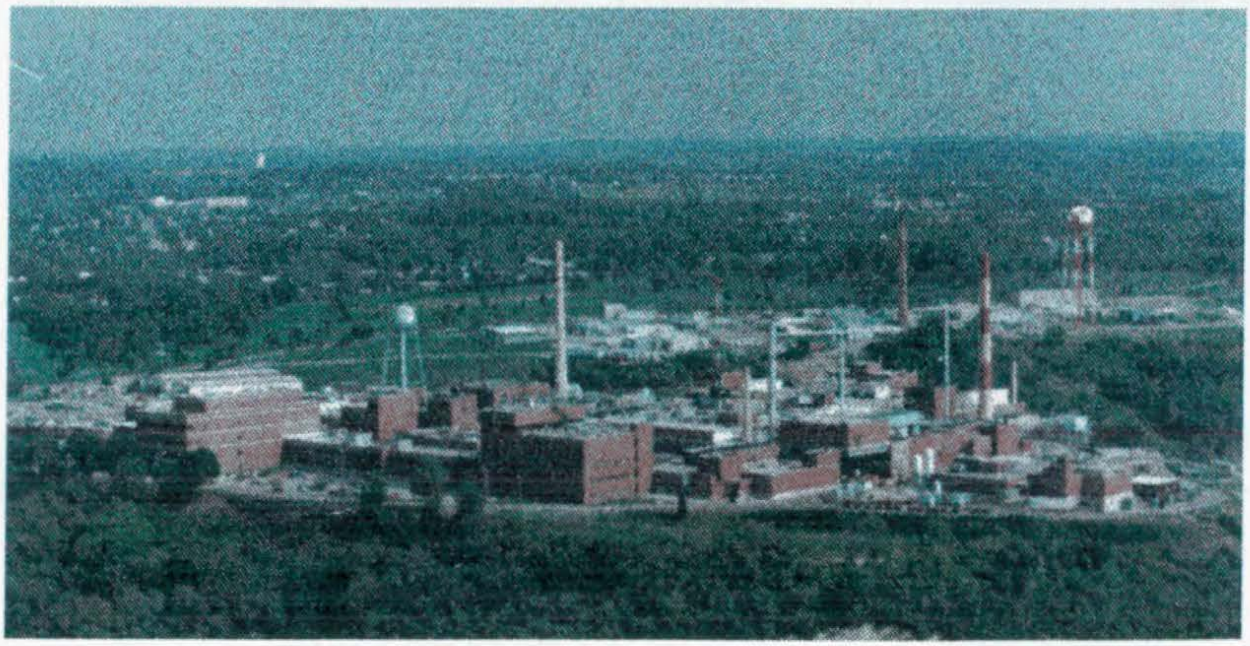
EG&G MOUND-30-03-04-02--9702110048

MOUND

Environmental
Restoration
Program

MOUND PLANT
Potential Release Site Package
PRS # 369



MOUND

Environmental Restoration Program

MOUND PLANT POTENTIAL RELEASE SITE PACKAGE

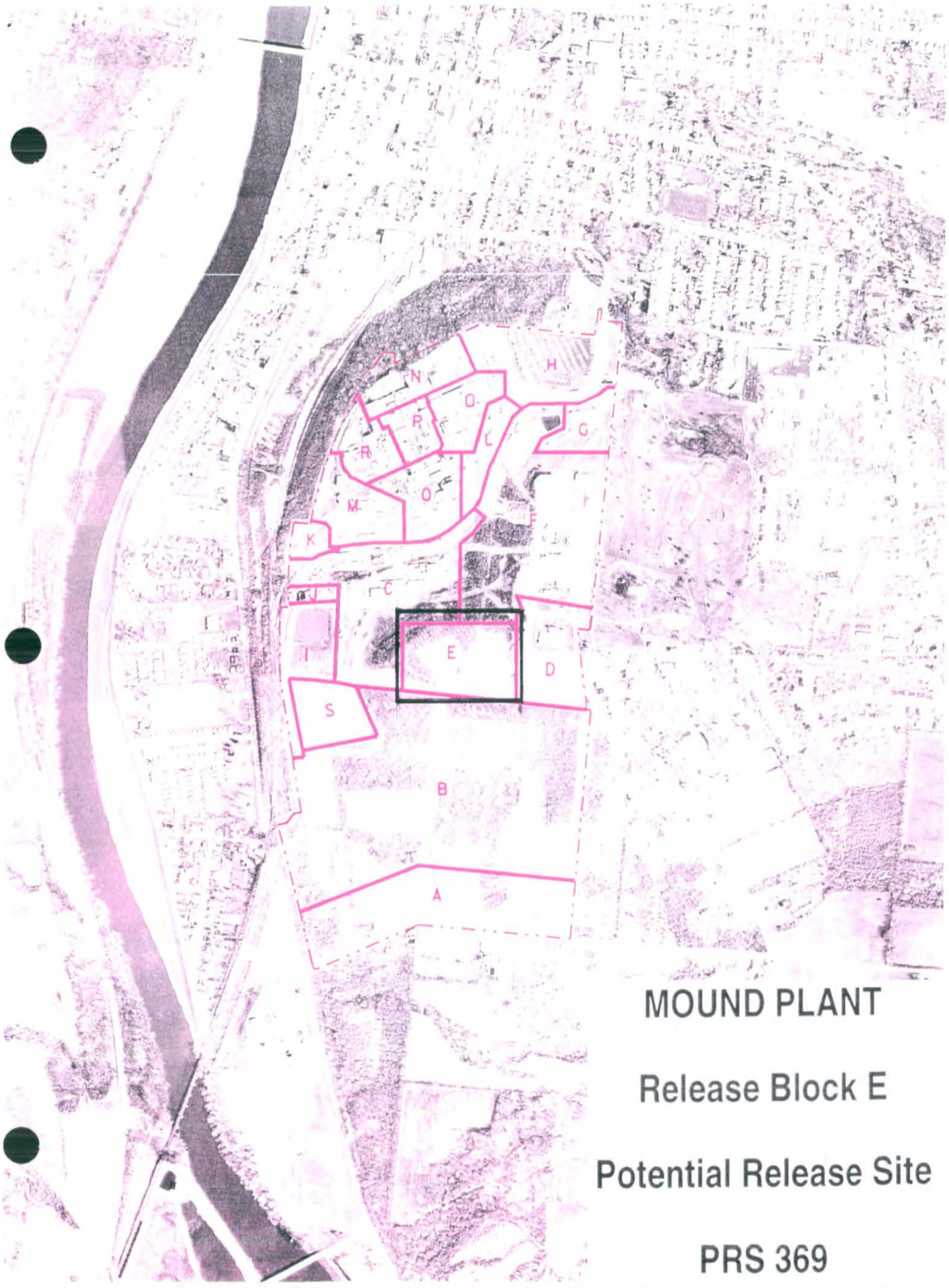
Notice of Public Review Period

The following potential release site (PRS) packages will be available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio beginning December 19, 1996. Public comment will be accepted on these packages from December 19, 1996, through January 23, 1997.

PRS 346/347/348/355/370, 351/352/353/357/359/360/361/362/385/386/387, 364, 369, 384, 388, 389/392

Questions can be referred to Mound's Community Relations at (937) 865-4140.

REV	DESCRIPTION	DATE
PUBLIC RELEASE 0	Available for comment.	Dec. 19, 1996
FINAL 1	Comment period expired. No comments. Recommendation page annotated.	Jan. 28, 1997

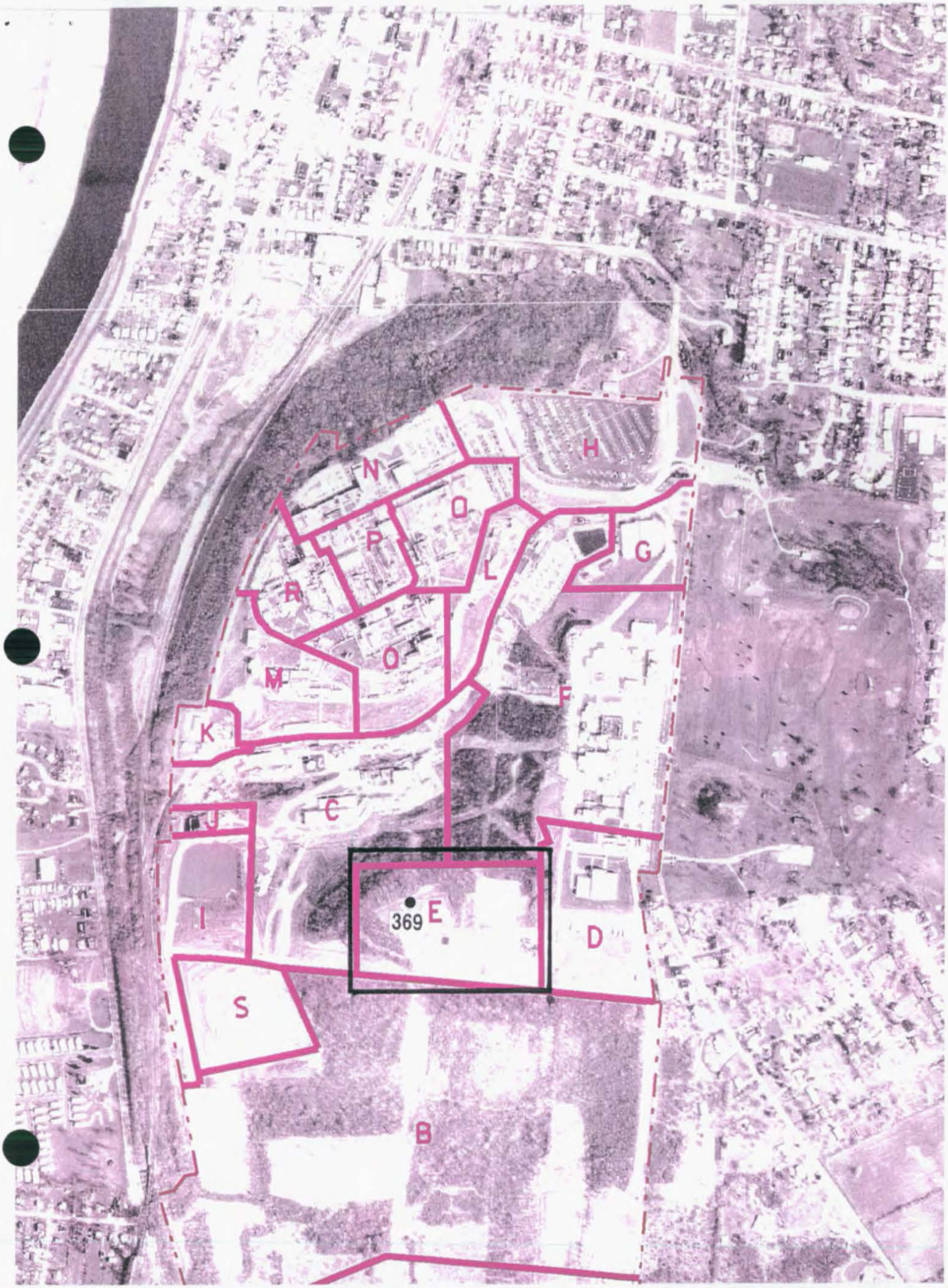


MOUND PLANT

Release Block E

Potential Release Site

PRS 369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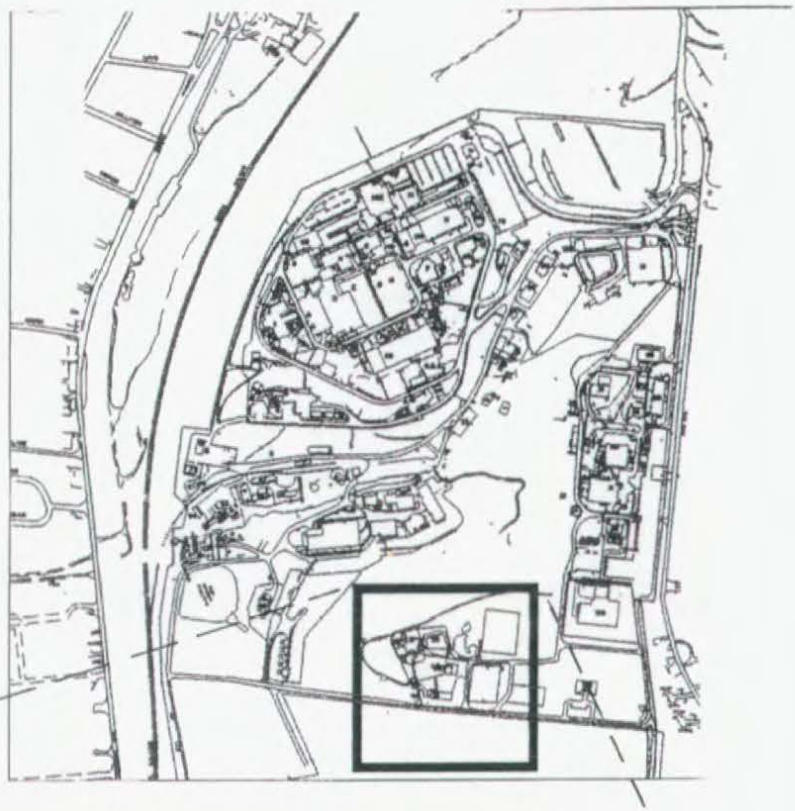
MOUND PLANT

Release Block E

Potential Release Site

PRS 369



369

PRS 369

PRS HISTORY:

Potential Release Site (PRS) 369 is located in an area northeast of Building 90 in the historical explosives burn area. Trash was burned inside a 4-ft by 4-ft by 4-ft. metal box. The metal box was inside an area enclosed by a chainlink fence. Waste materials disposed of in the trash burner included mild detonating fuses, pyrotechnic materials, and components containing small amounts of explosives. Ash from the burner was placed in 55-gallon drums for disposal. The trash burner began operation in the 1950's and was dismantled in 1988. No radiological processes are known to have occurred in this area. During the Operable Unit 5 (OU5) investigation in 1994/95, relatively high hydrocarbons were detected in the soil at this location. Due to this detection, the sampling location was identified as PRS 369.

CONTAMINATION:

In the mid 1980's, the ***Radiological Site Survey*** [1] performed sampling in the area of PRS 369.[1] Results indicated no levels of plutonium-238 (Pu-238) or thorium-232 above guideline criteria levels of 25 pCi/g and 5 pCi/g respectively.

In 1991, the ***Miscellaneous Site Limited Field Investigation*** [3, 4] sampled three soil locations. Sampling depths were 3.5 feet or less. Parameters analyzed were volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and polychlorinated biphenyls (P/PCBs), inorganics, and explosives. Results indicated no VOCs, SVOCs, P/PCBs, or explosives above guideline criteria. Only one inorganic was detected above guideline criteria which was beryllium at a maximum level of 1.8 mg/kg compared to the guideline criteria of 0.7 mg/kg[4] and background level of 1.3 mg/kg[8].

Additional soil investigation was conducted during the 1994 ***OU5 Investigation*** [5, 6] using a technique known as PETREX.[6] Results indicated relatively high readings of total aromatic hydrocarbons, total petroleum hydrocarbons, and total halogenated hydrocarbons. PETREX soil gas data only indicates the presence of a compound but does not give a definitive concentration. The area that PRS 369 is located was not included as part of the Site Soil Gas Reconnaissance Investigation conducted in 1992. Radiological investigation was also performed during the OU5 Investigation.[6] Results indicated no levels of plutonium-238 or thorium-232 above guideline criteria of 25 pCi/g and 5 pCi/g respectively.

In 1996, the ***Soil Gas Confirmation Investigation*** [8] took a soil sample within 25 feet of the PRS 369 location. The soil sample, sample #15, was collected over a depth of 1 to 3 feet and analyzed for volatiles, semivolatiles, PCBs, pesticides, metals, radionuclides and explosives. Results of the investigation showed:

- All concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives, in the soils, were below their respective ALARA, regulatory or 10^{-6} Risk Based Guideline Criteria.[7, 8, 9]

READING ROOM REFERENCES:

1) Operable Unit 9, Site Scoping Report: Volume 3-Radiological Site Survey, Final June 1993. (pages 6-8)
2) Operable Unit 9, Site Scoping Report: Volume 7-Waste Management, Final, February 1993. (pages 9-11)
3) Operable Unit 3, Miscellaneous Sites Limited Field Investigation Report, Volume I, Sections 1-6, Final July 1993. (pages 12-22)
4) Operable Unit 3, Miscellaneous Sites Limited Field Investigation Report, Volume II, Appendix A, Final July 1993. (pages 23-40)
5) Operable Unit 5, Operational Area Phase I Investigation Non-AOC Field Report, Volume I, Final, June 1995. (pages 41-45)
6) Operable Unit 5, Operational Area Phase I Investigation Non-AOC Field Report, Volume II, Final, June 1995. (pages 46-55)
7) Risk-Based Soil Guidelines, Final, Revision 3, December 1995.

SUPPLEMENTAL REFERENCES:

8) Further Assessment, Soil Gas Confirmation Sampling, May 1996. (pages 56-63)
9) Code of Federal Regulations, 40 CFR 192.12 and 40 CFR 192.43.

PREPARED BY:

Gary L. Coons, Member of EG&G Technical Staff

MOUND PLANT
PRS 369
SOIL CONTAMINATION

RECOMMENDATION:

Potential Release Site (PRS) 369 was identified due to elevated qualitative PETREX hydrocarbon levels. During the 1996 soil gas confirmation investigation all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives, in the soils, were below their respective ALARA, regulatory or 10^{-6} Risk Based Guideline Criteria. Therefore, NO FURTHER ASSESSMENT is recommended.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath 11/20/96
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 11/20/96
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 11/20/96
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 12/19/96 to 1/23/97

☒ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

REFERENCE MATERIAL
PRS 369

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 9, SITE SCOPING REPORT: VOLUME 3 - RADIOLOGICAL SITE SURVEY

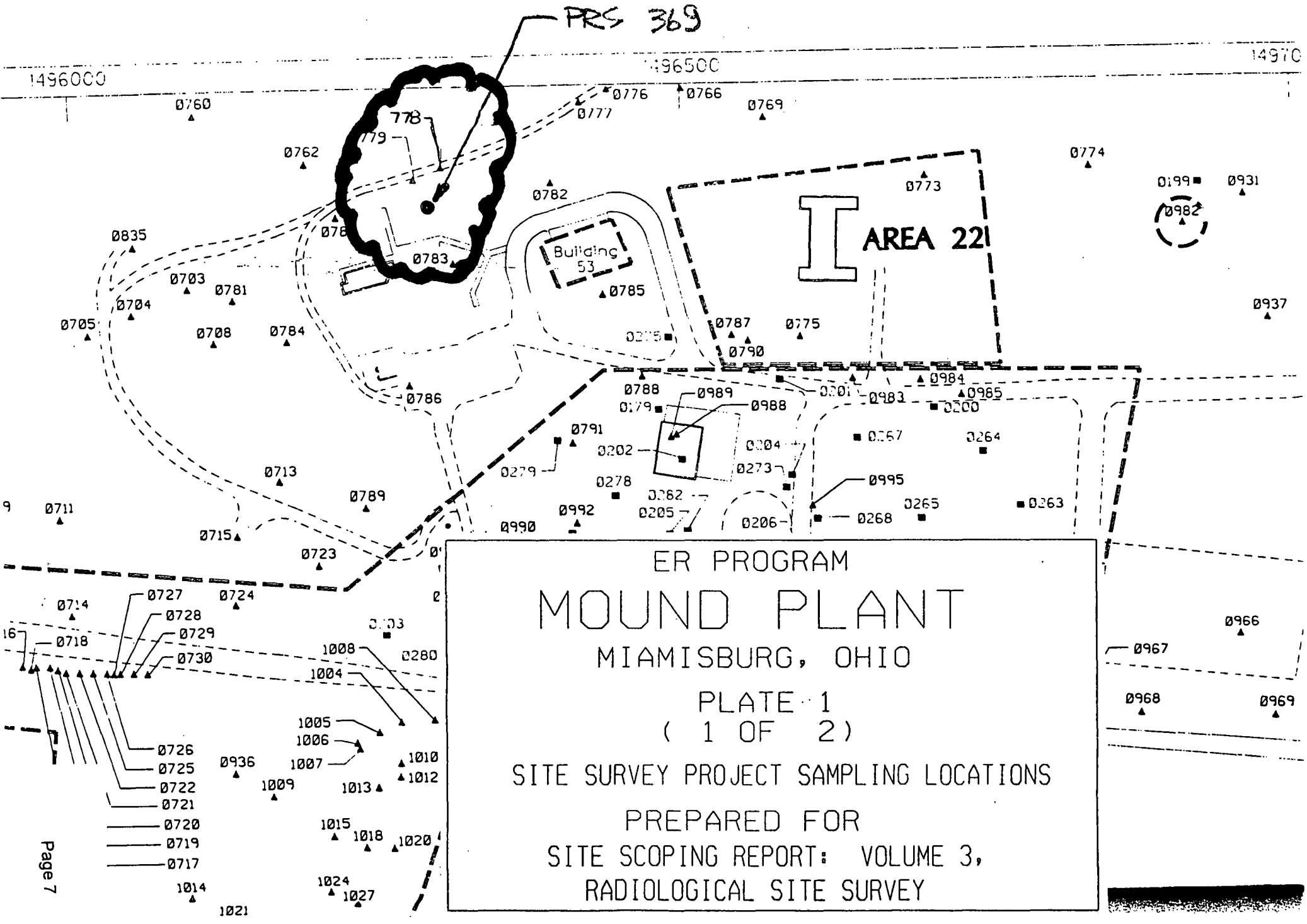
MOUND PLANT
MIAMISBURG, OHIO

June 1993

DEPARTMENT OF ENERGY
ALBUQUERQUE FIELD OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL


PRS 369
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ER PROGRAM
MOUND PLANT
MIAMISBURG, OHIO
PLATE 1
(1 OF 2)
SITE SURVEY PROJECT SAMPLING LOCATIONS
PREPARED FOR
SITE SCOPING REPORT: VOLUME 3,
RADIOLOGICAL SITE SURVEY

Map Location[a]	Coordinates South	West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)

[a]Map locations are given using a "C" to designate core locations and an "S" to designate surface locations.

[b]A "b" indicates that the total thorium concentration was less than the background level of 2.0 pCi/g, using FIDLER screening. Therefore, radiochemical analysis was not performed.

FIDLER - field instrument for the detection of low-energy radiation

LDL - The measured concentration was below the lower detection limit, estimated to be 0.5 pCi/g for cobalt-60, cesium-137, and americium-241; and 1 pCi/g for radium-226.

MRC ID - Monsanto Research Corporation identification

pCi/g - picocuries per gram

pCi/mL - picocuries per milliliter

S0768	3400	3225	2888	10-83	0	0.61	b					
S0769	3400	3300	7347	09-84	0	0.61	b					
S0770	3425	3025	7346	09-84	0	0.54	b					
S0771	3425	3075	7342	09-84	0	0.45	b					
S0772	3475	3050	7343	09-84	0	0.23	b					
S0773	3500	3200	2887	10-83	0	1.67[c]	b	0.15				
S0774	3550	3075	2886									
S0775	3575	3350	2883									
C0178	3300	3380	8262									
			8263	10-84	162	0.01	b					
S0776	3325	3405	4148	11-83	0	0.53	b					
S0777	3325	3430	7203	09-84	0	1.66	3.71					
S0778	3325	3555	4144	11-83	0	0.14	b					
S0779	3325	3580	4147	11-83	0	0.16	b					
S0780	3325	3650	4145	11-83	0	0.31	b					

RADIOCHEMICAL ANALYSIS

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 9
SITE SCOPING REPORT:
VOLUME 7 - WASTE MANAGEMENT

MOUND PLANT
MIAMISBURG, OHIO

February 1993

DEPARTMENT OF ENERGY
ALBUQUERQUE FIELD OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL

The off-gas was subsequently passed through a vertical scrubber, blower, and filter prior to exiting the stack.

Sixteen runs of 2 to 3 hours each were performed with this incinerator. Decontamination factors of 5×10^8 were achieved based on test data. Feed stock for the tests consisted of a synthetic waste with an alpha activity level of approximately 1×10^{11} d/m. It is not known what volume of feed material was treated in this incinerator nor what was done with the off-gas scrub solutions. It is not known when or how the unit was dismantled nor its disposition; it was gone by October 1951 (Bradley 1951b).

Design of a full-scale incinerator, based on the down-draft cylindrical pilot-scale model, was completed on October 31, 1952. By February 1953, the construction of the incinerator facility had been indefinitely deferred.

4.12. EXPLOSIVES WASTE TREATMENT

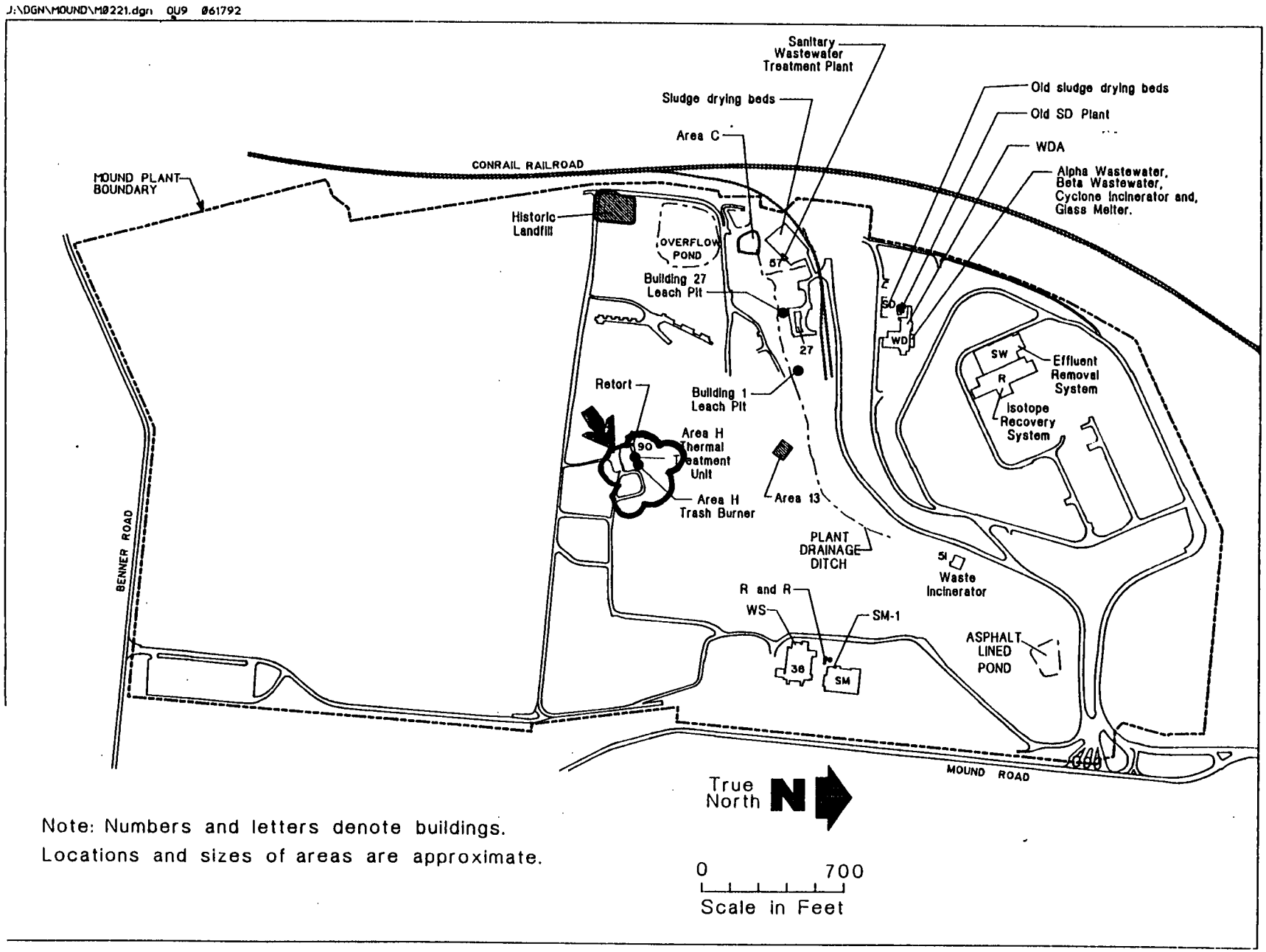
4.12.1. Area H Trash Burner (Historical)

The trash burner was located east of Building 90 in the open burning area (Figure 4.1). Trash was burned inside a 4-ft by 4-ft by 4-ft metal box. The metal box was inside an area enclosed by a chain-link fence and was covered with a screen gate to prevent release of large particulate material to the air. The floor of the trash burning unit was concrete. The trash burner was designed to burn up to 40 pounds of trash per event but more typically 5 to 6 pounds of material were burned at one time.

Waste materials disposed of in the trash burner included mild detonating fuses, pyrotechnic materials, components containing small amounts of explosives, tissue and cardboard contaminated with explosives, and thermite powder. The trash burner was also used to flash large detonating devices that did not fit into the retort or thermal treatment unit and materials containing organic solvents such as acetone and Freon (EPA 1988). The major products from the burning of the explosive wastes were carbon dioxide and water vapor with minor quantities of carbon monoxide, nitric oxide, nitrous oxide, and nitrogen dioxide (DOE 1979). Ash from the burner was placed in 55-gallon drums for disposal (DOE 1992g). The trash burner began operating in the 1950s and was dismantled in 1988.

4.12.2. Area H Thermal Treatment Unit

The thermal treatment unit is east of Building 90 in the open burning area (Figure 4.1). The unit consists of a 55-gallon drum placed in a larger diameter base that contains antifreeze and water to allow cooling of the drum base during burning. The drum and cooling syste
ft by 10-ft cubicle consisting of steel-plate, sand-filled walls, 4-inches thic



Note: Numbers and letters denote buildings.
Locations and sizes of areas are approximate.

Figure 4.1 Waste treatment facilities.

3

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 3 – MISCELLANEOUS SITES
LIMITED FIELD INVESTIGATION REPORT
VOLUME I
SECTIONS 1-6

MOUND PLANT
MIAMISBURG, OHIO

July 1993

DEPARTMENT OF ENERGY

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL
(REVISION 0)

of the disposal area are not known. Interviews conducted by the OEPA indicated that Mound Plant personnel disposed of small quantities of pyrotechnic wastes near the western fence line of Area H behind the retort. Wastewater containing dissolved pyrotechnic materials was last disposed of in this area in 1985 (RFA 1988).

2.18.1.2 Potential Area Contaminants

Throughout an unknown period of time ending in 1984, manufacturing operations produced small quantities of waste solvents (primarily acetone) and reacted pyrotechnic material including potassium perchlorate (DOE 1986). At Area H, these materials were dissolved in water and filtered; the filtrate was poured onto the ground along the southern fence line of Area H. Land treatment was used because it was believed that inorganic salts in the solutions would not be removed by the units in the sanitary wastewater treatment plant. The amount of waste stream materials disposed of ranged from 5 to 20 gallons per year (DOE 1986). For acetone, the amount treated annually was far below the 24-hour reportable quantity of 5,000 pounds. The acetone that was present is listed as spent, nonhalogenated solvent F003. Any residual pyrotechnic materials would be listed because of ignitability (D001) or reactivity (D003).

No prior environmental samples have been collected at the Area H Pyrotechnic Waste Disposal Area. There are no monitor wells or soil gas sampling locations in the vicinity of Area H.

2.18.2. Field Investigation Procedures

The objective of sampling at the Area H Pyrotechnic Waste Disposal Area was to identify hazardous contaminants that may be present. Since the boundaries of the pyrotechnic waste disposal area are not well defined, sampling in areas of visible residue or staining were used to determine the potential for contamination associated with this site. Stained soils were discovered in an area approximately 3 ft by 2 ft. Soil sample MND33-0090 was placed in this location.

Sampling activities were conducted on 19 November 1991 and from 16 December to 18 December 1991 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

Soil sample locations are shown on Figure 2.18. The soils encountered during drilling ranged from a yellow-brown sandy silt with trace amounts of clay and gravel, to a dark brown gravelly silt. Bedrock was encountered between 3.5 and 4.0 ft BGS, determined from cuttings and auger refusal. Groundwater was not encountered during drilling. A summary of soil samples collected at each location listing the sample

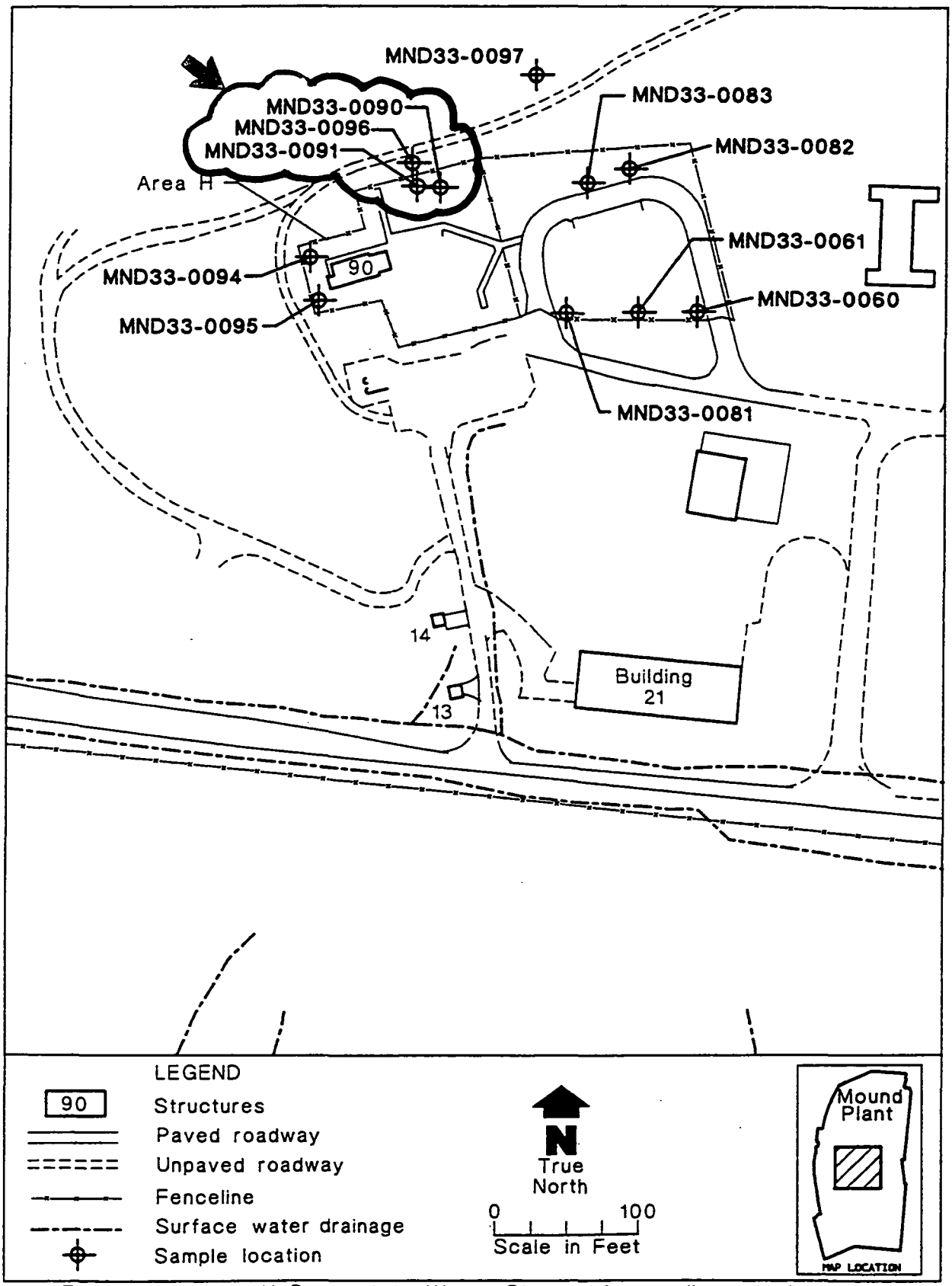


Figure 2.18. Area H Pyrotechnic Waste Disposal Area soil sample locations.

identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.17.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0060-0001 — Interval 0.0 to 2.0 ft BGS. Two surface split spoons were necessary to obtain the required sample volume.
- MND33-0061-0001 — Interval 0.0 to 2.0 ft BGS (19 November 1991). Two surface split spoons were necessary to obtain the required sample volume. In the second split spoon, a white powder chunk (approximately 1 inch in diameter) was encountered with the scoop. The sample was left in the bowl as described in the OU 3 Health and Safety Plan. EG&G retained custody of the sample in order to determine if it was an explosive. EG&G determined that the white powder was not an explosive. Sufficient sample volume did not remain for further analyses and the material was not further identified.
- MND33-0061-0001 — Interval 0.0 to 2.0 ft BGS (16 December 1991). The location was resampled. Two split spoons were necessary to obtain the required sample volume.
- MND33-0081-0001 — Interval 0.0 to 2.0 ft BGS. Two split spoons were necessary to obtain the required sample volume.
- MND33-0082-0001 — Interval 0.0 to 0.5 ft BGS. The sampling interval was 0.0 to 0.5 ft BGS because of split spoon refusal at 0.5 ft BGS. Four split spoons were necessary to obtain the required sample volume.
- MND33-0083-0001 — Interval 0.0 to 2.0 ft BGS. Three split spoons were necessary to obtain the required sample volume. A nitrate/nitrite and chloride sample was collected in addition to the requested analyses.
- MND33-0083-0002 — Interval 2.0 to 2.6 ft BGS. The borehole could only be advanced to 2.6 ft BGS because of split spoon and auger refusal at 2.6 ft BGS. No sample was collected for analyses.
- MND33-0090-0001 — Interval 0.0 to 3.5 ft BGS. The sampling depth went to 3.5 ft BGS to obtain the required sample volume.
- MND33-0094-0001 — Interval 0.0 to 2.0 ft BGS. Three surface split spoons were necessary to obtain the required sample volume. There was no advancement of the borehole to 10.0 ft BGS because split spoon refusal was encountered at approximately 4.5 ft BGS.
- MND33-0096-0001 — Interval 0.0 to 2.0 ft BGS. Two surface split spoons were necessary to obtain the required sample volume.

3.18. AREA H PYROTECHNIC WASTE DISPOSAL AREA

The Area H Pyrotechnic Waste Disposal Area is one of four sites in Area H where pyrotechnic and explosive wastes were handled. In this area, filtrate from pyrotechnic wastewater was disposed of directly to the ground. Hazardous constituents in the wastewater included small quantities of waste solvent (primarily acetone) and reacted pyrotechnic material, including potassium perchlorate. Soil sampling was conducted in the pyrotechnic waste disposal area to assess whether the site is or has been a source of hazardous constituents released to the environment. A summary description of the Area H Pyrotechnic Waste Disposal Area, including the field investigative procedures, is presented in subsection 2.18.

Thirteen soil samples and four duplicate samples collected from 11 locations (Figure 2.18) within the approximate disposal area were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. One sample, MND33-0083-0001, was also analyzed for nitrate/nitrite and chloride. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.21.

3.18.1. Volatile Organic Compounds

Of the 17 soil samples analyzed, three contained detectable concentrations of VOCs. Toluene and xylenes were detected in sample MND33-0094-0001 and its duplicate sample -1001. 1,1,1-TCA was detected in sample MND33-0060-0001. The concentrations of these three compounds in the soils were less than 10 times the laboratory reporting limit and were below PRGs established for each compound. Because of the low concentrations of these compounds in the soils sampled, these constituents do not represent an impact to the soils in the Area H Pyrotechnic Waste Disposal Area.

3.18.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above the laboratory reporting limits in any of the samples analyzed from the Area H Pyrotechnic Waste Disposal Area.

3.18.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above the laboratory reporting limit in any of the samples analyzed.

3.18.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Area H Pyrotechnic Waste Disposal Area at concentrations above PRGs or proposed action levels.

3.18.5. Explosives

Explosives were not detected in concentrations above laboratory reporting limits in any soil samples collected in the Area H Pyrotechnic Waste Disposal Area.

3.18.6. Nitrate/Nitrites and Chloride

Nitrite and chlorides were not detected above laboratory reporting limits in sample MND33-0083-0001. Nitrate was detected at a concentration of 54.8 mG/Kg, which is below the PRG.

3.18.7. Summary

The analytical results for soil samples collected in the Area H Pyrotechnic Waste Disposal Area indicate that site activities involving the disposal of pyrotechnic wastewater filtrate in this area have not impacted soil quality at the site. As a result of these findings, no further action involving site characterization or soil remediation is recommended.

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0090
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5330.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	6790.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	17.7	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	29.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.4	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	9.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	52.3		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	73.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.1	J	1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	1.2	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.7	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	5.2	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	168000	J	NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	114000.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	29.2	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	31.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.9	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	27.2	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	38.7	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	12600.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	14600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	23.7		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	19.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	13800.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	32900.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	306.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	321.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	1.1		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	1.4		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	39.1	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	44.1	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	689.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	711.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	18.7	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	18.3	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	132.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General Chemistry

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: HND33-0090
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	1001	S	mG/Kg	10.	142.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.0	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	28.2	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	48.6	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	58.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0091
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4010.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3770.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	13.9	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.6	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	0.80	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	55.7		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	28.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.8	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.81	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	108000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	233000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.1	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	28.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	5.7	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.6	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	24.0	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	12.9	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	9180.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	8730.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	4.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	9870.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	3530.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	195.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	274.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.65		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.9	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	12.2	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	466.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	639.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	0.80	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.3	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	20.4	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	110.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General Chemistry

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MWD33-0091
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0002	S	mG/Kg	10.	112.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.3	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	17.8	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	27.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	27.0	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0096
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8050.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	60.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.84		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	.69		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	103000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	27.0	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.7		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16000.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	3990.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	462.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	689.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.0	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	97.8		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	67.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General
Chemistry

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 3 — MISCELLANEOUS SITES
LIMITED FIELD INVESTIGATION REPORT
VOLUME II
APPENDIX A

MOUND PLANT
MIAMISBURG, OHIO

July 1993

DEPARTMENT OF ENERGY

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL
(REVISION 0)

APPENDIX A
Location: MND33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
1,1,1-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,1-TRICHLOROETHANE	1001	S	MG/KG	0.006	0.006	U			I
1,1,2,2-TETRACHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2,2-TETRACHLOROETHANE	1001	S	MG/KG	0.006	0.006	U			I
1,1,2-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2-TRICHLOROETHANE	1001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHANE	1001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHENE	1001	S	MG/KG	0.006	0.006	U			I
1,2,4-TRICHLOROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
1,2,4-TRICHLOROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
1,2-DICHLOROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
1,2-DICHLOROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
1,2-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHANE	1001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHENE	1001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROPROPANE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROPROPANE	1001	S	MG/KG	0.006	0.006	U			I
1,3,5-TRINITROBENZENE	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3,5-TRINITROBENZENE	1001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-CIS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,3-CIS-DICHLOROPROPENE	1001	S	MG/KG	0.006	0.006	U			I
1,3-DICHLOROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
1,3-DICHLOROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
1,3-DNB	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-DNB	1001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-TRANS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,3-TRANS-DICHLOROPROPENE	1001	S	MG/KG	0.006	0.006	U			I
1,4-DICHLOROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
1,4-DICHLOROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2,4,5-TRICHLOROPHENOL	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
2,4,5-TRICHLOROPHENOL	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
2,4,6-TRICHLOROPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2,4,6-TRICHLOROPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2,4,6-TRINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,4,6-TRINITROTOLUENE	1001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,4-DICHLOROPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2,4-DICHLOROPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2,4-DIMETHYLPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2,4-DIMETHYLPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2,4-DINITROPHENOL	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
2,4-DINITROPHENOL	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	.24	.24	U	.24	UJ	I

General
Chemistry

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
2,4-DINITROTOLUENE	1001	S	MG/KG	.24	.24	U	.24	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2,4-DINITROTOLUENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,6-DINITROTOLUENE	1001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2,6-DINITROTOLUENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2-AMINO-4,6-DINITROTOLUENE	0001	S	MG/KG	2.2	2.2	U	2.2	UJ	I
2-AMINO-4,6-DINITROTOLUENE	1001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
2-BUTANONE	0001	S	MG/KG	0.011	0.011	U			I
2-BUTANONE	1001	S	MG/KG	0.012	0.012	U			I
2-CHLORONAPHTHALENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2-CHLORONAPHTHALENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2-CHLOROPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2-CHLOROPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2-HEXANONE	0001	S	MG/KG	0.011	0.011	U			I
2-HEXANONE	1001	S	MG/KG	0.012	0.012	U			I
2-METHYLNAPHTHALENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2-METHYLNAPHTHALENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2-METHYLPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2-METHYLPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
2-NITROANILINE	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
2-NITROANILINE	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
2-NITROPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
2-NITROPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
3,3'-DICHLOROBENZIDINE	0001	S	MG/KG	1.5	1.5	U	1.5	UJ	I
3,3'-DICHLOROBENZIDINE	1001	S	MG/KG	1.6	1.6	U	1.6	UJ	I
3-NITROANILINE	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
3-NITROANILINE	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
4,4'-DDD	0001	S	MG/KG	0.0083	0.0083	U	0.0083	UJ	I
4,4'-DDD	1001	S	MG/KG	0.0089	0.0089	U	0.0089	UJ	I
4,4'-DDE	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
4,4'-DDE	1001	S	MG/KG	0.0033	0.0033	U	0.0033	UJ	I
4,4'-DDT	0001	S	MG/KG	0.0091	0.0091	U	0.0091	UJ	I
4,4'-DDT	1001	S	MG/KG	0.0098	0.0098	U	0.0098	UJ	I
4,6-DINITRO-O-CRESOL	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
4,6-DINITRO-O-CRESOL	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
4-BROMOPHENYL-PHENYL ETHER	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
4-BROMOPHENYL-PHENYL ETHER	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
4-CHLORO-3-METHYLPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
4-CHLORO-3-METHYLPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
4-CHLOROANILINE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
4-CHLOROANILINE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
4-CHLOROPHENYL-PHENYLETHER	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
4-CHLOROPHENYL-PHENYLETHER	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
4-METHYL-2-PENTANONE	0001	S	MG/KG	0.011	0.011	U			I

APPENDIX A
Location: MND33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
4-METHYL-2-PENTANONE	1001	S	MG/KG	0.012	0.012	U			I
4-METHYLPHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
4-METHYLPHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
4-NITROANILINE	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
4-NITROANILINE	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
4-NITROPHENOL	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
4-NITROPHENOL	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
ACENAPHTHENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
ACENAPHTHENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
ACENAPHTHYLENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
ACENAPHTHYLENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
ACETONE	0001	S	MG/KG	0.011	0.007	JB	0.011	U	I
ACETONE	1001	S	MG/KG	0.012	0.008	JB	0.012	U	I
ALDRIN	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ALDRIN	1001	S	MG/KG	0.0033	0.0033	U	0.0033	UJ	I
ALPHA CHLORDANE	0001	S	MG/KG	0.0106	0.0106	U	0.0106	UJ	I
ALPHA CHLORDANE	1001	S	MG/KG	0.0114	0.0114	U	0.0114	UJ	I
ALPHA-BHC	0001	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
ALPHA-BHC	1001	S	MG/KG	0.0024	0.0024	U	0.0024	UJ	I
ALUMINUM, TOTAL	0001	S	MG/KG	6.	5330.				I
ALUMINUM, TOTAL	1001	S	MG/KG	6.	6790.				I
ANTHRACENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
ANTHRACENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
ANTIMONY, TOTAL	0001	S	MG/KG	3.	17.7		17.7	J	I
ANTIMONY, TOTAL	1001	S	MG/KG	3.	29.		29.0	J	I
AROCLOR-1016	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I
AROCLOR-1016	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
AROCLOR-1221	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I
AROCLOR-1221	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
AROCLOR-1232	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I
AROCLOR-1232	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
AROCLOR-1242	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I
AROCLOR-1242	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
AROCLOR-1248	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I
AROCLOR-1248	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
AROCLOR-1254	0001	S	MG/KG	0.1817	0.1817	U	0.1817	UJ	I
AROCLOR-1254	1001	S	MG/KG	0.1959	0.1959	U	0.1959	UJ	I
AROCLOR-1260	0001	S	MG/KG	0.1817	0.1817	U	0.1817	UJ	I
AROCLOR-1260	1001	S	MG/KG	0.1959	0.1959	U	0.1959	UJ	I
ARSENIC, TOTAL	0001	S	MG/KG	.2	6.4		6.4	J	I
ARSENIC, TOTAL	1001	S	MG/KG	.2	9.1		9.1	J	I
BARIUM, TOTAL	0001	S	MG/KG	.2	52.3				I
BARIUM, TOTAL	1001	S	MG/KG	.2	73.5				I
BENZENE	0001	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
BENZENE	1001	S	MG/KG	0.006	0.006	U			I
BENZO(A)ANTHRACENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZO(A)ANTHRACENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BENZO(A)PYRENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZO(A)PYRENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BENZO(B)FLUORANTHENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZO(B)FLUORANTHENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BENZO(G,H,I)PERYLENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZO(G,H,I)PERYLENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BENZO(K)FLUORANTHENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZO(K)FLUORANTHENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BENZOIC ACID	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
BENZOIC ACID	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
BENZYL ALCOHOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BENZYL ALCOHOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BERYLLIUM	0001	S	MG/KG	.2	1.1	B	1.1	J	I
BERYLLIUM	1001	S	MG/KG	.2	1.2	B	1.2	J	I
BETA-BHC	0001	S	MG/KG	0.0045	0.0045	U	0.0045	UJ	I
BETA-BHC	1001	S	MG/KG	0.0049	0.0049	U	0.0049	UJ	I
BIS(2-CHLOROETHOXY)METHANE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BIS(2-CHLOROETHOXY)METHANE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BIS(2-CHLOROETHYL)ETHER	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BIS(2-CHLOROETHYL)ETHER	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BIS(2-CHLOROISOPROPYL)ETHER	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BIS(2-CHLOROISOPROPYL)ETHER	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	MG/KG	0.74	0.13	J	0.74	U	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
BROMODICHLOROMETHANE	0001	S	MG/KG	0.006	0.006	U			I
BROMODICHLOROMETHANE	1001	S	MG/KG	0.006	0.006	U			I
BROMOFORM	0001	S	MG/KG	0.006	0.006	U			I
BROMOFORM	1001	S	MG/KG	0.006	0.006	U			I
BROMOMETHANE	0001	S	MG/KG	0.011	0.011	U			I
BROMOMETHANE	1001	S	MG/KG	0.012	0.012	U			I
BUTYL BENZYL PHTHALATE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
BUTYL BENZYL PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
CADMIUM, TOTAL	0001	S	MG/KG	.2	2.7	B	2.7	J	I
CADMIUM, TOTAL	1001	S	MG/KG	.2	5.2		5.2	J	I
CALCIUM, TOTAL	0001	S	MG/KG	2.	168000.	*	168000	J	I
CALCIUM, TOTAL	1001	S	MG/KG	2.	114000.	*	114000.	J	I
CARBON DISULFIDE	0001	S	MG/KG	0.006	0.003	J			I
CARBON DISULFIDE	1001	S	MG/KG	0.006	0.006	U			I
CARBON TETRACHLORIDE	0001	S	MG/KG	0.006	0.006	U			I
CARBON TETRACHLORIDE	1001	S	MG/KG	0.006	0.006	U			I
ROBENZENE	0001	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
CHLOROBENZENE	1001	S	MG/KG	0.006	0.006	U			I
CHLOROETHANE	0001	S	MG/KG	0.011	0.011	U			I
CHLOROETHANE	1001	S	MG/KG	0.012	0.012	U			I
CHLOROFORM	0001	S	MG/KG	0.006	0.006	U			I
CHLOROFORM	1001	S	MG/KG	0.006	0.006	U			I
CHLOROMETHANE	0001	S	MG/KG	0.011	0.011	U			I
CHLOROMETHANE	1001	S	MG/KG	0.012	0.012	U			I
CHROMIUM, TOTAL	0001	S	MG/KG	1.	29.2		29.2	J	I
CHROMIUM, TOTAL	1001	S	MG/KG	1.	31.3		31.3	J	I
CHRYSENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
CHRYSENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
COBALT, TOTAL	0001	S	MG/KG	1.	7.9	B	7.9	J	I
COBALT, TOTAL	1001	S	MG/KG	1.	9.7	B	9.7	J	I
COPPER, TOTAL	0001	S	MG/KG	1.	27.2		27.2	J	I
COPPER, TOTAL	1001	S	MG/KG	1.	38.7		38.7	J	I
CYANIDE	0001	S	MG/KG	.1	.25		0.25	UJ	I
CYANIDE	1001	S	MG/KG	.1	.25		0.25	UJ	I
DELTA-BHC	0001	S	MG/KG	0.0068	0.0068	U	0.0068	UJ	I
DELTA-BHC	1001	S	MG/KG	0.0073	0.0073	U	0.0073	UJ	I
DI-N-BUTYL PHTHALATE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DI-N-BUTYL PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
DI-N-OCTYL PHTHALATE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DI-N-OCTYL PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
DIBENZO(A,H)ANTHRACENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DIBENZO(A,H)ANTHRACENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
DIBENZOFURAN	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DIBENZOFURAN	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
DIBROMOCHLOROMETHANE	0001	S	MG/KG	0.006	0.006	U			I
DIBROMOCHLOROMETHANE	1001	S	MG/KG	0.006	0.006	U			I
DICHLOROMETHANE-METHYLENE CHLORIDE	0001	S	MG/KG	0.006	0.005	JB	0.006	U	I
DICHLOROMETHANE-METHYLENE CHLORIDE	1001	S	MG/KG	0.006	0.005	JB	0.006	U	I
DIELDRIN	0001	S	MG/KG	0.0015	0.0015	U	0.0015	UJ	I
DIELDRIN	1001	S	MG/KG	0.0016	0.0016	U	0.0016	UJ	I
DIETHYL PHTHALATE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DIETHYL PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
DIMETHYL PHTHALATE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
DIMETHYL PHTHALATE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
ENDOSULFAN I(ALPHA)	0001	S	MG/KG	0.0091	0.0091	U	0.0091	UJ	I
ENDOSULFAN I(ALPHA)	1001	S	MG/KG	0.0098	0.0098	U	0.0098	UJ	I
ENDOSULFAN II(BETA)	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ENDOSULFAN II(BETA)	1001	S	MG/KG	0.0033	0.0033	U	0.0033	UJ	I
ENDOSULFAN SULFATE	0001	S	MG/KG	0.0182	0.0182	U	0.0182	UJ	I
ENDOSULFAN SULFATE	1001	S	MG/KG	0.0196	0.0196	U	0.0196	UJ	I
ENDRIN	0001	S	MG/KG	0.0045	0.0045	U	0.0045	UJ	I

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
ENDRIN	1001	S	MG/KG	0.0049	0.0049	U	0.0049	UJ	I
ENDRIN ALDEHYDE	0001	S	MG/KG	0.0174	0.0174	U	0.0174	UJ	I
ENDRIN ALDEHYDE	1001	S	MG/KG	0.0187	0.0187	U	0.0187	UJ	I
ENDRIN KETONE	0001	S	MG/KG	0.0182	0.0182	U	0.0182	UJ	I
ENDRIN KETONE	1001	S	MG/KG	0.0196	0.0196	U	0.0196	UJ	I
ETHYLBENZENE	0001	S	MG/KG	0.006	0.006	U			I
ETHYLBENZENE	1001	S	MG/KG	0.006	0.006	U			I
FLUORANTHENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
FLUORANTHENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
FLUORENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
FLUORENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
GAMMA CHLORDANE	0001	S	MG/KG	0.0106	0.0106	U	0.0106	UJ	I
GAMMA CHLORDANE	1001	S	MG/KG	0.0114	0.0114	U	0.0114	UJ	I
GAMMA-BHC (LINDANE)	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
GAMMA-BHC (LINDANE)	1001	S	MG/KG	0.0033	0.0033	U	0.0033	UJ	I
HEPTACHLOR	0001	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
HEPTACHLOR	1001	S	MG/KG	0.0024	0.0024	U	0.0024	UJ	I
HEPTACHLOR EPOXIDE	0001	S	MG/KG	0.0091	0.0091	U	0.0091	UJ	I
HEPTACHLOR EPOXIDE	1001	S	MG/KG	0.0098	0.0098	U	0.0098	UJ	I
HEXACHLOROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
HEXACHLOROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
HEXACHLOROBUTADIENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
HEXACHLOROBUTADIENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
HEXACHLOROCYCLOPENTADIENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
HEXACHLOROCYCLOPENTADIENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
HEXACHLOROETHANE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
HEXACHLOROETHANE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
HMX	0001	S	MG/KG	2.9	2.9	U	2.9	UJ	I
HMX	1001	S	MG/KG	2.9	2.9	U	2.9	UJ	I
INDENO(1,2,3-CD)PYRENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
INDENO(1,2,3-CD)PYRENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
IRON, TOTAL	0001	S	MG/KG	1.	12600.		12600.	J	I
IRON, TOTAL	1001	S	MG/KG	1.	14600.		14600.	J	I
ISOPHORONE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
ISOPHORONE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
LEAD, TOTAL	0001	S	MG/KG	.2	23.7				I
LEAD, TOTAL	1001	S	MG/KG	.2	19.6				I
MAGNESIUM, TOTAL	0001	S	MG/KG	5.	13800.	*	13800.	J	I
MAGNESIUM, TOTAL	1001	S	MG/KG	5.	32900.	*	32900.	J	I
MANGANESE, TOTAL	0001	S	MG/KG	.2	306.		306.	J	I
MANGANESE, TOTAL	1001	S	MG/KG	.2	321.		321.	J	I
MERCURY, TOTAL	0001	S	MG/KG	.02	1.1	*			I
MERCURY, TOTAL	1001	S	MG/KG	.02	1.4	*			I
METHOXYCHLOR	0001	S	MG/KG	0.0909	0.0909	U	0.0909	UJ	I

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
METHOXYCHLOR	1001	S	MG/KG	0.098	0.098	U	0.098	UJ	I
N-NITROSO-DI-N-PROPYLAMINE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
N-NITROSO-DI-N-PROPYLAMINE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
N-NITROSODIPHENYLAMINE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
N-NITROSODIPHENYLAMINE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
NAPHTHALENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
NAPHTHALENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
NICKEL, TOTAL	0001	S	MG/KG	2.	39.1		39.1	J	I
NICKEL, TOTAL	1001	S	MG/KG	2.	44.1		44.1	J	I
NITROBENZENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
NITROBENZENE	1001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
NITROBENZENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
NITROBENZENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
PENTACHLOROPHENOL	0001	S	MG/KG	3.6	3.6	U	3.6	UJ	I
PENTACHLOROPHENOL	1001	S	MG/KG	3.9	3.9	U	3.9	UJ	I
PHENANTHRENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
PHENANTHRENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
PHENOL	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
PHENOL	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
POTASSIUM, TOTAL	0001	S	MG/KG	10.	689.	B			I
POTASSIUM, TOTAL	1001	S	MG/KG	10.	711.	B			I
PYRENE	0001	S	MG/KG	0.74	0.74	U	0.74	UJ	I
PYRENE	1001	S	MG/KG	0.81	0.81	U	0.81	UJ	I
RDX	0001	S	MG/KG	2.2	2.2	U	2.2	UJ	I
RDX	1001	S	MG/KG	2.2	2.2	U	2.2	UJ	I
SELENIUM, TOTAL	0001	S	MG/KG	.45	.45	U			I
SELENIUM, TOTAL	1001	S	MG/KG	.48	.48	U			I
SILVER, TOTAL	0001	S	MG/KG	1.	18.7		18.7	J	I
SILVER, TOTAL	1001	S	MG/KG	1.	18.3		18.3	J	I
SODIUM, TOTAL	0001	S	MG/KG	10.	132.	B	132.	J	I
SODIUM, TOTAL	1001	S	MG/KG	10.	142.	B	142.	J	I
STYRENE	0001	S	MG/KG	0.006	0.006	U			I
STYRENE	1001	S	MG/KG	0.006	0.006	U			I
TETRACHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
TETRACHLOROETHENE	1001	S	MG/KG	0.006	0.006	U			I
THALLIUM, TOTAL	0001	S	MG/KG	.45	.45	U			I
THALLIUM, TOTAL	1001	S	MG/KG	.48	.48	U			I
TOLUENE	0001	S	MG/KG	0.006	0.006	U			I
TOLUENE	1001	S	MG/KG	0.006	0.006	U			I
TOTAL XYLENES	0001	S	MG/KG	0.006	0.006	U			I
TOTAL XYLENES	1001	S	MG/KG	0.006	0.006	U			I
TOXAPHENE	0001	S	MG/KG	0.1817	0.1817	U	0.1817	UJ	I
TOXAPHENE	1001	S	MG/KG	0.1959	0.1959	U	0.1959	UJ	I
TRICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
TRICHLOROETHENE	1001	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MWD33-0090
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
VANADIUM, TOTAL	0001	S	MG/KG	1.	23.		23.0	J	I
VANADIUM, TOTAL	1001	S	MG/KG	1.	28.2		28.2	J	I
VINYL ACETATE	0001	S	MG/KG	0.011	0.011	U			I
VINYL ACETATE	1001	S	MG/KG	0.012	0.012	U			I
VINYL CHLORIDE	0001	S	MG/KG	0.011	0.011	U			I
VINYL CHLORIDE	1001	S	MG/KG	0.012	0.012	U			I
ZINC, TOTAL	0001	S	MG/KG	.5	48.6		48.6	J	I
ZINC, TOTAL	1001	S	MG/KG	.5	58.9		58.9	J	I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
1,1,1-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,1-TRICHLOROETHANE	0002	S	MG/KG	0.006	0.006	U			I
1,1,2,2-TETRACHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2,2-TETRACHLOROETHANE	0002	S	MG/KG	0.006	0.006	U			I
1,1,2-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2-TRICHLOROETHANE	0002	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHANE	0002	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHENE	0002	S	MG/KG	0.006	0.006	U			I
1,2,4-TRICHLOROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
1,2,4-TRICHLOROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
1,2-DICHLOROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
1,2-DICHLOROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
1,2-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHANE	0002	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHENE	0002	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROPROPANE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROPROPANE	0002	S	MG/KG	0.006	0.006	U			I
1,3,5-TRINITROBENZENE	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3,5-TRINITROBENZENE	0002	S	MG/KG	1.2	1:2	U	1.2	UJ	I
1,3-CIS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,3-CIS-DICHLOROPROPENE	0002	S	MG/KG	0.006	0.006	U			I
1,3-DICHLOROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
1,3-DICHLOROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
1,3-DNB	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-DNB	0002	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-TRANS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,3-TRANS-DICHLOROPROPENE	0002	S	MG/KG	0.006	0.006	U			I
1,4-DICHLOROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
1,4-DICHLOROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2,4,5-TRICHLOROPHENOL	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
2,4,5-TRICHLOROPHENOL	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
2,4,6-TRICHLOROPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2,4,6-TRICHLOROPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2,4,6-TRINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,4,6-TRINITROTOLUENE	0002	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,4-DICHLOROPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2,4-DICHLOROPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2,4-DIMETHYLPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2,4-DIMETHYLPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2,4-DINITROPHENOL	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
2,4-DINITROPHENOL	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	.24	.24	U	.24	UJ	I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
2,4-DINITROTOLUENE	0002	S	MG/KG	.24	.24	U	.24	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2,4-DINITROTOLUENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,6-DINITROTOLUENE	0002	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2,6-DINITROTOLUENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2-AMINO-4,6-DINITROTOLUENE	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
2-AMINO-4,6-DINITROTOLUENE	0002	S	MG/KG	1.2	1.2	U	1.2	UJ	I
2-BUTANONE	0001	S	MG/KG	0.011	0.002	J			I
2-BUTANONE	0002	S	MG/KG	0.012	0.012	U			I
2-CHLORONAPHTHALENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2-CHLORONAPHTHALENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2-CHLOROPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2-CHLOROPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2-HEXANONE	0001	S	MG/KG	0.011	0.011	U			I
2-HEXANONE	0002	S	MG/KG	0.012	0.012	U			I
2-METHYLNAPHTHALENE	0001	S	MG/KG	0.76	0.086	J			I
2-METHYLNAPHTHALENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2-METHYLPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2-METHYLPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
2-NITROANILINE	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
2-NITROANILINE	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
2-NITROPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
2-NITROPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
3,3'-DICHLOROBENZIDINE	0001	S	MG/KG	1.5	1.5	U	1.5	UJ	I
3,3'-DICHLOROBENZIDINE	0002	S	MG/KG	1.6	1.6	U	1.6	UJ	I
3-NITROANILINE	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
3-NITROANILINE	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
4,4'-DDD	0001	S	MG/KG	0.0085	0.0085	U	0.0085	UJ	I
4,4'-DDD	0002	S	MG/KG	0.0085	0.0085	U	0.0085	UJ	I
4,4'-DDE	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
4,4'-DDE	0002	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
4,4'-DDT	0001	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
4,4'-DDT	0002	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
4,6-DINITRO-O-CRESOL	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
4,6-DINITRO-O-CRESOL	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
4-BROMOPHENYL-PHENYL ETHER	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
4-BROMOPHENYL-PHENYL ETHER	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
4-CHLORO-3-METHYLPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
4-CHLORO-3-METHYLPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
4-CHLOROANILINE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
4-CHLOROANILINE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
4-CHLOROPHENYL-PHENYLETHER	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
4-CHLOROPHENYL-PHENYLETHER	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
4-METHYL-2-PENTANONE	0001	S	MG/KG	0.011	0.005	J			I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
4-METHYL-2-PENTANONE	0002	S	MG/KG	0.012	0.012	U			I
4-METHYLPHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
4-METHYLPHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
4-NITROANILINE	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
4-NITROANILINE	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
4-NITROPHENOL	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
4-NITROPHENOL	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
ACENAPHTHENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
ACENAPHTHENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
ACENAPHTHYLENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
ACENAPHTHYLENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
ACETONE	0001	S	MG/KG	0.011	0.02	B	0.02	U	I
ACETONE	0002	S	MG/KG	0.012	0.006	JB	0.012	U	I
ALDRIN	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ALDRIN	0002	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ALPHA CHLORDANE	0001	S	MG/KG	0.0108	0.0108	U	0.0108	UJ	I
ALPHA CHLORDANE	0002	S	MG/KG	0.0108	0.0108	U	0.0108	UJ	I
ALPHA-BHC	0001	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
ALPHA-BHC	0002	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
ALUMINUM, TOTAL	0001	S	MG/KG	6.	4010.				I
ALUMINUM, TOTAL	0002	S	MG/KG	6.	3770.				I
ANTHRACENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
ANTHRACENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
ANTIMONY, TOTAL	0001	S	MG/KG	3.	13.9		13.9	J	I
ANTIMONY, TOTAL	0002	S	MG/KG	3.	13.9		13.9	J	I
AROCLOR-1016	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1016	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1221	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1221	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1232	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1232	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1242	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1242	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1248	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1248	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
AROCLOR-1254	0001	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
AROCLOR-1254	0002	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
AROCLOR-1260	0001	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
AROCLOR-1260	0002	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
ARSENIC, TOTAL	0001	S	MG/KG	.2	7.6		7.6	J	I
ARSENIC, TOTAL	0002	S	MG/KG	.2	.8		0.80	J	I
BARIUM, TOTAL	0001	S	MG/KG	.2	55.7				I
BARIUM, TOTAL	0002	S	MG/KG	.2	28.9	B			I
BENZENE	0001	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MND33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
BENZENE	0002	S	MG/KG	0.006	0.006	U			I
BENZO(A)ANTHRACENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZO(A)ANTHRACENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BENZO(A)PYRENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZO(A)PYRENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BENZO(B)FLUORANTHENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZO(B)FLUORANTHENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BENZO(G,H,I)PERYLENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZO(G,H,I)PERYLENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BENZO(K)FLUORANTHENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZO(K)FLUORANTHENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BENZOIC ACID	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
BENZOIC ACID	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
BENZYL ALCOHOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BENZYL ALCOHOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BERYLLIUM	0001	S	MG/KG	.2	1.8		1.8	J	I
BERYLLIUM	0002	S	MG/KG	.2	.81	B	0.81	J	I
BETA-BHC	0001	S	MG/KG	0.0047	0.0047	U	0.0047	UJ	I
BETA-BHC	0002	S	MG/KG	0.0047	0.0047	U	0.0047	UJ	I
BIS(2-CHLOROETHOXY)METHANE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BIS(2-CHLOROETHOXY)METHANE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BIS(2-CHLOROETHYL)ETHER	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BIS(2-CHLOROETHYL)ETHER	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BIS(2-CHLOROISOPROPYL)ETHER	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BIS(2-CHLOROISOPROPYL)ETHER	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	MG/KG	0.76	0.15	J	0.76	U	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
BROMODICHLOROMETHANE	0001	S	MG/KG	0.006	0.006	U			I
BROMODICHLOROMETHANE	0002	S	MG/KG	0.006	0.006	U			I
BROMOFORM	0001	S	MG/KG	0.006	0.006	U			I
BROMOFORM	0002	S	MG/KG	0.006	0.006	U			I
BROMOMETHANE	0001	S	MG/KG	0.011	0.011	U			I
BROMOMETHANE	0002	S	MG/KG	0.012	0.012	U			I
BUTYL BENZYL PHTHALATE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
BUTYL BENZYL PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
CADMIUM, TOTAL	0001	S	MG/KG	.2	1.8		1.8	J	I
CADMIUM, TOTAL	0002	S	MG/KG	2.3	2.3	U			I
CALCIUM, TOTAL	0001	S	MG/KG	2.	108000.	*			I
CALCIUM, TOTAL	0002	S	MG/KG	2.	233000.	*			I
CARBON DISULFIDE	0001	S	MG/KG	0.006	0.001	J			I
CARBON DISULFIDE	0002	S	MG/KG	0.006	0.006	U			I
CARBON TETRACHLORIDE	0001	S	MG/KG	0.006	0.006	U			I
CARBON TETRACHLORIDE	0002	S	MG/KG	0.006	0.006	U			I
CHLOROBENZENE	0001	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
CHLOROBENZENE	0002	S	MG/KG	0.006	0.006	U			I
CHLOROETHANE	0001	S	MG/KG	0.011	0.011	U			I
CHLOROETHANE	0002	S	MG/KG	0.012	0.012	U			I
CHLOROFORM	0001	S	MG/KG	0.006	0.006	U			I
CHLOROFORM	0002	S	MG/KG	0.006	0.006	U			I
CHLOROMETHANE	0001	S	MG/KG	0.011	0.011	U			I
CHLOROMETHANE	0002	S	MG/KG	0.012	0.012	U			I
CHROMIUM, TOTAL	0001	S	MG/KG	1.	23.1		23.1	J	I
CHROMIUM, TOTAL	0002	S	MG/KG	1.	28.7		28.7	J	I
CHRYSENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
CHRYSENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
COBALT, TOTAL	0001	S	MG/KG	1.	5.7	B	5.7	J	I
COBALT, TOTAL	0002	S	MG/KG	1.	6.6	B	6.6	J	I
COPPER, TOTAL	0001	S	MG/KG	1.	24.		24.0	J	I
COPPER, TOTAL	0002	S	MG/KG	1.	12.9		12.9	J	I
CYANIDE	0001	S	MG/KG	.1	.33		0.33	UJ	I
CYANIDE	0002	S	MG/KG	.1	.24		0.24	UJ	I
DELTA-BHC	0001	S	MG/KG	0.007	0.007	U	0.007	UJ	I
DELTA-BHC	0002	S	MG/KG	0.007	0.007	U	0.007	UJ	I
DI-N-BUTYL PHTHALATE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DI-N-BUTYL PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
DI-N-OCTYL PHTHALATE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DI-N-OCTYL PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
DIBENZO(A,H)ANTHRACENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DIBENZO(A,H)ANTHRACENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
DIBENZOFURAN	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DIBENZOFURAN	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
DIBROMOCHLOROMETHANE	0001	S	MG/KG	0.006	0.006	U			I
DIBROMOCHLOROMETHANE	0002	S	MG/KG	0.006	0.006	U			I
DICHLOROMETHANE-METHYLENE CHLORIDE	0001	S	MG/KG	0.006	0.03	B	0.03	U	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0002	S	MG/KG	0.006	0.005	JB	0.006	U	I
DIELDRIN	0001	S	MG/KG	0.0015	0.0015	U	0.0015	UJ	I
DIELDRIN	0002	S	MG/KG	0.0015	0.0015	U	0.0015	UJ	I
DIETHYL PHTHALATE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DIETHYL PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
DIMETHYL PHTHALATE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
DIMETHYL PHTHALATE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
ENDOSULFAN I(ALPHA)	0001	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
ENDOSULFAN I(ALPHA)	0002	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
ENDOSULFAN II(BETA)	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ENDOSULFAN II(BETA)	0002	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
ENDOSULFAN SULFATE	0001	S	MG/KG	0.0187	0.0187	U	0.0187	UJ	I
ENDOSULFAN SULFATE	0002	S	MG/KG	0.0187	0.0187	U	0.0187	UJ	I
ENDRIN	0001	S	MG/KG	0.0047	0.0047	U	0.0047	UJ	I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
ENDRIN	0002	S	MG/KG	0.0047	0.0047	U	0.0047	UJ	I
ENDRIN ALDEHYDE	0001	S	MG/KG	0.0178	0.0178	U	0.0178	UJ	I
ENDRIN ALDEHYDE	0002	S	MG/KG	0.0178	0.0178	U	0.0178	UJ	I
ENDRIN KETONE	0001	S	MG/KG	0.0187	0.0187	U	0.0187	UJ	I
ENDRIN KETONE	0002	S	MG/KG	0.0187	0.0187	U	0.0187	UJ	I
ETHYLBENZENE	0001	S	MG/KG	0.006	0.006	U			I
ETHYLBENZENE	0002	S	MG/KG	0.006	0.006	U			I
FLUORANTHENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
FLUORANTHENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
FLUORENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
FLUORENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
GAMMA CHLORDANE	0001	S	MG/KG	0.0108	0.0108	U	0.0108	UJ	I
GAMMA CHLORDANE	0002	S	MG/KG	0.0108	0.0108	U	0.0108	UJ	I
GAMMA-BHC (LINDANE)	0001	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
GAMMA-BHC (LINDANE)	0002	S	MG/KG	0.0031	0.0031	U	0.0031	UJ	I
HEPTACHLOR	0001	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
HEPTACHLOR	0002	S	MG/KG	0.0023	0.0023	U	0.0023	UJ	I
HEPTACHLOR EPOXIDE	0001	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
HEPTACHLOR EPOXIDE	0002	S	MG/KG	0.0093	0.0093	U	0.0093	UJ	I
HEXACHLOROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
HEXACHLOROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
HEXACHLOROBUTADIENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
HEXACHLOROBUTADIENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
HEXACHLOROCYCLOPENTADIENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
HEXACHLOROCYCLOPENTADIENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
HEXACHLOROETHANE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
HEXACHLOROETHANE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
HMX	0001	S	MG/KG	2.9	2.9	U	2.9	UJ	I
HMX	0002	S	MG/KG	2.9	2.9	U	2.9	UJ	I
INDENO(1,2,3-CD)PYRENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
INDENO(1,2,3-CD)PYRENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
IRON, TOTAL	0001	S	MG/KG	1.	9180.				I
IRON, TOTAL	0002	S	MG/KG	1.	8730.				I
ISOPHORONE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
ISOPHORONE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
LEAD, TOTAL	0001	S	MG/KG	.2	13.				I
LEAD, TOTAL	0002	S	MG/KG	.2	4.9				I
MAGNESIUM, TOTAL	0001	S	MG/KG	5.	9870.	*	9870.	J	I
MAGNESIUM, TOTAL	0002	S	MG/KG	5.	3530.	*	3530.	J	I
MANGANESE, TOTAL	0001	S	MG/KG	.2	195.		195.	J	I
MANGANESE, TOTAL	0002	S	MG/KG	.2	274.		274.	J	I
MERCURY, TOTAL	0001	S	MG/KG	.02	.65	*			I
MERCURY, TOTAL	0002	S	MG/KG	.12	.12				I
METHOXYCHLOR	0001	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
METHOXYCHLOR	0002	S	MG/KG	0.0933	0.0933	U	0.0933	UJ	I
N-NITROSO-DI-N-PROPYLAMINE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
N-NITROSO-DI-N-PROPYLAMINE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
N-NITROSODIPHENYLAMINE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
N-NITROSODIPHENYLAMINE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
NAPHTHALENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
NAPHTHALENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
NICKEL, TOTAL	0001	S	MG/KG	2.	14.9		14.9	J	I
NICKEL, TOTAL	0002	S	MG/KG	2.	12.2		12.2	J	I
NITROBENZENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
NITROBENZENE	0002	S	MG/KG	1.3	1.3	U	1.3	UJ	I
NITROBENZENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
NITROBENZENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
PENTACHLOROPHENOL	0001	S	MG/KG	3.7	3.7	U	3.7	UJ	I
PENTACHLOROPHENOL	0002	S	MG/KG	3.8	3.8	U	3.8	UJ	I
PHENANTHRENE	0001	S	MG/KG	0.76	0.12	J			I
PHENANTHRENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
PHENOL	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
PHENOL	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
POTASSIUM, TOTAL	0001	S	MG/KG	10.	466.	B			I
POTASSIUM, TOTAL	0002	S	MG/KG	10.	639.	B			I
PYRENE	0001	S	MG/KG	0.76	0.76	U	0.76	UJ	I
PYRENE	0002	S	MG/KG	0.78	0.78	U	0.78	UJ	I
RDX	0001	S	MG/KG	2.2	2.2	U	2.2	UJ	I
RDX	0002	S	MG/KG	2.2	2.2	U	2.2	UJ	I
SELENIUM, TOTAL	0001	S	MG/KG	.2	.8		0.80	J	I
SELENIUM, TOTAL	0002	S	MG/KG	.46	.46		0.46	J	I
SILVER, TOTAL	0001	S	MG/KG	1.	15.3		15.3	J	I
SILVER, TOTAL	0002	S	MG/KG	1.	20.4		20.4	J	I
SODIUM, TOTAL	0001	S	MG/KG	10.	110.	B	110.	J	I
SODIUM, TOTAL	0002	S	MG/KG	10.	112.	B	112.	J	I
STYRENE	0001	S	MG/KG	0.006	0.006	U			I
STYRENE	0002	S	MG/KG	0.006	0.006	U			I
TETRACHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
TETRACHLOROETHENE	0002	S	MG/KG	0.006	0.006	U			I
THALLIUM, TOTAL	0001	S	MG/KG	.46	.46	U			I
THALLIUM, TOTAL	0002	S	MG/KG	.46	.46	U			I
TOLUENE	0001	S	MG/KG	0.006	0.006	U			I
TOLUENE	0002	S	MG/KG	0.006	0.006	U			I
TOTAL XYLENES	0001	S	MG/KG	0.006	0.006	U			I
TOTAL XYLENES	0002	S	MG/KG	0.006	0.006	U			I
TOXAPHENE	0001	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
TOXAPHENE	0002	S	MG/KG	0.1865	0.1865	U	0.1865	UJ	I
TRICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
TRICHLOROETHENE	0002	S	MG/KG	0.006	0.006	U			I

APPENDIX A
Location: MWD33-0091
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
VANADIUM, TOTAL	0001	S	MG/KG	1.	24.3		24.3	J	I
VANADIUM, TOTAL	0002	S	MG/KG	1.	17.8		17.8	J	I
VINYL ACETATE	0001	S	MG/KG	0.011	0.011	U			I
VINYL ACETATE	0002	S	MG/KG	0.012	0.012	U			I
VINYL CHLORIDE	0001	S	MG/KG	0.011	0.011	U			I
VINYL CHLORIDE	0002	S	MG/KG	0.012	0.012	U			I
ZINC, TOTAL	0001	S	MG/KG	.5	27.5		27.5	J	I
ZINC, TOTAL	0002	S	MG/KG	.5	27.		27.0	J	I

APPENDIX A
Location: MND33-0096
Report Date: 03/09/93

Parameter	Samp Id	M	Units of Measure	Laboratory Reporting Limit	Laboratory Result	Lab Qual. (1)	Validated Result (2)	Data Val. Qual.	Run Type
1,1,1-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2,2-TETRACHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1,2-TRICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,1-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,2,4-TRICHLOROBENZENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
1,2-DICHLOROBENZENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
1,2-DICHLOROETHANE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROETHENE	0001	S	MG/KG	0.006	0.006	U			I
1,2-DICHLOROPROPANE	0001	S	MG/KG	0.006	0.006	U			I
1,3,5-TRINITROBENZENE	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-CIS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,3-DICHLOROBENZENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
1,3-DNB	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
1,3-TRANS-DICHLOROPROPENE	0001	S	MG/KG	0.006	0.006	U			I
1,4-DICHLOROBENZENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2,4,5-TRICHLOROPHENOL	0001	S	MG/KG	1.9	1.9	U	1.9	UJ	I
2,4,6-TRICHLOROPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2,4,6-TRINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,4-DICHLOROPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2,4-DIMETHYLPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2,4-DINITROPHENOL	0001	S	MG/KG	1.9	1.9	U	1.9	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	.24	.24	U	.24	UJ	I
2,4-DINITROTOLUENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	1.3	1.3	U	1.3	UJ	I
2,6-DINITROTOLUENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2-AMINO-4,6-DINITROTOLUENE	0001	S	MG/KG	1.2	1.2	U	1.2	UJ	I
2-BUTANONE	0001	S	MG/KG	0.012	0.001	J			I
2-CHLORONAPHTHALENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2-CHLOROPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2-HEXANONE	0001	S	MG/KG	0.012	0.012	U			I
2-METHYLNAPHTHALENE	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2-METHYLPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I
2-NITROANILINE	0001	S	MG/KG	1.9	1.9	U	1.9	UJ	I
2-NITROPHENOL	0001	S	MG/KG	0.4	0.4	U	0.4	UJ	I

Environmental Restoration Program

OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
NON-AOC FIELD REPORT

MOUND PLANT
MIAMISBURG, OHIO

VOLUME I - TEXT

June 1995

Final (Revision 0)

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies

Surface and subsurface soil sampling was conducted at Building 24 on August 8 and 9, 1994. Locations were sampled to assess for potential chemical and radiological contamination from previous activities at this site (Appendix B).

2.4.1. Field Work Performed and Procedures

The field activities and procedures are presented in the following subsections.

2.4.1.1. Decontamination

All sampling equipment was decontaminated prior to sampling following SOP 1.6, General Equipment Decontamination. Decontaminated equipment was wrapped in aluminum foil and stored until use.

2.4.1.2. Surface and Subsurface Soil Sampling

Prior to digging, the sample locations were cleared for underground utilities, and an excavation permit was issued. Surface samples were collected using a stainless steel scoop and bowl following SOP 5.2, Soil Sampling with a Spade and Scoop. Subsurface samples were collected using an auger. An effort was make to prevent inclusion of organic matter, trash, asphalt, and gravel in the sample. Samples were collected, packaged, and shipped according to Mound SOP 1.3, Sample Control and Documentation; SOP 1.4, Sample Containers and Preservation; and SOP 1.5, Guide to the Handling, Packaging, and Shipping of Samples. Samples were shipped to an OU9 QAPjP approved analytical laboratory for analysis.

Area H Pyrotechnic Waste Disposal Area and the Building 34 Firefighting Training Area

On September 14, 1994, six surface soil samples were collected from the Area H Pyrotechnic Waste Disposal Area for explosive analysis (BB2001, BB3001, BB4001, BB5001, BB6001, and BB7001) (see Figure 2.6). One sample (BB1001) was collected from the Firefighting Training Area (next to Building 34) for TAL metals analysis (see Figure 2.7). All sampling information was recorded for these areas in the Site Manager Logbook (see Appendix A.2.).

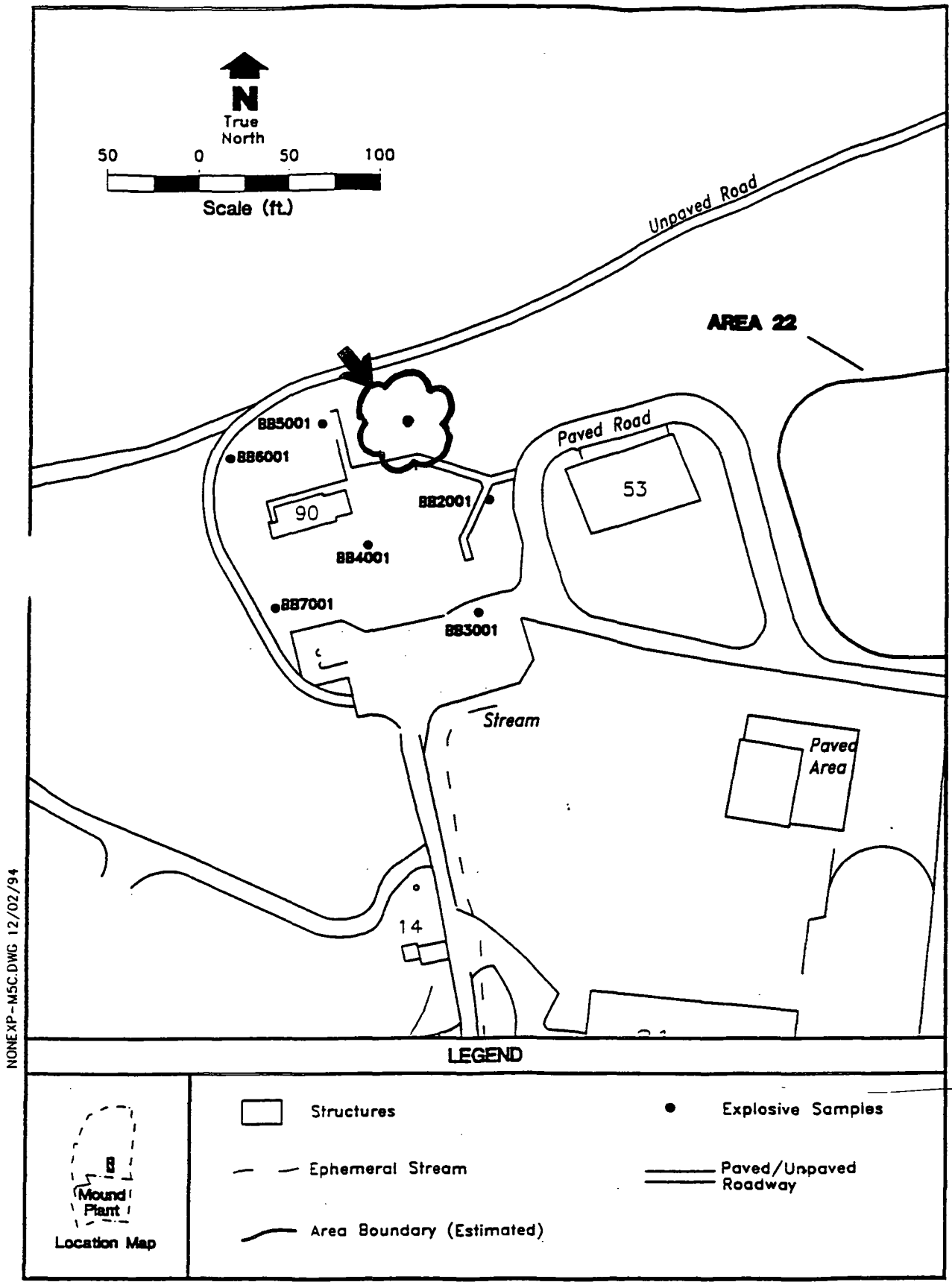


Figure 2.6. Sampling Locations in Area H Pyrotechnic Waste Disposal Area

3.4. SOIL SAMPLING: AREAS OF SPECIAL INTEREST

In Area H Pyrotechnic Waste Disposal Area, one explosive, nitrobenzene, was detected in surface soil sample BB6001 at an estimated concentration of 0.38J mg/kg.

In Building 34 Firefighting Training Area, 22 metals were detected in the surface soil sample BB1001. Four of these metals (calcium, chromium, copper, and nickel) were detected at estimated concentrations. These results were inconsistent with a historical investigation during which only one metal, antimony, was detected. Antimony was not detected during this investigation.

The soil sampling conducted at Building 24 indicates the presence of radiological and chemical contaminants as summarized below:

- Nine radionuclides were detected in the nine soil samples. Except for K-40, all other radionuclides were listed at estimated quantities (J) or trace values;
- SVOCs were primarily detected in surface soil samples B17001 and B18001, and subsurface soil sample B17002;
- No VOCs or cyanide were detected in the samples;
- Nineteen of the 22 metals were detected in a majority of the eight soil samples.

3.5. MONITORING WELL W410

Soil and groundwater sampling at monitoring well W410 indicates the presence of chemical and radiological contamination as summarized below:

- A total of eight radionuclides were detected in the soil samples and seven radionuclides in the groundwater sample. Tritium was detected at 4223.3 pCi/L in groundwater sample W41001. No Pu-238 or Th-232 was detected by the analytical laboratory. This is

APPENDIX F.2. SURFACE SOIL CHEMICAL DATA
OPERABLE UNIT 5 NON-AOC

MOUND OPERATIONAL AREA		BB2001		BB2101		BB3001		BB4001		BB5001		BB6001		BB7001	
		639009 REG		639009 REG		639016 REG		639018 REG		639019 REG		639022 REG		639023 REG	
		/ /		/ /		/ /		/ /		/ /		/ /		/ /	
		Result	Val	Result	Val	Result	Val	Result	Val	Result	Val	Result	Val	Result	Val
EXPLOSIVES	Units														
2-Amino-4,6-dinitrotoluene	MG/KG	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3-Dinitrobenzene	MG/KG	2	U	2	U	2	U	2	U	2	U	2	U	2	U
2,4-Dinitrotoluene	MG/KG	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	MG/KG	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
HMX	MG/KG	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Nitrobenzene	MG/KG	2	U	2	U	2	U	2	U	2	U	0.38	J	2	U
PETN	MG/KG	1	R	1	R	1	R	1	R	1	R	1	R	1	R
RDX	MG/KG	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Tetryl	MG/KG	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U	7.5	U
1,3,5-Trinitrobenzene	MG/KG	3	U	3	U	3	U	3	U	3	U	3	U	3	U
2,4,6-Trinitrotoluene	MG/KG	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U

General Chemistry

Document Control No._____

Environmental Restoration Program

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MOUND PLANT
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VOLUME II - APPENDICES A-G

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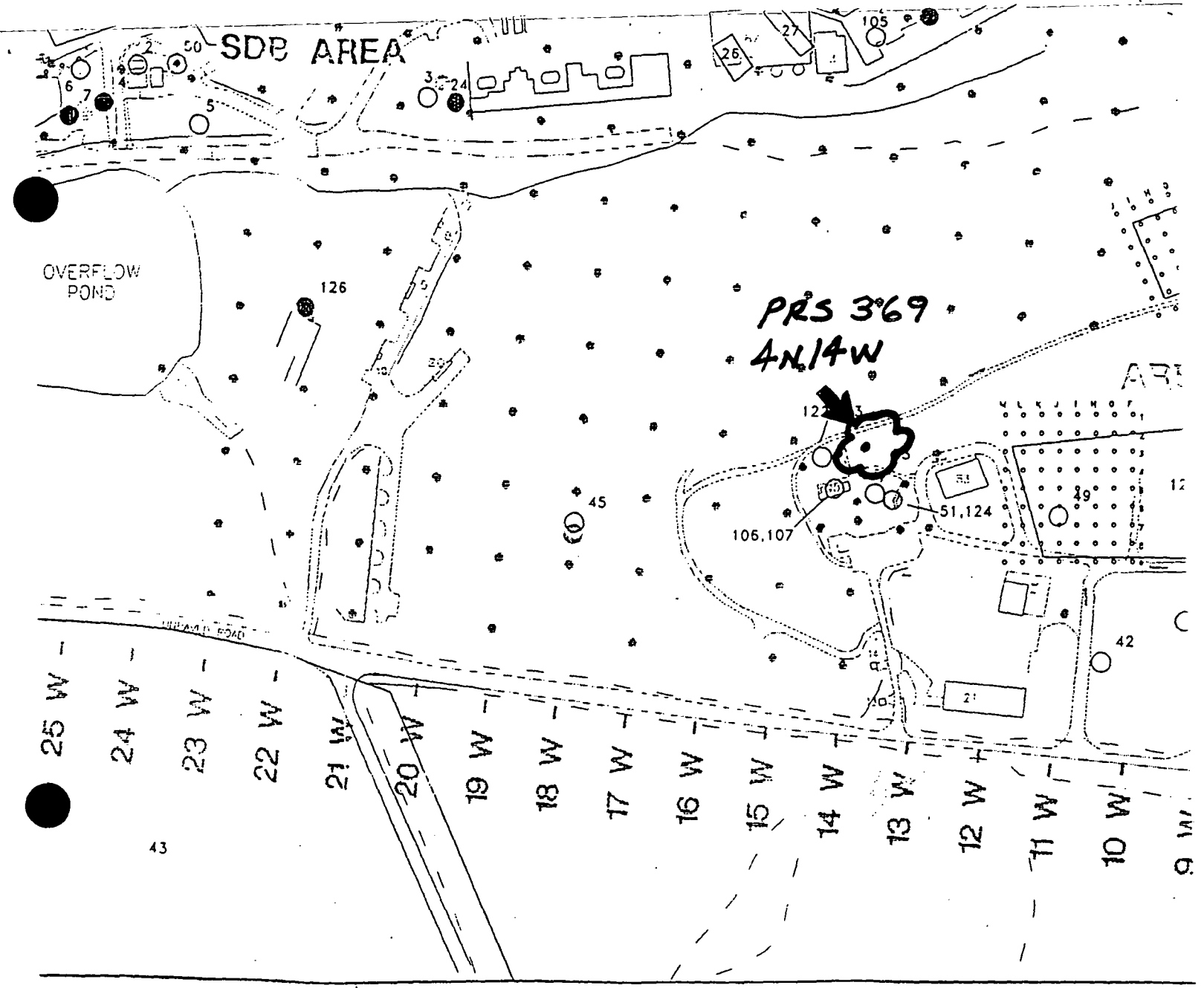


MOUND PLANT OPERABLE UNIT 5

PHASE 1 RI/FS OPERATIONAL AREA SAMPLING AND LOCATION OF POTENTIAL SITES OF CONTAMINATION

- Structures
- Plant Boundary
- Paved/Unpaved Roadway
- Ephemeral Stream
- Site Locations
- Tank Locations
- Non-AOC Operational Area Sampling and Survey Locations: Soil Gas Samples, Mound Soil Screening Facility Radiological Samples, and FIDLER Survey (Proposed)
- AOC Sampling and Survey Locations: Soil Gas Samples, Mound Soil Screening Facility Radiological Samples, and FIDLER Survey (Proposed)
- 1 N - / 1 W - Grid Lines
- Contaminated Areas
- Warehouses
- Proposed Locations for Soil Gas Samples and Mound Soil Screening Facility Radiological Samples
- Proposed Building Walls for Soil Gas Samples and Mound Soil Screening Facility Radiological Samples
- Proposed Locations of Mound Soil Screening Facility Radiological Samples
- Proposed Locations for Total Analyte List (TAL) Metals Soil Samples
- Proposed Locations for Explosives Soil Samples
- Surface and Subsurface Soil Sample Locations (Building 24)

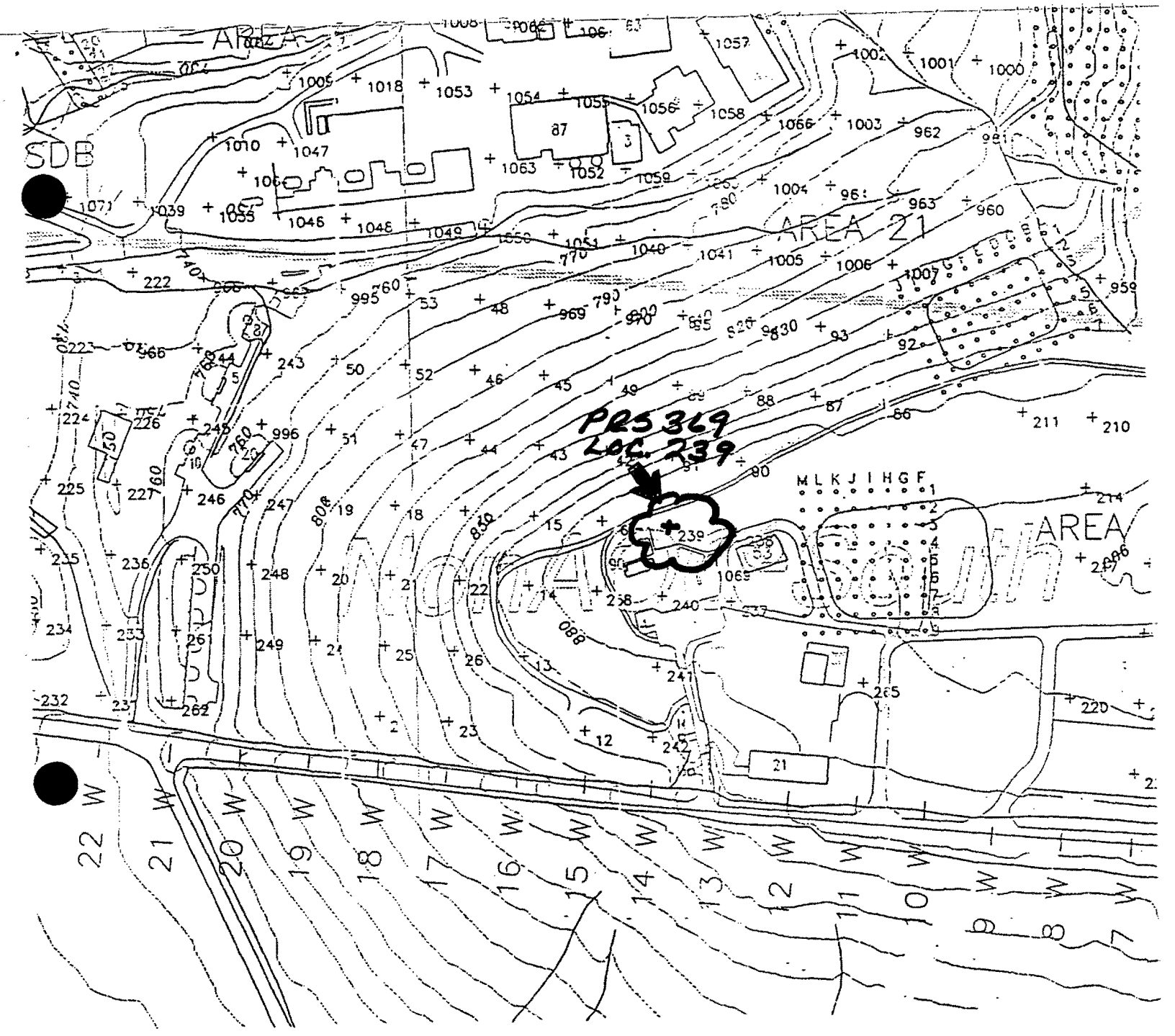
APPENDIX D

RADIOLOGICAL DATA (FIDLER SURVEY MOUND SOIL SCREENING FACILITY DATA) FOR NON-AOC POINTS

	FIDLER SURVEY DATA					MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
04N06	137.8	100	6.5	5.0	NC	0	a	0.3	a
04N6.5	137.8	1000	6.5	80.	45	NC		NC	
04N07	137.8	100	6.5	6.0	NC	19	a	0.8	a
04N08	179.4	100	10.92	8.5	NC	0	a	1.1	a
04N13	170.3	130	9.72	8.5	NC	13	a	0.7	a
04N14	170.3	110	9.72	6.0	NC	16	a	1.4	a
04N15	179.4	170	10.92	8.5	NC	19	a	1.2	a
04N16	179.4	140	10.92	8.0	NC	31	b	0.8	a

NR - Not recorded
NC - No sample/reading taken
NA - Reading not taken; contamination criteria not exceeded.
a - Mound Soil Screening Facility detection level not exceeded.
b - Concentration at or above the Mound Soil Screening Facility detection level.
c - Results of the wipe sample were less than 20 disintegrations per minute.
CPM - Counts per minute
KCPM - Counts per minute x 1000
pCi/g - Picocuires per gram

MOUND SOIL SCREEN DATA



LEGEND	Sample Locations
Features:	
+ PETREX Sample Location	Plate 1

Two samples, #50 and #220, demonstrated mild interference to the identification of petroleum hydrocarbons due to the presence of terpenes. Terpenes are hydrocarbon compounds derived from plant resins. Terpenes may enter the soil gas naturally through plant growth or may be released into the environment as components of products containing terpenes (e.g., turpentine, natural oils, etc.). The recorded response levels yielded by these two samples for aromatic hydrocarbons and total petroleum hydrocarbons do not accurately reflect the level of these compounds in the soil gas due to this interference. Thus, the data are excluded from reporting and replaced with the letter "T" in Table 1 and on Plate 2 and 4. Despite this interference, and taking into account the effects of terpenes on the samples, it is apparent that only very low relative levels of aromatic hydrocarbons and total C_5 to C_{11} petroleum hydrocarbons may be present in the soil gas at the collection points of these two samples.

Halogenated organic compounds were detected rarely in the soil gas within the NonAOC-South, but several occurrences are notable (see the mass spectra of samples #25, #86, #94, and #1069). A pronounced level of tetrachloroethene (PCE) was detected in sample #94. Pronounced levels of trichloroethene (TCE) were detected in samples #239, and #1069; and a pronounced level of dichlorobenzene was detected in sample #25. A low but distinct occurrence of trichlorotrifluoroethane (Freon-113) was also detected in sample #86.

8.2.2 NonAOC-West

Elevated levels of petroleum hydrocarbons were detected at numerous points within the NonAOC-West. Two distinct combinations of petroleum hydrocarbons were observed. One combination of compounds (exemplified by the mass spectra of samples #1025 and #1085) was typical of the composition of vapor derived from partially weathered light or medium weight fuels such as gasoline or diesel fuel. The soil gas at these points contained particularly high levels of the C_7 and C_8 aromatics toluene and ethylbenzene/xylenes. Samples #963, #964, #1001, #1025, #1026, #1043, #1048, #1056, #1059, #1061, #1062, #1066, #1084, #1085, and #1093 demonstrated the most pronounced levels of the light aromatics and other compounds commonly found in light and medium weight fuels. The purity of occurrence of light weight aromatics, and ethylbenzene/xylenes in particular, in samples #1026, #1046, #1048, #1056, #1059, #1062, #1066, and #1084 may alternately be an indication of the occurrence in the subsurface of components of industrial solvents or paint thinners (see the mass spectrum of sample #1059). Samples #961, #1008, #1015, #1022, #1035, #1041, and #1071 demonstrated elevated levels of combinations of hydrocarbons which are typical of the composition of vapor derived from weathered medium to heavy weight fuels or oils (see the mass spectra of samples #1035 and #1071). Each of these seven samples contained elevated levels of compounds, particularly cycloalkenes/dienes, ranging from C_4 to C_{14} in weight.

The areal distribution of halogenated hydrocarbons in the soil gas is displayed in Plate 5. PCE was detected much more frequently in the soil gas than were the other halogenated organics. Thus, the majority of the elevated responses to Total Halogenated Hydrocarbons shown in Tables 1 through 5 and on Plate 5 principally reflects the presence of PCE in the soil gas. Significant exceptions to this rule were the occurrence of pronounced levels of TCE at the collection points of samples #239, #956, #976, #1010, #1058, 1066, #1069, #1077, and #1096 (grid coordinates 4N14W, 9N6W, 20N10W, 9N21W, 10N14W, 10N13W, 3½N13½W, 19N10¾W, and 8N25W, respectively); dichlorobenzene at the collection point of sample #25 (grid coordinate 2N18W) and chloroform at the collection point of samples #887 and #890 (from grid coordinates 20N and 18N8W). The highest levels of PCE were detected in the soil gas at the collection point samples #94, #775, #941, #1024, and #1077 (at grid coordinates 7N13W, 26¼N2¼W, 13N1 12N18W, and 19N10¾W).

The occurrence of elevated levels of TCE and dichlorobenzene in the soil gas at sampling poi #25 and #239 is the most salient feature of the distribution of halogenated compounds within t NonAOC-South. Although the structure nearest the collection point of sample #239 may relate to a source of halogenated compounds, the collection point of sample #25 appears to be isolated from any potential source and thus may show impact due to past land use.

The occurrence of high levels of halogenated compounds in the center of the NonAOC-West may relates to nearby operations within neighboring Buildings No. 49 and No. 2. Similarly, the zone of elevated halogenated hydrocarbons located immediately to the northwest, nearby Buildings No. 36, No. 59, and No. 63 may also relate to local operations. The distribution of halogenated organics in the soil gas throughout the NonAOC is limited and suggests that any occurrence of halogenated organics in the in the subsurface is the result of localized small scale releases.

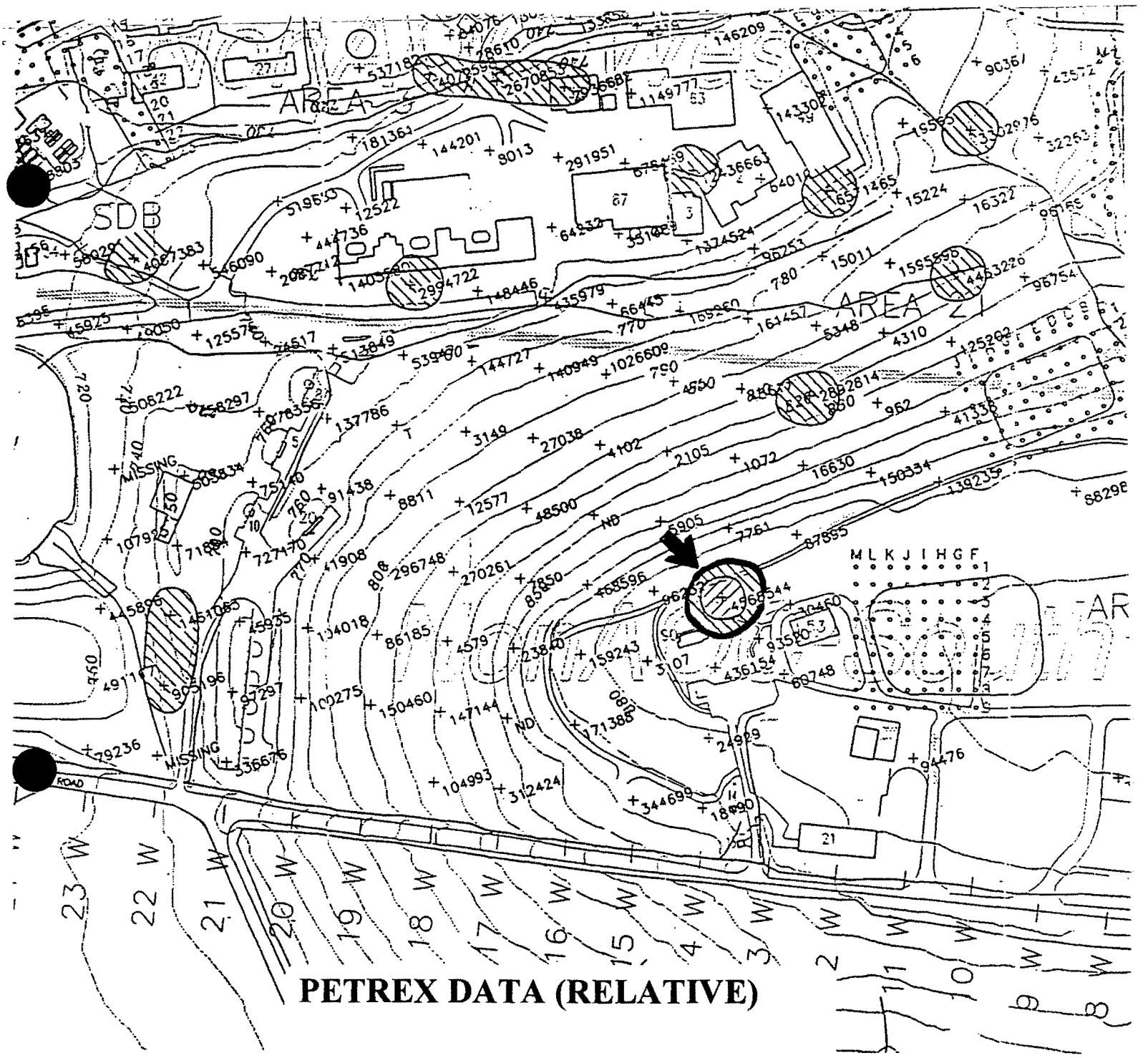
Prominent occurrences of halogenated hydrocarbons in the soil gas at points in the south of in the NonAOC-East and the NonAOC-North generally appear distant from existing structures from which they may originate. Thus, these occurrences may derive from past land use.

10.0 CONCLUSIONS

From the findings of this Petrex soil gas survey the following conclusions may be drawn:

1. Elevated levels of petroleum hydrocarbons occur in the subsurface in many areas of the NonAOC and are likely the result of the release of any of various grades of fuels. However, the potential exists for some occurrences of aromatics to derive from releases of solvents or thinners.

2. The Fuel Area, Area-61, and large portions of the NonAOC-East demonstrate the greatest potential impact to the subsurface by hydrocarbons. Aromatic hydrocarbons which are components of most fuels show the greatest areal distribution within the NonAOC and may pose the greatest risk to subsurface media quality. Principal source areas of petroleum hydrocarbons within the NonAOC include the fuel pumps, separa



PETREX DATA (RELATIVE)

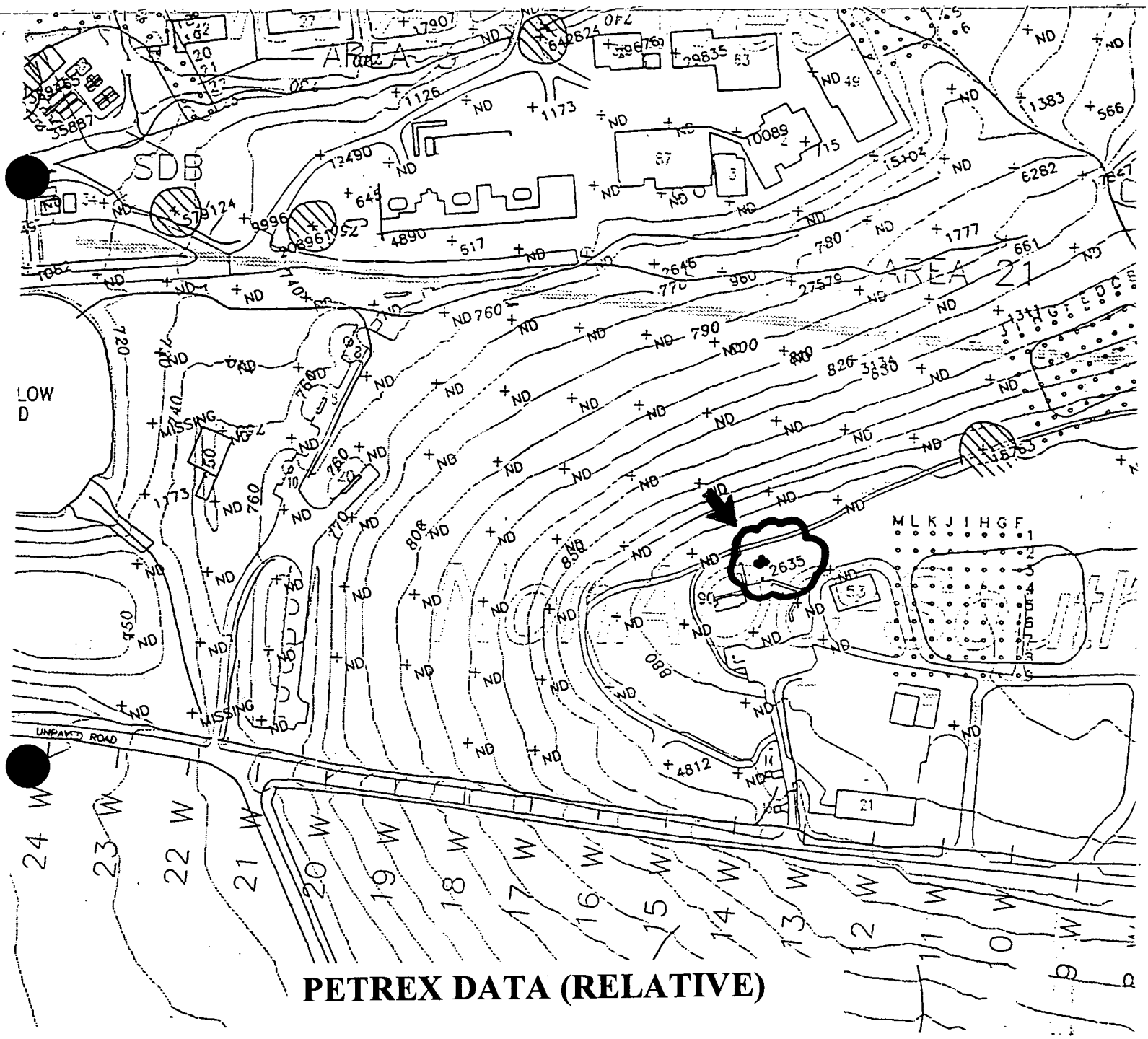
LEGEND

Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 4,200,000	≥ 20,000,000	≥ 5,000,000	≥ 10,000,000	≥ 5,800,000
850,000–4,199,999	2,000,000–19,999,999	850,000–4,999,999	1,500,000–9,999,999	1,400,000–5,799,999

Relative Response

Total Aromatic Hydrocarbons

Plate 2

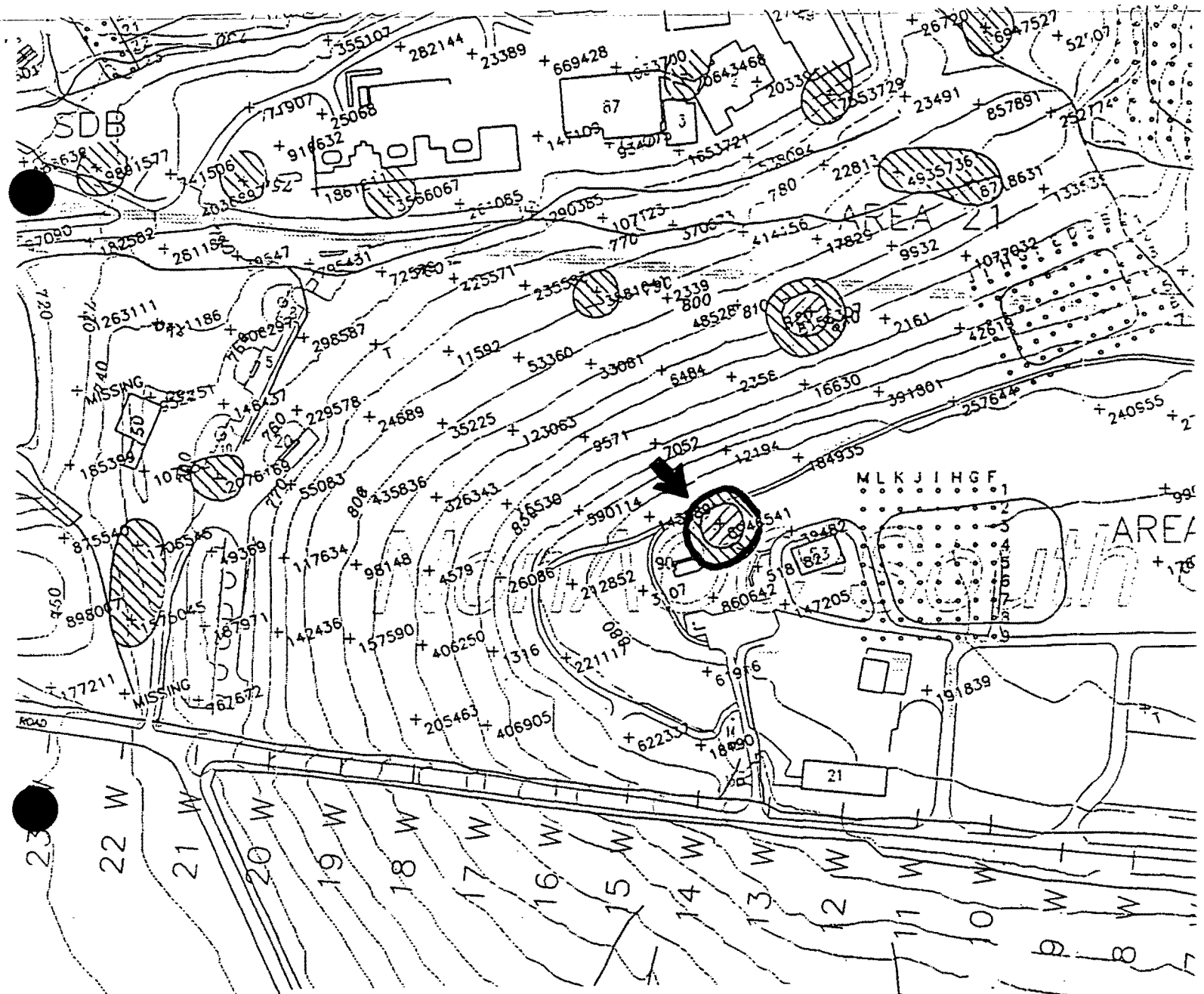


LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 70,000	≥ 1,000,000	≥ 300,000	≥ 800,000	≥ 1,400,000
7,000–69,999	100,000–999,999	30,000–299,999	80,000–799,999	180,000–1,399,999

Relative Response

Total Semivolatile Hydrocarbons

Plate 3



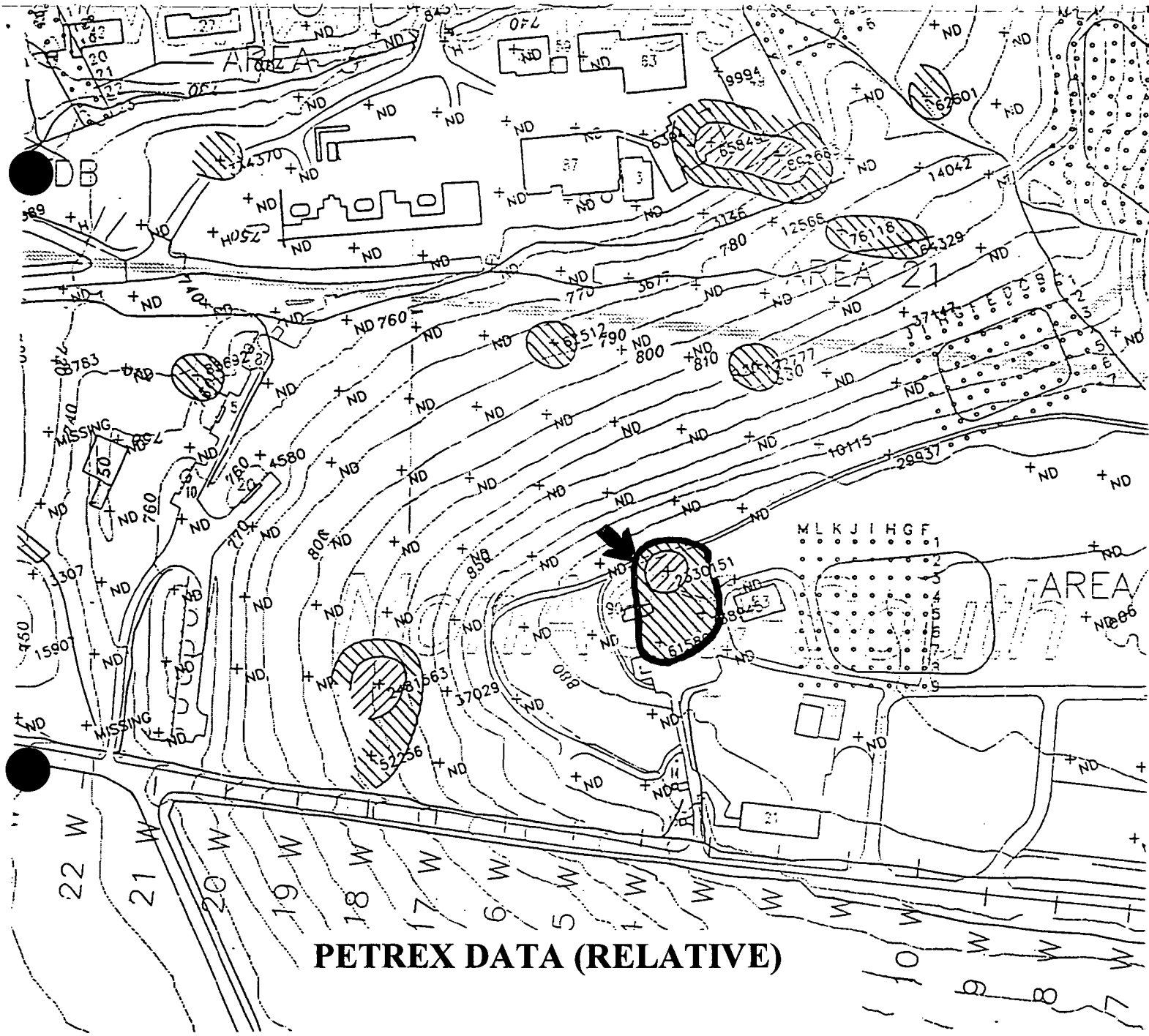
PETREX DATA (RELATIVE)

LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 51
≥ 8,000,000	≥ 29,000,000	≥ 11,500,000	≥ 23,000,000	≥ 25,000,000
1,500,000–7,999,999	3,000,000–28,999,999	1,800,000–11,499,999	4,000,000–22,999,999	3,000,000–24,999,999

Relative Response

Total C5–C11
Petroleum Hydrocarbons

Plate 4



LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 500,000	≥ 500,000	≥ 80,000	≥ 400,000	≥ 250,000
50,000–499,999	50,000–499,999	20,000–79,999	40,000–399,999	35,000–249,999

Relative Response

Total Halogenated Hydrocarbons

Plate 5

MOUND

Environmental
Restoration
Program

Further Assessment

Soil Gas Confirmation Sampling

Mound Plant
Miamisburg, Ohio

May 1996

Revision 0

Department of Energy

EG&G Mound Applied Technologies

Table I.1 Soil Analyte List

Volatile Organic Compounds

Acetone	Dibromochloromethane	4-Methyl-2-Pentanone
Benzene	1,1-Dichloroethane	Styrene
Bromodichloromethane	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromoform	1,1-Dichloroethene	Tetrachloroethene
Bromomethane	1,2-Dichloroethene (total)	1,1,1-Trichloroethane
2-Butanone	1,2-Dichloropropane	1,1,2-Trichloroethane-
Carbon Disulfide	cis-1,3-Dichloropropene	Trichloroethene
Carbon Tetrachloride	trans-1,3-Dichloropropene	Toluene
Chlorobenzene	Ethylbenzene	Vinyl Acetate
Chloroethane	2-Hexanone	Vinyl Chloride
Chloroform	Methylene Chloride	Xylenes (total)
Chloromethane		

Semivolatile Organic Compounds

Acenaphthene	Chrysene	Hexachlorobenzene
Acenaphthylene	Dibenz(a,h)anthracene	Hexachlorobutadiene
Anthracene	Dibenzofuran	Hexachlorocyclopentadiene
Benzo(a)anthracene	1,2-Dichlorobenzene	Hexachloroethane
Benzo(a)pyrene	1,3-Dichlorobenzene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	1,4-Dichlorobenzene	Isophorone
Benzo(g,h,i)perylene	3,3-Dichlorobenzidine	2-Methylnaphthalene
Benzo(k)fluoranthene	2,4-Dichlorophenol	2-Methylphenol
bis(2-Chloroethoxy)methane	Diethylphthalate	4-Methylphenol
bis(2-Chloroethyl)ether	2,4-Dimethylphenol	Naphthalene
bis(2-Ethylhexyl)phthalate	Dimethyphthalate	2-Nitroaniline
4-Bromophenyl-phenylether	Di-n-butylphthalate	3-Nitroaniline
Butylbenzylphthalate	Di-n-octylphthalate	4-Nitroaniline
Carbazole	4,6-Dinitro-2-methylphenol	Nitrobenzene
4-Chloroaniline	2,4-Dinitrophenol	2-Nitrophenol
4-Chloro-3-methylphenol	2,4-Dinitrotoluene	4-Nitrophenol
2-Chloronaphthalene	2,6-Dinitrotoluene	N-Nitroso-di-n-propylamine
2-Chlorophenol	Fluoranthene	N-Nitroso-diphenylamine
4-Chlorophenyl-phenylether	Fluorene	2,2-oxybis(1-Chloropropane)
Pentachlorophenol	Pyrene	2,4,5-Trichlorobenzene
Phenanthrene	1,2,4-Trichlorobenzene	2,4,6-Trichlorobenzene
Phenol		

Table I.1 Soil Analyte List (Continued)

Pesticides/PCB's		
Aroclor-1016	Delta-BHC	Endosulfan II
Aroclor-1221	Gamma-BHC	Endosulfan sulfate
Aroclor-1232	alpha-Chlordane	Endrin
Aroclor-1242	gamma-Chlordane	Endrin aldehyde
Aroclor-1248	4,4'-DDD	Endrin ketone
Aroclor-1254	4,4'-DDE	Heptachlor
Aroclor-1260	4,4'-DDT	Heptachlor epoxide
Aldrin	Dieldrin	Methoxychlor
Alpha-BHC	Endosulfan I	Toxaphene
Beta-BHC		
Inorganics		
Aluminum	Copper	Potassium
Antimony	Cyanide	Selenium
Arsenic	Iron	Silver
Barium	Lead	Sodium
Beryllium	Lithium	Thallium
Bismuth	Magnesium	Tin
Cadmium	Manganese	Vanadium
Calcium	Mercury	Zinc
Chromium	Molybdenum	Nitrate/Nitrite
Cobalt	Nickel	Explosives (USATHAMA,PETN)
Radionuclides		
Americium-241	Plutonium-238	Thorium-230
Bismuth-207	Plutonium-239/240	Thorium-232
Bismuth-210	Potassium-40	Uranium-234
Cesium-137	Radium-226	Uranium-235
Cobalt-60	Thorium-228	Uranium-238

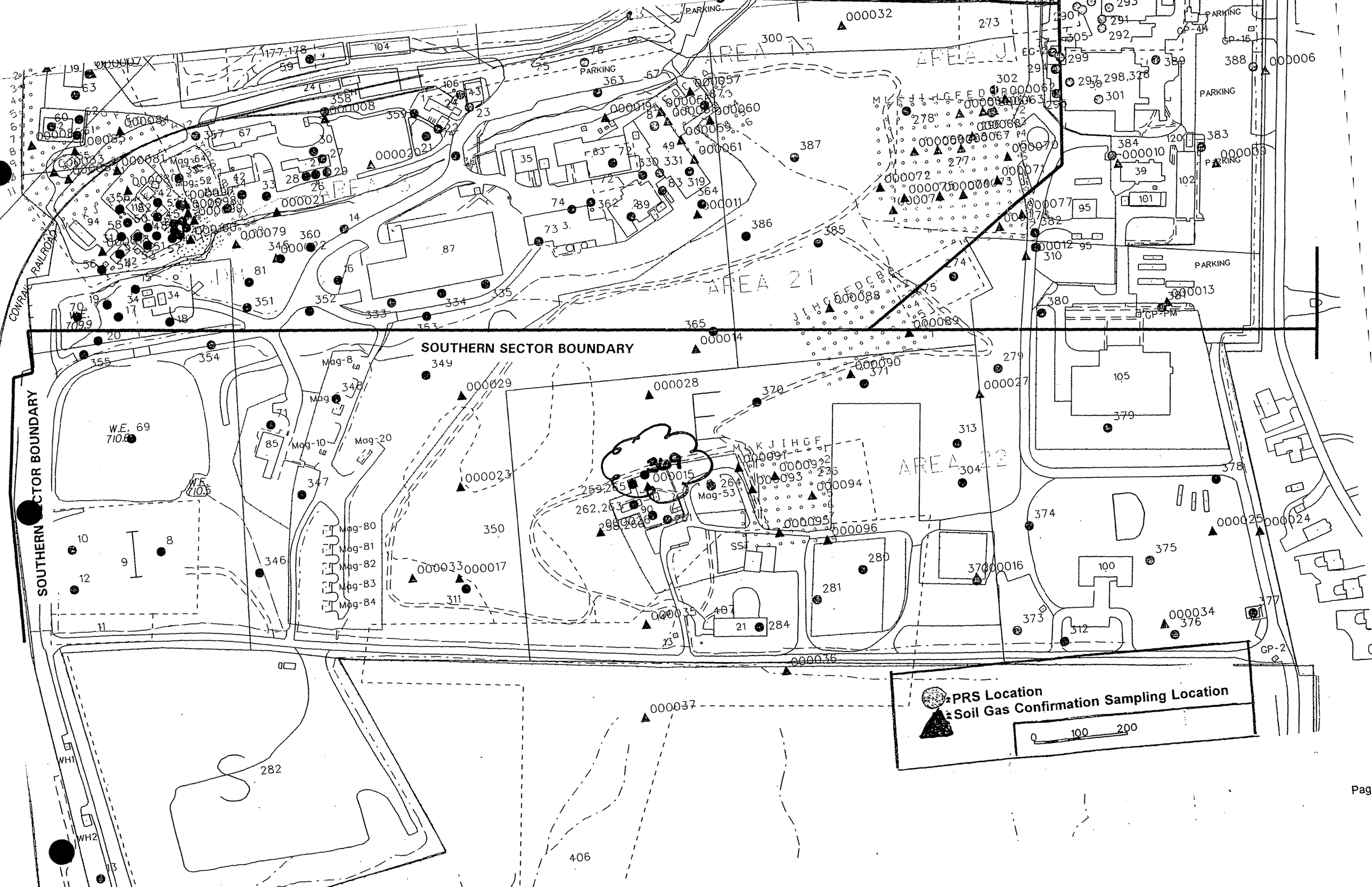

SOUTHERN SECTOR BOUNDARY
SOUTHERN SECTOR BOUNDARY
AREA 21
AREA 22
AREA 15
PARKING
CONRAIL RAILROAD
PRS Location
Soil Gas Confirmation Sampling Location
0 100 200

Table A.1. Soil Gas Confirmation Detected Volatile Organic Compounds (cont.)

ANALYTE	SGC NAC 000010	SGC NAC 000011	SGC NAC 000012	SGC NAC 000013	SGC NAC 000014	SGC NAC 000015	Background	10^{-6} Construction Worker Guidelines
VOLATILES (μg/Kg)								
Acetone							NA	105000000
1,2-Dichloroethene (total)						96	NA	21500000
2-Butanone			8 J	10 J			NA	46500000
Benzene						2 J	NA	8900
Carbon Disulfide				4 J			NA	1400000
Chloroform							NA	NA
Chloromethane	4 J						NA	NA
Ethylbenzene						1 J	NA	480
Methylene Chloride	8						NA	NA
Tetrachloroethene							NA	10500000
Toluene		2 J				28	NA	1250000
Trichloroethene				7		3 J	NA	41000
Xylene (total)					1 J	4 J	NA	2150000000

J - Numerical value is an estimated quantity
NA - Value not available
D - Sample was diluted
C - Estimated due to error in calibration
μg/kg - micrograms per kilogram
B - Analyte detected below CRDL but above instrument detection limit

Table A.2. Soil Gas Confirmation Detected Semivolatile Organic Compounds (cont.)

ANALYTE	SGC NAC 000008		SGC NAC 000009		SGC NAC 000010		SGC NAC 000011		SGC NAC 000012		SGC NAC 000015		Background	10^{-6} Construction Worker Guidelines
SEMIVOLATILES (μg/Kg)														
Acenaphthene													NA	NA
Acenaphthylene													NA	NA
Anthracene													NA	320000000
Benzo(a)anthracene	57	J							18	J			NA	4100
Benzo(a)pyrene	65	J							21	J			NA	410
Benzo(b)fluoranthene	67	J							22	J			NA	4100
Benzo(g,h,i)perylene	26	J											NA	NA
Benzo(k)fluoranthene	58	J							17	J			NA	41000
Bis(2-ethylhexyl)phthalate			71	J			36	J	35	J			NA	215000
Butylbenzylphthalate													NA	215000000
Carbazole													NA	NA
Chrysene	68	J			20	J			22	J			NA	410000
Di-n-butyl phthalate													NA	105000000
Di-n-octyl phthalate													NA	21500000
Dibenz(a,h)anthracene													NA	410
Dibenzofuran													NA	NA
Diethyl phthalate													NA	NA
Fluoranthene	110	J			31	J			38	J			NA	42500000
Fluorene													NA	NA
Indeno(1,2,3-cd)pyrene	36	J											NA	4100
2-Methylnaphthalene													NA	NA
Naphthalene											61	J	NA	NA
Phenanthrene	53	J											NA	NA
Phenol													NA	650000000
Pyrene	120	J			31	J	20	J	37	J			NA	32000000

Table A.4. Soil Gas Confirmation Detected TAL Inorganics (cont.)

ANALYTE	SGC NAC 000013		SGC NAC 000014		SGC NAC 000015		SGC NAC 000016		SGC NAC 000017		SGC NAC 000018		Background	10^{-6} Construction Worker Guidelines
INORGANICS (mg/kg)														
Aluminum	8460		17700		7370		14100		20000		5130		19000	NA
Antimony													NA	425
Arsenic	1.2	BJ	2.7		3.6	J	3.4		2.4	B	4.1		8.6	320
Barium	53.4		110		51.3	B	68.7		119		21.4	B	180	75000
Beryllium	0.20	B	0.68		0.24	B	0.46		0.98		0.28		1.3	0.7
Bismuth							0.82	B	1.2	B			NA	NA
Cadmium	4.6		7.7		3.7		5.7		8.6				2.1	1050
Calcium	222000	J	94200		342000		133690		23800		157000		310000	NA
Chromium	10.8		22.3		9.1		17.7		24.5		9.3		20	1050000
Cobalt	7.5	BJ	13.9		5.8	B	11.6	B	18.5		5.5	B	19	NA
Copper	13.5	J	22.4		12.2		19.3		26.9		11.6		26	NA
Cyanide			1.8				1.0						ND	21400
Iron	21100		36300		16600		26600		40000		13600		35000	NA
Lead	29.4	J	12.9		14.3		14.1		27.5		8.2		48	NA
Lithium	17.8	B	30.7		15.0	B	25.1		34.1		18.1	B	26	NA
Magnesium	7250	J	8190		4760		14600		6250		47700		40000	NA
Manganese	543		939		689		641		1360		381		1400	135000
Mercury									0.07	B			NC	320
Molybdenum	0.81	B	1.3	B	0.51	B	1.3	B	0.76	B	0.82	B	27	NA
Nickel	17.6		31.4		13.8		23.9		34.4		13.5		32	21500
Potassium	1100	B	2250	B	1010	B	2090	B	3680		1040	B	1900	NA
Selenium													NA	NA
Silver											0.41	B	1700	5500000
Sodium	328	BJ	142	B	248	B	398	B	209	B	398	B	240	NA
Thallium													460	NA
Tin	1.1	B	0.98	B			1.7	B	3.3	B			20	NA
Vanadium	12.9		29.4		10.7		23.8		30.2		10.3		25	7500
Zinc	44.9		92.5		67.7		70.5		103		41.2		140	320000

Table A.6. Soil Gas Confirmation Detected Radionuclides (cont.)

ANALYTE	SGC NAC 000015	SGC NAC 000016	SGC NAC 000017	SGC SAN 000018	SGC NAC 000019	SGC NAC 000020	SGC NAC 000021	Background	10^{-6} Construction Worker Guidelines
RADIONUCLIDES (pCi/g)									
Americium-241		0.162						ND	4.95
Bismuth-207		0.0183						ND	0.175
Bismuth-210		0.00477						ND	NA
Cesium-137		0.0763	0.582				0.193	0.42	0.46
Cobalt-60		0.0142						NC	0.1
Plutonium-238	0.0118	0.253	0.200	0.684	0.121	0.721	0.772	0.13	5.5
Plutonium-239/240		0.00413	0.0166	0.00487			0.00579	0.18	5.5
Potassium-40	19.2	15.2	29.1	10.1	7.90	24.7	41.8	37	NA
Radium-226	1.40	0.934	0.960	0.677	0.528	0.841	1.03	2	0.14
Thorium-228	1.37	1.04	1.10	0.465	0.378	0.892	1.19	1.5	0.85
Thorium-230	1.48	1.36	1.01	0.582	0.749	1.08	0.701	1.9	44
Thorium-232	1.43	0.894	1.26	0.508	0.375	0.843	0.970	1.4	50
Uranium-234	1.01	0.765	0.698	0.523	0.440	0.751	0.861	1.1	37.5
Uranium-235	0.0927	0.0394	0.0403			0.0362	0.0374	0.11	3.35
Uranium-238	0.955	0.993	0.852	0.496	0.691	0.825	0.822	1.2	11