drilling Fluids and Cuttings. All drums were closed and labeled by a certified Waste Generator and transferred to RFETS personnel along with a Waste Residue Traveler for disposition.

2.9 HEAVY EQUIPMENT AND GENERAL DECONTAMINATION

Field equipment was decontaminated in accordance with ERPD SOP FO.03 (EG&G 1992j) or ERPD SOP FO.04 (EG&G 1992k). Downhole equipment was decontaminated at the decontamination facility before it was used, between uses, and after final use (before it was released from site). General small equipment was decontaminated in the field using tubs, brushes, garden sprayers, Liquinox™, and deionized water. Decontamination liquid was collected in satellite containers and transported to the decontamination facility for disposal. Property Release Evaluations (PREs) were obtained before the removal of equipment from RFETS. Field radiological monitoring was done in accordance with ERPD SOP FO.16 (EG&G 1992a) and Environmental Management Radiological Guidelines (EMRG) 3.02 (EG&G 1991a). Decontamination activities are recorded in field logbooks and on Form FO.4A – Heavy Equipment Decontamination/Wash Checklist and Record.

2.10 ABANDONMENT OF BOREHOLES

All boreholes were plugged and abandoned in accordance with ERPD SOP GT.05 (EG&G 1992l). Required information was documented on form GT.5A (Rev. 3) – Well/Borehole Abandonment. A metal cap inscribed with the borehole number and date was placed in the abandoned borehole cement cap. The elevation and survey coordinates will be inscribed on the metal cap upon completion of borehole surveying.

2.11 TANK CHARACTERIZATION

Tank characterization consisted of both visual inspection of the tank and/or vault and collection of sludge or liquid samples from the tank. A final EG&G ERPD SOP for tank characterization was not available, so a Scientific Notebook Plan (SNP) (Jacobs 1995), was created to guide the field activities. This SNP provided procedures for conducting visual inspections and for collecting samples from the tanks and also provided the field team with the discretion to implement sample collection techniques not otherwise delineated in the SNP. The Scientific Notebook was maintained to document any changes to established SNP procedures and the reasons for implementing alternate procedures.

Visual inspection of the tanks and/or tank vaults was conducted by viewing the interior of the tanks through manways or inspection ports without physically entering the tanks. An intrinsically safe flashlight was used to illuminate the tank, but no other mechanical means of viewing the tanks, such as remote camera videotaping, was used.

Sample collection from the tanks followed the procedures in the SNP to the extent practicable, but procedures followed at each tank depended on the circumstances and characteristics encountered at the tank and therefore will be discussed individually in each tank section. Table 2-4 summarizes the analytical parameters for tank liquid, sludge, and smear sampling.

2.12 LOCATION OF SURFACE-SOIL AND SUBSURFACE-SOIL SAMPLING SITES

Maps from the OU9 RFI/RI Work Plan (DOE 1992a) and OU9 Technical Memorandum 1 (DOE 1994a) were used to locate surface- and subsurface-soil sample collection points. Fixed locations such as building corners and fences were used to locate the sample points. Measurements were made off the maps, and locations were determined with a tape and

compass. Site inspection also provided information, such as soil staining and stressed vegetation, indicating the best sample location. Each location was flagged in the field.

Some borehole locations for subsurface-soil samples had to be offset from the original location due to interference with utilities in the area. Boreholes that were meant to capture downgradient conditions were offset further downgradient up to 20 feet from the original location with the expectation that the contaminant plume would still be detected; boreholes that were meant to capture upgradient or presumed background conditions were offset up to 20 feet further upgradient. Several borehole locations were abandoned because of possible underground utilities at or near the location.

2.13 GEOGRAPHIC INFORMATION SYSTEM

All maps and spatially referenced data have been created in a Geographic Information System (GIS) format using ARC/Info software. RFETS map coverages, including OU and IHSS outlines, were obtained from EG&G. Analytical data were imported into the software to spatially represent analyte concentrations.

TABLE 2-1
Analytical Parameters for Surface Soil Samples Associated With OU9 Tank Groups

Test Group: BNACLP
1,2,4-TRICHLOROBENZENE
1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
2,4,5-TRICHLOROPHENOL
2,4,6-TRICHLOROPHENOL
2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL
2,4-DINITROPHENOL
2,4-DINITROTOLUENE
2,6-DINITROTOLUENE
2-CHLORONAPHTHALENE
2-CHLOROPHENOL
2-METHYLNAPHTHALENE
2-METHYLPHENOL
2-NITROANILINE
2-NITROPHENOL
2-PENTANONE, 4-HYDROXY-4-METHY
3,3'-DICHLOROBENZIDINE
3-HEXENE-2,5-DIONE
3-NITROANILINE
4,6-DINITRO-2-METHYLPHENOL
4-CHLORO-3-METHYLPHENOL
4-CHLOROANILINE
4-CHLOROPHENYL PHENYL ETHER
4-METHYL-3-PENTEN-2-ONE
4-METHYLPHENOL
4-NITROANILINE
4-NITROPHENOL
9,10-ANTHRAQUINONE
ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZO(a)ANTHRACENE
BENZO(a)PYRENE
BENZO(b)FLUORANTHENE
BENZO(ghi)PERYLENE
BENZO(k)FLUORANTHENE
BIS(2-CHLOROETHOXY)METHANE
BIS(2-CHLOROETHYL)ETHER
BIS(2-CHLOROISOPROPYL)ETHER
BIS(2-ETHYLHEXYL)PHTHALATE
BUTYL BENZYL PHTHALATE
CARBAZOLE
CHRYSENE
CYCLOPENTA[DEF]PHENANTHRENONE
DI-n-BUTYL PHTHALATE
DI-n-OCTYL PHTHALATE

TABLE 2-1
Analytical Parameters for Surface Soil Samples Associated With OU9 Tank Groups

DIBENZO(a,h)ANTHRACENE
DIBENZOFURAN
DIBENZOTHIOPHENE
DIETHYL PHTHALATE
DIMETHYL PHTHALATE
ETHANE, 1,1'-OXYBIS 2-METHOX
FLUORANTHENE
FLUORENE
FLUORENONE
HEXACHLOROBENZENE
HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE
HEXACHLOROETHANE
INDENO(1,2,3-cd)PYRENE
ISOPHORONE
METHYL FLUORENE ISOMER
N-NITROSO-DI-n-PROPYLAMINE
N-NITROSODIPHENYLAMINE
NAPHTHALENE
NITROBENZENE
p-BROMODIPHENYL ETHER
PENTACHLOROPHENOL
PHENANTHRENE
PHENOL
PYRENE

Test Group: METADD
CESIUM
LITHIUM
MOLYBDENUM
SILICON
STRONTIUM
TIN

Test Group: PESTCLP
4,4'-DDD
4,4'-DDE
4,4'-DDT
ALDRIN
alpha-BHC
alpha-CHLORDANE
AROCLOR-1016
AROCLOR-1221
AROCLOR-1232
AROCLOR-1242
AROCLOR-1248
AROCLOR-1254
AROCLOR-1260
beta-BHC

TABLE 2-1
Analytical Parameters for Surface Soil Samples Associated With OU9 Tank Groups

delta-BHC
DIELDRIN
ENDOSULFAN I
ENDOSULFAN II
ENDOSULFAN SULFATE
ENDRIN
ENDRIN ALDEHYDE
ENDRIN KETONE
gamma-BHC (LINDANE)
gamma-CHLORDANE
HEPTACHLOR
HEPTACHLOR EPOXIDE
METHOXYCHLOR
TOXAPHENE

Test Group: SMETCLP
ALUMINUM
ANTIMONY
ARSENIC
BARIUM
BERYLLIUM
CADMIUM
CALCIUM
CHROMIUM
COBALT
COPPER
IRON
LEAD
MAGNESIUM
MANGANESE
MERCURY
NICKEL
POTASSIUM
SELENIUM
SILVER
SODIUM
TANTALUM
THALLIUM
VANADIUM
ZINC

Test Group: TCLP-RADS
TRITIUM

TABLE 2-1

Analytical Parameters for Surface Soil Samples Associated With OU9 Tank Groups

Test Group: TRADS
AMERICIUM-241
CESIUM-134
CESIUM-137
GROSS ALPHA
GROSS BETA
NEPTUNIUM-237
PLUTONIUM-238
PLUTONIUM-239/240
URANIUM-233,-234
URANIUM-235
URANIUM-238

Test Group: VOACLP
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE
1,2-DICHLOROETHANE
1,2-DICHLOROETHENE
1,2-DICHLOROPROPANE
2-BUTANONE
2-HEXANONE
2-PROPANOL OR ISOPROPANOL
4-METHYL-2-PENTANONE
ACETONE
BENZENE
BROMODICHLOROMETHANE
BROMOFORM
BROMOMETHANE
CARBON DISULFIDE
CARBON TETRACHLORIDE
CHLOROBENZENE
CHLOROETHANE
CHLOROFORM
CHLOROMETHANE
cis-1,3-DICHLOROPROPENE
DIBROMOCHLOROMETHANE
ETHYLBENZENE
METHYLENE CHLORIDE
STYRENE
TETRACHLOROETHENE
TOLUENE
TOTAL XYLENES
trans-1,3-DICHLOROPROPENE
TRICHLOROETHENE
TRICHLOROFLUOROMETHANE
VINYL CHLORIDE

TABLE 2-1
Analytical Parameters for Surface Soil Samples Associated With OU9 Tank Groups

Test Group: WQPL
CHLORIDE
CHROMIUM VI
NITRATE
NITRITE
SULFATE
TOTAL ORGANIC CARBON

Notes:
BNACLP = Base Neutral Acid Extractable Contract Lab Program
METADD = Metals Added
PESTCLP = Pesticides Contract Lab Program
SMETCLP = Standard Metals Contract Lab Program
TCLP-RADS = Toxicity Characteristics Leaching Procedure - Radionuclides
TRADS = Total Radionuclides
VOACLP = Volatile Organic Analysis Contract Lab Program
WQPL = Water Quality Parameter List

TABLE 2-2
Analytical Parameters for Subsurface Soil Samples Associated With OU9 Tank Groups

Test Group: BNACLP
1,2,4-TRICHLOROBENZENE
1,2-BENZENEDICARBOXYLIC ACID
1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
1-PHENYLNAPHTHALENE
2,4,5-TRICHLOROPHENOL
2,4,6-TRICHLOROPHENOL
2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL
2,4-DINITROPHENOL
2,4-DINITROTOLUENE
2,6-DINITROTOLUENE
2-CHLORONAPHTHALENE
2-CHLOROPHENOL
2-METHYLNAPHTHALENE
2-METHYLPHENOL
2-NITROANILINE
2-NITROPHENOL
2-PENTANONE, 4-HYDROXY-4-METHY
2-PHENYLNAPHTHALENE
3,3'-DICHLOROBENZIDINE
3-HEXENE-2,5-DIONE
3-NITROANILINE
4,5-METHYLENE PHENANTHRENE
4,6-DINITRO-2-METHYLPHENOL
4-CHLORO-3-METHYLPHENOL
4-CHLOROANILINE
4-CHLOROPHENYL PHENYL ETHER
4-METHYL-3-PENTEN-2-ONE
4-METHYLPHENOL
4-NITROANILINE
4-NITROPHENOL
9,10-ANTHRAQUINONE
ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZANTHRONE
BENZO(a)ANTHRACENE
BENZO(a)PYRENE
BENZO(b)FLUORANTHENE
BENZO(ghi)PERYLENE
BENZO(k)FLUORANTHENE
BENZO[b]NAPHTHO[2,3-d]FURA
BIS(2-CHLOROETHOXY)METHANE
BIS(2-CHLOROETHYL)ETHER
BIS(2-CHLOROISOPROPYL)ETHER

TABLE 2-2
Analytical Parameters for Subsurface Soil Samples Associated With OU9 Tank Groups

BIS(2-ETHYLHEXYL)PHTHALATE
BUTYL BENZYL PHTHALATE
CARBAZOLE
CHRYSENE
CYCLOPENTA[DEF]PHENANTHRENONE
CYCLOPENTASILOXANE, DECANE
DI-n-BUTYL PHTHALATE
DI-n-OCTYL PHTHALATE
DIBENZO(a,h)ANTHRACENE
DIBENZOFURAN
DIBENZOTHIOPHENE
DIETHYL PHTHALATE
DIMETHYL PHTHALATE
DIMETHYLPHENANTHRENE ISOMER
ETHANE, 1,1'-OXYBIS 2-METHOX
FLUORANTHENE
FLUORENE
FLUORENONE
HEPTANE, 3,4-DIMETHYL-
HEXACHLOROBENZENE
HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE
HEXACHLOROETHANE
INDENO(1,2,3-cd)PYRENE
ISOPHORONE
N-NITROSO-DI-n-PROPYLAMINE
N-NITROSODIPHENYLAMINE
NAPHTHALENE
NITROBENZENE
p-BROMODIPHENYL ETHER
PENTACHLOROPHENOL
PHENANTHRENE
PHENOL
PYRENE
TETRAHYDROFURAN
TRIDECANE

Test Group: HERB8150
2,4-DICHLOROPHENOXYACETIC ACID, SALTS
PROPANOIC ACID, 2-(2,4,5-TRICHLOROPHENOX

Test Group: METADD
CESIUM
LITHIUM
MOLYBDENUM
SILICON
STRONTIUM
TIN

TABLE 2-2
Analytical Parameters for Subsurface Soil Samples Associated With OU9 Tank Groups

Test Group: PESTCLP
4,4'-DDD
4,4'-DDE
4,4'-DDT
ALDRIN
alpha-BHC
alpha-CHLORDANE
AROCLOR-1016
AROCLOR-1221
AROCLOR-1232
AROCLOR-1242
AROCLOR-1248
AROCLOR-1254
AROCLOR-1260
beta-BHC
delta-BHC
DIELDRIN
ENDOSULFAN I
ENDOSULFAN II
ENDOSULFAN SULFATE
ENDRIN
ENDRIN ALDEHYDE
ENDRIN KETONE
gamma-BHC (LINDANE)
gamma-CHLORDANE
HEPTACHLOR
HEPTACHLOR EPOXIDE
METHOXYCHLOR
TOXAPHENE

Test Group: SMETCLP
ALUMINUM
ANTIMONY
ARSENIC
BARIUM
BERYLLIUM
CADMIUM
CALCIUM
CHROMIUM
COBALT
COPPER
IRON
LEAD
MAGNESIUM
MANGANESE
MERCURY
NICKEL

TABLE 2-2
Analytical Parameters for Subsurface Soil Samples Associated With OU9 Tank Groups

POTASSIUM
SELENIUM
SILVER
SODIUM
TANTALUM
THALLIUM
VANADIUM
ZINC

Test Group: TCLP-RADS
TRITIUM

Test Group: TRADS
AMERICIUM-241
CESIUM-134
CESIUM-137
GROSS ALPHA
GROSS BETA
NEPTUNIUM-237
PLUTONIUM-238
PLUTONIUM-239/240
URANIUM-233,-234
URANIUM-235
URANIUM-238

Test Group: VOACLP
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE
1,2-DICHLOROETHANE
1,2-DICHLOROETHENE
1,2-DICHLOROPROPANE
2-BUTANONE
2-HEXANONE
2-PROPANOL OR ISOPROPANOL
4-METHYL-2-PENTANONE
ACETONE
BENZENE
BROMODICHLOROMETHANE
BROMOFORM
BROMOMETHANE
CARBON DISULFIDE
CARBON TETRACHLORIDE
CHLOROBENZENE
CHLOROETHANE
CHLOROFORM

TABLE 2-2

Analytical Parameters for Subsurface Soil Samples Associated With OU9 Tank Groups

CHLOROMETHANE
cis-1,3-DICHLOROPROPENE
DECANAL
DIBROMOCHLOROMETHANE
ETHYLBENZENE
METHYLENE CHLORIDE
STYRENE
TETRACHLOROETHENE
TOLUENE
TOTAL XYLENES
TRICHLOROETHENE
VINYL CHLORIDE

Test Group: WQPL
CHLORIDE
CHROMIUM VI
FLUORIDE
NITRATE
NITRITE
pH
SPECIFIC CONDUCTIVITY
SULFATE
TOTAL ORGANIC CARBON

Notes:

BNACLP = Base Neutral Acid Extractable Contract Lab Program

HERB8150 = Herbicides - Method 8150

METADD = Metals Added

PESTCLP = Pesticides Contract Lab Program

SMETCLP = Standard Metals Contract Lab Program

TCLP-RADS = Toxicity Characteristics Leaching Procedure - Radionuclides

TRADS = Total Radionuclides

VOACLP = Volatile Organic Analysis Contract Lab Program

WQPL = Water Quality Parameter List

TABLE 2-3
Analytical Parameters for Groundwater Samples Associated With OU9 Tank Groups

TEST GROUP: BNACLP
1,2,4-TRICHLOROBENZENE
1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
2,4,5-TRICHLOROPHENOL
2,4,6-TRICHLOROPHENOL
2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL
2,4-DINITROPHENOL
2,4-DINITROTOLUENE
2,6-DINITROTOLUENE
2-CHLORONAPHTHALENE
2-CHLOROPHENOL
2-METHYLNAPHTHALENE
2-METHYLPHENOL
2-NITROANILINE
2-NITROPHENOL
3,3'-DICHLOROBENZIDINE
3-NITROANILINE
4,6-DINITRO-2-METHYLPHENOL
4-CHLORO-3-METHYLPHENOL
4-CHLOROANILINE
4-CHLOROPHENYL PHENYL ETHER
4-METHYLPHENOL
4-NITROANILINE
4-NITROPHENOL
ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZO(a)ANTHRACENE
BENZO(a)PYRENE
BENZO(b)FLUORANTHENE
BENZO(ghi)PERYLENE
BENZO(k)FLUORANTHENE
BIS(2-CHLOROETHOXY)METHANE
BIS(2-CHLOROETHYL)ETHER
BIS(2-CHLOROISOPROPYL)ETHER
BIS(2-ETHYLHEXYL)PHTHALATE
BUTYL BENZYL PHTHALATE
CARBAZOLE
CHRYSENE
DI-n-BUTYL PHTHALATE
DI-n-OCTYL PHTHALATE
DIBENZO(a,h)ANTHRACENE
DIBENZOFURAN
DIETHYL PHTHALATE
DIMETHYL PHTHALATE
FLUORANTHENE
FLUORENE

TABLE 2-3
Analytical Parameters for Groundwater Samples Associated With OU9 Tank Groups

HEXACHLOROBENZENE
HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE
HEXACHLOROETHANE
INDENO(1,2,3-cd)PYRENE
ISOPHORONE
N-NITROSO-DI-n-PROPYLAMINE
N-NITROSODIPHENYLAMINE
NAPHTHALENE
NITROBENZENE
p-BROMODIPHENYL ETHER
PENTACHLOROPHENOL
PHENANTHRENE
PHENOL
PYRENE

TEST GROUP: HERB8150
PROPANOIC ACID, 2-(2,4,5-TRICHLOROPHENOX
2,4-DICHLOROPHENOXYACETIC ACID, SALTS

TEST GROUP: METADD
CESIUM
LITHIUM
MOLYBDENUM
SILICON
STRONTIUM
TIN

TEST GROUP: PESTCLP
4,4'-DDD
4,4'-DDE
4,4'-DDT
ALDRIN
alpha-BHC
alpha-CHLORDANE
AROCLOR-1016
AROCLOR-1221
AROCLOR-1232
AROCLOR-1242
AROCLOR-1248
AROCLOR-1254
AROCLOR-1260
beta-BHC
delta-BHC
DIELDRIN
ENDOSULFAN I
ENDOSULFAN II
ENDOSULFAN SULFATE
ENDRIN
ENDRIN ALDEHYDE

TABLE 2-3
Analytical Parameters for Groundwater Samples Associated With OU9 Tank Groups

ENDRIN KETONE
gamma-BHC (LINDANE)
gamma-CHLORDANE
HEPTACHLOR
HEPTACHLOR EPOXIDE
METHOXYCHLOR
TOXAPHENE

TEST GROUP: SMETCLP
ALUMINUM
ANTIMONY
ARSENIC
BARIUM
BERYLLIUM
CADMIUM
CALCIUM
CHROMIUM
COBALT
COPPER
IRON
LEAD
MAGNESIUM
MANGANESE
MERCURY
NICKEL
POTASSIUM
SELENIUM
SILVER
SODIUM
THALLIUM
VANADIUM
ZINC

TEST GROUP: TRADS
AMERICIUM-241
GROSS ALPHA
GROSS BETA
PLUTONIUM-239/240
RADIUM-226
TRITIUM
URANIUM-233,-234
URANIUM-235
URANIUM-238

TEST GROUP: VOACLP
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE

TABLE 2-3
Analytical Parameters for Groundwater Samples Associated With OU9 Tank Groups

1,2-DICHLOROETHANE
1,2-DICHLOROETHENE
1,2-DICHLOROPROPANE
2-BUTANONE
2-HEXANONE
4-METHYL-2-PENTANONE
ACETONE
BENZENE
BROMODICHLOROMETHANE
BROMOFORM
BROMOMETHANE
CARBON DISULFIDE
CARBON TETRACHLORIDE
CHLOROBENZENE
CHLOROETHANE
CHLOROFORM
CHLOROMETHANE
DIBROMOCHLOROMETHANE
ETHYLBENZENE
METHYLENE CHLORIDE
STYRENE
TETRACHLOROETHENE
TOLUENE
TOTAL XYLENES
TRICHLOROETHENE
VINYL CHLORIDE

TEST GROUP: WQPL
CHLORIDE
CHROMIUM VI
FLUORIDE
NITRATE
NITRITE
pH
SPECIFIC CONDUCTIVITY
SULFATE
TOTAL ORGANIC CARBON

Notes:

BNACLP = Base Neutral Acid Extractable Contract Lab Program

HERB8150 = Herbicides - Method 8150

METADD = Metals Added

PESTCLP = Pesticides Contract Lab Program

SMETCLP = Standard Metals Contract Lab Program

TRADS = Total Radionuclides

VOACLP = Volatile Organic Analysis Contract Lab Program

WQPL = Water Quality Parameter List

TABLE 2-4

Analytical Parameters for Tank Liquid, Sludge, and Smear Samples From OU9 Tank Groups

Test Group: BNACLP
1,2,4-TRICHLOROBENZENE
1,2-DICHLOROBENZENE
1,2-DICHLOROBENZENE-D4
1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE
2,4,5-TRICHLOROPHENOL
2,4,6-TRIBROMOPHENOL
2,4,6-TRICHLOROPHENOL
2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL
2,4-DINITROPHENOL
2,4-DINITROTOLUENE
2,6-DINITROTOLUENE
2-CHLORONAPHTHALENE
2-CHLOROPHENOL
2-CHLOROPHENOL-D4
2-FLUOROBIPHENYL
2-METHYLNAPHTHALENE
2-METHYLPHENOL
2-NITROANILINE
2-NITROPHENOL
3,3'-DICHLOROBENZIDINE
3-NITROANILINE
4,6-DINITRO-2-METHYLPHENOL
4-CHLORO-3-METHYLPHENOL
4-CHLOROANILINE
4-CHLOROPHENYL PHENYL ETHER
4-METHYLPHENOL
4-NITROANILINE
4-NITROPHENOL
ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZO(a)ANTHRACENE
BENZO(a)PYRENE
BENZO(b)FLUORANTHENE
BENZO(ghi)PERYLENE
BENZO(k)FLUORANTHENE
BIS(2-CHLOROETHOXY)METHANE
BIS(2-CHLOROETHYL)ETHER
BIS(2-CHLOROISOPROPYL)ETHER
BIS(2-ETHYLHEXYL)PHTHALATE
BUTYL BENZYL PHTHALATE
CARBAZOLE
CHRYSENE
DI-n-BUTYL PHTHALATE
DI-n-OCTYL PHTHALATE

TABLE 2-4
Analytical Parameters for Tank Liquid, Sludge, and Smear Samples From OU9 Tank Groups

DIBENZO(a,h)ANTHRACENE
DIBENZOFURAN
DIETHYL PHTHALATE
DIMETHYL PHTHALATE
FLUORANTHENE
FLUORENE
HEXACHLOROBENZENE
HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE
HEXACHLOROETHANE
INDENO(1,2,3-cd)PYRENE
ISOPHORONE
N-NITROSO-DI-n-PROPYLAMINE
N-NITROSODIPHENYLAMINE
NAPHTHALENE
NITROBENZENE
NITROBENZENE-D5
o-FLUOROPHENOL
p-BROMODIPHENYL ETHER
PENTACHLOROPHENOL
PHENANTHRENE
PHENOL
PHENOL-D5
PYRENE
TERPHENYL-D14

Test Group: METADD
CESIUM
LITHIUM
MOLYBDENUM
SILICON
STRONTIUM
TIN

Test Group: PESTCLP
4,4'-DDD
4,4'-DDE
4,4'-DDT
ALDRIN
alpha-BHC
alpha-CHLORDANE
AROCLOR-1016
AROCLOR-1221
AROCLOR-1232
AROCLOR-1242
AROCLOR-1248
AROCLOR-1254
AROCLOR-1260

TABLE 2-4
Analytical Parameters for Tank Liquid, Sludge, and Smear Samples From OU9 Tank Groups

beta-BHC
delta-BHC
DIELDRIN
ENDOSULFAN I
ENDOSULFAN II
ENDOSULFAN SULFATE
ENDRIN
ENDRIN ALDEHYDE
ENDRIN KETONE
gamma-BHC (LINDANE)
gamma-CHLORDANE
HEPTACHLOR
HEPTACHLOR EPOXIDE
METHOXYCHLOR
TOXAPHENE

Test Group: SMETCLP
ALUMINUM
ANTIMONY
ARSENIC
BARIUM
BERYLLIUM
CADMIUM
CALCIUM
CHROMIUM
COBALT
COPPER
IRON
LEAD
MAGNESIUM
MANGANESE
MERCURY
NICKEL
POTASSIUM
SELENIUM
SILVER
SODIUM
TANTALUM
THALLIUM
VANADIUM
ZINC

Test Group: TRADS
AMERICIUM-241
GROSS ALPHA
GROSS BETA
NEPTUNIUM-237
PLUTONIUM-239/240

TABLE 2-4

Analytical Parameters for Tank Liquid, Sludge, and Smear Samples From OU9 Tank Groups

RADIUM-226
TOTAL RADIOCESIUM
TRITIUM
URANIUM-233,-234
URANIUM-235
URANIUM-238

Test Group: VOACLP
1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROETHANE
1,1-DICHLOROETHANE
1,1-DICHLOROETHENE
1,2-DICHLOROETHANE
1,2-DICHLOROETHENE
1,2-DICHLOROPROPANE
2-BUTANONE
2-HEXANONE
4-METHYL-2-PENTANONE
ACETONE
BENZENE
BROMODICHLOROMETHANE
BROMOFLUOROBENZENE
BROMOFORM
BROMOMETHANE
CARBON DISULFIDE
CARBON TETRACHLORIDE
CHLOROBENZENE
CHLOROETHANE
CHLOROFORM
CHLOROMETHANE
cis-1,3-DICHLOROPROPENE
DIBROMOCHLOROMETHANE
ETHYLBENZENE
METHYLENE CHLORIDE
STYRENE
TETRACHLOROETHENE
TOLUENE
TOLUENE - D8
TOTAL XYLENES
trans-1,3-DICHLOROPROPENE
TRICHLOROETHENE
VINYL CHLORIDE

Test Group: WQPL
CHLORIDE
CHROMIUM VI
FLUORIDE

TABLE 2-4
Analytical Parameters for Tank Liquid, Sludge, and Smear Samples From OU9 Tank Groups

NITRATE
NITRITE
pH
SPECIFIC CONDUCTIVITY
SULFATE
TOTAL ORGANIC CARBON

Notes:

BNACLP = Base Neutral Acid Extractable Contract Lab Program

METADD = Metals Added

PESTCLP = Pesticides Contract Lab Program

SMETCLP = Standard Metals Contract Lab Program

TRADS = Total Radionuclides

VOACLP = Volatile Organic Analysis Contract Lab Program

WQPL = Water Quality Parameter List

3.0 DATA SUMMARY

The location of the tank groups is presented on Plate 1. This data summary section also reports the recorded history of the tank sites to indicate potential sources of contamination. Information from adjacent IHSSs is presented, as appropriate, if the IHSS is a potential source of contamination.

Radiological surveys were conducted before field activities both for health and safety precautions and for site characterization.

Finally, the data generated during field sampling activities are reported, including surface-soil, subsurface-soil, groundwater, and tank-characterization findings. The preliminary remediation goals (PRGs) are identified for the surface-soil, subsurface-soil, and groundwater media for comparison.

3.1 DATA EVALUATION

Analytical results for the various sampling and analysis activities were obtained from the RFEDS. Each activity undertaken at OU9 is introduced in this section, and an overview of the data use is provided.

3.1.1 In Situ High-Purity Germanium Survey

During the investigation of other OU/IHSS sites proximate to OU9, HPGe data were generated for screening purposes to help identify areas that are potentially contaminated with radionuclides. Seventeen HPGe surveys were conducted within the boundaries of OU9 that provide useful data to screen areas for possible radionuclide contamination. Plate 2 shows americium-241 (Am-241) contours generated by the HPGe unit for the Industrial Area. The HPGe detector identifies and quantifies the specific activities of

gamma-emitting radionuclides in soils at the picocuries per gram (pCi/g) level for a variety of radionuclides (except for plutonium, which can only be measured at the nanocurie per gram [nCi/g] level). While the instrumentation uses several assumptions that make the method qualitative, the system is useful in identifying general areas of contamination. The radionuclides measured by the HPGe methodology in OU9 include potassium-40 (K-40), radium-226 (Ra-226), thorium-232 (Th-232), cesium-137 (CS-137), Am-241, plutonium-239/240 (Pu-239/240), uranium-233/234 (U-233/234), uranium-235 (U-235), and uranium-238 (U-238). In general, the HPGe detector is accurate in identifying the presence of specific radionuclides because of its gamma spectrum resolution. However, the HPGe detector is generally considered inaccurate in the quantitation of specific radionuclides, especially given the assumptions required for the calculation of specific activities. In addition, some HPGe results indicate that inadequate shielding during HPGe surveys may lead to elevated activity readings because of "shine" from structures that process or store high or concentrated levels of radionuclides. Shine is radiation that emanates from radioactive materials stored within structures, causing elevated readings of nearby field HPGe measurements.

Because of the large area over which the instrument collects data, HPGe survey stations often count activity from more than one IHSS in different OUs. HPGe station designations were typically combined with the OU for which the survey reading was made. Thus, Station 8I-9 was surveyed primarily for the purpose of characterizing an area within OU9. Some tank groups in OU9 had no HPGe survey conducted, although an HPGe survey was occasionally conducted in the vicinity so the tank fell within the radius of influence of the instrument. Data generated from these surveys were used to estimate radionuclide contamination in OU9.

HPGe data obtained for OU9, as well as associated minimum detectable activity (MDA) and error terms, are contained in Appendix C. HPGe error terms account for the propagated statistical counting uncertainty for the sample and the associated analytical

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blanks at the 95 percent confidence level. These error terms represent a minimum estimate of error for the data (EG&G 1994d). Anomalous HPGe values were identified based on comparison of HPGe in situ analytical results to expected background activities of radionuclides. Error terms were taken into account in the comparison to background activities. More specifically, if the background value was located within the range of the reported HPGe result plus or minus (±) its associated error term, the HPGe result was considered to be statistically indistinguishable from background activities. For example, a reported HPGe U-238 value of 2.4 pCi/g is numerically greater than the background comparison value of 2.3 pCi/g. However, after accounting for a hypothetical associated error term of ± 0.2 pCi/g, the range of possible U-238 values is 2.2 to 2.6 pCi/g. Because this range includes the background value of 2.3 pCi/g, the HPGe result is considered statistically indistinguishable from background.

Expected background activities were identified based on background HPGe data as well as a literature search of background activities that included Rock Creek data collected during the OU1 Phase III Investigation in 1993 as presented in the OU6 Technical Memorandum 4 (DOE 1994b). These background values are shown in Table 3-1. Table 3-1 also contains the background values for the fallout radionuclides based on the Preliminary Draft Background and Soils Characterization Program Report (BSCP) (DOE 1995a). For the fallout radionuclides (i.e., Am-241, Cs-137, Pu-239/240 and strontium-89/90 [Sr-89/90]), the background values for surface soil are believed to be more appropriate using the Rock Creek data. This is because the samples for the BSCP were collected from a background location that is not potentially impacted by RFETS operations, and a statistically larger sample population was used (Siders 1995). Therefore, for these radionuclides, detected activities will be compared to the Rock Creek background values. Table 3-1 identifies background activities of specific radionuclides.

A brief description of the various radionuclides measured and reported by the HPGe detector is presented below:

Potassium-40 is a naturally occurring radioisotope that has not been used in significant quantities in production-related activities at RFETS. Background activities of K-40 could be expected to range up to 21.8 pCi/g. HPGe data for K-40 were generated primarily for calibration purposes for the HPGe detector. Nothing in the operational history of OU9 suggests that K-40 would be present in excess of natural background conditions because of production-related radionuclide or hazardous waste contamination.

Nevertheless, it should be noted that K-40 above background activity levels may be present in soils on the plant site because of the use of Polar Melt® deicer, which is composed of potassium chloride. Potassium chloride has a 0.0117 percent natural abundance of K-40. In March 1992, a report titled *Possible Gross Beta Affects to Rocky Flats Plant's Storage Ponds Due to Polar Melt® De-icer Usage* (EG&G 1992m) evaluated how the usage of Polar Melt® affected gross beta activities in the drainage ponds. The activity of Polar Melt® was estimated to average 53 pCi/g or 24,040 picocuries per pound (pCi/lb). A total of 62,350 pounds of Polar Melt® were used during the 1990-91 snow season. Conclusions of the study indicated that 14.3 to 41.9 percent of the gross beta in the pond system during 1990-91 could be attributed to Polar Melt® in runoff. The average contribution of gross beta by Polar Melt® in the ponds was predicted to be 1.9 picocuries per liter (pCi/L) with contributions ranging as high as 3.9 pCi/L in March 1991 (EG&G 1992m).

Radium-226 is a naturally occurring radionuclide that was not used in significant quantities in production-related activities at RFETS. Background values for this radionuclide can be expected to range up to 1.13 pCi/g. HPGe data for Ra-226 were generated primarily for calibration purposes for the HPGe detector and for comparison of the total activities of Ra-226 and U-238 in the surface soils. Nothing in the history of operations in OU9 suggests that Ra-226 would be present in excess of natural background conditions as a result of radionuclide or hazardous waste contamination.

Thorium-232 is the most abundant of the naturally occurring isotopes, being about three times as abundant as uranium and roughly as abundant as lead and molybdenum (Cember 1978; Chemical Rubber Company [CRC] 1980). This metal is not known to have been used in significant quantities for production purposes at RFETS. Thorium-232 may have been used for light bulbs, crucibles, camera lenses, scientific instruments, or as a coating for tungsten wire in electronic equipment (CRC 1980). Background activities of Th-232 could be expected to range up to 1.35 pCi/g. HPGe data for Th-232 were generated primarily for calibration purposes for the HPGe detector. Nothing in the history of operations in OU9 suggests that Th-232 would be present in excess of natural background conditions as a result of radionuclide or hazardous waste contamination.

Uranium-238 is called depleted uranium. Naturally occurring uranium is processed to remove the U-235 isotope (called enriched uranium). The remaining material is the U-238 depleted uranium. Uranium-238 was used widely at RFETS, especially in the 400-area buildings. The maximum background activity of U-238 is 2.3 pCi/g. Therefore, the 2.3 pCi/g value was used as an initial indicator that anomalous U-238 values may exist.

Once anomalous U-238 activities were identified, further analysis of the data was conducted by evaluating the ratio of Ra-226 activity to U-238 activity. Radium-226 is a daughter product of U-238 and has a half-life of 1,600 years versus the 4.51×10^9 year half-life of U-238. Thus, in naturally occurring materials, these two radionuclides should be in secular equilibrium and the ratio of the activities should be near unity (Cember 1978; Faure 1977). Based on the HPGe-generated data for background soils, this ratio is considerably less than unity in all cases, ranging from 0.35 to 0.51. The low ratios identified by the HPGe technology are expected to be caused in part by the HPGe sensitivity to the two isotopes. In the OU9 HPGe data evaluation, ratios of Ra-226 to U-238 activity that exceed 0.35 are considered to be indicative of naturally occurring U-238 activities, and ratios below 0.35 are considered to be indicative of anthropogenic sources of U-238.

Therefore, for HPGe OU9 survey results for U-238 to be identified as anomalously high, the survey station must demonstrate a uranium activity in excess of 2.3 pCi/g and a Ra-226 to U-238 ratio of less than 0.35.

Uranium-235 is recovered from natural uranium through the enrichment process, and is called "enriched uranium." It has a very low natural abundance (0.72 percent). Based on the BSCP-generated data, the background activities for U-235 could range up to 0.10 pCi/g. The history of U-235 usage at RFETS in production-related activities indicates that this material could potentially be found in excess of natural background activities in the general vicinities of all 11 tank groups (all of OU9).

Cesium-137 is a man-made radionuclide found in surface soils because of fallout deposition from atmospheric testing of nuclear weapons. Cesium-137 activities up to 1.37 pCi/g are expected in areas where soils have remained undisturbed in recent years. Areas where soils have been disturbed would have lower activities of Cs-137 because of the mixing of Cs-137 in surface soils with less-contaminated deeper soils. From historical reports of the 886 Criticality Laboratory area, Tanks T-21, T-22, and T-27 may have been associated with Cs-137 handling and therefore might suggest a presence of it in excess of fallout activities.

Americium-241 is a daughter product of man-made Pu-241 and is present in the plutonium handled at RFETS. Americium-241 is known to have been released to the environment at RFETS and is probably present in buildings that processed plutonium, including Buildings 371, 374, 776/777, 771, 774, and 707. Some elevated Am-241 readings within OU9 could be influenced by shine from buildings that store transuranic wastes. Based on background data, only Am-241 values above 0.10 pCi/g are considered to be anomalous.

Plutonium-239/240 is a man-made radionuclide that has been used extensively in production-related activities at RFETS. The MDA for Pu-239/240 with the HPGe

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detector at RFETS is relatively high (on the order of nCi/g). Thus, Pu-239/240 values greater than the MDA are considered to be anomalous. As is the case with Am-241, elevated Pu-239/240 readings within OU9 could be influenced by shine from buildings that processed plutonium, such as the 700-area buildings. Rock Creek data identify 0.13 pCi/g as the background upper tolerance limit.

3.1.2 Sodium Iodide Survey

NaI surveys were conducted with a FIDLER instrument at every surface-soil, and borehole location, and around every tank in OU9 as part of a health and safety requirement and to supplement the HPGe data, particularly at tanks where buildings or obstructions limited HPGe effectiveness. The NaI data provide spatial resolution of surficial radioactivity detected in HPGe readings. In other words, the NaI data enable further resolution of the exact locations of high activity within the larger area measured by HPGe technology.

Before using the FIDLER instrument in each tank or sample location, background readings were obtained by holding the instrument 15 feet outside of the established sampling grid and performing a one-minute scaler count. The upper limit of background values was then calculated at two times the square root of background plus background (Hyder 1994):

$$\left(B + 2\sqrt{B}\right).$$

This calculation provides a statistical estimate of two standard deviations above the mean, given a normal distribution. This number represents the acceptable error, or reproducibility of the background reading. Thus, NaI readings above this value were considered potentially indicative of anomalous activity levels at the survey station (Hyder 1994). For tanks with large survey areas, more than one background reading was usually

taken. For these tanks, each background reading was compared to the group of readings immediately following the background reading. Field notes and data logs for NaI detector results obtained at OU9 are contained in Appendix D.

3.1.3 Sample Analyses

The following sections introduce each sampling activity performed in OU9 and provide an overview to the data generated.

3.1.3.1 Environmental Samples

The analytical parameters collected at a given site depends on the historical use of the tank and associated pipelines. Environmental samples consist of both soil (surface and subsurface) and groundwater samples. Tables 2-1 through 2-4 previously identified the analytical parameters requested for laboratory analysis. Tables 3-2 through 3-8 identify individual analytes provided in the RFEDS data packages. In some cases, laboratory analytes included additional analytes not identified in the OU9 RFI/RI Work Plan (DOE 1992a).

Sample results were compared to risk-based or background levels. The PRGs were obtained from the *Programmatic Risk-Based Preliminary Remediation Goals for the Rocky Flats Plant* (DOE 1995b) and background concentrations and specific activities were obtained from both the BSCP Report (DOE 1995a) and the Background Geochemical Characterization Report for Rocky Flats Plant (DOE 1993). PRGs have been calculated for various scenarios at RFETS to obtain contaminant and medium-specific levels of exposure that protect human health. Ecological effects were not considered in the development of these goals. PRGs used to evaluate surface-soil sample results and groundwater sample results are those developed for the residential exposure scenario that examined exposure to an adult via the soil ingestion and water consumption

pathways. The residential soil PRGs were used because the calculated surface-soil concentrations are the lowest, or most conservative concentrations among the various soil-exposure scenarios assessed. The residential groundwater PRGs are also lowest amongst all water-exposure scenarios assessed. Thus, PRGs used to evaluate groundwater results are those developed for the residential-exposure scenario that examined exposure to an adult via the drinking water pathway.

Subsurface-soil or borehole sample results were evaluated using PRGs developed for the construction worker subsurface-soil exposure scenario. Use of these reference values implies that only workers obtaining the borehole samples are subject to potential exposure risks in handling the subsurface soils.

If both a PRG and a background concentration were available for an analyte (e.g., for most of the inorganic analytes), comparison was made to the higher of the two concentrations. This procedure helps to prevent characterization of existing background levels as site contamination and removes the consideration of potential health risks associated with naturally occurring levels. Background is assumed to be zero for organic analytes. When a PRG was not available for a particular analyte, it was assumed to be zero. PRGs were used where available.

The analytical results of the surface-soil sampling and borehole sampling were used to characterize soil contamination near each tank by comparing the results to the PRGs and/or background levels to identify areas that may be of potential concern for future investigation.

The PRGs and background concentrations used for comparison with the OU9 data are listed in each positive results data table. These tables (Tables 3-9 through 3-35) follow Section 3.0 text.

Data tables presenting complete analytical sampling results for each set of samples (i.e., surface soil, boreholes, groundwater, and tank residues) from each tank group are presented in Appendix E. The following tables were compiled for each tank group:

- data tables that show both the detected and the undetected analytes (Appendix E); and
- data tables that show only the detected analytes and analytes that exceed their designated PRG and/or background concentration (Section 3.0 tables).

3.1.3.2 Tank Samples

The analytical results of sludge and liquid samples collected from the tanks in OU9 were not compared with any PRGs or background values. Samples of tank sludge and liquids, being industrial waste and having come from a confined containment, will undoubtedly exceed even the least conservative PRGs and background values; therefore no tank sludge/liquid comparisons to PRGs or background levels were made. The locations of the tank samples are depicted in tank group figures, and the analytical results are shown in each tank group table. However, because tank samples had no comparison to background or PRGs, there are no figures that list these data.

3.2 TANK T-1

The Tank T-1 source area is located in the 100 Area, along the south side of Building 122 near the southeast corner (Figure 3-2).

3.2.1 Historical Information

Tank T-1 was an 800-gallon, stainless steel underground tank that was installed in 1955 and then removed in January 1984. It held waste streams from Building 122, the Medical Facility, including wastes such as trace radionuclides and decontamination water with

constituents such as bleach, soap, blood, and hydrogen peroxide. This former tank area has been identified as a known release location (DOE 1992b).

3.2.2 Radiological Surveys

The following sections describe the radiological surveys conducted at Tank T-1. HPGe survey locations are shown on Plate 2 and HPGe results are presented in Appendix C. NaI survey locations and results are shown in Appendix D.

3.2.2.1 High-Purity Germanium Survey

Tank T-1 is within the radius of influence of one HPGe survey location, Station 8I-9. This station provided no evidence to indicate anomalous activities of K-40, Ra-226, Th-232, U-235, U-238, Cs-137, Am-241, or Pu-239/240.

3.2.2.2 Sodium Iodide Survey

Twelve locations around the area of the former tank location were surveyed on a 10-foot grid. Of these stations, five appear to have elevated activities statistically distinguishable above background levels. These locations are primarily on the east side of the former tank location. Activities around the tank ranged from 2,200 to 2,700 counts per minute (cpm) with a background of 2,465 cpm.

3.2.3 Borehole Investigations/Groundwater Sampling

Three boreholes were drilled around the former location of Tank T-1. Figure 3-1, Example 1 depicts the sampling rationale that was used for the borehole drilling conditions encountered at Tank T-1. Borehole BH_01095 was drilled upgradient of the former tank but within its original radius, BH_01195 in the center, and BH_01295 downgradient but

within the original radius. Borehole and groundwater sample locations are presented in Figure 3-2. Two soil samples were collected from directly above the groundwater table and from 1 foot below the base of the tanks (estimated at 12 feet below ground surface). Surface-soil samples were omitted because the area was backfilled with uncontaminated fill when the tank was removed in 1984. Groundwater samples were collected using a HydroPunch® sampler. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, volatiles, and Target Analyte List (TAL) metals. Water samples were analyzed for the same analytes as above in addition to water quality parameters, which include fluoride, nitrate, nitrite, sulfate, chloride, total organic carbon (TOC), pH, and specific conductivity. A summary of the analytical parameters for each medium are shown in Tables 2-1 through 2-4. Tables 3-9 and 3-10 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-3 displays sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

The sample range and interval varied, and a complete analytical suite was not always possible because of limited recovery in some boreholes. The following summarizes the borehole sampling investigations around the former location of Tank T-1:

Borehole 01095. This borehole was located on the west side (upgradient) of the former location of Tank T-1, approximately 7 feet northwest of the original location specified in the OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was initially encountered at 7.0 feet and the borehole was drilled to a depth of 14.0 feet. No bedrock was encountered in this borehole. Soil samples were collected above the groundwater table (6.0 to 6.7 feet), and below the base of the tank (12.0 to 13.8 feet). Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 3.2 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

No radionuclides or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 6.0 to 6.7 feet (BHG4900JE), or in the soil sample from 12.0 to 13.8 feet (BHG4901JE and BHG4902JE [duplicate]).

In the groundwater sample from this boring (GWG1702JE) the metals aluminum, arsenic, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, strontium, vanadium, and zinc and the radionuclides Am-241, and Pu-239/240 all exceeded background concentrations. In addition, the metals aluminum, antimony, arsenic, beryllium, manganese, and vanadium and the radionuclides Am-241, Pu-239/240 and Ra-226 exceeded their specific PRG. Only aluminum, arsenic, manganese, vanadium, Am-241, and Pu-239/240 exceeded both background and PRG concentrations.

Because this boring is located upgradient of the former location of Tank T-1, the contaminants detected in the groundwater sample may be attributable to other upgradient sources.

Borehole 01195. This borehole was located on the center portion of the former location of Tank T-1 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was initially encountered at 4.5 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected above the groundwater table (4.0 to 4.9 feet). Because of poor recovery and refusal, it was not possible to collect a sample at the base of the tank. Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 3.0 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 4.0 to 4.9 feet (BHG4906JE), the radionuclides Am-241 and Pu-239/240 were detected at levels exceeding background. No radionuclides or TAL metals were detected at levels exceeding PRGs.

detected at a concentration of 14 µg/kg (acetone was also detected in the blank), and methylene chloride was detected at a concentration of 2 µg/kg. All of these detected concentrations are well below the PRGs for these chemicals. In the soil sample collected from the 3.0-foot level in the excavation (BHG4914JE) no radionuclides or TAL metals were detected at levels exceeding background or PRGs.

A groundwater sample was not collected from this boring/excavation location.

The volatiles detected in BHG4904JE may be attributable to material contained in the PVC pipe that was breached by the drilling operations.

3.3 TANKS T-2 AND T-3

Tanks T-2 and T-3 are interconnected tanks located in the 400 area, along the south wall of Building 441 near its southwest corner (Figure 3-4). Tank T-3 refers to the 3,200-gallon carbon steel aboveground storage tank (AST) and an underlying 3,000-gallon concrete storage tank. T-2 is an underground concrete tank that partially underlies Building 441. However, the precise location of the underground tanks and the tank designation are not clear because the underground tanks could not be visually inspected because of the presence of water in the vaults, and the as-built drawings do not adequately describe the tanks (DOE 1969). The data reported herein assume that Tank T-3 is only the steel AST, and Tank T-2 refers to the underground concrete tank that has three concrete access chambers overlying the tank. The field inspection could not determine if the tank underlying these vaults extended under the T-3 AST nor could the field inspection assess the condition of the underground tank(s).

3.3.1 Historical Information

The T-2 and T-3 tanks were installed in 1952. The underground concrete tanks and the AST were then abandoned in June 1982 after reportedly being decontaminated, filled with

gravel, and covered with concrete (DOE 1969; Jacobs 1994). However, the reference to being filled with gravel probably refers only to the part of the T-2 tank that underlies the addition to Building 441, whereas the other part of the T-2 tank that is outside of the building probably remains intact. The as-built drawing for this tank indicates that a separate chamber to this tank lies entirely outside of the building foundation (DOE 1969). Further, no gravel was noted during the limited visual inspection of the T-2 tank underlying the three concrete access chambers. Information also indicates that a pipe directed effluent to this part of the tank so that the other parts could be filled with gravel upon construction of the structure addition to Building 441.

These tanks reportedly received waste streams from Building 122 (the Medical Facility), Building 123 (the Health Physics Analytical Laboratory), and Building 441 (the Analytical Laboratory) (Jacobs 1994). Waste streams included acids, bases, solvents, radionuclides, metals, thiocyanate, ethylene glycol, trace polychlorinated biphenyls (PCBs), bleach, soap, blood, and hydrogen peroxide. Tank T-3 reportedly last stored ammonia after storing several other wastes. This site has been identified as a known release location (DOE 1992b).

3.3.2 Radiological Surveys

The following sections describe the radiological surveys conducted at Tanks T-2 and T-3. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2. HPGe results are presented in Appendix C.

3.3.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Tanks T-2 and T-3 lie within the radius of one HPGe survey location, Station 8J-9. This station provided no evidence to indicate anomalous

activities of K-40, Ra-226, U-235, U-238, Cs-137, Am-241, or Pu-239/240. Only Th-232 was noted slightly above background activities at 1.38 (± 0.01 percent) pCi/g.

Sodium Iodide Survey. Seventeen locations around Tanks T-2 and T-3 were surveyed on a 10-foot grid. Of the 17 locations, six were slightly elevated and statistically distinguishable above background levels; these six are located randomly around the tanks. Activities around the tanks ranged from 2,100 to 2,600 cpm with backgrounds ranging from 2,200 to 2,400 cpm.

3.3.2.2 Tank Area Surveys

A radiological contamination survey was conducted on the exterior parts of the T-2 and T-3 tanks. Radionuclides are not historically associated with these tanks, although the data obtained from this investigation indicate otherwise. A direct radiological survey of the tank exterior surfaces indicated fixed and removable alpha activity less than 100 disintegrations per minute (dpm) per 100 square centimeters (cm^2) and beta activity less than 1,894 dpm/100 cm^2 (Appendix F, Field Monitoring/Survey Forms). Radiological smear samples collected from the tank exterior surfaces reported removable alpha contamination less than 20 dpm/100 cm^2 and beta contamination less than 200 dpm/100 cm^2.

Radiological smear samples were collected from the interior of the T-3 tank and are reported in Section 3.5.2.

3.3.3 Surface-Soil Investigations

Eleven surface-soil samples were originally intended for collection around Tanks T-2 and T-3; however, only nine were needed because of the site conditions and the concurrence

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of borehole locations within 1 to 2 feet of surface-soil locations. See Figure 3-4 for the locations of the surface-soil sampling sites.

The nine surface-soil samples were analyzed for gross alpha, gross beta, Am-241, Pu-239/240, U-233/234, U-235, U-238, TAL metals, Target Compound List (TCL) volatiles, TCL semivolatiles, pesticides, and PCBs. Concentrations detected above background are listed in Table 3-11 and shown in Figure 3-5.

Americium-241 activity was slightly elevated above background activity levels, but not above PRGs, in all but two of the nine surface-soil sample locations (SS000195 and SS000495). Plutonium-239/240 activity was slightly elevated above background activity levels, but not above PRGs, in all but one of the nine surface-soil sample locations (SS001095). Uranium-238 activity was detected in all nine of the surface-soil sample locations above the PRG but not above background.

Arsenic and beryllium were detected above their PRGs at all nine locations, but arsenic at Location SS000695 was the only detection above background. Several metals were detected only above background concentrations are listed in Table 3-11 and are shown in Figure 3-5.

TCL volatile analysis detected acetone above the Method Detection Limit (MDL) at four of the nine sample locations (SS000195, SS000295, SS000395, and SS000595), and methylene chloride above the MDL at one of the nine locations (SS000695). Neither volatile was detected at levels above the PRGs.

TCL semivolatile analysis revealed detections of multiple chemicals above the MDL (Table 3-11) at every surface-soil sample location. However, the following sample locations had detections above the PRG for the chemical listed: SS000195 and SS001095, benzo(a)pyrene; SS000295, SS000595, and SS000795, benzo(a)pyrene and

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dibenzo(a,h)anthracene; SS000395 and SS000895, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; and SS000495, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene.

At least one of the pesticide/PCB analytes was detected above the MDL at every sample location (Table 3-11). Aroclor-1254 was detected above its PRG (83.2 µg/kg) at locations SS000395, SS000695, SS000795, SS000895, and SS001095. A significant concentration (10,000 µg/kg) of aroclor-1254 was detected at Location SS000695. aroclor-1260 was detected above its PRG (83.2 µg/kg) at Location SS000195. Dieldrin was detected above its PRG (40 µg/kg) at Location SS000395.

3.3.4 Borehole Investigations/Groundwater Sampling

Five boreholes were drilled around Tanks T-2 and T-3. Borehole and groundwater sample locations are presented in Figure 3-4. Three soil samples were collected from the following locations: ground surface (before drilling), directly above the groundwater table (if groundwater was encountered), and 1 foot below the base of the tanks (estimated at 8.0 to 10.0 feet below ground surface). Groundwater samples were collected using a HydroPunch® sampler. Figure 3-1, Example 1 depicts the sampling rationale that was used for borehole drilling conditions encountered at Tanks T- 2 and T-3. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, pesticides, and PCBs. Water samples were analyzed for the same analytes as above in addition to water quality parameters that include fluoride, nitrate, nitrite, sulfate, chloride, TOC, pH, and specific conductivity. A summary of the analytical parameters for each medium is shown in Tables 2-1 through 2-4. Tables 3-12 and 3-13 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-5 displays sample results that exceed

established PRGs and background concentrations. Borehole logs are presented in Appendix B.

The sample range and interval varied, and a complete analytical suite was not always possible because of limited recovery in some boreholes. The following summarizes the borehole sampling investigations around Tanks T-2 and T-3.

Borehole 01395. This borehole was located adjacent to the northwest corner of Tanks T-2 and T-3 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 5.2 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (2.0 to 4.6 feet), and below the base of the tank (8.0 to 12.5 feet). Water samples were collected once groundwater was encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4858JE), Pu-239/240 activities were above background but below the PRG. No other radionuclides were detected above background. No TAL metals were detected at concentrations above background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. All organic compounds were considered to have a background level of zero. For pesticides/PCBs, aldrin and aroclor-1260 were detected but were not present at concentrations above PRGs.

In the soil sample from 2.0 to 4.6 feet (BHG4896JE), Pu-239/240 activities were above background but below the PRG. No other radionuclides were detected above background. None of the TAL metals were detected at concentrations above background or PRGs. Acetone was the only TCL volatile detected, but it was at a concentration well below the PRG. No TCL semivolatiles were detected. No pesticides/PCBs were detected.

In the soil sample from 8.0 to 12.5 feet (BHG4897JE), none of the radionuclide isotopes analyzed for were detected above background or PRGs. None of the TAL metals were detected at concentrations above background or PRGs. Acetone was the only TCL volatile detected, but it was at a concentration well below the PRG. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. No pesticides/PCBs were detected.

In the groundwater sample from this boring (GWG1696JE) all of the TAL metals and radionuclides except cesium, molybdenum, beryllium, and silver exceeded background concentrations (Table 3-13). In addition, the metals aluminum, arsenic, barium, beryllium, manganese, nickel, and vanadium and the radionuclides Pu-239/240, Ra-226, U-233/234, and U-238 exceeded their specific PRG. Aluminum, arsenic, barium, manganese, nickel, vanadium, Pu-239/240, Ra-226, U-233/234, and U-238 exceeded both background and PRG concentrations. The TCL volatiles 1,2-dichloropropane, tetrachloroethene (PCE), and trichloroethene (TCE) were detected, but only PCE was present in a concentration above its PRG. TCL semivolatiles analytical results had not been received from RFEDS at the time this report was prepared. The only pesticide/PCB detected was delta-BHC at a concentration of 0.11 micrograms per liter (µg/L). A PRG has not been developed for this compound.

Even though this boring is located immediately upgradient of Tank T-2, the contaminants detected in both the soil and the groundwater indicate that the waste streams associated with this tank may have impacted the surrounding soil and groundwater. The radionuclide analysis indicates that radiological contamination may also be present at this location.

Borehole 01495. This borehole was located adjacent to the southwest corner of Tanks T-2 and T-3 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 3.5 feet and the borehole was drilled to a depth of 15.0 feet. Soil samples were collected at the ground surface (0.0 to 6.0 inches), above/at the

groundwater table (2.0 to 4.7 feet), and below the base of the tank (12.0 to 12.6 feet). Water samples were collected once groundwater was encountered. Because of poor recovery from 8.0 to 15.0 feet it was not possible to collect a complete analytical suite below the base of the tank. The volatile, semivolatile, and PCB/pesticide samples were omitted from this location. Recovery was sufficient to collect a complete analytical suite for the remainder of the samples.

In the soil sample from 0.0 to 6.0 inches (BHG4859JE), Pu-239/240 activities were above background but below the PRG. No other radionuclides were detected above background. Of the TAL metals, only lead was detected at a concentration greater than background. No metals were detected at concentrations above PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. For pesticides/PCBs, aroclor-1254 was detected but at a concentration significantly below the PRG.

In the soil sample from 2.0 to 4.7 feet (BHG4893JE), none of the radionuclides analyzed for were detected above background or the PRGs. None of the TAL metals were detected at concentrations above background or PRGs. Of the TCL volatiles, 2-hexanone, acetone, and methylene chloride were detected. Acetone and methylene chloride concentrations did not exceed the PRG, and 2-hexanone was detected at a concentration of 2 µg/kg. A PRG has not been established for this chemical. No TCL semivolatiles were detected. No pesticides/PCBs were detected.

In the soil sample from 12.0 to 12.6 feet (BHG4894JE), none of the radionuclides analyzed for were detected above background or PRGs. No TAL metals were detected at concentrations above background or PRGs.

In the groundwater sample from this boring (GWG1700JE) Am-241, U-233/234, and U-238 activities exceeded background, and U-238 activities also exceeded the PRG (Table

3-13). Of the TAL metals, aluminum, barium, lead, potassium, sodium, and strontium exceeded background concentrations. Beryllium exceeded the PRG but not background. Arsenic and manganese exceeded both background and PRGs. The TCL volatiles 1,2-dichloropropane was not detected in this sample, but in the duplicate sample the result exceeded the PRG. Acetone was detected but did not exceed the PRG. Methylene chloride was detected but it was also present in the laboratory blank. TCL semivolatiles analytical results had not been received from RFEDS at the time this report was prepared. Pesticides and PCBs were not detected.

The groundwater radionuclide analyses indicate that radiological contamination may be present at this location. Therefore, the contaminants detected in the groundwater sample may be attributable to other upgradient sources.

Borehole 01595. This borehole was located adjacent to the south side of Building 441 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 4.4 feet and the borehole was drilled to a depth of 13.0 feet. Soil samples were collected at the ground surface (0.0 to 6.0 inches), above the groundwater table (2.0 to 4.6 feet), and below the base of the tank (12.0 to 12.2 feet). Water samples were collected once groundwater was encountered. Because of poor recovery from 8.0 to 13.0 feet, it was not possible to collect a complete soil analytical suite below the base of the tank. There was enough recovery to collect only a volatile sample at the 8.0- to 13.0-foot interval. In addition, the water table yielded only enough recovery to collect a volatile sample. Recovery was sufficient to collect a complete analytical suite for the remainder of the samples.

In the soil sample from 0.0 to 6.0 inches (BHG4860JE), Am-241 and Pu-239/240 activities were above background but below the PRG. No other radionuclides were detected above background. A significant detection of lead (204 milligrams per kilogram [mg/kg]) was the only TAL metal detected at a concentration greater than background.

No metals were detected at concentrations above PRGs (a PRG for lead has not been established). The TCL volatiles 2-butanone, acetone, carbon disulfide, and methylene chloride were detected, but at concentrations well below PRGs. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. No pesticides or PCBs were detected.

In the soil sample from 2.0 to 4.6 feet (BHG4887JE), none of the radionuclides analyzed for were detected above background or the PRGs. None of the TAL metals were detected at concentrations above background or PRGs. Of the TCL volatiles, toluene was detected but was well below the PRG. Several TCL semivolatiles were detected, but none exceeded their PRG. No pesticides or PCBs were detected.

For the soil sample from 12.0 to 12.2 feet (BHG4889JE) there was only enough recovery for a TCL volatiles sample. In that sample, 2-butanone, ethylbenzene, styrene, PCE, toluene, and total xylenes were detected. None of the concentrations for these chemicals exceeded their PRGs; however styrene and total xylenes do not have an established PRG.

In the groundwater sample from this boring (GWG1698JE) the TCL volatiles 1,2-dichloroethene and acetone were detected (Table 3-13). The detected concentration of 1,2-dichloroethene was 1 µg/L. A PRG has not been established for this volatile. Acetone was detected at a concentration of 35 µg/L, which is two orders of magnitude below the PRG. Radionuclides, TAL metals, TCL semivolatiles, and pesticides or PCB analyses were not run on this sample because of insufficient recovery.

Borehole 01695: This borehole was located adjacent to the east side of Building 441 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 4.0 feet and the borehole was drilled to a depth of 13.0 feet. Soil samples were collected at the ground surface (0.0 to 6.0 inches), and above the groundwater table (2.0 to 2.8 feet). Water samples were collected once groundwater was encountered.

Because of poor recovery from 8.0 to 13.0 feet, it was not possible to collect a soil sample below the base of the tank. Recovery was sufficient to collect a complete analytical suite for the remainder of the samples.

In the soil sample from 0.0 to 6.0 inches (BHG4857JE), Pu-239/240 and U-238 activities were above background but below the PRG. No other radionuclides were detected above background. The TAL metal lead was detected at a concentration slightly greater than background. A PRG for lead has not been established. No other metals were detected at concentrations above background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. The pesticides and PCBs dieldrin and aroclor-1254 were detected, but both were below their respective PRGs.

In the soil sample from 2.0 to 2.8 feet (BHG4890JE), none of the radionuclides analyzed for were detected above background or the PRGs. None of the TAL metals were detected at concentrations above background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected, but none exceeded their PRG. The pesticide endrin ketone was detected at a concentration of 62 µg/kg; however, a PRG for this chemical has not been established.

In the groundwater sample from this boring (GWG1699JE) every radionuclide analyzed for had detectable activity above its respective background value (Table 3-13). In addition, Am-241, Ra-226, U-233/234, and U-238 activities exceeded their PRG values. Every TAL metal except antimony, beryllium, cadmium, calcium, cesium, molybdenum, silicon, silver, and tin exceeded its background concentration. Antimony and beryllium exceeded their PRGs, but not their background values. Aluminum, arsenic, manganese, mercury, and vanadium exceeded both their background and PRG values. The TCL volatiles 1,1,1-trichloroethane, 1,2-dichloropropane, acetone, chloromethane, and PCE were detected. The detected concentration of 1,1,1-trichloroethane was 1 µg/L. A PRG

has not been established for this volatile. Also, the volatile 1,2-dichloropropane was detected at a concentration of 3 µg/L, which is greater than its PRG. The TCL semivolatile bis(2-ethylhexyl)phthalate was detected at a concentration of 4 µg/L, but this chemical was also detected in the blank. Aroclor-1254 was the only PCB detected, at a concentration of 9.8 µg/L, which exceeded its PRG.

Although the soil at this location does not appear to have been significantly impacted by the waste streams contained in Tanks T-2 and T-3, the groundwater analyses indicate that contaminants from these tanks may have impacted the groundwater. Additionally, the radionuclide analyses indicate that radiological contamination may be present in the groundwater at this location.

Borehole 01795. This borehole was located adjacent to the northeast corner of Building 441 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 4.0 feet and the borehole was drilled to a depth of 12.0 feet. Soil samples were collected at the ground surface (0.0 to 6.0 inches), above or at the groundwater table (2.6 to 4.8 feet), and below the base of the tank (8.0 to 10.6 feet). Water samples were collected once groundwater was encountered. Because of poor recovery from 2.0 to 5.0 feet, it was not possible to collect a complete soil analytical suite above the water table. There was enough recovery to collect only a radionuclide and volatile sample at the 2.0- to 5.0-foot interval. Recovery was sufficient to collect a complete analytical suite for the remainder of the samples.

In the soil sample from 0.0 to 6.0 inches (BHG4856JE), Pu-239/240 activities were detected above background but below the PRG. No other radionuclides were detected above background. The TAL metal lead was detected at a concentration slightly greater than background. A PRG for lead has not been established. No other metals were detected at concentrations above background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-12) but none were above PRGs. The

pesticide dieldrin and PCB aroclor-1260 were detected, but both were below their respective PRGs.

In the soil sample from 2.6 to 4.8 feet (BHG4884JE), none of the radionuclides analyzed for were detected above background or exceeded the PRGs. The TCL volatile acetone was detected, but did not exceed the PRG. However, acetone was also detected in the blank. Insufficient sample recovery did not allow TAL metals, TCL semivolatiles, or pesticide/PCB analyses.

In the soil sample from 8.0 to 10.6 feet (BHG4886JE), there were no radionuclide activities detected above background or PRGs. No TAL metals were detected above background or PRGs. The TCL volatiles 2-butanone and acetone were detected, but did not exceed their PRG values. Six TCL semivolatiles were detected (Table 3-12) but none were above PRGs. The PCB aroclor-1254 was detected, but did not exceed its PRG.

In the groundwater sample from this boring (GWG1697JE) every radionuclide analyzed for had detectable activity above its respective background value (Table 3-13). In addition, Am-241, Ra-226, U-233/234, and U-238 activities exceeded their PRG values. Every TAL metal except antimony, beryllium, cadmium, calcium, cesium, molybdenum, silicon, silver, and tin exceeded its background concentration. Beryllium exceeded its PRG but not its background value. Aluminum, arsenic, manganese, and vanadium exceeded both their background and PRG values. The TCL volatiles 1,2-dichloroethene, acetone, and PCE were detected. The detected concentration of 1,2-dichloroethene was 2 µg/L. A PRG has not been established for this volatile. Acetone and PCE detections did not exceed their PRGs. Several TCL semivolatiles were detected (Table 3-13) but only benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene were detected above the PRGs. Aroclor-1254 was the only PCB detected, at a concentration of 3 µg/L, which exceeded its PRG.

Although the soil at this location does not appear to have been significantly impacted by the waste streams contained in Tanks T-2 and T-3, the groundwater analyses indicate that contaminants from these tanks may have impacted the groundwater. Additionally, the radionuclide analyses indicate that radiological contamination may be present in the groundwater at this location.

3.3.5 Tank Characterization

Characterization of the T-2 and T-3 tanks began with a visual inspection of the tanks and the surrounding area. No soil staining or stressed vegetation was noted in the area. The foundation to the T-3 tank (a carbon steel AST) was composed of wooden framing on which the tank rested; the foundation framing was filled to a depth of roughly 12 inches with 1-inch gravel. No staining was noted on this gravel.

Tank T-3 was observed to be in satisfactory condition. Its paint was largely intact and the interior of the tank had no residue but did have some limited surface oxidation. The pipes connected to T-3 were in satisfactory condition, but no test was possible to determine tightness. No staining was observed at the pipe connections. The tank reportedly had stored ammonia, but no ammonia odor was detected upon opening the tank ports and no organic vapors were detected.

Visual inspection of the underground portion of the tanks was limited because no entry was made into the T-2 vault. However, it was apparent that an underground tank was located under the T-2 vault chambers, although the lateral or vertical extent of the underground tank could not be determined. A manhole at the base of the southernmost chamber of the T-2 vault and the northernmost chamber both led into the underlying tank, but the base of the underlying tank could not be viewed because of poor lighting and the liquid that filled the tank. The middle chamber of the T-2 vault did not appear to have any

opening to the underlying tank, but it was connected to the north and south T-2 vault chambers.

Approximately 6 inches of a clear liquid was found in the base of the southernmost and northernmost chambers of the T-2 vault, and this liquid presumably completely submerged the underlying T-2 tank. The middle vault chamber, however, had about three feet of a clear liquid that also had some rust-colored, fine, unconsolidated sediment at the bottom. The middle T-2 vault did not seem to have any opening to the underlying tank.

The bottom drain valve from the T-3 tank exited into the southernmost chamber of the T-2 vault. A port at the top of the T-3 tank also led into this chamber. An overflow pipe from the north end of T-3 emptied into the northernmost chamber of the T-2 vault. Two pumps were also located on top of the north end of the underground T-2 vault with shafts extending through the vault into the underlying tank.

3.3.5.1 Tank T-2

A disposable bailer was used to collect the liquid sample from the middle vault of Tank T-2. The rust-colored, fine, unconsolidated sediment in this chamber quickly went into suspension when the liquid was disturbed. Therefore, no effort was made to isolate the liquid mixed with the sediment from the clear liquid. These aqueous phase samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, water quality parameters including fluoride, nitrate, nitrite, sulfate, and chloride, TOC, pH, specific conductivity, TCL volatiles, TCL semivolatiles, pesticides, and PCBs.

Both the southernmost and northernmost chamber of the T-2 vault were sampled using a Teflon® dipper. The dipper was extended to about 10 feet and used to reach through the manholes in these chambers in an attempt to reach the bottom of the underlying tank.

However, the bottom could not be determined because the chambers were themselves about 6 feet deep and the tank is about another 8 feet deep (DOE 1969).

No organic vapors were detected during the sampling event (Appendix F, Field Monitoring Results).

Table 3-14 lists detected constituents, reported concentrations, and sample locations for liquid and smear samples taken from Tanks T-2 and T-3.

Analytical results collected with a disposable bailer from the middle vault of Tank T-2 (TNG0003JE) indicate that the aqueous sample contained aroclor-1254 at a concentration of 250 µg/L. Results for radionuclides, TAL metals, TCL volatiles, TCL semivolatiles, pesticide/PCB, and water quality parameters had not been received from RFEDS at the time this report was prepared.

Analytical results collected with a Teflon® dipper from the southernmost chamber of the Tank T-2 vault (TNG0004JE) indicate that every radionuclide analyzed for had a positive activity, with gross alpha, gross beta, U-233/234, U-235, and U-238 having moderate to high activities. All of the TAL metals analyzed for were detected, except for antimony, cadmium, chromium, cobalt, selenium, tin, and vanadium. Most of the detections indicate trace concentrations except for magnesium, potassium, and sodium, which appear to be slightly elevated. The following TCL volatiles were detected: 1,2-dichloropropane (5 µg/L), chloroform (13 µg/L), PCE (17 µg/L), and TCE (9 µg/L). TCL semivolatile results had not been received from RFEDS at the time this report was prepared. No pesticides or PCBs were detected.

Analytical results collected with a Teflon® dipper from the northernmost chamber of the Tank T-2 vault (TNG0005JE) indicate that every radionuclide analyzed for had a positive activity, with gross alpha and gross beta having moderate to high activities. All of the TAL

metals analyzed for were detected, except for antimony, arsenic, cadmium, cobalt, selenium, and tin. Most of the detections indicate trace concentrations except for lead, magnesium, potassium, and sodium, which appear to be slightly elevated. The following TCL volatiles were detected: 1,2-dichloropropane (5 µg/L), acetone (8 µg/L), chloroform (13 µg/L), PCE (17 µg/L), and TCE (8 µg/L). TCL semivolatile results had not been received from RFEDS at the time this report was prepared. No pesticides or PCBs were detected.

3.3.5.2 Tank T-3

Tank T-3 did not have any residue to be sampled, but some limited surface oxidation was apparent within the AST. The surface oxidation was not sufficient to scrape to obtain any significant sample quantity. Therefore, radiological smear samples were collected to assess the removable radiological contamination. Samples were collected through the three ports on top of the AST by affixing smears to the end of an extension pole and firmly rubbing the smear on the tank surface. Samples were collected at the following locations within Tank T-3:

- at the base of the interior of the AST near the southernmost end by the drain valve;
- on the side of the interior of the AST near the southernmost end by the drain valve;
- at the base of the interior of the AST near the northernmost end; and
- on the side of the interior of the AST near the northernmost end.

All of the smear samples indicated removable radiological alpha contamination less than 20 dpm/100 cm^2 and beta contamination less than 200 dpm/100 cm^2 (Table 3-14 and Appendix F).

No organic vapor was detected during the sampling event (Appendix E). The tank had reportedly stored ammonia before being closed, but no ammonia was detected by colorimetric tubes during the sampling event.

Significant surface and subsurface contamination has been found during this Stage 1 investigation for the T-2 and T-3 tank group. Groundwater analytical results indicate the presence of TAL metals, TCL semivolatiles, TCL volatiles, PCBs, pesticides, and radionuclides. These tanks should be considered for an accelerated action.

3.4 TANK T-7

Tank T-7 is located in the 500 Area within Building 528, which is referred to as the Building 559 Process Waste Pit. This tank is located approximately 30 feet southeast of Building 559. Tank T-7 is composed of two 2,000-gallon, in-sump steel tanks within an underground concrete vault (Figure 3-6).

3.4.1 Historical Information

Tank T-7 was reportedly installed in 1969 and received waste streams from Building 559, the Analytical Laboratory, including acids, bases, solvents, radionuclides, metals, pesticides, herbicides, and possibly PCBs. The tanks were used as 90-day transuranic waste tanks, according to Building 559 personnel. This tank has been identified as a known release location at its connection with Pipe P-16 (DOE 1992b). The tanks were undergoing operational decontamination to be used to drain building sinks at the time of the field investigation (Jacobs 1994).

In the groundwater sample from this boring (GWG1704JE) the metals aluminum, arsenic, lead, manganese, and potassium and the radionuclides gross alpha, gross beta, Am-241, Pu-239/240, Ra-226, U-233/234, U-235, and U-238 all exceeded background concentrations. In addition, the metals arsenic, beryllium, and manganese and the radionuclides Am-241, Pu-239/240, Ra-226, U-233/234, and U-238 exceeded their specific PRG. Arsenic, manganese, Am-241, Pu-239/240, Ra-226, U-233/234, and U-238 exceeded both background and PRG concentrations. TOC was detected at a concentration of 6.07 milligrams per liter (mg/L). A background or PRG concentration for TOC has not been established.

Because the waste streams held in Tank T-1 included trace radionuclides, the radionuclides detected in soil and groundwater samples from this boring may be indicative of contamination from the tank.

Borehole 01295. This borehole was located adjacent to the east side, downgradient of the former location of Tank T-1, as specified in OU9 Technical Memorandum 1 (DOE 1994a). The borehole was drilled to a depth of 7.0 feet. Drilling operations were stopped at 7 feet when visible vapors were noted coming out of the borehole (photoionization detector [PID] reading of 400 parts per million [ppm]). It was determined at a later date that while drilling, the augers breached a portion of a polyvinyl chloride (PVC) pipe secondary containment of a process waste line, even though utility clearance for the borehole location had been obtained. This borehole location was abandoned and RFETS personnel excavated the site to conduct repairs to the process waste line secondary containment. For characterization purposes, a radionuclide and TAL metals sample was collected from 4.5 to 4.8 feet in the initial boring and a volatiles sample was collected from the excavation at the 3.0-foot level.

In the soil sample collected from 4.5 to 4.8 feet in the boring (BHG4904JE), 2-butanone was detected at a concentration of 4 micrograms per kilogram (µg/kg), acetone was

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3.4.2 Radiological Surveys

The following sections describe the radiological surveys performed around Tank T-7. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C. NaI survey locations and results are shown in Appendix D.

3.4.2.1 High-Purity Germanium Survey

Tank T-7 lies within the radii of two HPGe survey locations, 9D-9 and 9E-9. These stations provided no evidence to indicate anomalous activities for K-40, Ra-226, U-235, U-238, or Cs-137. However, Am-241 was elevated above background activities with specific activities of 11.5 (± 0.1 percent) and 31.1 (± 0.1 percent) pCi/g at 9D-9 and 9E-9, respectively. In addition, Pu-239/240 was noted above background activities with 4.3 (± 0.14 percent) nCi/g at 9D-9 and 4.2 (± 0.14 percent) nCi/g at 9E-9. It should also be noted that HPGe data analysis in this area indicates that both Am-241 and Pu-239 levels increase as they get closer to Building 569. Therefore, the increased activities around Tank T-7 are probably due to shine from Building 569, which is located about 200 feet south of Tank T-7.

In addition, the Th-232 activity at location 9D-9 was noted to have an above-background activity of 1.45 (± 0.5 percent) pCi/g.

3.4.2.2 Sodium Iodide Survey

Thirty locations around Tank T-7 were surveyed on a 10-foot grid. Only three locations were statistically distinguishable above background levels—one location on the northwest side and two locations adjacent to one another on the south side of the tank. Activities around the tank ranged from 1,500 to 2,500 cpm with background readings in the same range.

3.4.3 Borehole Investigations/Groundwater Sampling

Three of four boreholes were drilled around Tank T-7. Borehole 02195, located adjacent to the southeast corner of Tank T-7, was abandoned because of interference from underground utilities. Borehole and groundwater sampling locations are presented in Figure 3-6. Three soil samples were collected from the following locations: ground surface (before drilling), directly above the groundwater table (if groundwater was encountered), and 1 foot below the base of the tank (estimated at 22.0 to 25.0 feet below ground surface) or above bedrock, whichever came first. Groundwater was sampled with a HydroPunch® sampler. Figure 3-2, Example 1 depicts the sampling rationale that was used for the borehole drilling conditions encountered at Tank T-7. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, pesticides and PCBs, chlorinated herbicides, and hexavalent chromium. Water samples were analyzed for the same analytes as above with additional water quality parameters that include fluoride, nitrate, nitrite, sulfate, chloride, TOC, pH, and specific conductivity. A summary of the analytical parameters for each medium is shown in Tables 2-1 through 2-4. Tables 3-15 and 3-16 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-7 displays borehole and groundwater sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery in some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 01895. This borehole was located adjacent to the northwest corner of Tank T-7 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Borehole 01895 was

moved approximately 3 feet to the west to avoid underground utilities. Groundwater was initially encountered at 16.8 feet, bedrock at 20.5 feet, and the borehole was drilled to a depth of 23.5 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (15.5 to 16.8 feet), and above bedrock (19.5 to 20.7 feet). Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 11.5 feet. Recovery was sufficient to collect a complete analytical suite for each soil sample collected.

No radionuclides, organics, or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 15.5 to 16.8 feet (BHG4998JE), or in the soil sample from 19.5 to 20.7 feet (BHG4999JE).

In the soil sample from 0.0 to 0.5 feet (BHG4997JE) Pu-239/240 exceeded background but was significantly lower than the PRG.

In the groundwater sample from this boring (GWG1726JE) the metals arsenic, barium, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, strontium, and zinc all exceeded background concentrations (Table 3-16). In addition, the metals antimony, arsenic, barium, beryllium, manganese, and vanadium exceeded their specific PRGs. Only arsenic, barium, manganese, and vanadium exceeded both background and PRG concentrations.

For radionuclides, both gross alpha and gross beta were found in concentrations above background in the groundwater sample. Uranium-235 was found above background, and U-233/234 and U-238 were found in concentrations above both background and their specific PRGs.

Four volatile analytes were found in concentrations above PRG in the groundwater sample, including 1,1-DCE, chloromethane, PCE, and TCE. 1,1,1-TCA and 1,2-DCE both showed positive results, but there are no PRGs for these compounds.

Borehole 01995. This borehole was located approximately 15 feet south of the center of Tank T-7 approximately, 17 feet southeast of the original location specified in OU9 Technical Memorandum 1 (DOE 1994a). Borehole BH_01995 was offset because of abundant underground utilities located in the vicinity of the southwest corner of Tank T-7. Groundwater was initially encountered at 15.5 feet, bedrock at 18.2 feet, and the borehole was drilled to a depth of 24.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (13.0 to 14.0 feet), and within the bedrock/alluvial contact (18.0 to 20.5 feet). Because of poor recovery, it was not possible to collect a sample above bedrock so a sample was collected within bedrock. Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 10.3 feet because of hydrostatic pressure. Recovery was sufficient to collect a complete analytical suite for each soil sample collected, but only volatiles were analyzed for on the groundwater sample because of excessive fines that prohibited sufficient recovery.

No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 13.0 to 14.0 feet (BHG5016JE), or in the soil sample from 18.0 to 20.5 feet (BHG5017JE). No organics or radionuclides were detected at levels exceeding background or PRGs in the soil samples from 0.0 to 0.5 feet (BHG5014JE and BHG5015JE [duplicate]). Cadmium was found in concentrations greater than background, but below its PRG in the duplicate sample.

Groundwater sampling for this borehole was limited to one volatile sample taken at 10.2 feet (GWG1731JE). The volatile sample showed five analytes with concentrations

elevated above their PRGs. These were 1,2-dichloropropane, chloroform, chloromethane, methylene chloride, and PCE.

Borehole 02095. This borehole was located adjacent to the northeast corner of Tank T-7 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was initially encountered at 24.5 feet, bedrock at 24.0 feet, and the borehole was drilled to a depth of 26.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (18.3 to 22.3 feet), and within bedrock/alluvial contact (24.0 to 25.0 feet). Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 21.0 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

Four borehole sample suites were taken at BH_02095. Two were analyzed for TCL semivolatiles and all were analyzed for TAL metals, radionuclides, and TCL volatiles. No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in any of the soil. Carbon tetrachloride was detected in concentrations below its PRG in the soil samples from 0.0 to 0.5 feet (BHG5000JE and BHG5001JE [duplicate]) and in the soil sample from 18.3 to 22.3 feet (BHG5002JE).

In the groundwater sample for this boring (GWG1727JE) the semivolatile bis(2-ethylhexyl)phthalate and the metal beryllium were detected in concentrations greater than their specific PRGs. These results were not confirmed by the duplicated sample (GWG1728JE).

The metals arsenic, strontium, manganese, sodium, and zinc and the radionuclides U-233/234 and U-238 all exceeded background concentrations in the groundwater sample. In addition, arsenic and manganese exceeded both background and PRG concentrations. Arsenic exceeding background concentration was not confirmed in the duplicate sample.

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Borehole 02195. This borehole was located on the southeast corner of Tank T-7. It was abandoned because of the presence of numerous underground utilities. This borehole also could not be offset or relocated because of utilities.

3.5 TANK T-8

Tank T-8 is located in the 700 Area within Building 728, which is referred to as the Building 771 Process Waste Pit. It is located approximately 30 feet north of Building 771. Tank T-8 consists of two 25,000-gallon underground concrete tanks, one being located west of the other (Figure 3-8). For clarity, these two tanks have been designated as T-8 (west) and T-8 (east).

3.5.1 Historical Information

These two tanks were installed in 1952 and were reportedly taken out of service in May of 1984, cleaned, painted, and converted to plenum deluge catch tanks for fire-water from Building 771. The tanks originally received waste streams from Building 771, the Plutonium and Uranium Recovery Building, including radionuclides, acids, bases, solvents, metals, fuel oil, lubricating oil, PCBs, and photography laboratory wastes (Jacobs 1994).

The T-8 tanks reportedly fill with groundwater periodically, and surface water also reportedly runs into Building 728 during periods of high runoff (Jacobs 1994).

3.5.2 Radiological Surveys

The following is a summary of the in situ radiological surveys performed around Tank T-8. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C.

3.5.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Two HPGe survey sites were located within the vicinity of Tank T-8, Stations 7F-8 and 7FB-8. Surveys at these HPGe stations were conducted for OU8, but T-8 was within the range of influence. The HPGe survey data provided no evidence to indicate anomalous activities for Ra-226, U-235, U-238, Cs-137, Am-241, or Pu-239/240. Nonetheless, at Station 7F-8, K-40 (23.7 [± 0.1 percent] pCi/g) and Th-232 (1.66 [± 0.01 percent] pCi/g) were statistically elevated above background levels. At Station 7FB-8, only Th-232 at 1.55 (± 0.01 percent) pCi/g was in excess of background activities.

Sodium Iodide Survey. Thirty-five locations were surveyed around Tank T-8. Seven of the 35 NaI survey locations were statistically distinguishable above background levels; these locations are located primarily along the north-south axis near the center of the tank. Activities around the tank ranged from 2,100 to 3,000 cpm with background levels in the same range.

3.5.2.2 Tank Area Surveys

Radiological contamination surveys were conducted both before entering the Building 728 vault to collect samples from the underlying tanks and upon completion of all tank sampling (Appendix F). Direct surveys of the surfaces within the vault were conducted to detect fixed and removable alpha and beta contamination. All fixed and removable alpha contamination was below 100 dpm/100 cm^2 and beta contamination was below 1,894 dpm/100 cm^2. Smear surveys within the vault were conducted to detect removable alpha and beta contamination. All removable alpha contamination was below 20 dpm/100 cm^2 and all beta contamination was below 200 dpm/100 cm^2.

3.5.3 Borehole Investigations

Two of four boreholes were drilled around Tank T-8. Boreholes BH_02395 and BH_02495, located on the south side of Tank T-8, were abandoned because of interference by utilities. Locations for all boreholes that were drilled are presented in Figure 3-8. Three soil samples were collected from the following locations: ground surface (before drilling), above the bedrock/alluvial contact, and 1 foot below the bedrock/alluvial contact. Tank T-8 appeared to be keyed into bedrock. No water samples were collected because groundwater was not encountered. Figure 3-1, Example 1 depicts the sampling rationale for borehole drilling at Tank T-8. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, pesticides, PCBs, tantalum, and hexavalent chromium. A summary of the analytical parameters for each medium is shown in Tables 2-1 through 2-4. Tables 3-17 and 3-18 list detected constituents, reported concentrations, and sample locations for the borehole and tank liquid samples, respectively. Complete analytical results are included in Appendix E. Figure 3-9 displays sample results that exceed established PRGs and background concentrations for borehole samples. Borehole logs are presented in Appendix B.

Because of limited recovery on some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 02295. This borehole was located adjacent to the northwest corner of Tank T-8 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 20.4 feet and the borehole was drilled to a depth of 24.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (16.0 to 17.1 feet), and below the base of the tank, which coincides with the bedrock/alluvial

contact (20.0 to 22.4 feet). Groundwater was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

No radionuclides, TAL metals, TCL volatiles, or TCL semivolatiles were detected at levels exceeding background or PRGs in the soil samples from 0.0 to 0.5 feet (BHG4986JE or BHG4992JE [duplicate]), 16.0 to 17.1 feet (BHG4987JE), or 20.0 to 22.4 feet (BHG4988JE).

Borehole 02395. This borehole was located adjacent to the southwest corner of Tank T-8. This borehole was abandoned because of utilities found on the southern portion of Tank T-8.

Borehole 02495. This borehole was located adjacent to the southeast corner of Tank T-8. This borehole was abandoned because of utilities found on the southern portion of Tank T-8.

Borehole 02595. This borehole was located adjacent to the east side of Tank T-8 approximately 10 feet south of the original location specified in OU9 Technical Memorandum 1 (DOE 1994a), but was offset because of overhead utilities. Bedrock was encountered at 16.0 feet and the borehole was drilled to a depth of 24.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (14.0 to 15.1 feet), and below the bedrock/alluvial contact (16.0 to 19.0 feet). Groundwater was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 14.0 to 15.1 feet (BHG4990JE), the radionuclide Am-241 was detected at levels exceeding background (Table 3-17). No radionuclides, TCL semivolatiles, or TAL metals were detected at levels exceeding PRGs.

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3.5.4 Tank Characterization

During the visual inspection of the T-8 vault, it appeared that the original plumbing and pumps still exist. The two T-8 tanks appeared to be identical and to have similar piping. However, a pipe to the T-8 (west) tank that apparently had originally branched to the pump was disconnected and open to the atmosphere. A similar pipe from the T-8 (east) tank was still connected. Nothing in the vault was locked or tagged out.

The T-8 (east) tank had an estimated 2.5 feet of a clear liquid. No sludge was noted in the bottom of the tank, although some thin, green-colored material, with an appearance similar to algae, coated the tank base. It was noted that the ladder-rungs in the tank were severely rusted.

The T-8 (west) tank contained an estimated 6 feet of clear liquid. As in the T-8 (east) tank, no sludge was noted other than a thin coating of a green-colored material resembling algae.

Liquid level staining marks were observed in both tanks at various levels from the current water level to the top of the tanks. A steel pipe, approximately 4 inches in diameter, enters each tank through the south wall at a level approximately 18 inches below the top of the tank and appears to be directed toward Building 771. Another similar pipe entered each tank about 18 inches to the side and below the other pipe, and exits the tank to the pumps. A smaller steel pipe, about 2 inches in diameter, was observed in the tank to the west of the manholes, but the destination of the pipes could not be determined. Some piping leading from the pumps was labeled "Process Waste to 774 or Pond."

A peristaltic pump was used to collect the liquid sample from the T-8 (east) tank whereas a disposable bailer was used to collect the liquid sample from the T-8 (west) tank. The peristaltic pump prevented spilling of the liquid during sample collection, but the pump

required much time to collect the necessary volume. Therefore, a pigpen was constructed around the T-8 (west) tank to contain any liquid incidentally spilled from the disposable bailer used to collect the sample.

These aqueous phase samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, hexavalent chromium, water quality parameters including TOC, pH, and specific conductivity, TCL volatiles, TCL semivolatiles, pesticides, and PCBs.

Analytical results from the west tank (TNG0015JE) indicate the aqueous samples contained traces of the TAL metals molybdenum, silicon, strontium, tin, aluminum, barium, calcium, copper, magnesium, manganese, nickel, potassium sodium, and zinc (Table 3-18). Radionuclides detected were Am-241, gross alpha and beta, Pu-239/240, tritium, U-233/234, U-235, and U-238.

Analytical results from the aqueous samples from the east tank (TNG0016JE) indicate the presence of the same metals as the west tank with the exception that tin, manganese, nickel, and zinc were not detected in the east tank. Mercury was detected in the east tank but not in the west tank. Radionuclide analyses indicate the presence of the same compounds except that Ra-226 was present in the east tank but not in the west. Acetone was also present in the east tank but not in the west.

No organic vapors were detected with field instruments before or during the sampling events. Colorimetric tubes failed to indicate any carbon tetrachloride present in either T-8 tank (Appendix F).

3.6 TANKS T-9 AND T-10

Tanks T-9 and T-10 are located in the 700 Area within Building 730, which is referred to as the Building 776 Process Waste Pit (Figure 3-10). These tanks are approximately 50

feet north of Building 776 and about 30 feet east of Building 701. Tank T-9 consists of two 22,500-gallon underground concrete tanks oriented east/west and therefore will be referred to as T-9 (east) and T-9 (west). Tank T-10 consists of two 4,500-gallon concrete underground tanks oriented east/west and therefore will be referred to as T-10 (east) and T-10 (west).

3.6.1 Historical Information

The T-9 tanks were installed in 1955 and were taken out of service in October 1984 at which time both chambers were cleaned, painted, and converted to plenum deluge catch tanks. These tanks originally received laundry waste from Building 778 (Jacobs 1994).

The T-10 tanks were installed in 1955 and were abandoned in December 1982; however, these tanks reportedly were not cleaned upon being abandoned. Tanks T-10 received waste streams from Building 776, Production Support, and Building 778, the Laundry (Jacobs 1994).

Waste streams for both sets of tanks include radionuclides, solvents, metals, and limited amounts of machinery and lubricating oils. Documented releases from Tanks T-9 and T-10 were not found, but releases from the tanks are considered likely because of the condition of the tanks (Jacobs 1994).

Furthermore, numerous releases have been documented from a previously removed underground storage tank adjacent to Building 730 (Tanks T-9 and T-10) that contained solvents such as carbon tetrachloride and possibly PCE. This tank was reportedly located approximately 10 feet west of the exposed portion of the Building 730 pump house and was buried approximately 9.0 to 10.0 feet below grade. Documentation detailing the fate of the constituents released has not been found; moreover, this area (IHSS 118.1) is also being studied under OU8 investigations (DOE 1992b).

3.6.2 Radiological Surveys

The following sections summarize the NaI and HPGe radiological surveys performed around Tanks T-9 and T-10. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C.

3.6.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Tanks T-9 and T-10 lie within the radii of two HPGe survey locations, Stations 9F-9 and 7O-8. The HPGe survey for both locations provided no evidence to indicate anomalous activities for K-40, Ra-226, Th-232, U-238, U-235, or Cs-137. However, Stations 9F-9 and 7O-8 both indicated elevated Am-241 levels of 1.2 (± 0.04 percent) pCi/g and 0.2 (± 0.03 percent) pCi/g, respectively. Additionally, Pu-239/240 activities were also in exceedance of background levels with 1.1 (± 0.1 percent) nCi/g at 9F-9, and 1.3 (± 0.1 percent) nCi/g at 7O-8. It was determined from the tank inspection and survey results that radionuclide activity in the tanks is extremely high and therefore could be skewing the HPGe results in the area around this tank.

Sodium Iodide Survey. Twenty-nine NaI survey sites are located around Tanks T-9 and T-10. Only one location was statistically distinguishable above background activities. It registered 1,687 cpm with a background of 1,595 cpm. The remaining activities around the tanks ranged from 1,300 to 2,100 cpm with background activities in the same range.

3.6.2.2 Tank Area Surveys

Radiological contamination surveys were conducted both before entering the T-9 and T-10 vault, which is Building 730, and at the conclusion of sampling in the vault (Appendix F). Direct surveys of the surfaces within the vault were conducted to detect fixed and removable alpha and beta contamination. Several areas surveyed in the Building 730 vault

reported fixed and removable alpha contamination ranging up to about 7,400 dpm/100 cm^2; however, fixed and removable beta contamination was below 1,894 dpm/100 cm^2. Most of the fixed and removable alpha contamination was detected on the floor of the vault and on the lower stairs leading into the vault.

Smear surveys within the vault were conducted to detect removable alpha and beta contamination. The vault had significant dust covering the floor, stairs, piping, and pumps. The smear surveys reported removable alpha contamination at virtually all survey locations up to about 1,000 dpm/100 cm^2; all of the removable beta contamination was below 200 dpm/100 cm^2 (Appendix F).

A smear was collected from the underside of the Tank T-9 (east) inspection plate that reported removable alpha contamination of 8,798 dpm/100 cm^2. The underside of the inspection plates for the other tanks also reported removable alpha contamination up to about 600 dpm/100 cm^2. The direct survey for fixed and removable alpha contamination was not conducted because the surface was moist such that alpha contamination would not be detected. Removable beta contamination on the underside of the Tank T-9 (east) inspection plate was 354 dpm/100 cm^2; removable beta contamination on the other tank inspection plates was below 200 dpm/100 cm^2 (Appendix F). While the underside of the inspection port for T-9 (east) had the highest removable activity, the samples from the T-9 (east) tank did not have the highest activity when compared to the sludge sampled in the T-10 (east) tank (as discussed in Sections 3.6.4.2).

The dose rate within both T-9 tanks and the T-10 (west) tank was reported as background (10 microrem per hour); the dose rate in Tank T-10 (east) was reported at 50 microrem per hour (Appendix F).

3.6.3 Borehole Investigations

Four of the four boreholes were drilled around Tanks T-9 and T-10. Borehole locations are presented in Figure 3-10. Three soil samples were collected from the following locations: ground surface (before drilling), directly above the groundwater table (if groundwater was encountered), and 1 foot below the base of the tank (estimated at 26.0 to 29.0 feet below ground surface) or above bedrock, whichever came first. Groundwater samples were collected using a HydroPunch® sampler. Figure 3-1, Examples 1 and 3 depict the sampling rationale for borehole drilling at Tanks T-9 and T-10. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, and hexavalent chromium. In addition, water samples were analyzed for tritium and for the same analytes as above with additional water quality parameters, which include fluoride, nitrate, nitrite, sulfate, chloride, TOC, pH, and specific conductivity. A summary of the analytical parameters for each medium is shown in Tables 2-1 through 2-4. Tables 3-19 and 3-20 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-11 displays borehole and groundwater sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery in some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. In addition, carbon tertrachloride was encountered in all boreholes, and as a result, drilling operations were conducted in Level B protection. Free product was encountered at several intervals. The following is a summary of the borehole sampling.

Borehole 02695. This borehole was located adjacent to the northwest corner of Tanks T-9 and T-10, approximately 4 feet northwest of the original location specified in OU9

Technical Memorandum 1 (DOE 1994a). Borehole BH_02695 was offset because of overhead utilities. Groundwater was initially encountered at 9.0 feet, bedrock was encountered at 22.4 feet, and the borehole was drilled to a depth of 26.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (6.3 to 8.3 feet), and at the bedrock/alluvial contact (22.0 to 22.8 feet). Recovery from 8.3 to 22.0 feet was very poor because of the absence of any fines. Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected, rose to 5.1 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4955JE), Am-241 and Pu-239/240 activities were detected above background but below the PRG. No other radionuclides were detected above background. No TAL metals were detected at a concentration greater than background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-19) but none were above PRGs. Hexavalent chromium was not detected.

In the soil sample from 6.3 to 8.3 feet (BHG5010JE) none of the radionuclides analyzed for were detected above background or the PRGs. Analyses for Am-241 and U-235 were not conducted. No TAL metals were detected at a concentration greater than background or PRGs. The TCL volatiles acetone, carbon tetrachloride, chloroform, and methylene chloride were detected, but were significantly below the PRG. The TCL semivolatile di-n-butyl phthalate was detected at a concentration of 190 µg/kg, which did not exceed the PRG. No other TCL semivolatiles were detected. Hexavalent chromium was not detected.

In the soil sample from 22.0 to 22.8 feet (BHG5011JE), there were no radionuclide activities detected above background or PRGs. No TAL metals were detected above background or PRGs. The TCL volatiles 1,1,2,2-tetrachloroethane, carbon tetrachloride,

and chloroform were detected at concentrations significantly higher than their PRG values (Table 3-19). 1,1,2,2-Tetrachloroethane and chloroform were nearly one order of magnitude greater than the PRG, and carbon tetrachloride was more than two orders of magnitude greater than the PRG. The dilution required to get an accurate carbon tetrachloride result may have masked the detection of other volatiles. Table 3-19 shows that all TCL volatile results, except carbon tetrachloride and chloroform, were below 630,000 µg/kg. Hexachlorobutadiene and hexachloroethane were the only TCL semivolatiles detected, but neither were above PRGs. Hexavalent chromium was not detected.

In the groundwater sample from this boring (GWG1730JE) the radionuclides gross alpha, gross beta, Am-241, U-233/234, U-235, and U-238 had detectable activity above their respective background values. In addition, U-233/234 and U-238 activities exceeded their PRG values. Every TAL metal except beryllium, cadmium, cesium, selenium, silicon, silver, thallium, and tin exceeded its background concentration. Beryllium exceeded its PRG, but not its background value. Aluminum, arsenic, manganese, and vanadium exceeded both their background and PRG values. The TCL volatiles 1,2-dichloroethene, 1,2-dichloropropane, acetone, carbon disulfide, carbon tetrachloride, chloroform, chloromethane, methylene chloride, PCE, and TCE were detected. All of the detected concentrations for these chemicals exceeded their PRGs except for 1,2-dichloroethene, acetone, carbon disulfide, and TCE. The TCL semivolatile, di-n-butyl phthalate was detected but at a concentration significantly below its PRG. TOC was detected at a concentration of 14.1 mg/L.

The lack of contaminants in the soil samples from above the water table, compared to the contaminants detected in the soil sample from below the water table and the groundwater sample, suggests that the waste streams historically contained in Tanks T-9 and T-10 have impacted the groundwater in this area.

Borehole 02795. This borehole was located adjacent to the southwest corner of Tanks T-9 and T-10 approximately 5 feet northwest of the original location specified in OU9 Technical Memorandum 1 (DOE 1994a). Borehole BH_02795 was offset because of interference from overhead utilities. Groundwater was initially encountered at 5.6 feet and the borehole was drilled to a depth of 28.0 feet. Because of poor recovery (lack of fines) from 18.0 to 28.0 feet, it was not possible to collect a sample above bedrock or below the base of the tank. Soil samples were collected at ground surface (0.0 to 6.0 inches), and above the groundwater table (4.6 to 5.6 feet). Water samples were collected once groundwater was encountered. The depth to groundwater, measured again after the water sample was collected. rose to 4.2 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4956JE), Am-241 and Pu-239/240 activities were detected above background but below the PRG. No other radionuclides were detected above background. Lead and zinc were the only TAL metals detected at a concentration greater than background. No metals were detected above the PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-19) but none were above PRGs. Hexavalent chromium was not detected.

In the soil sample from 4.6 to 5.6 feet (BHG5008JE) none of the radionuclides analyzed for were detected above background or the PRGs. The TAL metals results had not been received from RFEDS by the time this report was prepared. The TCL volatiles acetone, carbon tetrachloride, and chloroform were detected, but were significantly below the PRG. The TCL semivolatiles fluoranthene and pyrene were detected but did not exceed the PRG. No other TCL semivolatiles were detected. Hexavalent chromium results had not been received from RFEDS by the time this report was prepared.

In the groundwater sample from this boring (GWG1729JE) the radionuclides U-233/234, U-235, and U-238 had detectable activity above their respective background values. In

addition, Ra-226, U-233/234, and U-238 activities exceeded their PRG values. The TAL metal selenium exceeded its background concentration. Beryllium exceeded its PRG, but not its background value. Arsenic exceeded both its background and PRG values. The TCL volatiles acetone, carbon tetrachloride, chloroform, methylene chloride, and PCE were detected. Carbon tetrachloride, chloroform, and PCE exceeded their PRGs, with carbon tetrachloride and chloroform exceeding their PRGs by more than three orders of magnitude and PCE exceeding its PRG by nearly one order of magnitude (Table 3-20). The TCL semivolatiles bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene were detected; however, bis(2-ethylhexyl)phthalate was also detected in the blank. Fluoranthene and pyrene were detected at concentrations significantly below their PRGs, and phenanthrene was detected at a concentration of 2 µg/L, but a PRG has not been established for this chemical. TOC was detected at a concentration of 6.25 mg/L.

The lack of contaminants in the soil samples from above the water table, compared to the contaminants detected in the soil sample from below the water table and the groundwater sample, suggests that the waste streams historically contained in Tanks T-9 and T-10 may have impacted the groundwater in this area; or since this boring is located upgradient of the tanks, the contaminants in the groundwater may be from sources further upgradient.

Borehole 02895. This borehole was located adjacent to the southeast corner of Tanks T-9 and T-10 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 5.8 feet, bedrock was encountered at 22.0 feet, and the borehole was drilled to a depth of 24.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (4.6 to 6.9 feet), and above the bedrock/alluvial contact (20.0 to 22.5 feet). Recovery from 12.0 to 20.0 feet was very poor because of the cobbly nature of the soils and the absence of any fines. Water samples were collected once groundwater was encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4957JE), Am-241 and Pu-239/240 activities were detected above background but below the PRG. No other radionuclides were detected above background. Lead and zinc were the only TAL metals detected at a concentration greater than background. No metals were detected above the PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-19) but none were above PRGs. Hexavalent chromium was not detected in the original sample, but was detected in the duplicate at a concentration of 0.86 mg/kg.

In the soil sample from 4.6 to 6.9 feet (BHG4960JE), none of the radionuclides analyzed for were detected above background or the PRGs. Americium-241 and U-235 results had not been received from RFEDS by the time this report was prepared. No TAL metals were detected above background concentrations. The only TCL volatiles detected were 2-butanone (below the PRG), and 4-methyl-2-pentanone at a concentration of 43 µg/kg. A PRG for 4-methyl-2-pentanone has not been established. No TCL semivolatiles were detected. Hexavalent chromium was not detected.

In the soil sample from 20.0 to 22.5 feet (BHG4961JE), Am-241 was the only radionuclide detected above the background concentration. The Am-241 detected did not exceed the PRG. No TAL metals were detected above background concentrations. The only TCL volatiles detected were acetone and carbon tetrachloride. Acetone did not exceed the PRG, but carbon tetrachloride, at a concentration of 25,000,000 µg/kg, exceeded the PRG by nearly two orders of magnitude. The dilution required to get an accurate carbon tetrachloride result may have masked the detection of other volatiles. Table 3-19 shows that all volatile results, except carbon tetrachloride, were below 1,600,000 µg/kg. Hexachlorobutadiene and hexachloroethane were the only TCL semivolatiles detected, neither of which exceeded the PRG. Hexavalent chromium was not detected.

In the groundwater sample from this boring (GWG1718JE) the radionuclide U-235 had detectable activity above the background value. Americium-241, Pu-239/240, Ra-226, U-233/234, and U-238 activities exceeded both background and PRG values. The TAL metals aluminum, barium, copper, iron, lead, magnesium, mercury, potassium, sodium, strontium, and zinc exceeded their background concentrations (Table 3-20). Beryllium exceeded its PRG, but not its background value. Manganese exceeded both its background and PRG values. No TCL volatiles were detected. Several TCL semivolatiles were detected; however, none of them exceeded their PRG. A PRG has not been established for 2-methylnaphthalene, 4-methylphenol, carbazole, or phenanthrene, which were detected at concentrations of 100 µg/L, 150 µg/L, 1 µg/L and 12 µg/L, respectively. TOC was detected at a concentration of 67 mg/L. A PRG has not been established for TOC.

The lack of contaminants in the soil samples from above the water table, compared to the contaminants detected in the soil sample from below the water table and the groundwater sample, suggests that the waste streams historically contained in tanks T-9 and T-10 may have impacted the groundwater in this area.

Borehole 02995. This borehole was located adjacent to the northeast corner of Tanks T-9 and T-10 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was initially encountered at 9.0 feet, bedrock was encountered at 26.5 feet, and the borehole was drilled to a depth of 28.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (8.0 to 9.4 feet), and above the bedrock/alluvial contact (26.0 to 27.8 feet). The depth to groundwater, measured again after the water sample was collected, rose to 4.9 feet. Recovery from 16.0 to 26.0 feet was very poor because of the absence of any fines. Water samples were collected once groundwater was encountered. Recovery was sufficient to collect a complete analytical suite for each soil sample acquired, but the water table did not yield sufficient quantity to collect a complete analytical suite. Hexavalent chromium and water quality parameters were not collected.

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In the soil sample from 0.0 to 6.0 inches (BHG4958JE), no radionuclides were detected above background or PRGs. No TAL metals were detected at a concentration greater than background or PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-19) but none were above PRGs. Hexavalent chromium was not detected.

In the soil sample from 8.0-9.4 feet (BHG4962JE), none of the radionuclides analyzed for were detected above background or the PRGs. No TAL metals were detected above background or PRG concentrations. The TCL volatiles carbon tetrachloride, chloroform, and chloromethane were detected at concentrations of 17 µg/kg, 1 µg/kg, and 4 µg/kg, respectively, but did not exceed the PRGs. No TCL semivolatiles were detected. Hexavalent chromium was not detected.

In the soil sample from 26.0-27.8 feet (BHG4963JE), none of the radionuclides analyzed for were detected above background or the PRGs. No TAL metals were detected above background concentrations. No TCL volatiles were detected, but it appears that the detection of volatiles may have been masked by the dilution required to get an accurate carbon tetrachloride result. Table 3-19 shows that all volatile results were below 640,000 µg/kg. Hexachlorobutadiene, hexachloroethane, and naphthalene were the only TCL semivolatiles detected, none of which exceeded the PRG. Hexavalent chromium was not detected.

In the groundwater sample from this boring (GWG1719JE) the radionuclides gross alpha, gross beta, and U-235 had detectable activity above the background value. Radium-226, U-233/234, and U-238 activities exceeded both background and PRG values. Americium-241 results had not been received from RFEDS at the time this report was prepared. The TAL metals calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, mercury, nickel, potassium, sodium, strontium, and zinc exceeded their background concentrations. Antimony and beryllium exceeded their PRG, but not their background concentration.

Aluminum, arsenic, barium, manganese, and vanadium exceeded both their background and PRG values. The TCL volatiles acetone, carbon tetrachloride, chloroform, methylene chloride, and PCE were detected and carbon tetrachloride, chloroform and PCE detections exceeded PRGs. The TCL semivolatiles bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene were detected, all at a concentration of 2 µg/L. All of the detections were below PRGs as well as estimated values. Bis(2-ethylhexyl)phthalate was also detected in the blank. TOC was detected at a concentration of 29.7 mg/L. A PRG has not been established for TOC. There was insufficient groundwater available to collect a sample for hexavalent chromium or water quality parameters.

The downgradient location of this boring suggests that it would be the most severely impacted by contaminants from Tanks T-9 and T-10. However, the contamination detected does not appear to be any more extensive than that detected in BH_02695 or BH_02895. The contaminants detected in the groundwater sample suggest that the waste streams historically contained in Tanks T-9 and T-10 may have impacted the groundwater in this area, or the contamination could have come from another IHSS/OU upgradient from these tanks.

3.6.4 Tank Characterization

The vault to the T-9 and T-10 tanks measured roughly 15 feet along the north-south axis by about 20 feet and was approximately 8 feet deep. The four metal lids on the vault roof, which measured about 36 inches square, had radiological placards indicating that the vault was a Radiological Control Area (RCA).

Tank T-9 is used as plenum deluge catch tanks for Building 776. It was noted that a 6-inch pipe leading into the vault from the south wall, labeled "To (Buildings) 776/777/778," emptied into the T-9 and T-10 tanks controlled by manual valves. One valve leading into

the T-9 (west) tank was in the open position, and all other valves to the other tanks were closed at the time of inspection. However, no lockout or tagout was observed. It is presumed that the T-9 tanks have some overflow between them since both tanks are used as plenum deluge catch tanks, but the flow can only directly enter the T-9 (west) tank.

A pipe approximately 2 inches in diameter connected the T-10 tanks to pumps that then connected through one common pipe to the pumps of the T-9 tanks. This same pipe also branched to three pipes on the north wall of the vault. The only pipe still apparently connected was to the far western pipe; the other two pipes had been capped, although one branch of this pipe fed through a valve to a fire hose. The three pipes on the north wall of the vault were labeled "To 774, 207 [T-29], and Solar Ponds."

The vault had water staining on the floor and on the walls, which indicates that surface water runoff or groundwater intrusion is likely. The sludge in Tank T-10 (east), discussed below, also had divots directly below the cover, which indicates that water from the vault had dripped onto the sludge through the covers.

3.6.4.1 Tank T-9

Tank T-9 had two identical tanks, one lying west of the other. An 8-inch steel diamond-plate inspection cover was removed from each tank's 4-foot steel diamond-plate cover to visually inspect the tank and to collect samples. The 4-foot cover was not removed because of health and safety concerns and because removal of this cover would probably not have significantly expanded the field of view. The visual inspection of these two tanks was therefore limited because the tanks extended away from the inspection cover and a concrete header blocked much of the view. It was noted that the pumping mechanism in both tanks seems in good repair and the paint on the pumps and piping were intact. Liquid-level float mechanisms were present in both tanks, but the mechanisms did not seem operational.

The walls to the T-9 tanks that could be visually inspected appeared in satisfactory condition. However, the walls that could be visually inspected were the walls between the T-9 tanks and the walls between the T-9 and T-10 tanks; the exterior walls to the T-9 tanks could not be viewed. One area in the T-9 (east) tank near the top of the ladder-rungs appeared to have been painted at some point and is now peeling; this was not observed in the T-9 (west) tank. Several liquid level stains on the walls of the tanks indicated that the liquid level had fluctuated. The steel ladder-rungs in the tanks were significantly rusted.

A Teflon® dipper was used to collect the liquid samples out of both the T-9 (east) and T-9 (west) tanks. Sample medium was transferred from the dipper to the sample containers directly over the tank openings so that the liquid would fall back into the tanks. As an added precaution, pigpens were constructed around the tank openings to contain incidental spillage. The aqueous phase samples collected from the T-9 tanks were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, hexavalent chromium, TCL volatiles, and TCL semivolatiles.

No organic vapors were detected before or during the sampling events (Appendix F). Colorimetric tubes indicated that carbon tetrachloride was below the detection capabilities of the tube in both T-9 tanks (Appendix F).

Table 3-21 lists detected constituents, reported concentrations, and sample locations for both T-9 and T-10 tank liquid samples. Complete analytical results are included in Appendix E.

Tank T-9 (east) Liquid Sample Results. About 1 foot of a clear liquid was found in the T-9 (east) tank. No significant sediment was found on the base of the tank other than some unconsolidated fine material that went into suspension as soon as the liquid was agitated. The sump was not assessed for sediment or sludge.

Analytical results for the sample from this tank (TNG0019JE) indicate that every radionuclide analyzed for, with the exception of Ra-226, had a positive activity (Table 3-21). Americium-241, gross alpha, gross beta, Pu-239/240, U-233/234, U-235, and U-238 had elevated activities. All of the TAL metals analyzed for were detected, except for antimony, cadmium, chromium, cobalt, lead, mercury, silver, thallium, tin, and vanadium. Most of the detections indicate trace concentrations with the exception of lithium, beryllium, selenium, and sodium, which appear to be elevated. No TCL volatiles were detected. No TCL semivolatiles were detected. No hexavalent chromium was detected.

Tank T-9 (west) Liquid Sample Results. About 4 inches of a clear liquid was found in the T-9 (west) tank. No significant sediment was found on the base of the tank other than some unconsolidated fine material that went into suspension as soon as the liquid was agitated. The sump was not assessed for sediment or sludge.

Analytical results for the sample from this tank (TNG0020JE) indicate that every radionuclide analyzed for, with the exception of Ra-226, had a positive activity (Table 3-21). Americium-241, gross alpha, gross beta, Pu-239/240, U-233/234, U-235, and U-238 had elevated activities. All of the TAL metals analyzed for were detected, except for antimony, cadmium, chromium, lead, mercury, silicon, thallium, tin, and vanadium. Most of the detections indicate trace concentrations with the exception of lithium, beryllium, potassium, selenium, and sodium, which appear to be elevated. No TCL volatiles were detected. The TCL semivolatile bis(2-ethylhexyl)phthalate was detected, at a concentration of 17 µg/L. No hexavalent chromium was detected.

3.6.4.2 Tank T-10

Tank T-10 has two identical tanks, one lying west of the other. An 8-inch steel diamond-plate inspection cover was removed from each tank's 4-foot steel diamond-plate cover to visually inspect the tank and to collect samples. The 4-foot cover was not removed

because of health and safety concerns and because removal of this cover would probably not have significantly expanded the field of view. Much of the T-10 tanks could be viewed except the far east wall of the T-10 (east) tank and the west wall of the T-10 (west) tank.

A potential breach in the south wall of the T-10 (east) tank was noted about 1 foot west of the southeast corner of the tank. This area of the tank cannot be fully viewed from the inspection cover, but the hole appears to be about 8 inches long and about 4 inches high, and the concrete around this hole is crumbling.

Several liquid-level stains on the walls of the tanks indicated that the liquid level had fluctuated. The steel ladder-rungs in the tanks were significantly rusted.

A Teflon® dipper was used to collect the liquid samples from the T-10 (west) tank. Sample medium was transferred from the dipper to the sample containers directly over the tank opening so that the liquid would fall back into the tanks. A Teflon® dipper was used to collect a volatile organic analysis sample aliquot from the sump in the T-10 (east) tank, but a peristaltic pump was then used to collect all other liquid samples. As an added precaution, pigpens were constructed around the tank openings to contain incidental spillage. Both the aqueous phase samples and the sludge samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, hexavalent chromium, TCL volatiles, and TCL semivolatiles.

No organic vapors were detected before or during the sampling events other than the organic vapor detected at times during the collection of the liquid in Tank T-10 (east). Colorimetric tubes indicated that carbon tetrachloride was below the detection capabilities of the tube in both T-10 tanks.

Tank T-10 (west) Liquid Sample Results. Approximately 2 feet of a clear liquid was found in Tank T-10 (west). No significant sediment was found on the base of the tank other than some unconsolidated fine material that went into suspension as soon as the liquid was agitated. The sump was not assessed for sediment or sludge.

No organic vapor was detected using in-field instruments during the collection of the liquid in Tank T-10 (west) using the peristaltic pump (Appendix F).

Analytical results for the sample from this tank (TNG0024JE) indicate that every radionuclide analyzed for, with the exception of gross alpha, had a positive activity. Americium-241, gross alpha, Pu-239/240, U-233/234, U-235, and U-238 had significantly elevated activities. All of the TAL metals analyzed for were detected, except for antimony, beryllium, mercury, molybdenum, silver, thallium, and vanadium. Most of the detections indicate trace concentrations with the exception of cadmium and cobalt, which were slightly elevated; and calcium, copper, lithium, manganese, nickel, potassium, sodium, strontium, and zinc, which appear to be significantly elevated. The only TCL volatiles detected was TCE at a concentration of 7 µg/L. The TCL semivolatile bis(2-ethylhexyl)phthalate was detected at a concentration of 3 µg/L. No hexavalent chromium was detected.

Tank T-10 (east) Liquid Sample Results. Water was found almost filling the sump to the T-10 (east) tank but no liquid was found on the floor of the tank. The sump measures about 3.3 feet by 5.5 feet and about 1.25 feet deep according to the as-built drawing, so the total volume of the sump is about 150 gallons (DOE 1984). This liquid was sampled.

Analytical results for the sample from this tank (TNG0032JE) indicate that every radionuclide analyzed for, with the exception of gross alpha and Ra-226, had a positive activity (Table 3-21). Americium-241, Pu 239/240, U-233/234, U-235, and U-238 had elevated activities and gross alpha had significantly elevated activity. All of the TAL

metals analyzed for were detected except for antimony, arsenic, beryllium, cadmium, chromium, cobalt, mercury, molybdenum, selenium, silver, thallium, and vanadium. Most of the detections indicate trace concentrations with the exception of nickel, which was slightly elevated, and lithium, potassium, sodium, and zinc, which appear to be significantly elevated. The TCL volatiles 1,2-dichloroethene and acetone were detected at concentrations of 12 µg/L and 5 µg/L, respectively. No other TCL volatiles were detected. The TCL semivolatile bis(2-ethylhexyl)phthalate was detected at a concentration of 43 µg/L; however, it was also detected in the blank. No hexavalent chromium was detected.

Organic vapor was detected during the collection of the liquid in Tank T-10 (east) during the use of the peristaltic pump. The fluid from the pump initially pulled up a colloidal material, similar to soap scum, but then began pumping clear liquid. The organic vapors diminished as the liquid became clear, but increased whenever some of the colloidal material was brought up. The monitoring of organic vapors was conducted in the sample containers, which were preserved with concentrated nitric acid, possibly causing interference with the PID readings.

Tank T-10 (east) Sludge Sample Results. A stainless steel trowel attached to a telescoping pole was used to collect the sludge from this location. A stainless steel 5-milliliter (mL) spoon was used to transfer the sample aliquot into sample containers. The sludge was estimated at about 1.0 to 2.0 inches deep in the T-10 (east) tank. The top 1/4 inch of the sludge was a muddy-brown color and had a silty texture. The remaining sludge was a dark gray color and appeared more colloidal, but with parts that seemed to have a silty-sand texture.

The sludge directly under the inspection cover was observed to have divots in the surface. It is suspected that these divots are a result of water dripping from the cover onto the

sludge. The other areas of the sludge had deep cracks up to about 1 inch across that gave the sludge the appearance of a cracked-dry desert soil.

The sludge samples were sent to the 559 laboratory for analysis because of the high radiation screening levels. These results were not been received in time for incorporation into RFEDS data packages and this report. Appendix E includes the raw laboratory results.

3.7 TANKS T-11 AND T-30

Tanks T-11 and T-30 are located on the east side of Building 707 in the 700 Area within Building 731, which is referred to as the Building 707 Process Waste Pit (Figure 3-12). Tank T-11 is composed of two 2,000-gallon concrete tanks within Building 731. Tank T-30 consists of a 23,111-gallon underground concrete structure and a 100-gallon concrete sump.

3.7.1 Historical Information

Tanks T-11 and T-30 were installed in 1959. In 1975, the concrete tanks were partially removed. The concrete wall separating the two tanks was removed along with part of the concrete tank surface and new concrete was poured into the old process waste tanks and the 100-gallon sump. Currently, the area of the old process waste tanks serves as a secondary containment for the Building 707 process waste and plenum deluge tanks (Jacobs 1994).

Original waste streams for these tanks originated from Building 707, including solvents, radionuclides, metals, and other wastes (Jacobs 1994).

A 100-gallon steel tank, which was not within the scope of this investigation, is reportedly filled with Raschig rings and was used to contain fire deluge from Building 707 but did not reportedly receive process waste. The piping that connected with this tank was removed in 1975. Any leak from this tank would have flowed to the T-11 and T-30 tanks (Jacobs 1994).

3.7.2 Radiological Surveys

The following is a brief summary of the NaI and HPGe surveys conducted around Tanks T-11 and T-30. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C.

3.7.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. No HPGe survey locations within 75 feet (the approximate radius of influence for the in situ HPGe instrument) of Tanks T-11 and T-30 currently exist.

Sodium Iodide Survey. Twenty-nine NaI locations were surveyed around Tanks T-11 and T-30 on a 10-foot grid. Of these, 13 locations were statistically distinguishable above background (activities ranging between 2,064 to 3,082 cpm with a background of only 1,876 cpm). These locations are primarily located adjacent to Building 707 (east side within 3.0 to 4.0 feet) and on the north side of Building 731 (Tank T-11 and Tank T-30 vault entrance and housing). It should also be noted that it was determined these higher readings are probably because of shine from Building 707 and Building 731 where plutonium is processed and stored. Activities around the tanks ranged from 1,500 to 1,900 cpm.

3.7.2.2 Tank Area Surveys

A radiological contamination survey of the T-11 and T-30 tanks and the Building 731 vault was conducted by personnel from Building 707 under supervision of environmental personnel. These results are discussed in Section 3.7.4.

3.7.3 Borehole Investigations/Groundwater Survey

Four boreholes were drilled around Tanks T-11 and T-30. Borehole locations are presented in Figure 3-12. Three soil samples were collected from the following locations: ground surface (before drilling), above bedrock or 1 foot below the base of the tank (estimated at 13.0 to 15.0 feet), and 1 foot below bedrock/alluvial contact. If encountered, groundwater was sampled using a HydroPunch® sampler. Figure 3-1, Examples 1, 2, and 4 depict the sampling rationale for borehole drilling at Tanks T-11 and T-30. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, and tantalum. In addition, water samples were analyzed for the same analytes as above with additional water quality parameters including fluoride, nitrate, nitrite, sulfate, chloride, TOC, pH, and specific conductivity. A summary of the analytical parameters is shown in Tables 2-1 through 2-4. Tables 3-22 and 3-23 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-13 displays borehole and groundwater sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery in some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 03095. This borehole was located adjacent to the north side of Building 731, approximately 5 feet east of the location specified in OU9 Technical Memorandum 1 (DOE 1994a). Borehole BH_03095 was offset because of underground and overhead utilities. Groundwater was initially encountered at 15.7 feet (1.7 feet into bedrock), bedrock was encountered at 14.0 feet, and the borehole was drilled to a depth of 16.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table/bedrock (10.4 to 14.0 feet), and below the bedrock/alluvial contact (15.2 to 16.0 feet). Water samples were collected once groundwater was encountered. The depth to groundwater, measured the next day, rose to 14.8 feet. Recovery was sufficient to collect a complete analytical suite for each soil sample collected, but the water yield was only sufficient to collect a volatile sample.

No radionuclides, organics, or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 10.4 to 14.0 feet (BHG4981JE), or in the soil sample from 15.2 to 16.0 feet (BHG4982JE).

In the soil sample from 0.0 to 0.5 feet (BHG4967JE), silver exceeded background but was significantly lower than the PRG.

The groundwater sample from this boring was the only water sample obtained from the four borings around Tanks T-11 and T-30. Water yield was only sufficient to collect a volatile sample (GWG1723JE). Carbon tetrachloride, chloroform, and PCE all exceeded their specific PRGs. Volatiles found are consistent with the prior use of Tanks T-11 and T-30 to store waste solvents.

Borehole 03195. This borehole was located adjacent to the southwest corner of Tank T-11 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 12.2 feet and the borehole was drilled to a depth of 14.0 feet. Groundwater was not encountered. Soil samples were collected at ground surface (0.0 to 6.0 inches),

above the bedrock/alluvial contact (10.0 to 13.0 feet), and below the bedrock/alluvial contact (13.0 to 14.0 feet). Recovery was sufficient to collect a complete analytical suite for each sample collected.

Four borehole sample suites were taken at BH_03195. No organics were detected at levels exceeding background or PRGs in any of the soil samples.

The metal silver was detected at a level exceeding background in the soil sample from 0.0 to 0.5 feet (BHG4968JE and BHG4969JE [duplicate]), but was significantly lower than the PRG. In the duplicate sample, the metal copper and the radionuclide Am-241 were detected at levels greater than background concentrations. These results were unconfirmed by the real samples, and were both significantly lower than the specific PRGs.

No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 10.0 to 13.0 feet (BHG4975JE).

The metal lead and radionuclide Am-241 were detected at levels exceeding background in the soil sample from 13.0 to 14.0 feet (BHG4976JE). The Am-241 result was significantly lower than the PRG.

Groundwater was not encountered, and therefore not sampled.

Borehole 03295. This borehole was located about 10 feet south of the southeast corner of Tanks T-11 and T-30, approximately 9 feet south-southwest of the original location specified in OU9 Technical Memorandum 1 (DOE 1994a). Borehole BH_03295 was offset in order to avoid a security alarm line. Bedrock was encountered at 11.0 feet, and the borehole was drilled to a depth of 14.0 feet. Groundwater was not encountered. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (6.0 to 7.0 feet), and below the bedrock/alluvial contact (11.0 to 12.0 feet). Poor

recovery from 7.0 to 11.0 feet prevented a sample from being collected directly above the bedrock/alluvial contact. Recovery was sufficient to collect a complete analytical suite for each sample collected except for the sample from 6.0 to 7.0 feet. At this location, metals and tantalum samples were omitted.

No organics were detected at levels exceeding background or PRGs in the soil sample from 0.0 to 0.5 feet (BHG4970JE). Copper, silver, and the radionuclide Am-241 all exceeded background concentrations, but were all significantly lower than their specific PRG.

No organics or radionuclides were detected at levels exceeding background or PRGs in the soil samples from 6.0 to 7.0 feet (BHG4973JE). Metals were not sampled because of insufficient yield.

No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 11.0 to 12.0 feet (BHG4974JE).

Groundwater was not encountered, and therefore was not sampled.

Borehole 03395. This borehole is located 8 feet from the northeast corner of the 731 Building Tanks T-11 and T-30, approximately 7 feet northwest of the original location specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 7.0 feet and the borehole was drilled to a depth of 10.0 feet. Groundwater was not encountered. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (6.0 to 7.0 feet), and below the bedrock/alluvial contact (8.1 to 9.1 feet). Recovery was sufficient to collect a complete analytical suite for each sample collected.

No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in the soil samples from 0.0 to 0.5 feet (BHG4971JE), 6.0 to 7.0 feet (BHG4977JE), and from 8.1 to 9.1 feet (BHG4978JE).

Groundwater was not encountered, and therefore was not sampled.

3.7.4 Tank Characterization

Tanks T-11 and T-30 were visually inspected and noted to be painted with no detected cracks. The tanks serve as secondary containment for the Building 707 process waste and plenum deluge tanks, but no staining was noted within the area.

Organic vapor was not detected on any in-field instruments (Appendix F). Respirable airborne particulate levels were also below background.

Ten smear samples for removable radiological contamination were collected by Building 707 personnel under the direction and supervision of the investigation team members. Three swipe samples for removable radiological contamination were also collected. These data were not processed through RFEDS and are not included in either the tables or figures because samples were collected and read by Building 707 personnel.

The swipe is a 4,100 cm^2 piece of material that is physically rubbed against an area to collect removable matrix. All of the swipe samples indicated removable radiological contamination below 250 cpm (Appendix F).

The smear samples were collected from an area of approximately 100 cm^2. Removable beta contamination ranged from 35 to 46 dpm/100 cm^2, which is approximately background for this instrument. Removable alpha contamination was at or below 3 dpm/100 cm^2 for eight of the 10 smear samples collected.

However, a smear collected from the northeast corner of the T-11 (east) tank reported removable alpha contamination at 39 dpm/100 cm^2. Another smear collected from the northwest side of the T-11 (east) tank reported removable alpha contamination at 644 dpm/100 cm^2. Building 707 was notified of the discovered removable contamination in Building 731, and decontamination procedures were then implemented by the building personnel.

3.8 TANKS T-14 AND T-16

Tanks T-14 and T-16 are located in the 700 Area on the east side of Building 774 underlying a chemical storage shed (Figure 3-14). Tank T-14, which is designated by RFETS as Tank 68, is a 30,000-gallon concrete underground tank. Tank T-16 consists of two 14,000-gallon concrete underground tanks underlying the chemical storage shed to the north of Tank T-14. The northernmost T-16 tank, which will be referred to as T-16 (north), is designated by RFETS as Tank 66 while the other T-16 tank, which will be referred to as T-16 (south), is designated by RFETS as Tank 67.

3.8.1 Historical Information

These tanks were installed in 1952 and were reportedly abandoned in November 1989 (Jacobs 1994). The Historical Release Report (DOE 1992b) indicates that the tanks were to be closed in compliance with RCRA closure requirements, although confirmation of this is unavailable. These tanks were reportedly removed from the list of RCRA-permitted or RCRA interim-status tanks before closure was conducted and were then transferred to OU9. The tanks received waste streams from Building 774, the Process Waste Treatment Facility, including acids, bases, radionuclides, metals, and other wastes from RFETS processes. Releases from the tanks have been documented, specifically from tank overflow in 1980 and 1981 (DOE 1992b).

3.8.2 Radiological Surveys

The following paragraphs summarize the NaI and HPGe surveys conducted around Tanks T-14 and T-16. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2 and HPGe results are presented in Appendix C.

3.8.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Two HPGe stations, Sites 9J-9 and 9K-9, are located adjacent to Tanks T-14 and T-16. No evidence was provided to indicate anomalous activities for K-40, Ra-226, U-235, Cs-137, or Pu-239/240. Both 9J-9 and 9K-9 showed slightly elevated Th-232 levels at 1.64 (± 0.01 percent) and 1.38 (± 0.01 percent) pCi/g, respectively. At Survey Site 9K-9, U-238 was slightly elevated at 2.6 (± 0.2 percent) pCi/g. Sites 9J-9 and 9K-9 also exhibited elevated Am-241 levels of 1.6 (± 0.1 percent) and 3.8 (± 0.1 percent) pCi/g, respectively.

Sodium Iodide Survey. Twenty-one NaI survey sites, taken on a 10-foot grid, were located directly adjacent to Tanks T-14 and T-16. Five of the 21 sites encountered activities statistically distinguishable above background levels; these are randomly located throughout the survey area. Activities around the tanks ranged from 2,000 to 3,100 cpm with background readings in the same range.

3.8.2.2 Tank Area Surveys

A radiological contamination survey was conducted of the area around the T-14 and T-16 tanks before tank characterization (Appendix F). While no removable radiological contamination was noted on the concrete surface near the underlying T-14 and T-16 tanks, a direct survey for fixed and removable alpha and beta contamination indicated significant fixed alpha contamination. The contamination survey for fixed and removable

alpha indicated activities ranging from 118 dpm/100 cm^2 to about 4,500 dpm/100 cm^2 (Appendix F). The areas with the highest fixed and removable alpha contamination seem to be located to the south of the manhole for Tank T-14, near Door 10 of Building 774, and near Door 11 of Building 774 (Figure 3-14). The Building 774 shift manager was notified of these findings and the area was painted by building personnel to encapsulate the radiological contamination after the OU9 tank sampling in this area was complete.

The dose rate above Tanks T-14 and T-16 (south) prior to removing the manway cover was reported to be 14 and 12 microrem per hour, respectively; the dose rates were 400 and 1,200 microrem per hour when measured inside of the tank manways, respectively (Appendix F). The dose rate inside of Tank T-16 (north) was 1,000 microrem per hour.

3.8.3 Borehole Investigations

Five boreholes were drilled around Tanks T-14 and T-16. Borehole and tank sludge/liquid locations are presented in Figure 3-14. Because contaminated soils have been detected previously in this area, soil samples were collected from the following locations: ground surface (before drilling), and one composite sample at each 2-foot interval to a depth of 10 feet below the base of the tank, or until bedrock was encountered. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, TCL semivolatiles, hexavalent chromium, and tantalum. Groundwater was not encountered. A summary of the analytical parameters for all media is shown in Tables 2-1 through 2-4. Tables 3-24 and 3-25 list detected constituents, reported concentrations, and sample locations for the borehole and tank sludge/liquid samples, respectively. Complete analytical results are included in Appendix C. Figure 3-15 displays borehole sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery on some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 03495. This borehole was located adjacent to the northeast corner of Tank T-16 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 8.5 feet and the borehole was drilled to a depth of 10.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), from 2.4 to 5.7 feet, 6.0 to 7.4 feet, and 8.0 to 8.5 feet. Because of recovery variations, it was not possible to collect a composite sample at every 2-foot interval. Recovery was sufficient to collect a complete analytical suite for each soil sample collected.

Four borehole sample suites were taken at BH_03495. No radionuclides, organics or TAL metals were detected at levels exceeding background or PRGs in any of the four soil samples collected (Table 2-24).

Groundwater was not encountered, and therefore was not sampled.

Borehole 03595. This borehole was located adjacent to the southeast corner of Tank T-16 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 9.6 feet and the borehole was drilled to a depth of 10.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), from 2.0 to 5.2 feet, 6.0 to 8.4 feet, and 8.4 to 9.6 feet. Because of recovery variations, it was not possible to collect a composite sample at every 2-foot interval. Recovery was sufficient to collect a complete analytical suite for each soil sample collected.

Four borehole sample suites were taken at BH_03595. No organics or TAL metals were detected at levels exceeding background or PRGs in any of the soil samples.

The radionuclides Am-241 and Pu-239/240 were detected at levels exceeding background in the soil sample from 0.0 to 0.5 feet (BHG4879JE), but both were significantly lower than their specific PRGs. Americium-241 was also detected above background in the soil sample from 2.0 to 5.2 feet (BHG4930JE), but again was significantly lower than the PRG.

Plutonium-239/240 and Am-241 were also detected in samples taken from water and sludge inside Tanks T-14, T-16 (south), and T-16 (north). BH_03595 is downgradient from all three tanks.

Groundwater was not encountered, and therefore was not sampled.

Borehole 03695. This borehole was located adjacent to the southeast corner of Tank T-14 as specified in OU9 Technical Memorandum 1 (DOE 1994a). The borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), from 0.5 to 2.5 feet, 4.0 to 6.5 feet, 6.5 to 8.9 feet, and 10.0 to 13.2 feet. Because of recovery variations, it was not possible to collect a composite sample at every 2-foot interval. Recovery was sufficient to collect a complete analytical suite for each soil sample collected.

Five borehole sample suites were taken at BH_03695. No organics were detected at levels exceeding background or PRGs in any of the five soil-sampling intervals (Table 3-24).

The metals barium and lead were detected at levels exceeding background in two of the five samples, from 0.0 to 0.5 feet (BHG4880JE) and from 0.5 to 2.5 feet (BHG4925JE). The metal silver was also detected in the soil sample from 0.0 to 0.5 feet at a level exceeding background.

The radionuclides Am-241 and Pu-239/240 were detected at levels exceeding background concentrations in four of the five sampling intervals. The results were significantly higher than background for the sampling intervals 0.0 to 0.5 feet and 0.5 to 2.5 feet, but were all lower than their specific PRGs. Results for the interval 4.0 to 6.5 feet (BHG4926JE) were below detection limits. Results for the intervals 6.5 to 8.9 feet (BHG4927JE) and 10.0 to 13.2 feet (BHG4928JE) for Am-241 and Pu-239/240 were above background but significantly lower than their specific PRGs.

Because Pu-239/240 and Am-241 were also detected in samples taken from water and sludge inside Tanks T-14, T-16 (south), and T-16 (north), and BH_03695 is downgradient from all three tanks, these tanks may be a source of this subsurface soil contamination.

Groundwater was not encountered, and therefore was not sampled.

Borehole 03795. This borehole was located adjacent to the southeast corner of Tank T-14 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 8.5 feet and the borehole was drilled to a depth of 12.0 feet (refusal). Soil samples were collected at ground surface (0.0 to 6.0 inches), from 0.5 to 2.7 feet, 5.0 to 6.6 feet, and 10.0 to 10.9 feet. Because of recovery variations, it was not possible to collect a composite sample at every 2-foot interval. Recovery was not sufficient to collect a complete analytical suite for each soil sample collected. None of the samples except for the ground surface sample had adequate recovery to collect the TCL metals, tantalum, and hexavalent chromium samples. In addition, the 10.0- to 10.9-foot sample did not have enough recovery to collect a TCL semivolatile.

Four borehole sample suites were taken at BH_03795. No organics were detected at levels exceeding background or PRGs in any of the four soil sampling intervals. Semivolatiles were not sampled at the deepest of the four sample intervals (10.0 to 10.9 feet) because of insufficient recovery.

The metal silver and the radionuclides Am-241 and Pu-239/240 were detected at levels exceeding background in the sample interval from 0.0 to 0.5 feet (BHG4881JE). All were less than their specific PRGs. Plutonium-239/240 was significantly less than its PRG.

No radionuclides or added metals were detected at levels exceeding background or PRGs in the remaining three sample intervals. TCL metals, tantalum, and hexavalent chromium were not sampled in the remaining three sample intervals because of inadequate recovery.

Because Pu-239/240 and Am-241 were also detected in samples taken from water and sludge inside Tanks T-14, T-16 (south), and T-16 (north), and silver was detected in Tank T-14, and BH_03795 is downgradient from Tank T-14, this tank could be a source of soil contamination.

Groundwater was not encountered, and therefore was not sampled.

Borehole 03895. This borehole was located adjacent to the southwest corner of Tank T-14 as specified in OU9 Technical Memorandum 1 (DOE 1994a). The borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), from 0.5 to 2.8 feet, 4.0 to 6.5 feet, 8.0 to 9.7 feet, and 10.0 to 12.9 feet. Because of recovery variations, it was not possible to collect a composite sample at every 2-foot interval. Recovery was sufficient to collect a complete analytical suite for each soil sample collected.

Five sample suites were taken at BH_03895. No organics, radionuclides, or TAL metals were detected at levels exceeding background or PRGs in any of the soil samples (Table 3-24).

Groundwater was not encountered, and therefore was not sampled.

3.8.4 Tank Characterization

Tank T-14 and the two T-16 tanks underlaid a concrete slab that had no significant cracks and otherwise appeared to be in satisfactory condition. However, as noted above, fixed and removable alpha contamination was detected on the concrete around the tanks. Parts of the concrete seemed to have some coating that had appeared to have worn off, especially in high traffic areas.

All of the manways to the tanks had a steel rail cage around three sides with two metal chains restricting access from the front. Each manway had been silicone sealed shut. An aluminum grate, weighing about 10 pounds, was present under each manway cover.

Tank T-14 and Tank T-16 sludge samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, hexavalent chromium, tantalum, TCL volatiles, and TCL semivolatiles. The aqueous phase samples from Tank T-14 were analyzed for the same suite with the exception of tantalum. Tank T-16 residue samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, tritium, TAL metals, hexavalent chromium, tantalum, TCL volatiles, and TCL semivolatiles. The aqueous phase samples from Tank T-16 were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, tritium, TAL metals, TCL volatiles, and TCL semivolatiles.

3.8.4.1 Tank T-14

Visual inspection of the T-14 tank was limited because no entry into the tank was made. However, liquid was noted extending in an arc about 8 feet from the northwest corner of the tank. A brown-colored sludge was observed at the perimeter of the liquid extending to the limit of visual observation. This sludge presumably underlies the liquid. The liquid

appeared to be about 12.0 to 18.0 inches at the deepest point and was observed to be a brown color.

An air bubbler was noted in the northwest corner, which, according to Building 774 personnel, is part of the liquid-level indicator. This air bubbler agitated the water and probably caused the underlying sediment to be in suspension, accounting for the silty-brown appearance of the liquid.

It is suspected that there is a sump in the northwest corner of the tank, which is the deepest point of the tank according to as-built drawings, but it could not be viewed because of the turbidity of the liquid (DOE 1986). Based on the as-built drawings and the similarity of the T-16 tanks, the sump is probably located along the north wall of T-14 in the northwest corner, measuring about 18 inches square and about 1 foot deep (DOE 1958). A metal pipe, about 4 inches in diameter, extends out of the sump into the west wall of the tank about 18 inches above the floor of the tank; this pipe appeared to be clean and is believed to be stainless steel because of the absence of corrosion. A smaller pipe, perhaps 3 inches in diameter, extended straight out of the sump to the top of the tank, but the destination of this pipe could not be viewed. The as-built drawings for this tank indicate that this pipe extends into the west wall of the tank about 3 feet below the top of the tank (DOE 1958). This pipe appears to be the source for the air bubbler discussed above.

Organic vapors were not detected at the top of this tank before or during the sampling events. Colorimetric tubes were used to screen for carbon tetrachloride, hydrogen cyanide, and hydrogen chloride, but each was below the detection capabilities of the tubes.

Radiological monitoring of the tank indicated removable alpha contamination of 6,422 dpm/100 cm^2 on the grate to the tank; fixed and removable alpha activity was reported at 3,570 dpm/100 cm^2, and fixed and removable beta contamination was reported at 3,750

dpm/100 cm^2 on this grate. The dose from Tank T-14 was recorded as 400 microrem per hour (Appendix F).

Liquid Sample Results. The liquid in Tank T-14 was collected using a peristaltic pump because this minimized spillage during sampling. However, a Teflon® dipper was used first to collect the samples to be analyzed for VOCs to minimize the volatilization of the aliquot.

For the water sample taken from Tank T-14 (TNG0009JE) no organics were detected in the ppm range. The following metals were detected at 1 ppm (1,000 mg/L) or greater: cesium, lithium, silicon, aluminum, beryllium, calcium, copper, nickel, and silver.

With the exception of Ra-226, all radionuclide analytes were detected in significant quantities. Americium-241, Pu-239/240, tritium, U-233/234, and U-238 were all detected in quantities greater than 1,000 pCi/L, the highest being Am-241 at more than 7,500 pCi/L. Uranium-235 was detected at more than 100 pCi/L.

Gross alpha was measured at greater than 25,000 pCi/L, and gross beta at more than 2,500 pCi/L.

For hexavalent chromium, results were missing from the RFEDS data.

Sludge Sample Results. The sludge in Tank T-14 was sampled about 8 feet east of the tank's west wall near the perimeter of the liquid. A stainless steel trowel attached to a telescoping pole was used to collect the sludge from this location. However, the bottom of the tank could not be felt during sampling, so the total depth of the sludge at this location can only be estimated at a minimum of 4 inches. The top layer of the sludge was a light brown color about 1/4-inch thick, based on visual observations. The next layer, also about 1/4-inch thick, was a light gray-green color, followed by a turquoise-green

layer about 1/2-inch thick (parts of the turquoise-green layer had vibrant colors). The remaining part of the sludge was a dark gray. Most of the sludge had an even consistency. The surface of the sludge that was not submerged in the liquid had deep cracks in it up to about 2 inches wide.

The sludge was collected from the tank and brought up to the manway where the samplers then used a stainless steel 5-mL spoon to transfer the sample aliquot to a sample container. All sampling operations were conducted within a containment constructed of visqueen to prevent the incidental spread of contaminants. Negative air pressure was maintained within the containment to minimize any potential spread of contamination.

In-field instruments did not detect any organic vapors from the sludge (Appendix F). However, consistent alpha activity was detected from the sludge even though the sludge was saturated.

The radionuclides Pu-239/240 and the combination Pu-238 + Am-241 were detected at levels exceeding 150,000 pCi/g in the sludge sample analyzed by the 371 Laboratory (TNG0010JE). Uranium-235 was detected at less than 1.82 pCi/g.

For TAL metals, hexavalent chromium, tantalum, volatiles, and semivolatiles, results were missing from the RFEDS data.

3.8.4.2 Tank T-16 (South)

Visual inspection of the T-16 (south) tank was limited because no entry into the tank was made. However, liquid was noted extending in an arc about 8 feet from the northwest corner of the tank. A brown-colored sludge was observed at the perimeter of the liquid extending to the edge of the field of view, and the sludge presumably underlies the liquid. The liquid is about 12.0 to 18.0 inches at the deepest point and was observed to be clear.

The liquid was not sampled because the quantity was limited and the liquid was probably the same liquid that was sampled in Tank T-16 (north), discussed in Section 3.8.4.3.

A pile of a whitish-gray granular material was discovered directly under the manway, measuring about 3 feet in diameter and about 12 inches high. The grains measured less than about 5 millimeters in diameter, but numerous grains had fused together. This material was completely submerged in the liquid.

An air bubbler was noted in the northwest corner, which is the deepest point in the tank according to as-built drawings (DOE 1986), similar to the one in Tank T-14, but only one bubble each six seconds appeared. This air bubbler did not agitate the water.

A sump is located along the north wall of Tank T-16 (south) in the northwest corner measuring about 18 inches square and about 1 foot deep. A pipe, approximately 6 inches in diameter, extends out of the sump and then bends to the north through the tank wall into Tank T-16 (north).

Approximately 77 ppm of organic vapor was detected within 8 inches below the manway opening. This reading dropped to background at the surface of the manway and in the breathing zone. However, higher readings were then detected as the field organic vapor detection instrument was brought close to the sides of the manway. A white, flaking scale was noted on the manway opening and readings up to about 45 ppm were detected directly adjacent to the material. Prior field monitoring of this tank using colorimetric tubes for carbon tetrachloride, hydrogen cyanide, and hydrogen fluoride indicated each was below the detection capabilities of the tubes.

Unknown Residue Results. A stainless steel trowel attached to a telescoping extension pole was used to collect the granular unknown residue in Tank T-16 (south). The material was cohesive and required some chipping to remove an aliquot from the pile. The material

appeared to be a whitish-gray color with some brown staining, presumably from the similarly colored sludge in the tank. Some of the granules were broken upon being removed from the tank to reveal a whitish-gray color with little brown interspersed in the matrix. This sample was designated as sample number TNG001JE.

Initial surveys of the material with a PID revealed organic vapors up to 15 ppm. However, subsequent monitoring of the sample container indicated background levels. The original PID survey may have detected the same organic vapors detected within the manway because this monitoring was conducted within the manway when the material was first brought up.

Field radiological surveys of the material indicated only background levels of alpha and beta radiation.

All results from this sample (TNG0017JE) were missing from the RFEDS data.

Sludge Sample Results. The sludge in Tank T-16 (south) was sampled about 6 feet south of the tank's north wall near the perimeter of the liquid. A stainless steel trowel attached to a telescoping pole was used to collect the sludge from this location. However, the bottom of the tank could not be felt during sampling, so the total depth of the sludge at this location can only be estimated at a minimum of 3 inches. The sludge was predominantly a rust color to an orange-brown color. The sludge had some light-brown-colored material within the matrix, but layers could not be discerned. Parts of the sludge had an even consistency, but other parts contained lumps. The surface of the sludge that was not submerged in the liquid had deep cracks in it up to about 2 inches wide.

The sludge was collected from the tank and brought up to the manway where the samplers could then use a stainless steel 5-mL spoon to transfer the sample aliquot to a sample container. All sampling operations were conducted within a containment constructed of

visqueen to prevent the incidental spread of contaminants. Negative air pressure was maintained within the containment to minimize any potential spread of contamination.

In-field instruments did not detect any organic vapors from the sludge (Appendix F). However, radiological monitoring detected occasional alpha activity; alpha contamination was not detected at every point as it was in the sludge for Tank T-14.

In the sludge sample (TNG0011JE) taken from Tank T-16 (south) and analyzed by the 371 Laboratory, the radionuclide Pu-239/240 and the combination of Pu-238 + Am-241 were detected at levels in excess of 23,000 pCi/g. Uranium-235 was less than 0.03 pCi/g.

The results from this sample suite for TAL metals, hexavalent chromium, tantalum, TCL-volatiles, TCL semivolatiles, and tritium were missing from the RFEDS data.

3.8.4.3 Tank T-16 (North)

Visual inspection of the T-16 (north) tank was limited because no entry into the tank was made. However, liquid was noted in the western part of the tank to a point approximately 8 feet east of the west wall. The tank had been preliminarily visually inspected about two months before the more complete visual inspection, but no liquid was noted during that initial inspection. It is possible that the liquid was not noticed during the initial viewing because the manway lid was only partially removed; however, the two interceding months brought significant precipitation that may have either entered the tank by surface water runoff or by groundwater intrusion.

A rust- or brown-colored sludge was observed at the edge of the liquid extending to the edge of the field of view. It presumably underlies the liquid considering that it was noted during the first tank visit. The liquid is about 18 inches at the deepest point and was observed to be clear.

Neither an air bubbler nor a sump was noted in the tank. However, both are probably present because the T-16 (north) and T-16 (south) tanks seem to be otherwise identical.

A colorimetric tube was used to detect carbon tetrachloride at a level of 7 ppm just below the level of the manway (Appendix F). No other organic vapors were detected. Colorimetric tubes were used to screen for hydrogen cyanide and hydrogen fluoride but failed to indicate the presence of either vapor above the detection capabilities of the tubes.

Radiological surveys of the tank indicated that the grate underneath the manway cover had fixed and removable alpha contamination at 10,710 dpm/100 cm^2, and fixed and removable beta contamination at 23,700 dpm/100 cm^2. Removable alpha contamination on this grate was reported at 18,672 dpm/100 cm^2 and 11,813 dpm/100 cm^2, and removable beta contamination was reported at 2,460 dpm/100 cm^2 (Appendix F).

Liquid Sample Results. The liquid in Tank T-16 (north) was sampled using a peristaltic pump to transfer the liquid into sample containers. The liquid was collected carefully so as not to disturb the underlying sludge. In-field instruments did not detect any organic vapors during collection of the liquid samples (Appendix F).

For the water sample taken from T-16 (north) (TNG0018JE), no organics were detected in the ppm range (Table 3.25). The following TAL metals were detected at 1 ppm (1,000 mg/L) or greater: silicon, calcium, and potassium.

All radionuclide analytes were found above detection limits. Americium-241, Pu-239/240, and tritium were all detected in quantities greater than 1,000 pCi/L. The highest was Am-241 at more than 35,000 pCi/L. Uranium-233/234 was detected at more than 100 pCi/L. Uranium-235 and U-238 were detected at less than 100 pCi/L.

Gross alpha was measured at greater than 25,000 pCi/L, and gross beta at more than 1,000 pCi/L.

Sludge Sample Results. The sludge in Tank T-16 (north) was sampled about 6 feet south of the tank's north wall near the perimeter of the liquid. A stainless steel trowel attached to a telescoping pole was used to collect the sludge from this location. However, the bottom of the tank could not be felt during sampling, so the total depth of the sludge at this location can only be estimated at a minimum of 3 inches. The sludge was similar to that found in the T-16 (south) tank, being predominantly a rust color to an orange-brown color. The sludge had some light-brown-colored material within the matrix, but layers could not be discerned. Parts of the sludge had an even consistency, but other parts contained lumps. The surface of the sludge that was not submerged in the liquid had deep cracks in it up to about 2 inches wide.

The sludge was collected from the tank and brought up to the manway where the samplers could then use a stainless steel 5-mL spoon to transfer the sample aliquot to a sample container. All sampling operations were conducted within a containment constructed of visqueen to prevent the incidental spread of contaminants.

In-field instruments did not detect any organic vapors from the sludge (Appendix F). However, radiological monitoring detected occasional alpha activity; alpha contamination was not detected at every location as it was for the sludge associated with Tank T-14.

In the sludge sample (TNG0012JE) taken from Tank T-16 (north) and analyzed by the 371 Laboratory, the radionuclide Pu-239/240 was detected at a level in excess of 325,000 pCi/g. The combination of Pu-238 + Am-241 was detected at a level exceeding 225,000 pCi/g. Uranium-235 was less than 0.3 pCi/g.

The following results from this sample suite were missing from the RFEDS data dump: TAL metals, hexavalent chromium, tantalum, TCL volatiles, and TCL semivolatiles.

3.9 TANKS T-21, T-22, AND T-27

Tanks T-21, T-22, and T-27 are located in the 800 Area within Building 828, the Building 886 Process Waste Pit (Figure 3-16). Tank T-21 is an approximately 135-gallon floor sump in the southeast corner of the 886 Waste Pit vault. Tank T-22 is a 450-gallon stainless steel AST filled with Raschig rings within the 886 Waste Pit vault that was used for waste storage. Another identical tank was located within the vault to the north of Tank T-22 that stored product, but this tank was outside of the scope of this investigation. Tank T-27 was a 500-gallon portable tank that was located on a concrete pad to the north of the 886 Process Waste Pit; Tank T-27 was previously removed (Jacobs 1994).

3.9.1 Historical Information

Tank T-22 and the T-21 sump were installed in 1963 and then abandoned in 1978. Tank T-22 held waste from the laboratories in Building 886, including radionuclides, laboratory soaps, janitorial cleaning fluids, and possibly nitrates. Tank T-21 captured overflow from Tanks T-22 and the other tank. Historical reports of the 886 Criticality Laboratory indicate Tanks T-21, T-22, and T-27 may have been associated with Cs-137 handling. No known releases at this location have been identified (Jacobs 1994).

It is unknown when Tank T-27 was installed. This tank was decontaminated, removed, and sent to the size reduction building for disposal in July 1989 after a state employee noted a wet area, approximately 4.0 to 5.0 inches in diameter, under the bottom drain valve of the tank. This tank was used to store and transfer Building 886 process waste from Tanks T-21 and T-22 to the waste treatment facility (Jacobs 1994).

3.9.2 Radiological Surveys

The following summarizes the in situ NaI and HPGe radiological results from the area around Tanks T-21, T-22, and T-27. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C.

3.9.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Two HPGe survey stations, Locations 3S-14 and 3T-14, are in the vicinity of Tanks T-21, T-22, and T-27. No evidence was provided to indicate anomalous activities for K-40, Cs-137, Am-241, or Pu-239/240. At Station 3S-14, Ra-226 was slightly elevated at 1.14 (± 0.01 percent) pCi/g. Survey Location 3T-14 recorded elevated U-235 activities of 1.75 (± 0.02 percent) pCi/g. Station 3S-14 recorded elevated Th-232 at 1.39 (± 0.01 percent). Both Stations 3S-14 and 3T-14 provided evidence of elevated U-238 activities; 4.8 (± 0.1 percent) and 4.5 (± 0.1 percent) pCi/g, respectively.

Sodium Iodide Survey. Twenty NaI sites were surveyed around the Building 886 Process Waste Pit and around the concrete pad of the already removed Tank T-27 on a 10-foot grid. Only two of the 20 sites showed activities statistically distinguishable above background levels: one directly west of the tanks on the concrete driveway, and the other on the northeast corner of the Building 886 Process Waste Pit. Activities around the tanks ranged from 1,600 to 2,200 cpm with background readings in the same range.

3.9.2.2 Tank Area Surveys

A radiological contamination survey was performed inside of Building 828, the vault containing the T-21 sump and the T-22 AST (Appendix F). Only U-235, a beta emitter, is historically associated with these tanks. A direct survey for fixed and removable alpha and

beta contamination within the vault failed to reveal readings above 100 dpm/100 cm^2 for alpha and 1,894 dpm/100 cm^2 for beta; removable alpha and beta contamination was less than 20 dpm/100 cm^2 for alpha and less than 200 dpm/100 cm^2 for beta. This radiological survey was conducted throughout the vault, including surveying the exterior surface of Tank T-22 and the sediment accumulated within the secondary containment in the vault.

The dose rate within the Building 828 vault was determined to be 10 microrem per hour, both at the manway to the vault and 4 feet below the ceiling of the vault (Appendix F).

3.9.3 Historical Surface Soil Sampling

Previous radiation surveys and soil sampling efforts around the Tank T-27 concrete pad indicated no radiological contamination as a result of the leak previously mentioned in Section 3.9.1 (Jacobs 1994). Results of the soil samples showed only low levels of naturally occurring uranium (Jacobs 1994).

3.9.4 Surface Soil Investigations

Three soil samples were originally intended for collection around Tank T-27; however, only two were actually needed. Because of the utility clearance and relocation of Borehole BH_04295, the borehole was co-located with a surface-soil site and the surface-soil site was subsequently eliminated. See Figure 3-16 for the locations of the surface-soil sampling sites. Table 3-26 lists detected constituents, reported concentrations, and sample locations for the surface-soil samples. Complete analytical results are included in Appendix E. Figure 3-17 displays sample results for soil and groundwater that exceed established PRGs and background concentrations.

In the two surface-soil samples taken from the vicinity of Tank T-27 at sites SS001195 and SS001395 (SSG2834JE and SSG2836JE), no organics were detected at levels

exceeding background or specific PRGs. The metals arsenic and beryllium were detected in both samples at levels exceeding their specific PRGs, but none of these results were greater than background. The metals calcium and magnesium were detected at both sample locations at levels in excess of background. At sample location SS001194 only, the metals cesium, copper, manganese, and sodium were detected at levels exceeding background. The result for copper was significantly lower than its PRG.

The radionuclide Cs-137 was detected at both sample locations at a level exceeding the PRG, but neither result was greater than background. For Location SS001195, U-238 was detected at a level greater than the PRG but lower than background.

3.9.5 Borehole Investigations

Three of four planned boreholes were drilled around Tanks T-21 and T-22. Borehole BH_04195, located on the east side of Tanks T-21 and T-22, was abandoned because of abundant underground utilities. Borehole locations are presented in Figure 3-16. Three soil samples were collected from the following locations: ground surface (before drilling); above the groundwater table (if groundwater was encountered); and 1 foot below the base of the tank. Tanks T-21 and T-22 appeared to be keyed into bedrock. Groundwater was encountered and sampled at two of the three boreholes; however, these sample results were never received from RFEDS. Figure 3-1, Examples 1, 4, 5, and 6 depict the sampling rationale for borehole drilling at Tanks T-21 and T-22. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, Cs-137, neptunium, TAL metals, TCL volatiles, and TCL semivolatiles. A summary of the analytical parameters for each medium is shown in Tables 2-1 through 2-4. Table 3-27 lists detected constituents, reported concentrations, and sample locations for the borehole samples. Complete analytical results are included in Appendix E. Figure 3-17 displays sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery on some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 03995. This borehole was located on the west side of Tanks T-21 and T-22 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 18.6 feet, bedrock at 19.5 feet, and the borehole was drilled to a depth of 21.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (13.4 to 14.5 feet), and below the base of the tank (19.5 to 20.3 feet). Water samples were collected once groundwater was encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

Three borehole sample suites were taken at BH_03995. No radionuclides, organics or TAL metals were detected at levels exceeding background or PRGs in the soil sample from 0.0 to 0.6 inches (BHG5030JE).

Data are missing for the soil samples taken from 13.4 to 14.5 feet (BHG5036JE) and from 19.5 to 20.3 feet (BHG5037JE). In addition, data are missing from the duplicate sample BHG5031JE (DUP for BHG5030JE taken from 0.0 to 0.5 feet). These data were not received from RFEDS.

Groundwater was encountered and sampled at 18.6 feet (GWG1735JE). Results were also not included in RFEDS data.

Borehole 04095. This borehole is located on the southwest corner of Tanks T-21 and T-22 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 10.7 feet and the borehole was drilled to a depth of 16.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (8.4 to 10.5 feet), and below the bedrock/alluvial contact (12.6 to 13.6 feet). Groundwater

was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

Three borehole sample suites were taken at BH_04095.

Data are missing for all soil samples. Samples were taken from 0.0 to 0.5 feet (BHG5032JE), from 8.4 to 10.5 feet (BHG5042JE), and from 12.6 to 13.6 feet (BHG5043JE). These data were not received from RFEDS.

Groundwater was not encountered, and therefore was not sampled.

Borehole 04195. This borehole is located on the southeast corner of Tank T-21. It was abandoned because of interference with utilities.

Borehole 04295. This borehole was located on the north side of Tanks T-21 and T-22 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Groundwater was encountered at 12.7 feet, bedrock at 16.6 feet, and the borehole was drilled to a depth of 18.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the groundwater table (8.9 to 12.6 feet), and below the bedrock/alluvial contact (17.0 to 18.0 feet). Because of inadequate recovery, a sample could not be collected above the bedrock/alluvial contact. Water samples were collected once groundwater was encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

Two borehole sample suites were taken at BH_04295.

Data are missing for the soil samples taken from 0.0 to 6.0 inches (BHG5034JE) and from 17.0 to 18.0 feet (BHG5040JE). These data were not received from RFEDS. A sample could not be collected from 8.9 to 12.6 feet because of inadequate recovery.

Groundwater was encountered and sampled at 12.7 feet (GWG1736JE). These results were also not included in RFEDS data.

3.9.6 Tank Characterization

The Building 828 vault, which measured about 17 feet along the north-south axis and about 13 feet along the east-west axis, and is approximately 15 feet deep, was entered through a manway. The T-21 sump was located in the southeast corner of the vault and the T-22 free standing AST was located along the west wall of the vault just to the north of the vault ladder, near the southwest corner of the vault. Another free standing AST, seemingly identical to the T-22 tank, was situated immediately north of T-22. This other AST was outside of the scope of this investigation.

Immediately before the Jacobs tank characterization effort, the vault had been flooded with presumed surface-water runoff. Building 886 personnel detected that the vault was flooded after several storm events and pumped the water from the vault. Only a few puddles of water remained on the floor of the vault at the time of sample collection, although the sump was full of liquid. It was suspected that the water entered the vault through the plenum system after a sump pump failed in an adjacent building. Building 886 personnel indicated that water could be detected dripping into the vault. Over a five-day period, approximately 77,000 gallons were reportedly pumped from the vault. The vault has a one-time capacity to hold approximately 25,000 gallons.

The vault was lined with what appeared to be a stainless steel secondary containment about 24 inches high. Inspection of the vault disclosed significant corrosion up to about the height of the secondary containment in the vault, indicating that the vault was regularly flooded. It is suspected, therefore, that the vault was not water-tight and that only the secondary containment held the water. A thin layer of a dark-brown-colored sediment covered the vault floor.

A platform extended over the top of Tank T-22 and the adjacent tank. This platform was used to visually inspect most of the vault and the tanks as well as to collect the liquid sample from the sump. However, a complete inspection could not be performed from this location, so the team entered the vault floor after conducting a radiological survey of the vault floor.

3.9.6.1 Tank T-21

The T-21 sump was full of liquid even though the vault had been pumped of all water by Building 886 personnel before sample collection. The vault had reportedly been pumped by dropping a vacuum hose to the vault floor through the manway at the southwest corner of the vault. The T-21 sump, however, was in the southeast corner and, therefore, was not drained.

A Teflon® dipper on a 6-foot extension pole was used to collect the liquid samples from Tank T-21. The sampling team remained on the platform that extended over Tank T-22 to collect the samples so that the base of the vault did not have to be entered.

Table 3-28 lists detected constituents, reported concentrations, and sample locations for Tank T-21 liquid samples. Complete analytical results are included in Appendix E.

No organic vapors were detected with in-field instrumentation before or during the sampling events (Appendix F).

For the water sample taken from Tank T-21 (TNG0027JE), no organics were detected in the ppm range. The following metals were detected at 1 ppm (1,000 mg/L) or greater: calcium, iron, magnesium, potassium, and sodium.

The radionuclides U-233/234, U-235, and U-238 were all detected in quantities greater than 1.0 pCi/L, the highest being U-233/234 at more than 61.0 pCi/L.

Gross alpha was measured at greater than 66 pCi/L, and gross beta at more than 74 pCi/L.

For cesium, results were missing from the RFEDS data.

3.9.6.2 Tank T-22

Tank T-22 was surveyed with a Bicron microrem meter and a Ludlum 12-4 millirem meter to determine dose. The dose rate was determined to be 20 microrem per hour from the tank (Appendix F).

Tank T-22 has an inspection port on the top of the AST with a clear lens. It could be determined, after cleaning the inspection port lens, that this AST was filled with Raschig rings, which moderate neutrons to minimize the risk of a criticality. It could not be determined, however, whether the AST contained liquid. The sample team loosened the six bolts that secured the inspection port, although it was found that only two of the six bolts were tightened, and a minimal amount of liquid escaped before the bolts could be secured. The liquid pooled on the flat top of the tank and was then siphoned with a syringe to be transferred to a sample container.

This aliquot, less than 10 mL in volume, was delivered to the Building 881 lab for radiological screening analysis and found to have 18 pCi/L ± 13 pCi/L gross alpha activity and 64 pCi/L ± 120 pCi/L beta activity (Appendix F).

It was decided that the tank could not be sampled through this inspection port on the top of the tank because of the apparent hydrostatic head and the concern expressed by the Building 886 Shift Manager that the inspection port might not be able to be completely

sealed again. A steel pipe, approximately 3 inches in diameter, entered the T-22 tank through the east wall of the vault but was not blanked nor did it have a valve. Adequate spill containment could not be planned without knowledge of the total potential volume that could escape the tank.

A visual inspection of the tank and its ancillary equipment, such as the liquid-level indicator, revealed that no sampling ports were available and all other ports that could conceivably be opened were severely corroded and therefore might not seal completely after collection of the samples. Authorization to attempt alternate sampling methods, such as installation of a self-tapping sampling port, was denied. Therefore, sampling of Tank T-22 was canceled.

The Building 881 laboratory was contacted to determine whether the small sample aliquot initially recovered could be analyzed for U-235. While this was possible and therefore requested, the sample aliquot was inadvertently disposed of by Building 881 laboratory personnel after the request.

3.10 TANKS T-24 AND T-32

Tanks T-24 and T-32 are located in the 800 Area in Building 887, the Building 881 Process Waste Pit (Figure 3-18). Tank T-32 is a 131,160-gallon concrete vault underlying Building 887 serving as secondary containment for the seven 2,700-gallon ASTs (T-24 being one of the seven ASTs).

3.10.1 Historical Information

Tanks T-24 and T-32 were installed in 1952 and are still active tanks receiving Building 881 process wastes. These tanks received waste streams from Building 881, including

radionuclides, solvents, metals, acids, bases, oils, and PCBs. No reported releases from these tanks are known.

3.10.2 Radiological Surveys

The following sections summarize the NaI and HPGe surveys completed for Tanks T-24 and T-32. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2 and HPGe results are presented in Appendix C.

3.10.2.1 High-Purity Germanium Survey

Tanks T-24 and T-32 lie within the radius of one HPGe survey location, Station 3F-10. No evidence was provided that indicated anomalous activities for any of the HPGe analytes including K-40, Ra-226, Th-232, U-235, U-238, Cs-137, Am-241, or Pu-239.

3.10.2.2 Sodium Iodide Survey

A total of 27 NaI locations were surveyed around the tanks on a 10-foot grid. Twelve of the 27 sites were statistically distinguishable above background. These 12 sites were located primarily on the south and southeastern side of the tanks. Activities around the tanks ranged from 1,600 to 2,350 cpm with background activities of 1,902 and 2,159 cpm.

3.10.3 Borehole Investigations

Three of the three planned boreholes were drilled around Tanks T-24 and T-32. Borehole locations are presented in Figure 3-18. Three soil samples were collected from the following locations; ground surface (before drilling), above the bedrock/alluvial contact, and 1 foot below the bedrock/alluvial contact. Tanks T-24 and T-32 appeared to be keyed into bedrock. Groundwater was not encountered. Figure 3-1, Example 4 depicts

the sampling rationale for borehole drilling at Tanks T-24 and T-32. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, neptunium, TAL metals, TCL volatiles, TCL semivolatiles, hexavalent chromium, and pesticides/PCBs. A summary of the analytical parameters is shown in Tables 2-1 through 2-4. Table 3-29 lists detected constituents, reported concentrations, and sample locations for the borehole samples. Complete analytical results are included in Appendix E. Figure 3-19 displays sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery on some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 05195. This borehole was located on the southwest corner of Tanks T-24 and T-32 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 16.3 feet and the borehole was drilled to a depth of 20.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (14.0 to 16.3 feet), and below the bedrock/alluvial contact (16.3 to 19.4). Water was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample collected below the alluvial/bedrock contact zone at 16.3 to 19.4 feet (BHG5021JE), the U-233/234 value slightly exceeded background values. No TAL metals were detected at a concentration greater than background or PRGs. No TCL volatiles or semivolatiles were detected. Hexavalent chromium was not detected.

Borehole 05295. This borehole was located on the southeast corner of Tanks T-24 and T-32 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 15.1 feet and the borehole was drilled to a depth of 18.0 feet. Soil samples

were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (14.0 to 15.1 feet), and below the bedrock/alluvial contact (16.0 to 18.0 feet). Water was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample collected below the alluvial/bedrock contact zone at 16.0 to 18.0 feet (BHG5025JE) and its duplicate sample (BHG5029JE), two background exceedances were identified. The duplicate sample indicated an exceedance value for U-233/234, but this exceedance was not confirmed in the original sample. For zinc, a background exceedance value was shown in the original sample, but not confirmed in the duplicate. No TAL metals were detected at a concentration greater than background or PRGs. No TCL volatiles or semivolatiles were detected. Hexavalent chromium was not detected.

Borehole 05395. This borehole was located on the northeast corner of Tanks T-24 and T-32 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 12.2 feet and the borehole was drilled to a depth of 16.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), above the bedrock/alluvial contact (10.0 to 11.5 feet), and below the bedrock/alluvial contact (13.2 to 14.9 feet). Water was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

No background or PRG exceedances were reported for any borehole soil samples.

3.11 TANK T-29

Tank T-29 is located in the 700 Area to the northeast of Building 776 and to the east of the cooling tower (Figure 3-20). Tank T-29 is a 200,000-gallon carbon steel AST. A valve vault on the north side of Tank T-29 was also sampled.

3.11.1 Historical Information

Tank T-29 was installed in 1952 and was then reportedly abandoned in the mid-1980s. This tank was used to store untreated process waste from Building 774, including acids, bases, solvents, radionuclides, metals, chlorides, oils, and grease. No reported releases from this tank are known (Jacobs 1994).

3.11.2 Radiological Surveys

The following summarizes the in situ radiological NaI and HPGe surveys performed around Tank T-29. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2; HPGe results are presented in Appendix C.

3.11.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Tank T-29 falls within the radii of three HPGe survey locations: Stations 9G-9, 9H-9, and 9I-9. Results fail to indicate any anomalous activities for K-40, Ra-226, or Cs-137. At Stations 9G-9, 9H-9, and 9I-9, U-238 showed elevated activities of 9.4 (± 0.1 percent), 17.3 (± 0.1 percent), and 9.2 (± 2.5 percent) pCi/g, respectively; and U-235 was also elevated at 0.66 (± 0.01 percent), 1.78 (± 0.01 percent), and 1.35 (± 0.01 percent) pCi/g, respectively. At Station 9G-9, Th-232 was slightly elevated at 1.57 (± 0.01 percent) pCi/g. Stations 9G-9, 9H-9, and 9I-9 also showed elevated Am-241 activities of 9.7 (± 0.1 percent), 13.5 (± 0.1 percent), and 9.8 (± 0.1 percent) pCi/g, respectively. In addition, Pu-239/240 activities were elevated at 7.8 (± 0.1 percent), 5.8 (± 0.1 percent), and 3.4 (± 0.1 percent) pCi/g, respectively.

Sodium Iodide Survey. A total of 48 NaI sites were surveyed around Tank T-29 on a 10-foot grid. Of these, only three located east of the tank, on the service road, were statistically distinguishable above background levels. NaI activities measured around Tank

T-29 ranged between 1,900 and 3,000 cpm with background levels falling in the same range.

3.11.2.2 Tank Area Surveys

A radiological contamination survey was performed for the exterior of Tank T-29, the interior of Tank T-29 (discussed in Section 3.11.5.1), and for the exterior of the valve vault on the north side of Tank T-29 (Appendix F). A direct radiological survey of the exterior of Tank T-29 for fixed and removable contamination failed to reveal activities above 100 dpm/100 cm^2 for alpha activity and 1,894 dpm/100 cm^2 for beta activity. The inspection port, through which the sampling team later collected radiological smear samples, was also monitored both on the exterior and under the lid; fixed and removable activity was less than 100 dpm/100 cm^2 for alpha activity and less than 1,894 dpm/100 cm^2 for beta activity (Appendix F).

A direct radiological survey of the interior of the T-29 tank for fixed and removable beta and gamma activity revealed 45,456 dpm/100 cm^2 when measured at the plane of the tank through the opened inspection port. The beta and gamma activity dropped to 2,841 dpm/100 cm^2 when the instrument probe was held 8 inches above the opened inspection port (Appendix F).

The valve vault on the north side of Tank T-29 did report areas of fixed and removable alpha contamination on the northeast quadrant of the manway cover and on the northwest quadrant of the vault pad. A single area on the manway cover had 208 dpm/100 cm^2 fixed and removable alpha contamination while the area on the concrete pad had 210 dpm/100 cm^2 fixed and removable alpha contamination.

The dose rate, which was measured when the manway on the west side of the T-29 tank was initially removed, was 0.2 microrem per hour (Appendix F).

3.11.3 Surface-Soil Sampling Investigation and Results

Three soil samples were originally intended for collection from around Tank T-29; however, only two were actually collected. One surface-soil site was co-located (within 1.0 to 2.0 feet) with BH_04595, and the surface-soil site was subsequently eliminated. Figure 3-20 identifies the locations of the surface-soil sampling sites.

Table 3-30 lists detected constituents, reported concentrations, and sample locations for the surface-soil samples. Complete analytical results are included in Appendix E. Figure 3-21 displays sample results that exceed established PRGs and background concentrations.

The two surface-soil samples at Sites SS001495 and SS001595 (SSG2837JE and SSG2838JE) were analyzed for gross alpha, gross beta, Am-241, Pu-239/240, U-233/234, U-235, U-238, neptunium, TAL metals, TCL volatiles, TCL semivolatiles, tantalum, hexavalent chromium, and pesticides and PCBs.

Americium-241 activity was detected above background and PRG activity levels at Location SS001495 (Table 3-30). Americium-241 activity was detected above background but not above PRG activity levels at Location SS001595. Gross alpha activity was detected above background but not above PRG activity levels at Location SS001495. Plutonium-239/240 activity was detected above background and PRG activity levels at Location SS001495. Plutonium-239/240 activity was detected above background but not above PRG activity levels at Location SS001595. Uranium-238 activity was detected above PRG but not above background activity levels at Location SS001495. Neptunium-237 was not detected at either location.

Arsenic and beryllium were detected above their PRGs but not above background at both surface-soil sample locations. Additionally, copper was detected above background levels

at both locations, and silver was detected above background levels at Location SS001595. Tantalum and hexavalent chromium were not detected at either location.

Methylene chloride, at an estimated concentration of 1 µg/kg in the sample from Location SS001595, was the only TCL volatile detected.

TCL semivolatile analysis revealed detections of multiple chemicals above the MDL (Table 3-30) at every surface-soil sample location. However, both sample locations (SS001495 and SS001595) had detections above the PRG for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene. In addition, Location SS001495 had a detection of indeno(1,2,3-cd)pyrene above the PRG.

Of the PCB analytes, aroclor-1260 was detected at Location SS001495 and aroclor-1254 was detected at Location SS001595. However, neither detection exceeded the PRG.

3.11.4 Borehole Investigations

Four boreholes were drilled around Tank T-29. Three soil samples were collected from the following locations: ground surface (before drilling), mid-depth between the ground surface and bedrock, and above the bedrock/alluvial contact. Groundwater was not encountered. Figure 3-1, Example 5 depicts the sampling rationale for borehole drilling at Tanks T-29. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, neptunium, TAL metals, TCL volatiles, TCL semivolatiles, tantalum, hexavalent chromium, chlorinated herbicides, and pesticides/PCBs. A summary of the analytical parameters for all media is shown in Tables 2-1 through 2-4. Table 3-31 lists detected constituents, reported concentrations, and sample locations for the borehole samples. Complete analytical results are included in Appendix E. Figure 3-21 displays sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery on some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 04395. This borehole was located on the west side of Tank T-29 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 13.0 feet and the borehole was drilled to a depth of 16.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), mid-depth between the ground surface and bedrock (4.0 to 7.2 feet), and above the bedrock/alluvial contact (10.0 to 13.0 feet). Water was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4873JE), every radionuclide analyzed for had detectable activity. However, Am-241 and Pu-239/240 were the only radionuclides with activities above background. No radionuclides exceeded PRG levels. Tritium was not detected by the total radionuclide analysis method, but the toxicity characteristic leaching procedure (TCLP) leachate analysis detected an estimated activity of 16.9 pCi/L. Of the TAL metals, lead was the only metal detected above background concentrations. No metals exceeded PRGs. Methylene chloride, at an estimated concentration of 1 µg/kg, was the only TCL volatile detected. Several TCL semivolatiles were detected (Table 3-31) but none were above PRGs. Tantalum was not detected. Hexavalent chromium was not detected. Because this is a surface-soil sample for this boring location, and to remain consistent with the surface-soil analytical suite, chlorinated herbicides were not analyzed for in this sample. Aroclor-1254, at an estimated concentration of 68 µg/kg, was the only PCB detected. This detection of aroclor-1254 did not exceed the PRG.

In the soil sample from 4.0 to 7.2 feet (BHG4946JE) none of the radionuclide results, including tritium, were received from RFEDS by the time this report was prepared. No TAL metals were detected above background or PRG concentrations. The TCL volatiles

2-butanone, acetone, and methylene chloride were detected at concentrations of 8 µg/kg, 160 µg/kg, and 2 µg/kg, respectively, but did not exceed the PRGs. The 2-butanone and methylene chloride detections were estimated concentrations, and acetone was also detected in the blank. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was detected at an estimated concentration of 0.59 mg/kg. A background concentration or PRG for hexavalent chromium has not been established. Chlorinated herbicides were not detected. Pesticide and PCBs were not detected.

In the soil sample from 10.0 to 13.0 feet (BHG4947JE), none of the radionuclide results, including tritium, were received from RFEDS by the time this report was prepared. No TAL metals were detected above background concentrations. Four TCL volatiles were detected: 2-butanone at 12 µg/kg, 4-methyl-2-pentanone at 4 µg/kg, acetone at 76 µg/kg, and methylene chloride at 2 µg/kg. The detected concentrations of 4-methyl-2-pentanone and methylene chloride were estimated, and acetone was also detected in the blank. None of the detected volatiles exceeded PRGs. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was not detected. Chlorinated herbicides were not detected. Pesticides/PCBs were not detected.

Possibly because of its upgradient location, it does not appear that contaminants associated with the Tank T-29 waste stream have impacted the soil in this location.

Borehole 04495. This borehole is located on the southwest side of Tank T-29 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 14.3 feet and the borehole was drilled to a depth of 16.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), mid-depth between the ground surface and bedrock (6.0 to 6.9 feet), and above the bedrock/alluvial contact (10.0 to 14.3 feet). Water was not encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

In the soil sample from 0.0 to 6.0 inches (BHG4874JE), every radionuclide analyzed for had detectable activity. However, Am-241 and Pu-239/240 were the only radionuclides with activities above background. No radionuclides exceeded PRG levels. Tritium was not detected by the total radionuclide analysis method, but the TCLP leachate analysis detected an estimated activity of 28.16 pCi/L. Of the TAL metals, lead was the only metal detected above background concentrations. No metals exceeded PRGs. Methylene chloride, at an estimated concentration of 2 µg/kg, was the only TCL volatile detected. Several TCL semivolatiles were detected (Table 3-31) but none were above PRGs. Tantalum was not detected. Hexavalent chromium was not detected. Because this is a surface-soil sample for this boring location, and to remain consistent with the surface-soil analytical suite, chlorinated herbicides were not analyzed for in this sample. Aroclor-1260, at an estimated concentration of 89 µg/kg, and gamma-chlordane, at an estimated concentration of 2.6 µg/kg, were the only pesticides/PCBs detected. In addition, dieldrin was detected in the duplicate of this sample at an estimated concentration of 4.5 µg/kg. None of the detections exceeded the PRG.

In the soil sample from 6.0 to 6.9 feet (BHG4944JE), none of the radionuclide results, including tritium, were received from RFEDS by the time this report was prepared. No TAL metals were detected above background or PRG concentrations. The TCL volatiles acetone and methylene chloride were detected at concentrations of 95 µg/kg, and 1 µg/kg, respectively, but did not exceed the PRGs. Acetone was detected in the blank, and the methylene chloride detected concentration was estimated. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was not detected. Chlorinated herbicides were not detected. Pesticide and PCBs were not detected.

In the soil sample from 10.0 to 14.3 feet (BHG4945JE), none of the radionuclide results, including tritium, were received from RFEDS by the time this report was prepared. No TAL metals were detected above background concentrations. The TCL volatiles acetone and methylene chloride were detected at concentrations of 70 µg/kg and 2 µg/kg,

respectively, but did not exceed the PRGs. Acetone was detected in the blank, and the methylene chloride detected concentration was estimated. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was detected at an estimated concentration of 0.84 mg/kg. A background concentration or PRG for hexavalent chromium has not been established. Chlorinated herbicides were not detected. Pesticides/PCBs were not detected.

Possibly because of its upgradient location, it does not appear that contaminants associated with the Tank T-29 waste stream have impacted the soil in this location.

Borehole 04595. This borehole was located on the east side of Tank T-29 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 13.2 feet and the borehole was drilled to a depth of 15.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), mid-depth between the ground surface and bedrock (6.0 to 7.4 feet), and above the bedrock/alluvial contact (10.5 to 11.5 feet). Water was not encountered. Collection of a complete analytical suite was not possible above the bedrock/alluvial contact. Only a semivolatile/pesticide/PCB fraction was not collected. For all other samples, recovery was sufficient to collect a complete analytical suite.

In the soil sample from 0.0 to 6.0 inches (BHG4875JE), every radionuclide analyzed for had detectable activity. However, Am-241 and Pu-239/240 were the only radionuclides with activities above background. No radionuclides exceeded PRG levels. Tritium was not detected by the total radionuclide analysis method, but the TCLP leachate analysis method detected an estimated activity of 46.59 (227) pCi/L. Of the TAL metals, lead was detected above background concentrations. No metals exceeded PRGs. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-31) but none were above PRGs. Tantalum was not detected. Hexavalent chromium was not detected. Since this is a surface-soil sample for this boring location, and to remain consistent with the surface-soil analytical suite, chlorinated herbicides were not analyzed for in this

sample. Aroclor-1254, at an estimated concentration of 81 µg/kg, was the only PCB parameter detected. The detection did not exceed the PRG.

In the soil sample from 6.0 to 7.4 feet (BHG4948JE), gross alpha, gross beta, neptunium-237, Pu-239/240, U-233/234, and U-238 had detectable activities, but none exceeded background or PRGs. Analytical results for Am-241, Pu-238, tritium, and U-235 had not been received from RFEDS at the time this report was prepared. No TAL metals were detected above background or PRG concentrations. The TCL volatiles 2-butanone, acetone, and methylene chloride were detected at concentrations of 6 µg/kg, 110 µg/kg, and 2 µg/kg, respectively, but did not exceed the PRGs. The 2-butanone and methylene chloride detected concentrations were estimated. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was not detected. Chlorinated herbicides were not detected. Pesticide and PCBs were not detected.

In the soil sample from 10.5 to 11.5 feet (BHG4949JE), Pu-239/240, U-233/234, U-235, and U-238 had detectable activities, but none exceeded background or PRGs. Analytical results for gross alpha, gross beta, Am-241, and tritium had not been received from RFEDS at the time this report was prepared. Neptunium-237 and Pu-238 did not have detectable activity. Cadmium and silver were detected above background concentrations. Their concentrations did not exceed their PRGs. The TCL volatiles acetone and methylene chloride were detected at concentrations of 45 µg/kg, and 3 µg/kg, respectively, but did not exceed the PRGs. Both chemicals' detected concentrations were estimated. Inadequate sample recovery prevented the collection of a sample for TCL semivolatile, chlorinated herbicide, and pesticide/PCB analyses. Tantalum was detected at an estimated concentration of 25.6 mg/kg; however, it was also detected in the blank. Hexavalent chromium was detected at an estimated concentration of 0.56 mg/kg. A background concentration or PRG for hexavalent chromium has not been established.

Significant contamination associated with the Tank T-29 waste streams does not appear to be present at this location.

Borehole 04695. This borehole was located on the northeast side of Tank T-29 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 13.2 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches), mid-depth between the ground surface and bedrock (6.0 to 8.3 feet), and above the bedrock/alluvial contact (10.0 to 13.2 feet). Water was not encountered. Because of lack of recovery, a complete analytical suite was not possible for the mid-depth sample and as a result, the TAL metals and the semivolatile and pesticide and PCB samples were not collected. For the rest of the samples, recovery was sufficient to collect a complete analytical suite.

In the soil sample from 0.0 to 6.0 inches (BHG4876JE), every radionuclide analyzed for had detectable activity. However, Am-241 and Pu-239/240 were the only radionuclides with activities above background. No radionuclides exceeded PRG levels. Tritium was not detected by the total radionuclide analysis method, but the TCLP leachate analysis method detected an estimated activity of 56.8 (220) pCi/L. No TAL metals were detected above background or PRG concentrations. No TCL volatiles were detected. Several TCL semivolatiles were detected (Table 3-31) but none were above PRGs. Tantalum was not detected. Hexavalent chromium was not detected. Because this is a surface-soil sample for this boring location, and to remain consistent with the surface-soil analytical suite, chlorinated herbicides were not analyzed for in this sample. No pesticide or PCBs were detected.

In the soil sample from 6.0 to 8.3 feet (BHG4950JE), every radionuclide analyzed for had detectable activity, but none exceeded background or PRGs. Analytical results for tritium had not been received from RFEDS at the time this report was prepared. Inadequate sample recovery prevented the collection of a sample for TAL metals (including tantalum),

TCL semivolatiles, chlorinated herbicides, pesticides/PCBs, and hexavalent chromium analysis. The TCL volatiles acetone and methylene chloride were detected at concentrations of 76 µg/kg and 2 µg/kg, respectively, but did not exceed the PRGs. The methylene chloride detected concentration was estimated.

In the soil sample from 10.0 to 13.2 feet (BHG4951JE), every radionuclide analyzed for had detectable activity, but none exceeded background or PRGs. Analytical results for tritium had not been received from RFEDS at the time this report was prepared. No TAL metals were detected above background concentrations or PRGs. The TCL volatiles acetone and methylene chloride were detected at concentrations of 29 µg/kg and 3 µg/kg, respectively, but did not exceed the PRGs. The methylene chloride detected concentration was estimated. No TCL semivolatiles were detected. Tantalum was not detected. Hexavalent chromium was detected at an estimated concentration of 1.16 mg/kg. A background concentration or PRG for hexavalent chromium has not been established. Chlorinated herbicides or pesticide and PCBs were not detected.

Significant contamination associated with the Tank T-29 waste streams does not appear to be present at this location.

3.11.5 Tank Characterization

The Tank T-29 valve vault measured about 5 feet on the north-south axis and about 6 feet on the east-west axis, and is approximately 4 feet deep. A steel pipe, about 4 inches in diameter, enters the valve vault through its south wall from the direction of and presumably from Tank T-29. This pipe enters a valve and continues out of the north side of the vault. A steel pipe, also about 4 inches in diameter, exits from the top of Tank T-29 and enters the valve vault through the top of the vault. This pipe leads into a valve that then connects with the other pipe that exits the north side of the vault.

Two other 4-inch pipes enter valves in the vault through the east wall from the direction of the solar ponds and then connect to a common pipe that exits the north wall of the vault.

3.11.5.1 Tank T-29 Vault

The vault was visually inspected through the manway. The valve vault had about 12 inches of a clear liquid, but the bottom inch of the liquid had rust-colored, unconsolidated sediment that quickly dispersed upon being disturbed. Water-level stains on the vault walls indicated that the vault periodically filled with water; the manway cover was not sealed, so surface water runoff is suspected within the vault. The walls of the vault appeared to be in satisfactory condition, but no paint was noted. The pipe and the ladder rungs were significantly corroded, again indicating that water was common in the vault.

No organic vapors were detected with in-field instrumentation before or during the sampling event (Appendix F). Colorimetric tubes were used to screen for carbon tetrachloride, hydrogen fluoride, and chloroform but indicated that each was below the detection capabilities of the tubes.

The liquid sample was collected using a disposable bailer and included some of the unconsolidated sediments that went into suspension.

This aqueous sample was analyzed for the complete analytical suite including gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, tritium, TAL metals, hexavalent chromium, and tantalum; water quality parameters including fluoride, nitrate, nitrite, sulfate, chloride, TOC, pH, and specific conductivity; and TCL volatiles, TCL semivolatiles, pesticides, and PCBs.

impossible. Some oxidation was apparent inside of the tank, but no residue was found (which the sampling team had been told was present). Building 774 personnel reportedly sampled the residue from this tank sometime in the mid-1980s after the tank was taken out of service, but data from this sampling were not located.

The paint on the exterior of the tank was in satisfactory condition and no surface oxidation on the exterior of the tank was noted. The tank seemed structurally sound, although some oxidation was noted near the welds between the ladder and the tank.

Radiological smear samples were collected from the interior of the tank because no residue was found. The results for removable alpha and beta contamination are presented in Appendix F. The highest activities were found on the base of the tank, ranging from 2,970 to 6,020 dpm/100 cm^2 for removable alpha activity and from less than 200 dpm/100 cm^2 to 263 dpm/100 cm^2 for removable beta activity. The sides near the base of the tank had significantly lower removable activities than the base, ranging from 26 to 142 dpm/100 cm^2 for removable alpha activity and less than 200 dpm/100 cm^2 at all locations for removable beta activities. The removable alpha activities on the sides of the tank increased as the positions of the survey locations approached the tank ceiling.

These data would suggest that the residue that was present during the sampling in the early- to mid-1980s was removed and the tank cleaned before this tank characterization. It is conceivable that the top of the tank could not be cleaned as thoroughly as the sides closer to the base, which would account for the trend of increasing radiological activity closer to the top of the tank.

A radiological smear sample was collected from a 4-inch overflow pipe located on the east side of the tank because no residue or liquid remained in the pipe to sample. Removable alpha contamination from the interior of this overflow pipe was less than 20 dpm/100 cm^2

and removable beta contamination from this same location was less than 200 dpm/100 cm^2.

No organic vapors were detected with in-field instrumentation before or during the sampling events at Tank T-29 (Appendix F).

3.12 TANK T-40

Tank T-40 is located in the 800 Area west of Building 889 (Figure 3-22). Tank T-40 consists of two 400-gallon underground concrete tanks underlying a concrete vault approximately 7 feet deep; however, the assumed volume of these tanks may be inaccurate, as discussed below.

3.12.1 Historical Information

Tank T-40 was reportedly installed sometime in the mid-1950s and was then abandoned in 1981 or 1982 (Jacobs 1994). The T-40 tanks received waste from Building 889, including acids, solvents, radionuclides (only U-238), metals, detergents, and soap and grease from cleaning equipment. Information indicates that the tanks were abandoned in 1982 when the new transfer system was brought into service (Jacobs 1994). As-built drawings indicate that the tanks were decontaminated when abandoned (DOE 1981).

3.12.2 Radiological Surveys

The following sections describe the results from the in situ radiological NaI and HPGe surveys around Tank T-40. NaI survey locations and results are shown in Appendix D. HPGe survey locations are shown on Plate 2 and HPGe results are presented in Appendix C.

3.12.2.1 HPGe and NaI Surveys

High-Purity Germanium Survey. Tank T-40 lies within the radius of one HPGe survey location, Station 3H-14. No evidence was provided indicative of anomalous activities for K-40, Ra-226, Th-232, Cs-137, Am-241, or Pu-239/240. However, U-238 and U-235 activities were both elevated at 29.3 (± 0.1 percent) and 0.44 (± 0.01 percent) pCi/g, respectively.

Sodium Iodide Survey. Thirteen total locations were surveyed around Tank T-40 on a 10-foot grid. Only one site was statistically distinguishable above background activities and it is located on the southeast side of the tank. Activities around the tank ranged from 1,900 to 3,300 cpm with backgrounds of 2,078 to 3,125 cpm.

3.12.2.2 Tank Area Surveys

A radiological contamination survey was conducted on the exterior of the vault to Tank T-40 near the vault entry way (Appendix F). Fixed and removable alpha contamination was less than 100 dpm/100 cm^2 and beta was below 1,894 dpm/100 cm^2. Removable alpha contamination was less than 20 dpm/100 cm^2 and removable beta contamination was less than 200 dpm/100 cm^2.

3.12.3 Borehole Investigations/Groundwater Sampling

Four boreholes were drilled around Tank T-40. Borehole locations are presented in Figure 3-22. Two soil samples were collected from the ground surface (before drilling), and above the groundwater contact and above the bedrock/alluvial contact (the groundwater surface and the bedrock/alluvial contact were at virtually the same depth and therefore this sample was combined into one). Groundwater was encountered at three of the four boreholes. Figure 3-1, Example 3 depicts the sampling rationale for borehole

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drilling at Tank T-40. Soil samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, and TCL semivolatiles. A summary of the analytical parameters for each medium is shown in Table 2-2. Tables 3-33 and 3-34 list detected constituents, reported concentrations, and sample locations for the borehole and groundwater samples, respectively. Complete analytical results are included in Appendix E. Figure 3-23 displays sample results that exceed established PRGs and background concentrations. Borehole logs are presented in Appendix B.

Because of limited recovery in some boreholes, the sample range and interval varied and a complete analytical suite was not always possible. The following is a summary of the borehole sampling.

Borehole 04795. This borehole was located on the northwest side of Tank T-40 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 10.0 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches) and above groundwater (and immediately below the bedrock/alluvial contact) (10.0 to 11.6 feet). Groundwater was initially encountered at 13.7 feet and eventually rose to 9.3 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

No radionuclide, TAL metals, or TCL volatiles or semivolatiles were detected at levels exceeding background or PRGs in the soil samples in Borehole BH_04795 from 0.0 to 0.5 feet (BHG4869JE), or from 10.0 to 11.6 feet, (BHG4908JE or BHG4910JE [duplicate]).

In the groundwater sample (GWG1705JE) from this boring, the compounds strontium, barium, calcium, magnesium, mercury, and sodium exceeded background only. Arsenic, beryllium, Ra-226, PCE, and vinyl chloride exceeded PRGs only. Manganese was the only analyte that exceeded both background and PRGs.

Since Borehole BH_04795 is located generally crossgradient from T-40 and the waste stream held in T-40 included base/neutrals acids, trace metals, and radionuclides, the base/neutral acids, metals, and radionuclides detected in soil and groundwater samples from this boring may be indicative of releases from the tank.

Borehole 04895. This borehole was located on the southwest side of Tank T-40 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 12.3 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches) and above groundwater (and immediately above the bedrock/alluvial contact) (8.0 to 12.3 feet). Groundwater was encountered at 10.2 feet. A complete analytical suite was not collected for the groundwater sample because of lack of recovery; total radionuclides, TAL metals, and a TOC sample were not collected. For the remainder of the samples, recovery was sufficient to collect a complete analytical suite.

Uranium-233/234 was detected above background from 0.0 to 0.5 feet (BHG4870JE) in Borehole BH_04895. No radionuclides, TAL metals, or TCL volatiles or semivolatiles were detected above background or PRGs from 0.0 to 0.5 feet. No radionuclides, TAL metals, or TCL volatiles or semivolatiles were detected at levels exceeding background or PRGs in soil samples from 8.0 to 12.3 feet (BHG4911JE) (Table 3-33).

In the groundwater sample (GWG1706JE) from this boring, PCE was the only compound that exceeded the PRG. No backgrounds were exceeded in analytical results from groundwater in this borehole.

Because Borehole BH_04895 is located generally upgradient from the former location of Tank T-40, the presence of PCE in the groundwater and U-233/234 in soil may be attributable to other upgradient sources.

Borehole 04995. This borehole was located on the southeast side of Tank T-40 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 10.5 feet and the borehole was drilled to a depth of 12.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches) and above groundwater (and immediately above the bedrock/alluvial contact) (9.1 to 10.5 feet). Groundwater was initially encountered at 10.8 feet and eventually rose to 9.3 feet. Recovery was sufficient to collect a complete analytical suite for each sample collected.

No radionuclides, TAL metals, or TCL volatiles or semivolatiles were detected at levels exceeding background or PRGs in the soil samples in Borehole BH_04995 from 0.0 to 0.5 feet (BHG4871JE) and from 9.1 to 10.5 feet (BHG4915JE).

In the groundwater sample (GWG1707JE) from this boring the compounds strontium and zinc exceeded background only. Uranium and PCE exceeded PRGs only. No compounds exceeded background and PRGs.

Because Borehole BH_04995 is located generally crossgradient to T-40 and contaminants in the waste streams held in T-40 included trace elements of uranium and PCE, the compounds found in the groundwater may be indicative of releases from the tank.

Borehole 05095. This borehole was located on the northeast side of Tank T-40 as specified in OU9 Technical Memorandum 1 (DOE 1994a). Bedrock was encountered at 11.0 feet and the borehole was drilled to a depth of 14.0 feet. Soil samples were collected at ground surface (0.0 to 6.0 inches) and immediately above the bedrock/alluvial contact (8.0 to 11.0 feet). Groundwater was never encountered. Recovery was sufficient to collect a complete analytical suite for each sample collected.

Uranium-233/234 was detected above background from 0.0 to 0.5 feet (BHG4872JE) in Borehole BH_05095. No TCL volatiles or semivolatiles or TAL metals were detected

above background or PRGs from 0.0 to 0.5 feet. No radionuclides, TAL metals, or TCL volatiles or semivolatiles were detected in levels exceeding background or PRGs in soil samples from 8.0 to 11.0 feet (BHG4918JE) (Table 3-33).

Because Borehole BH_05095 is located generally downgradient from Tank T-40 and the waste streams held in T-40 included trace U-233/234, the U-233/234 detected in soil samples from this boring may be indicative of releases from the tank.

No groundwater was collected from this borehole.

3.12.4 Tank Characterization

The vault to the two T-40 tanks measured about 12 feet along the north-south axis and about 7 feet along the east-west axis, and is approximately 7 feet deep. Stairs on the west side of the vault landed in the northwest vault corner. The manway to the south T-40 tank was near the southeast corner of the vault and the manway to the north T-40 tanks was near the northeast corner. The covers to the manways had each been removed and lay on the vault floor. Pumps to each tank were noted immediately southeast of each manway.

A steel pipe, approximately 4 inches in diameter, led out of the north T-40 tank about 1 foot south of the manway; a similar pipe led from the south T-40 tank about 1 foot north of the manway for this tank. Each pipe had been disconnected from the associated piping and was open to the vault atmosphere. Vents were noted immediately adjacent to these pipes. Another similar pipe entered the vault from the direction of Building 889 through the east vault wall between the two open pipes; this pipe, however, was blanked. Another blanked pipe, also about 4 inches in diameter, exited the vault through the north wall in the northeast corner.

Approximately 2 inches of a clear liquid covered the base of the vault and filled each of the tanks. Some liquid, presumably groundwater or surface water runoff, was noted on the vault walls. Much debris, including plastic sheeting, a medium-size garbage can, and a tumbleweed, lay in the vault.

The two T-40 tanks could not be visually inspected because both were filled with liquid and because the sampling team could not enter the vault. The dimension of the tanks could therefore not be measured in the field and the reported capacity of 400 gallons each could not be verified. However, the as-built drawings indicate that the tanks are each approximately 5 feet along the north-south axis by about 7 feet along the east-west axis and about 4.5 feet deep; the tanks would therefore each have a capacity of about 1,200 gallons (DOE 1981).

Similarly, the T-40 tanks could not be directly assessed to determine the presence of sediment or sludge underlying the liquid.

A Teflon® dipper was used to remotely collect the liquid sample from the south T-40 tank. It was decided that only one sample would be collected from the two T-40 tanks because the liquid would probably be homogenous considering that the liquid could migrate between the tanks and liquid was observed entering the vault through the walls.

These aqueous phase samples were analyzed for gross alpha, gross beta, U-233/234, U-235, U-238, Am-241, Pu-239/240, TAL metals, TCL volatiles, and TCL semivolatiles.

Table 3-35 lists detected constituents, reported concentrations, and sample locations for the tank liquid samples. Complete analytical results are included in Appendix E.

No organic vapors were detected with in-field instrumentation before or during the sampling event (Appendix F). Colorimetric tubes were used to screen for carbon tetrachloride and sulfuric acid, but each was below the detection capabilities of the tubes.

Analytical results from the Tank T-40 liquid sample (TNG001JE) indicate the aqueous-phase samples contained traces of the following TAL metals: lithium, molybdenum, silicon, strontium, barium, calcium, cobalt, iron, magnesium, manganese, mercury, nickel, potassium sodium, thallium, vanadium, and zinc. Radionuclides detected were U-233/234, U-235, and U-238. Bis(2-ethylhexyl)phthalate was the only analyte detected from the test group TCL semivolatiles. Analytes detected from the TCL volatiles test group are 1,2-dichloroethene, 1,2-dichloropropane, acetone, PCE, toluene, and TCE. Water quality parameters detected include chloride, fluoride, and sulfate. TOC was also detected.

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TABLE 3-1
Background Activities of Specific Radionuclides

Radionuclide	Background Activities Identified in General Literature (pCi/g)	Source	Rock Creek Background Upper Tolerance Limit 1 ($UTL_{999/99}$)	BSCP Background Upper Tolerance Limit ($UTL_{99/99}$) † (pCi/g)	Maximim HPGe Activity Identified in Survey of Background Areas Near RFETS (pCi/g)
Potassium-40	1.89-21.8	Henderson (1982) Fauré (1977) NCRP (1987)	NR	NR	12.8
Radium-226	0.017-1.0	Henderson (1982) EG&G (1992) NCRP (1987)	1.59	1.20	1.13
Thorium-232	0.99-1.35	Henderson (1982) NCRP (1987)	NR	NR	1.25
Uranium-238	1.08-1.78	Henderson (1982) NCRP (1987)	1.91	2.83	2.30
Uranium-235	0.01-0.09	NCRP (1987) EG&G (1992)	0.20	0.13	0.10
Cesium-137	0.01-1.37	Henderson (1987) EG&G-EM (1990) EG&G (1992c) Faure (1977)	NR	2.25	0.84
Americium-241	0.01-0.05	EG&G (1992e) CDPHE (1992) Henderson (1987)	0.06	0.037	0.10
Plutonium-239 & 240	0.009-0.05	EG&G (1992e) CDPHE (1992) Henderson (1987)	0.13 pCi/g	0.084	††

Notes:

HPGe = high purity germanium
NR = not reported
pCi/g = picocuries per gram
RFETS = Rocky Flats Environmental Technology Site
$UTL_{99/99}$ = upper tolerance limit

† These numbers were reported in the "Geochemical Characterization of Background Surface Soils, Background Soils Characterization Program (BSCP), Rocky Flats Environmental Technology Site" (DOE 1995a). These values represent the 99/99 background upper tolerance limits ($UTL_{99/99}$) based on a normal distribution of data.

†† HPGe technology is only capable of measuring plutonium-239 in the nanocurie per gram (nCi/g) range.

TABLE 3-2
Target Analyte List Metals (Modified)

Aluminum, Al	Antimony, Sb	Arsenic, As
Barium, Ba	Beryllium, Be	Cadmium, Cd
Cesium, Cs	Chromium, Cr	Chromium (VI), Cr^{6+}*
Cobalt, Co	Copper, Cu	Iron, Fe
Lead, Pb	Lithium, Li	Magnesium, Mg
Manganese, Mn	Molybdenum, Mo	Nickel, Ni
Potassium, K	Selenium, Se	Silicon, Si
Silver, Ag	Sodium, Na	Strontium, Sr
Thallium, Tl	Tin, Sn	Vanadium, V
Zinc, Zn	Tantalum, Ta*	

* These metals (not part of the TAL metals list) were only analyzed for at certain tanks

TABLE 3-3
Target Compound List Volatile Organic Compounds

Chloromethane	Bromomethane	Vinyl chloride
Chloroethane	Methylene chloride	Acetone
Carbon disulfide	1,1-Dichloroethane	1,1-Dichloroethene
1,2-Dichloroethene (total)	Chloroform	1,2-Dichloroethane
2-Butanone	1,1,1-Trichloroethane	Carbon tetrachloride
1,2-Dichloropropane	cis-1,3-Dichloropropene	Trichloroethene
Dibromochloromethane	1,1,2-Trichloroethane	Benzene
trans-1,3-Dichloropropene	Bromoform	4-Methyl-2-pentanone
2-Hexanone	Tetrachloroethene	Toluene
1,1,2,2-Tetrachloroethane	Chlorobenzene	Ethylbenzene
Styrene	Xylenes (total)	

TABLE 3-4
Target Compound List Semivolatile Organic Compounds

Acenaphthene	Acenaphthylene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(g,h,i)perylene	Benzo(k)fluoranthene	4-Bromophenyl-phenylether
Butylbenzylphthalate	Carbazole	4-Chloro-3-methylphenol
bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether
2-Chloronaphthalene	2-Chlorophenol	4-Chlorophenyl-phenylether
Chrysene	Dibenzofuran	Dibenzo(a,h)anthracene
1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
3,3'-Dichlorobenzidine	2,4-Dichlorophenol	Diethylphthalate
2,4-Dimethylphenol	Dimethylphthalate	Di-n-butylphthalate
2,4-Dinitrobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene
Di-n-octylphthalate	bis(2-ethylhexyl) phthalate	Fluoranthene
Fluorene	Hexachlorobenzene	Hexachlorobutadiene
Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene
Isophorone	2-Methylnaphthalene	2-Methylphenol
4-Methylphenol	Naphthalene	2-Nitroaniline
3-Nitroaniline	4-Nitroaniline	Nitrobenzene
2-Nitrophenol	4-Nitrophenol	N-Nitroso-di-n-polyamine
N-Nitrosophenylamine	Pentachlorophenol	Phenanthrene
Phenol	Pyrene	1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	

TABLE 3-5
Radionuclide Analyte List

Total Gross alpha	Total Gross beta	Total U-233/234, 235, 238*
Total Pu-239/240, Am-241	Tritium, ^{3}H**	Neptunium-237**
Cesium-137**	Radiological Screen***	

* Isotopes U-233 and U-234 are measured together along with individual measurements of U-235 and U-238.

** These radionuclides were only analyzed for at certain tanks; see Tables 2-1 and 2-3.

*** Gross screening that all samples are subjected to before they are released from RFETS.

TABLE 3-6
List of Other Organic Compounds
(Pesticides and Polychlorinated Biphenyls)

Aldrin	α-BHC	β-BHC
γ-BHC (Lindane)	δ-BHC	Chlordane
4,4'-DDD	4,4'-DDE	4,4'-DDT
Dieldrin	Endosulfan I	Endosulfan II
Endosulfan sulfate	Endrin	Endrin aldehyde
Heptachlor	Heptachlor epoxide	Methoxychlor
Toxaphene	PCB-1016	PCB-1221
PCB-1232	PCB-1242	PCB-1248
PCB-1254	PCB-1260	

TABLE 3-7
List of Water Quality Parameters

Fluoride	Nitrate/Nitrite (N)	Chloride
Sulfate	Total Organic Carbon	pH (Standard Units)
Specific Conductivity		

TABLE 3-8
List of Chlorinated Herbicides*

Dichlorophenoxyacetic Acid (2,4-D)	Trichlorophenoxypropionic Acid (2,4,5-TP)

- Chlorinated herbicides were only analyzed for at certain tanks; see Table 2-1 and 2-3.

Legend for Tables 3-9 through 3-35

A = Validation qualifier; laboratory qualifier considered acceptable
B = Indicates compound was found in blank and sample
D = Compounds identified using Secondary Dilution Factor - Organic
I = Interference
J = Laboratory Qualifier: estimated value
R = Data are rejected
U = Analyzed; not detected at/above method detection limit
V = Validation qualifier: valid data
X = Result by calculation defined in GRRASP (EG&G 1991b)
Y = Analytical results in validation process
* = Indicated compound exceeds PRG
** = All samples reported with positive results; no non-detects reported
- = No background or PRG for indicated compound
= Indicated compound exceeds background
< = Indicated compound is equal to or below instrument detection limit

BKGND = Background
BNACLP = Base Neutral Acid Contract Laboratory Program Method
GRRASP = General Radiochemistry and Routine Analytical Services Protocol
HERB8150 = Herbicides Method 8150
IHSS = Individual Hazardous Substance Site
MDL = Method Detection Limit
METADD = Metals Added
mg/kg = milligrams per kilogram
OU = Operable Unit
pCi/g = picocuries per gram
pCi/L = picocuries per liter
PESTCLP = Pesticides Contract Laboratory Program
pH = measure of acidity/alkalinity
PRG = Preliminary Remediation Goal
SED = Sediment
SMETCLP = Standard Metals Contract Laboratory Program
SQL = Sample Quantitation Limit
SS = Surface Soils
TCLP-RADS = Radionuclides - Toxicity Characteristic Leaching Procedure
TRADS = Total Radionuclides
VOACLP = Contract Laboratory Program Volatile Organic Analyte Package
WQPL = Water Quality Parameter List
WQPL - SPCOND = Water Quality Parameter List - Specific Conductivity
WQPL - pH = Water Quality Parameter List - measure of acidity/alkalinity
%REC = Percent Recovery
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter
1 = PRGs from Programmatic Risk-Based Preliminary Remediation Goals (DOE 1995b)
2 = Background from Background Soils Characterization Program, May 1995 (DOE 1995a)

TABLE 3-9
Borehole Positive Results Table
Tank T-1

Sample Location:			1095	1095	1095	1196	1295	1295
Sample Identification Number:			BHG4900JE	BHG4901JE	BHG4902JE	BHG4906JE	BHG4904JE	BHG4914JE
Date Sampled:	MDL	PRG / BKGND	9-Mar-95	9-Mar-95	9-Mar-95	10-Mar-95	10-Mar-95	14-Mar-95
Test Group:METADD Units:MG/KG		Depth(ft) or Sample Type	6.0-6.7	12.0-13.8	duplicate	4.0-4.9	4.0-4.6	trench
CESIUM	1000	0.00E 0 / 1267.00E 0						4.5 :Y
LITHIUM	100	3.55E 4 / 53.40E 0	7.1 B:V	5.3 B:V	5.9 B:V	6.1 B:V		10.7 :Y
STRONTIUM	200	1.00E 6 / 342.60E 0	11.1 B:V	10.1 B:V	11.3 B:V	12.5 B:V		21.6 :Y
TIN	200	1.00E 6 / 0.00E 0						9 :Y
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	200	1.00E 6 / 55098.00E 0	10500 :V	6560 :V	7200 :V	8440 :V		15700 :Y
ARSENIC	10	7.09E 1 / 21.48E 0	6.6 :V	3 :V	3.5 :V	4.9 :V		8.9 :Y
BARIUM	200	1.24E 5 / 389.00E 0	54.9 :V	54.7 :V	64.7 :V	49.1 :V		89.1 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	.84 B:V	.56 B:V	.559:V	.6 B:V		1.2 :Y
CALCIUM	5000	0.00E 0 / 67403.00E 0	2450 :V	2030 :V	2270 :V	4180 :V		3620 I:Y
CHROMIUM	10	0.00E 0 / 113.80E 0	10.9 :V	10.3 :V	10 :V	9.8 :V		16.4 :Y
COBALT	50	1.06E 5 / 48.80E 0	6.2 B:V	5.8 B:V	6 B:V	4.8 B:V		7.5 :Y
COPPER	25	7.10E 4 / 59.10E 0	10.3 :V	11.8 :V	13.5 :V			11.9 :Y
IRON	100	0.00E 0 / 63389.00E 0	13700 :V	9120 :V	10900 :V	10900 :V		16900 :Y
LEAD	3	0.00E 0 / 30.50E 0	8.6 :V	4.9 :V	5.5 :V	6.8 :V		15.7 :Y
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	1520 :V	1420 :V	1530 :V	1380 :V		1910 :Y
MANGANESE	15	8.86E 3 / 1505.00E 0	155 :JA	162 :JA	203 :JA	80.1 :JA		188 :Y
MERCURY	0.2	5.32E 2 / 2.81E 0						.062 :Y
NICKEL	40	3.55E 4 / 103.60E 0	11.4 :V	9.4 :V	10.5 :V	9.6 :V		15.4 :Y
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1220 I:JA	1020 BI:JA	1090 BI:JA	1120 BI:JA		1640 :Y
SODIUM	5000	0.00E 0 / 0.00E 0	62.3 B:JA-	56.9 B:JA-	71.6 B:JA-	74.3 B:JA-		116 :Y-
THALLIUM	10	0.00E 0 / 0.00E 0						.53 :Y-
VANADIUM	50	1.24E 4 / 138.30E 0	30.4 :V	18.4 :V	18 :V	23.3 :V		38.4 :Y
ZINC	20	5.32E 5 / 216.20E 0	25.1 :V	20.1 :V	20.8 :V	20.7 :V		29.1 :Y
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.011(.008) :V	.003(.004) J:V	.014(.01) :V	.178(.033) :V#		.007(.006) J:V
GROSS ALPHA	0	0.00E 0 / 44.56E 0	16.07(4.39) :V	12.27(3.85) :V	13.99(4.12) :V	13.48(4.02) :V		19.35(4.67) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	32.04(3.55) :V	27.89(3.23) :V	31.42(3.51) :V	30.89(3.45) :V		29.23(3.32) :V
PLUTONIUM-238	0	E 0 / E 0	.005(.006) J:V-	.001(.004) J:V-	.001(.005) J:V-	.021(.01) :V-		.018(.017) J:V-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.033(.012) :V	.03(.014) :V	.055(.017) :V	.747(.099) :V#		.024(.017) :V
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	.713(.122) :V	.537(.092) :V	.541(.095) :V	1.001(.161) :V		.841(.185) :V
URANIUM-235	0	1.73E 1 / 19.83E-2	.029(.017) :V	.031(.017) :V	.035(.019) :V	.035(.02) :V		.028(.026) J:V
URANIUM-238	0	7.98E 1 / 19.12E-1	.761(.128) :V	.551(.095) :V	.657(.11) :V	.907(.149) :V		.92(.198) :V
Test Group:VOACLP Units:UG/KG								
2-BUTANONE	0	1.00E 9 / 0.00E 0					4 J:Y	
ACETONE	10	1.77E 8 / 0.00E 0					14 B:Y	
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0					2 J:Y	

TABLE 3-10
Groundwater Positive Results Table
Tank T-1

Sample Location:				1095	1195
Sample Identification Number:				GWG1702JE	GWG1704JE
Date Sampled:	MDL	PRG / BKGND		9-Mar-95	10-Mar-95
Test Group:METADD Units:UG/L					
LITHIUM	100	7.30E 2 /	7.52E 1	73.3 B:V	15.5 B:V
SILICON	500	0.00E 0 /	567.77E 2	16400 :JA	6340 :JA
STRONTIUM	200	2.19E 4 /	2.45E 2	380 :V#	231 :V
TIN	200	2.19E 4 /	1.45E 2	20.8 B:JA	
Test Group:SMETCLP Units:UG/L					
ALUMINUM	200	1.06E 5 /	192.24E 2	124000 :V*#	23500 :V#
ANTIMONY	60	1.46E 1 /	6.89E 1	24.7 B:V*	
ARSENIC	10	4.86E-2 /	7.43E 0	17.6 :V*#	10.4 :V*#
BARIUM	200	2.56E 3 /	2.08E 2	367 :V#	178 B:V
BERYLLIUM	5	1.98E-2 /	0.00E 0	7.5 :V*	1 B:JA*
CALCIUM	5000	0.00E 0 /	932.89E 2	74900 :V	56300 :V
CHROMIUM	10	0.00E 0 /	3.10E 1	156 :V#	20.3 :V
COBALT	50	2.19E 3 /	3.98E 1	43.8 B:V#	5.9:V
COPPER	25	1.46E 3 /	5.35E 1	133 :V#	27.4 :V
IRON	100	0.00E 0 /	223.89E 2	141000 :V#	22200 :V
LEAD	3	0.00E 0 /	1.56E 1	99.4 :JA#	19.3 :V#
MAGNESIUM	5000	0.00E 0 /	114.75E 2	22900 :V#	7360 :V
MANGANESE	15	1.82E 2 /	1.37E 2	1240 :V*#	584 :V*#
MERCURY	0.2	1.09E 1 /	2.60E-1	.23 :JA	
NICKEL	40	7.30E 2 /	4.77E 1	110 :V#	18.7 B:V
POTASSIUM	5000	0.00E 0 /	51.99E 2	18400 :V#	6360 :V#
SELENIUM	5	1.82E 2 /	3.27E 0	4.1 B:JA#	3.2 B:V
SILVER	10	1.82E 2 /	0.00E 0	11 :V	
SODIUM	5000	0.00E 0 /	138.65E 2	17800 :V#	9870 :V
VANADIUM	50	2.56E 2 /	4.90E 1	269 :V*#	45 B:V
ZINC	20	1.09E 4 /	2.45E 2	530 :V#	147 :V
Test Group:TRADS Units:PCI/L					
AMERICIUM-241	0	1.98E-1 /	6.34E-2	.407(.061) :Y*#	11.9(3.98) :Y*#
GROSS ALPHA	0	0.00E 0 /	44.56E 0	6(1) :Y	1900(150) :Y#
GROSS BETA	0	0.00E 0 /	55.35E 0	9(1) :Y	1500(96) :Y#

TABLE 3-10
Groundwater Positive Results Table
Tank T-1

Sample Location:			1095	119[illegible]
Sample Identification Number:			GWG1702JE	GWG17[illegible]4JE
Date Sampled:	MDL	PRG / BKGND	9-Mar-95	1[illegible]-Mar-95
PLUTONIUM-239/240	0	2.07E-1 / 13.21E-2	2.104(.102) :Y*#	140(6.73) :Y*#
RADIUM-226	0	3.97E-1 / 15.87E-1	1.1(.5) :Y*	130(3) :Y*#
URANIUM-233,-234	0	2.98E 0 / 17.69E-1	.61(.08) :Y	42.99(3.9) :Y*#
URANIUM-235	0	2.98E 0 / 19.83E-2	.07(.02) :Y	1.84(.68) :Y#
URANIUM-238	0	2.98E 0 / 19.12E-1	.76(.05) :Y	41.86(3.9) :Y*#
Test Group:WQPL Units:MG/L				
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0		6.07 :V-

TABLE 3-11
Surficial Soil Positive Results Table
Tank Group T-2 and T-3

Sample Location:			SS000195	SS000295	SS000395	SS000495	SS000595	SS000695
Sample Identification Number:			SSG2821JE	SSG2822JE	SSG2823JE	SSG2827JE	SSG2831JE	SSG2829JE
Date Sampled:	MDL	PRG / BKGND	14-Feb-95	14-Feb-95	16-Feb-95	15-Feb-95	16-Feb-95	16-Feb-95
Test Group:BNACLP Units:UG/KG								
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0			160 J:A-	74 J:A	42 J:A-	
ACENAPHTHENE	330	1.65E 7 / 0.00E 0	200 J:A	310 J:A	810 :V	390 :V	320 J:A	
ANTHRACENE	330	8.23E 7 / 0.00E 0	240 J:A	380 J:A	1200 :V	470 :V	360 J:A	
BENZO(a)ANTHRACENE	330	8.77E 2 / 0.00E 0	440 :V	780 :V	2100 :V*	1100 :V*	800 :V	
BENZO(a)PYRENE	330	8.77E 1 / 0.00E 0	430 :V*	780 :V*	2000 :V*	960 :V*	740 :V*	
BENZO(b)FLUORANTHENE	330	8.77E 2 / 0.00E 0	390 :V	700 :V	2200 :V*	1200 :V*	620 :V	
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0	290 J:A-	610 :V-	1300 :V-	920 :V-	490 :V-	
BENZO(k)FLUORANTHENE	330	8.77E 3 / 0.00E 0	200 J:A	380 J:A	880 :V	420 :V	440 :V	
BUTYL BENZYL PHTHALATE	330	5.49E 7 / 0.00E 0		66 J:A		45 J:A		
CARBAZOLE	0	0.00E 0 / 0.00E 0	130 J:A-	210 J:A-	500 :V-	220 J:A-	230 J:A-	
CHRYSENE	330	8.77E 4 / 0.00E 0	460 :V	840 :V	1900 :V	1100 :V	800 :V	
DI-n-BUTYL PHTHALATE	330	2.74E 7 / 0.00E 0						
DIBENZO(a,h)ANTHRACENE	330	8.77E 1 / 0.00E 0		180 J:A*	460 J:A*	69 J:A	120 J:A*	
DIBENZOFURAN	330	0.00E 0 / 0.00E 0	71 J:A-	87 J:A-	340 J:A-	140 J:A-	100 J:A-	
FLUORANTHENE	330	1.10E 7 / 0.00E 0	1300 :V	2300 :V	5500 :V	2600 :V	2300 :V	
FLUORENE	330	1.10E 7 / 0.00E 0	140 J:A	230 J:A	780 :V	320 J:A	240 J:A	
INDENO(1,2,3-cd)PYRENE	330	8.77E 2 / 0.00E 0	210 J:A	500 :V	1200 :V*	720 :V	440 :V	
NAPHTHALENE	330	1.10E 7 / 0.00E 0	110 J:A	100 J:A	300 J:A	75 J:A	150 J:A	
PHENANTHRENE	330	0.00E 0 / 0.00E 0	1100 :V-	1700 :V-	5100 :V-	2300 :V-	1800 :V-	
PYRENE	330	8.23E 6 / 0.00E 0	1000 :V	1800 :V	5300 :V	2700 :V	1700 :V	
Test Group:METADD Units:MG/KG								
LITHIUM	20	5.49E 3 / 15.08E 0	6.6 B:V	9 B:V	7.3 B:V	7.9 B:V	13.1 B:V	3.2 B:V
STRONTIUM	40	1.65E 5 / 67.92E 0	13.9 B:V	25.9 B:V	22.5 B:V	11.9 B:V	86.6 :V#	22.6 B:V
TIN	40	1.65E 5 / 2.90E 0						139 B:JA#
Test Group:PESTCLP Units:UG/KG								
ALDRIN	8	3.77E 1 / 0.00E 0			5 P:JA			
AROCLOR-1254	160	8.32E 1 / 0.00E 0		43 P:JA	210 P:JA*		82 P:JA	10000 D:JA*
AROCLOR-1260	160	8.32E 1 / 0.00E 0	110 :JA*			68 P:JA		
DIELDRIN	16	4.00E 1 / 0.00E 0			92 P:JA*			
ENDOSULFAN II	16	1.65E 6 / 0.00E 0			4.8 P:JA			
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	40	7.96E 5 / 22999.00E 0	7550 :V	12400 :V	10200 :V	7070 :V	14100 :V	5230 :V
ARSENIC	2	3.66E-1 / 13.75E 0	3.5 :V*	7.9 :V*	6.2 :V*	3.5 :V*	6.5 :V*	34.7 :V*#
BARIUM	40	1.91E 4 / 176.00E 0	63.6 :V	110 :V	101 :V	88.5 :V	196 :V#	3320 :V#

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TABLE 3-11
Surficial Soil Positive Results Table
Tank Group T-2 and T-3

Sample Location:			SS000195	SS000295	SS000395	SS000495	SS000595	SS000695
Sample Identification Number:			SSG2821JE	SSG2822JE	SSG2832JE	SSG2827JE	SSG2831JE	SSG2829JE
Date Sampled:	MDL	PRG / BKGND	14-Feb-95	14-Feb-95	16-Feb-95	15-Feb-95	16-Feb-95	16-Feb-95
BERYLLIUM	1	1.49E-1 / 1.25E 0	.5 B:V*	.96 B:V*	1.1 B:V*	.55 B:V*	1 B:V*	
CADMIUM	1	1.37E 2 / 2.34E 0	.37 B:V	.6 B:V	2.2 :V	.66 B:V		
CALCIUM	1000	0.00E 0 / 5839.00E 0	2590 :V	6290 :V#	5270 :V	6590 :V#	25200 :V#	3330 B:V
CHROMIUM	2	0.00E 0 / 22.21E 0	14.6 :V	18.2 :V	16.8 :V	11.9 :V	16.1 :V	113 :V#
COBALT	10	1.65E 4 / 14.22E 0	6.2 B:V	9.3 B:V	9.9 B:V	5.3 B:V	8.9 B:V	25.1 B:V#
COPPER	5	1.10E 4 / 22.75E 0	15.2 :V	19.5 :V	15.9 :V	36.2 :V#	17.3 :V	210 :V#
IRON	20	0.00E 0 / 23063.00E 0	12000 :V	1[illegible]700 :V	15200 :V	11300 :V	18700 :V	276000 :V#
LEAD	1	0.00E 0 / 73.87E 0	33 :V	5[illegible].2 :V	27.8 :V	51.[illegible] :V	22.1 :V	7810 :V#
MAGNESIUM	1000	0.00E 0 / 3707.00E 0	2190 :V	24[illegible] :V	2310 :V	24[illegible]0 :V	4190 :V#	785 B:V
MANGANESE	3	1.36E 3 / 482.10E 0	177 :V	24[illegible] :V	[illegible]4 :V	3[illegible]7 :V	319 :V	351 :V
MERCURY	0.2	8.23E 1 / 0.19E 0		.1[illegible] :V	.13 :V	.[illegible]59 B:V		.88 :V#
NICKEL	8	5.49E 3 / 19.74E 0	9.8 :V	14.7 :V	15.2 :V	8.8 :V	17.9 :V	138 :V#
POTASSIUM	2000	0.00E 0 / 3797.00E 0	1520 :V	1840 :V	1380 :V	1640 :V	1740 :V	422 B:JA
SILVER	2	1.37E 3 / 0.22E 0	1 B:V#			.88 [illegible].V#		30.7 :JA#
SODIUM	2000	0.00E 0 / 119.02E 0	98.1 B:V			1[illegible]1 B:V		154 B:JA#
THALLIUM	2	0.00E 0 / 0.45E 0						4 B:JA#
VANADIUM	10	1.92E 3 / 61.84E 0	25.3 :V	39.7 :V	3[illegible].1 :V	20.9 :V	36.1 :V	14.5 B:V
ZINC	4	8.23E 4 / 95.92E 0	95 I:JA	97.2 I:JA#	66.1 :JA	87 I:JA	54.4 I:JA	1050 I:JA#
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	0	2.37E 0 / 0.04E 0	.019(.01) :V	.04(.013) :V#	.058([illegible]016) :V#	.017(.009) :V	.054(.016) :V#	.017(.008) :V
GROSS ALPHA	0	0.00E 0 / 44.56E 0	13.69(4.03) :V	22.93(5.39) :V	22.9[illegible](5.41) :V	27.2(5.88) :V	17.24(4.58) :V	10.92(3.56) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	35.21(3.73) :V	34.32(3.67) :V	33.7[illegible](3.62) :V	39.12(4.01) :V	30.86(3.44) :V	14.86(2.33) :V
PLUTONIUM-238	0	E 0 / E 0	.001(.004) J:V-	.006(.005) :V-	.00[illegible](.007) J:V-	.007(.007) :V-	.032(.012) :V-	(.003) J:V-
PLUTONIUM-239/240	0	3.43E 0 / 0.08E 0	.114(.026) :V#	.3(.049) :V#	.3[illegible](.066) :V#	.[illegible]34(.048) :V#	.109(.025) :V#	.111(.026) :V#
URANIUM-233,-234	0	4.53E 1 / 3.10E 0	.884(.139) :V	1.002(.144) :V	1.[illegible]86(.188) :V	1.[illegible]264(.175) :V	.975(.143) :V	
URANIUM-235	0	1.73E-1 / 0.13E 0	.017(.013) :V	.049(.02) :V	.0[illegible]72(.025) :V	.0[illegible]57(.022) :V	.065(.024) :V	
URANIUM-238	0	8.00E-1 / 2.83E 0	.86(.136) :V*	1.046(.149) :V*	1.[illegible]56(.246) :V*	1.4[illegible]31(.195) :V*	1.081(.155) :V*	
Test Group:VOACLP Units:UG/KG								
ACETONE	10	2.74E 7 / 0.00E 0	25 :JA	59 :JA	170 :JA		31 :JA	8 J:A
METHYLENE CHLORIDE	5	8.54E 4 / 0.00E 0	2 J:A	1 J:A	2 J:A		3 J:A	62 :V

TABLE 3-11
Surficial Soil Positive Results Table
Tank Group T-2 and T-3

Sample Location:	SS000795	SS000895	SS001095
Sample Identification Number:	SSG2830JE	SSG2825JE	SSG2826JE
Date Sampled:	16-Feb-95	15-Feb-95	15-Feb-95
Test Group:BNACLP Units:UG/KG			
2-METHYLNAPHTHALENE		70 J:A-	
ACENAPHTHENE	220 J:A	550 :V	70 J:A
ANTHRACENE	240 J:A	650 :V	55 J:A
BENZO(a)ANTHRACENE	700 :V	1500 :V*	180 J:A
BENZO(a)PYRENE	640 :V*	1500 :V*	160 J:A*
BENZO(b)FLUORANTHENE	740 :V	1400 :V*	180 J:A
BENZO(ghi)PERYLENE	720 :V-	1100 :V-	180 J:A-
BENZO(k)FLUORANTHENE	360 J:A	600 :V	73 J:A
BUTYL BENZYL PHTHALATE		59 J:A	
CARBAZOLE	100 J:A-	370 :V-	41 J:A-
CHRYSENE	730 :V	1600 :V	200 J:A
DI-n-BUTYL PHTHALATE		51 J:A	
DIBENZO(a,h)ANTHRACENE	190 J:A*	240 J:A*	
DIBENZOFURAN	61 J:A-	160 J:A-	
FLUORANTHENE	1700 :V	4700 :V	510 :V
FLUORENE	160 J:A	390 :V	47 J:A
INDENO(1,2,3-cd)PYRENE	510 :V	930 :V*	140 J:A
NAPHTHALENE	78 J:A	190 J:A	54 J:A
PHENANTHRENE	1200 :V-	3200 :V-	400 :V-
PYRENE	1800 :V	3300 :V	370 J:A
Test Group:METADD Units:MG/KG			
LITHIUM	5.9 B:V	7.2 B:V	6.6 B:V
STRONTIUM	17.6 B:V	15.5 B:V	18.6 B:V
TIN	4 B:JA#		
Test Group:PESTCLP Units:UG/KG			
ALDRIN			
AROCLOR-1254	430 D:JA*	120 :JA*	340 :JA*
AROCLOR-1260			
DIELDRIN		17 P:JA	
ENDOSULFAN II	7.1 :JA		
Test Group:SMETCLP Units:MG/KG			
ALUMINUM	8180 :V	9350 :V	9530 :V
ARSENIC	6.2 :V*	5.7 :V*	6.8 :V*
BARIUM	173 :V	83.9 :V	94.8 :V

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TABLE 3-11
Surficial Soil Positive Results Table
Tank Group T-2 and T-3

Sample Location:	SS000795	SS000895	SS001095
Sample Identification Number:	SSG2830JE	SSG2825JE	SSG2826JE
Date Sampled:	16-Feb-95	15-Feb-95	15-Feb-95
BERYLLIUM	1.1 B:V*	.93 B:V	1.1 B:V*
CADMIUM	1.1 B:V	.87 B:V	.56 B:V
CALCIUM	4310 :V	3040 :V	5020 :V
CHROMIUM	17.8 :JA	16.4 :V	14.5 :V
COBALT	6.7 B:V	6.7 B:V	7.5 B:V
COPPER	59.3 :V#	15.8 :V	17.2 :V
IRON	22000 :V	13500 :V	14100 :V
LEAD	1410 :V#	36.9 :V	48.3 :V
MAGNESIUM	1610 :V	2040 :V	1720 :V
MANGANESE	219 :V	178 :V	227 :V
MERCURY	.36 :V#	.25 :V#	.10 :V
NICKEL	13.7 :V	11.3 :V	12.1 :V
POTASSIUM	1250 :V	1440 :V	1540 :V
SILVER	2.6 :V#	1.2 B:V#	
SODIUM			
THALLIUM			
VANADIUM	28.2 :V	30 :V	32.9 :V
ZINC	226 I:JA#	72.8 I:JA	59 I:JA
Test Group:TRADS Units:PCI/G			
AMERICIUM-241	.144(.027) :V	.065(.018) :V#	.098(.023) :V#
GROSS ALPHA	19.04(4.84) :V	17.41(4.23) :V	20.81(4.99) :V
GROSS BETA	33.18(3.6) :V	29.5(3.38) :V	28.8(3.3) :V
PLUTONIUM-238	.007(.006) :V-	.009(.007) :V-	.007(.007) :V-
PLUTONIUM-239/240	.418(.064) :V#	.269(.041) :V#	.059(.02) :V
URANIUM-233,-234	1.375(.206) :V	1.289(.185) :V	.979(.156) :V
URANIUM-235	.068(.027) :V	.066(.025) :V	.063(.026) :V
URANIUM-238	2.075(.294) :V*	1.429(.202) :V*	1.262(.182) :V*
Test Group:VOACLP Units:UG/KG			
ACETONE	5 J:A		
METHYLENE CHLORIDE			

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TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:			1395	1395	1395	1495	1495	1495
Sample Identification Number:			BHG4858JE	BHG4896JE	BHG4897JE	BHG4859JE	BHG4893JE	BHG4894JE
Date Sampled:	MDL	PRG / BKGND	15-Feb-95	6-Mar-95	6-Mar-95	15-Feb-95	7-Mar-95	7-Mar-95
Test Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	2.0-4.6	8.0-12.5	0.0-0.5	2.0-4.7	12.0-12.6
2,4-DIMETHYLPHENOL	330	3.55E 7 / 0.00E 0						
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0						
2-METHYLPHENOL	330	8.87E 7 / 0.00E 0						
4-METHYLPHENOL	330	0.00E 0 / 0.00E 0						
ACENAPHTHENE	330	1.06E 8 / 0.00E 0	170 J:A		140 J:A	100 J:A		
ANTHRACENE	330	5.32E 8 / 0.00E 0	150 J:A		120 J:A	120 J:A		
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	580 :JA		270 J:A	380 J:A		
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	700 :JA		230 J:A	400 :V		
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	700 :JA		260 J:A	410 :V		
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0			120 J:A-	360 J:A-		
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	300 J:A		9[illegible] J:A	160 J:A		
BUTYL BENZYL PHTHALATE	330	3.55E 8 / 0.00E 0						
CARBAZOLE	0	0.00E 0 / 0.00E 0	92 J:A-			67 J:A-		
CHRYSENE	330	1.70E 7 / 0.00E 0	610 :JA		330 J:A	420 :V		
DI-n-BUTYL PHTHALATE	330	1.77E 8 / 0.00E 0						
DIBENZO(a,h)ANTHRACENE	330	1.70E 4 / 0.00E 0						
DIBENZOFURAN	330	0.00E 0 / 0.00E 0	43 J:A-		82 J:A-			
FLUORANTHENE	330	7.10E 7 / 0.00E 0	1200 :JA		570 :V	950 :V		
FLUORENE	330	7.10E 7 / 0.00E 0	120 J:A			62 J:A		
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0	330 J:A			280 J:A		
NAPHTHALENE	330	7.10E 7 / 0.00E 0	40 J:A			44 J:A		
PHENANTHRENE	330	0.00E 0 / 0.00E 0	1000 :JA-		660 :V-	5[illegible] :V-		
PHENOL	330	1.00E 9 / 0.00E 0						
PYRENE	330	5.32E 7 / 0.00E 0	1400 :JA		580 :V	30 :V		
Test Group:METADD Units:MG/KG								
CESIUM	1000	0.00E 0 / 1267.00E 0		5 :Y	4.8 :Y		5 :Y	4.7 :Y
LITHIUM	100	3.55E 4 / 53.40E 0	5.5 B:V	10.4 :Y	6.9 :Y	7.5 [illegible]:V	8.8 :Y	5.3 :Y
MOLYBDENUM	200	8.87E 3 / 0.00E 0		2.5 :Y	[illegible].8 :Y		1.2 :Y	1.7 :Y
STRONTIUM	200	1.00E 6 / 342.60E 0	11.2 B:V	45.1 :Y	[illegible]7 :Y	23.2 B:V	40.2 :Y	20.8 :Y
TIN	200	1.00E 6 / 0.00E 0		7.7 :Y	[illegible].4 :Y		8 :Y	5.8 :Y

TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:			1395	1395	[illegible]	495	1495	1495
Sample Identification Number:			BHG4858JE	BHG4896JE	BHG4897JE	BHG4859JE	BHG4893JE	BHG4894JE
Date Sampled:	MDL	PRG / BKGND	15-Feb-95	6-Mar-95	6-Mar-95	15-Feb-95	7-Mar-95	7-Mar-95
Test Group:PESTCLP Units:UG/KG								
ALDRIN	8	7.30E 3 / 0.00E 0	2.3 :JA					
AROCLOR-1254	160	1.61E 4 / 0.00E 0				80 : [illegible]		
AROCLOR-1260	160	1.61E 4 / 0.00E 0	83 :JA					
DIELDRIN	16	7.76E 3 / 0.00E 0						
ENDRIN KETONE	16	0.00E 0 / 0.00E 0						
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	200	1.00E 6 / 55098.00E 0	5800 :V	18100 :Y	11700 :Y	10200 :V	15200 :Y	10400 :Y
ANTIMONY	60	7.10E 2 / 0.00E 0			4.6 :Y			
ARSENIC	10	7.09E 1 / 21.48E 0	3.1 :V	8.3 :Y	6.8 :Y	6.3 :V	5.9 :Y	7.6 :Y
BARIUM	200	1.24E 5 / 389.00E 0	59.7 :V	98.1 :Y	122 :Y	105 :V	125 :Y	65.6 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	.4 B:V	1.9 :Y	1 :Y	.92 B:V	1.9 :Y	.94 :Y
CADMIUM	5	8.87E 2 / 2.36E 0						
CALCIUM	5000	0.00E 0 / 67403.00E 0	2240 :V	27400 :Y	8050 :Y	5850 :V	13700 :Y	6190 :Y
CHROMIUM	10	0.00E 0 / 113.80E 0	11.2 :V	20.4 :Y	12.9 :Y	16.7 :V	15.9 :Y	12.5 :Y
COBALT	50	1.06E 5 / 48.80E 0	7.5 B:V	8.3 :Y	7.4 :Y	6.2 B:V	9.5 :Y	10.3 :Y
COPPER	25	7.10E 4 / 59.10E 0	11.9 :V	11.8 :Y	11.2 :Y	16.2 :V	15.2 :Y	10.8 :Y
IRON	100	0.00E 0 / 63389.00E 0	10500 :V	16900 :Y	13900 :Y	14900 :V	15300 :Y	19000 :Y
LEAD	3	0.00E 0 / 30.50E 0	21.5 :V	15.8 :Y	11.6 :Y	83.7 :V#	16.5 :Y	8.9 :Y
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	1900 :V	2390 :Y	1850 :Y	2080 :V	2090 :Y	1630 :Y
MANGANESE	15	8.86E 3 / 1505.00E 0	167 :V	133 :Y	223 :Y	193 :V	199 :Y	203 :Y
MERCURY	0.2	5.32E 2 / 2.81E 0	.093 B:V	.21 :Y	.095 :Y	.15 :V	.14 :Y	.069 :Y
NICKEL	40	3.55E 4 / 103.60E 0	8.2 B:V	21.9 :Y	13.4 :Y	12.6 :V	16.6 :Y	13.6 :Y
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1200 :V	1340 :Y	1230 :Y	1580 :V	1350 :Y	1010 :Y
SILVER	10	8.87E 3 / 20.00E 0		1.2 :Y	1.4 :Y	1.9 B:V		1.6 :Y
SODIUM	5000	0.00E 0 / 0.00E 0		139 :Y-	93.4 :Y-	150 B:V-	135 :Y-	90.7 :Y-
VANADIUM	50	1.24E 4 / 138.30E 0	21.5 :V	36.2 :Y	33.5 :Y	33.1 :V	35.8 :Y	38.1 :Y
ZINC	20	5.32E 5 / 216.20E 0	68.4 I:JA	30.8 :Y	21.6 :Y	74.1 I:JA	57.3 :Y	20.1 :Y
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.027(.012) :V	.023(.01) :V	.003(.003) J:V	.036(.012) :V	.017(.008) :V	.003(.005) J:V
GROSS ALPHA	0	0.00E 0 / 44.56E 0	18.45(4.79) :V	11.82(3.78) :V	15.05(4.22) :V	18.8(4.73) :V	15.14(4.32) :V	13.03(3.88) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	40.48(4.11) :V	21.65(2.85) :V	21.95(2.83) :V	32.36(3.55) :V	24.12(2.98) :V	23.28(2.91) :V
PLUTONIUM-238	0	E 0 / E 0	.003(.004) J:V-	.003(.005) J:V-	(.002) J:V-	.006(.006) J:V-	-.001(.002) J:V-	.007(.006) :V-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.278(.049) :V#	.133(.03) :V#	.002(.003) J:V	.215(.045) :V#	.008(.006) :V	.003(.005) J:V
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	1.02(.171) :V	.955 .164) :V	7.25(.121) :V	.96 (.17) :V	.802(.124) :V	.994(.157) :V

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TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:			1395	1395	1395	495	1495	1495
Sample Identification Number:			BHG4858JE	BHG4896JE	BH 4897JE	BHG 4859JE	BHG4893JE	BHG4894JE
Date Sampled:	MDL	PRG / BKGND	15-Feb-95	6-Mar-95	6-M 95	15- eb-95	7-Mar-95	7-Mar-95
URANIUM-235	0	1.73E 1 / 19.83E-2	.039(.022) :V	.04(.023) :V	.037(.019) :V	04(23) :V	.036(.017) :V	.047(.022) :V
URANIUM-238	0	7.98E 1 / 19.12E-1	1.166(.19) :V	1.179(.194) :V	.308(.132) :V	1.176(199) :V	.859(.131) :V	1.213(.184) :V
Test Group:VOACLP Units:UG/KG								
2-BUTANONE	0	1.00E 9 / 0.00E 0					2 J:Y-	
2-HEXANONE	0	0.00E 0 / 0.00E 0					12 B:Y	
ACETONE	10	1.77E 8 / 0.00E 0		22 B:Y	19 B:Y			
CARBON DISULFIDE	0	1.77E 8 / 0.00E 0						
ETHYLBENZENE	0	1.51E 8 / 0.00E 0						
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0					14 :Y	
STYRENE	0	E 0 / E 0						
TETRACHLOROETHENE	5	2.22E 8 / 0.00E 0						
TOLUENE	5	1.25E 8 / 0.00E 0						
TOTAL XYLENES	5	0.00E 0 / 0.00E 0						

TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:	1595	1595	1595	1695	1695	1795	1795	1795
Sample Identification Number:	BHG4860JE	BHG4887JE	BHG4889JE	BHG4857JE	BHG4890JE	BHG4856JE	BHG4884JE	BHG4886JE
Date Sampled:	16-Feb-95	2-Mar-95	3-Mar-95	15-Feb-95	2-Mar-95	15-Feb-95	1-Mar-95	1-Mar-95
Test Group:BNACLP Units:UG/KG	0.0-0.5	2.0-4.6	12.0-12.2	0.0-0.5	2.0-2.8	0.0-0.5	2.6-4.8	8.0-10.6
2,4-DIMETHYLPHENOL					5[illegible] J:A			
2-METHYLNAPHTHALENE					11[illegible]0 :V-			
2-METHYLPHENOL					6[illegible] J:A			
4-METHYLPHENOL					13[illegible] J:A-			
ACENAPHTHENE	64 J:A	60 J:A		140 J:A	19[illegible]0 :V	37[illegible] J:A		170 J:A
ANTHRACENE	76 J:A	46 J:A		120 J:A	21[illegible]0 :V	42[illegible] :V		
BENZO(a)ANTHRACENE	280 J:A			360 J:A	32[illegible]0 :V	12[illegible]0 :V		
BENZO(a)PYRENE	290 J:A	120 J:A		380 J:A	31[illegible] :V	12[illegible]0 :V		
BENZO(b)FLUORANTHENE	310 J:A	120 J:A		490 :V	3[illegible]00 :V	14[illegible]0 :V		
BENZO(ghi)PERYLENE	250 J:A-			290 J:A-	1[illegible]00 :JA-	12[illegible] :V-		
BENZO(k)FLUORANTHENE	77 J:A	66 J:A		190 J:A	1500 :V	520 :V		
BUTYL BENZYL PHTHALATE						[illegible]2 J:A		
CARBAZOLE	46 J:A-			74 J:A-	1300 :JA-	200 J:A-		
CHRYSENE	300 J:A	140 J:A		400 :V	3500 :V	1200 :V		
DI-n-BUTYL PHTHALATE	140 J:A							
DIBENZO(a,h)ANTHRACENE				98 J:A	420 :V	250 J:A		
DIBENZOFURAN					[illegible]90 :V-	89 J:A-		48 J:A-
FLUORANTHENE	740 :V	310 J:A		870 :V		3000 :V		51 J:A
FLUORENE	42 J:A			99 J:A	1[illegible]00 :V	250 J:A		
INDENO(1,2,3-cd)PYRENE	210 J:A	61 J:A		260 J:A	11[illegible]0 :JA	870 :V		
NAPHTHALENE	39 J:A	79 J:A		69 J:A	3[illegible]00 :V	77 J:A		91 J:A
PHENANTHRENE	410 :V-	270 J:A-		750 :V-	69[illegible]0 :V-	2100 :V-		57 J:A-
PHENOL					10[illegible] J:A			
PYRENE	500 :V	270 J:A		810 :V	6000 :V	3300 :V		46 J:A
Test Group:METADD Units:MG/KG								
CESIUM		19.3 :Y			24 :Y			23.5 :Y
LITHIUM	7.3 B:V	8.8 :Y		8 B:V	6.8 :Y	6.4 B:V		10.5 :Y
MOLYBDENUM		1.2 :Y			2.9 :Y			
STRONTIUM	19.9 B:V	46.2 :Y		34.4 B:V	37.9 :Y	18.1 B:V		18.5 :Y
TIN		7.9 :Y			8.9 :Y			9 :Y

TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:	1595	1595	1595	1695	1695	1795	1795	1795
Sample Identification Number:	BHG4860JE	BHG4887JE	BHG4889JE	BHG4857JE	BHG4870JE	BHG4856JE	BHG4884JE	BHG4886JE
Date Sampled:	16-Feb-95	2-Mar-95	3-Mar-95	15-Feb-95	2-Mar-95	15-Feb-95	1-Mar-95	1-Mar-95
Test Group:PESTCLP Units:UG/KG								
ALDRIN								
AROCLOR-1254				1300 :JA				68 :JA
AROCLOR-1260						120 P:JA		
DIELDRIN				34 :JA		83 P:JA		
ENDRIN KETONE					62 P:JA-			
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	10500 :V	15500 :Y		11400 :V	12000 :Y	6870 :V		17400 :Y
ANTIMONY	3.9 B:JA					3.9 B:JA		
ARSENIC	7 :V	7.2 :Y		7 :V	6.[illegible]:Y	3.[illegible]:V		9.6 :Y
BARIUM	116 :V	105 :Y		122 :V	99[illegible]:Y	78[illegible]:V		96.1 :Y
BERYLLIUM	1 B:V	1.4 :Y		2.2 :V	[illegible]:Y	.86 B:V		1.2 :Y
CADMIUM	.75 B:V			.59 B:V		[illegible]B:V		
CALCIUM	6160 :V	26000 :Y		8340 :V	11700 :Y	4770 :V		2870 :Y
CHROMIUM	14.9 :V	15.2 :Y		22.4 :V	22.6 :Y	13.8[illegible]		17.1 :Y
COBALT	6.5 B:V	7.4 :Y		9.1 B:V	6.6 :Y	6.1 B:V		8.5 :Y
COPPER	19.3 :V	10.8 :Y		16.3 :V	11.6 :Y	14.5 :[illegible]		13.5 :Y
IRON	17900 :V	16600 :Y		15500 :V	14900 :Y	11400 :V		17600 :Y
LEAD	204 :V#	11.2 I:Y		38.2 :V#	14.4 I:Y	38.6 :V#		12.8 I:Y
MAGNESIUM	1780 :V	2230 :Y		2350 :V	1750 :Y	2010 :V		1730 :Y
MANGANESE	190 :V	137 :Y		205 :V	154 :Y	195 :V		146 :Y
MERCURY	.17 :V	.14 :Y		.54 :V	.2 :Y	.25 :V		.11 :Y
NICKEL	14.5 :V	15.2 :Y		15.8 :V	14.[illegible]Y	10.7 :V		17.7 :Y
POTASSIUM	1640 :V	1370 :Y		1550 :V	1000 :Y	1440 :V		1770 :Y
SILVER	1.3 B:V	1.4 :Y		2 B:V	1.3 :Y	1.1 B:V		
SODIUM	97 B:V-	208 :Y-			111 :Y-			157 :Y-
VANADIUM	33.2 :V	35.8 :Y		36.5 :V	33.1 :Y	24.3 :V		48.1 :Y
ZINC	121 I:JA	30.5 :Y		93.6 I:JA	29.8 :Y	138 I:JA		26.3 :Y
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	.145(.03) :V#	.015(.008) :V		.036(.012) :V	.023(.011) :V	.023(.009) :V	.008(.008) J:V	.009(.006) :V
GROSS ALPHA	17(4.49) :V	16.19(4.42) :V		18.28(4.68) :V	17.03(4.43) :V	17.64(4.55) :V	18.82(4.81) :V	17.32(4.57) :V
GROSS BETA	35.38(3.76) :V	26.09(3.14) :V		31.82(3.5) :V	24.49(3.01) :V	37.62(3.92) :V	24.36(2.99) :V	29.25(3.36) :V
PLUTONIUM-238	.013(.008) :V-	.003(.004) :V-		.005(.005) :V-	-.001(.004) J:V-	.009(.007) :V-	.006(.008) J:V-	.002(.005) J:V-
PLUTONIUM-239/240	.237(.042) :V#	.049(.016) :V		.263(.05) :V#	.072(.02) :V	.271(.045) :V#	.11(.027) :V	.037(.015) :V
URANIUM-233,-234	1.039(.154) :V	.93(.148) :V		1.182(.168) :V	1.061(.168) :V	.938(.149) :V	1.064(.161) :V	.973(.155) :V

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TABLE 3-12
Borehole Positive Results Table
Tank Group T-2 and T-3

Sample Location:	1595	1595	1595	1695	1695	1795	1795	1795
Sample Identification Number:	BHG4860JE	BHG4887JE	BHG4889JE	BHG4857JE	BHG4890JE	BHG4886JE	BHG4884JE	BHG4886JE
Date Sampled:	16-Feb-95	2-Mar-95	3-Mar-95	15-Feb-95	3-Mar-95	15-Feb-95	1-Mar-95	1-Mar-95
URANIUM-235	.05(.022) :V	.033(.018) :V		.046(.02) :V	.06[illegible].026) :V	.054(.024) :V	.059(.024) :V	.041(.021) :V
URANIUM-238	1.352(.191) :V	1.146(.175) :V		1.998(.265) :V#	1.472(.22) :V	1.498(.22) :V	1.334(.195) :V	.977(.156) :V
Test Group:VOACLP Units:UG/KG								
2-BUTANONE	3 J:A		25 J:A-					9 J:A
2-HEXANONE								
ACETONE	64 :JA						130 B:JA	67 B:JA
CARBON DISULFIDE	4 J:A							
ETHYLBENZENE			21 J:A					
METHYLENE CHLORIDE	1 J:A							
STYRENE			17 J:A-					
TETRACHLOROETHENE			79 :V					
TOLUENE		1 J:A	4 J:A					
TOTAL XYLENES			110 :V-					

TABLE 3-13
Groundwater Positive Results Table
Tank Group T-2 and T-3

Sample Location:			1395	1495	1495	1595	1695	1795
Sample Identification Number:			GWG1696JE	GWG1700JE	GWG1701JE	GWG1698JE	GWG1699JE	GWG1697JE
Date Sampled:	MDL	PRG / BKGND	6-Mar-95	7-Mar-95	7-Mar-95	3-Mar-95	2-Mar-95	1-Mar-95
Test Group:BNACLP Units:UG/L								
BENZO(a)ANTHRACENE	330	1.16E-1 / 0.00E 0						2 J:Y*
BENZO(a)PYRENE	330	1.16E-2 / 0.00E 0						2 J:Y*
BENZO(b)FLUORANTHENE	330	1.16E-1 / 0.00E 0						2 J:Y*
BIS(2-ETHYLHEXYL)PHTHALATE	330	6.07E 0 / 0.00E 0					4 BJ:Y	3 BJ:Y
CHRYSENE	330	1.16E 1 / 0.00E 0						1 J:Y
DIBENZOFURAN	330	0.00E 0 / 0.00E 0						2 J:Y-
FLUORANTHENE	330	1.46E 3 / 0.00E 0						2 J:Y
NAPHTHALENE	330	1.46E 3 / 0.00E 0						1 J:Y
PYRENE	330	1.09E 3 / 0.00E 0						3 J:Y
Test Group:METADD Units:UG/L								
CESIUM	1000	0.00E 0 / 7.67E 2	60 B:JA	20 B:JA				
LITHIUM	100	7.30E 2 / 7.52E 1	490 :V#	9.4 B:V	2[illegible] B:JA		78 B:V#	102 :V#
MOLYBDENUM	200	1.82E 2 / 1.48E 2	66.9 B:JA					
SILICON	500	0.00E 0 / 567.77E 2	149000 :JA#	5950 :JA	[illegible]270 :JA		14300 :JA	19200 :JA
STRONTIUM	200	2.19E 4 / 2.45E 2	1960 :V#	328 :V#	[illegible]94 :JA#		350 :V#	363 :V#
TIN	200	2.19E 4 / 1.45E 2	209 :JA#				48.1 B:JA	52.7 B:JA
Test Group:PESTCLP Units:UG/L								
AROCLOR-1254	160	1.10E-2 / 0.00E 0					9.8 :JA*	3 :JA*
delta-BHC	8	0.00E 0 / 0.00E 0	.11 P:Y-					
Test Group:SMETCLP Units:UG/L								
ALUMINUM	200	1.06E 5 / 192.24E 2	974000 :JA*#	20100 :JA#	[illegible]070 :JA		136000 :V*#	185000 :V*#
ANTIMONY	60	1.46E 1 / 6.89E 1					23.7 B:JA*	
ARSENIC	10	4.86E-2 / 7.43E 0	430 :V*#	8.7 B:V*#	[illegible]7 B:JA*		61 :V*#	78.2 :V*#
BARIUM	200	2.56E 3 / 2.08E 2	10400 :V*#	278 :V#	[illegible]B:JA		720 :V#	755 :V#
BERYLLIUM	5	1.98E-2 / 0.00E 0	263 :V*	1.4 B:V*	.53 B:JA*		55 :V*	18.4 :V*
CADMIUM	5	1.82E 1 / 7.39E 0	13.6 :V#				3.6 B:V	
CALCIUM	5000	0.00E 0 / 932.89E 2	417000 :V#	81100 :V	75700 :JA		79300 :V	78200 :V
CHROMIUM	10	0.00E 0 / 3.10E 1	1400 :V#	23.3 :V	5.6 B:JA		146 :V#	179 :V#
COBALT	50	2.19E 3 / 3.98E 1	381 :V#	5.6 B:V	2.3 B:JA		51.7 :V#	56.8 :V#
COPPER	25	1.46E 3 / 5.35E 1	1300 :V#				107 :V#	136 :V#
IRON	100	0.00E 0 / 223.89E 2	659000 :V#	17500 :V	5380 :JA		111000 :V#	137000 :V#
LEAD	3	0.00E 0 / 1.56E 1	1880 :V#	16.7 :V#	5.5 :JA		[illegible]20 :V#	296 :V#
MAGNESIUM	5000	0.00E 0 / 114.75E 2	85000 :V#	9530 :V	7740 :JA		17900 :V#	20100 :V#
MANGANESE	15	1.82E 2 / 1.37E 2	7840 :V*#	241 :V*#	138 :JA#		1190 :V*#	1240 :V*#
MERCURY	0.2	1.09E 1 / 2.60E-1	3 :JA#		[illegible].22 :JA		24.2 :V*#	5.6 :V#
NICKEL	40	7.30E 2 / 4.77E 1	820 :V*#	16.3 B:V	[illegible].9 B:JA		140 :V#	164 :V#

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TABLE 3-13
Groundwater Positive Results Table
Tank Group T-2 and T-3

Sample Location:			1395	1495	1495	1595	1695	1795
Sample Identification Number:			GWG1696JE	GWG1700JE	GWG1[illegible]JE	GWG1698JE	GWG1699JE	GWG1697JE
Date Sampled:	MDL	PRG / BKGND	6-Mar-95	7-Mar-95	7-Mar-95	6-Mar-95	2-Mar-95	1-Mar-95
POTASSIUM	5000	0.00E 0 / 51.99E 2	93400 :V#	6780 :V#	5500 :JA#		19000 :V#	21500 :V#
SELENIUM	5	1.82E 2 / 3.27E 0	21.2 :JA#				8.1 :V#	8.2 :V#
SILVER	10	1.82E 2 / 0.00E 0	44.3 :V				19.2 :JA	13.4 :JA
SODIUM	5000	0.00E 0 / 138.65E 2	30800 :V#	42500 :V#	43600 :JA#		61200 :V#	50200 :V#
VANADIUM	50	2.56E 2 / 4.90E 1	1870 :V*#	43.3 B:V	11.6 B:JA		282 :V*#	357 :V*#
ZINC	20	1.09E 4 / 2.45E 2	2010 :V#	45.8 :JA			549 :V#	340 :V#
Test Group:TRADS Units:PCI/L								
AMERICIUM-241	0	1.98E-1 / 6.34E-2	.132(.026) :Y#	.144(.11) :Y#	.025(.011) :Y		2.075(.541) :Y*#	1.011(.436) :Y*#
GROSS ALPHA	0	0.00E 0 / 44.56E 0	815(79) :Y#	[illegible]9(6) :Y	[illegible](1) :Y		94(14) :Y#	363(48) :Y#
GROSS BETA	0	0.00E 0 / 55.35E 0	741(55) :Y#	54(5) :Y	10(1) :Y		165(14) :Y#	343(50) :Y#
PLUTONIUM-239/240	0	2.07E-1 / 13.21E-2	1.614(1.03) :Y*#	.05[illegible](.022) :Y	.038(.018) :Y		.147(.03) :Y#	.134(.028) :Y#
RADIUM-226	0	3.97E-1 / 15.87E-1	39.9(2) :Y*#	.2[illegible].7) :Y			11.7(1) :Y*#	19.6(1.6) :Y*#
URANIUM-233,-234	0	2.98E 0 / 17.69E-1	30(.8) :Y*#	2.8[illegible]12) :Y#	[illegible](.06) :Y		[illegible]3.53(1.16) :Y*#	11.7(1.24) :Y*#
URANIUM-235	0	2.98E 0 / 19.83E-2	1.01(.15) :Y#	.12(.03) :Y	[illegible]4(.01) :Y		.33(.19) :Y#	.24(.2) :Y#
URANIUM-238	0	2.98E 0 / 19.12E-1	35.3(.86) :Y*#	3.35(.14) :Y*#	[illegible]14(.08) :Y		36.5(1.9) :Y*#	18.4(1.55) :Y*#
Test Group:VOACLP Units:UG/L								
1,1,1-TRICHLOROETHANE	0	0.00E 0 / 0.00E 0					1 J:Y-	
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0				1 [illegible]:Y-		2 J:Y-
1,2-DICHLOROPROPANE	0	1.25E 0 / 0.00E 0	1 J:Y		[illegible]:Y*		3 J:Y*	
ACETONE	10	3.65E 3 / 0.00E 0		10 J:Y	1[illegible]:Y	35 :Y	150 :Y	16 :Y
CHLOROMETHANE	0	2.32E 0 / 0.00E 0					2 J:Y	
METHYLENE CHLORIDE	5	6.22E 0 / 0.00E 0		1 BJ:Y				
TETRACHLOROETHENE	5	1.43E 0 / 0.00E 0	2 J:Y*				1 J:Y	1 J:Y
TRICHLOROETHENE	0	2.55E 0 / 0.00E 0	2 J:Y					
Test Group:WQPL Units:MG/L								
CHLORIDE	0	0.00E 0 / 0.00E 0	37.6 :V-	140 :V-	42 :V-			131 :V-
FLUORIDE	0	2.19E 0 / 0.00E 0	.58 :V	.43 :V	.44 :V			.62 :V
NITRATE	0	5.84E 1 / 0.00E 0	4.56 :V	5.09 :V	5.04 :V			2.24 :V
SULFATE	0	0.00E 0 / 0.00E 0	18.4 :V-	13.7 :V-	13.6 :V-			12.2 :V-
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	52.8 :V-	12.8 :V-	4.93 :V-		59.2 :V-	44.9 :V-
Test Group:WQPL-SCOND Units:UMHOS/CM								
SPECIFIC CONDUCTIVITY	0	E 0 / E 0	555 :V-	816 :V-	797 :V-			777 :V-

TABLE 3-14
Tank Liquid/Smear Positive Results Table
Tank Group T-2 and T-3

Sample Location:			T-2	T-2	T-2
Sample Identification Number:			TNG0003JE	TNG0004JE	TNG0005JE
Date Sampled:	MDL	PRG / BKGND	6-Mar-95	6-Mar-95	6-Mar-95
Test Group:METADD Units:UG/L					
CESIUM	1000	0.00E 0 / 0.00E 0		20 B:JA	30 B:JA
LITHIUM	100	0.00E 0 / 0.00E 0		19.8 B:V	20.7 B:V
MOLYBDENUM	200	0.00E 0 / 0.00E 0		228 :V	239 :V
SILICON	500	0.00E 0 / 0.00E 0		10200 :JA	10200 :JA
STRONTIUM	200	0.00E 0 / 0.00E 0		505 :V	530 :V
Test Group:PESTCLP Units:UG/L					
AROCLOR-1254	160	0.00E 0 / 0.00E 0	250 DP:JA		
Test Group:SMETCLP Units:UG/L					
ALUMINUM	200	0.00E 0 / 0.00E 0		301 :JA	294 :JA
ARSENIC	10	0.00E 0 / [illegible] 0		2.8 B:V	
BARIUM	200	0.00E 0 / 0.00E 0		38.9 B:V	46.1 B:V
BERYLLIUM	5	0.00E 0 / 0.00E 0		.47 B:V	.86 B:V
CALCIUM	5000	0.00E 0 / 0.00E 0		183000 :V	192000 :V
CHROMIUM	10	0.00E 0 / 0.00E 0			11.1 :JA
COPPER	25	0.00E 0 / 0.00E 0		44.4 :V	54.4 :V
IRON	100	0.00E 0 / 0.00E 0		1750 :V	3140 :V
LEAD	3	0.00E 0 / 0.00E 0		26.1 :V	50.5 :V
MAGNESIUM	5000	0.00E 0 / 0.00E 0		19300 :V	20200 :V
MANGANESE	15	0.00E 0 / 0.00E 0		136 :V	149 :V
MERCURY	0.2	0.00E 0 / 0.00E 0		6 :JA	4.9 :JA
NICKEL	40	0.00E 0 / 0.00E 0		136 :V	145 :V
POTASSIUM	5000	0.00E 0 / 0.00E 0		61100 :V	63300 :V
SODIUM	5000	0.00E 0 / 0.00E 0		174000 :V	180000 :V
VANADIUM	50	0.00E 0 / 0.00E 0			3.5 B:V
ZINC	20	0.00E 0 / 0.00E 0		47.2 :JA	68.8 :V
Test Group:TRADS Units:PCI/L					
AMERICIUM-241	0	0.00E 0 / 0.00E 0		.015 .011) :Y	.065(.019) :Y
GROSS ALPHA	0	0.00E 0 / 0.00E 0		48 (18) :Y	633(21) :Y
GROSS BETA	0	0.00E 0 / 0.00E 0		59 (12) :Y	737(13) :Y
PLUTONIUM-239/240	0	0.00E 0 / 0.00E 0		.016 .012) :Y	.03(.014) :Y

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TABLE 3-14
Tank Liquid/Smear Positive Results Table
Tank Group T-2 and T-3

Sample Location:			T-2	T-2	T-2
Sample Identification Number:			TNG0003JE	TNG0004JE	TNG0005JE
Date Sampled:	MDL	PRG / BKGND	6-Mar-95	6-Mar-95	6-Mar-95
URANIUM-233,-234	0	0.00E 0 / 0.00E 0		134(4.32) :Y	.15(.04) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0		10.6(1.23) :Y	.26(.05) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0		451(7.86) :Y	57.5(.72) :Y
Test Group:VOACLP Units:UG/L					
1,2-DICHLOROPROPANE	0	0.00E 0 / 0.00E 0		5 J:Y	5 J:Y
ACETONE	10	0.00E 0 / 0.00E 0			8 J:Y
CHLOROFORM	0	0.00E 0 / 0.00E 0		13 :Y	13 :Y
TETRACHLOROETHENE	5	0.00E 0 / 0.00E 0		17 :Y	17 :Y
TRICHLOROETHENE	0	0.00E 0 / 0.00E 0		9 J:Y	8 J:Y
Test Group:WQPL Units:MG/L					
CHLORIDE	0	0.00E 0 / 0.00E 0		346 :V	351 :V
FLUORIDE	0	0.00E 0 / 0.00E 0		3.88 :V	3.64 :V
NITRATE	0	0.00E 0 / 0.00E 0		180 :V	183 :V
NITRITE	0	0.00E 0 / 0.00E 0		3.46 :V	3.52 :V
SULFATE	0	0.00E 0 / 0.00E 0		104 :V	112 :V
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0		9.62 :V	10.8 :V
Test Group:WQPL-SCOND Units:UMHOS/CM					
SPECIFIC CONDUCTIVITY	0	E 0 / E 0		3280 :V	3310 :V

TABLE 3-15
Borehole Positive Results Table
Tank T-7

ample Location:			1895	1895	1895	1995	1995
ample Identification Number:			BHG4997JE	BHG4998JE	BHG4999JE	BHG5014JE	BHG5015JE
ate Sampled:	MDL	PRG / BKGND	24-Apr-95	24-Apr-95	24-Apr-95	5-May-95	5-May-95
est Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	15.5-16.8	19.5-20.7	0.0-0.5	duplicate
-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0	260 J:Y-				
CENAPHTHENE	330	1.06E 8 / 0.00E 0	2700 :Y				
NTHRACENE	330	5.32E 8 / 0.00E 0	3400 :Y				
ENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	10000 :Y			42 J:Y	87 J:Y
ENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	10000 :Y				130 J:Y
ENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	12000 :Y			72 J:Y	230 J:Y
ENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0	4700 :Y-				92 J:Y-
ENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	5200 :Y			45 J:Y	62 J:Y
IS(2-ETHYLHEXYL)PHTHALATE	330	8.87E 6 / 0.00E 0	41 J:Y				
ARBAZOLE	0	0.00E 0 / 0.00E 0	3400 :Y-				
HRYSENE	330	1.70E 7 / 0.00E 0	9900 :Y			45 J:Y	100 J:Y
IBENZO(a,h)ANTHRACENE	330	1.70E 4 / 0.00E 0	1600 :Y				
IBENZOFURAN	330	0.00E 0 / 0.00E 0	910 :Y-				
LUORANTHENE	330	7.10E 7 / 0.00E 0	21000 :Y			65 J:Y	190 J:Y
LUORENE	330	7.10E 7 / 0.00E 0	1900 :Y				
EXACHLOROCYCLOPENTADIENE	330	1.24E 7 / 0.00E 0	1800 J:Y				
NDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0	4900 :Y				
APHTHALENE	330	7.10E 7 / 0.00E 0	680 :Y				
HENANTHRENE	330	0.00E 0 / 0.00E 0	15000 :Y-				86 J:Y-
YRENE	330	5.32E 7 / 0.00E 0	23000 :Y			69 J:Y	180 J:Y
Test Group:METADD Units:MG/KG							
ESIUM	1000	0.00E 0 / 1267.00E 0	6.4 :Y	7 :Y	4.9 :Y	4.6 :Y	2.1 :Y
ITHIUM	100	3.55E 4 / 53.40E 0	3.6 :Y	4.1 :Y	3.6 :Y	7.4 :Y	7.5 :Y
STRONTIUM	200	1.00E 6 / 342.60E 0	11.6 :Y	2.9 :Y	40.5 :Y	33.7 :Y	34 :Y
TIN	200	1.00E 6 / 0.00E 0	4.7 :Y		4.6 :Y		
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	200	1.00E 6 / 55098.00E 0	3510 :Y	7770 :Y	7500 :Y	10400 :Y	9250 :Y
ARSENIC	10	7.09E 1 / 21.48E 0	1.6 :Y	4.3 :Y	5 :Y	5 :Y	4.4 :Y
BARIUM	200	1.24E 5 / 389.00E 0	46 :Y	100 :Y	113 :Y	81.9 :Y	76.8 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	.17 :Y	.75 :Y	.87 :Y	.76 :Y	.59 :Y

TABLE 3-15
Borehole Positive Results Table
Tank T-7

ample Location:			1895	1895	1995	1995	1995
ample Identification Number:			BHG4997JE	BHG4998JE	BHG4999JE	BHG5014JE	BHG5015JE
ate Sampled:	MDL	PRG / BKGND	24-Apr-95	24-Apr-95	24-Apr-95	5-May-95	5-May-95
ADMIUM	5	8.87E 2 / 2.36E 0					11.7 :Y#
ALCIUM	5000	0.00E 0 / 67403.00E 0	2280 :Y	4940 :Y	4740 :Y	7560 :Y	6090 :Y
HROMIUM	10	0.00E 0 / 113.80E 0	6 :Y	9.5 :Y	10.6 :Y	12.4 :Y	10.8 :Y
OBALT	50	1.06E 5 / 48.80E 0	3.9 :Y	6.7 :Y	7.1 :Y	8.7 :Y	7.9 :Y
OPPER	25	7.10E 4 / 59.10E 0	20.1 :Y	16.1 :Y	23 :Y	20.1 :Y	25.1 :Y
RON	100	0.00E 0 / 63389.00E 0	7540 :Y	12400 :Y	21400 :Y	15600 :Y	14400 :Y
EAD	3	0.00E 0 / 30.50E 0	11.2 :Y	12.6 :Y	15.8 :Y	13.2 :Y	11.9 :Y
AGNESIUM	5000	0.00E 0 / 14932.00E 0	2340 :Y	1860 :Y	1810 :Y	4580 :Y	5410 :Y
ANGANESE	15	8.86E 3 / 1505.00E 0	169 :Y	213 :Y	250 :Y	352 :Y	348 :Y
ERCURY	0.2	5.32E 2 / 2.81E 0			.069 :Y		
ICKEL	40	3.55E 4 / 103.60E 0	7.8 :Y	14.2 :Y	15.2 :Y	14.5 :Y	14.3 :Y
OTASSIUM	5000	0.00E 0 / 10781.00E 0	1070 :Y	936 :Y	864 :Y	1670 :Y	1590 :Y
ELENIUM	5	8.87E 3 / 4.85E 0		.68 :Y	.97 :Y		
ILVER	10	8.87E 3 / 20.00E 0			1.7 :Y		.97 :Y
ODIUM	5000	0.00E 0 / 0.00E 0	672 :Y-	75.5 :Y-	78 :Y-	348 :Y-	751 :Y-
ANADIUM	50	1.24E 4 / 138.30E 0	14.3 :Y	26.6 :Y	31.9 :Y	31.8 :Y	27.9 :Y
INC	20	5.32E 5 / 216.20E 0	47.1 I:Y	43.5 I:Y	70.7 I:Y	52.3 :Y	49.2 :Y
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.061(.018) :Y	.004(.004) J:Y	.001(.003) J:Y	.01(.007) :Y	.025(.011) :Y
GROSS ALPHA	0	0.00E 0 / 44.56E 0	11.05(4.9) :Y	17.48(6.21) :Y	16.91(6.2) :Y	15.84(5.8) :Y	14.74(5.7) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	39.41(5.08) :Y	30(4.33) :Y	27.11(4.11) :Y	33.52(5.19) :Y	32.72(5.07) :Y
PLUTONIUM-238	0	E 0 / E 0	.006(.006) J:Y-	-.002(.002) J:Y-	-.001(.003) J:Y-	-.003(.004) J:Y-	(.007) J:Y-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.346(.056) :Y#	.001(.003) J:Y	.002(.004) J:Y	.026(.014) :Y	.127(.03) :Y
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	.741(.115) :Y	.919(.147) :Y	1.06(.163) :Y	.777(.126) :Y	.788(.119) :Y
URANIUM-235	0	1.73E 1 / 19.83E-2	.03(.016) :Y	.043(.022) :Y	.034(.019) :Y	.019(.014) :Y	.037(.017) :Y
URANIUM-238	0	7.98E 1 / 19.12E-1	.871(.13) :Y	1.029(.16) :Y	1.131(.172) :Y	.763(.124) :Y	.946(.138) :Y

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TABLE 3-15
Borehole Positive Results Table
Tank T-7

ample Location:			1895	1895	1895	1995	1995
ample Identification Number:			BHG4997JE	BHG4998JE	BHG4999JE	BHG5014JE	BHG5015JE
ate Sampled:	MDL	PRG / BKGND	24-Apr-95	24-Apr-95	24-Apr-95	5-May-95	5-May-95
est Group:VOACLP Units:UG/KG							
-BUTANONE	0	1.00E 9 / 0.00E 0		6 J:Y			51 :Y
-HEXANONE	0	0.00E 0 / 0.00E 0					35 B:Y-
-METHYL-2-PENTANONE	0	E 0 / E 0					47 :Y-
CETONE	10	1.77E 8 / 0.00E 0		28 :Y	28 :Y	8 JB:Y	56 B:Y
ARBON TETRACHLORIDE	0	3.96E 5 / 0.00E 0	190 :Y	2 J:Y	3 J:Y	15 :Y	7 J:Y
HLOROFORM	0	6.34E 5 / 0.00E 0					
ETHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0			2 J:Y	2 J:Y	2 J:Y

TABLE 3-15
Borehole Positive Results Table
Tank T-7

Sample Location:	1995	1995	2095	2095	2095	2095
Sample Identification Number:	BHG5016JE	BHG5017JE	BHG5000JE	BHG5001JE	BHG5002JE	BHG5003JE
Date Sampled:	5-May-95	9-May-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95
Test Group:BNACLP Units:UG/KG	13.0-14.0	18.0-20.5	0.0-0.5	Duplicate	18.3-22.3	24.0-25.0
2-METHYLNAPHTHALENE						
ACENAPHTHENE						
ANTHRACENE						
BENZO(a)ANTHRACENE			110 J:Y	14 J:Y		
BENZO(a)PYRENE			100 J:Y			
BENZO(b)FLUORANTHENE			110 J:Y	51 J:Y		
BENZO(ghi)PERYLENE						
BENZO(k)FLUORANTHENE			53 J:Y	24 J:Y		
BIS(2-ETHYLHEXYL)PHTHALATE						
CARBAZOLE						
CHRYSENE			110 J:Y	43 J:Y		
DIBENZO(a,h)ANTHRACENE						
DIBENZOFURAN						
FLUORANTHENE			220 J:Y	78 J:Y		
FLUORENE						
HEXACHLOROCYCLOPENTADIENE						
INDENO(1,2,3-cd)PYRENE						
NAPHTHALENE						
PHENANTHRENE			120 J:Y-			
PYRENE			290 J:Y	83 J:Y		
Test Group:METADD Units:MG/KG						
CESIUM	2.2 :Y		4.4 :Y	6.5 :Y	6.8 :Y	7.2 :Y
LITHIUM	6.8 :Y		6.9 :Y	7.3 :Y	6.4 :Y	1.8 :Y
STRONTIUM	16.5 :Y		23.6 :Y	22.4 :Y	30.5 :Y	51.1 :Y
TIN						
Test Group:SMETCLP Units:MG/KG						
ALUMINUM	8220 :Y		7490 :Y	8380 :Y	10700 :Y	5860 :Y
ARSENIC	7 :Y		3 :Y	3.4 :Y	4.2 :Y	3.8 :Y
BARIUM	36.4 :Y		66.5 :Y	66.3 :Y	128 :Y	63.9 :Y
BERYLLIUM	.84 :Y		.55 :Y	.59 :Y	.76 :Y	.77 :Y

TABLE 3-15
Borehole Positive Results Table
Tank T-7

Sample Location:	1995	1995	2095	2095	2095	2095
Sample Identification Number:	BHG5016JE	BHG5017JE	BHG5000JE	BHG5001JE	BHG5002JE	BHG5003JE
Date Sampled:	5-May-95	9-May-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95
CADMIUM						
CALCIUM	3170 :Y		13700 :Y	11700 :Y	5050 :Y	5010 :Y
CHROMIUM	12.1 :Y		8.2 :Y	9.7 :Y	12.2 :Y	6.6 :Y
COBALT	6.8 :Y		4.2 :Y	4.6 :Y	11.6 :Y	1.7 :Y
COPPER	18.4 :Y		10.6 :Y	10.8 :Y	14.5 :Y	12.4 :Y
IRON	15700 :Y		8750 :Y	9430 :Y	14000 :Y	3960 :Y
LEAD	6.9 :Y		6.1 :Y	[illegible] :Y	11.3 :Y	17.7 :Y
MAGNESIUM	2430 :Y		1930 :Y	1990 :Y	2120 :Y	1300 :Y
MANGANESE	112 :Y		137 :Y	157 :Y	387 :Y	5.3 :Y
MERCURY						.12 :Y
NICKEL	15.2 :Y		8.9 :Y	10 :Y	12.5 :Y	5.3 :Y
POTASSIUM	1060 :Y		1300 :Y	1300 :Y	1180 :Y	490 :Y
SELENIUM						
SILVER	1.9 :Y					
SODIUM	76.8 :Y-		42.7 :Y-	44.7 :Y-	63.6 :Y-	66.4 :Y-
VANADIUM	33.1 :Y		18.6 :Y	20.3 :Y	27.3 :Y	22.2 :Y
ZINC	42.4 :Y		24.9 I:Y	25.1 I:Y	[illegible] :Y	28.7 I:Y
Test Group:TRADS Units:PCI/G						
AMERICIUM-241	.004(.004) :Y	.005(.006) J:Y	.013(.007) :Y	.01(.006) :Y	.004(.004) :Y	.005(.006) J:Y
GROSS ALPHA	14.49(5.71) :Y	14.94(5.71) :Y	14.83(5.62) :Y	21.26(6.98) :Y	12.94(5.36) :Y	9.678(4.6) :Y
GROSS BETA	29.39(4.73) :Y	25.88(4.2) :Y	30.28(4.34) :Y	28.22(4.22) :Y	33.72(4.63) :Y	18.08(3.4) :Y
PLUTONIUM-238	.001(.003) J:Y-	.004(.008) J:Y-		.005(.005) :Y-	(.006) J:Y-	(.005) J:Y-
PLUTONIUM-239/240	.001(.003) J:Y	.016(.014) J:Y	.011(.007) :Y	.01(.009) J:Y	.006(.008) J:Y	.003(.008) J:Y
URANIUM-233,-234	.643(.103) :Y	1.206(.172) :Y		.694(.119) :Y	.974(.15) :Y	1.001(.153) :Y
URANIUM-235	.038(.018) :Y	.056(.022) :Y		.029(.018) :Y	.024(.016) :Y	.032(.018) :Y
URANIUM-238	.701(.11) :Y	1.06(.155) :Y		.721(.123) :Y	.953(.148) :Y	1.11(.166) :Y

TABLE 3-15
Borehole Positive Results Table
Tank T-7

Sample Location:	1995	1995	2095	2095	2095	2095
Sample Identification Number:	BHG5016JE	BHG5017JE	BHG5001JE	BHG5004JE	BHG5002JE	BHG5003JE
Date Sampled:	5-May-95	9-May-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95
Test Group:VOACLP Units:UG/KG						
2-BUTANONE					14 :Y	
2-HEXANONE						
4-METHYL-2-PENTANONE	2 J:Y-					
ACETONE	13 B:Y	9 JB:Y			120 :Y	6 J:Y
CARBON TETRACHLORIDE	1 J:Y	4 J:Y	1 J:Y	3 J:Y	2 J:Y	
CHLOROFORM		17 :Y				
METHYLENE CHLORIDE	3 J:Y					

TABLE 3-16
Groundwater Positive Results Table
Tank T-7

Sample Location:			1895	1995	2095	2095
Sample Identification Number:			GWG1726JE	GWG1731JE	GWG1727JE	GWG1728JE
Date Sampled:	MDL	PRG / BKGND	24-Apr-95	9-May-95	25-Apr-95	25-Apr-95
Test Group:BNACLP Units:UG/L						
BIS(2-ETHYLHEXYL)PHTHALATE	330	6.07E 0 / 0.00E 0	4 J:Y		8 J:Y*	4 J:Y
Test Group:METADD Units:UG/L						
LITHIUM	100	7.30E 2 / 7.52E 1	215 :JA#		9 B:JA	5.1 B:JA
SILICON	500	0.00E 0 / 567.77E 2			6600 :JA	14500 :JA
STRONTIUM	200	2.19E 4 / 2.45E 2	1410 :JA#		291 :V#	274 :JA#
TIN	200	2.19E 4 / 1.45E 2	99.9 B:JA			
Test Group:SMETCLP Units:UG/L						
ALUMINUM	200	1.06E 5 / 192.24E 2			9950 :JA	3880 :JA
ANTIMONY	60	1.46E 1 / 6.89E 1	28 B:JA*			
ARSENIC	10	4.86E-2 / 7.43E 0	189 :JA*#		8.2 B:JA*#	4.9 B:JA*
BARIUM	200	2.56E 3 / 2.08E 2	2700 :JA*#		163 B:V	131 B:JA
BERYLLIUM	5	1.98E-2 / 0.00E 0	31.9 :JA*		.7 B:V*	
CADMIUM	5	1.82E 1 / 7.39E 0	2.7 B:JA			
CALCIUM	5000	0.00E 0 / 932.89E 2			51500 :V	49500 :JA
CHROMIUM	10	0.00E 0 / 3.10E 1	371 :JA#		8.2 B:V	
COBALT	50	2.19E 3 / 3.98E 1	218 :JA#		5.4 B:V	3.3 B:JA
COPPER	25	1.46E 3 / 5.35E 1	514 :JA#			
IRON	100	0.00E 0 / 223.89E 2			8160 :JA	3470 :JA
LEAD	3	0.00E 0 / 1.56E 1	232 :JA#		8.9 :JA	5.8 :JA
MAGNESIUM	5000	0.00E 0 / 114.75E 2			9700 :V	8670 :JA
MANGANESE	15	1.82E 2 / 1.37E 2	9540 :JA*#		992 :V*#	966 :JA*#
MERCURY	0.2	1.09E 1 / 2.60E-1	1.8 :JA#			
NICKEL	40	7.30E 2 / 4.77E 1	442 :JA#			
POTASSIUM	5000	0.00E 0 / 51.99E 2			2720 B:V	1810 B:JA
SELENIUM	5	1.82E 2 / 3.27E 0	11.4 :JA#			
SILVER	10	1.82E 2 / 0.00E 0	26 :JA			
SODIUM	5000	0.00E 0 / 138.65E 2			32000 :V#	31800 :JA#
VANADIUM	50	2.56E 2 / 4.90E 1	846 :JA*#		23.6 B:V	10.7 B:JA
ZINC	20	1.09E 4 / 2.45E 2	1420 :JA#		330 :JA#	438 :JA#

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TABLE 3-16
Groundwater Positive Results Table
Tank T-7

Sample Location:			1895	1995	2095	2095
Sample Identification Number:			GWG1726JE	GWG1731JE	GWG1727JE	GWG1728JE
Date Sampled:	MDL	PRG / BKGND	24-Apr-95	3-May-95	25-Apr-95	25-Apr-95
Test Group:TRADS Units:PCI/L						
AMERICIUM-241	0	1.98E-1 / 6.34E-2			.037(.035) :Y	.011(.008) :Y
GROSS ALPHA	0	0.00E 0 / 44.56E 0	219(25) :Y#		11(2) :Y	5(1) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	241(24) :Y#		14(2) :Y	10(1) :Y
PLUTONIUM-239/240	0	2.07E-1 / 13.21E-2	.027(.057) :Y		.011(.038) :Y	.009(.007) :Y
URANIUM-233,-234	0	2.98E 0 / 17.69E-1	10.4(1.9) :Y*#		2.83(.57) :Y#	.88(.13) :Y
URANIUM-235	0	2.98E 0 / 19.83E-2	.3(.32) :Y#		.1(.17) :Y	.01(.01) :Y
URANIUM-238	0	2.98E 0 / 19.12E-1	11.59(1.95) :Y*#		2.17(.48) :Y#	.68(.12) :Y
Test Group:VOACLP Units:UG/L						
1,1,1-TRICHLOROETHANE	0	0.00E 0 / 0.00E 0	2 J:Y-			
1,1-DICHLOROETHENE	0	6.77E-2 / 0.00E 0	0 J:Y*			
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0	310 :Y-		4 J:Y-	7 J:Y-
1,2-DICHLOROPROPANE	0	1.25E 0 / 0.00E 0		2 J:Y*		
2-BUTANONE	0	2.47E 3 / 0.00E 0		19 :Y		
ACETONE	10	3.65E 3 / 0.00E 0		55 :Y	10 J:Y	6 J:Y
CHLOROFORM	0	2.76E-1 / 0.00E 0		510 :Y*		
CHLOROMETHANE	0	2.32E 0 / 0.00E 0	18 J:Y*	17 J:Y*		
METHYLENE CHLORIDE	5	6.22E 0 / 0.00E 0		39 :Y*		
TETRACHLOROETHENE	5	1.43E 0 / 0.00E 0	13 J:Y*	10 J:Y*		
TRICHLOROETHENE	0	2.55E 0 / 0.00E 0	170 :Y*	1 J:Y		
Test Group:WQPL Units:MG/L						
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	6.51 :Y-		4.29 :Y-	4.22 :Y-

TABLE 3-17
Borehole Positive Results Table
Tank T-8

ample Location:			2295	2295	2295	2295	2595	2595	2595
ample Identification Number:			BHG4986JE	BHG4987JE	BHG4988JE	BHG4992JE	BHG4989JE	BHG4990JE	BHG4991JE
ate Sampled:	MDL	PRG / BKGND	17-Apr-95	18-Apr-95	18-Apr-95	17-Apr-95	17-Apr-95	20-Apr-95	20-Apr-95
est Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	16.0-17.1	20.0-22.4	duplicate	0.0-0.5	14.0-15.1	16.0-19.0
ENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0					57 J:Y		
HRYSENE	330	1.70E 7 / 0.00E 0					62 J:Y		
LUORANTHENE	330	7.10E 7 / 0.00E 0					57 J:Y		
HENANTHRENE	330	0.00E 0 / 0.00E 0					47 J:Y-		
YRENE	330	5.32E 7 / 0.00E 0					120 J:Y		
est Group:METADD Units:MG/KG									
ITHIUM	100	3.55E 4 / 53.40E 0	5.6 :Y	7 :Y	3.8 :Y	5.9 :Y	5.6 :Y	3.5 :Y	
TRONTIUM	200	1.00E 6 / 342.60E 0	4.4 :Y	46.5 :Y	54.9 :Y	4.3 :Y	7.6 :Y	43 :Y	
IN	200	1.00E 6 / 0.00E 0		20 :Y	6.5 :Y		3.3 :Y	7.5 :Y	
est Group:SMETCLP Units:MG/KG									
LUMINUM	200	1.00E 6 / 55098.00E 0	4250 :Y	8450 :Y	6940 :Y	4270 :Y	4200 :Y	4820 :Y	
RSENIC	10	7.09E 1 / 21.48E 0	.99 :Y	1.1 :Y	5.3 :Y	1.2 :Y	.97 :Y	1 :Y	
ARIUM	200	1.24E 5 / 389.00E 0	39.2 :Y	80.9 :Y	158 :Y	41.8 :Y	41.7 :Y	50.3 :Y	
ERYLLIUM	5	2.89E 1 / 18.80E 0	.18 :Y	.55 :Y	78 :Y	.18 :Y	.2 :Y	.57 :Y	
ADMIUM	5	8.87E 2 / 2.36E 0			.25 :Y				
ALCIUM	5000	0.00E 0 / 67403.00E 0	784 :Y	36400 :Y	4180 :Y	851 :Y	1350 :Y	5530 :Y	
HROMIUM	10	0.00E 0 / 113.80E 0	6.5 :Y	10.6 :Y	8.9 :Y	7.5 :Y	8.3 :Y	4.1 :Y	
OBALT	50	1.06E 5 / 48.80E 0	14 :Y	2.1 :Y	6.3 :Y	12.2 :Y	22.5 :Y	1.9 :Y	
OPPER	25	7.10E 4 / 59.10E 0	32.5 :Y	6 :Y	16.0 :Y	32.5 :Y	58.6 :Y	16.2 :Y	
RON	100	0.00E 0 / 63389.00E 0	7260 :Y	7140 :Y	20000 :Y	7390 :Y	7550 :Y	15600 :Y	
EAD	3	0.00E 0 / 30.50E 0	7.1 :Y	4 :Y	14.9 :Y	8.6 :Y	6.4 :Y	18.5 :Y	
AGNESIUM	5000	0.00E 0 / 14932.00E 0	1610 :Y	1880 :Y	1610 :Y	1720 :Y	1800 :Y	1410 :Y	
ANGANESE	15	8.86E 3 / 1505.00E 0	112 :Y	72.3 :Y	602 :Y	118 :Y	136 :Y	127 :Y	
ERCURY	0.2	5.32E 2 / 2.81E 0	.072 :Y	.12 :Y	.093 :Y				
ICKEL	40	3.55E 4 / 103.60E 0	5.7 :Y	5.3 :Y	17.6 :Y	5.7 :Y	5.2 :Y	3.5 :Y	
OTASSIUM	5000	0.00E 0 / 10781.00E 0	1550 :Y	746 :Y	720 :Y	1660 :Y	1550 :Y	519 :Y	
ELENIUM	5	8.87E 3 / 4.85E 0						1.3 :Y	
ILVER	10	8.87E 3 / 20.00E 0	1.9 :Y		1.5 :Y	1.9 :Y	5.3 :Y	1.4 :Y	
ODIUM	5000	0.00E 0 / 0.00E 0	293 :Y-	128 :Y-	158 :Y-	290 :Y-	177 :Y-	209 :Y-	
ANADIUM	50	1.24E 4 / 138.30E 0	11.9 :Y	9.1 :Y	15.3 :Y	11.9 :Y	11.7 :Y	15.9 :Y	
INC	20	5.32E 5 / 216.20E 0	29.2 :Y	18.3 :Y	68.3 :Y	30.3 :Y	30.7 :Y	56.6 I:Y	
Test Group:TRADS Units:PCI/G									
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.005(.005) J:Y	.004(.004) J:Y	.003(.005) J:Y	.019(.012) :Y	.015(.008) :Y	.065(.02) :Y#	.002(.003) J:Y
GROSS ALPHA	0	0.00E 0 / 44.56E 0	19.82(6.68) :Y	11.59(5.37) :Y	18.91(6.52) :Y	24.1(7.81) :Y	23.71(7.14) :Y	14.31(5.83) :Y	12.13(5.08) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	44.73(5.47) :Y	30(4.32) :Y	26.19(4.06) :Y	45.9(5.53) :Y	49.87(5.83) :Y	19.38(3.47) :Y	17.57(3.3) :Y
PLUTONIUM-238	0	E 0 / E 0	(.003) J:Y-	.003(.004) :Y-	.001(.005) J:Y-	(.008) J:Y-	.002(.003) J:Y-	(.004) J:Y-	-.001(.002) J:Y-

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TABLE 3-17
Borehole Positive Results Table
Tank T-8

ample Location:			2295	2295	2295	2295	2595	2595	2595
ample Identification Number:			BHG4986JE	BHG4987JE	BHG4988JE	BHG4992JE	BHG4989JE	BHG4990JE	BHG4991JE
ate Sampled:	MDL	PRG / BKGND	17-Apr-95	18-Apr-95	18-Apr-95	17-Apr-95	17-Apr-95	20-Apr-95	20-Apr-95
LUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.022(.011) :Y	.001(.002) J:Y	.003(.005) J:Y	.031(.016) :Y	.011(.008) :Y	.001(.007) J:Y	.001(.005) J:Y
RANIUM-233,-234	0	4.18E 3 / 17.69E-1	.79(.13) :Y	.572(.102) :Y	.725(.119) :Y	1.046(.175) :Y	.978(.164) :Y	.908(.145) :Y	.97(.154) :Y
RANIUM-235	0	1.73E 1 / 19.83E-2	.022(.015) :Y	.023(.015) :Y	.047(.021) :Y	.05(.027) :Y	.035(.021) :Y	.044(.021) :Y	.039(.02) :Y
RANIUM-238	0	7.98E 1 / 19.12E-1	.755(.125) :Y	.555(.1) :Y	.715(.118) :Y	1(.169) :Y	.983(.165) :Y	1.071(.168) :Y	1.093(.169) :Y
est Group:VOACLP Units:UG/KG									
-BUTANONE	0	1.00E 9 / 0.00E 0	9 J:Y	4 J:Y					
CETONE	10	1.77E 8 / 0.00E 0	70 B:Y	62 B:Y	87 B:Y	76 B:Y	63 B:Y	18 :Y	14 :Y
ARBON TETRACHLORIDE	0	3.96E 5 / 0.00E 0	12 :Y	5 J:Y	140 :Y	8 J:Y	20 :Y		
HLOROFORM	0	6.34E 5 / 0.00E 0		1 J:Y	12 J:Y				
IETHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	18 B:Y	32 B:Y	33 B:Y	15 B:Y	39 B:Y	4 J:Y	5 J:Y
OLUENE	5	1.25E 8 / 0.00E 0	1 J:Y						
RICHLOROETHENE	0	5.44E 6 / 0.00E 0		2 J:Y	5 J:Y				

TABLE 3-18
Tank Liquid Positive Results Table
Tank T-8

Sample Location:			T-8	T-8
Sample Identification Number:			TNG0015JE	TNG0016JE
Date Sampled:	MDL	PRG / BKGND	5-Apr-95	5-Apr-95
Test Group:METADD Units:UG/L				
MOLYBDENUM	200	0.00E 0 / 0.00E 0	6.3 B:V	6.2 B:V
SILICON	500	0.00E 0 / 0.00E 0	2900 :JA	2460 :JA
STRONTIUM	200	0.00E 0 / 0.00E 0	179 B:V	73.7 B:V
TIN	200	0.00E 0 / 0.00E 0	21.4 B:V	
Test Group:SMETCLP Units:UG/L				
ALUMINUM	200	0.00E 0 / 0.00E 0	38.2 B:V	36.8 B:V
BARIUM	200	0.00E 0 / 0.00E 0	8.2 B:V	4 B:V
CALCIUM	5000	0.00E 0 / 0.00E 0	31200 :V	15400 :V
COPPER	25	0.00E 0 / 0.00E 0	10 B:JA	16.5 B:JA
MAGNESIUM	5000	0.00E 0 / 0.00E 0	1550 B:V	764 B:V
MANGANESE	15	0.00E 0 / 0.00E 0	2.9 B:V	
MERCURY	0.2	0.00E 0 / 0.00E 0		.47 :V
NICKEL	40	0.00E 0 / 0.00E 0	23.6 B:V	
POTASSIUM	5000	0.00E 0 / 0.00E 0	30300 :V	64900 :V
SODIUM	5000	0.00E 0 / 0.00E 0	36700 :V	81700 :V
ZINC	20	0.00E 0 / 0.00E 0	10.2 B:V	
Test Group:TRADS Units:PCI/L				
AMERICIUM-241	0	0.00E 0 / 0.00E 0	.42(.057) :Y	.321(.043) :Y
GROSS ALPHA	0	0.00E 0 / 0.00E 0	5.806(2.47) C:Y	295.843(23.373) C:Y
GROSS BETA	0	0.00E 0 / 0.00E 0	31.607(3.385) :Y	79.234(6.457) :Y
PLUTONIUM-239/240	0	0.00E 0 / 0.00E 0	1.187(.083) :Y	152.862(7.672) :Y
RADIUM-226	0	0.00E 0 / 0.00E 0		.092(.084) :Y
TRITIUM	0	0.00E 0 / 0.00E 0	119.973(175.966) :Y	31.8[illegible](166.723) :Y
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	3.01(.735) :Y	[illegible]17(2.291) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	208([illegible]96) :Y	[illegible].396(.973) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	4.[illegible](.866) :Y	[illegible].787([illegible].636) :Y
Test Group:VOACLP Units:UG/L				
ACETONE	10	0.00E 0 / 0.00E 0		7 J:A
Test Group:WQPL Units:MG/L				
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	[illegible].55 :V	9.17 :V

TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

ample Location:			2695	2695	2695	2795	2795
ample Identification Number:			BHG4955JE	BHG5010JE	BHG5011JE	BHG4956JE	BHG5008JE
ate Sampled:	MDL	PRG / BKGND	3-Apr-95	3-May-95	3-May-95	3-Apr-95	1-May-95
est Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	6.3-8.3	22.0-22.8	0.0-0.5	4.6-5.6
CENAPHTHENE	330	1.06E 8 / 0.00E 0	76 J:A			65 J:A	
NTHRACENE	330	5.32E 8 / 0.00E 0	66 J:A			74 J:A	
ENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	180 J:A			410 :V	
ENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	150 J:A			430 :V	
ENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	190 J:A			510 :V	
ENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0					
ENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	87 J:A			190 J:A	
ARBAZOLE	0	0.00E 0 / 0.00E 0				59 J:A-	
HRYSENE	330	1.70E 7 / 0.00E 0	210 J:A			430 :V	
I-n-BUTYL PHTHALATE	330	1.77E 8 / 0.00E 0		190 J:Y			
IMETHYL PHTHALATE	330	1.00E 9 / 0.00E 0				210 J:A	
LUORANTHENE	330	7.10E 7 / 0.00E 0	440 :V			870 :V	44 J:Y
LUORENE	330	7.10E 7 / 0.00E 0				37 J:A	
EXACHLOROBUTADIENE	330	3.55E 5 / 0.00E 0			180 J:Y		
EXACHLOROETHANE	330	1.77E 6 / 0.00E 0			610 :Y		
NDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0				310 J:A	
APHTHALENE	330	7.10E 7 / 0.00E 0					
HENANTHRENE	330	0.00E 0 / 0.00E 0	390 J:A-			490 :V-	
YRENE	330	5.32E 7 / 0.00E 0	460 :V			890 :V	54 J:Y
Test Group:METADD Units:MG/KG							
ESIUM	1000	0.00E 0 / 1267.00E 0		4.7 :Y	7.4 :Y		
ITHIUM	100	3.55E 4 / 53.40E 0	6.5 B:V	5.2 :Y	3.7 :Y	4.6 B:V	
STRONTIUM	200	1.00E 6 / 342.60E 0	40.4 B:V	52.4 :Y	62.7 :Y	12.8 B:V	
TIN	200	1.00E 6 / 0.00E 0	5.9 B:V		4 :Y		
Test Group:SMETCLP Units:MG/KG							
LUMINUM	200	1.00E 6 / 55098.00E 0	9920 :V	9830 :Y	9280 :Y	4680 :V	
RSENIC	10	7.09E 1 / 21.48E 0	8.4 :V	9.4 :Y	3.4 :Y	3.2 :V	
ARIUM	200	1.24E 5 / 389.00E 0	116 :V	121 :Y	119 :Y	51.4 :V	
ERYLLIUM	5	2.89E 1 / 18.80E 0	.85 B:V	83 :Y	.56 :Y	.23 B:V	
ADMIUM	5	8.87E 2 / 2.36E 0				.53 B:V	

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TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

ample Location:			2695	2695	2695	2795	2795
ample Identification Number:			BHG4955JE	BHG5010JE	BHG5011JE	BHG4956JE	BHG5008JE
ate Sampled:	MDL	PRG / BKGND	3-Apr-95	3-May-95	3-May-95	3-Apr-95	1-May-95
ALCIUM	5000	0.00E 0 / 67403.00E 0	8620 :V	5960 :Y	6250 :Y	3320 :V	
HROMIUM	10	0.00E 0 / 113.80E 0	11.1 :V	11.5 :Y	11.6 :Y	13.2 :V	
OBALT	50	1.06E 5 / 48.80E 0	9 B:V	5.5 :Y	4.2 :Y	3.9 B:V	
OPPER	25	7.10E 4 / 59.10E 0	14.6 :V	21.6 :Y	20.7 :Y	28.1 :V	
ON	100	0.00E 0 / 63389.00E 0	15900 :V	10600 :Y	12100 :Y	11800 :V	
EAD	3	0.00E 0 / 30.50E 0	19.3 :JA	20.2 :Y	16.7 :Y	38.6 :JA#	
AGNESIUM	5000	0.00E 0 / 14932.00E 0	2090 :V	1900 :Y	1920 :Y	1730 :V	
ANGANESE	15	8.86E 3 / 1505.00E 0	226 :V	140 :Y	261 :Y	179 :V	
ERCURY	0.2	5.32E 2 / 2.81E 0	.076 B:V	.086 :Y			
ICKEL	40	3.55E 4 / 103.60E 0	15.7 :V	10.1 :Y	6.6 :Y	7.3 B:V	
OTASSIUM	5000	0.00E 0 / 10781.00E 0	1530 :V	1000 :Y	1210 :Y	1440 :V	
ILVER	10	8.87E 3 / 20.00E 0					
ODIUM	5000	0.00E 0 / 0.00E 0	163 B:V-	134 :Y-	118 :Y-	128 B:V-	
ANADIUM	50	1.24E 4 / 138.30E 0	27.6 :V	23.5 :Y	25.7 :Y	16.2 :V	
INC	20	5.32E 5 / 216.20E 0	56 :JA	78.6 :Y	43.8 :Y	270 :JA#	
est Group:TRADS Units:PCI/G							
MERICIUM-241	0	2.16E 2 / 6.34E-2	.064(.015) :Y#		.005(.005) J:Y	.185(.032) :Y#	.011(.007) :Y
ROSS ALPHA	0	0.00E 0 / 44.56E 0	15.47(4.29) :Y	26.25(7.65) :Y	10.69(4.9) :Y	14.31(4.16) :Y	9.23(4.71) :Y
ROSS BETA	0	0.00E 0 / 55.35E 0	26.21(3.13) :Y	25.69(4.38) :Y	23.12(4.07) :Y	33.19(3.63) :Y	25.42(3.98) :Y
LUTONIUM-238	0	E 0 / E 0	.029(.033) J:Y-	.002(.004) J:Y-	-.002(.002) J:Y-	.025(.016) :Y-	.009(.009) J:Y-
LUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.429(.143) :Y#	-.001(.002) J:Y	.002(.004) J:Y	2.038(.252) :Y#	.025(.014) :Y
RANIUM-233,-234	0	4.18E 3 / 17.69E-1	.862(.188) :Y	1.119(.175) :Y	.853(.127) :Y	.617(.179) :Y	.932(.148) :Y
RANIUM-235	0	1.73E 1 / 19.83E-2	.06(.036) :Y		.046(.02) :Y	.008(.019) J:Y	.045(.022) :Y
RANIUM-238	0	7.98E 1 / 19.12E-1	.988(.209) :Y	1.17(.181) :Y	1.046(.15) :Y	.776(.208) :Y	1.053(.163) :Y
est Group:VOACLP Units:UG/KG							
,1,2,2-TETRACHLOROETHANE	0	6.21E 5 / 0.00E 0			6100000 J:Y*		
-BUTANONE	0	1.00E 9 / 0.00E 0					
-METHYL-2-PENTANONE	0	E 0 / E 0					
CETONE	10	1.77E 8 / 0.00E 0		25 B:Y			7 JB:Y
ROMOFORM	0	1.18E 7 / 0.00E 0			1700000 J:Y		
ARBON DISULFIDE	0	1.77E 8 / 0.00E 0			110000 J:Y		

TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

ample Location:			2695	2695	2695	2795	2795
ample Identification Number:			BHG4955JE	BHG5010JE	BH35011JE	BHG4956JE	BHG5008JE
ate Sampled:	MDL	PRG / BKGND	3-Apr-95	3-May-95	3-May-95	3-Apr-95	1-May-95
ARBON TETRACHLORIDE	0	3.96E 5 / 0.00E 0		5 J:Y	810 0000 :Y*		34 :Y
HLOROFORM	0	6.34E 5 / 0.00E 0		7 J:Y	380 000 :Y*		2 J:Y
HLOROMETHANE	0	9.55E 6 / 0.00E 0					
ETHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0		7 J:Y			
ETRACHLOROETHENE	5	2.22E 6 / 0.00E 0			2500 0 J:Y		
est Group:WQPL Units:MG/KG							
HROMIUM VI	0	E 0 / E 0					

TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

Sample Location:	2895	2895	2895	2895	2995	2995	2995
Sample Identification Number:	BHG4957JE	BHG4959JE	BHG4960JE	BHG4961JE	BHG4958JE	BHG4962JE	BHG4963JE
Date Sampled:	3-Apr-95	3-Apr-95	3-Apr-95	4-Apr-95	3 Apr-95	28-Apr-95	1-May-95
Test Group:BNACLP Units:UG/KG	0.0-0.5	duplicate	4.6-6.9	20.0-22.0	0.0-0.5	8.0-9.4	26.0-27.8
ACENAPHTHENE		130 J:A			63 J:A		
ANTHRACENE		100 J:A			61 J:A		
BENZO(a)ANTHRACENE	60 J:A	530 :V			241 J:A		
BENZO(a)PYRENE	68 J:A	580 :V			260 J:A		
BENZO(b)FLUORANTHENE		570 :V			250 J:A		
BENZO(ghi)PERYLENE		560 :V-			130 J:A-		
BENZO(k)FLUORANTHENE		410 :V			140 J:A		
CARBAZOLE		120 J:A-			55 J:A-		
CHRYSENE	76 J:A	610 :V			270 J:A		
DI-n-BUTYL PHTHALATE							
DIMETHYL PHTHALATE							
FLUORANTHENE	140 J:A	1400 :V			590 :V		
FLUORENE		81 J:A			42 J:A		
HEXACHLOROBUTADIENE				260 J:A			1200 :Y
HEXACHLOROETHANE				3300 :V			3300 :Y
INDENO(1,2,3-cd)PYRENE	70 J:A	480 :V					
NAPHTHALENE		49 J:A			40 J:A		43 J:Y
PHENANTHRENE	100 J:A-	860 :V-			430 :V-		
PYRENE	150 J:A	1400 :V			600 :V		
Test Group:METADD Units:MG/KG							
CESIUM						7.2 :Y	4.7 :Y
LITHIUM	7.4 B:V	8.4 B:V	5.9 B:V	4.8 B:V	2 B:V	5.9 :Y	4.1 :Y
STRONTIUM	26.9 B:V	26.6 B:V	46.2 B:V	46.7 B:V	9.6 B:V	43.4 :Y	50 :Y
TIN	4.5 B:V	5.4 B:V	4.7 B:V				4.2 :Y
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	8910 :V	10800 :V	8810 :V	8660 :V	2070 :V	9280 :Y	9710 :Y
ARSENIC	6.6 :V	6.7 :V	5 :V	3.2 :V	5.9 :V	11.4 :Y	9.3 :Y
BARIUM	111 :V	105 :V	138 :V	47.4 B:V	37.1 B:V	127 :Y	82.9 :Y
BERYLLIUM	.67 B:V	.74 B:V	.61 B:V	.69 B:V	.15 B:V	.9 :Y	.71 :Y
CADMIUM	2.1 :V	1.5 :V					

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TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

Sample Location:	2895	2895	2895	2895	2995	2995	2995
Sample Identification Number:	BHG4957JE	BHG4959JE	BHG4960JE	BHG4961JE	BHG4958JE	BHG4962JE	BHG4963JE
Date Sampled:	3-Apr-95	3-Apr-95	3-Apr-95	4-Apr-95	3-Apr-95	28-Apr-95	1-May-95
CALCIUM	5200 :V	6120 :V	17600 :V	5740 :V	856 B:V	5140 :Y	4930 :Y
CHROMIUM	54.6 :V	54 :V	10.3 :V	9.8 :V	4.9 :V	11.3 :Y	10.4 :Y
COBALT	10.6 B:V	11.4 :V	5.9 B:V	5.2 B:V	1.6 B:V	7.6 :Y	6.1 :Y
COPPER	28.1 :V	17.7 :V	10.6 :V	15.7 :V	15.6 :V	16.6 :Y	17.7 :Y
IRON	12800 :V	14400 :V	13200 :V	6010 :V	3720 :V	14200 :Y	15600 :Y
LEAD	270 :JA#	232 :JA#	12.3 :JA	213 :V	7 :JA	16 :Y	19.2 :Y
MAGNESIUM	2060 :V	2090 :V	2050 :V	2100 :V	584 B:V	1910 :Y	1840 :Y
MANGANESE	260 :V	298 :V	172 :V	63.2 :V	58.5 :V	220 :Y	95.4 :Y
MERCURY	.33 :V	.16 :V				.12 :Y	.077 :Y
NICKEL	12.1 :V	13.6 :V	11.8 :V	6.9 B:V	3.5 B:V	15.8 :Y	12.8 :Y
POTASSIUM	2170 :V	2100 :V	1080 B:V	1060 B:V	635 B:V	1030 :Y	942 :Y
SILVER	2.9 :V	1.6 B:V				1 :Y	1 :Y
SODIUM	106 B:V-	100 B:V-	71.5 B:V-		56.1 B:V-	72.2 :Y-	81.7 :Y-
VANADIUM	26.5 :V	29.3 :V	23.8 :V	17.5 :V	11.4 :V	25.2 :Y	27 :Y
ZINC	238 :JA#	188 :JA	36.5 :JA	48.5 :JA	41.7 :JA	60.2 :Y	68.2 :Y
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	1.246(.14) :Y#	1.602(.177) :Y#		.163(.031) :Y#	.011(.006) :Y	.016(.011) :Y	.007(.008) J:Y
GROSS ALPHA	24.09(5.55) :Y	27.33(5.87) :Y	11.99(3.7) :Y	17.18(5.21) :Y	8.767(3.38) :Y	19.73(6.61) :Y	19.71(6.52) :Y
GROSS BETA	30.64(3.45) :Y	31.9(3.53) :Y	26.49(3.16) :Y	24.82(2.85) :Y	23.02(2.94) :Y	25.6(3.98) :Y	25.3(3.94) :Y
PLUTONIUM-238	.133(.03) :Y-	.205(.043) :Y-	.038(.038) :Y-	.004(.006) J:Y-	.028(.012) :Y-	(.006) J:Y-	.017(.011) :Y-
PLUTONIUM-239/240	6.228(.686) :Y#	7.386(.85) :Y#	.043(.044) J:Y	.001(.004) J:Y	.037(.014) :Y	-.004(.007) J:Y	.003(.005) J:Y
URANIUM-233,-234	1.158(.23) :Y	1.262(.282) :Y	.996(.234) :Y	.805(.134) :Y	.701(.16) :Y	.8(.125) :Y	1.067(.163) :Y
URANIUM-235	.051(.032) :Y	.038(.032) :Y		.039(.02) :Y	.04(.023) :Y	.036(.018) :Y	.035(.019) :Y
URANIUM-238	.893(.187) :Y	.983(.233) :Y	1.043(.242) :Y	.819(.136) :Y	.73(.16) :Y	.897(.137) :Y	1.026(.158) :Y
Test Group:VOACLP Units:UG/KG							
1,1,2,2-TETRACHLOROETHANE							
2-BUTANONE			29 :V				
4-METHYL-2-PENTANONE			43 :JA-				
ACETONE				1200000 J:A			
BROMOFORM							
CARBON DISULFIDE							

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TABLE 3-19
Borehole Positive Results Table
Tank Group T-9 and T-10

Sample Location:	2895	2895	2895	2895	2995	2995	2995
Sample Identification Number:	BHG4957JE	BHG4959JE	BHG4960JE	BHG4961JE	BHG4958JE	BHG4962JE	BHG4963JE
Date Sampled:	3-Apr-95	3-Apr-95	3-Apr-95	4-Apr-95	3-Apr-95	28-Apr-95	1-May-95
CARBON TETRACHLORIDE				25000000 :V*		17 :Y	
CHLOROFORM						1 J:Y	
CHLOROMETHANE						4 J:Y	
METHYLENE CHLORIDE							
TETRACHLOROETHENE							
Test Group:WQPL Units:MG/KG							
CHROMIUM VI		.86 :JA-					

TABLE 3-20
Groundwater Positive Results Table
Tank Group T-9 and T-10

Sample Location:			2695	2795	2895	2995
Sample Identification Number:			GWG1730JE	GWG1729JE	GWG1718JE	GWG1719JE
Date Sampled:	MDL	PRG / BKGND	3-May-95	1-May-95	3-Apr-95	28-Apr-95
Test Group:BNACLP Units:UG/L						
2,4-DIMETHYLPHENOL	330	7.30E 2 / 0.00E 0			8 J:A	
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0			100 :V-	
4-METHYLPHENOL	330	0.00E 0 / 0.00E 0			150 :V-	
ACENAPHTHENE	330	2.19E 3 / 0.00E 0			5 J:A	
BIS(2-ETHYLHEXYL)PHTHALATE	330	6.07E 0 / 0.00E 0		2 JB:Y	1 J:A	2 JB:Y
CARBAZOLE	0	0.00E 0 / 0.00E 0			1 J:A-	
DI-n-BUTYL PHTHALATE	330	3.65E 3 / 0.00E 0	1 J:Y		1 J:A	
DIETHYL PHTHALATE	330	2.92E 4 / 0.00E 0			2 J:A	
FLUORANTHENE	330	1.46E 3 / 0.00E 0		2 J:Y		2 J:Y
FLUORENE	330	1.46E 3 / 0.00E 0			3 J:A	
NAPHTHALENE	330	1.46E 3 / 0.00E 0			32 :V	
PHENANTHRENE	330	0.00E 0 / 0.00E 0		2 J:Y-	12 :V-	2 J:Y-
PHENOL	330	2.19E 4 / 0.00E 0			100 :V	
PYRENE	330	1.09E 3 / 0.00E 0		1 J:Y		2 J:Y
Test Group:METADD Units:UG/L						
CESIUM	1000	0.00E 0 / 7.67E 2	20 :Y	10 :Y		40 :Y
LITHIUM	100	7.30E 2 / 7.52E 1	126 :Y#	1.1 :Y	20.4 B:V	250 :Y#
MOLYBDENUM	200	1.82E 2 / 1.48E 2		3 :Y		
SILICON	500	0.00E 0 / 567.77E 2	35500 :Y		14300 :JA	38700 :Y
STRONTIUM	200	2.19E 4 / 2.45E 2	1080 :Y#		426 :V#	1620 :Y#
TIN	200	2.19E 4 / 1.45E 2	56.7 :Y			120 :Y
Test Group:SMETCLP Units:UG/L						
ALUMINUM	200	1.06E 5 / 192.24E 2	225000 :Y*#		24100 :V#	454000 :Y*#
ANTIMONY	60	1.46E 1 / 6.89E 1				25.1 :Y*
ARSENIC	10	4.86E-2 / 7.43E 0	139 :Y*#	12.2 :Y*#		269 :Y*#
BARIUM	200	2.56E 3 / 2.08E 2	2400 :Y#		429 :V#	4230 :Y*#
BERYLLIUM	5	1.98E-2 / 0.00E 0	18.3 :Y*	.74 :Y*	.97 B:V*	41.1 :Y*
CADMIUM	5	1.82E 1 / 7.39E 0	2 :Y			4.6 :Y
CALCIUM	5000	0.00E 0 / 932.89E 2	213000 :Y#		80800 :V	429000 :Y#
CHROMIUM	10	0.00E 0 / 3.10E 1	217 :Y#		24.8 :V	506 :Y#

TABLE 3-20
Groundwater Positive Results Table
Tank Group T-9 and T-10

Sample Location:			2695	2795	2895	2995
Sample Identification Number:			GWG1730JE	GWG1729JE	GWG1718JE	GWG1719JE
Date Sampled:	MDL	PRG / BKGND	3-May-95	1-May-95	3-Apr-95	28-Apr-95
COBALT	50	2.19E 3 / 3.98E 1	109 :Y#	6.6 :Y	14.2 B:V	207 :Y#
COPPER	25	1.46E 3 / 5.35E 1	179 :Y#	19.2 :Y	99.7 :V#	347 :Y#
IRON	100	0.00E 0 / 223.89E 2	218000 :Y#		43200 :V#	423000 :Y#
LEAD	3	0.00E 0 / 1.56E 1	193 :Y#		61.9 :V#	364 :Y#
MAGNESIUM	5000	0.00E 0 / 114.75E 2	46400 :Y#		17700 :V#	75200 :Y#
MANGANESE	15	1.82E 2 / 1.37E 2	4200 :Y*#		1560 :V*#	5100 :Y*#
MERCURY	0.2	1.09E 1 / 2.60E-1	.32 :Y#	.11 :Y	.69 :V#	.34 :Y#
NICKEL	40	7.30E 2 / 4.77E 1	218 :Y#		21.6 B:V	449 :Y#
POTASSIUM	5000	0.00E 0 / 51.99E 2	31100 :Y#		24600 :V#	51200 :Y#
SELENIUM	5	1.82E 2 / 3.27E 0		7.2 :Y#		
SILVER	10	1.82E 2 / 0.00E 0	[illegible]6 :Y			11.5 :Y
SODIUM	5000	0.00E 0 / 138.65E 2	38500 :Y#		54800 :V#	24800 :Y#
THALLIUM	10	0.00E 0 / 6.36E 0				6.1 :Y
VANADIUM	50	2.56E 2 / 4.90E 1	541 :Y*#		48.2 B:V	1190 :Y*#
ZINC	20	1.09E 4 / 2.45E 2	665 :Y#	120 :Y	97.1 :V#	1170 :Y#
Test Group:TRADS Units:PCI/L						
AMERICIUM-241	0	1.98E-1 / 6.34E-2	.092(.194) :Y#	.008(.031) :Y	.4 (.078) :Y*#	
GROSS ALPHA	0	0.00E 0 / 44.56E 0	446(54) :Y#	19(2) :Y	28(4) :Y	1360(148) :Y#
GROSS BETA	0	0.00E 0 / 55.35E 0	565(51) :Y#	38(4) :Y	54(5) :Y	1650(132) :Y#
PLUTONIUM-239/240	0	2.07E-1 / 13.21E-2	.089(.116) :Y	.004(.023) :Y	2.453(.562) :Y*#	.058(.207) :Y
RADIUM-226	0	3.97E-1 / 15.87E-1		1.3(.3) :Y	2.9(.5) :Y*#	33(1.1) :Y*#
TRITIUM	0	8.82E 2 / 545.96E 0	115(139) :Y	-109(216) :Y	-19(195) :Y	-49(218) :Y
URANIUM-233,-234	0	2.98E 0 / 17.69E-1	29.09(3.81) :Y*#	9.2(1.64) :Y*#	5.67(.48) :Y*#	17.32(4.1) :Y*#
URANIUM-235	0	2.98E 0 / 19.83E-2	1.04(.75) :Y#	.4(.43) :Y#	.48(.14) :Y#	.53(.58) :Y#
URANIUM-238	0	2.98E 0 / 19.12E-1	30.73(4.08) :Y*#	6.7(1.38) :Y*#	5.37(.45) :Y*#	17.42(4.9) :Y*#
Test Group:VOACLP Units:UG/L						
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0	4 J:Y-			
1,2-DICHLOROPROPANE	0	1.25E 0 / 0.00E 0	2 J:Y*			
ACETONE	10	3.65E 3 / 0.00E 0	16 B:Y	11 :Y		13 :Y
CARBON DISULFIDE	0	2.76E 1 / 0.00E 0	6 J:Y			
CARBON TETRACHLORIDE	0	2.60E-1 / 0.00E 0	2000 :Y*	1500 :Y*		390 :Y*

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TABLE 3-20
Groundwater Positive Results Table
Tank Group T-9 and T-10

Sample Location:			2695	2795	2895	2995
Sample Identification Number:			GWG1730JE	GWG1729JE	GWG1718JE	GWG1719JE
Date Sampled:	MDL	PRG / BKGND	3-May-95	1-May-95	3-Apr-95	28-Apr-95
CHLOROFORM	0	2.76E-1 / 0.00E 0	1200 :Y*	450 :Y*		620 :Y*
CHLOROMETHANE	0	2.32E 0 / 0.00E 0	3 J:Y*			
METHYLENE CHLORIDE	5	6.22E 0 / 0.00E 0	22 :Y*	4 J:Y		4 J:Y
TETRACHLOROETHENE	5	1.43E 0 / 0.00E 0	12 :Y*	14 :Y*		2 J:Y*
TRICHLOROETHENE	0	2.55E 0 / 0.00E 0	2 J:Y			
Test Group:WQPL Units:MG/L						
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	14.1 :Y-	6.25 :Y-	67 :V-	29.7 :Y-

TABLE 3-21
Tank Liquid Positive Results Table
Tank Group T-9 and T-10

Sample Location:				T-10E	T-10W	T-9E	T-9W
Sample Identification Number:				TNG0032JE	TNG0024JE	TNG0019JE	TNG0020JE
Date Sampled:	MDL	PRG / BKGND		27-Apr-95	20-Apr-95	20-Apr-95	20-Apr-95
Test Group:BNACLP Units:UG/L							
BIS(2-ETHYLHEXYL)PHTHALATE	330	0.00E 0 /	0.00E 0	43 B:Y	3 J:A	2 J:A	17 :JA
Test Group:METADD Units:UG/L							
CESIUM	1000	0.00E 0 /	0.00E 0	73 B:Y	73 B:Y	32 B:Y	37 B:Y
LITHIUM	100	0.00E 0 /	0.00E 0	19700 :Y	11000 :Y	104 :Y	540 :Y
MOLYBDENUM	200	0.00E 0 /	0.00E 0			34.9 B:Y	48 B:Y
SILICON	500	0.00E 0 /	0.00E 0	14700 E:Y	19300 E:Y	16800 E:Y	
STRONTIUM	200	0.00E 0 /	0.00E 0	118 B:Y	2730 :Y	67.6 B:Y	70.3 B:Y
TIN	200	0.00E 0 /	0.00E 0	46.4 B:Y	40.6 B:Y		
Test Group:SMETCLP Units:UG/L							
ALUMINUM	200	0.00E 0 /	0.00E 0	136 B:Y	242 :Y	178 B:Y	56.6 B:Y
ARSENIC	10	0.00E 0 /	0.00E 0		5.3 B:Y	5.1 B:Y	6.2 B:Y
BARIUM	200	0.00E 0 /	0.00E 0	21.7 B:Y	45.1 B:Y	13.3 B:Y	11.7 B:Y
BERYLLIUM	5	0.00E 0 /	0.00E 0			2.3 B:Y	1.8 B:Y
CADMIUM	5	0.00E 0 /	0.00E 0		29.9 :Y		
CALCIUM	5000	0.00E 0 /	0.00E 0	26700 :Y	312000 :Y	13200 :Y	9750 :Y
CHROMIUM	10	0.00E 0 /	0.00E 0		3.8 B:Y		
COBALT	50	0.00E 0 /	0.00E 0		12.3 B:Y		6.7 B:Y
COPPER	25	0.00E 0 /	0.00E 0	20.4 B:Y	562 :Y	28.1 :Y	62.3 :Y
IRON	100	0.00E 0 /	0.00E 0	3570 :Y	829 :Y	398 :Y	280 :Y
LEAD	3	0.00E 0 /	0.00E 0	10.2 :Y	2.2 B:Y		
MAGNESIUM	5000	0.00E 0 /	0.00E 0	5090 :Y	9170 :Y	4410 B:Y	3420 B:Y
MANGANESE	15	0.00E 0 /	0.00E 0	161 :Y	1900 :Y	12.3 B:Y	14.2 B:Y
NICKEL	40	0.00E 0 /	0.00E 0	98.1 :Y	198 :Y	22.4 B:Y	45.2 :Y
POTASSIUM	5000	0.00E 0 /	0.00E 0	190000 :Y	269000 :Y	5470 :Y	10300 :Y
SELENIUM	5	0.00E 0 /	0.00E 0		4.7 B:Y	22.[illegible] :Y	30.4 :Y
SILVER	10	0.00E 0 /	0.00E 0				3.6 B:Y
SODIUM	5000	0.00E 0 /	0.00E 0	575000 :Y	4[illegible]6000 :Y	1[illegible]2000 :Y	281000 :Y
ZINC	20	0.00E 0 /	0.00E 0	2950 :Y	[illegible]0200 :Y	17.6 B:Y	14.2 B:Y
Test Group:TRADS Units:PCI/L							
AMERICIUM-241	0	0.00E 0 /	0.00E 0	1.728(.115) :Y	21211.6(530[illegible]621) :Y	332.882(22.406) :Y	171.04(14.303) :Y
GROSS ALPHA	0	0.00E 0 /	0.00E 0	10559.11() C:Y	101953.2(5174.[illegible]1) C:Y	18[illegible].46[illegible](108.485) C:Y	4022.306(223.531) C:Y
GROSS BETA	0	0.00E 0 /	0.00E 0	-25.71(31.757) C:Y	-2763.767(1[illegible]8.30[illegible]) C:Y	618.[illegible]25(35.319) C:Y	553.087(34.724) C:Y
PLUTONIUM-239/240	0	0.00E 0 /	0.00E 0	6.829(.373) :Y	49661.47(8[illegible]14.6[illegible]5) :Y	7[illegible]9.51(45.644) :Y	895.091(50.621) :Y
RADIUM-226	0	0.00E 0 /	0.00E 0	.033(.09) :Y	.238(.13) :Y	.173(.178) :Y	.146(.112) :Y

TABLE 3-21
Tank Liquid Positive Results Table
Tank Group T-9 and T-10

Sample Location:			T-10E	T-10W	T-9E	T-9W
Sample Identification Number:			TNG0032JE	TNG0024JE	TNG0019JE	TNG0020JE
Date Sampled:	MDL	PRG / BKGND	27-Apr-95	20-Apr-95	20-Apr-95	20-Apr-95
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	69.783(20.581) :Y	4730.63(3387.317) :Y	91.731 14.132) :Y	121.4(15.469) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	14.054(9.088) :Y	1182.657(1833.5) :Y	6.026 3.607) :Y	12.385(4.713) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	109.036(25.697) :Y	6061.118(3429.53) :Y	502.51 (40.03) :Y	758.929(51.96) :Y
Test Group:VOACLP Units:UG/L						
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0	12 :Y			
ACETONE	10	0.00E 0 / 0.00E 0	5 J:Y			
TRICHLOROETHENE	0	0.00E 0 / 0.00E 0		7 J:A		

TABLE 3-22
Borehole Positive Results Table
Tank Group T-11 and T-30

Sample Location:			3095	3095	3095	3195	3195
Sample Identification Number:			BHG4967JE	BHG4981JE	BHG4982JE	BHG4968JE	BHG4969JE
Date Sampled:	MDL	PRG / BKGND	5-Apr-95	11-Apr-95	11-Apr-95	5-Apr-95	5-Apr-95
Test Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	10.4-12.8	15.2-16.0	0.0-0.5	0.0-0.5
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0		140 J:Y-			
ACENAPHTHENE	330	1.06E 8 / 0.00E 0		1500 :Y			
ANTHRACENE	330	5.32E 8 / 0.00E 0		1300 :Y			
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0		2800 :Y			
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0		2200 :Y			
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0		2200 :Y			
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0		860 :Y-			
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0		1100 :Y			
CARBAZOLE	0	0.00E 0 / 0.00E 0		560 :Y-			
CHRYSENE	330	1.70E 7 / 0.00E 0		2600 :Y			
DIBENZOFURAN	330	0.00E 0 / 0.00E 0		930 :Y-			
FLUORANTHENE	330	7.10E 7 / 0.00E 0		5600 :Y			
FLUORENE	330	7.10E 7 / 0.00E 0		1600 :Y			
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0		830 :Y			
NAPHTHALENE	330	7.10E 7 / 0.00E 0		210 J:Y			
PHENANTHRENE	330	0.00E 0 / 0.00E 0		6000 :Y-			
PYRENE	330	5.32E 7 / 0.00E 0		9400 :Y			
Test Group:METADD Units:MG/KG							
CESIUM	1000	0.00E 0 / 1267.00E 0		4.4 :Y	9 :Y		
LITHIUM	100	3.55E 4 / 53.40E 0	6 B:V	13.1 :Y	4.3 :Y	6.3 B:V	7 B:V
STRONTIUM	200	1.00E 6 / 342.60E 0	5.1 B:V	56.8 :Y	53.5 :Y	9.1 B:V	9.2 B:V
TIN	200	1.00E 6 / 0.00E 0		4 :Y	7.9 :Y		3.4 B:V
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	200	1.00E 6 / 55098.00E 0	4270 :V	16700 :Y	9120 :Y	5180 :V	5840 :V
ARSENIC	10	7.09E 1 / 21.48E 0	1.2 B:V	4.7 :Y	5.9 :Y	1.7 B:V	2 B:V
BARIUM	200	1.24E 5 / 389.00E 0	35.3 B:V	102 :Y	82.2 :Y	48.4 :V	51.6 :V
BERYLLIUM	5	2.89E 1 / 18.80E 0	.15 B:V	.85 :Y	.88 :Y	.23 B:V	.23 B:V
CALCIUM	5000	0.00E 0 / 67403.00E 0	899 B:V	8220 :Y	4310 :Y	1210 :V	1370 :V
CHROMIUM	10	0.00E 0 / 113.80E 0	7.5 :V	16.7 :Y	11.4 :Y	7.4 :V	8.8 :V
COBALT	50	1.06E 5 / 48.80E 0	26 :V	7 :Y	5.5 :Y	14.8 :V	23.8 :V
COPPER	25	7.10E 4 / 59.10E 0	42 :V	13.8 :Y	16.1 :Y	52.1 :V	67.1 :V#
IRON	100	0.00E 0 / 63389.00E 0	7590 :V	15300 :Y	26000 :Y	8130 :V	9670 :V

TABLE 3-22
Borehole Positive Results Table
Tank Group T-11 and T-30

Sample Location:			3095	3095	3095	3195	3195
Sample Identification Number:			BHG4967JE	BHG4981JE	BHG4982JE	BHG4968JE	BHG4969JE
Date Sampled:	MDL	PRG / BKGND	5-Apr-95	11-Apr-95	11-Apr-95	5-Apr-95	5-Apr-95
LEAD	3	0.00E 0 / 30.50E 0	7.6 :JA	13.4 :Y	15.5 :Y	8.3 :JA	11.4 :JA
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	1730 :V	3310 :Y	1080 :Y	1950 :V	2240 :V
MANGANESE	15	8.86E 3 / 1505.00E 0	127 :V	293 :Y	2[illegible]8 :Y	139 :V	154 :V
NICKEL	40	3.55E 4 / 103.60E 0	6.5 B:V	13.9 :Y	[illegible]3 :Y	7 B:V	8.6 :V
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1630 :V	2540 :Y	13[illegible] :Y	1730 :V	1740 :V
SILVER	10	8.87E 3 / 20.00E 0	26.6 :V#		1.[illegible] :Y	49.8 :V#	62.4 :V#
SODIUM	5000	0.00E 0 / 0.00E 0	589 B:V-	101 :Y-	70.4 :Y-	59.2 B:V-	72.7 B:V-
VANADIUM	50	1.24E 4 / 138.30E 0	12.2 :V	33.2 :Y	23.3 :Y	12.8 :V	14.6 :V
ZINC	20	5.32E 5 / 216.20E 0	41.3 :V	44.1 :Y	61.9 :Y	59 :V	69.5 :V
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.008(.011) J:Y	.05(.014) :Y	.008(.006) J:Y		.238(.04) :Y#
GROSS ALPHA	0	0.00E 0 / 44.56E 0	15.38(5.89) :Y	23.92(7.29) :Y	10.87([illegible]) :Y	14.04(5.64) :Y	
GROSS BETA	0	0.00E 0 / 55.35E 0	44.23(3.72) :Y	32.45(4.52) :Y	22.91(3.[illegible]) :Y		
PLUTONIUM-238	0	E 0 / E 0	-.001(.002) J:Y-	.002(.003) J:Y-	.001(.00[illegible]) J:Y-		
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.002(.005) J:Y	.055(.016) :Y	.004(.00[illegible]) J:Y		.012(.01) J:Y
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	1.013(.191) :Y	.727(.121) :Y	.771(.12[illegible] :Y	.874(.138) :Y	
URANIUM-235	0	1.73E 1 / 19.83E-2	.023(.023) J:Y	.056(.024) :Y	.02(.014[illegible] :Y		
URANIUM-238	0	7.98E 1 / 19.12E-1	.999(.189) :Y	.838(.135) :Y	.744(.124[illegible] :Y	.893(.141) :Y	
Test Group:VOACLP Units:UG/KG							
2-BUTANONE	0	1.00E 9 / 0.00E 0		4 J:Y			14 :JA
2-HEXANONE	0	0.00E 0 / 0.00E 0					26 :JA-
4-METHYL-2-PENTANONE	0	E 0 / E 0					30 :JA-
ACETONE	10	1.77E 8 / 0.00E 0		31 :Y	23 B:Y		55 B:V
CARBON TETRACHLORIDE	0	3.96E 5 / 0.00E 0	42 :V			2 J:A	1 J:A
CHLOROFORM	0	6.34E 5 / 0.00E 0	7 J:A				
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	5 J:A	5 BJ:Y	3 JB:Y		1 J:A

TABLE 3-22
Borehole Positive Results Table
Tank Group T-11 and T-30

ample Location:	3195	3195	3295	3295	3295	3395	3395	3395
ample Identification Number:	BHG4975JE	BHG4976JE	BHG4970JE	BHG4973JE	BHG4974JE	BHG4971JE	BHG4977JE	BHG4978JE
ate Sampled:	6-Apr-95	6-Apr-95	5-Apr-95	12-Apr-95	12-Apr-95	5-Apr-95	12-Apr-95	12-Apr-95
est Group:BNACLP Units:UG/KG	10.0-13.0	13.0-14.0	0.0-0.5	6.0-7.0	11.0-12.0	0.0-0.5	6.0-7.0	8.1-9.1
METHYLNAPHTHALENE								
ENAPHTHENE								
NTHRACENE								
ENZO(a)ANTHRACENE	87 J:A							
ENZO(a)PYRENE	42 J:A							
ENZO(b)FLUORANTHENE	59 J:A							
ENZO(ghi)PERYLENE								
ENZO(k)FLUORANTHENE								
ARBAZOLE								
HRYSENE	79 J:A							
IBENZOFURAN								
LUORANTHENE	250 J:A	28 J:A						
LUORENE								
IDENO(1,2,3-cd)PYRENE								
APHTHALENE								
HENANTHRENE	210 J:A-	46 J:A-						
YRENE	240 J:A							
est Group:METADD Units:MG/KG								
ESIUM	9 :Y	7 :Y			4.6 :Y		8.8 :Y	6.9 :Y
ITHIUM	5.9 :Y	5.2 :Y	6.1 B:V		2.5 :Y	6.3 B:V	3 :Y	2.8 :Y
TRONTIUM	46.9 :Y	69 :Y	13.4 B:V		30.1 :Y	6.9 B:V	31.6 :Y	40.6 :Y
IN	3.5 :Y	5.1 :Y					4.1 :Y	12.4 :Y
est Group:SMETCLP Units:MG/KG								
LUMINUM	10100 :Y	11500 :Y	4760 :V		5990 :Y	4910 :V	7350 :Y	7150 :Y
RSENIC	5.5 :Y	4.2 :Y	1.8 B:V		6.8 :Y	1.2 B:V	7.7 :Y	10 :Y
ARIUM	220 :Y	304 :Y	47.5 :V		46.1 :Y	48.1 :V	67.9 :Y	75.5 :Y
ERYLLIUM	.77 :Y	1.1 :Y	.24 B:V		.7 :Y	.19 B:V	.62 :Y	.79 :Y
ALCIUM	5000 :Y	6000 :Y	2070 :V		2390 :Y	1130 :V	4970 :Y	15800 :Y
HROMIUM	11.4 :Y	14.7 :Y	7.8 :V		6.6 :Y	7.3 :V	8 :Y	8.5 :Y
OBALT	7.9 :Y	10.6 :Y	30.6 :V		4.6 :Y	11.3 :V	7.9 :Y	6.4 :Y
OPPER	16.6 :Y	26 :Y	72.3 :V#		8.8 :Y	17.7 :V	12.7 :Y	16.8 :Y
RON	20400 :Y	19900 :Y	8890 :V		12100 :Y	8280 :V	13100 :Y	22000 :Y

TABLE 3-22
Borehole Positive Results Table
Tank Group T-11 and T-30

ample Location:	3195	3195	3295	3295	3295	3395	3395	3395
ample Identification Number:	BHG4975JE	BHG4976JE	BHG4970JE	BHG4973JE	BHG4974JE	BHG4971JE	BHG4977JE	BHG4978JE
ate Sampled:	6-Apr-95	6-Apr-95	5-Apr-95	12-Apr-95	12-Apr-95	5-Apr-95	12-Apr-95	12-Apr-95
EAD	18.3 :Y	30.6 :Y#	7.7 :JA		9.2 :Y	6.7 :JA	9.9 :Y	13.6 :Y
AGNESIUM	2190 :Y	2690 :Y	2010 :V		1270 :Y	2650 :V	1590 :Y	1800 :Y
ANGANESE	689 :Y	794 :Y	146 :V		89.5 :Y	157 :V	288 :Y	243 :Y
ICKEL	16.3 :Y	23.3 :Y	8.7 :V		11.8 :Y	5.5 B:V	17 :Y	17.4 :Y
OTASSIUM	1630 :Y	1700 :Y	1440 :V		962 :Y	1760 :V	1020 :Y	1070 :Y
ILVER			57.4 :V#			3.6 :V		1.2 :Y
ODIUM	74.3 :Y-	75.6 :Y-	81.8 B:V-		48.5 :Y	133 B:V-	57.8 :Y-	48.5 :Y-
ANADIUM	28.3 :Y	33.4 :Y	14.3 :V		18.3 :Y	12.3 :V	27.9 :Y	28 :Y
INC	63.6 :Y	89.7 :Y	72.6 :V		43 :Y	29.7 :V	43.8 :Y	57.6 :Y
est Group:TRADS Units:PCI/G								
MERICIUM-241	.023(.011) :Y	.092(.026) :Y#	.241(.044) :Y#	.015(.008) :Y		.024(.012) :Y	.003(.004) J:Y	.003(.004) J:Y
ROSS ALPHA	14.75(5.62) :Y	11.13(4.9) :Y	14.72(5.64) :Y	14.03(5.62) :Y	11.12(5.27) :Y	10.41(4.92) :Y	10.59(4.69) :Y	16.22(5.97) :Y
ROSS BETA	32.51(2.95) :Y	29.23(2.76) :Y	37.1(3.27) :Y	30.26(4.38) :Y	24.7(3.9) :Y	45.17(3.79) :Y	21.21(3.63) :Y	23.39(3.8) :Y
LUTONIUM-238	-.002(.006) J:Y-	.003(.01) J:Y-	(.011) J:Y-	(.003) J:Y-		(.004) J:Y-	.002(.003) J:Y-	.001(.003) J:Y-
LUTONIUM-239/240	.006(.01) J:Y	(.013) J:Y	-.001(.003) J:Y	.048(.015) :Y	.005(.025) J:Y	.002(.004) J:Y	.002(.003) J:Y	.002(.003) J:Y
RANIUM-233,-234	.812(.128) :Y	.843(.135) :Y	.761(.129) :Y	.607(.102) :Y		.924(.154) :Y	.551(.097) :Y	.72(.117) :Y
RANIUM-235	.034(.018) :Y	.022(.015) :Y	.023(.015) :Y	.019(.014) :Y		.027(.017) :Y	.034(.018) :Y	.031(.017) :Y
RANIUM-238	.832(.13) :Y	.983(.152) :Y	.834(.139) :Y	.679(.111) :Y		.711(.152) :Y	.639(.108) :Y	.816(.129) :Y
est Group:VOACLP Units:UG/KG								
-BUTANONE	6 J:A	14 :JA					5 J:Y	
-HEXANONE	26 :JA-	32 :JA-					13 B:Y-	
-METHYL-2-PENTANONE	19 :JA-	31 :JA-					5 J:Y-	
CETONE		77 B:JA		32 B:Y	20 B:Y		25 B:Y	15 B:Y
ARBON TETRACHLORIDE	1 J:A	6 J:A	5 J:A		27 :Y	54 :V		
HLOROFORM								
ETHYLENE CHLORIDE			1 J:A	7 BJ:Y	7 BJ:Y		2 BJ:Y	5 BJ:Y

TABLE 3-23
Groundwater Positive Results Table.
Tank Group T-11 and T-30

Sample Location:			3095
Sample Identification Number:			GWG1723JE
Date Sampled:	MDL	PRG / BKGND	11-Apr-95
Test Group:VOACLP Units:UG/L			
ACETONE	10	3.65E 3 / 0.00E 0	7 J:Y
CARBON TETRACHLORIDE	0	2.60E-1 / 0.00E 0	21 :Y*
CHLOROFORM	0	2.76 E-1 / 0.00E 0	11 :Y*
TETRACHLOROETHENE	5	1.43E 0 / 0.00E 0	7 J:Y*

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TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:			3495	3495	3495	3495	3595	3595
Sample Identification Number:			BHG4878JE	BHG4921JE	BHG4922JE	BHG4923JE	BHG4879JE	BHG4930JE
Date Sampled:	MDL	PRG / BKGND	27-Feb-95	23-Mar-95	23-Mar-95	23-Mar-95	27-Feb-95	21-Mar-95
Test Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	2.4-5.7	6.0-7.4	8.0-8.5	0.0-0.5	2.0-5.2
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0						110 J:Y
ACENAPHTHENE	330	1.06E 8 / 0.00E 0			42 J:Y			73 J:Y
ANTHRACENE	330	5.32E 8 / 0.00E 0			63 J:Y			220 J:Y
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0		160 J:Y	360 J:Y			
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0						130 J:Y
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0			430 :Y			
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0						130 J:Y
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0			210 J:Y			
BIS(2-ETHYLHEXYL)PHTHALATE	330	8.87E 6 / 0.00E 0						
BUTYL BENZYL PHTHALATE	330	3.55E 8 / 0.00E 0						
CARBAZOLE	0	0.00E 0 / 0.00E 0						270 J:Y
CHRYSENE	330	1.70E 7 / 0.00E 0		170 J:Y	410 J:Y			
DI-n-BUTYL PHTHALATE	330	1.77E 8 / 0.00E 0						
DIBENZO(a,h)ANTHRACENE	330	1.70E 4 / 0.00E 0						52 J:Y-
DIBENZOFURAN	330	0.00E 0 / 0.00E 0						
DIMETHYL PHTHALATE	330	1.00E 9 / 0.00E 0						480 :Y
FLUORANTHENE	330	7.10E 7 / 0.00E 0		310 J:Y	760 :Y		52 J:A	76 J:Y
FLUORENE	330	7.10E 7 / 0.00E 0						
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0						62 J:Y
NAPHTHALENE	330	7.10E 7 / 0.00E 0	39 J:A				40 J:A	530 :Y-
PHENANTHRENE	330	0.00E 0 / 0.00E 0		230 J:Y-	97 J:Y-			430 :Y
PYRENE	330	5.32E 7 / 0.00E 0		260 J:Y	6[illegible] :Y		45 J:A	
Test Group:METADD Units:MG/KG								
LITHIUM	100	3.55E 4 / 53.40E 0	7.5 B:V	7.4 B:V	5.[illegible] B:V	2.6 B:V	8.9 B:V	7.8 B:V
MOLYBDENUM	200	8.87E 3 / 0.00E 0					12.6 B:V	
STRONTIUM	200	1.00E 6 / 342.60E 0	10.7 B:V	36.3 B:V	7.2 :V	31.2 B:V	14.2 B:V	46.2 B:V
TIN	200	1.00E 6 / 0.00E 0		4.6 B:V	14 B[illegible]	9.8 B:JA		
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	200	1.00E 6 / 55098.00E 0	6160 :V	12000 :V	6380 :V	060 :V	7020 :V	10400 :V
ARSENIC	10	7.09E 1 / 21.48E 0	1.5 B:JA	6.9 :JA	3.8 :JA	2 :JA	2.4 :JA	6.5 :V
BARIUM	200	1.24E 5 / 389.00E 0	57.8 :V	96.5 :V	93.6 :V	61.1 :V	56.9 :V	141 :V
BERYLLIUM	5	2.89E 1 / 18.80E 0	.26 B:V	.81 B:V	.66 B:V	B:V	.29 B:V	.84 B:V
CADMIUM	5	8.87E 2 / 2.36E 0						
CALCIUM	5000	0.00E 0 / 67403.00E 0	1340 :V	7630 :V	18800 :V	2790 :V	1960 :V	12400 :V

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TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:			3495	3495	3495	3495	3595	3595
Sample Identification Number:			BHG4878JE	BHG4921JE	BHG4922JE	BHG4923JE	BHG4879JE	BHG4930JE
Date Sampled:	MDL	PRG / BKGND	27-Feb-95	23-Mar-95	23-Mar-95	23-Mar-95	27-Feb-95	21-Mar-95
CHROMIUM	10	0.00E 0 / 113.80E 0	9.4 :V	12 :V	9 :V	5.1 :JA	10.5 :V	10.8 :V
COBALT	50	1.06E 5 / 48.80E 0	6.1 B:V	6.3 B:V	6 B:V	7.5 B:V	12.8 :V	6.3 B:V
COPPER	25	7.10E 4 / 59.10E 0	15 :V	12.1 :V	17.4 :V	19.7 :V	36.3 :V	14.1 :V
IRON	100	0.00E 0 / 63389.00E 0	9780 :V	14900 :JA	14800 :JA	23400 :JA	10300 :V	13400 :V
LEAD	3	0.00E 0 / 30.50E 0	10 :V	11.8 :V	12.6 :V	11.1 :V	15.8 :V	13.8 :V
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	2160 :V	2210 :V	1910 :V	1110 B:V	2200 :V	2650 :V
MANGANESE	15	8.86E 3 / 1505.00E 0	159 :JA	159 :JA	119 :JA	35 :JA	159 :JA	212 :JA
MERCURY	0.2	5.32E 2 / 2.81E 0						
NICKEL	40	3.55E 4 / 103.60E 0	6.8 B:V	13.9 :V	15.9 :V	16.8 :V	7.4 B:V	13.3 :V
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1890 :V	1430 :V	1320 :V	771 B:V	2050 :V	1240 :V
SILVER	10	8.87E 3 / 20.00E 0					2 B:V	
SODIUM	5000	0.00E 0 / 0.00E 0	91.3 B:V-				103 B:V-	136 B:JA-
TANTALUM	0	E 0 / E 0				15.7 B:JA-		
VANADIUM	50	1.24E 4 / 138.30E 0	17.1 :V	26 :V	21.8 :V	19.3 :V	17.6 :V	25.6 :V
ZINC	20	5.32E 5 / 216.20E 0	25.4 :JA	45.2 :JA	52.2 :JA	59.7 :JA	48 :JA	44.1 :V
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.018(.01) :V				1.588(.196) :V#	.163(.039) :Y#
GROSS ALPHA	0	0.00E 0 / 44.56E 0	20.82(5.12) :V				28.15(5.99) :V	14.1(4.01) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	43.24(4.32) :V				43.72(4.33) :V	26.48(3.14) :Y
PLUTONIUM-238	0	E 0 / E 0	.004(.004) :V-				.018(.009) :V-	(.004) J:Y-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.008(.007) :V				.904(.112) :V#	.003(.004) J:Y
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	.971(.148) :V				.872(.13) :V	.988(.152) :Y
URANIUM-235	0	1.73E 1 / 19.83E-2	.049(.022) :V				.042(.019) :V	.051(.022) :Y
URANIUM-238	0	7.98E 1 / 19.12E-1	.851(.133) :V				.908(.135) :V	1.038(.158) :Y
Test Group:VOACLP Units:UG/KG								
ACETONE	10	1.77E 8 / 0.00E 0		25 :Y	54 :Y	30 :Y		
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	3 J:A	15 :Y	2 :Y	19 :Y	2 J:A	3 J:Y
Test Group:WQPL Units:MG/KG								
CHROMIUM VI	0	E 0 / E 0						

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TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:	3595	3595	3695	3695	3695	3695	3695	3795
Sample Identification Number:	BHG4931JE	BHG4932JE	BHG4880JE	BHG4925JE	BHG4926JE	BHG4927JE	BHG4928JE	BHG4881JE
Date Sampled:	21-Mar-95	21-Mar-95	27-Feb-95	20-Mar-95	20-Mar-95	20-Mar-95	20-Mar-95	27-Feb-95
Test Group:BNACLP Units:UG/KG	6.0-8.4	8.4-9.6	0.0-0.5	0.5-2.5	4.0-6.5	6.5-8.9	10.0-13.2	0.0-0.5
2-METHYLNAPHTHALENE				65 J:Y-				
ACENAPHTHENE			210 J:A	430 :Y	100 J:Y	58 J:Y		130 J:A
ANTHRACENE			350 J:A	270 J:Y	74 J:Y			160 J:A
BENZO(a)ANTHRACENE			1400 :V	1000 :Y	220 J:Y			580 :V
BENZO(a)PYRENE			1500 :V	1100 :Y		100 J:Y		590 :V
BENZO(b)FLUORANTHENE			1700 :V	1400 :Y				750 :V
BENZO(ghi)PERYLENE			790 :JA-	770 :Y-				290 J:A-
BENZO(k)FLUORANTHENE			760 :V	650 :Y				210 J:A
BIS(2-ETHYLHEXYL)PHTHALATE			43 J:A					
BUTYL BENZYL PHTHALATE			540 :V	510 :Y				110 J:A
CARBAZOLE			320 J:A-	410 :Y-				130 J:A-
CHRYSENE			1400 :V	1100 :Y	260 J:Y	190 J:Y		590 :V
DI-n-BUTYL PHTHALATE			6600 :V	3600 :Y				1200 :V
DIBENZO(a,h)ANTHRACENE			280 J:A					
DIBENZOFURAN			65 J:A-	150 J:Y-				
DIMETHYL PHTHALATE								100 J:A
FLUORANTHENE			3300 :V	2600 :Y	640 :Y	360 J:Y	100 J:Y	1500 :V
FLUORENE			160 J:A	330 J:Y	69 J:Y			97 J:A
INDENO(1,2,3-cd)PYRENE			770 :JA	780 :Y				310 J:A
NAPHTHALENE			71 J:A	170 J:Y	94 J:Y	43 J:Y		71 J:A
PHENANTHRENE	60 J:Y-		2000 :V-	2300 :Y-	590 :Y-	340 J:Y-	84 J:Y-	990 :V-
PYRENE			2300 :V	2700 :Y	530 :Y	360 J:Y		1100 :V
Test Group:METADD Units:MG/KG								
LITHIUM	2.7 B:JA	2.4 B:JA	6.7 B:V	6.7 B:V	7.6 B:V	6.3 B:V	4.5 B:JA	5.7 B:V
MOLYBDENUM								
STRONTIUM	31.8 B:V	28.8 B:V	60.9 :V	37.2 B:V	35.9 B:V	36.2 B:V	38.8 B:V	21.4 B:V
TIN		5.6 B:V	8.2 B:V	7.4 B:V			3.5 B:V	3.9 B:V
Test Group:SMETCLP Units:MG/KG								
ALUMINUM	4500 :V	4870 :V	6750 :V	6080 :V	9360 :V	7900 :V	7440 :V	6590 :V
ARSENIC	6.7 :V	11.2 :V	3.5 :JA	2.6 :V	4.2 :V	3.1 :V	6.4 :V	3.4 :JA
BARIUM	95.3 :V	49.6 :V	748 :V#	491 :V#	87.1 :V	88.1 :V	101 :V	132 :V
BERYLLIUM	.57 B:V	.68 B:V	.65 B:V	.42 B:V	.67 B:V	.61 B:V	.68 B:V	.5 B:V
CADMIUM			.66 B:V					.5 B:V
CALCIUM	5010 :V	3010 :V	13300 :V	9080 :V	8520 :V	7410 :V	10700 :V	5860 :V

TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:	3595	3595	3695	3695	3695	3695	3695	3795
Sample Identification Number:	BHG4931JE	BHG4932JE	BHG4880JE	BHG4925JE	BHG4926JE	BHG4927JE	BHG4928JE	BHG4881JE
Date Sampled:	21-Mar-95	21-Mar-95	27-Feb-95	20-Mar-95	20-Mar-95	20-Mar-95	20-Mar-95	27-Feb-95
CHROMIUM	5.1 :JA	6.7 :JA	16.8 :V	19.7 :V	10.7 :V	8.7 :V	8.1 :V	12.2 :V
COBALT	6.4 B:V	5.9 B:V	5.7 B:V	5.2 B:V	5 B:V	4.6 B:V	5.1 B:V	3.8 B:V
COPPER	13.8 :V	12.6 :V	18.6 :V	19 :V	13.9 :V	18.6 :V	13 :V	14.3 :V
IRON	8290 :V	17500 :V	11600 :V	1[illegible]700 :V	12000 :V	10200 :V	11700 :V	9820 :V
LEAD	11.7 :V	11 :V	42.5 :V#	30.8 :V#	14.7 :V	20.5 :V	13.4 :V	25.6 :V
MAGNESIUM	1260 :V	1210 :V	1850 :V	2000 :V	2000 :V	2150 :V	1830 :V	1610 :V
MANGANESE	171 :JA	33.4 :JA	176 :JA	182 :JA	172 :JA	194 :JA	196 :JA	159 :JA
MERCURY			.11 :V		.068 B:V			.058 B:V
NICKEL	11.6 :V	14.5 :V	15.1 :V	13.3 :V	10.2 :V	9.4 :V	11.5 :V	9.1 :V
POTASSIUM	692 B:V	738 B:V	1850 :V	1860 :V	1810 :V	1690 :V	1140 B:V	1390 :V
SILVER		2.6 :JA	27 :V#	17.4 :V	1.5 B:JA			364 :V#
SODIUM	91.6 B:JA-	99.8 B:JA-	94.9 B:V-	101 B:JA-	57 B:JA-	68.4 B:JA-	47.7 B:JA-	78.7 B:V-
TANTALUM								
VANADIUM	15.8 :V	17.4 :V	19.6 :V	17.8 :V	22 :V	16.3 :V	19.4 :V	18.5 :V
ZINC	41.2 :V	56.5 :V	100 :JA	92.7 :V	38.9 :V	59.9 :V	38 :V	55.2 :JA
Test Group:TRADS Units:PCI/G								
AMERICIUM-241	.02(.012) :Y	.004(.007) J:Y	15.51(1.56) :V#	24.64(2.55) :Y#		.806(.105) :Y#	1.005(.12) :Y#	2.579(.288) :V#
GROSS ALPHA	11.05(3.52) :Y	9.509(3.29) :Y	43.31(7.88) :V		24.87(5.61) :Y	13.25(4.05) :Y	16.14(4.32) :Y	17.67(4.56) :V
GROSS BETA	18.84(2.61) :Y	14.12(2.28) :Y	29.32(3.36) :V	33(3.59) :Y	25.75(3.09) :Y	21.23(3.47) :Y	23.19(2.91) :Y	33.91(3.66) :V
PLUTONIUM-238	(.004) J:Y-	(.003) J:Y-	.206(.04) :V-	.197(.046) :Y-		.012(.009) :Y-	.01(.008) J:Y-	.028(.013) :V-
PLUTONIUM-239/240	.027(.012) :Y	.003(.005) J:Y	12.19(1.32) :V#	14.96(1.58) :Y#		.878(.116) :Y#	1.385(.165) :Y#	1.717(.2) :V#
URANIUM-233,-234	.727(.117) :Y	.796(.131) :Y	1.028(.16) :V	1.001(.18) :Y		1.042(.15) :Y	.92(.142) :Y	.711(.117) :V
URANIUM-235	.039(.019) :Y	.026(.017) :Y	.024(.016) :V	.044(.03) :Y	.032(.016) :Y	.059(.023) :Y	.027(.016) :Y	.016(.013) :V
URANIUM-238	.812(.128) :Y	.801(.132) :Y	1.08(.166) :V	.946(.173) :Y		.872(.13) :Y	.878(.136) :Y	.834(.132) :V
Test Group:VOACLP Units:UG/KG								
ACETONE	6 BJ:Y	57 B:Y		3 BJ:Y		5 BJ:Y	14 :Y	
METHYLENE CHLORIDE	3 J:Y	3 J:Y				2 J:Y	1 J:Y	9 J:A
Test Group:WQPL Units:MG/KG								
CHROMIUM VI								.85 :V-

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TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:	3795	3795	3795	3895	3895	3895	3895	3895
Sample Identification Number:	BHG4939JE	BHG4940JE	BHG4941JE	BHG4882JE	BHG4935JE	BHG4936JE	BHG4937JE	BHG4938JE
Date Sampled:	23-Mar-95	23-Mar-95	24-Mar-95	27-Feb-95	23-Mar-95	23-Mar-95	23-Mar-95	23-Mar-95
Test Group:BNACLP Units:UG/KG	0.5-2.7	5.0-6.6	10.0-10.9	0.0-0.5	0.5-2.8	4.0-6.5	8.0-9.7	10.0-12.9
2-METHYLNAPHTHALENE								
ACENAPHTHENE							50 J:Y	200 J:Y
ANTHRACENE								150 J:Y
BENZO(a)ANTHRACENE	210 J:Y							840 :Y
BENZO(a)PYRENE								920 :Y
BENZO(b)FLUORANTHENE	230 J:Y					39 J:Y		770 :Y
BENZO(ghi)PERYLENE								500 :Y-
BENZO(k)FLUORANTHENE	91 J:Y							610 :Y
BIS(2-ETHYLHEXYL)PHTHALATE								
BUTYL BENZYL PHTHALATE								
CARBAZOLE								120 J:Y-
CHRYSENE	250 J:Y					39 J:Y	180 J:Y	1000 :Y
DI-n-BUTYL PHTHALATE	140 J:Y					130 J:Y		
DIBENZO(a,h)ANTHRACENE								
DIBENZOFURAN								42 J:Y-
DIMETHYL PHTHALATE								
FLUORANTHENE	470 :Y	130 J:Y			150 J:Y	94 J:Y	320 J:Y	2400 :Y
FLUORENE								130 J:Y
INDENO(1,2,3-cd)PYRENE								
NAPHTHALENE							41 J:Y	37 J:Y
PHENANTHRENE	290 J:Y-	120 J:Y-			110 J:Y-	84 J:Y-	260 J:Y-	1200 :Y-
PYRENE	430 :Y				110 J:Y	83 J:Y	310 J:Y	2000 :Y
Test Group:METADD Units:MG/KG								
LITHIUM				7.4 B:V	6 B:V	5.6 B:V	6.2 B:V	8.9 B:V
MOLYBDENUM				2 B:JA				
STRONTIUM				11.4 B:V	26.1 B:V	41.7 B:V	41 B:V	28.6 B:V
TIN						6.7 B:V	9.2 B:V	3.9 B:V
Test Group:SMETCLP Units:MG/KG								
ALUMINUM				5580 :V	10500 :V	9980 :V	8900 :V	8240 :V
ARSENIC				1.3 B:JA	5.4 :JA	7.5 :JA	6.3 :JA	3.6 :JA
BARIUM				54.1 :V	74.5 :V	74.9 :V	126 :V	84.6 :V
BERYLLIUM				.25 B:V	.66 B:V	.71 B:V	.88 B:V	.6 B:V
CADMIUM							1.9 :V	.55 B:V
CALCIUM				2540 :V	6400 :V	11000 :V	11500 :V	6190 :V

TABLE 3-24
Borehole Positive Results Table
Tank Group T-14 and T-16

Sample Location:	3795	3795	3795	3895	3895	3895	3895	3895
Sample Identification Number:	BHG4939JE	BHG4940JE	BHG4941JE	BHG4882JE	BHG4935JE	BHG4936JE	BHG4937JE	BHG4938JE
Date Sampled:	23-Mar-95	23-Mar-95	24-Mar-95	27-Feb-95	23-Mar-95	23-Mar-95	23-Mar-95	23-Mar-95
CHROMIUM				8.3 :V	12.6 :V	10.3 :V	9.3 :V	10.4 :V
COBALT				6.9 B:V	7.6 B:V	5.5 B:V	8.5 B:V	5.7 B:V
COPPER				18.9 :V	12 :V	9.1 :V	13 :V	13.4 :V
IRON				8980 :V	11200 :JA	12600 :JA	15600 :JA	11800 :JA
LEAD				7 :V	10.4 :V	8 :V	21.5 :V	25.5 :V
MAGNESIUM				2040 :V	1410 :V	1410 :V	2150 :V	2400 :V
MANGANESE				142 :JA	138 :JA	163 :JA	285 :JA	171 :JA
MERCURY								
NICKEL				6.3 B:V	10 :V	12.7 :V	18.1 :V	12.3 :V
POTASSIUM				1540 :V	1320 :V	1430 :V	2060 :V	2060 :V
SILVER								
SODIUM							515 B:V-	367 B:V-
TANTALUM								
VANADIUM				14.1 :V	28.3 :V	29 :V	20.3 :V	19.8 :V
ZINC				25.1 :JA	24.7 :JA	22.9 :JA	44.9 :JA	43.9 :JA
Test Group:TRADS Units:PCI/G								
AMERICIUM-241				.029(.011) :V				
GROSS ALPHA				21.43(5.16) :V				
GROSS BETA				40.35(4.1) :V				
PLUTONIUM-238				.003(.005) J:V-				
PLUTONIUM-239/240				.018(.01) :V				
URANIUM-233,-234				.892(.137) :V				
URANIUM-235				.025(.015) :V				
URANIUM-238				.941(.143) :V				
Test Group:VOACLP Units:UG/KG								
ACETONE	54 :Y	60 :Y	140 :Y		42 :Y	90 :Y	31 :Y	95 :Y
METHYLENE CHLORIDE	10 J:Y	14 :Y	22 :Y	4 J:A	28 :Y	15 :Y	6 J:Y	7 J:Y
Test Group:WQPL Units:MG/KG								
CHROMIUM VI								

TABLE 3-25
Tank Sludge/Liquid Positive Results Table
Tank Group T-14 and T-16N

Sample Location:			T-14	T-16N
Sample Identification Number:			TNG0[illegible]JE	TNG0018JE
Date Sampled:	MDL	PRG / BKGND	8-May-9[illegible]	8-May-95
Test Group:BNACLP Units:UG/L				
BIS(2-ETHYLHEXYL)PHTHALATE	330	0.00E 0 / 0.00E 0	260 :[illegible]	2 J:Y
DI-n-BUTYL PHTHALATE	330	0.00E 0 / 0.00E 0		1 BJ:Y
FLUORANTHENE	330	0.00E 0 / 0.00E 0	14 J:[illegible]	
PHENOL	330	0.00E 0 / 0.00E 0	8 J:Y	16 :Y
Test Group:METADD Units:UG/L				
CESIUM	1000	0.00E 0 / 0.00E 0	1010 :Y	324 B:Y
LITHIUM	100	0.00E 0 / 0.00E 0	187000 :Y	419 :Y
MOLYBDENUM	200	0.00E 0 / 0.00E 0	207 :Y	27.8 B:Y
SILICON	500	0.00E 0 / 0.00E 0	218000 E:Y	23000 E:Y
STRONTIUM	200	0.00E 0 / 0.00E 0	24.5 B:Y	58.4 B:Y
TIN	200	0.00E 0 / 0.00E 0	159 B:Y	27 B:Y
Test Group:SMETCLP Units:UG/L				
ALUMINUM	200	0.00E 0 / 0.00E 0	7130 :Y	895 :Y
ANTIMONY	60	0.00E 0 / 0.00E 0	54.9 B:Y	
ARSENIC	10	0.00E 0 / 0.00E 0	34 BE:Y	8.4 B:Y
BERYLLIUM	5	0.00E 0 / 0.00E 0	12500 :Y	89.9 :Y
CALCIUM	5000	0.00E 0 / 0.00E 0	1820 B:Y	[illegible]10 B:Y
CHROMIUM	10	0.00E 0 / 0.00E 0	291 :Y	177 :Y
COBALT	50	0.00E 0 / 0.00E 0	253 :Y	
COPPER	25	0.00E 0 / 0.00E 0	1110 :Y	55.5 :Y
IRON	100	0.00E 0 / 0.00E 0	489 :Y	890 :Y
LEAD	3	0.00E 0 / 0.00E 0	20.1 S:Y	
MAGNESIUM	5000	0.00E 0 / 0.00E 0	579 B:Y	496 B:Y
MANGANESE	15	0.00E 0 / 0.00E 0	31.1 :Y	
MERCURY	0.2	0.00E 0 / 0.00E 0	697 :Y	
NICKEL	40	0.00E 0 / 0.00E 0	1240 :Y	
POTASSIUM	5000	0.00E 0 / 0.00E 0		951000 :Y
SELENIUM	5	0.00E 0 / 0.00E 0		15 B:Y
SILVER	10	0.00E 0 / 0.00E 0	3150 :Y	11.5 :Y
THALLIUM	10	0.00E 0 / 0.00E 0	39.6 BEN:Y	

TABLE 3-25
Tank Sludge/Liquid Positive Results Table
Tank Group T-14 and T-16N

Sample Location:			T-14	T-16N
Sample Identification Number:			TNG0008JE	TNG0018JE
Date Sampled:	MDL	PRG / BKGND	8-May-95	8-May-95
VANADIUM	50	0.00E 0 / 0.00E 0	44 B:Y	62.7 :Y
ZINC	20	0.00E 0 / 0.00E 0	183 :Y	42.1 :Y
Test Group:TRADS Units:PCI/L				
AMERICIUM-241	0	0.00E 0 / 0.00E 0	7880.754(476.786) :Y	35979.97(2112.755) :Y
GROSS ALPHA	0	0.00E 0 / 0.00E 0	25044.5() C:Y	26234.24(1592.793) C:Y
GROSS BETA	0	0.00E 0 / 0.00E 0	2545.169(417.194) C:Y	1034.962(157.131) C:Y
PLUTONIUM-239/240	0	0.00E 0 / 0.00E 0	6905.721(401.453) :Y	17027.57(1097.134) :Y
RADIUM-226	0	0.00E 0 / 0.00E 0	.059(.406) :Y	.089(.153) :Y
TRITIUM	0	0.00E 0 / 0.00E 0	3846.703(420.382) :Y	6488.586(550.16) :Y
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	3698.411(522.426) :Y	106.864(39.919) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	159.262(108.96) :Y	14.656(14.381) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	1120.277(272.104) :Y	20.457(17.872) :Y
Test Group:VOACLP Units:UG/L				
ACETONE	10	0.00E 0 / 0.00E 0	9 BJ:Y	13 B:Y
METHYLENE CHLORIDE	5	0.00E 0 / 0.00E 0		19 :Y
TOTAL XYLENES	5	0.00E 0 / 0.00E 0	8 J:Y	

TABLE 3-26
Surficial Soil Positive Results Table
Tank Group T-21, T-22, and T-27

Sample Location:			SS001195	SS001395
Sample Identification Number:			SSG2834JE	SSG2836JE
Date Sampled:	MDL	PRG / BKGND	15-May-95	15-May-95
Test Group:BNACLP Units:UG/KG				
BENZO(a)ANTHRACENE	330	8.77E 2 / 0.00E 0	45 J:Y	39 J:Y
BENZO(b)FLUORANTHENE	330	8.77E 2 / 0.00E 0	66 J:Y	38 J:Y
BENZO(k)FLUORANTHENE	330	8.77E 3 / 0.00E 0	23 J:Y	28 J:Y
CHRYSENE	330	8.77E 4 / 0.00E 0	50 J:Y	43 J:Y
FLUORANTHENE	330	1.10E 7 / 0.00E 0	97 J:Y	85 J:Y
PHENANTHRENE	330	0.00E 0 / 0.00E 0	47 J:Y	50 J:Y-
PYRENE	330	8.23E 6 / 0.00E 0	110 J:Y	85 J:Y
Test Group:METADD Units:MG/KG				
CESIUM	200	0.00E 0 / 7.00E 0	9.8 :Y	6.1 :Y
LITHIUM	20	5.49E 3 / 15.08E 0	7.1 :Y	4.6 :Y
STRONTIUM	40	1.65E 5 / 67.92E 0	17.9 :Y	14.9 :Y
Test Group:SMETCLP Units:MG/KG				
ALUMINUM	40	7.96E 5 / 22999.00E 0	5820 :Y	3800 :Y
ARSENIC	2	3.66E-1 / 13.75E 0	1.7 :Y*	1.8 :Y*
BARIUM	40	1.91E 4 / 176.00E 0	50.6 :Y	39.9 :Y
BERYLLIUM	1	1.49E-1 / 1.25E 0	.38 :Y*	.27 :Y*
CALCIUM	1000	0.00E 0 / 5839.00E 0	14300 :Y#	11300 :Y#
CHROMIUM	2	0.00E 0 / 22.21E 0	10 :Y	9.7 :Y
COBALT	10	1.65E 4 / 14.22E 0	6.3 :Y	4.1 :Y
COPPER	5	1.10E 4 / 22.75E 0	26.5 :Y#	12.7 :Y
IRON	20	0.00E 0 / 23063.00E 0	18400 :Y	11700 :Y
LEAD	1	0.00E 0 / 73.87E 0	13.9 :Y	9.4 :Y
MAGNESIUM	1000	0.00E 0 / 3707.00E 0	6740 :Y#	4400 :Y#
MANGANESE	3	1.36E 3 / 482.10E 0	536 :Y#	400 :Y
NICKEL	8	5.49E 3 / 19.74E 0	5 :Y	4 :Y
POTASSIUM	2000	0.00E 0 / 3797.00E 0	2680 :Y	1720 :Y
SODIUM	2000	0.00E 0 / 119.02E 0	168 :Y#	85.1 :Y
VANADIUM	10	1.92E 3 / 61.84E 0	23.1 :Y	14.6 :Y
ZINC	4	8.23E 4 / 95.92E 0	80.2 I:Y	53.6 I:Y

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TABLE 3-26
Surficial Soil Positive Results Table
Tank Group T-21, T-22, and T-27

Sample Location:			SS001195	SS001395
Sample Identification Number:			SSG2834JE	SSG2836JE
Date Sampled:	MDL	PRG / BKGND	15-May-95	15-May-95
Test Group:TRADS Units:PCI/G				
AMERICIUM-241	0	2.37E 0 / 0.04E 0	.015(.009) :Y	.028(.012) :Y
CESIUM-134	0	0.00E 0 / 0.37E 0	.026(.027) J:Y	-.011(.037) J:Y
CESIUM-137	0	2.08E-2 / 2.25E 0	.021(.03) J:Y*	.059(.051) X:Y*
GROSS ALPHA	0	0.00E 0 / 4.59E 0	12.11(5.53) :Y	14.3(5.62) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	29.84(4.64) :Y	36.4(5.24) :Y
NEPTUNIUM-237	0	E 0 / E 0	.003(.003) J:Y-	.019(.009) :Y-
PLUTONIUM-238	0	E 0 / E 0	.003(.01) J:Y-	.001(.004) J:Y-
PLUTONIUM-239/240	0	3.43E 0 / 0.08E 0	.014(.014) J:Y	.036(.017) :Y
URANIUM-233,-234	0	4.53E 1 / 3.10E 0	.87(.13) :Y	.859(.183) :Y
URANIUM-235	0	1.73E-1 / 0.13E 0	.03(.017) :Y	.046(.031) :Y
URANIUM-238	0	8.00E-1 / 2.83E 0	.871(.128) :Y*	.734(.162) :Y
Test Group:VOACLP Units:UG/KG				
ACETONE	10	2.74E 7 / 0.00E 0	4 J:Y	9 JB:Y
METHYLENE CHLORIDE	5	8.54E 4 / 0.00E 0		4 JB:Y

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TABLE 3-27
Borehole Positive Results Table
Tank Group T-21, T-22, and T-27

Sample Location:			3995
Sample Identification Number:			BHG5030JE
Date Sampled:	MDL	PRG / BKGND	15-May-95
Test Group:BNACLP Units:UG/KG		Depth (ft) or Sample Type	0.0-0.5
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	63 J:Y
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	66 J:Y
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	97 J:Y
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	24 J:Y
CHRYSENE	330	1.70E 7 / 0.00E 0	70 J:Y
FLUORANTHENE	330	7.10E 7 / 0.00E 0	120 J:Y
PHENANTHRENE	330	0.00E 0 / 0.00E 0	55 J:Y-
PYRENE	330	5.32E 7 / 0.00E 0	130 J:Y
Test Group:METADD Units:MG/KG			
CESIUM	1000	0.00E 0 / 1287.00E 0	9.9 :Y
LITHIUM	100	3.[illegible]E 4 / 53.40E 0	7.6 :Y
STRONTIUM	200	1.[illegible]E 6 / 342.60E 0	19.2 :Y
Test Group:SMETCLP Units:MG/KG			
ALUMINUM	200	[illegible]E 6 / [illegible]E 0	6520 :Y
ARSENIC	10	7.09E 1 / [illegible]E 0	[illegible].8 :Y
BARIUM	200	1.24E 5 / 38[illegible].00E 0	60.2 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	[illegible].43 :Y
CALCIUM	5000	0.00E 0 / 67403.00E 0	11100 :Y
CHROMIUM	10	0.00E 0 / [illegible].80E 0	10.7 :Y
COBALT	50	1.06E 5 / [illegible].00E 0	6.8 :Y
COPPER	25	7.10E 4 / [illegible].00E 0	25.7 :Y
IRON	100	0.00E 0 / 63389.00E 0	18000 :Y
LEAD	3	0.00E 0 / 30.50E 0	12.2 :Y
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	5470 :Y
MANGANESE	15	8.86E 3 / 1505.00E 0	458 :Y
NICKEL	40	3.55E 4 / 103.60E 0	5.6 :Y
POTASSIUM	5000	0.00E 0 / 10731.00E 0	[illegible]060 :Y
SILVER	10	8.87E 3 / 20.00E 0	[illegible].9 :Y
SODIUM	5000	0.00E 0 / 0.00E 0	1[illegible]9 :Y-
VANADIUM	50	1.24E 4 / 138.30E 0	24.6 :Y

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TABLE 3-27
Borehole Positive Results Table
Tank Group T-21, T-22, and T-27

Sample Location:			3995
Sample Identification Number:			BHG5030JE
Date Sampled:	MDL	PRG / BKGND	16-May-95
ZINC	20	5.32E 5 / 216.20E 0	70.9 I:Y
Test Group:TRADS Units:PCI/G			
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.028(.012) :Y
CESIUM-134	0	0.00E 0 / 0.00E 0	.001(.025) J:Y-
CESIUM-137	0	2.08E 0 / 3.68E 0	.056(.025) :Y
GROSS ALPHA	0	0.00E 0 / 44.56E 0	9.97(4.61) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	31.3(4.75) :Y
NEPTUNIUM-237	0	E 0 / E 0	.017(.008) :Y-
PLUTONIUM-238	0	E 0 / E 0	(.001) J:Y-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.056(.022) :Y
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	.83(.122) :Y
URANIUM-235	0	1.73E 1 / 19.83E-2	.047(.019) :Y
URANIUM-238	0	7.98E 1 / 19.12E-1	.85(.125) :Y
Test Group:VOACLP Units:UG/KG			
ACETONE	10	1.77E 3 / 0.00E 0	12 F :Y
METHYLENE CHLORIDE	5	1.66E 3 / 0.00E 0	1 JB:Y

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TABLE 3-28
Tank Liquid Positive Results Table
Tank Group T-21, T-22, and T-27

Sample Location:			T-21
Sample Identification Number:			TNG0027JE
Date Sampled:	MDL	PRG / BKGND	11-May-95
Test Group:BNACLP Units:UG/L			
BIS(2-ETHYLHEXYL)PHTHALATE	330	0.00E 0 / 0.00E 0	1 BJ:Y
Test Group:METADD Units:UG/L			
CESIUM	1000	0.00E 0 / 0.00E 0	79 B:Y
MOLYBDENUM	200	0.00E 0 / 0.00E 0	18.8 B:Y
SILICON	500	0.00E 0 / 0.00E 0	4200 :Y
STRONTIUM	200	0.00E 0 / 0.00E 0	128 B:Y
Test Group:SMETCLP Units:UG/L			
ALUMINUM	200	0.00E 0 / 0.00E 0	809 :Y
ARSENIC	10	0.00E 0 / 0.00E 0	4.2 B:Y
BARIUM	200	0.00E 0 / 0.00E 0	18 B:Y
CADMIUM	5	0.00E 0 / 0.00E 0	4.4 B:Y
CALCIUM	5000	0.00E 0 / 0.00E 0	14700 :Y
CHROMIUM	10	0.00E 0 / 0.00E 0	6 B:Y
COPPER	25	0.00E 0 / 0.00E 0	31.7 :Y
IRON	100	0.00E 0 / 0.00E 0	1200 :Y
LEAD	3	0.00E 0 / 0.00E 0	19.4 :Y
MAGNESIUM	5000	0.00E 0 / 0.00E 0	5120 :Y
MANGANESE	15	0.00E 0 / 0.00E 0	20.8 :Y
POTASSIUM	5000	0.00E 0 / 0.00E 0	80900 :Y
SELENIUM	5	0.00E 0 / 0.00E 0	4.8 B:Y
SODIUM	5000	0.00E 0 / 0.00E 0	74300 :Y
ZINC	20	0.00E 0 / 0.00E 0	82 :Y
Test Group:TRADS Units:PCI/L			
AMERICIUM-241	0	0.00E 0 / 0.00E 0	.484(.051) :Y
GROSS ALPHA	0	0.00E 0 / 0.00E 0	66.389(9.404) C:Y
GROSS BETA	0	0.00E 0 / 0.00E 0	74.241(8.13) :Y
NEPTUNIUM-237	0	E 0 / E 0	.043(.068) :Y
PLUTONIUM-239/240	0	0.00E 0 / 0.00E 0	.302(.035) :Y
RADIUM-226	0	0.00E 0 / 0.00E 0	.855(.148) :Y
TOTAL RADIOCESIUM	0	E 0 / E 0	.414(.33) :Y
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	61.155(3.827) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	2.623(.497) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	4.685(.653) :Y

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TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:			5195	5195	5195	5195	5295
Sample Identification Number:			BHG4865JE	BHG5020JE	BHG5021JE	BHG5023JE	BHG4866JE
Date Sampled:	MDL	PRG / BKGND	21-Feb-95	10-May-95	10-May-95	10-May-95	21-Feb-95
Test Group:BNACLP Units:UG/KG		Depth (ft) or Sample Type	0.0-0.5	14.0-16.3	16.3-19.4	16.3-19.4	0.0-0.5
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0					
ACENAPHTHENE	330	1.06E 8 / 0.00E 0					51 J:A
ANTHRACENE	330	5.32E 8 / 0.00E 0					67 J:A
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	40 J:A				250 J:A
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0					210 J:A
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0					210 J:A
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0					180 J:A-
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0					150 J:A
CARBAZOLE	0	0.00E 0 / 0.00E 0					39 J:A-
CHRYSENE	330	1.70E 7 / 0.00E 0	40 J:A				240 J:A
DIBENZO(a,h)ANTHRACENE	330	1.70E 4 / 0.00E 0					
DIBENZOFURAN	330	0.00E 0 / 0.00E 0					
DIETHYL PHTHALATE	330	1.00E 9 / 0.00E 0					
FLUORANTHENE	330	7.10E 7 / 0.00E 0	69 J:A				470 :V
FLUORENE	330	7.10E 7 / 0.00E 0					40 J:A
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0					120 J:A
NAPHTHALENE	330	7.10E 7 / 0.00E 0					
PHENANTHRENE	330	0.00E 0 / 0.00E 0	43 J:A-				360 J:A-
PYRENE	330	5.32E 7 / 0.00E 0	76 J:A				590 :V
Test Group:METADD Units:MG/KG							
CESIUM	1000	0.00E 0 / 1267.00E 0	8.6 :Y	2.4 :Y	4.5 :Y	4.8 :Y	4 :Y
LITHIUM	100	3.55E 4 / 53.40E 0	7.1 :Y	4.8 :Y	11.9 :Y	5.6 :Y	6.5 :Y
MOLYBDENUM	200	8.87E 3 / 0.00E 0	1.4 :Y				1.2 :Y
STRONTIUM	200	1.00E 6 / 342.60E 0	18.7 :Y	67.9 :Y	97.1 :Y	73.9 :Y	25.7 :Y
TIN	200	1.00E 6 / 0.00E 0	5 :Y		7.3 :Y		4.6 :Y
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	200	1.00E 6 / 55098.00E 0	6240 :Y	7140 :Y	11300 :Y	6750 :Y	5610 :Y
ARSENIC	10	7.09E 1 / 21.48E 0	1.3 :Y	6.2 :Y	9.5 :Y	8 :Y	1.3 :Y
BARIUM	200	1.24E 5 / 389.00E 0	64.1 :Y	159 :Y	338 :Y	74.9 :Y	62.7 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	.33 :Y	.74 :Y	1.3 :Y	.93 :Y	.22 :Y

TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:			5195	5195	5195	5195	5295
Sample Identification Number:			BHG4865JE	BHG5020JE	BHG5021JE	BHG5023JE	BHG4866JE
Date Sampled:	MDL	PRG / BKGND	21-Feb-95	10-May-95	10-May-95	10-May-95	21-Feb-95
CADMIUM	5	8.87E 2 / 2.36E 0			.61 :Y		
CALCIUM	5000	0.00E 0 / 67403.00E 0	2890 :Y	11800 :Y	11800 :Y	5600 :Y	2420 :Y
CHROMIUM	10	0.00E 0 / 113.80E 0	8.2 :Y	7.9 :Y	15.6 :Y	8.3 :Y	6.3 :Y
COBALT	50	1.06E 5 / 48.80E 0	8.5 :Y	5.2 :Y	28.6 :Y	5.1 :Y	12.1 :Y
COPPER	25	7.10E 4 / 59.10E 0	24.1 :Y	14.4 :Y	24.5 :Y	22.3 :Y	34.8 :Y
IRON	100	0.00E 0 / 63389.00E 0	11500 :Y	10000 :Y	35500 :Y	6940 :Y	10400 :Y
LEAD	3	0.00E 0 / 30.50E 0	10 :Y	15.2 :Y	21.4 :Y	24.6 :Y	10.8 :Y
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	2670 :Y	2410 :Y	4700 :Y	2130 :Y	2400 :Y
MANGANESE	15	8.86E 3 / 1505.00E 0	223 :Y	99.6 :Y	903 :Y	104 :Y	208 :Y
MERCURY	0.2	5.32E 2 / 2.81E 0			.075 :Y	.076 :Y	
NICKEL	40	3.55E 4 / 103.60E 0	6 :Y	10.5 :Y	54.2 :Y	11.8 :Y	5.3 :Y
POTASSIUM	5000	0.00E 0 / 10781.00E 0	2160 :Y	829 :Y	1340 :Y	813 :Y	1950 :Y
SILVER	10	8.87E 3 / 20.00E 0	1.4 :Y		3.9 :Y		1.3 :Y
SODIUM	5000	0.00E 0 / 0.00E 0	108 :Y-	273 :Y-	258 :Y-	227 :Y-	135 :Y-
THALLIUM	10	0.00E 0 / 0.00E 0			.83 :Y-		
VANADIUM	50	1.24E 4 / 138.30E 0	15.4 :Y	18.6 :Y	34.6 :Y	36 :Y	13.8 :Y
ZINC	20	5.32E 5 / 216.20E 0	61.4 :Y	48.4 :Y	125 :Y	55.3 :Y	45.5 :Y
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	0	2.16E 2 / 6.34E-2	.041(.016) :V	.005(.004) :Y	.004(.004) J:Y	.008(.006) :Y	.017(.008) :V
GROSS ALPHA	0	0.00E 0 / 44.56E 0	28.64(6.15) :V	18.31(6.38) :Y	12.49(5.27) :Y	15.39(5.8) :Y	27.67(6.05) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	46.44(4.53) :V	20.02(3.79) :Y	28.85(4.82) :Y	25.98(4.43) :Y	43.81(4.34) :V
NEPTUNIUM-237	0	E 0 / E 0	.002(.003) J:V-	.029(.012) :Y-	.015(.008) :Y-	.003(.008) J:Y-	.002(.003) :V-
PLUTONIUM-238	0	E 0 / E 0	.002(.008) J:V-	(.004) J:Y-	.001(.002) J:Y-	(.003) J:Y-	(.004) J:V-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	.008(.008) :V	.004(.005) J:Y	.002(.005) J:Y	-.001(.005) J:Y	.001(.003) J:V
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	1.274(.187) :V	.843(.124) :Y	1.955(.37) :Y#	1.738(.234) :Y	1.094(.16) :V
URANIUM-235	0	1.73E 1 / 19.83E-2	.05(.023) :V	.04(.018) :Y	.064(.039) :Y	.077(.026) :Y	.037(.018) :V
URANIUM-238	0	7.98E 1 / 19.12E-1	1.311(.191) :V	.922(.134) :Y	1.646(.32) :Y	1.673(.226) :Y	.963(.144) :V
Test Group:VOACLP Units:UG/KG							
2-BUTANONE	0	1.00E 9 / 0.00E 0	3 J:A				
4-METHYL-2-PENTANONE	0	E 0 / E 0					4 J:A-
ACETONE	10	1.77E 8 / 0.00E 0		12 J:Y	8 J:Y	10 J:Y	

TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:			5195	5195	5195	5195	5295
Sample Identification Number:			BHG4865JE	BHG5020JE	BHG5021JE	BHG5023JE	BHG4866JE
Date Sampled:	MDL	PRG / BKGND	21-Feb-95	10-May-95	10-May-95	10-May-95	21-Feb-95
CARBON TETRACHLORIDE	0	3.96E 5 / 0.00E 0				1 J:Y	
CHLOROFORM	0	6.34E 5 / 0.00E 0					
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	1 J:A	6 J:Y	9 J:Y	8 J:Y	2 J:A
TETRACHLOROETHENE	5	2.22E 6 / 0.00E 0					6 J:A
TRICHLOROETHENE	0	5.44E 6 / 0.00E 0					
Test Group:WQPL Units:MG/KG							
CHROMIUM VI	0	E 0 / E 0					

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TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:	5295	5295	5295	5295	5395	5395	5395
Sample Identification Number:	BHG4867JE	BHG5024JE	BHG5025JE	BHG5023JE	BHG4868JE	BHG5026JE	BHG5027JE
Date Sampled:	21-Feb-95	11-May-95	11-May-95	11-May-95	21-Feb-95	11-May-95	11-May-95
Test Group:BNACLP Units:UG/KG	0.0-0.5	14.0-15.1	16.0-18.0	16.0-18.0	0.0-0.5	10.0-11.5	13.2-14.9
2-METHYLNAPHTHALENE	39 J:A-						
ACENAPHTHENE	180 J:A						
ANTHRACENE	220 J:A						
BENZO(a)ANTHRACENE	640 :V				42 J:A		
BENZO(a)PYRENE	520 :V				41 J:A		
BENZO(b)FLUORANTHENE	650 :V				57 :A		
BENZO(ghi)PERYLENE	340 J:A-						
BENZO(k)FLUORANTHENE	160 J:A						
CARBAZOLE	140 J:A-						
CHRYSENE	590 :V				46 J:A		
DIBENZO(a,h)ANTHRACENE	98 J:A						
DIBENZOFURAN	71 J:A-						
DIETHYL PHTHALATE			69 J:Y				
FLUORANTHENE	1600 :V	51 J:Y			100 J:A		
FLUORENE	140 J:A						
INDENO(1,2,3-cd)PYRENE	290 J:A						
NAPHTHALENE	130 J:A						
PHENANTHRENE	1200 :V-	41 J:Y-			84 J:A		
PYRENE	1300 :V	52 J:Y			110 J:A		
Test Group:METADD Units:MG/KG							
CESIUM	4.3 :Y	4.6 :Y	4.7 :Y	4.8 :Y	4.2 :Y	7.3 :Y	6.9 :Y
LITHIUM	5.9 :Y	5.8 :Y	9.5 :Y	10.3 :Y	6.9 :Y	8.7 :Y	8.4 :Y
MOLYBDENUM	1.3 :Y				1.8 :Y		
STRONTIUM	20.5 :Y	61.5 :Y	95.9 :Y	93.2 :Y	22.5 :Y	84.5 :Y	79.5 :Y
TIN	3.7 :Y		9.1 :Y	6.6 :Y	5.7 :Y	5 :Y	
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	5490 :Y	7840 :Y	9590 :Y	9700 :Y	5830 :Y	9740 :Y	9180 :Y
ARSENIC	1.4 :Y	3.3 :Y	16.6 :Y	11.6 :Y	1.6 :Y	7.9 :Y	4.4 :Y
BARIUM	73.2 :Y	66.7 :Y	97.8 :Y	97.8 :Y	64.9 :Y	72.2 :Y	67.9 :Y
BERYLLIUM	.2 :Y	.78 :Y	1.4 :Y	1.2 :Y	.28 :Y	1.1 :Y	1.1 :Y

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TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:	5295	5295	5295	5295	5395	5395	5395
Sample Identification Number:	BHG4867JE	BHG5024JE	BHG5025JE	BHG5029JE	BHG5068JE	BHG5026JE	BHG5027JE
Date Sampled:	21-Feb-95	11-May-95	11-May-95	11-May-95	21-Feb-95	11-May-95	11-May-95
CADMIUM		.41 :Y	.73 :Y	.66 :Y			
CALCIUM	2080 :Y	5080 :Y	8430 :Y	8480 :Y	3000 :Y	13900 :Y	13100 :Y
CHROMIUM	6.1 :Y	9.3 :Y	13.5 :Y	13.7 :Y	7.4 :Y	9.5 :Y	8.3 :Y
COBALT	8.8 :Y	7.4 :Y	29.5 :Y	27.6 :Y	7.5 :Y	7 :Y	6.6 :Y
COPPER	25.2 :Y	15.4 :Y	30.4 :Y	27.2 :Y	22 :Y	13.8 :Y	12.9 :Y
IRON	10200 :Y	6620 :Y	43600 :Y	35800 :Y	11[illegible]00 :Y	10500 :Y	9850 :Y
LEAD	10 :Y	17.4 :Y	22.9 :Y	20.4 :Y	9.[illegible] :Y	15.8 :Y	19.5 :Y
MAGNESIUM	2270 :Y	2320 :Y	3100 :Y	3360 :Y	26[illegible] :Y	3310 :Y	3130 :Y
MANGANESE	192 :Y	56.5 :Y	569 :Y	516 :Y	21[illegible] :Y	85.1 :Y	80.2 :Y
MERCURY				.067 :Y			.14 :Y
NICKEL	4.9 :Y	13.4 :Y	58.5 :Y	52.3 :Y	5.4 :Y	13.6 :Y	13 :Y
POTASSIUM	1840 :Y	919 :Y	1160 :Y	1130 :Y	2170 :Y	680 :Y	649 :Y
SILVER	1.4 :Y	.94 :Y	4.5 :Y	4.4 :Y	1.3 :Y	1.2 :Y	1.7 :Y
SODIUM	407 :Y-	218 :Y-	291 :Y-	293 :Y-	131 :Y-	107 :Y-	109 :Y-
THALLIUM			1.1 :Y-	.81 :Y-			
VANADIUM	13.4 :Y	19.7 :Y	43.7 :Y	34.9 :Y	14.7 :Y	29.2 :Y	27.9 :Y
ZINC	41.9 :Y	66.2 :Y	251 :Y#	189 :Y	41.7 :Y	58.3 :Y	55 :Y
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	.039(.014) :V	.004(.005) J:Y	.003(.006) J:Y	.004(.005) J:Y	.023(.012) :V	.004(.006) J:Y	.006(.005) J:Y
GROSS ALPHA	26.79(5.95) :V	11.22(4.99) :Y	12.85(5.36) :Y	11.67(4.99) :Y	30.47(6.4[illegible]) :V	17.65(6.21) :Y	15.3(5.8) :Y
GROSS BETA	41.38(4.19) :V	26.04(4.37) :Y	26.57(4.42) :Y	28.68(4.65) :Y	45.26(4.4[illegible]) :V	20.85(3.93) :Y	22.99(4.11) :Y
NEPTUNIUM-237	.001(.002) J:V-	.024(.01) :Y-	.008(.006) :Y-	.023(.01) :Y-	.001(.002) J:V-	.009(.008) J:Y-	.022(.01) :Y-
PLUTONIUM-238	.005(.008) J:V-	(.005) J:Y-	(.007) J:Y-	.001(.002) J:Y-	-.004(.006) J:V-	-.005(.006) J:Y-	(.003) J:Y-
PLUTONIUM-239/240	.012(.01) :V	.007(.006) :Y	-.002(.003) J:Y	(.003) J:Y	.018(.014) :V	.002(.003) J:Y	(.003) J:Y
URANIUM-233,-234	1.035(.152) :V	.829(.123) :Y	1.624(.22) :Y	1.983(.331) :Y#	1.066(.172) :V	.872(.133) :Y	1.142(.183) :Y
URANIUM-235	.033(.017) :V	.051(.02) :Y	.064(.024) :Y	.06(.032) :Y	.036(.023) :V	.035(.018) :Y	.059(.026) :Y
URANIUM-238	1.004(.149) :V	.88(.129) :Y	1.487(.204) :Y	1.663(.285) :Y	1.06(.172) :V	1.047(.154) :Y	1.217(.192) :Y
Test Group:VOACLP Units:UG/KG							
2-BUTANONE							
4-METHYL-2-PENTANONE							
ACETONE		8 J:Y		9 J:Y		10 J:Y	9 J:Y

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TABLE 3-29
Borehole Positive Results Table
Tank Group T-24 and T-32

Sample Location:	5295	5295	5295	5295	5395	5395	5395
Sample Identification Number:	BHG4867JE	BHG5024JE	BHG5025JE	BHG5029JE	BHG4868JE	BHG5026JE	BHG5027JE
Date Sampled:	21-Feb-95	11-May-95	11-May-95	11-May-95	21-Feb-95	11-May-95	11-May-95
CARBON TETRACHLORIDE							
CHLOROFORM			3 J:Y				
METHYLENE CHLORIDE	3 J:A		5 J:Y	3 JB:Y	4 J:A	7 J:Y	6 J:Y
TETRACHLOROETHENE	5 J:A	5 J:Y	4 J:Y	3 J:Y			
TRICHLOROETHENE			1 J:Y				
Test Group:WQPL Units:MG/KG							
CHROMIUM VI		1.06 :Y-	.62 :Y-	.8 :Y-			

TABLE 3-30
Surficial Soil Positive Results Table
Tank T-29

Sample Location:			SS001495	SS001595
Sample Identification Number:			SSG2837JE	SSG2838JE
Date Sampled:	MDL	PRG / BKGND	23-Feb-95	23-Feb-95
Test Group:BNACLP Units:UG/KG				
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0	190 J:A-	
ACENAPHTHENE	330	1.65E 7 / 0.00E 0	1100 :V	320 J:A
ANTHRACENE	330	8.23E 7 / 0.00E 0	1000 :V	290 J:A
BENZO(a)ANTHRACENE	330	8.77E 2 / 0.00E 0	2300 :V*	1200 :V*
BENZO(a)PYRENE	330	8.77E 1 / 0.00E 0	2200 :V*	1100 :V*
BENZO(b)FLUORANTHENE	330	8.77E 2 / 0.00E 0	2400 :V*	1200 :V*
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0	1700 :V-	820 :V-
BENZO(k)FLUORANTHENE	330	8.77E 3 / 0.00E 0	1400 :V	740 :V
CARBAZOLE	0	0.00E 0 / 0.00E 0	700 :V	210 J:A-
CHRYSENE	330	8.77E 4 / 0.00E 0	2600 :V	1300 :V
DIBENZO(a,h)ANTHRACENE	330	8.77E 1 / 0.00E 0	400 :V*	230 J:A*
DIBENZOFURAN	330	0.00E 0 / 0.00E 0	420 :V	75 J:A-
FLUORANTHENE	330	1.10E 7 / 0.00E 0	6000 :V	3300 :V
FLUORENE	330	1.10E 7 / 0.00E 0	370 :V	190 J:A
INDENO(1,2,3-cd)PYRENE	330	8.77E 2 / 0.00E 0	1500 :V*	690 :V
NAPHTHALENE	330	1.10E 7 / 0.00E 0	510 :V	97 J:A
PHENANTHRENE	330	0.00E 0 / 0.00E 0	5300 :V-	2100 :V-
PYRENE	330	8.23E 6 / 0.00E 0	5300 :V	3400 :V
Test Group:METADD Units:MG/KG				
LITHIUM	20	5.49E 3 / 15.08E 0	7.2 B:V	7 B:V
STRONTIUM	40	1.65E 5 / 67.92E 0	13.9 B:V	67.3 :V
Test Group:PESTCLP Units:UG/KG				
AROCLOR-1254	160	8.32E 1 / 0.00E 0		49 P:JA
AROCLOR-1260	160	8.32E 1 / 0.00E 0	74 P:JA	
Test Group:SMETCLP Units:MG/KG				
ALUMINUM	40	7.96E 5 / 22999.00E 0	6360 :V	6160 :V
ARSENIC	2	3.66E-1 / 13.75E 0	4 :V*	2.7 :V*
BARIUM	40	1.91E 4 / 176.00E 0	61.3 :V	113 :V
BERYLLIUM	1	1.49E-1 / 1.25E 0	.46 B:V*	.36 B:V*
CALCIUM	1000	0.00E 0 / 5839.00E 0	2210 :V	2850 :V

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TABLE 3-30
Surficial Soil Positive Results Table
Tank T-29

Sample Location:			SS001495	SS001595
Sample Identification Number:			SSG2837JE	SSG2838JE
Date Sampled:	MDL	PRG / BKGND	23-Feb-95	23-Feb-95
CHROMIUM	2	0.00E 0 / 22.21E 0	10.2 :V	10.2 :V
COBALT	10	1.65E 4 / 14.22E 0	5 B:V	4.8 B:V
COPPER	5	1.10E 4 / 22.75E 0	25.9 :V#	25.5 :V#
IRON	20	0.00E 0 / 23063.00E 0	11100 :V	11500 :V
LEAD	1	0.00E 0 / 73.87E 0	24 :JA	40.7 :JA
MAGNESIUM	1000	0.00E 0 / 3707.00E 0	1630 :V	2000 :V
MANGANESE	3	1.36E 3 / 482.10E 0	170 :V	205 :V
MERCURY	0.2	8.23E 1 / 0.19E 0	.055 B:V	
NICKEL	8	5.49E 3 / 19.74E 0	7.7 B:V	8.6 :V
POTASSIUM	2000	0.00E 0 / 3797.00E 0	1650 :V	1520 :V
SILVER	2	1.37E 3 / 0.22E 0		.94 B:JA#
VANADIUM	10	1.92E 3 / 61.84E 0	18.6 :V	15.9 :V
ZINC	4	8.23E 4 / 65.92E 0	66.6 :V	72.8 :V
Test Group:TCLP-RADS Units:PCI/L				
TRITIUM	0	1.47E 4 / 545.98E 0	172.5(236) J:V	19.87(230) J:V
Test Group:TRADS Units:PCI/G				
AMERICIUM-241	0	2.37E 0 / 0.04E 0	7.137(.714) :V*#	.60[illegible].08) :V#
GROSS ALPHA	0	0.00E 0 / 44.56E 0	50.53(8.78) :V#	24.1(5.55) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	37.84(3.94) :V	40.03(4.09) :V
NEPTUNIUM-237	0	E 0 / E 0	.00[illegible] J:V-	.012(.007) :V-
PLUTONIUM-238	0	E 0 / E 0	.40[illegible] :V-	.04(.016) :V-
PLUTONIUM-239/240	0	3.43E 0 / 0.08E 0	20.07(2.14) :V*#	1.938(.241) :V#
URANIUM-233,-234	0	4.53E 1 / 3.10E 0	1.[illegible]1(.228) :V	.925(.141) :V
URANIUM-235	0	1.73E-1 / 0.13E 0	.37[illegible](.028) :V	.064(.025) :V
URANIUM-238	0	8.00E-1 / 2.83E 0	1.576(.227) :V*	.784(.123) :V
Test Group:VOACLP Units:UG/KG				
METHYLENE CHLORIDE	5	8.54E 4 / 0.00E 0		1 J:A

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:			4395	4395	4395	4495	4495
Sample Identification Number:			BHG4873JE	BHG4946JE	BHG4947JE	BHG4874JE	BHG4877JE
Date Sampled:	MDL	PRG / BKGND	23-Feb-95	28-Mar-95	28-Mar-95	23-Feb-95	23-Feb-95
Test Group:BNACLP Units:UG/KG		Depth(ft) or Sample Type	0.0-0.5	4.0-7.2	10.0-13.0	0.0-0.5	0.0-0.5
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0	71 J:A-				
ACENAPHTHENE	330	1.06E 8 / 0.00E 0	610 :V			220 J:A	270 J:A
ANTHRACENE	330	5.32E 8 / 0.00E 0	650 :V			220 J:A	280 J:A
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	2000 :V			710 :V	820 :V
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	1900 :V			730 :V	800 :V
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	2300 :V			820 :V	910 :V
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0	1200 :V-			550 :V-	670 :V-
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	810 :V			370 :V	390 :V
CARBAZOLE	0	0.00E 0 / 0.00E 0	500 :V-			150 J:A-	180 J:A-
CHRYSENE	330	1.70E 7 / 0.00E 0	2200 :V			860 :V	900 :V
DIBENZO(a,h)ANTHRACENE	330	1.70E 4 / 0.00E 0					
DIBENZOFURAN	330	0.00E 0 / 0.00E 0	200 J:A-			67 J:A-	86 J:A-
FLUORANTHENE	330	7.10E 7 / 0.00E 0	5600 :V			1500 :V	2100 :V
FLUORENE	330	7.10E 7 / 0.00E 0	470 :V			160 J:A	200 J:A
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0	1100 :V			460 :V	610 :V
NAPHTHALENE	330	7.10E 7 / 0.00E 0	170 J:A			110 J:A	120 J:A
PHENANTHRENE	330	0.00E 0 / 0.00E 0	4300 :V-			1300 :V-	1700 :V-
PYRENE	330	5.32E 7 / 0.00E 0	5500 :V			2000 :V	2100 :V
Test Group:METADD Units:MG/KG							
LITHIUM	100	3.55E 4 / 53.40E 0	10.6 B:V	2.3 B:V	3.6 B:V	6.8 B:V	6.9 B:V
MOLYBDENUM	200	8.87E 3 / 0.00E 0					
STRONTIUM	200	1.00E 6 / 342.60E 0	24.6 B:V	10.6 B:V	9.3 B:V	13.5 B:V	14.5 B:V
TIN	200	1.00E 6 / 0.00E 0	3 B:V				
Test Group:PESTCLP Units:UG/KG							
AROCLOR-1254	160	1.61E 4 / 0.00E 0	68 P:JA				
AROCLOR-1260	160	1.61E 4 / 0.00E 0				89 P:JA	160 :JA
DIELDRIN	16	7.76E 3 / 0.00E 0					4.5 P:JA
gamma-CHLORDANE	80	9.55E 4 / 0.00E 0				2.6 P:JA	2.6 P:JA

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:			4395	4395	4395	4495	4495
Sample Identification Number:			BHG4873JE	BHG4946JE	BHG4947JE	BHG4874JE	BHG4877JE
Date Sampled:	MDL	PRG / BKGND	23-Feb-95	28-Mar-95	28-Mar-95	23-Feb-95	23-Feb-95
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	200	1.00E 6 / 55098.00E 0	8230 :V	3970 :V	5290 :V	5430 :V	5590 :V
ARSENIC	10	7.09E 1 / 21.48E 0	5.1 :V	1.4 B:JA	2.4 :JA	2.1 B:V	2.6 :V
BARIUM	200	1.24E 5 / 389.00E 0	86.1 :V	29.1 B:V	37 B:V	47.5 :V	52.3 :V
BERYLLIUM	5	2.89E 1 / 18.80E 0	.62 B:V	.35 B:V	.42 B:V	.34 B:V	.33 B:V
CADMIUM	5	8.87E 2 / 2.36E 0					
CALCIUM	5000	0.00E 0 / 67403.00E 0	5390 :V	1450 :V	1830 :V	2530 :V	3220 :V
CHROMIUM	10	0.00E 0 / 113.80E 0	22.5 :V	14.4 :V	8.2 :V	10.5 :V	10.4 :V
COBALT	50	1.06E 5 / 48.80E 0	5.9 B:V	4.5 B:V	3.1 B:V	4.2 B:V	4.2 B:V
COPPER	25	7.10E 4 / 59.10E 0	56.6 :V	5.3 :V	9.5 :V	30.5 :V	31.7 :V
IRON	100	0.00E 0 / 63389.00E 0	13400 :V	7120 :JA	8080 :JA	8650 :V	9660 :V
LEAD	3	0.00E 0 / 30.50E 0	58.7 :JA#	4.9 :V	4.8 :V	39.7 :JA#	36.1 :JA#
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	2420 :V	1010 B:V	1520 :V	1580 :V	1650 :V
MANGANESE	15	8.86E 3 / 1505.00E 0	282 :V	120 :JA	122 :JA	185 :V	200 :V
MERCURY	0.2	5.32E 2 / 2.81E 0	.11 B:V			.049 B:V	.053 B:V
NICKEL	40	3.55E 4 / 103.60E 0	11.7 :V	10.1 :V	8.9 :V	8.8 :V	8.6 :V
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1980 :V	585 B:V	825 B:V	1180 :V	1330 :V
SILVER	10	8.87E 3 / 20.00E 0	1.1 B:JA				1.2 B:JA
SODIUM	5000	0.00E 0 / 0.00E 0					
TANTALUM	0	E 0 / E 0					
VANADIUM	50	1.24E 4 / 138.30E 0	23.9 :V	10.8 :V	14.2 :V	15.7 :V	16.5 :V
ZINC	20	5.32E 5 / 216.20E 0	350 :V#		21.5 :JA	199 :V	189 :V
Test Group:TCLP-RADS Units:PCI/L							
TRITIUM	0	1.00E 6 / 545.96E 0	16.9(2[illegible]5) J:V			28.16(226) J:V	
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	0	2.16E 2 / 6.34E-2	2.7(.297) :V#			.329(.053) :V#	.332(.07) :V#
GROSS ALPHA	0	0.00E 0 / 44.56E 0	28.7(6.04) :V			19.25(4.79) :V	25.29(5.64) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	40.38(4.12) :V			41.31(4.18) :V	38.58(3.99) :V
NEPTUNIUM-237	0	E 0 / E 0	.016(.008) :V-			.006(.005) :V-	.006(.007) :V-
PLUTONIUM-238	0	E 0 / E 0	.128(.031) :V-			.023(.017) :V-	.028(.018) :V-
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2	6.716(.763) :V#			.981(.152) :V#	.638(.099) :V#

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:			4395	4395	4395	4495	4495
Sample Identification Number:			BHG4873JE	BHG4946JE	BHG4947JE	BHG4874JE	BHG4877JE
Date Sampled:	MDL	PRG / BKGND	23-Feb-95	28-Mar-95	28-Mar-95	23-Feb-95	23-Feb-95
TRITIUM	0	1.00E 6 / 545.96E 0					-99.8(217) J:V
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	1.425(.202) :V			1.074(.156) :V	1.201(.194) :V
URANIUM-235	0	1.73E 1 / 19.83E-2	.085(.029) :V			.039(.018) :V	.035(.024) :V
URANIUM-238	0	7.98E 1 / 19.12E-1	1.329(.191) :V			1.014(.149) :V	1.055(.176) :V
Test Group:VOACLP Units:UG/KG							
2-BUTANONE	0	1.00E 9 / 0.00E 0		8 J:Y	12 :Y		
4-METHYL-2-PENTANONE	0	E 0 / E 0			4 J:Y-		
ACETONE	10	1.77E 8 / 0.00E 0		160 B:Y	76 B:Y		
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	1 J:A	2 J:Y	2 J:Y	2 J:A	
Test Group:WQPL Units:MG/KG							
CHROMIUM VI	0	E 0 / E 0		.59 :JA-			

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4495	4495	4595	4595	4595	4695	4695
Sample Identification Number:	BHG4944JE	BHG4945JE	BHG4875JE	BHG4948JE	BHG4949. E	BHG4876JE	BHG4950JE
Date Sampled:	28-Mar-95	28-Mar-95	23-Feb-95	30-Mar-95	30-Mar-95	23-Feb-95	30-Mar-95
Test Group:BNACLP Units:UG/KG	6.0-6.9	10.0-14.3	0.0-0.5	6.0-7.4	10.5-11.5	0.0-0.5	6.0-8.3
2-METHYLNAPHTHALENE			64 J:A-			82 J:A-	
ACENAPHTHENE			450 :V			580 :V	
ANTHRACENE			420 :V			490 :V	
BENZO(a)ANTHRACENE			1100 :V			1400 :V	
BENZO(a)PYRENE			1200 :V			1500 :V	
BENZO(b)FLUORANTHENE			1300 :V			2000 :V	
BENZO(ghi)PERYLENE			810 :V-			950 :V-	
BENZO(k)FLUORANTHENE			640 :V			650 :V	
CARBAZOLE			290 J:A-			240 J:A-	
CHRYSENE			1300 :V			2000 :V	
DIBENZO(a,h)ANTHRACENE			240 J:A			300 J:A	
DIBENZOFURAN			150 J:A-			200 J:A-	
FLUORANTHENE			3100 :V			4700 :V	
FLUORENE			310 J:A			420 :V	
INDENO(1,2,3-cd)PYRENE			790 :V			850 :V	
NAPHTHALENE			190 J:A			220 J:A	
PHENANTHRENE			2700 :V-			3800 :V-	
PYRENE			3900 :V			4700 :V	
Test Group:METADD Units:MG/KG							
LITHIUM	5.6 B:V	5.5 B:V		4.6 B:V	3.2 B:V		
MOLYBDENUM				13.7 B:V	7.7 B:V		
STRONTIUM	16.1 B:V	14.7 B:V	16.3 B:V	11.5 B:V	10.5 B:V	12.3 B:V	
TIN			3.8 B:V	5.9 B:V	3.6 B:V		
Test Group:PESTCLP Units:UG/KG							
AROCLOR-1254			81 P:JA				
AROCLOR-1260							
DIELDRIN							
gamma-CHLORDANE							

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4495	4495	4595	4595	4595	4695	4695
Sample Identification Number:	BHG4944JE	BHG4945JE	BHG4875JE	BHG4946JE	BHG4947JE	BHG4876JE	BHG4950JE
Date Sampled:	28-Mar-95	28-Mar-95	23-Feb-95	30-Mar-95	30-Mar-95	23-Feb-95	30-Mar-95
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	12500 :V	8350 :V	5090 :V	6980 :V	4710 :V	4570 :V	
ARSENIC	4.5 :JA	3.4 :JA	2.9 :V	6.7 :JA	4.6 :JA	8.8 :V	
BARIUM	46.8 :V	43.1 :V	52.9 :V	41.6 B:V	31 B:V	52.1 :V	
BERYLLIUM	.87 B:V	.6 B:V	.33 B:V	.63 B:V	.44 B:V	.29 B:V	
CADMIUM					6.2 :V#		
CALCIUM	3080 :V	2530 :V	5610 :V	1520 :V	1620 :V	2790 :V	
CHROMIUM	12.1 :V	16.5 :V	10.3 :V	85.9 :V	59.3 :V	17.8 :V	
COBALT	5.1 B:V	5.1 B:V	4.4 B:V	6.6 B:V	4 B:V		
COPPER	8.3 :V	14.2 :V	26.1 :V	30.6 :JA	24.7 :JA	25.5 :V	
IRON	13300 :JA	12300 :JA	9810 :V	19900 :JA	16400 :JA	8870 :V	
LEAD	6.2 :V	5.6 :V	50.4 :JA#	5.5 :JA	4.6 :JA	19.6 :JA	
MAGNESIUM	1840 :V	2270 :V	1870 :V	1310 :V	1040 :V	1660 :V	
MANGANESE	121 :JA	122 :JA	184 :V	291 :JA	150 :JA	178 :V	
MERCURY	.06 :V						
NICKEL	10.9 :V	12.2 :V	6.9 B:V	18.9 :V	17.5 :V		
POTASSIUM	791 B:V	908 B:V	1300 :V	748 B:V	744 B:V	1360 :V	
SILVER			1.2 B:JA		21.2 :V#		
SODIUM				80.8 B:V-	86 B:V-		
TANTALUM					25.6 B:JA-		
VANADIUM	25.1 :V	19.9 :V	16.7 :V	27.8 :JA	18.1 :JA	14.6 :V	
ZINC	17.4 :JA	22.1 :JA	64.1 :V	14.8 :V	20.4 :V	46.9 :V	
Test Group:TCLP-RADS Units:PCI/L							
TRITIUM			46.59(227) J:V			-56.8(220) J:V	
Test Group:TRADS Units:PCI/G							
AMERICIUM-241			1.578(.182) :V#			1.515(.171) :V#	.02(.009) :Y
GROSS ALPHA			21.02(5.13) :V	14.72(4.13) :Y		15.8(4.33) :V	11.42(3.67) :Y
GROSS BETA			37.84(3.94) :V	30.18(3.41) :Y		39.58(4.04) :V	26.62(3.19) :Y
NEPTUNIUM-237			.004(.004) J:V-	.003(.004) J:Y-	(.002) J:Y-	.013(.007) :V-	.001(.002) J:Y-
PLUTONIUM-238			.034(.014) :V-		(.004) J:Y-	.02(.012) :V-	(.004) J:Y-
PLUTONIUM-239/240			1.436(.176) :V#	.024(.013) :Y	.011(.009) J:Y	1.076(.138) :V#	.018(.01) :Y

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4495	4495	4595	4595	4595	4695	4695
Sample Identification Number:	BHG4944JE	BHG4945JE	BHG4875JE	BHG4943JE	BHG4949JE	BHG4876JE	BHG4950JE
Date Sampled:	28-Mar-95	28-Mar-95	23-Feb-95	30-Mar-95	30-Mar-95	23-Feb-95	30-Mar-95
TRITIUM							
URANIUM-233,-234			.896(.141) :V	.638(.159) :Y	.453(.117) :Y	.939(.143) :A	.449(.112) :Y
URANIUM-235			.051(.022) :V		.023(.022) :Y	.046(.021) :A	.03(.024) :Y
URANIUM-238			.91(.143) :V	.744(.178) :Y	.553(.134) :Y	.859(.133) :A	.564(.131) :Y
Test Group:VOACLP Units:UG/KG							
2-BUTANONE				6 J:A			
4-METHYL-2-PENTANONE							
ACETONE	95 B:Y	70 B:Y		110 :V	45 :J		76 :V
METHYLENE CHLORIDE	1 J:Y	2 J:Y		2 J:A	3 J:A		2 J:A
Test Group:WQPL Units:MG/KG							
CHROMIUM VI		.84 :JA-			.56 :JA-		

TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4695	4695
Sample Identification Number:	BHG4951JE	BHG4953JE
Date Sampled:	30-Mar-95	30-Mar-95
Test Group:BNACLP Units:UG/KG	10.0-13.2	10.0-13.2
2-METHYLNAPHTHALENE		
ACENAPHTHENE		
ANTHRACENE		
BENZO(a)ANTHRACENE		
BENZO(a)PYRENE		
BENZO(b)FLUORANTHENE		
BENZO(ghi)PERYLENE		
BENZO(k)FLUORANTHENE		
CARBAZOLE		
CHRYSENE		
DIBENZO(a,h)ANTHRACENE		
DIBENZOFURAN		
FLUORANTHENE		
FLUORENE		
INDENO(1,2,3-cd)PYRENE		
NAPHTHALENE		
PHENANTHRENE		
PYRENE		
Test Group:METADD Units:MG/KG		
LITHIUM	7.6 B:V	6.9 B:V
MOLYBDENUM		
STRONTIUM	12.8 B:V	15.5 B:JA
TIN		6 B:JA
Test Group:PESTCLP Units:UG/KG		
AROCLOR-1254		
AROCLOR-1260		
DIELDRIN		
gamma-CHLORDANE		

TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4695	4695
Sample Identification Number:	BHG4951JE	BHG4953JE
Date Sampled:	30-Mar-95	30-Mar-95
Test Group:SMETCLP Units:MG/KG		
ALUMINUM	8950 :V	10700 :V
ARSENIC	6.4 :JA	15.5 :JA
BARIUM	42.4 B:V	46.6 :V
BERYLLIUM	.74 B:V	1.2 :V
CADMIUM		
CALCIUM	3300 :V	4000 :V
CHROMIUM	22.2 :V	14 :JA
COBALT	5.9 B:V	6.2 B:V
COPPER	18 :JA	20.9 :JA
IRON	17800 :JA	26300 :JA
LEAD	10.3 :JA	11.1 :JA
MAGNESIUM	2450 :V	3570 :V
MANGANESE	125 :JA	93.4 :JA
MERCURY		
NICKEL	16.9 :V	20.4 :V
POTASSIUM	926 B:V	1330 :V
SILVER		
SODIUM	81.4 B:V-	98.6 B:JA-
TANTALUM		
VANADIUM	42 :JA	51.3 :JA
ZINC	27.3 :V	34.3 :JA
Test Group:TCLP-RADS Units:PCI/L		
TRITIUM		
Test Group:TRADS Units:PCI/G		
AMERICIUM-241	.011(.006) :Y	.001(.002) J:Y
GROSS ALPHA	12.19(3.78) :Y	16.09(4.34) :Y
GROSS BETA	24.27(3) :Y	24.94(3.05) :Y
NEPTUNIUM-237	.002(.003) J:Y-	.001(.002) J:Y-
PLUTONIUM-238	.001(.003) J:Y-	.004(.004) :Y-
PLUTONIUM-239/240	.003(.006) J:Y	.01(.007) :Y

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TABLE 3-31
Borehole Positive Results Table
Tank T-29

Sample Location:	4695	4695
Sample Identification Number:	BHG4951JE	BHG4953JE
Date Sampled:	30-Mar-95	30-Mar-95
TRITIUM		
URANIUM-233,-234	.639(.158) :Y	.657(.165) :Y
URANIUM-235	.016(.019) J:Y	.021(.024) J:Y
URANIUM-238	.694(.168) :Y	.763(.184) :Y
Test Group:VOACLP Units:UG/KG		
2-BUTANONE		
4-METHYL-2-PENTANONE		
ACETONE	29 :V	67 :V
METHYLENE CHLORIDE	3 J:A	
Test Group:WQPL Units:MG/KG		
CHROMIUM VI	1.16 :JA-	

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TABLE 3-32
Tank Liquid/Smear Positive Results Table
Tank T-29

Sample Location:			T-29
Sample Identification Number:			TNG0008JE
Date Sampled:	MDL	PRG / BKGND	20-Mar-95
Test Group:BNACLP Units:UG/L			
ACENAPHTHENE	330	0.00E 0 / 0.00E 0	2 J:A
ANTHRACENE	330	0.00E 0 / 0.00E 0	2 J:A
BENZO(a)ANTHRACENE	330	0.00E 0 / 0.00E 0	6 J:A
BIS(2-ETHYLHEXYL)PHTHALATE	330	0.00E 0 / 0.00E 0	9 J:A
CARBAZOLE	0	0.00E 0 / 0.00E 0	1 J:A
CHRYSENE	330	0.00E 0 / 0.00E 0	8 J:A
FLUORANTHENE	330	0.00E 0 / 0.00E 0	15 :V
FLUORENE	330	0.00E 0 / 0.00E 0	1 J:A
PHENANTHRENE	330	0.00E 0 / 0.00E 0	11 :V
PYRENE	330	0.00E 0 / 0.00E 0	10 :V
Test Group:METADD Units:UG/L			
CESIUM	1000	0.00E 0 / 0.00E 0	30 B:V
LITHIUM	100	0.00E 0 / 0.00E 0	73.4 B:V
SILICON	500	0.00E 0 / 0.00E 0	16600 :JA
STRONTIUM	200	0.00E 0 / 0.00E 0	1060 :V
TIN	200	0.00E 0 / 0.00E 0	99.5 B:JA
Test Group:SMETCLP Units:UG/L			
ALUMINUM	200	0.00E 0 / 0.00E 0	20500 :V
ARSENIC	10	0.00E 0 / 0.00E 0	13.2 :V
BARIUM	200	0.00E 0 / 0.00E 0	382 :V
BERYLLIUM	5	0.00E 0 / 0.00E 0	7.8 :V
CADMIUM	5	0.00E 0 / 0.00E 0	16.8 :JA
CALCIUM	5000	0.00E 0 / 0.00E 0	37700 :V
CHROMIUM	10	0.00E 0 / 0.00E 0	41.8 :JA
COBALT	50	0.00E 0 / 0.00E 0	20.1 B:V
COPPER	25	0.00E 0 / 0.00E 0	521 :V
IRON	100	0.00E 0 / 0.00E 0	21000 :V
LEAD	3	0.00E 0 / 0.00E 0	18 :JA
MAGNESIUM	5000	0.00E 0 / 0.00E 0	55.0 :V
MANGANESE	15	0.00E 0 / 0.00E 0	267 :V

TABLE 3-32
Tank Liquid/Smear Positive Results Table
Tank T-29

Sample Location:			T-29
Sample Identification Number:			TNG0008JE
Date Sampled:	MDL	PRG / BKGND	20-Mar-95
NICKEL	40	0.00E 0 / 0.00E 0	70.5 :V
POTASSIUM	5000	0.00E 0 / 0.00E 0	43500 :V
SILVER	10	0.00E 0 / 0.00E 0	21.9 :V
SODIUM	5000	0.00E 0 / 0.00E 0	43500 :V
VANADIUM	50	0.00E 0 / 0.00E 0	74.4 :V
ZINC	20	0.00E 0 / 0.00E 0	1520 :V
Test Group:TRADS Units:PCI/L			
AMERICIUM-241	0	0.00E 0 / 0.00E 0	242.4(19.7) :Y
GROSS ALPHA	0	0.00E 0 / 0.00E 0	2030(43) :Y
GROSS BETA	0	0.00E 0 / 0.00E 0	109(7) :Y
PLUTONIUM-239/240	0	0.00E 0 / 0.00E 0	918.5(7.27) :Y
TRITIUM	0	0.00E 0 / 0.00E 0	332() :Y
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	8.87(1.18) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	1.17(.43) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	31.6(2.22) :Y
Test Group:VOACLP Units:UG/L			
2-BUTANONE	0	0.00E 0 / 0.00E 0	24 :Y

TABLE 3-33
Borehole Positive Results Table
Tank T-40

Sample Location:			4795	4795	4895	4895	4995
Sample Identification Number:			BHG4869JE	BHG4908JE	BHG4870J	BHG4911JE	BHG4871JE
Date Sampled:	MDL	PRG / BKGND	21-Feb-95	15-Mar-95	21-Feb-95	14-Mar-95	21-Feb-95
Test Group:BNACLP Units:UG/KG		Depth (ft) or Sample Type	0.0-0.5	10.0-11.6	0.0-0.3	8.0-12.3	0.0-0.5
2-METHYLNAPHTHALENE	330	0.00E 0 / 0.00E 0				220 J:A-	
ACENAPHTHENE	330	1.06E 8 / 0.00E 0	60 J:A				
ANTHRACENE	330	5.32E 8 / 0.00E 0	53 J:A				
BENZO(a)ANTHRACENE	330	1.70E 5 / 0.00E 0	220 J:A		48 J:A		84 J:A
BENZO(a)PYRENE	330	1.70E 4 / 0.00E 0	220 J:A		47 J:A		68 J:A
BENZO(b)FLUORANTHENE	330	1.70E 5 / 0.00E 0	280 J:A		62 J:A		130 J:A
BENZO(ghi)PERYLENE	330	0.00E 0 / 0.00E 0			40 J:A-		
BENZO(k)FLUORANTHENE	330	1.70E 6 / 0.00E 0	92 J:A				
CARBAZOLE	0	0.00E 0 / 0.00E 0	42 J:A-				
CHRYSENE	330	1.70E 7 / 0.00E 0	260 J:A		53 J:A		88 J:A
DIBENZOFURAN	330	0.00E 0 / 0.00E 0					
DIETHYL PHTHALATE	330	1.00E 9 / 0.00E 0		53 J:A			
FLUORANTHENE	330	7.10E 7 / 0.00E 0	550 :V		110 J:A		180 J:A
FLUORENE	330	7.10E 7 / 0.00E 0	42 J:A				
INDENO(1,2,3-cd)PYRENE	330	1.70E 5 / 0.00E 0	130 J:A				45 J:A
NAPHTHALENE	330	7.10E 7 / 0.00E 0	49 J:A			100 J:A	
PHENANTHRENE	330	0.00E 0 / 0.00E 0	380 :V-		78 J:A-		110 J:A-
PYRENE	330	5.32E 7 / 0.00E 0	500 :V		110 J:A		170 J:A
Test Group:METADD Units:MG/KG							
CESIUM	1000	0.00E 0 / 1267.00E 0	4.2 :Y	4.9 B:V	8.7 :Y		6.8 :Y
LITHIUM	100	3.55E 4 / 53.40E 0	5.3 :Y	4.6 B:V	5.4 :Y	5.9 B:V	4.7 :Y
MOLYBDENUM	200	8.87E 3 / 0.00E 0	2.1 :Y		1.7 :Y		2.2 :Y
STRONTIUM	200	1.00E 6 / 342.60E 0	31.5 :Y	70.6 :V	63.5 :Y	99.6 :V	51.1 :Y
TIN	200	1.00E 6 / 0.00E 0	4.3 :Y	3.4 B:V	12.3 :Y	3 B:V	7.4 :Y
Test Group:SMETCLP Units:MG/KG							
ALUMINUM	200	1.00E 6 / 55098.00E 0	6430 :Y	5680 :V	8070 :Y	8040 :V	6600 :Y
ARSENIC	10	7.09E 1 / 21.48E 0	3 :Y	8.6 :V	6.2 :Y	5.5 :V	8.1 :Y
BARIUM	200	1.24E 5 / 389.00E 0	74 :Y	102 :V	116 :Y	137 :V	110 :Y
BERYLLIUM	5	2.89E 1 / 18.80E 0	.45 :Y	.71 B:V	.7 :Y	.67 B:V	2.1 :Y
CALCIUM	5000	0.00E 0 / 67403.00E 0	16200 :Y	2[illegible]40 :V	339[illegible]0 :Y	50700 :V	29500 :Y
CHROMIUM	10	0.00E 0 / 113.80E 0	10.5 :Y	3[illegible]5 :V	15.9 :Y	9.9 :V	11.2 :Y
COBALT	50	1.06E 5 / 48.80E 0	5.9 :Y	8.3 B:V	8[illegible] :Y	7.4 B:V	7.6 :Y

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TABLE 3-33
Borehole Positive Results Table
Tank T-40

Sample Location:			4795	4795	4895	4895	4995
Sample Identification Number:			BHG4869JE	BHG4908JE	BHG4870JE	BHG4911JE	BHG4871JE
Date Sampled:	MDL	PRG / BKGND	21-Feb-95	15-Mar-95	21-Feb-95	14-Mar-95	21-Feb-95
COPPER	25	7.10E 4 / 59.10E 0	13.4 :Y	8 :V	13.7 :Y	12.3 :V	12.9 :Y
IRON	100	0.00E 0 / 63389.00E 0	12100 :Y	16900 :V	12600 :Y	15600 :V	13100 :Y
LEAD	3	0.00E 0 / 30.50E 0	16.1 :Y	6.7 :V	20.8 :Y	7.8 :V	18.4 :Y
MAGNESIUM	5000	0.00E 0 / 14932.00E 0	2240 :Y	2010 :V	2420 :Y	2680 :V	1890 :Y
MANGANESE	15	8.86E 3 / 1505.00E 0	254 :Y	354 :V	313 :Y	351 :JA	259 :Y
MERCURY	0.2	5.32E 2 / 2.81E 0					.096 :Y
NICKEL	40	3.55E 4 / 103.60E 0	7.4 :Y	16.3 :V	14 :Y	13.6 :V	13.7 :Y
POTASSIUM	5000	0.00E 0 / 10781.00E 0	1670 :Y	509 B:V	1250 :Y	954 BI:JA	1380 :Y
SELENIUM	5	8.87E 3 / 4.85E 0	.7 :Y				
SILVER	10	8.87E 3 / 20.00E 0	1.2 :Y	1.5 B:V			
SODIUM	5000	0.00E 0 / 0.00E 0	132 :Y-		132 :Y-	145 B:JA-	87.9 :Y-
VANADIUM	50	1.24E 4 / 138.30E 0	21.7 :Y	22.3 :V	27.5 :Y	30 :V	27.9 :Y
ZINC	20	5.32E 5 / 216.20E 0	78 :Y	30.5 :V	55.1 :Y	25.4 :V	52 :Y
Test Group:TRADS Units:PCI/G							
AMERICIUM-241	0	2.16E 2 / 6.34E-2				.013(.008) :V	
GROSS ALPHA	0	0.00E 0 / 44.56E 0	16.56(4.42) :V	17.85(4.63) :Y	20.98(5.21) :V	13.72(3.99) :V	25.4(5.75) :V
GROSS BETA	0	0.00E 0 / 55.35E 0	34.7(3.73) :V	23.12(2.9) :Y	31.31(3.48) :V	26.09(3.14) :V	33.08(3.61) :V
PLUTONIUM-238	0	E 0 / E 0				.002(.003) J:V-	
PLUTONIUM-239/240	0	3.01E 2 / 13.21E-2				.033(.013) :V	
URANIUM-233,-234	0	4.18E 3 / 17.69E-1	1.052(.151) :V	1.286(.183) :Y	2.774(.35) :V#	.83(.134) :V	1.51(.208) :V
URANIUM-235	0	1.73E 1 / 19.83E-2	.063(.023) :V	.067(.025) :Y	.145(.037) :V	.038(.02) :V	.09(.029) :V
URANIUM-238	0	7.98E 1 / 19.12E-1	.953(.139) :V	1.394(.196) :Y	1.459(.197) :V	.938(.148) :V	1.317(.185) :V
Test Group:VOACLP Units:UG/KG							
2-BUTANONE	0	1.00E 9 / 0.00E 0		7 J:Y			
ACETONE	10	1.77E 8 / 0.00E 0		45 B:Y		20 B:Y	
ETHYLBENZENE	0	1.51E 8 / 0.00E 0					
METHYLENE CHLORIDE	5	1.66E 7 / 0.00E 0	1 J:A	4 J:Y	6 J:A	2 J:Y	2 J:A
TETRACHLOROETHENE	5	2.22E 6 / 0.00E 0					
TOTAL XYLENES	5	0.00E 0 / 0.00E 0					

TABLE 3-33
Borehole Positive Results Table
Tank T-40

Sample Location:	4995	5095	5098
Sample Identification Number:	BHG4915JE	BHG4872JE	BHG4918JE
Date Sampled:	15-Mar-95	21-Feb-95	16-Mar-95
Test Group:BNACLP Units:UG/KG	9.1-10.5	0.0-0.5	8.0-11.0
2-METHYLNAPHTHALENE			730 :V-
ACENAPHTHENE		51 J:A	
ANTHRACENE		46 J:A	
BENZO(a)ANTHRACENE		230 J:A	
BENZO(a)PYRENE		230 J:A	
BENZO(b)FLUORANTHENE		420 X:V	
BENZO(ghi)PERYLENE		230 J:A-	
BENZO(k)FLUORANTHENE		[illegible]	
CARBAZOLE			
CHRYSENE		270 J:A	
DIBENZOFURAN			87 J:A-
DIETHYL PHTHALATE			
FLUORANTHENE		530 :V	
FLUORENE			
INDENO(1,2,3-cd)PYRENE		100 J:A	
NAPHTHALENE			340 J:A
PHENANTHRENE		320 J:A-	72 J:A-
PYRENE		520 :V	
Test Group:METADD Units:MG/KG			
CESIUM	9.7 B:V	6.4 :Y	7.2 B:V
LITHIUM	6.5 B:V	5.7 :Y	5.5 B:V
MOLYBDENUM		1.6 :Y	
STRONTIUM	129 :V	48.2 :Y	78.4 :V
TIN	3.5 B:JA	5.9 :Y	4.2 B:JA
Test Group:SMETCLP Units:MG/KG			
ALUMINUM	8410 :V	6900 :Y	8670 :V
ARSENIC	6.6 :V	3.5 :Y	11.6 :V
BARIUM	143 :V	88.8 :Y	174 :V
BERYLLIUM	.64 B:V	.5 :Y	.99 B:V
CALCIUM	61000 :V	28700 :Y	26400 :V
CHROMIUM	11.6 :JA	11.2 :Y	12.6 :JA
COBALT	8.3 B:V	6 :Y	15.2 :V

TABLE 3-33
Borehole Positive Results Table
Tank T-40

Sample Location:	4995	5096	5095
Sample Identification Number:	BHG4915JE	BHG4[illegible]72JE	BHG49[illegible]JE
Date Sampled:	15-Mar-95	21-Feb-95	16-Mar-95
COPPER	13.5 :JA	14.7 :Y	20.4 :\
IRON	14600 :V	10700 :Y	23100 :V
LEAD	10.3 :JA		12.3 :JA
MAGNESIUM	3420 :V	2270 :Y	3020 :V
MANGANESE	401 :V	200 :Y	571 :V
MERCURY			
NICKEL	14.2 :V	9.8 :Y	27.5 :V
POTASSIUM	1040 B:V	1730 :Y	1030 B:V
SELENIUM			
SILVER			1.4 B:V
SODIUM	140 B:V-	127 :Y-	116 B:V-
VANADIUM	32.4 :V	22.4 :Y	52.2 :V
ZINC	32.4 :JA	79.2 :Y	57 :V
Test Group:TRADS Units:PCI/G			
AMERICIUM-241			
GROSS ALPHA	14.62(4.26) :Y	28.13(6.12) :V	10.27(3.4) :Y
GROSS BETA	26.21(3.14) :Y	31.01(3.49) :V	26.26(3.15) :Y
PLUTONIUM-238			
PLUTONIUM-239/240			
URANIUM-233,-234	.976(.143) :Y	5.118(.629) :V#	.777(.117) :Y
URANIUM-235	.039(.018) :Y	.186(.043) :V	.045(.019) :Y
URANIUM-238	.856(.129) :Y	1.356(.188) :V	.911(.133) :Y
Test Group:VOACLP Units:UG/KG			
2-BUTANONE			
ACETONE	91 B:Y		21 B:Y
ETHYLBENZENE	28 J:Y		
METHYLENE CHLORIDE	13 J:Y		6 J:Y
TETRACHLOROETHENE	33 J:Y		1 J:Y
TOTAL XYLENES	180 :Y-		

TABLE 3-34
Groundwater Positive Results Table
Tank T-40

Sample Location:			4795	4896	4995
Sample Identification Number:			GWG1705JE	GWG1706JE	GWG1707JE
Date Sampled:	MDL	PRG / BKGND	16-Mar-95	16-Mar-95	16-Mar-95
Test Group:METADD Units:UG/L					
LITHIUM	100	7.30E 2 / 7.52E 1	10.8 B:V		5.6 B:V
SILICON	500	0.00E 0 / 567.77E 2	1490 :JA		
STRONTIUM	200	2.19E 4 / 2.45E 2	565 :V		315 :V#
Test Group:SMETCLP Units:UG/L					
ALUMINUM	200	1.06E 5 / 192.24E 2	9950 :V		877 :V
ARSENIC	10	4.86E-2 / 7.43E 0	5 B:JA*		
BARIUM	200	2.56E 3 / 2.08E 2	367 :V#		38.8 B:V
BERYLLIUM	5	1.98E-2 / 0.00E 0	.86 B:V*		
CALCIUM	5000	0.00E 0 / 932.89E 2	124000 :V#		
CHROMIUM	10	0.00E 0 / 3.10E 1	13.8 :V		2.2 B:V
COPPER	25	1.46E 3 / 5.35E 1	13.1 B:V		9.4 B:V
IRON	100	0.00E 0 / 223.89E 2	13400 :V		
LEAD	3	0.00E 0 / 1.56E 1	5.9 :V		1.6 B:V
MAGNESIUM	5000	0.00E 0 / 114.75E 2	16000 :V#		
MANGANESE	15	1.82E 2 / 1.37E 2	2570 :V*#		46.8 :V
MERCURY	0.2	1.09E 1 / 2.60E-1	.26 :JA#		.24 :JA
NICKEL	40	7.30E 2 / 4.77E 1	12.4 B:V		8.5 B:V
POTASSIUM	5000	0.00E 0 / 51.99E 2	1750 B:V		
SODIUM	5000	0.00E 0 / 138.65E 2	27200 :V#		
VANADIUM	50	2.56E 2 / 4.90E 1	29 B:V		16.5 B:V
ZINC	20	1.09E 4 / 2.45E 2	30.3 :V		246 :V#
Test Group:TRADS Units:PCI/L					
GROSS ALPHA	0	0.00E 0 / 44.56E 0	23(4) :Y		34(6) :Y
GROSS BETA	0	0.00E 0 / 55.35E 0	18(3) :Y		39(6) :Y
RADIUM-226	0	3.97E-1 / 15.87E-1	1.2(.5) :Y*		1(.5) :Y*
URANIUM-233,-234	0	2.98E 0 / 17.69E-1	1.15(.06) :Y		1.22(.07) :Y
URANIUM-235	0	2.98E 0 / 19.83E-2	.1(.02) :Y		.05(.01) :Y
URANIUM-238	0	2.98E 0 / 19.12E-1	.96(.06) :Y		.8(.05) :Y
Test Group:VOACLP Units:UG/L					
1,1,1-TRICHLOROETHANE	0	0.00E 0 / 0.00E 0	3 BJ:Y-		

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TABLE 3-34
Groundwater Positive Results Table
Tank T-40

Sample Location:			4795	4295	4995
Sample Identification Number:			GWG1705JE	GWG1706JE	GWG1707JE
Date Sampled:	MDL	PRG / BKGND	16-Mar-95	16-Mar-95	16-Mar-95
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0	1 J:Y-	4 J:Y-	
1,2-DICHLOROPROPANE	0	1.25E 0 / 0.00E 0		1 J:Y	
ACETONE	10	3.65E 3 / 0.00E 0	17 :Y	17 :Y	12 :Y
ETHYLBENZENE	0	1.58E 3 / 0.00E 0		8 :Y	6 J:Y
TETRACHLOROETHENE	5	1.43E 0 / 0.00E 0	2 J:Y*	1 J:Y	4 J:Y*
TOLUENE	5	9.65E 2 / 0.00E 0		11 :Y	4 J:Y
TOTAL XYLENES	5	0.00E 0 / 0.00E 0		100 :Y-	44 :Y-
TRICHLOROETHENE	0	2.55E 0 / 0.00E 0		3 J:Y*	
VINYL CHLORIDE	0	2.81E-2 / 0.00E 0	2 J:Y*		
Test Group:WQPL Units:MG/L					
CHLORIDE	0	0.00E 0 / 0.00E 0	50.6 :V-	38 :V-	55.6 :V-
FLUORIDE	0	2.19E 0 / 0.00E 0	.82 :V	1.41 :V	1.27 :V
NITRATE	0	5.84E 1 / 0.00E 0	7.91 :JA	3.08 :JA	
NITRITE	0	3.65E 0 / 0.00E 0	.083 :JA	.421 :JA	.966 :JA
SULFATE	0	0.00E 0 / 0.00E 0	17.6 :V-	26.8 :V-	33.5 :V-
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	5.56 :V-		3.96 :V-
Test Group:WQPL-SCOND Units:UMHOS/CM					
SPECIFIC CONDUCTIVITY	0	E 0 / E 0	648 :V-	353 :V-	415 :V-

TABLE 3-35
Tank Liquid Positive Results Table
Tank T-40

Sample Location:			T-40
Sample Identification Number:			TNG0001JE
Date Sampled:	MDL	PRG / BKGND	1-Mar-95
Test Group:BNACLP Units:UG/L			
BIS(2-ETHYLHEXYL)PHTHALATE	330	0.00E 0 / 0.00E 0	1 J:Y
Test Group:METADD Units:UG/L			
LITHIUM	100	0.00E 0 / 0.00E 0	121 :V
MOLYBDENUM	200	0.00E 0 / 0.00E 0	53.6 B:V
SILICON	500	0.00E 0 / 0.00E 0	9070 :JA
STRONTIUM	200	0.00E 0 / 0.00E 0	153 B:V
Test Group:SMETCLP Units:UG/L			
BARIUM	200	0.00E 0 / 0.00E 0	22.5 B:V
CALCIUM	5000	0.00E 0 / 0.00E 0	42400 :JA
COBALT	50	0.00E 0 / 0.00E 0	2.3 B:V
IRON	100	0.00E 0 / 0.00E 0	121 :V
MAGNESIUM	5000	0.00E 0 / 0.00E 0	20700 :V
MANGANESE	15	0.00E 0 / 0.00E 0	11.2 B:V
MERCURY	0.2	0.00E 0 / 0.00E 0	.42 :JA
NICKEL	40	0.00E 0 / 0.00E 0	81.2 :V
POTASSIUM	5000	0.00E 0 / 0.00E 0	131000 :V
SODIUM	5000	0.00E 0 / 0.00E 0	56000 :V
THALLIUM	10	0.00E 0 / 0.00E 0	2.5 B:V
VANADIUM	50	0.00E 0 / 0.00E 0	.7 B:V
ZINC	20	0.00E 0 / 0.00E 0	42 :V
Test Group:TRADS Units:PCI/L			
URANIUM-233,-234	0	0.00E 0 / 0.00E 0	360(1.8) :Y
URANIUM-235	0	0.00E 0 / 0.00E 0	12.7(.35) :Y
URANIUM-238	0	0.00E 0 / 0.00E 0	48.9(.68) :Y
Test Group:VOACLP Units:UG/L			
1,2-DICHLOROETHENE	5	0.00E 0 / 0.00E 0	3 J:Y
1,2-DICHLOROPROPANE	0	0.00E 0 / 0.00E 0	80 J:Y
ACETONE	10	0.00E 0 / 0.00E 0	170 B:Y
TETRACHLOROETHENE	5	0.00E 0 / 0.00E 0	900 :Y
TOLUENE	5	0.00E 0 / 0.00E 0	2 .Y

TABLE 3-35
Tank Liquid Positive Results Table
Tank T-40

Sample Location:			T-40
Sample Identification Number:			TNG0001JE
Date Sampled:	MDL	PRG / BKGND	1-Mar-95
TRICHLOROETHENE	0	0.00E 0 / 0.00E 0	610 :Y
Test Group:WQPL Units:MG/L			
CHLORIDE	0	0.00E 0 / 0.00E 0	41.5 :V
FLUORIDE	0	0.00E 0 / 0.00E 0	8.06 :V
SULFATE	0	0.00E 0 / 0.00E 0	31.6 :V
TOTAL ORGANIC CARBON	50	0.00E 0 / 0.00E 0	43.2 :V
Test Group:WQPL-SCOND Units:UMHOS/CM			
SPECIFIC CONDUCTIVITY	0	E 0 / E 0	1550 :V

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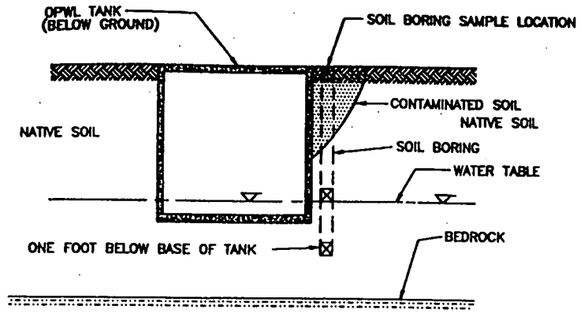
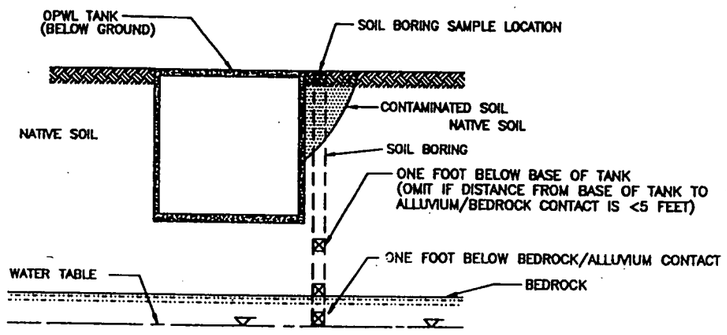
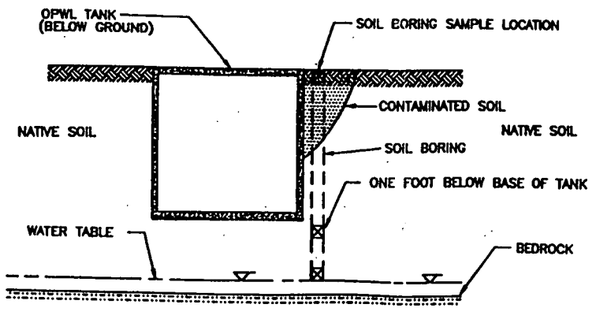


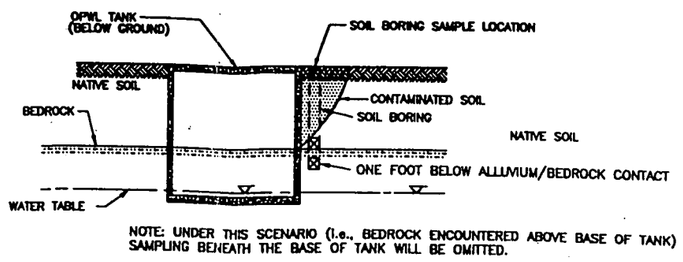
EXAMPLE 1 – WATER TABLE ABOVE BASE OF TANK



EXAMPLE 2 – WATER TABLE WITHIN BEDROCK

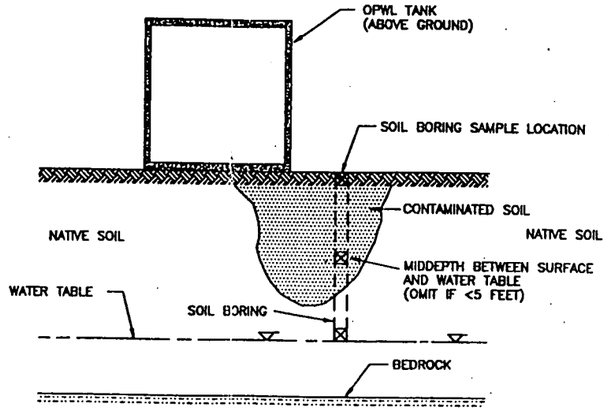


EXAMPLE 3 – WATER TABLE ABOVE BEDROCK, BUT BELOW BASE OF TANK

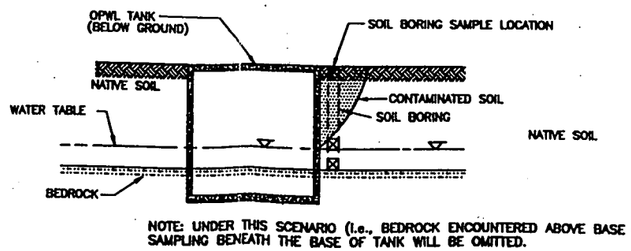


NOTE: UNDER THIS SCENARIO (i.e., BEDROCK ENCOUNTERED ABOVE BASE OF TANK) SAMPLING BENEATH THE BASE OF TANK WILL BE OMITTED.

EXAMPLE 4 – WATER TABLE WITHIN BEDROCK AND TANK "KEYED" INTO BEDROCK



EXAMPLE 5 – WATER TABLE ABOVE BEDROCK AND ABOVE GROUND OPWL TANK



NOTE: UNDER THIS SCENARIO (i.e., BEDROCK ENCOUNTERED ABOVE BASE OF TANK) SAMPLING BENEATH THE BASE OF TANK WILL BE OMITTED.

EXAMPLE 6 – WATER TABLE ABOVE BEDROCK AND TANK "KEYED" INTO BEDROCK

NOT TO SCALE

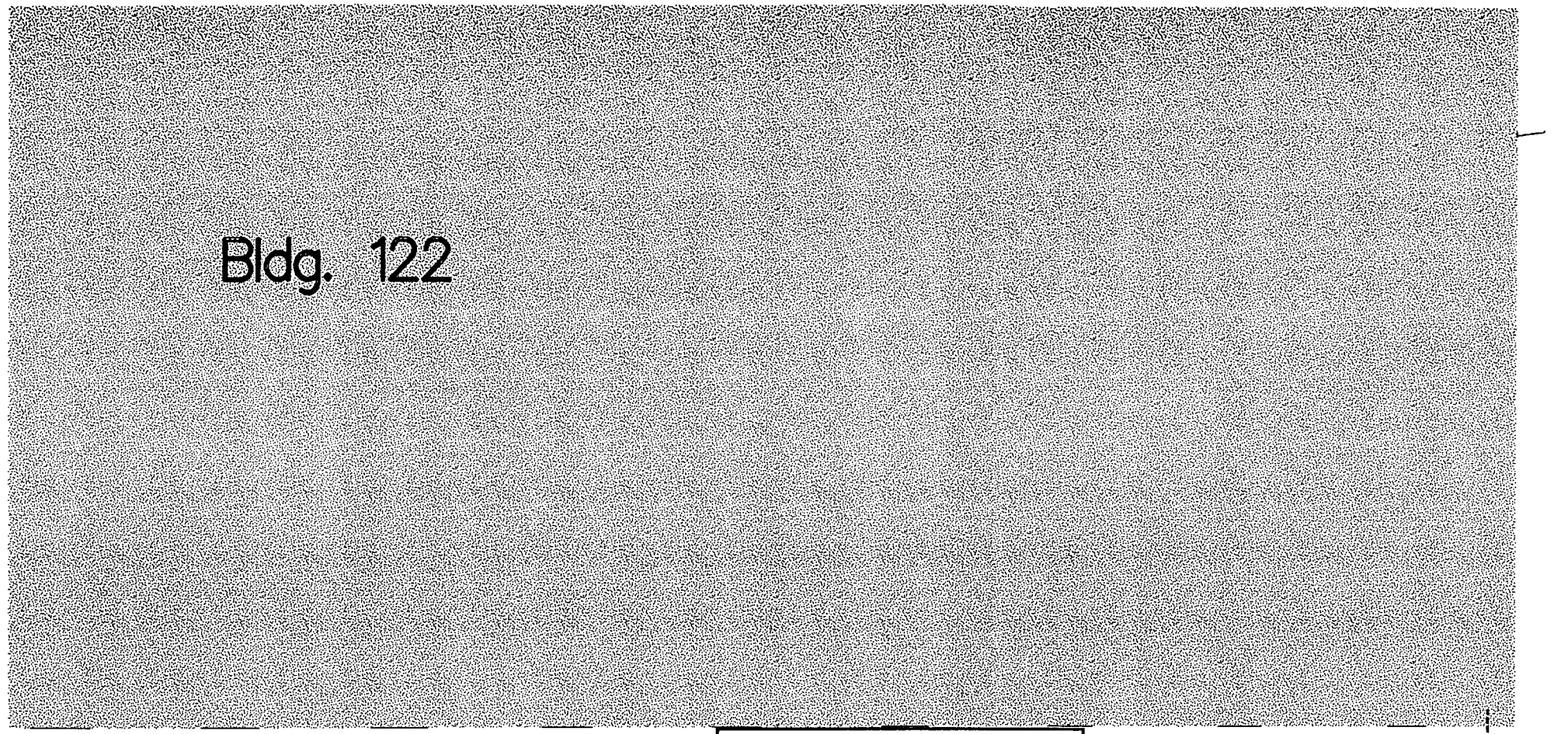
NOTE: IF TANK HAS BEEN REMOVED, THE SOIL BORING WILL BE PLACED APPROX–IMATELY IN THE CENTER OF THE ORIGINAL TANK LOCATION.

Figure 3–1

OU 9

BOREHOLE DRILLING SAMPLING RATIONALE

PROJ. MGR.	ACAD FILE NO.	FIGURE NO.
J. ZIMMERMAN	SAMPRAT	FIGURE 3–1
DRAWN BY	PROJ. NO.	DATE
E. DETMER	05–H–60800	7/25/95



Location Map

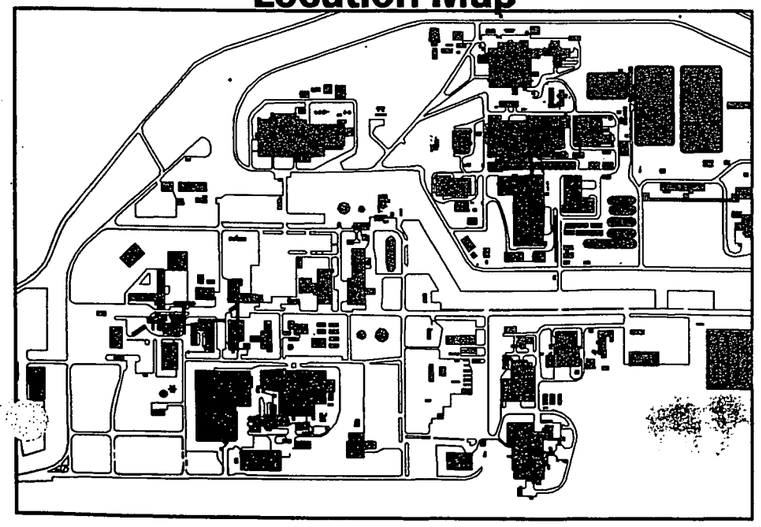


Figure 3-2

Tank T-1
Borehole and Groundwater Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 50 FEET
APPROXIMATE

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GWG1702JE
AL 124,000 @
AM-241 0.407 @
AS 47.6 @
BA 667 #
BE 7.5 •
CO 46.8 #
CR 156 #
CU 133 #
FE 141,000 #
K 18,400 #
MANG 1,240 @
MG 22,900 #
NA 17,800 #
NI 110 #
PB 99.4 #
PU 2.104 @
RA-226 1.1 •
SE 4.1 #
SR 380 #
V 269 @
ZN 530 #

(4-4.9')
BHG4906JE
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PU 0.747 #
GWG1704JE
AL 23,500 #
AM-241 11.9 @
AS 10.4 @
BE 1 •
GA 1,900 #
GB 1,500 #
K 6,360 #
MANG 584 @
PB 19.3 #
PU 140 @
RA-226 150 @
U-2334 42.99 @
U-235 1.84 #
U-238 41.86 @

Figure 3-3

Tank T-1
Analytical Results for Borehole and Groundwater Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- • Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 50 FEET
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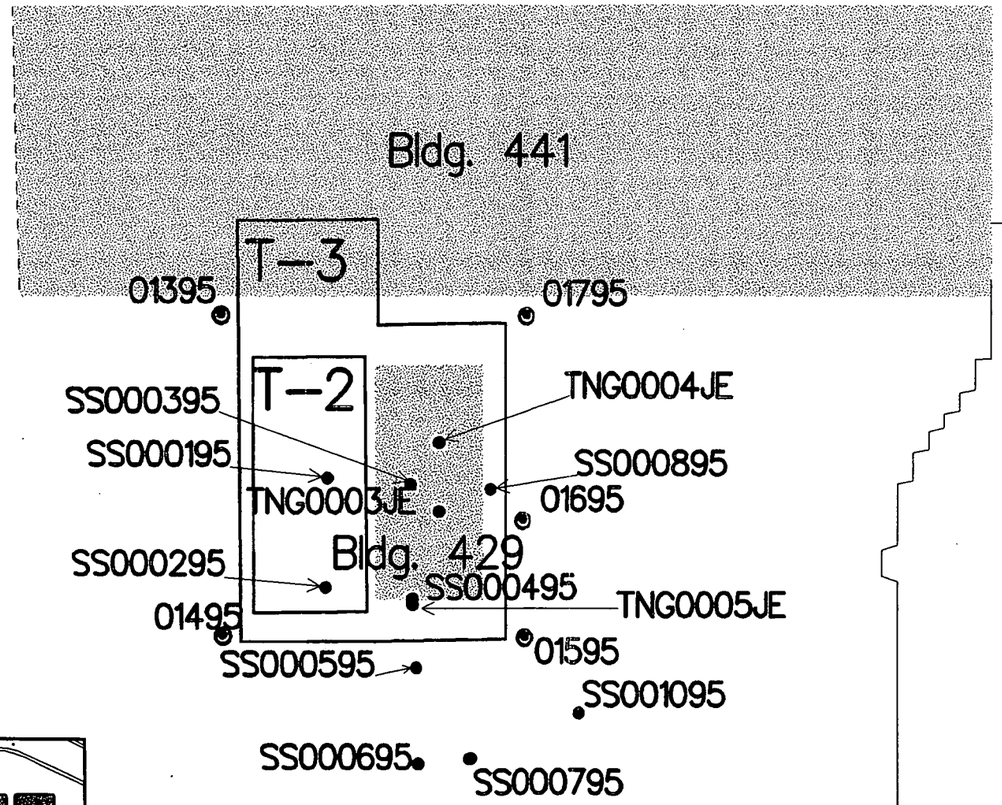

Location Map

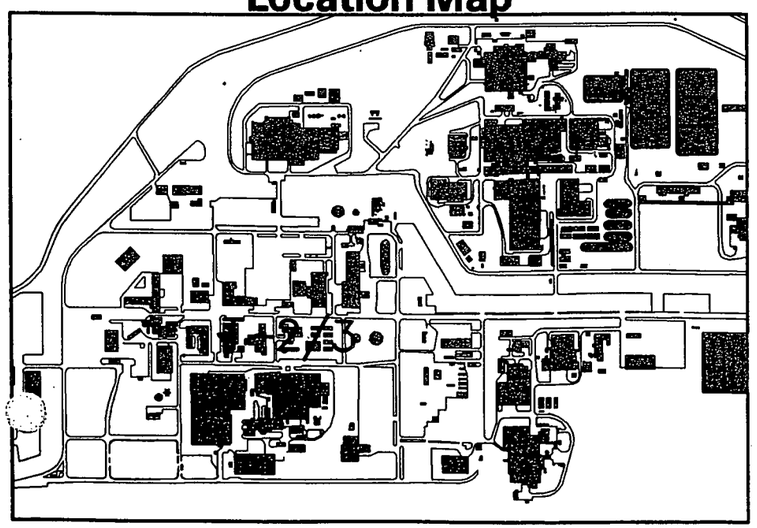

Figure 3-4

Tank Group T-2 and T-3 Borehole, Groundwater, Surface Soil, and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 65 FEET
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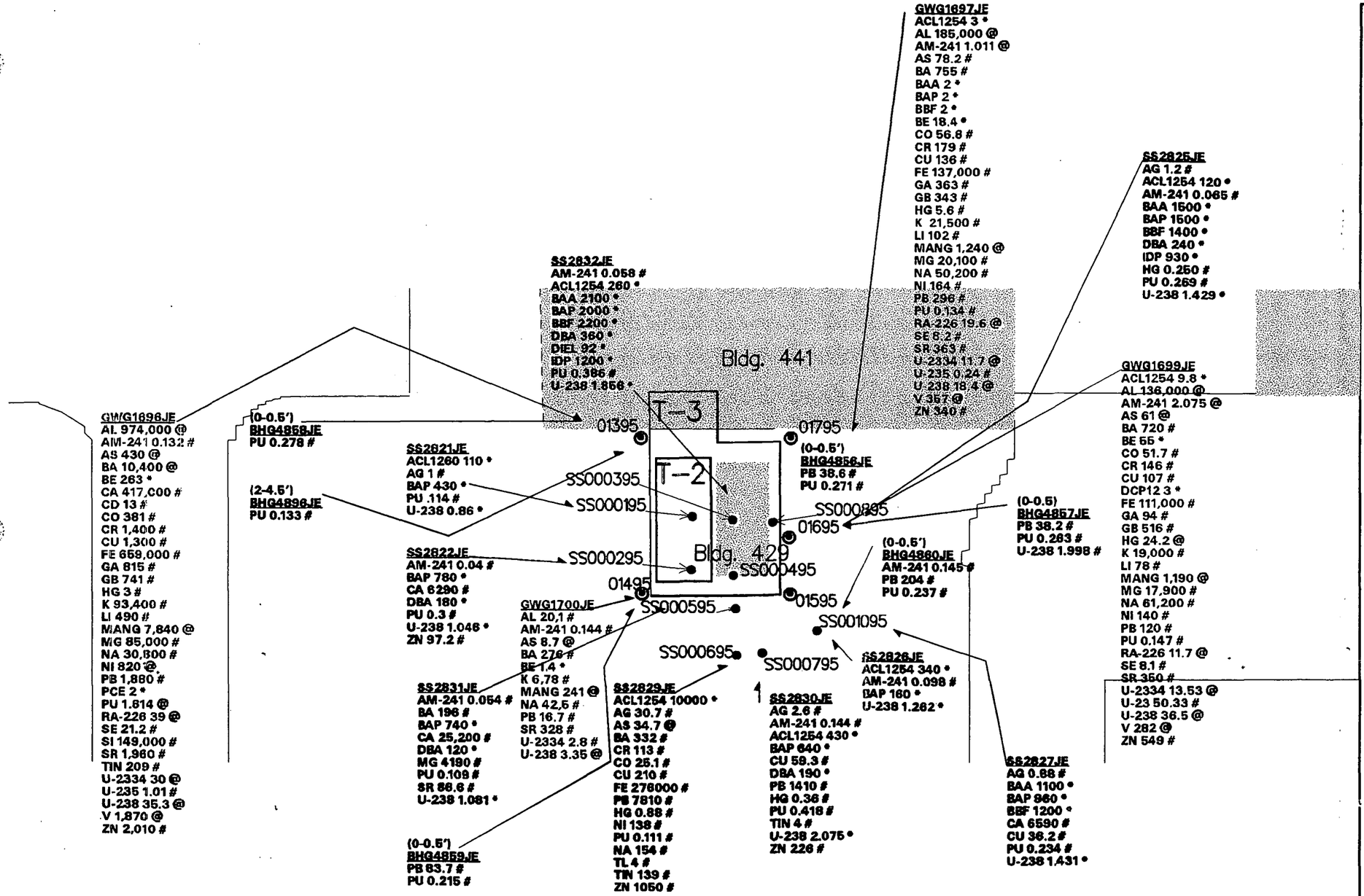

Figure 3-5

Tank Group T-2 and T-3 Analytical Results for Borehole, Groundwater, and Surface Soil Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- • Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 100 FEET

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Location Map

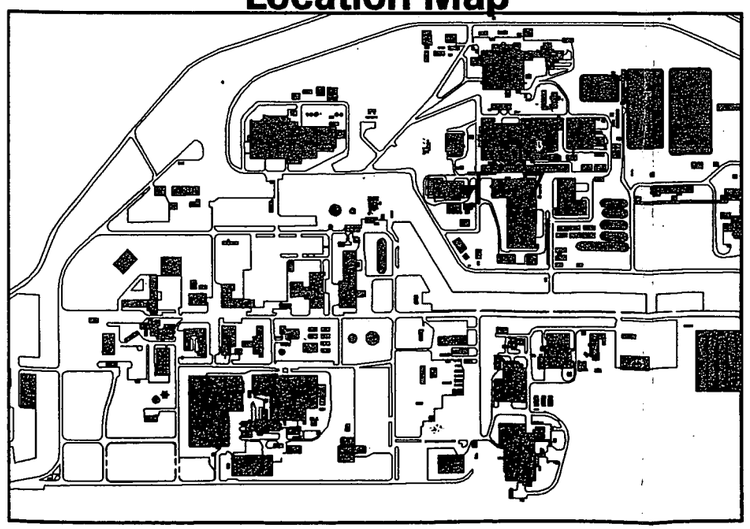

Figure 3-6

Tank T-7
Borehole and Groundwater Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 76 FEET
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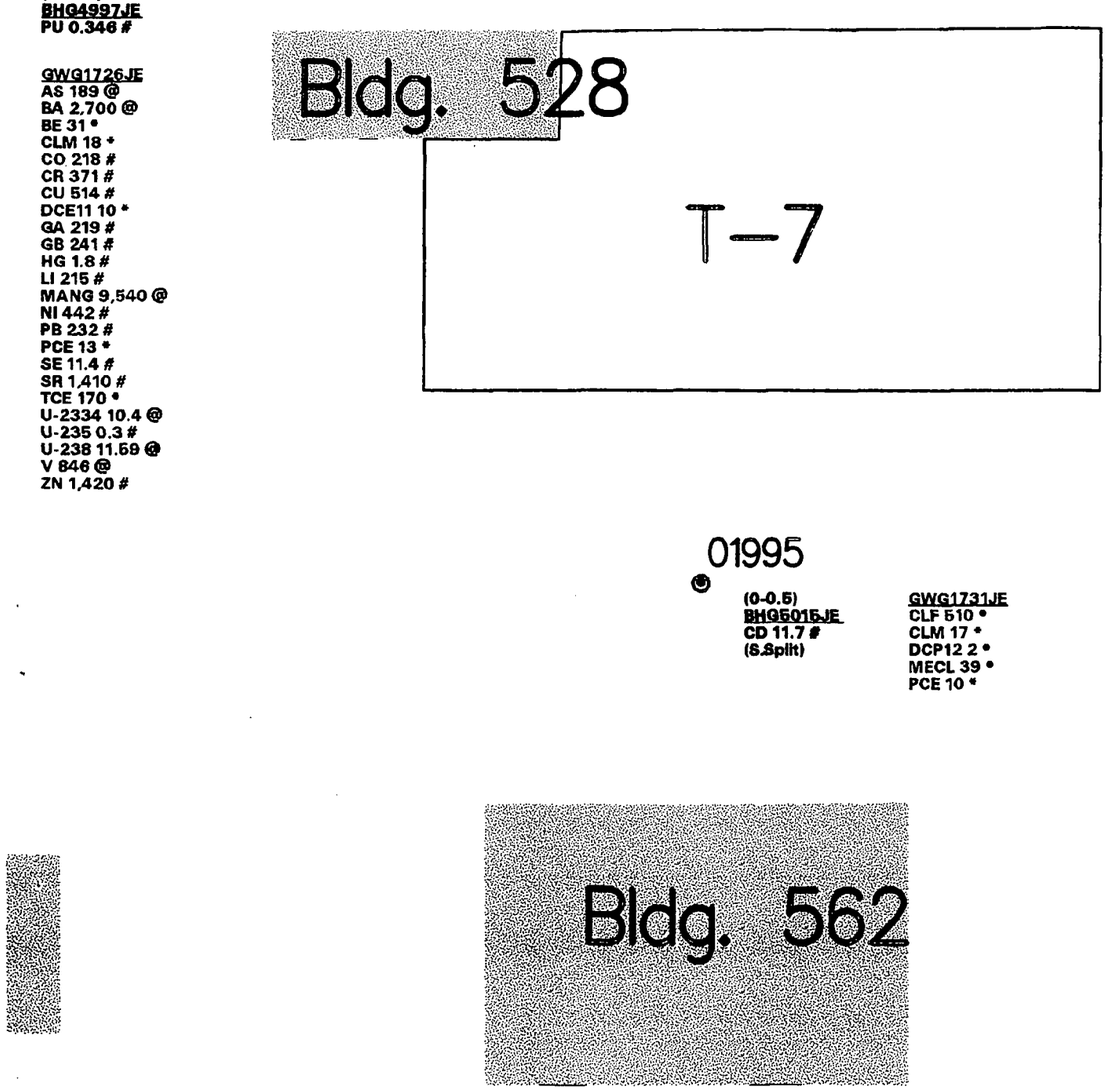

Figure 3-7

Tank T-7
Analytical Results for Borehole and Groundwater Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

* Positive detection above PRG
\# Positive detection above background
@ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 76 FEET
APPROXIMATE

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Location Map

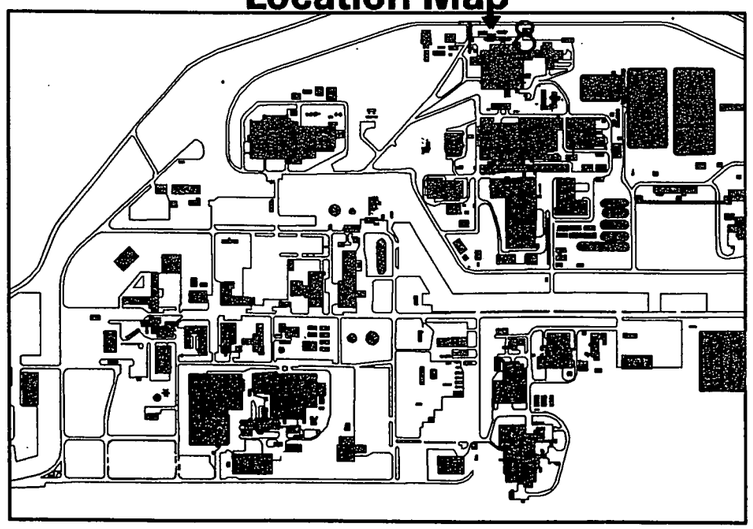

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Figure 3-8

Tank T-8
Borehole and Tank
Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 100 FEET
APPROXIMATE

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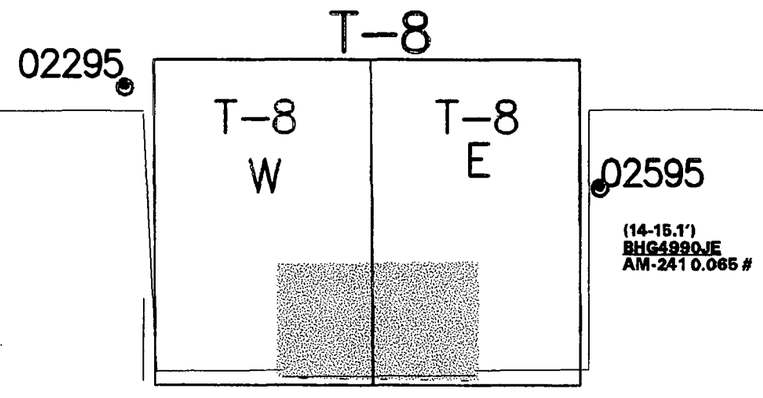

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Figure 3-9

Tank T-8
Analytical Results for
Borehole Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- * Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 100 FEET
APPROXIMATE

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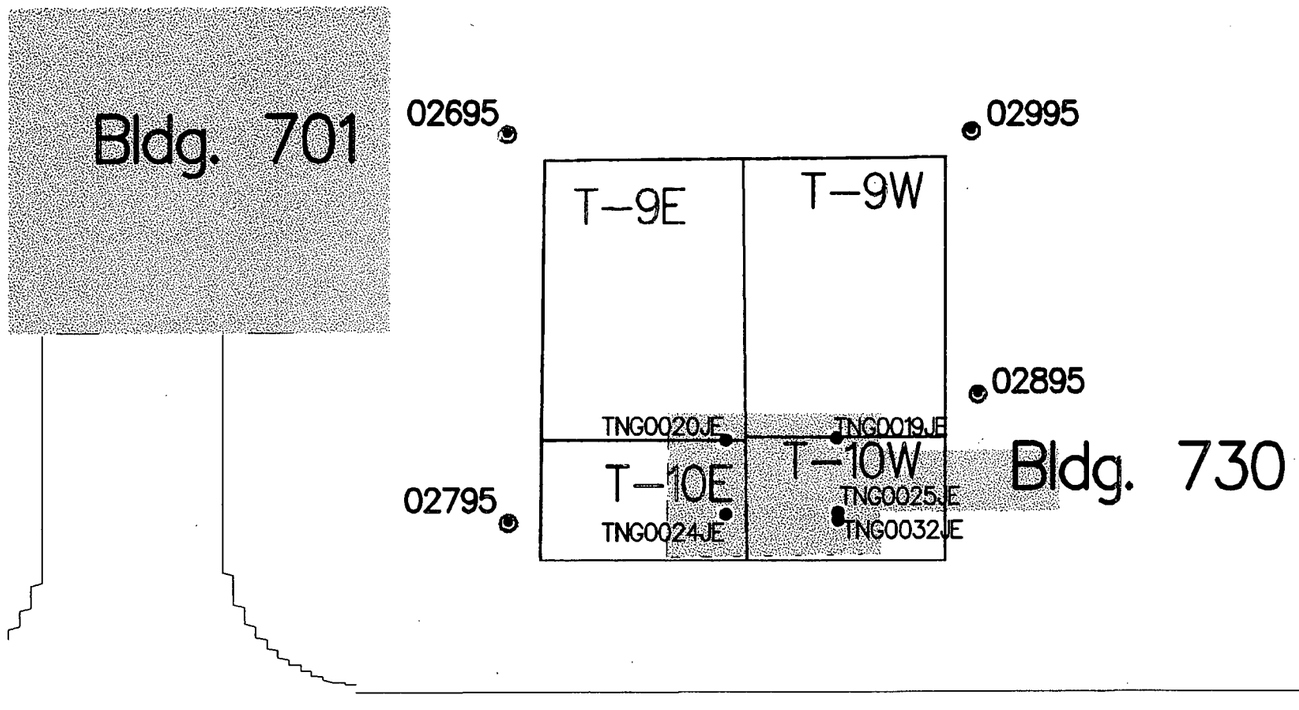

Location Map

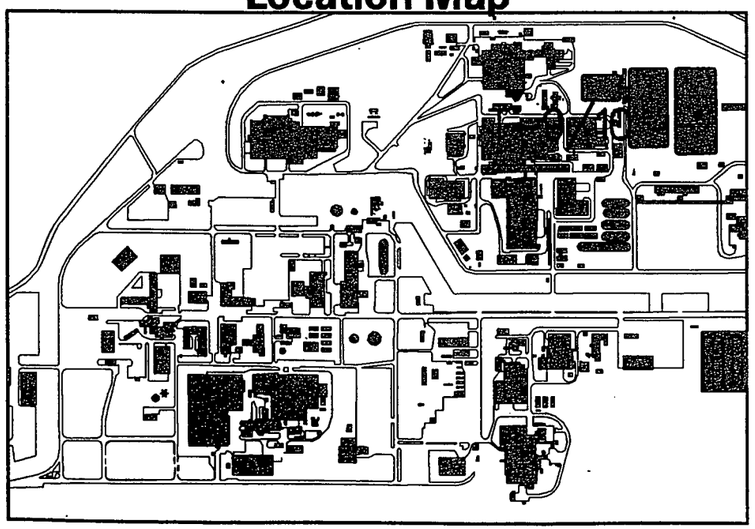

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Figure 3-10

Tank Group T-9 and T-10 Borehole, Groundwater, and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 116 FEET
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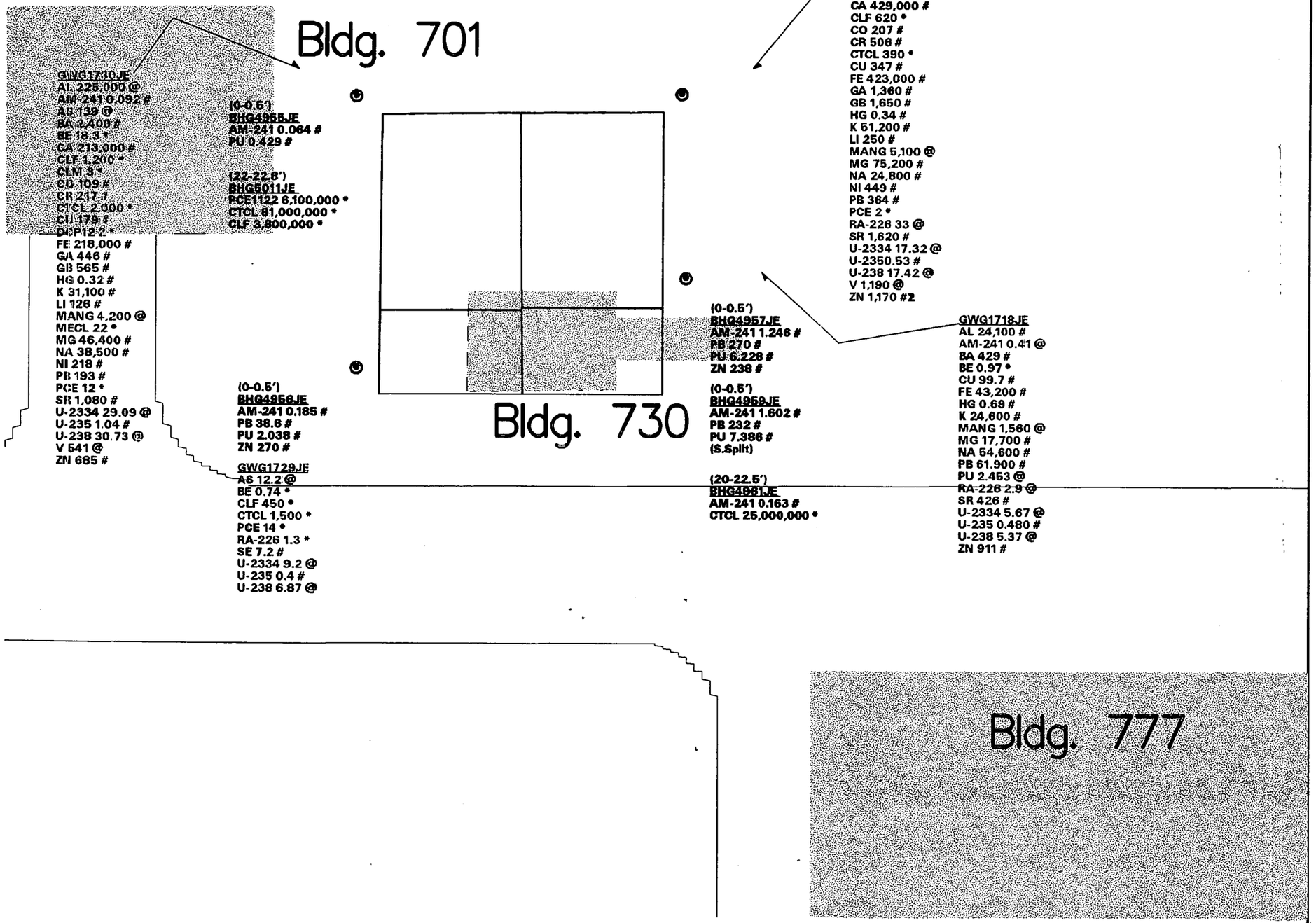

Figure 3-11

Tank Group T-9 and T-10 Analytical Results for Borehole and Groundwater Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- * Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 116 FEET
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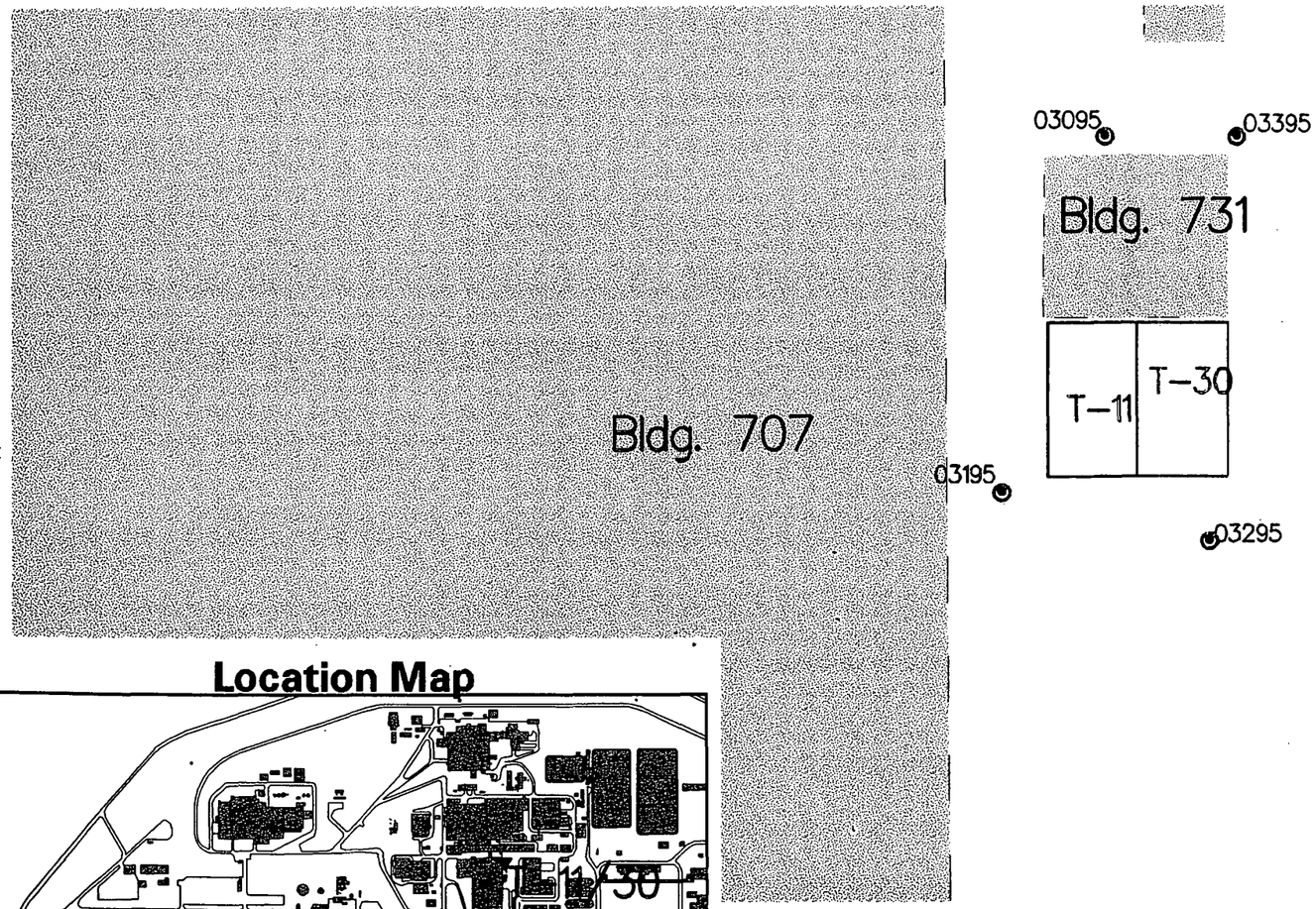

Location Map

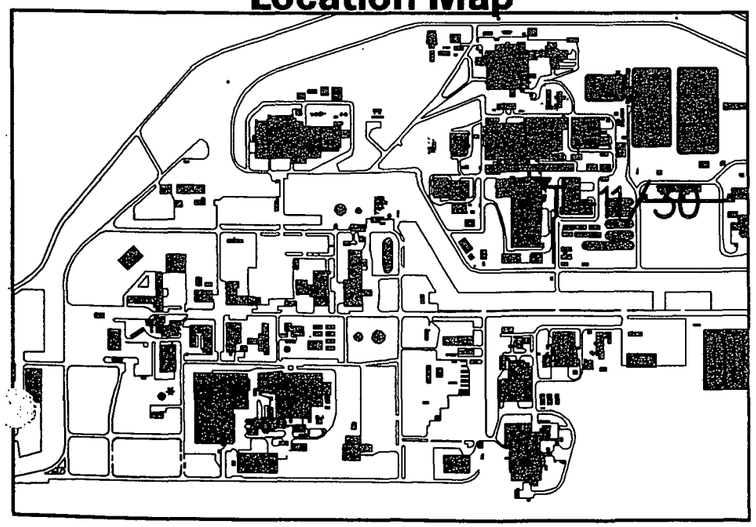

Figure 3-12

Tank Group T-11 and T-30 Borehole, and Groundwater Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 125 FEET
APPROXIMATE

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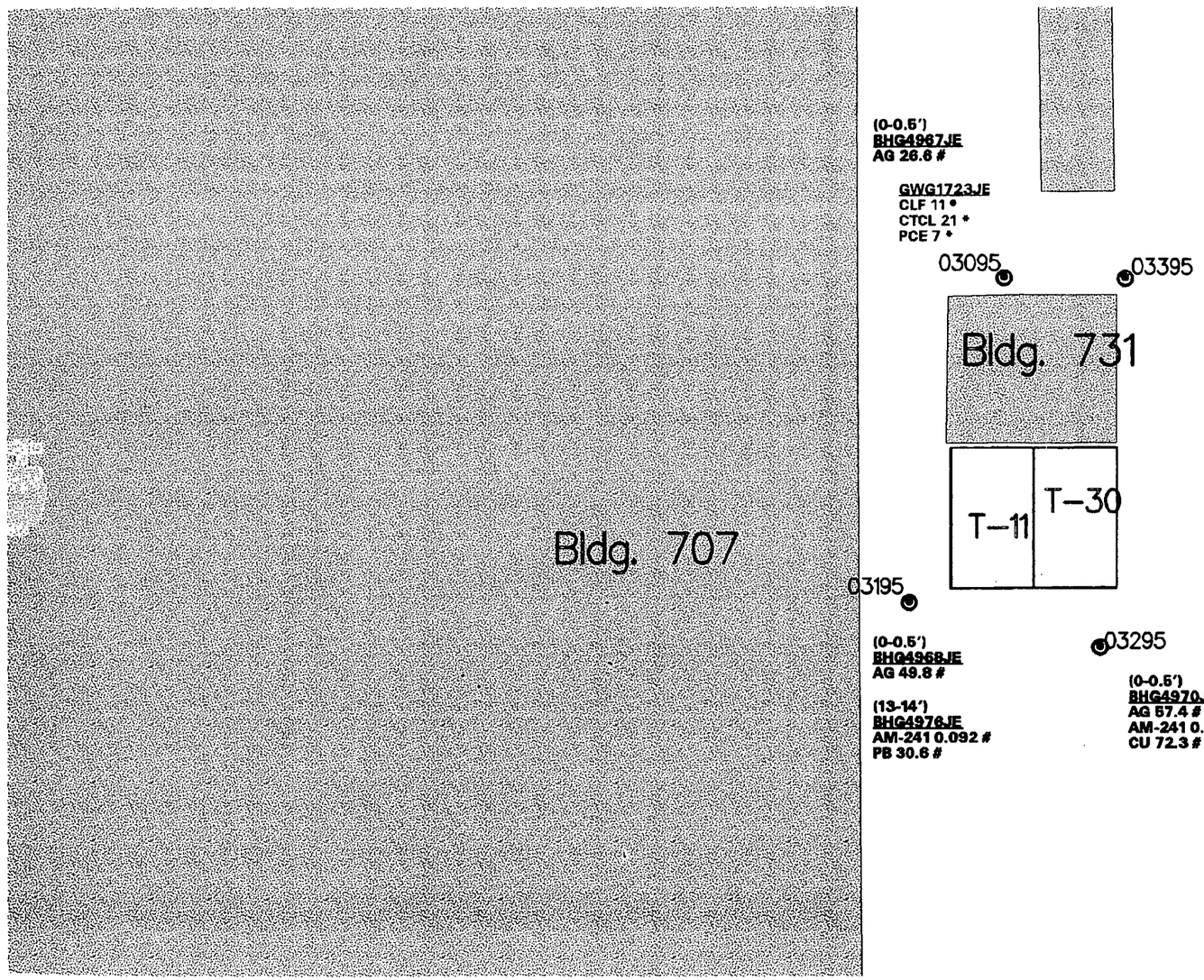

Figure 3-13

Tank Group T-11 and T-30 Analytical Results for Borehole and Groundwater Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- • Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 125 FEET

APPROXIMATE

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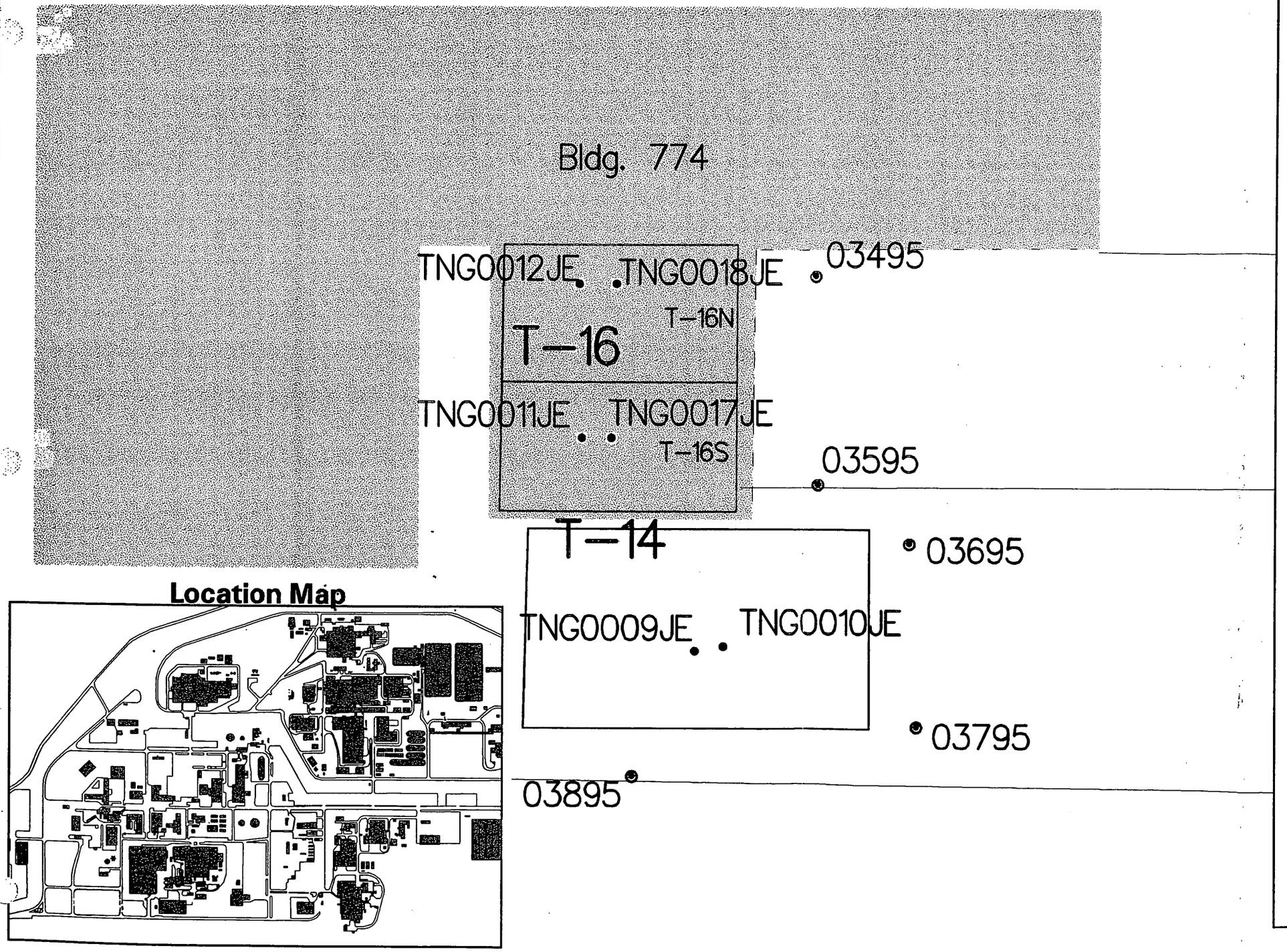

Location Map

Figure 3-14

Tank Group T-14 and T-16 Borehole and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 75 FEET
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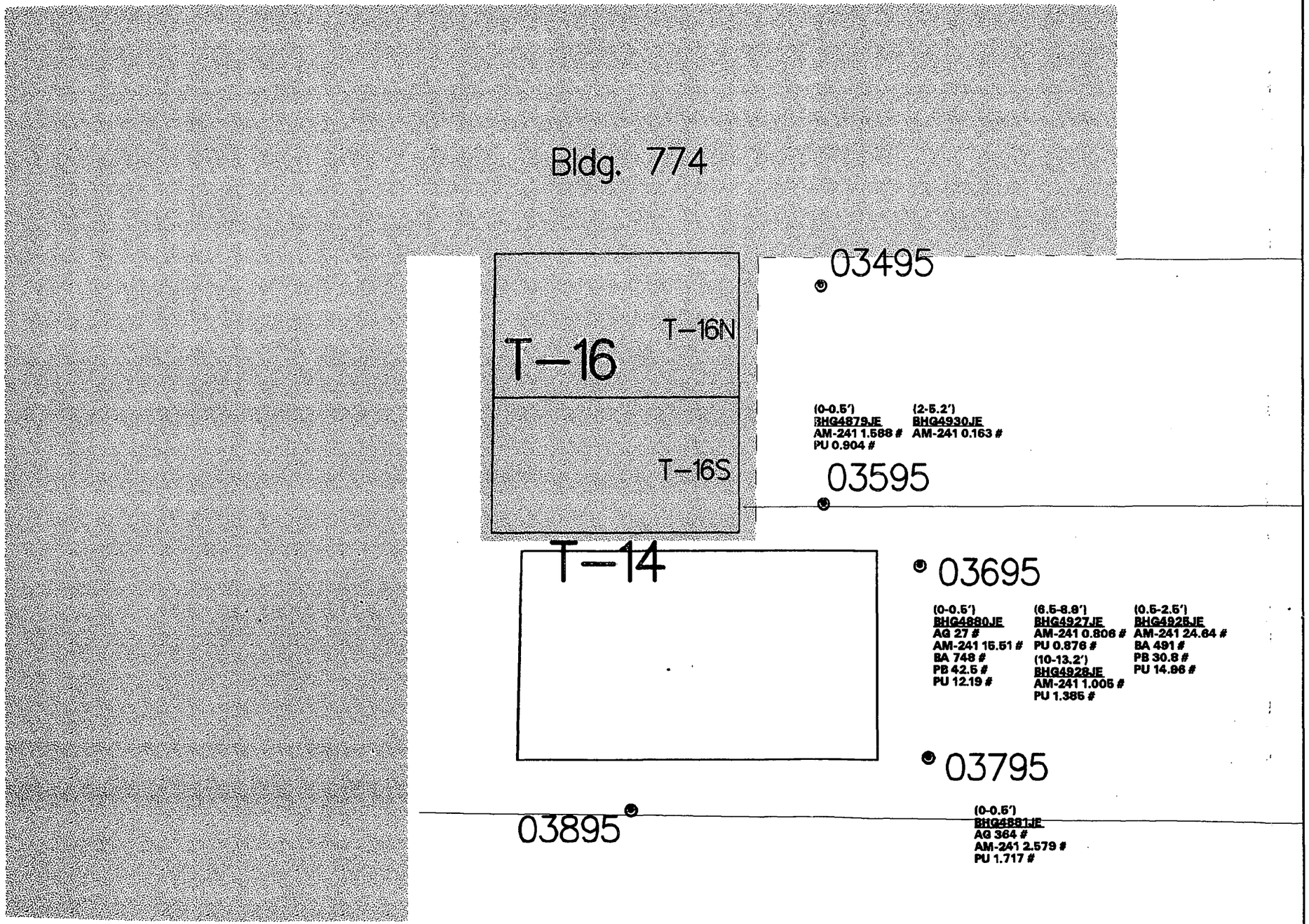

Figure 3-15

Tank Group T-14 and T-16 Analytical Results for Borehole Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

* Positive detection above PRG
\# Positive detection above background
@ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 75 FEET
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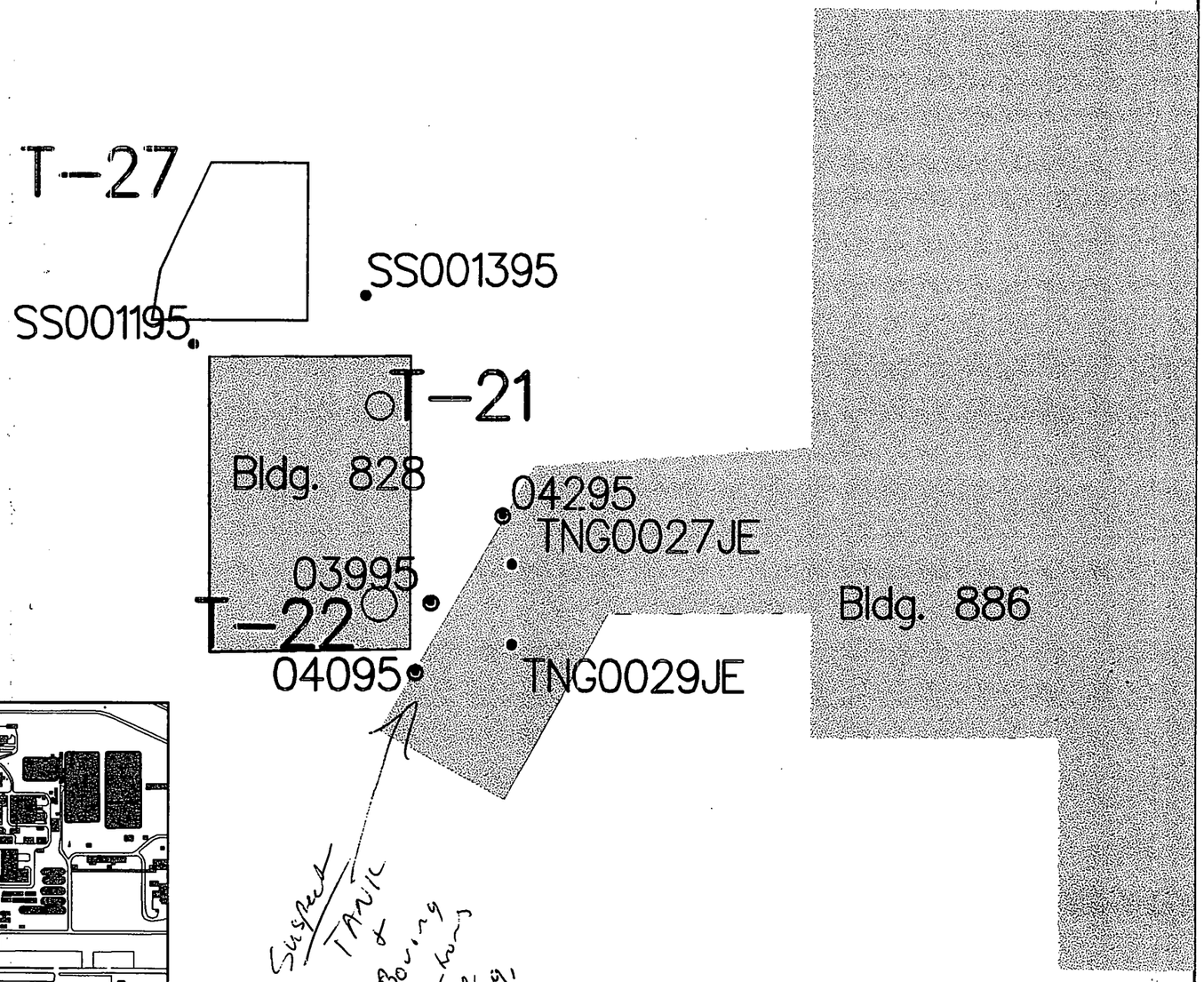

Location Map

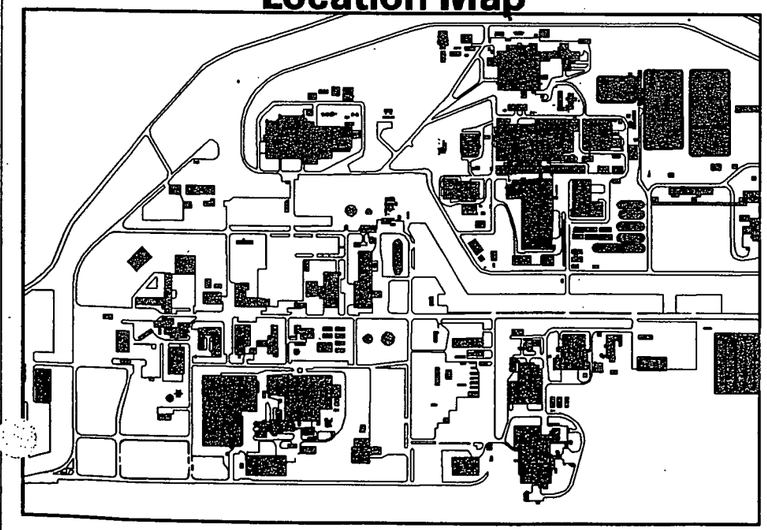

Figure 3-16

Tank Group T-21, T-22, and T-27 Borehole, Surface Soil and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = ~~62~~ 6.2 FEET
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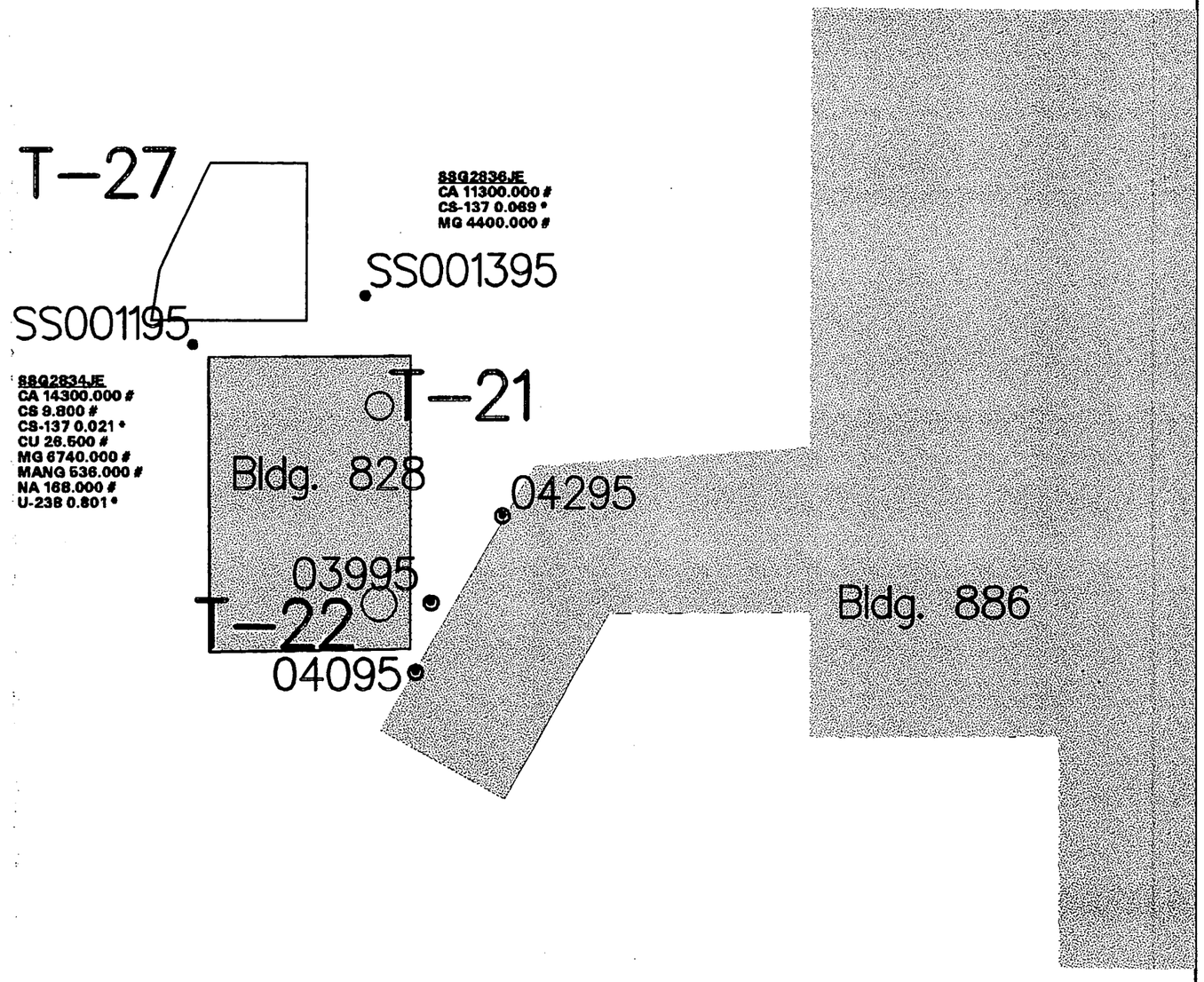

Figure 3-17

Tank Group T-21, T-22, and T-27 Analytical Results for Surface Soil Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- * Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = ~~62~~ 6.2 FEET

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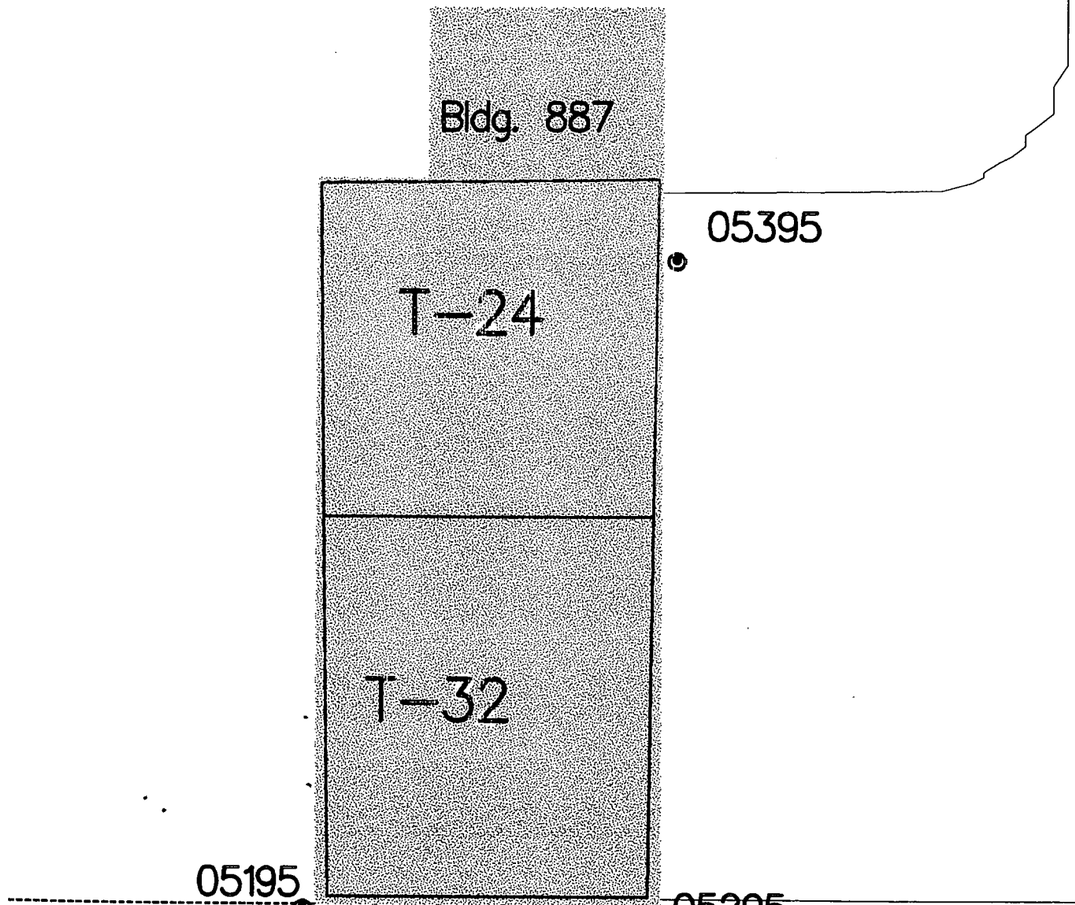

Location Map

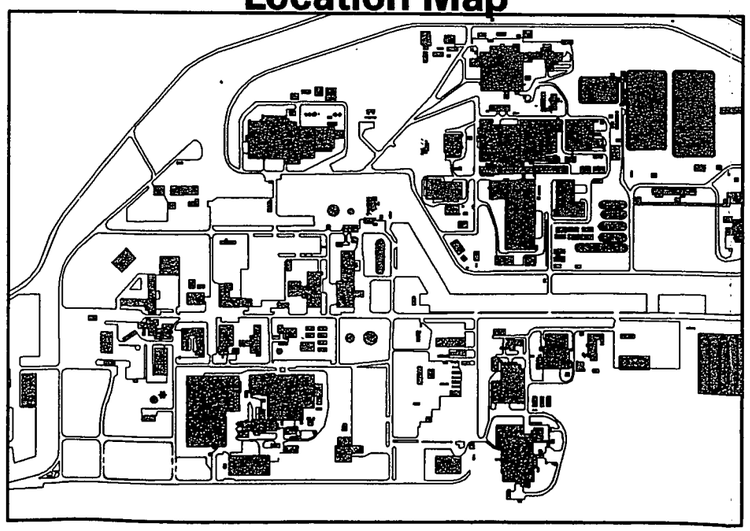

Figure 3-18

Tank Group T-24 and T-32 Borehole Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 100 FEET
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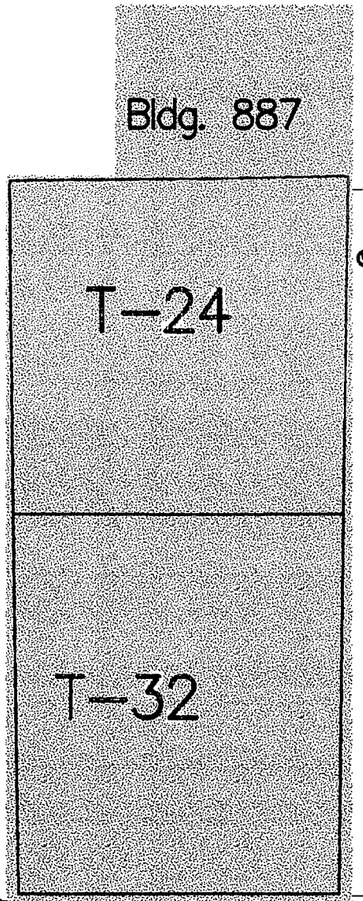

05395

05195

(16.3-19.4')
BHG5021JE
U-2334 1.955 #

05295

(16.0-18.0')
BHG5025JE
ZN 251 #

(16.0-18.0')
BHG5029JE
U-2334 1.883 #
(S.Split)

Bldg. 885

Figure 3-19

Tank Group T-24 and T-32 Analytical Results for Borehole Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- * Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

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SCALE: 1 INCH = 100 FEET
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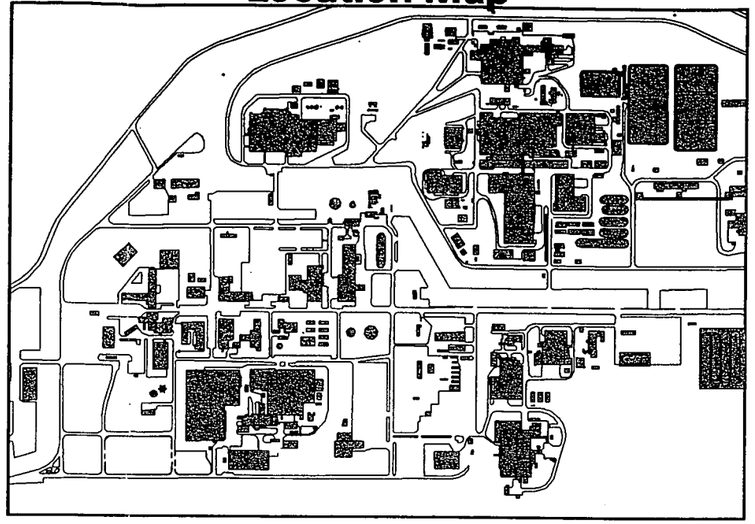
Location Map



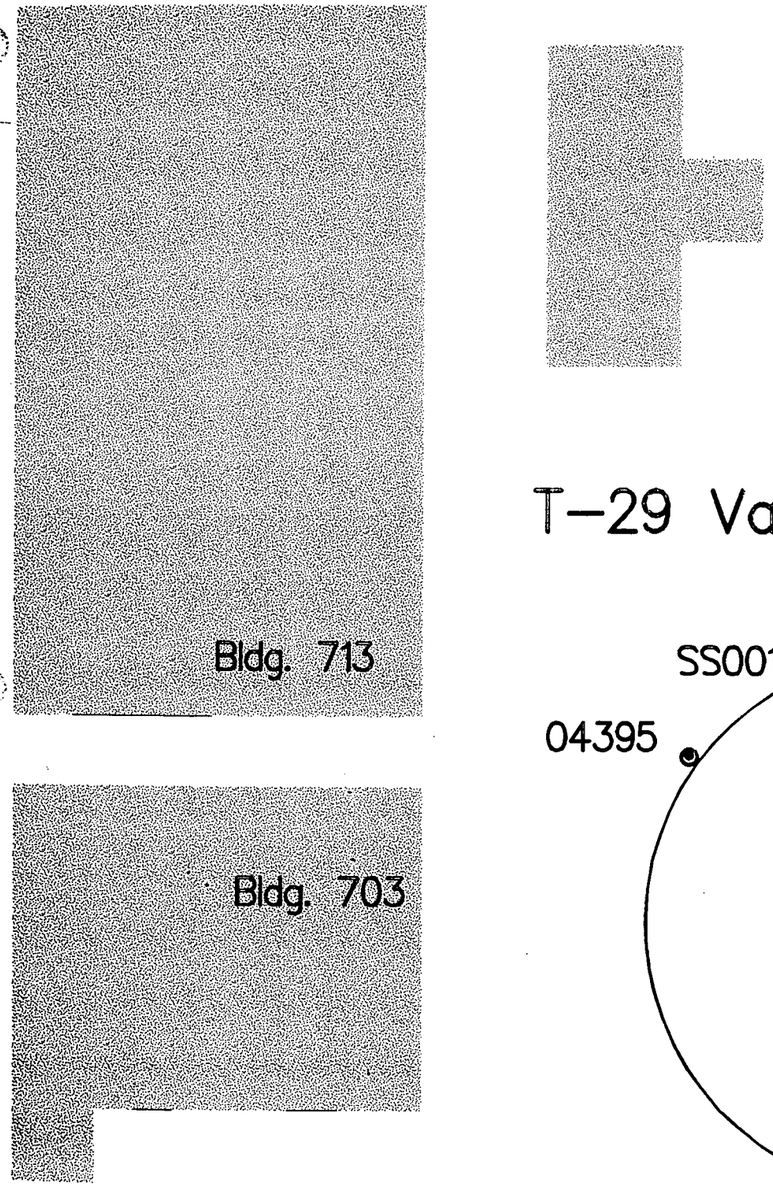


Figure 3-20

Tank T-29
Surface Soil, Borehole and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 100 FEET
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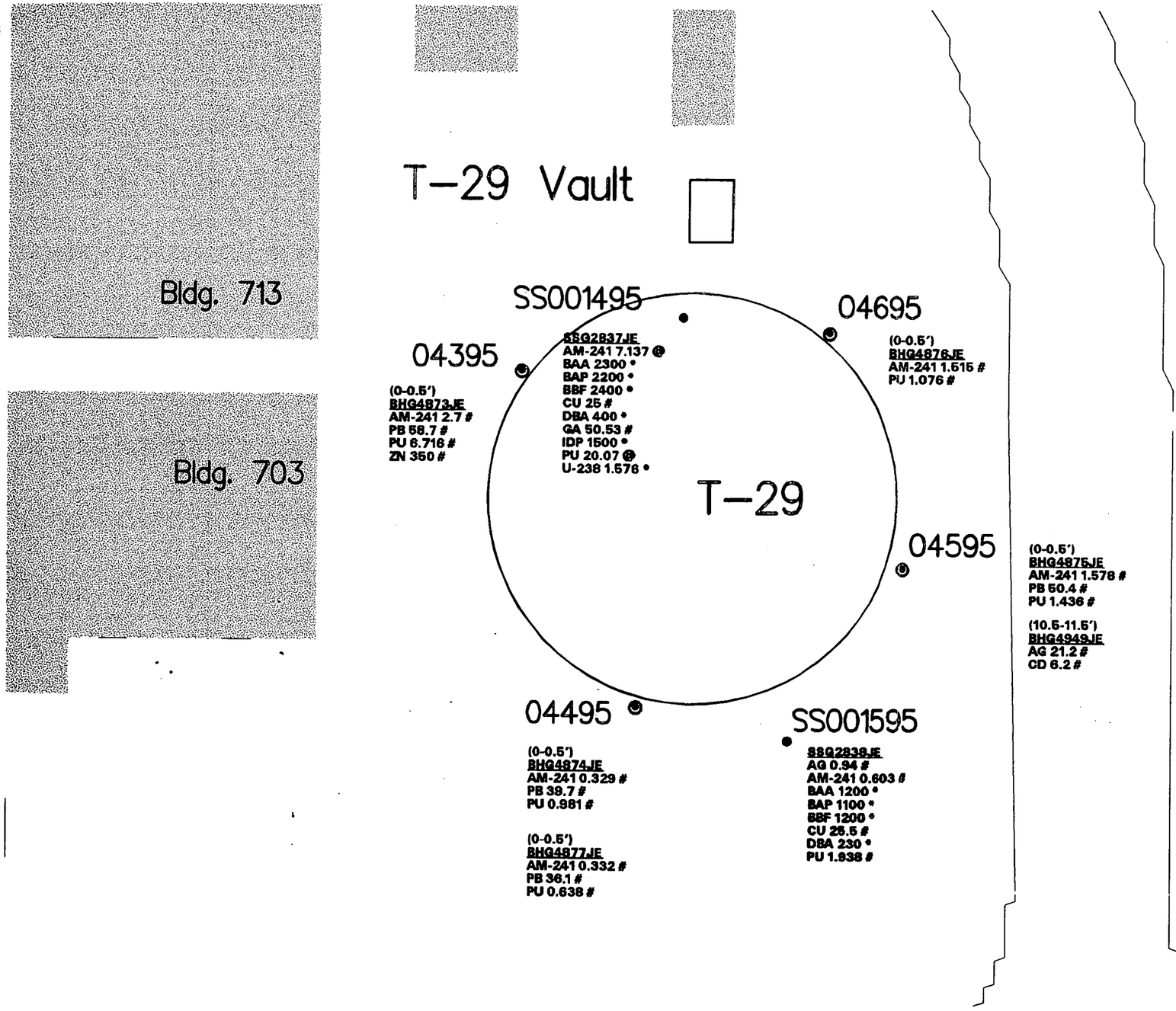

Figure 3-21

Tank T-29
Analytical Results for Surface Soil and Borehole Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- • Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 100 FEET
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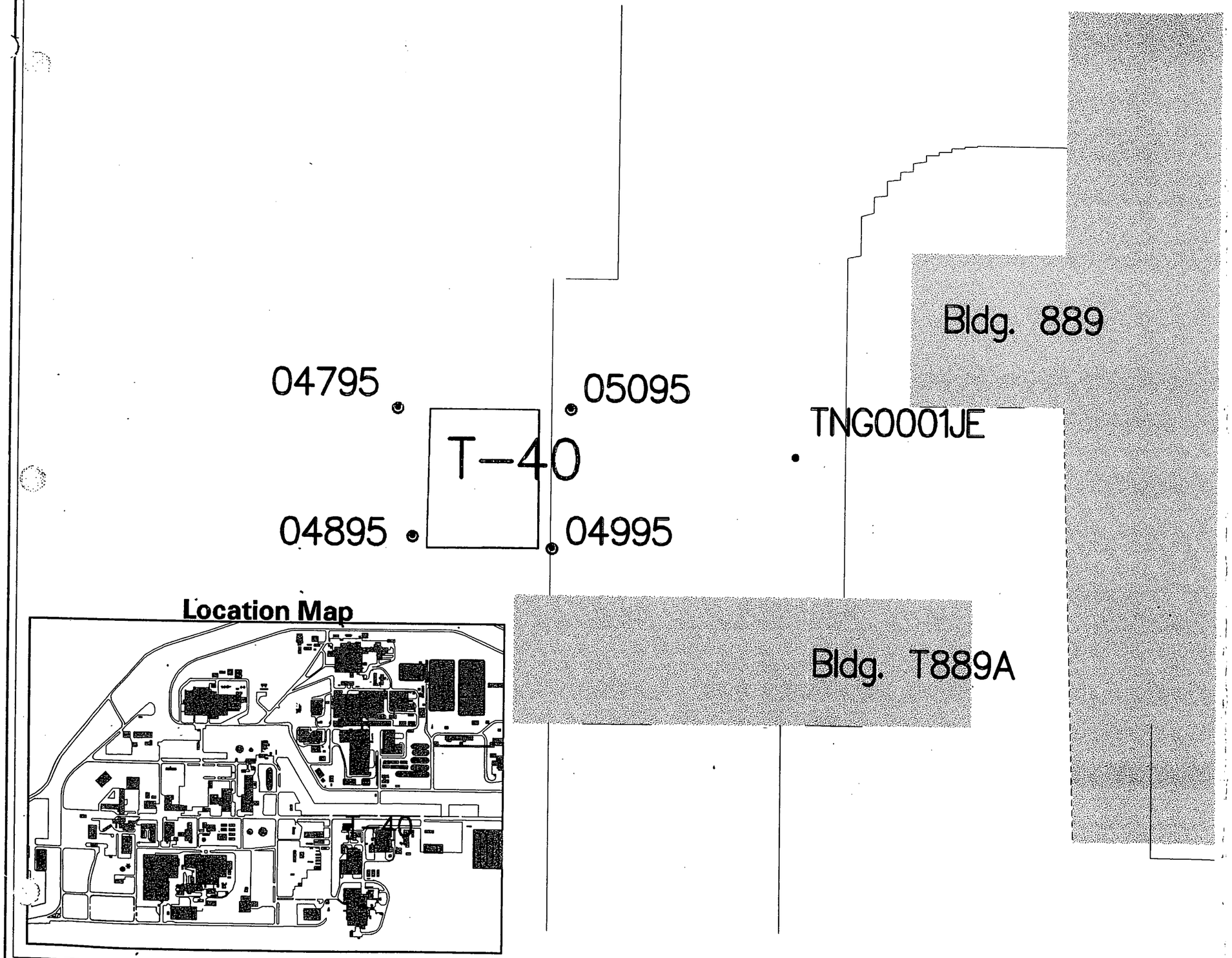

Location Map

Figure 3-22

Tank T-40
Borehole, Groundwater, and Tank Sample Locations

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

SCALE: 1 INCH = 75 FEET
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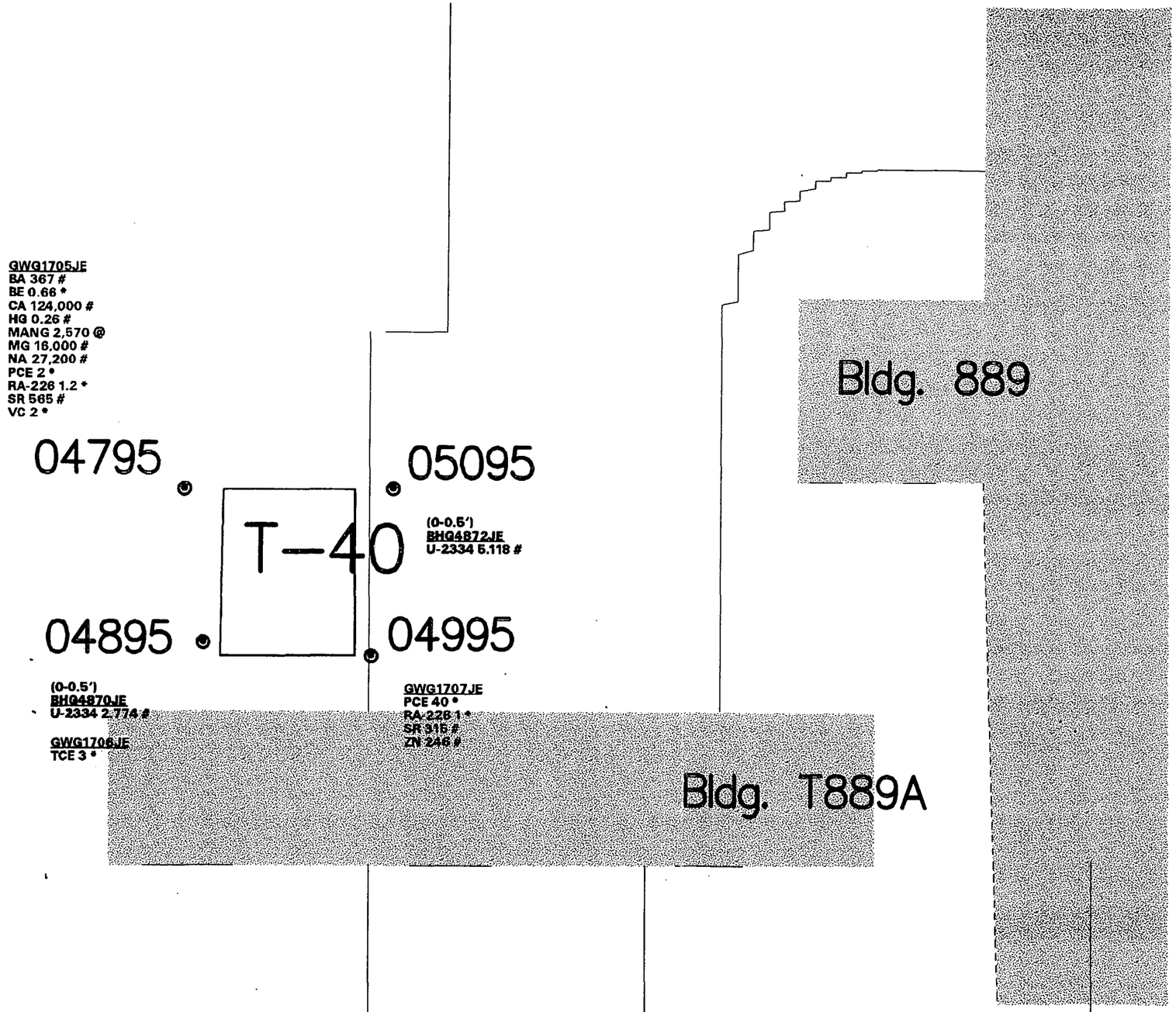

Figure 3-23

Tank T-40
Analytical Results for Borehole and Groundwater Samples

Legend

- Borehole/Hydropunch Sample Point
- Tank Samples
- Surface Soil Sample Point
- Buildings
- Tanks
- Fences
- Paved Roads
- Dirt Roads

Analytical results are indicated by the chemical symbol, result, and threshold flag. Flags are:

- * Positive detection above PRG
- # Positive detection above background
- @ Positive detection above PRG and background

Estimated or "J" qualified values are reported as positive detections. See associated data tables for full data presentation.

SCALE: 1 INCH = 75 FEET
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