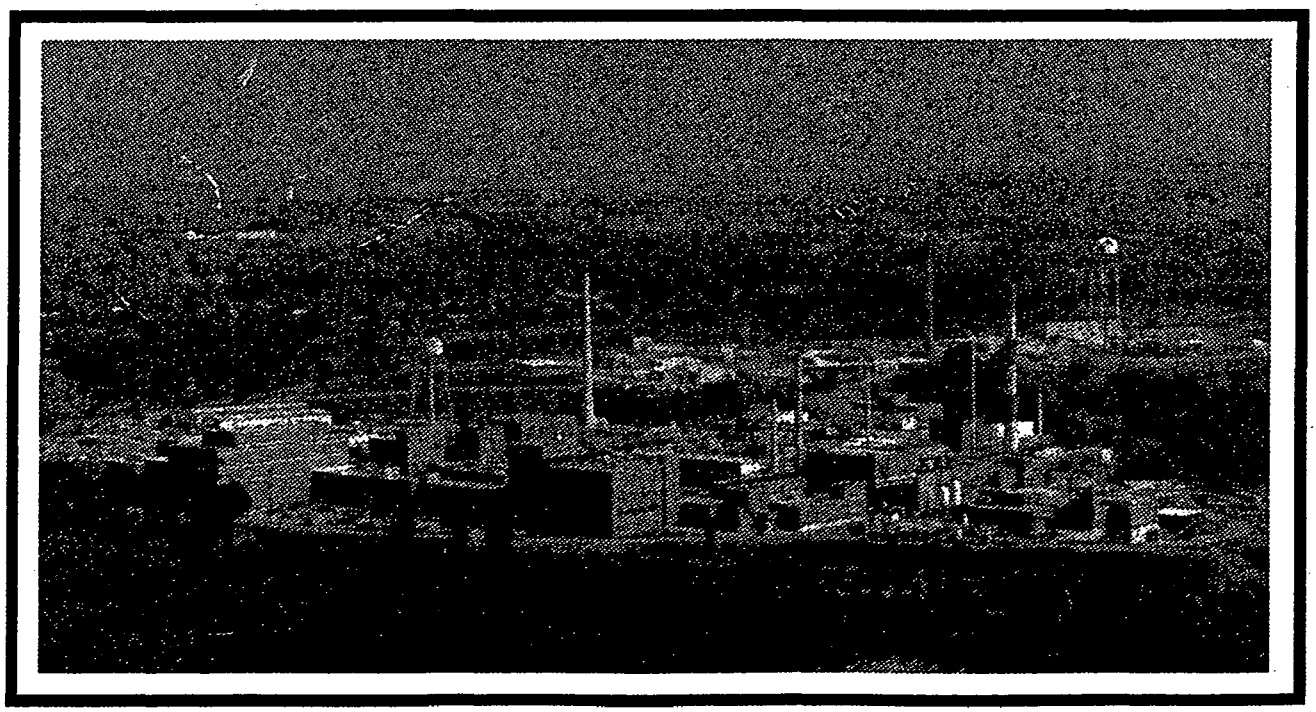
EG&G MOUND-30-03-04-02--9703180020

MOUND

Environmental Restoration Program

MOUND PLANT
Potential Release Site Package
PRS # 309



MOUND

Environmental Restoration Program

MOUND PLANT POTENTIAL RELEASE SITE PACKAGE

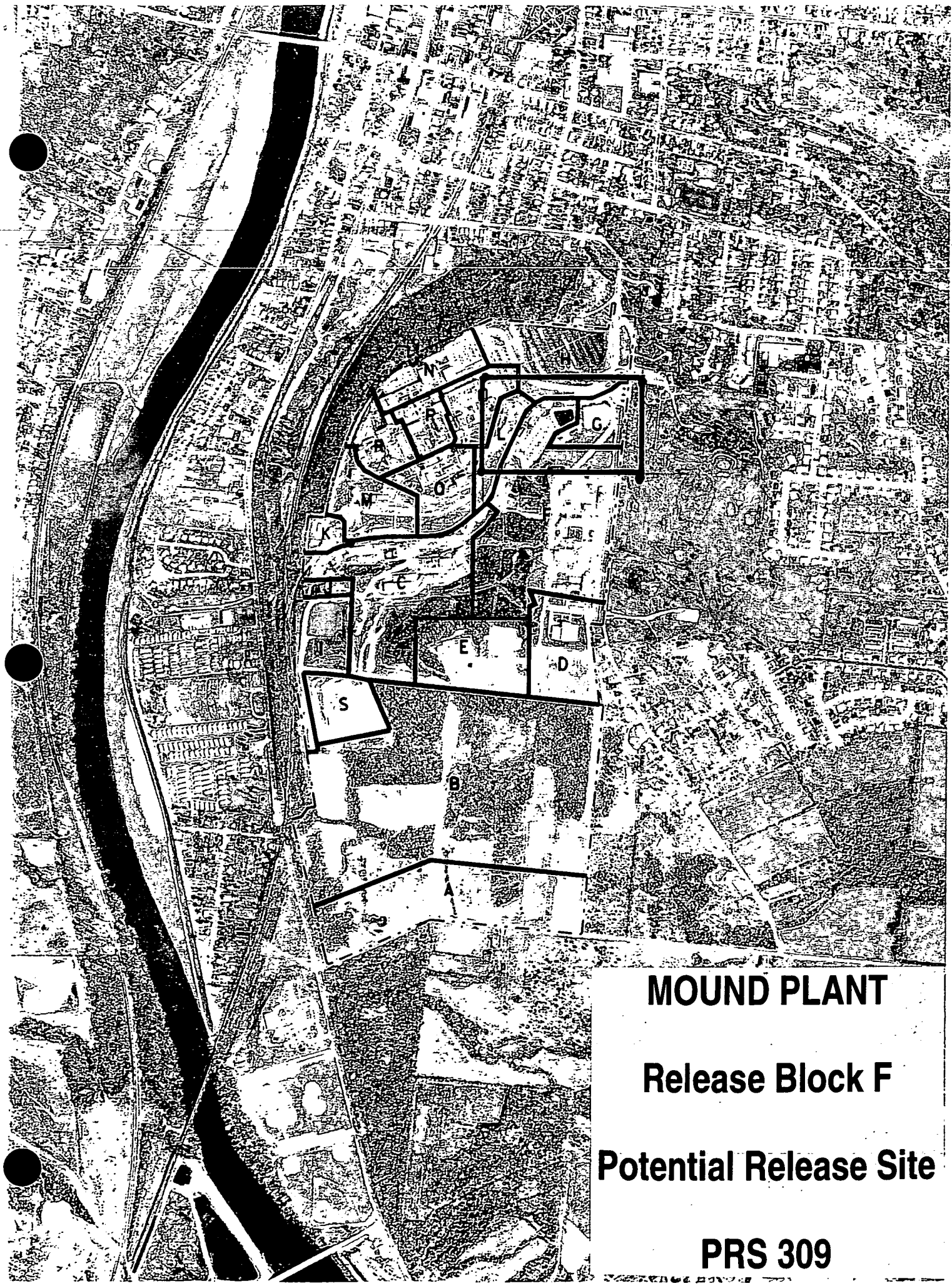
Notice of Public Review Period

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 January 30, 1997. Public comment will be accepted on these packages from January 30, 1997, through March 6, 1997.

PRS 244: Soil Contamination - B Building
PRS 273: Soil Contamination - Area 12 (SM/PP Hillside)
PRS 309: Soil Contamination - Radiological Survey Site Location S0307
PRS 315/316/319: Waste Transportation Vehicles, Trash Dumpsters, Epoxy Resin Waste Storage Site - Building 49
PRS 332: Waste Oil Tank - Building G (used engine oil)
PRS 338: Septic Tank - Building 29
PRS 400: Soil Contamination
PRS 401: Soil Contamination

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

REV	DESCRIPTION	DATE
PUBLIC RELEASE 0	Available for comment.	Dec. 17, 1996
FINAL 1	Comment period expired. No comments. Recommendation page annotated.	Mar. 11, 1997

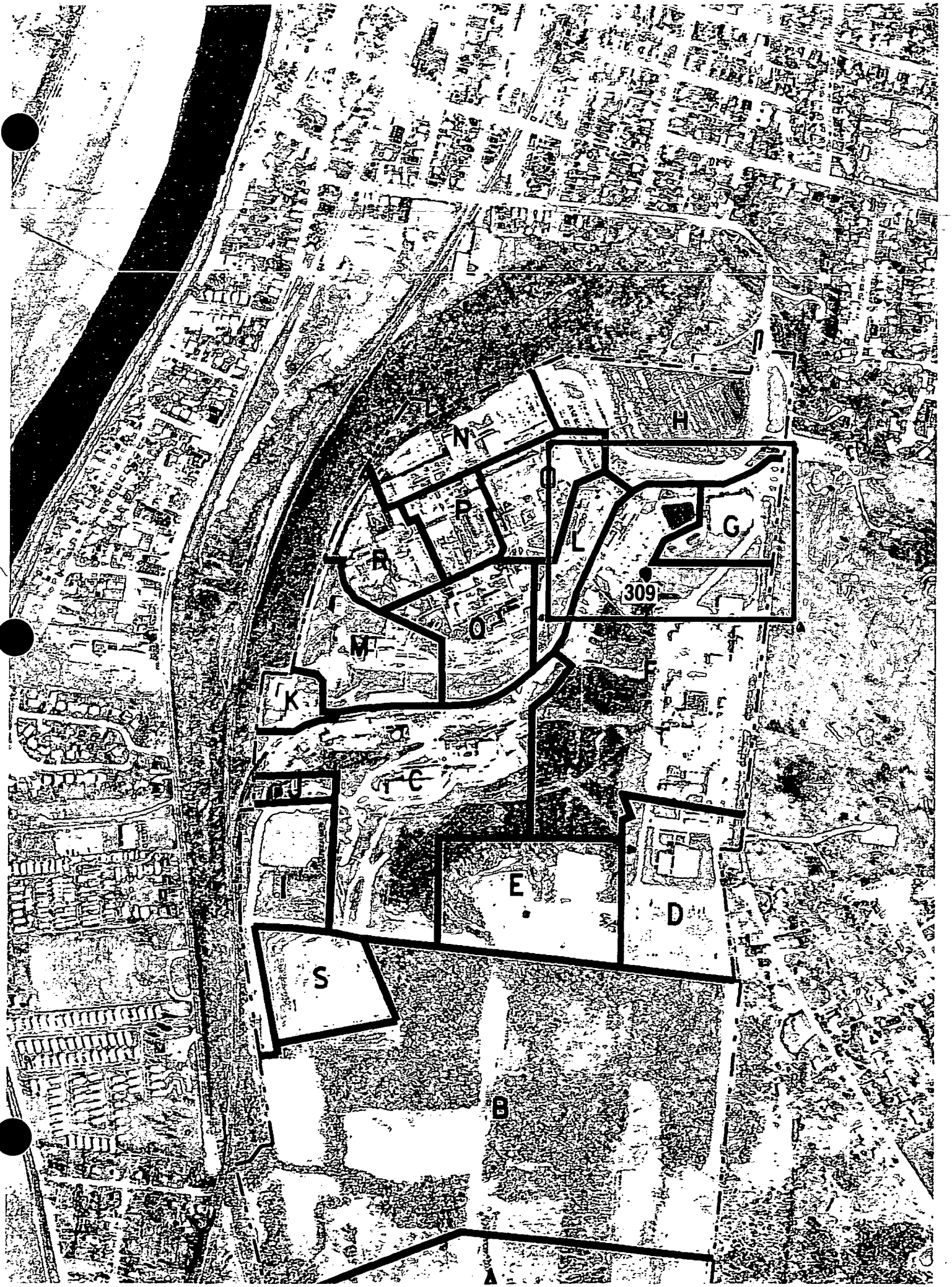


MOUND PLANT

Release Block F

Potential Release Site

PRS 309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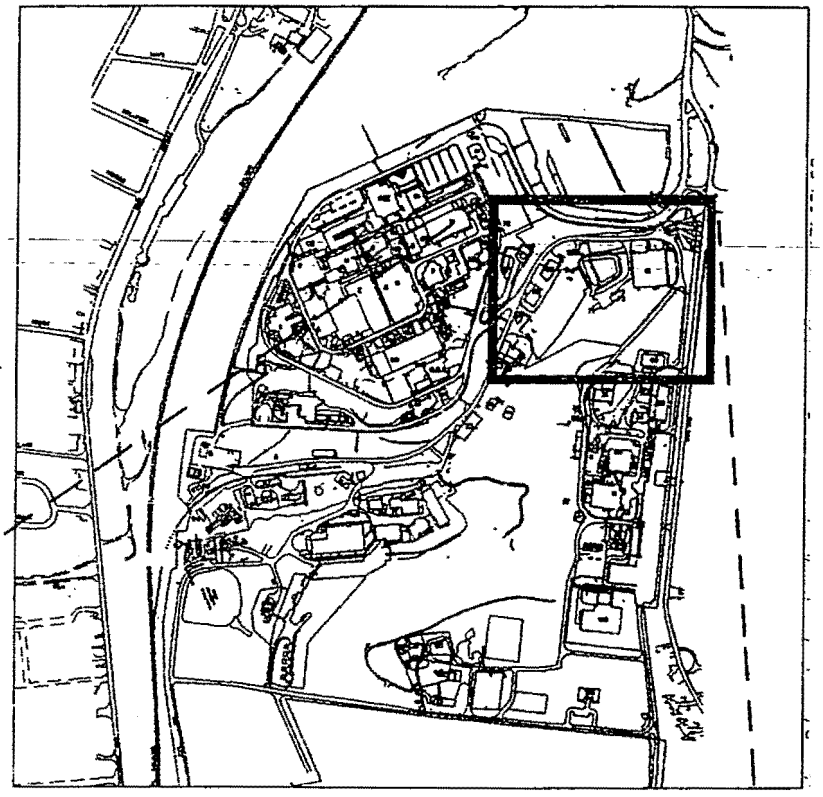
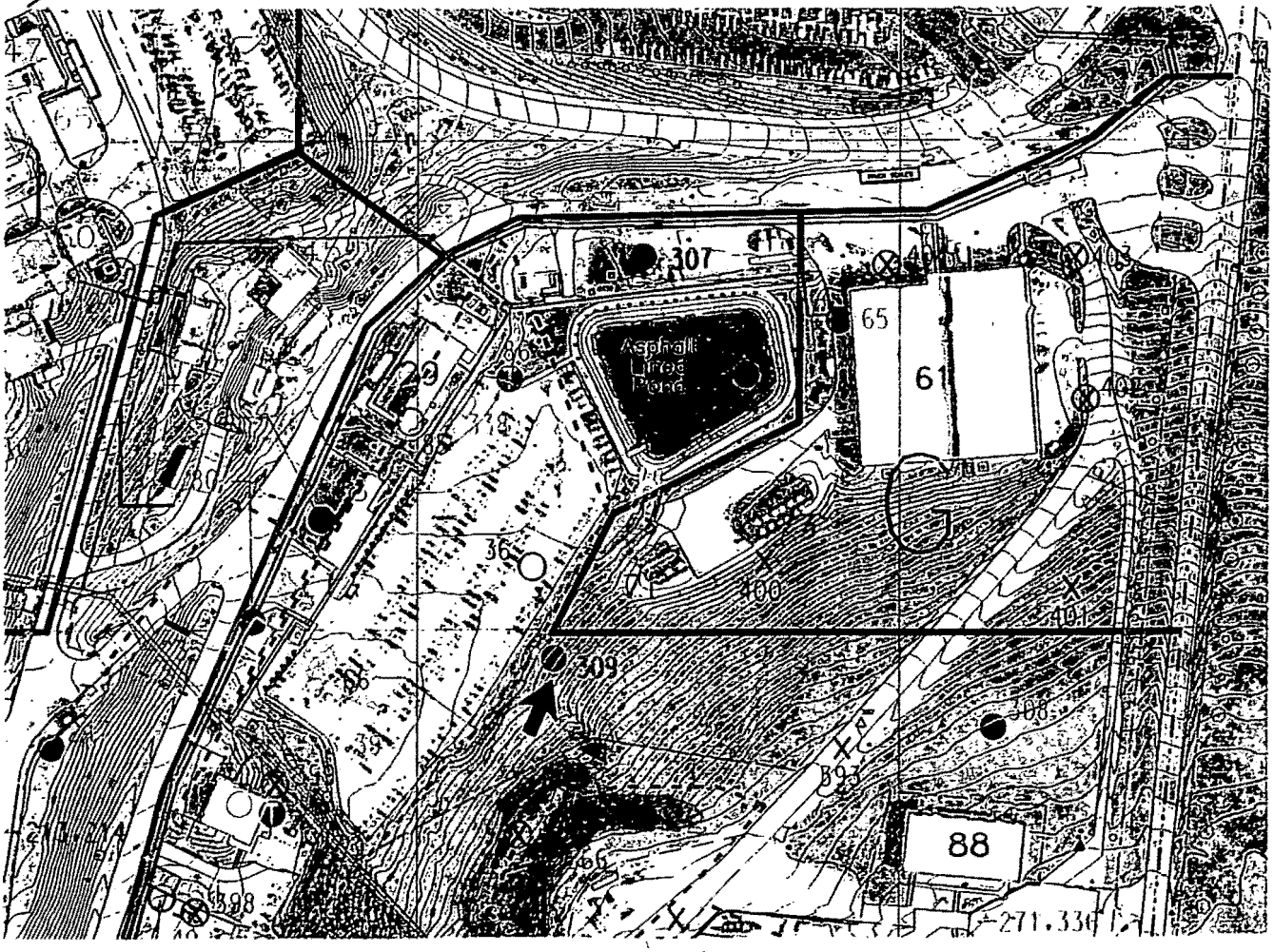
MOUND PLANT

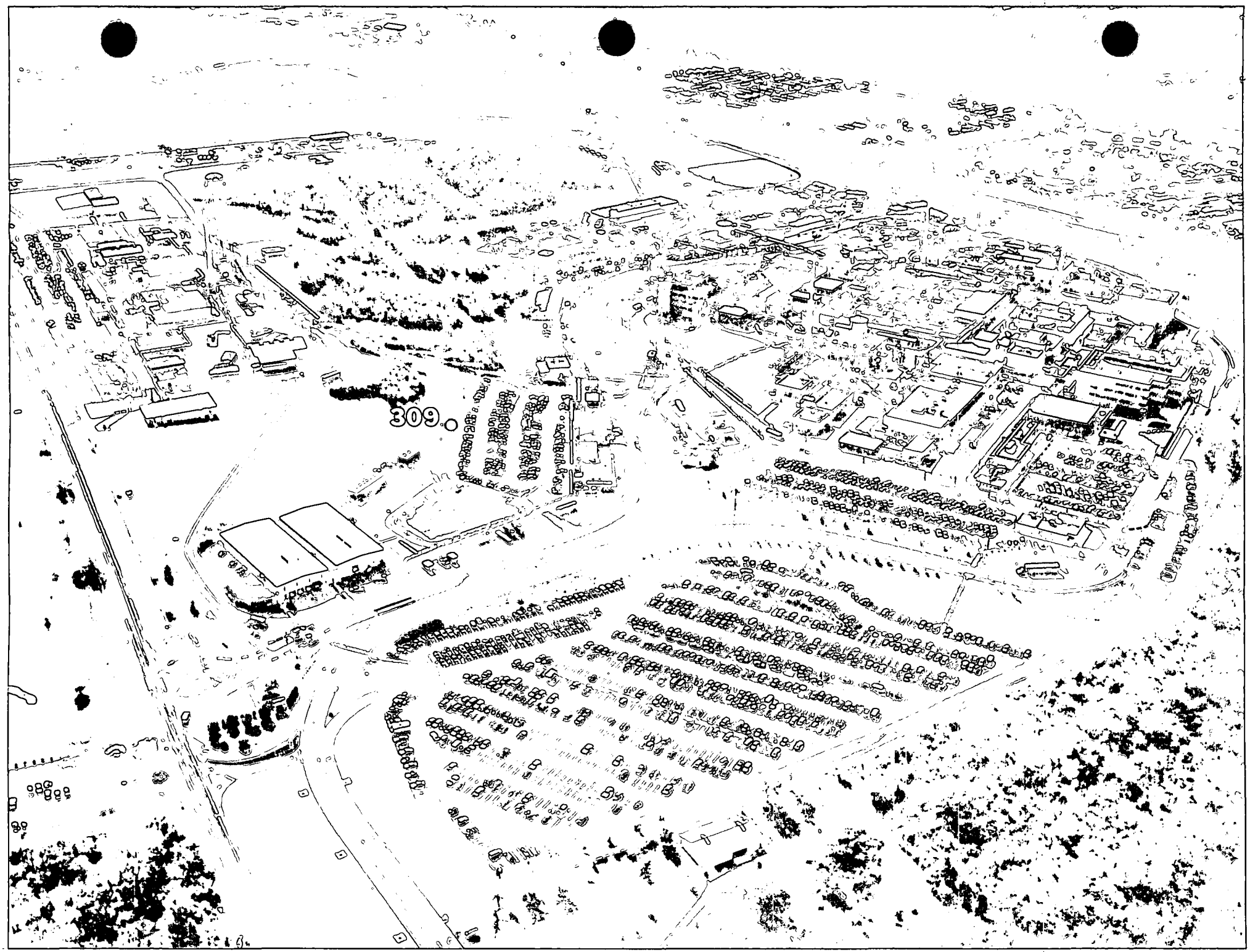
Release Block F

Potential Release Site

PRS 309






309

PRS 309

PRS HISTORY:

PRS 309 is located approximately 150 feet southwest of Building 71 on a hill behind the lower parking lot. This location was identified as a PRS due to a single thorium detection (location S0307) during the Site Survey Project.[2] No hazardous or radioactive waste generating processes or activities are known to have occurred at this location. Building 71, which is nearby, has never been utilized for radioactive processes.

CONTAMINATION:

In 1983, thorium was detected at 6.5 pCi/g in a soil surface sample (S0307); Pu-238 was measured at 5.36 pCi/g in the same sample.[2]

In 1995, a PETREX soil gas report showed "non-detects" for halogenated hydrocarbons and relatively low ion counts for all other hydrocarbons in the vicinity of PRS 309.[3] The maximum concentration of plutonium reported was 30 pCi/g.[3] Mound ALARA for plutonium is 25 pCi/g. All thorium detections were below regulatory guidelines.[3]

In the summer of 1995, PRS 309 and four soil locations located 10 feet north, south, east and west of PRS 309 were sampled for organics (organic vapor analyzer), metals (X-ray fluoroscope) and radionuclides (field detection via FIDLER and lab analysis via Mound soil screening).[5] Sample depth was 0 to 15 feet (unless refusal was reached prior to 15 feet).[5] Sample results were:

1) No radioactive contamination was detected above the regulatory limits.[5]
2) No organics were detected above background levels.[5]
3) No metal concentrations exceeded 10^{-6} Risk Based Soil Guidelines.[4, 5]

NOTE: PRS 309 is located just outside the boundary of the old thorium redrumming area known as Area 7. Area 7 has its own PRS designation (PRS 66).

READING ROOM REFERENCES:

1) OU9, Site Scoping Report: Volume 12 - Site Summary Report, December 1994. (pages 6-8)
2) OU9, Site Scoping Report: Volume 3 - Radiological Site Survey Report, June 1993. (pages 9-14)
3) OU5, Operational Area Phase I Investigation, Area 7 Field Report, Vol. I & II, Final, June 1995. (pages 15-48)
4) Risk Based Guideline Values, December 1995, Final, (Revision 0). (pages 49-51)

OTHER REFERENCES:

5) Other Soils Characterization Report, Final (Revision 0), May 1996. (pages 52-70)

PREPARED BY:

Gerald F. Maul, Member of EG&G Technical Staff

MOUND PLANT
PRS 309
THORIUM HOT SPOT

RECOMMENDATION:

Potential Release Site (PRS) 309 was identified due to a single thorium detection during the site survey project. No hazardous or radioactive waste generating processes are known to have occurred at this location. In 1983, thorium was detected at 6.5 pCi/g in a surface soil sample. Re-sampling of PRS 309 did not locate the thorium hot spot. All plutonium results were below the 10^{-5} Risk Based Guideline Value of 55 pCi/g. Therefore, NO FURTHER ASSESSMENT is recommended for PRS 309.

CONCURRENCE:

DOE/MB: Arthur W Kleinrath 11/27/96
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 12/3/96
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 12/17/96
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 1/30/97 to 3/6/97

☒ No comments were received during the comment period.

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

REFERENCE MATERIAL
PRS 309

Document Control No. _____

Environmental Restoration Program

OPERABLE UNIT 9 SITE SCOPING REPORT: VOLUME 12 – SITE SUMMARY REPORT

MOUND PLANT
MIAMISBURG, OHIO

December 1994

Final

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
300	Area 19, Underground Waste Transfer Line	G-6 G-7 G-8 G-9	Historical	Plutonium-238, Nitric acid	1, 4, 5, 18	Plutonium-238	S	1, 6, 18	14	Tables B.1, B.6, B.7, and B.8	6, 8
301	Building 38 In-Line Incinerator	G-9	Historical	Plutonium-238	2, 4	None Suspected D&D 1986			No Data - pending verification		
302	Area D, Acid Leach Field	H-8 H-9 G-8 G-9	Historical	Plutonium-238, Thorium	1, 4, 5, 18	Plutonium-238	S	6	4, 6 14	Tables B.6, B.7, and B.8 Table B.1 (Table IV.10 in Ref. 6)	8 6
303	Warehouse 14 (AKA Pad 14)	G- 9	Grounds	Thorium sludge constituents Plutonium-238	4	None Suspected			14	Table B.9 RSS[c] Locations C0127 and C0128 (Appendix E in Ref. 6)	6
304	Excavated Materials Disposal Area (AKA Rader's Hill)	I-8	Grounds	Thorium	4	Thorium < 2 pci/gm	S	6	14	Table B.1	6
305	SM Stack	G-9	In service	Plutonium-238	4	None suspected beyond routine emissions	A	4, 18	No Data		
306	SM/PP Hill Seep 0609	L-9	NA	None suspected	5, 18	None suspected			No Data		
307	Site Survey Project Potential Hot Spot Location C0007	E-9	Grounds	Thorium	6	Isolated activity from unknown source			14	Table B.9 (Appendix E in Ref. 6)	6
308	Site Survey Project Potential Hot Spot Location C0028	F-10	Grounds	Thorium	6						
309	Site Survey Project Potential Hot Spot Location S0307	F-9	Grounds	Thorium	6						
	Site Survey Project Potential Hot Spot Location S0647	H-9	Grounds	Cesium-137	6				15	Table B.9 (Appendix E in Ref. 6)	6

1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene
2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40
3 - Target Analyte List
4 - Target Compound List (VOC)
5 - Target Compound List (SVOC)
6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
7 - Dioxins/Furans
8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
9 - Lithium
10 - Nitrate/Nitrite
11 - Chloride
12 - Explosives
13 - Plutonium-238
14 - Plutonium-238, Thorium-232
15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
16 - Tritium

Reference List

1. DOE 1986 "Phase I: Installation Assessment Mound [DRAFT]."
2. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
3. DOE 1992c "Mound Plant Underground Storage Tank Program Plan & Regulatory Status Review (Final)."
4. DOE 1993a "Site Scoping Report: Vol. 7 - Waste Management (FINAL)."
5. EPA 1988a "Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant"
6. DOE 1993d "Operable Unit 9, Site Scping Report: Vol. 3 - Radiological Site Survey (FINAL)."
7. DOE 1993c "Operable Unit 3, Misc. Sites Limited Field Investigation Report."
8. DOE 1992d "Reconnaissance Sampling Report Decontamination & Decommissioning Areas, OU6, (FINAL)."
9. Fentiman 1990 "Characterization of Mound's Hazardous, Radioactive and Mixed Wastes."
10. DOE 1992f "Operable Unit 9, Site Scpoing Report: Vol. 9 - Spills and Response Actions (FINAL)."
11. Styron and Meyer 1981"Potable Water Standards Project: Final Report."
12. DOE 1993b "Reconnaissance Sampling Report - Soil Gas Survey & Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (FINAL)."
13. DOE 1993d "Operable Unit 9, Site Scoping Report: Vol. 3 - Radiological Site Survey (FINAL)."
14. DOE 1991b "Main Hill Seeps, Operable Unit 2, On-Scene Coordinator Report for CERCLA Section 104 Remedial Action, West Powerhouse PCB Site."
15. Halford 1990 "Results of South Pond Sampling."
16. DOE 1993e "Operable Unit 4, Special Canal Sampling Report, Miami Erie Canal."
17. DOE 1990 "Preliminary Results of Reconnaissance Magnetic Survey of Mound Plant Areas 2, 6, 7, and C."
18. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (FINAL)."
19. Rogers 1975 "Mound Laboratory Environmental Plutonium Study, 1974."
20. DOE 1992h "Ground Water and Seep Water Quality Data Report Through First Quarter, FY92."
21. Dames and Moore 1976a, b "Potable Water Standards Project Mound Laboratory" and "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory."
22. DOE 1992i "Closure Report, Building 34 - Aviation Fuel Storage Tank."
23. DOE 1992j "Closure Report, Building 51 - Waste Storage Tank."
24. DOE 1994 "Operable Unit 1, Remedial Investigation Report."
25. EG&G 1994 "Active Underground Storage Tank Plan."

Document Control No. DGC
W.P. DAVIS

Environmental Restoration Program

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

MOUND PLANT
MIAMISBURG, OHIO

June 1993

FINAL

Department of Energy
Albuquerque Field Office

Environmental Restoration Program
EG&G Mound Applied Technologies

5.9. AREAS OF POSSIBLE ELEVATED THORIUM ACTIVITY

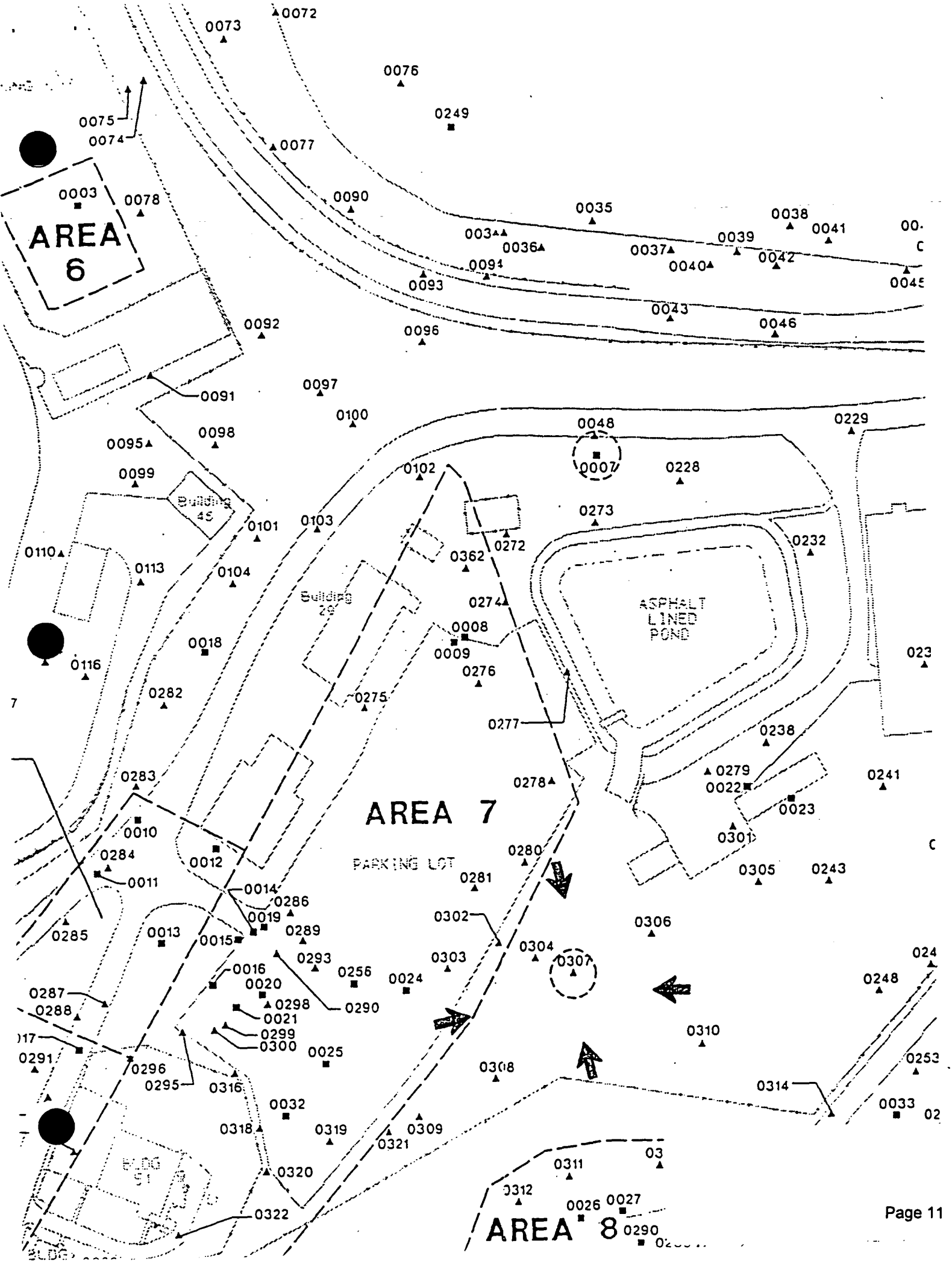
Evaluation of the Site Survey Project data indicates that both isolated and contiguous areas of elevated thorium activity, above the Mound Plant guidelines of 5 (surface) and 15 (subsurface) pCi/g, may exist beyond the areas with numerical indicators. Inspection of Plate 5 suggests that low-level thorium activity may be spread to the areas northwest of Areas 8 and 9 across Area 7. Considering that the thorium project actually involved redrumming operations in Areas 7 and 9, the mechanism of contaminant transport would have been fugitive dust emissions. This is largely consistent with the distribution of thorium depicted in Plate 5. Since this region of the upper valley of the plant has under gone considerable new construction and has been paved with asphalt since the redrumming operations, the isopleth concentrations depicted in Plate 5 may now be represented by spotty contamination in actual field conditions. Samples from locations C0007, C0028, S0307, S0425 are indicated as possible hot spots on Plate 1.

Indications of elevated levels of thorium adjacent to Area 8 (Plate 5) are substantiated by samples collected since the Site Survey Project. Samples were apparently collected north and west of the fenceline and south of Building 61 (Plate 1). Results reported from the Mound Plant Soil Screening Facility (MRC 1985) indicate thorium concentration that ranged from 1 to 28 pCi/g and plutonium-238 concentrations from 3 to 58 pCi/g. Approximately 24 samples were collected and analyzed, but the individual sample locations were not established for this report. The data sheets are included in Appendix E.

An area of possible elevated thorium activity is noted on Plate 1, west of Area 7. This area is located slightly uphill and to the southwest of Building 98. Table V.6 presents the results of the locations that have been included in this area. The maximum concentration of thorium reported, 37.69 pCi/g, was detected in the sample collected from core location C0011 at a depth of 18 inches. Thorium levels in excess of the Mound Plant cleanup levels (5 pCi/g for the first 15 cm of soil and 15 pCi/g for below 15 cm depth) were also measured in samples from core location C0010 and surface locations S0287 and S0288 (Table V.6).

Mound Plant drawings #FSE16472 (DOE 1992f) indicates the depth to bedrock in this area of Mound Plant is approximately 180 inches, or about 15 ft. The core locations in this area were sampled to at least 216 inches. Based on the Mound Plant drawing referenced above, it appears that the core locations in this area were sampled to bedrock, although boring logs are not available.

A second area of low-level but possibly wide-spread thorium contamination is indicated in Area 1 (Plates 1 and 5). This area was also involved with thorium storage and repackaging, but has experienced several cleanup activities, as previously described. Sample locations S0971 and S0982 (Table V.7), indicated as possible hot spots on Plate 1, may represent outlying areas of contamination associated with operations in Area 1.


AREA 6
AREA 7
AREA 8
PARKING LOT
ASPHALT LINED POND
Building 45
Building 29
BLDG 51
0072
0073
0076
0249
0075
0074
0077
0003
0078
0090
0035
0038
0041
0039
0042
0036
0037
0040
0094
0093
0043
0046
0092
0096
0091
0097
0100
0048
0229
0095
0098
0099
0102
0007
0228
0101
0103
0273
0232
0110
0113
0104
0362
0272
0274
0008
0009
0018
0116
0276
0282
0275
0277
0238
0279
0022
0241
0283
0278
0023
0010
0301
0284
0012
0280
0305
0243
0011
0014
0281
0286
0019
0302
0306
0285
0013
0015
0289
0304
0307
0293
0303
0256
0024
0248
0016
0020
0287
0298
0290
0288
0021
0299
0310
0300
0025
0291
0296
0308
0253
0295
0316
0314
0032
0033
0318
0319
0309
0321
0311
0320
0312
0026
0027
0322
0290

Map Location[a]	Coordinates South	Coordinates 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)
S0295	2075	2390	4090	10-83	0	0.64	b					
S0296	2075	2440	5984	07-84	0	1.56[c]	16.59[D]					
S0297	2075	2515	6756	08-84	0	0.31	b					
S0298	2085	2315	6758	08-84	0	3.01	20.52					
S0299	2085	2355	6755	08-84	0	0.41	b		LDL	LDL	1.2	LDL
S0300	2085	2365	6757	08-84	0	0.38	4.48					
C0022	2100	1860	8379	11-84	54	0.05	4.16					
			8380	11-84	80	0.02	2.53					
C0023	2125	1830	1801	05-83	18	0.18	2.81					
			1802	05-83	72	0.05	b					
			1803	05-83	90	0.03	b					
			1804	05-83	108	0.04	b					
C0024	2125	2200	1805	05-83	126	0.02	b					
			1806	05-83	144	0.01	b		LDL	LDL	0.8	LDL
			1807	05-83	156	0.02	b		LDL	LDL	0.9	LDL
S0301	2125	1885	6504	08-84	0	1.42	b					
S0302	2125	2110	6512	08-84	0	4.13	b					
S0303	2125	2160	2818	10-83	0	0.75	b					
S0304	2150	2085	6510	08-84	0	5.22	b		LDL	1.2	1.1	LDL
C0025	2150	2290	1815	05-83	12	6.60	3.90					
			1816	05-83	36	0.30[c]	4.02[c]		LDL	LDL	1	LDL
			1817	05-83	72	0.09	b					
			1818	05-83	90	0.05	b					
			1819	05-83	144	0.05	2.43					

GAMMA SPECTROSCOPY

RADIOCHEMICAL ANALYSIS

Map Location[a]	Coordinates South	Coordinates 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)
S0305	2175	1885	2819	10-83	0	0.09	b					
S0306	2175	1985	6505	08-84	0	4.82	b					
S0307	2175	2060	2821	10-83	0	5.36	6.46					
S0308	2225	2160	6509	08-84	0	1.06	b					
S0309	2225	2235	6508	08-84	0	1.70[c]	b		LDL	1.1	1.2	LDL
S0310	2275	1985	6506	08-84	0	0.59	b					
S0311	2325	2135	6507	08-84	0	0.62	6.76					
S0312	2325	2185	6507	08-84	0	0.75	b					
S0313	2350	2060	2817	10-83	0	6.28[c]	28.73[c]	1.12				
C0026	2362.7	2142.4	None[d]	07-84	0	NR	13					
			None[d]	07-84	12	NR	17					
			None[d]	07-84	24	NR	33					
			None[d]	07-84	36	NR	37					
			None[d]	07-84	48	NR	30					
			None[d]	07-84	60	NR	34					
			None[d]	07-84	72	NR	37					
			None[d]	07-84	84	NR	36					
			None[d]	07-84	96	NR	39					
			None[d]	07-84	108	NR	39					
			None[d]	07-84	120	NR	34					
			None[d]	07-84	132	NR	29					
)27	2371.9	2104.9	None[d]	07-84	0	NR	8.3					
			None[d]	07-84	12	NR	29					
			None[d]	07-84	24	NR	35					
			None[d]	07-84	36	NR	53					
			None[d]	07-84	48	NR	43					
			None[d]	07-84	60	NR	34					

Table V.6. Mound Site Survey Project - Area of Possible Elevated Thorium Activity

Plate 1 Location[a]	Coordinates South	Coordinates West	MRC ID No.	Mo-Yr	Depth (inch)	Plutonium-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Cobalt-60 (pCi/g)	Cesium-137 (pCi/g)	Radium-226 (pCi/g)	Americium-241 (pCi/g)
C0010	1900	2350	1734	05-83	18	0.36	b					
			1735	05-83	36	0.16	11.15					
			1736	05-83	54	NR	18.00					
			1737	05-83	90	0.03	14.41					
			1738	05-83	108	0.03	27.83					
			1739	05-83	162	0.01	5.76					
			1740	05-83	180	0.01	b					
			1741	05-83	198	<0.01	b					
			1742	05-83	216	0.01	5.[illegible]					
			1743	05-83	228	<0.01	[illegible]					
C0011	1925	2400	178[illegible]	05-83	18	8.97	37.69		LDL	LDL	1.5	LDL
			178[illegible]5	05-83	72	0.42	4.43					
			1786	05-83	90	0.[illegible]	b					
			1787	05-83	108	[illegible].31	b					
			1788	05-83	126	0.46	b					
			1789	05-83	198	0.44	b					
			1790	05-83	216	0.84	[illegible]13					

[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
NR - No result given
pCi/g - picocuries per gram
pCi/mL - picocuries per milliliter

Document Control No._____

Environmental Restoration Program

OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
AREA 7 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

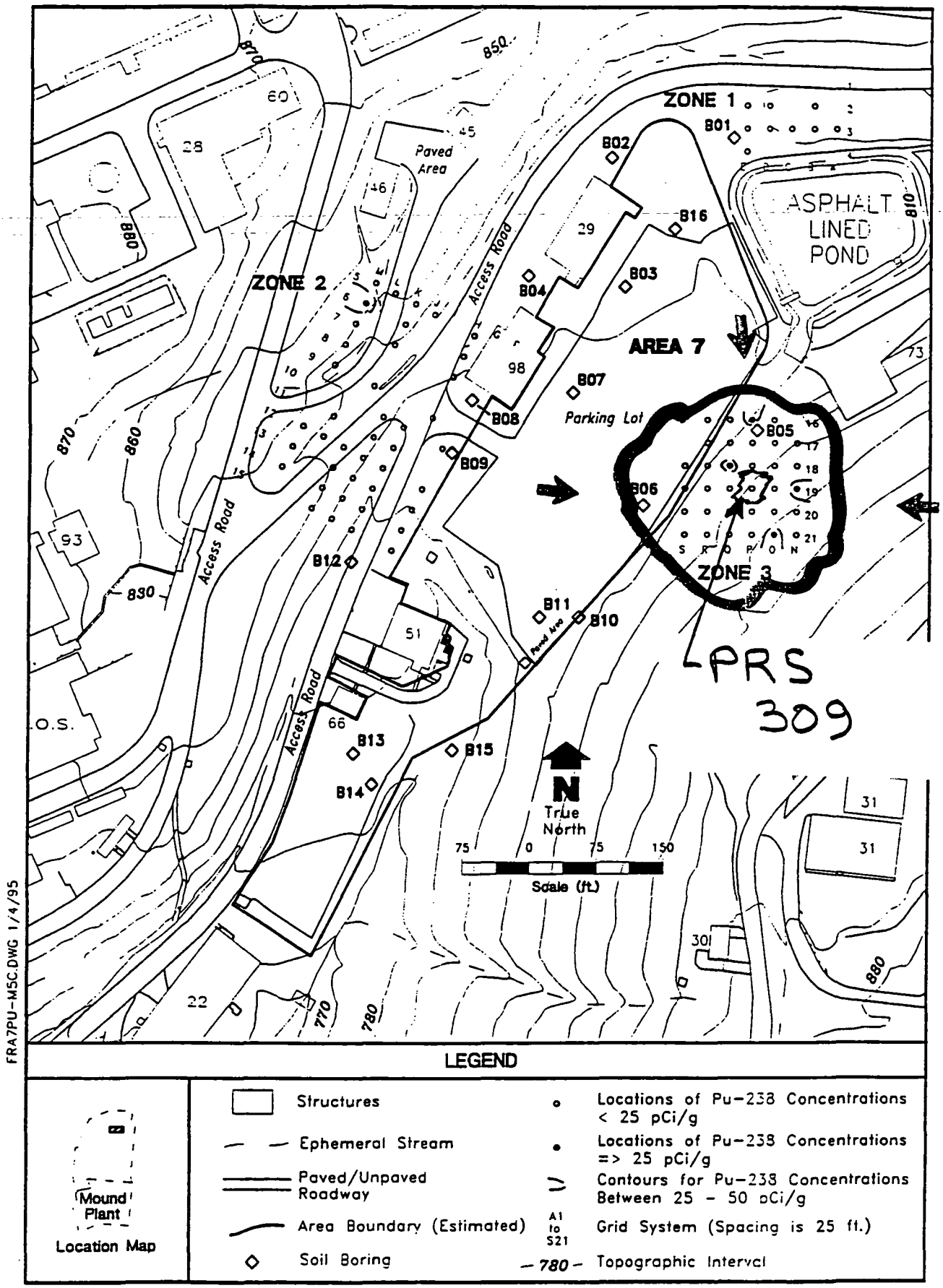


Figure 2.3. Areas of Elevated Surface Pu-238 Activity

Several small areas of elevated surface radiological activity were detected in the western side of Zone 1. In Zone 3, a large portion of the area was identified as having elevated surface radiological activity (see Figure 2.2).

2.1.4.2. Soil Screening Facility Data

Surface soil samples collected as part of the soil gas survey (see Section 2.2.1), were analyzed for Pu-238 and Th-232 at the Mound Plant Soil Screening Facility. Concentrations of Th-232 were not detected equal to or exceeding the Mound Plant Soil Screening Facility detection limit of 2.0 picocuries per gram (pCi/g). Concentrations of Pu-238 equal to or exceeding the Mound Plant Soil Screening Facility detection limit of 25 pCi/g were detected at five of the 132 sample locations. This information is summarized in Table II.3 and presented in Figure 2.3.

Table II.3. Summary of Elevated Surface Soil Radiological Activity

Grid Location*	Mound Plant Soil Screening Facility Data
	Plutonium-238 (pCi/g)
M6	28
N19	27
O21	25
P16	28
Q18	30

* See Figure 2.3 for grid locations

As Figure 2.3 indicates, there are several small locations of near surface (zero to six inches deep) Pu-238 contamination in Area 7. Most of these locations are in Zone 3. Additionally, Pu-238 activity was detected at M6 in Zone 2. The FIDLER survey did not show corresponding radiological activity at these locations.

2.2. SOIL GAS SURVEY

A soil gas survey was performed at the three outlying zones adjacent to Area 7 (see Figure 2.[illegible]) from July 2[illegible] to August 17, 1994. The survey was conducted according to the O[illegible]

The following subsections describe the distribution of the compounds listed above. A summary of soil gas findings is presented in Section 3.

2.2.4.1. Distribution of Total Aromatic Hydrocarbons

Total aromatic hydrocarbons are reported as the combined levels of C_6 to C_{15} aromatic (benzene based) hydrocarbon compounds detected in the soil gas samples. Most of the samples contained the lighter weight (C_6 through C_{10}) aromatics. Few samples were observed to contain C_{11} and heavier aromatics.

The distribution of aromatic hydrocarbons in Area 7 is shown in Appendix D, Plate 2. In Zone 1, elevated relative levels of aromatics were found in soil gas mostly along the access road to the north. There are two isolated sampling points near the asphalt-lined pond which also showed elevated relative levels of aromatics. Several of the samples showed high relative levels of an assortment of hydrocarbons (not just aromatics) which are characteristic of vapor from weathered medium to heavy weight fuels or heating oils.

Zone 2 shows the greatest presence of aromatics. Elevated relative levels were found in several large sections covering most of the area, which correlate to the asphalt roads that cross Zone 2. Aromatics in the soil gas in the southern portion of Zone 2 are mixed with other hydrocarbons, which together are characteristic of vapor from weathered light to medium weight fuels. Aromatics in the soil gas in the northern portion of Zone 2 are combined with other hydrocarbons, which together are characteristic of heavier fuels.

Elevated relative levels of aromatics in Zone 3 were found only in samples R18 and O20. The aromatics from sample O20 occurred with high levels of naphthalene and methylnaphthalene. This suggests the presence in the subsurface of semi-volatile polycyclic compounds such as coal tar, creosote, or heavy fuel oils.

A variety of aromatic hydrocarbons (C_6 - C_{10}) were confirmed on samplers J7, I8, I9, C2, and H10 by Thermal Desorption-Gas Chromatograph/Mass Spectrometry (TD-GC/MS). These results are presented in Appendix D.

2.2.4.2. Distribution of Total Semi-volatile Hydrocarbons

Total semi-volatile hydrocarbons are reported as the combined response to naphthalene; C_{11} through C_{15} alkyl naphthalenes; and C_{12}, C_{14}, and C_{16} polycyclic hydrocarbons. These compounds are constituents of creosote, coal tar, and other heavy, high boiling point fraction petroleum products. Naphthalene, and C_{11} and C_{12} alkyl naphthalenes (e.g. methylnaphthalene and ethyl- or dimethylnaphthalene) may also be found in medium to heavy weight fuels and fuel oils.

The distribution of semi-volatiles is shown in Appendix D, Plate 3. Within Zone 1, four samples (A4, C2, D4, and E1) showed elevated relative response to semi-volatiles in the soil gas. Of these, only sample C2 demonstrated a high relative level of a C_{14} compound. Analysis of C2 by TD-GC/MS did not confirm the presence of a C_{14} polycylic compound (see Appendix D). Semi-volatiles in samples A4, D4, and E1 occurred with various medium to heavy hydrocarbons typical of vapor from medium to heavy weight fuel or fuel oil.

Zone 2 shows elevated relative responses to semi-volatiles, mostly in two locations along the main access road. Semi-volatile compounds in these areas were combined with high relative levels of other petroleum hydrocarbons common in medium to heavy weight fuels or fuel oils. Elevated relative levels of naphthalene and dihydro-1H-indene were detected in the soil gas from sample J14 in the near absence of other petroleum hydrocarbons. This suggests that heavy weight petroleum products, particularly coal tar products, may be present in the subsurface.

Four samples in Zone 3 (N21, O20, R18, and R21) showed elevated relative responses to semi-volatile compounds. The higher relative responses, mostly naphthalene and methylnaphthalene, were found in samples O20 and R21. The presence of napththlenics in O20 was confirmed by TD-GC/MS (see Appendix D). In these two samples, the naphthalenes were found in the near absence of aromatics and other light to medium weight petroleum hydrocarbons. In samples N21 and R18, naphthalenes were also found with other petroleum hydrocarbons.

2.2.4.3. Distribution of Total C_5 to C_{11} Petroleum Hydrocarbons

Total C_5 to C_{11} petroleum hydrocarbons reported include alkanes, alkenes, cycloalkenes, dienes (referred to collectively as aliphatics), plus aromatic and naphthalenic compounds. In various combinations, these

compounds make up the bulk of most common petroleum fuels, oils, and lubricants. Total C_5 to C_{11} petroleum hydrocarbons are reported to best illustrate petroleum product vapor of which aromatic and semi-volatile compounds may not be prominent components.

The distribution of total C_5 to C_{11} petroleum hydrocarbons is shown in Appendix D, Plate 4. In Zone 1, high relative levels of petroleum hydrocarbons were found to the north near the access road. In addition, there are two sampling locations (A4 and D4) to the south along the asphalt-lined pond which also showed response to petroleum hydrocarbons. Analysis of sample C2 by TD-GC/MS confirmed the presence of alkanes and cycloalkanes (see Appendix D). Compounds found in samples from Zone 1 are typical of vapor derived from weathered heavy weight fuels or fuel oils. The prominence of heavy semi-volatile compounds in these samples suggest that coal tar may also be present in the subsurface.

Zone 2 shows the highest relative response to petroleum hydrocarbons. Elevated relative levels of a broad assortment of petroleum hydrocarbons occur mostly in several areas as elongated lobes roughly parallelling the asphalt roads in Area 7. Analysis of samples H10, I8, I9, and J7 by TD-GC/MS verified the presence of alkanes and cycloalkanes (see Appendix D). The compounds in these lobes are typical of vapor derived from weathered medium to heavy weight fuels.

In Zone 3, elevated relative levels of petroleum hydrocarbons were found in samples O20 and R18. In sample O20, these hydrocarbons included particularly high relative levels of napthalenic compounds characteristic of a coal tar product. The presence of napthalenics in sample O20 was confirmed by TD-GC/MS. In sample R18, elevated relative levels of petroleum hydrocarbons included many heavy weight compounds and the semi-volatile compound methylnaphthalene.

2.2.4.4. Distribution of Total Halogenated Hydrocarbons

Total halogenated hydrocarbons are reported as the combined levels of PCE, trichloroethene (TCE), trichloroethane (TCA), dichloromethane, trichlorofluoromethane (Freon-11), trichlorotrifluoroethane (Freon-113), chlorobenzene, dichlorobenzene (DCB), and a monobromo-C_7 hydrocarbon. Most of these compounds are used primarily as solvents and cleaning agents. The freons may also have been used as refrigerants. The precise identity and use of the brominated hydrocarbon is currently unknown.

The distribution of halogenated hydrocarbons in Area 7 is shown in Appendix D, Plate 5. PCE was detected more frequently in the soil gas than were the other halogenated organics. Thus, elevated relative responses to halogenated hydrocarbons shown in Appendix D, Plate 5, principally reflect the presence of PCE. However, PCE was not confirmed in samples I8, I9, and H10 when analyzed by TD-GC/MS. Additionally, exceptions to this were the detections of dichloromethane in sample K14, chlorobenzene in sample Q17, and the brominated hydrocarbon in samples J6 and J12.

In Zone 1, only low relative levels of halogenated hydrocarbons were detected. Since these levels are below the relative ion count chosen for contouring, they were not plotted.

In Zone 2, several areas demonstrated elevated relative levels of halogenated hydrocarbons, including dichloromethane and the brominated hydrocarbon previously mentioned. The distribution of these compounds does not appear to be associated with access roads or buildings. These areas show a slight east-west elongation and are found to the north and along the western and southern edge of Zone 2.

In Zone 3, there are two areas of elevated relative levels of halogenated hydrocarbons. Sample Q17 shows a pronounced occurrence of chlorobenzene. Lower levels of a mixture of halogenated compounds were detected close to Q17 and to the south from sample Q20.

2.3. SOIL BORINGS

Sixteen soil borings were drilled in Area 7 from June 20 to July 27, 1994, as part of the Phase 2 investigation. A hollow-stem auger drill rig was used to advance the borings through unconsolidated material until bedrock was encountered. Soil and groundwater samples were collected for radiological, chemical, and geotechnical parameter analysis, per the OU5 Work Plan and the OU5 QAPjP Data Quality Objectives (DQOs).

As specified in the OU5 FSP, objectives of Phase 2 activities at Area 7 include:

- evaluate groundwater contamination downgradient of Area 7 by utilizing the existing OU9 wells;

3. SUMMARY

The results of Area 7 Phase 1/Phase 2 activities are summarized in this section.

3.1. FIDLER SURVEY SUMMARY

The FIDLER survey detected several areas of elevated surface radiological activity. The areas were located in Zone 2 south of Building 98, in the western portion of Zone 1, and in a large portion of Zone 3.

Data from the Mound Plant Soil Screening Facility indicate that no surface soil samples collected from the 132 sampling locations showed Th-232 concentrations at or exceeding 2 pCi/g. Five samples had Pu-238 concentrations at or exceeding 25 pCi/g. Four of the samples were from Zone 3 and the remaining sample was from Zone 2.

3.2. SOIL GAS SURVEY SUMMARY

Zone 2 showed the most elevated relative responses to the four general compound classes, particularly total C_5 to C_{11} petroleum hydrocarbons. Except for total halogenated hydrocarbons, elevated relative responses to the other three compound classes generally occurred along the asphalt roads crossing Zone 2. Zone 1 showed no elevated relative response to total halogenated hydrocarbons. Zone 3 showed elevated relative responses to all four compound classes.

Of the halogenated hydrocarbons, PCE was most frequently detected. Thus, most of the responses to halogenated hydrocarbons comes from the presence of PCE in the soil gas.

Most of the soil gas samples showed low to moderate relative levels of C_4 to C_{10} petroleum hydrocarbons. These compounds belong to alkanes, cycloalkenes, alkenes, cycolalkenes, dienes, aromatics, styrenes, and naphthalenes. They are common constituents of most petroleum fuels, heating oils, light lubricating oils, and many other petroleum hydrocarbon products.

A few of the samples showed moderate to high relative levels of petroleum hydrocarbons which range up to C_{15} in weight. Two compositional characters were apparent in these heavier hydrocarbons. The first

Environmental Restoration Program

OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
AREA 7 FIELD REPORT

MOUND PLANT
MIAMISBURG, OHIO

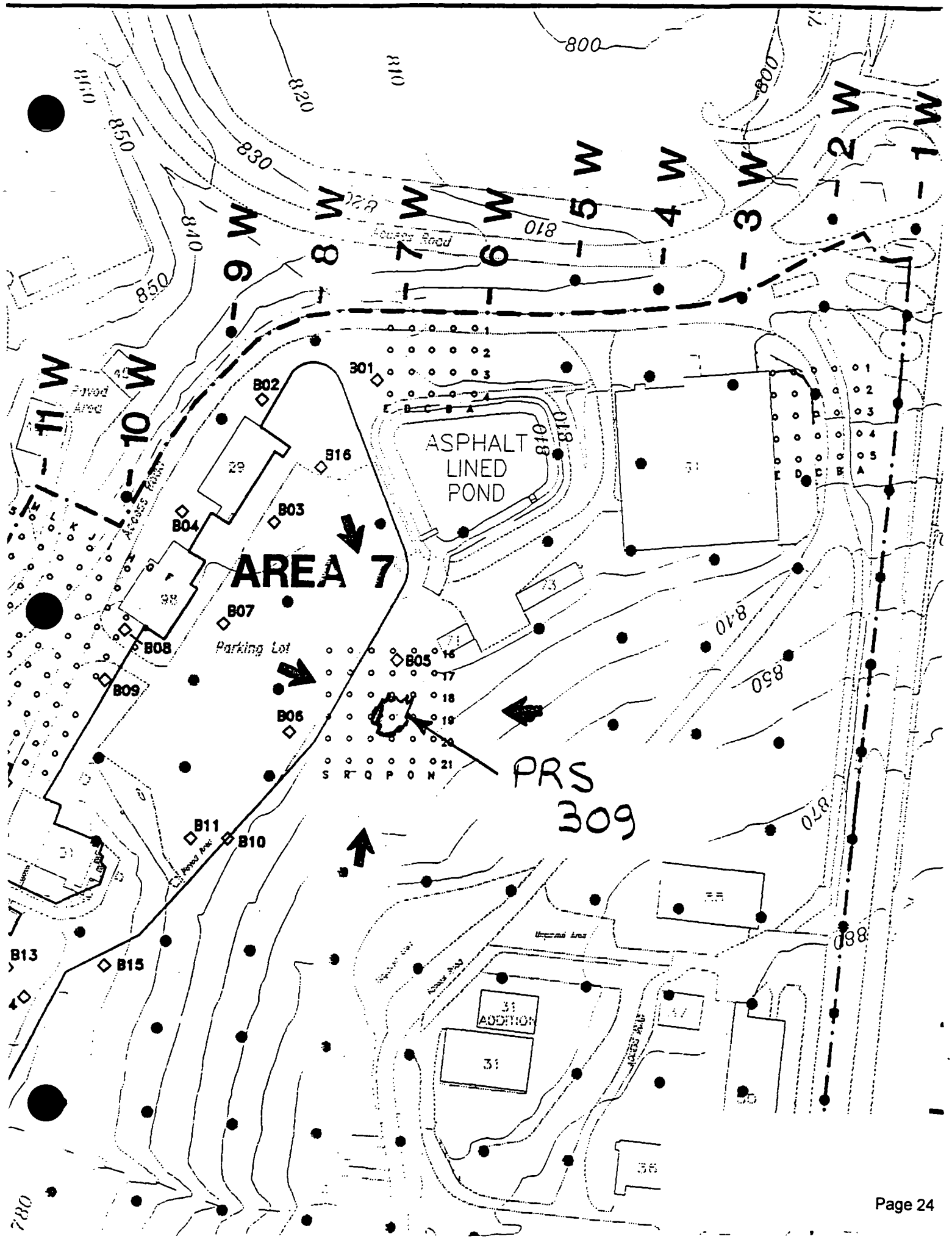
VOLUME II - APPENDICES A-G

June 1995

Final (Revision 0)

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies


AREA 7
ASPHALT LINED POND
PRS 309
Parking Lot
Paved Area
Access Road
Paved Area
Paved Area
Housing Road
Utility Line
31 ADDITION
31
29
98
73
71
51
55
56
B01
B02
B03
B04
B05
B06
B07
B08
B09
B10
B11
B13
B15
B16
1 W
2 W
3 W
4 W
5 W
6 W
7 W
8 W
9 W
10 W
11 W
800
810
820
830
840
850
860
870
880
780

APPENDIX C
RADIOLOGICAL DATA (MOUND SOIL SCREENING FACILITY DATA)
FOR AREA 7 SOIL BORINGS

		SOIL BORINGS (B01 - B16)			
		MOUND SOIL SCREENING FACILITY DATA			
SOIL	Sample Depth[b]	Plutonium - 238		Thorium - 232	
BORING		Units: pCi/g		Units: pCi/g	
		RESULTS	Note:	RESULTS	Note:
B01	6 inches	20	a	0.9	a
	2	19	a	0.7	a
	3.5	11	a	0.8	a
	5-7	23	a	0.7	a
	10-12	12	a	1.0	a
	15-17	30		0.7	a
	20-22	24	a	0.9	a
	25-27	17	a	0.8	a
	30-32	20	a	1.1	a
B02	6 inches	0	a	0.0	a
	2	0	a	0.6	a
	3.5	24	a	1.1	a
	5-7	9	a	1.7	a
B03	0-2	14	a	0.6	a
	4-6	0	a	1.0	a
	10-12	32		1.2	a
	15-17	26		0.7	a
	25-28	25		0.7	a
	36-38	10	a	1.6	a
	38-40	0	a	0.7	a
B04	6 inches	12	a	0.5	a
	2	23	a	0.8	a
	3.5	18	a	1.8	a
	5-7	14	a	0.9	a
	5-9	16	a	1.1	a
B05	6 inches	25		0.9	a
	2	26		1.5	a
	3.5	22	a	2.0	
	3-5	11	a	1.2	a
B06	6 inches	0	a	0.5	a
	2	16	a	0.9	a
	2-4	21	a	1.2	a
	5-10	7	a	1.0	a
	10-16	20	a	1.6	a
B07	15-17	0	a	18.3	
	15-17	9	a	8.7	
B08	6 inches	0	a	1.3	a
	2	11	a	1.1	a
	5-10	25		1.0	a
	10-22	0	a	0.9	a

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7N17-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7N17-08	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7N17-09	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N17-10	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N17-11	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N17-12	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N17-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7N17-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7N17-15	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7N17-16	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7N17-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7N17-18	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7N17-19	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N17-20	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N17-21	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N17-22	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N17-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7N17-24	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7N17-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7N18	NA	NA	NA	NA	NA	NR	24	a	1.2	a
7N18-01	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N18-02	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N18-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
N18-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
N18-05	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
N18-06	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
N18-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
N18-08	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
N18-09	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
N18-10	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
N18-11	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
N18-12	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
N18-13	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
N18-14	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
N18-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7N18-16	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N18-17	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N18-18	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N18-19	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N18-20	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N18-21	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N18-22	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N18-23	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N18-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N18-25	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19	NA	NA	NA	NA	NA	NR	27	b	1.1	a
7N19-01	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N19-02	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N19-03	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-04	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-05	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N19-06	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-07	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N19-08	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-09	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-10	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N19-11	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-12	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N19-13	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-14	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-15	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-16	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-17	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N19-18	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N19-19	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N19-20	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N19-21	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N19-22	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N19-23	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N19-24	178.1	NA	11.70	NA	13.0	12.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7N19-25	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N20	NA	NA	NA	NA	NA	NR	17	a	1.1	a
7N20-01	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N20-02	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-03	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N20-04	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N20-05	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N20-06	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N20-07	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N20-08	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7N20-09	178.1	NA	11.70	NA	13.0	14.0	NC		NC	
7N20-10	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-11	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-12	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-13	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-14	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N20-15	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7N20-16	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N20-17	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7N20-18	178.1	NA	11.70	NA	13.0	14.0	NC		NC	
7N20-19	178.1	NA	11.70	NA	13.0	16.0	NC		NC	
7N20-20	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-21	178.1	NA	11.70	NA	13.0	13.5	NC		NC	
7N20-22	178.1	NA	11.70	NA	13.0	16.0	NC		NC	
7N20-23	178.1	375	11.70	37	13.0	18.0	NC		NC	
7N20-24	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7N20-25	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7N21	NA	NA	NA	NA	NA	NR	19	a	1.4	a
7O16	NA	NA	NA	NA	NA	NR	6	a	0.8	a
7O16-01	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7O16-02	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7O16-03	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7O16-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O16-05	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O16-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7016-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7016-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-10	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7016-11	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-19	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-23	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7016-24	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7016-25	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7017	NA	NA	NA	NA	NA	NR	22	a	0.9	a
7017-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7017-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-11	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7017-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-13	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7017-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7017-15	178.1	NA	11.70	NA	13.0	10.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7017-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-19	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7017-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7017-22	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7017-23	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7017-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7017-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7018	NA	NA	NA	NA	NA	NR	22	a	1.1	a
7018-01	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7018-03	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7018-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7018-05	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7018-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7018-07	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-08	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-09	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-10	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-11	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-12	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7018-13	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
018-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
018-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
018-16	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
018-17	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
018-18	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
018-19	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
018-20	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
018-21	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
018-22	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
018-23	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
018-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7O18-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O19	NA	NA	NA	NA	NA	NR	14	a	1	a
7O19-01	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O19-02	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-03	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-04	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-05	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O19-07	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-08	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O19-09	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-10	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O19-11	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-12	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-13	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-14	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-16	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-17	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O19-18	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-19	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-20	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O19-21	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-22	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O19-23	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O19-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O19-25	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20	NA	NA	NA	NA	NA	NR	8	a	0.9	a
7O20-01	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-02	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-03	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-04	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-05	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-06	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7O20-08	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-09	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-10	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-11	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-12	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O20-13	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-14	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-16	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-17	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O20-18	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-19	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-20	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-21	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-22	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7O20-23	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7O20-24	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O20-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7O21	NA	NA	NA	NA	NA	NR	25	b	1.1	a
7P16	NA	NA	NA	NA	NA	NR	28	b	0.9	a
7P16-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-02	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-05	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7P16-06	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P16-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-10	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P16-11	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P16-12	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-13	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P16-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7P16-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-18	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-19	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-21	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P16-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P16-23	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P16-24	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P16-25	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P17	NA	NA	NA	NA	NA	NR	14	a	1.2	a
7P17-01	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-02	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-06	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P17-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-11	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-13	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-16	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-18	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P17-19	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-21	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P17-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P17-23	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P17-24	178.1	NA	11.70	NA	13.0	10.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7P17-25	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18	NA	NA	NA	NA	NA	NR	7	a	0.5	a
7P18-01	178.1	NA	11.70	NA	13.0	8.5	NC		NC	
7P18-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P18-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-07	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7P18-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P18-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-16	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P18-17	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P18-18	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P18-19	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P18-20	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P18-21	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P18-22	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P18-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P18-24	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P18-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19	NA	NA	NA	NA	NA	NR	13	a	0.9	a
7P19-01	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-03	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P19-04	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P19-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7P19-08	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-09	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-10	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-12	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-13	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P19-18	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P19-19	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-20	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P19-21	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-22	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P19-23	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P19-24	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P19-25	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20	NA	NA	NA	NA	NA	NR	15	a	1	a
7P20-01	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P20-02	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-03	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P20-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-05	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7P20-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-08	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7P20-09	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7P20-10	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P20-11	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7P20-12	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7P20-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-18	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-19	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7P20-20	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7P20-21	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-22	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7P20-24	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P20-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7P21	NA	NA	NA	NA	NA	NR	20	a	0.9	a
7Q16	NA	NA	NA	NA	NA	NR	6	a	0.7	a
7Q16-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-02	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-05	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-07	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q16-08	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q16-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q16-12	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q16-13	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-14	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-15	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q16-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-19	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-20	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-21	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q16-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q16-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7Q16-25	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q17	NA	NA	NA	NA	NA	NR	17	a	1	a
7Q17-01	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-05	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q17-06	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q17-07	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7Q17-08	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q17-09	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-10	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7Q17-11	178.1	NA	11.70	NA	13.0	8.5	NC		NC	
7Q17-12	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7Q17-13	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q17-16	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q17-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-18	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-19	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-21	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q17-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-24	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q17-25	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18	NA	NA	NA	NA	NA	NR	30	b	0.6	a
7Q18-01	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-02	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-04	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q18-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7Q18-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-09	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-10	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-11	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-12	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7Q18-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-14	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q18-15	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-16	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-19	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-22	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q18-23	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q18-24	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q18-25	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19	NA	NA	NA	NA	NA	NR	20	a	1	a
7Q19-01	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q19-02	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q19-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-04	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
7Q19-05	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q19-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q19-07	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q19-08	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q19-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-11	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q19-15	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7Q19-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-19	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-22	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-23	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q19-24	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q19-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q20	NA	NA	NA	NA	NA	NR	15	a	0.8	a
7Q20-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-02	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q20-03	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q20-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q20-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-08	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q20-09	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-11	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q20-12	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q20-13	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7Q20-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q20-16	178.1	130	11.70	14.5	13.0	14.0	NC		NC	
7Q20-17	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q20-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-19	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7Q20-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7Q20-22	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7Q20-23	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7Q20-24	178.1	NA	11.70	NA	13.0	12.5	NC		NC	
7Q20-25	178.1	NA	11.70	NA	13.0	12.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7Q21	NA	NA	NA	NA	NA	NR	24	a	0.9	a
7R16	NA	NA	NA	NA	NA	NR	18	a	0.9	a
7R16-01	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-02	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-03	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-04	178.1	NA	11.70	NA	13.0	5.0	NC		NC	
7R16-05	178.1	NA	11.70	NA	13.0	5.0	NC		NC	
7R16-06	178.1	NA	11.70	NA	13.0	5.0	NC		NC	
7R16-07	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-08	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-09	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-10	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R16-12	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-13	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-14	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-15	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-16	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-17	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-18	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-19	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R16-20	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R16-21	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R16-22	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R16-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R16-24	NA	NA	NA	NA	NA	NR	NC		NC	
7R16-25	NA	NA	NA	NA	NA	NR	NC		NC	
7R17	NA	NA	NA	NA	NA	NR	19	a	1.2	a
7R17-01	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
R17-02	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
R17-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
R17-04	178.1	NA	11.70	NA	13.0	9.0	NC		NC	
R17-05	NA	NA	NA	NA	NA	NS	NC		NC	
R17-06	NA	NA	NA	NA	NA	NS	NC		NC	
R17-07	178.1	NA	11.70	NA	13.0	9.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7R17-08	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R17-09	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-10	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R17-11	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R17-12	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R17-13	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R17-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R17-15	178.1	NA	11.70	NA	13.0	7.0	NC		NC	
7R17-16	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R17-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R17-18	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-19	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-20	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-21	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R17-22	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-23	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R17-24	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R17-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18	NA	NA	NA	NA	NA	NR	19	a	1.2	a
7R18-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R18-02	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R18-03	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-04	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-05	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R18-06	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-07	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R18-08	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-09	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R18-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-12	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-13	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-14	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-15	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-16	178.1	NA	11.70	NA	13.0	11.0	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7R18-17	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-18	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-19	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-20	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R18-21	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R18-22	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R18-23	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R18-24	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R18-25	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R19	NA	NA	NA	NA	NA	NR	24	a	1	a
7R19-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-03	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-04	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-05	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-07	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-09	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R19-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-11	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-12	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-13	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R19-14	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-15	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R19-16	178.1	NA	11.70	NA	13.0	8.5	NC		NC	
7R19-17	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-18	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-19	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R19-20	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-21	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R19-22	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R19-23	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R19-24	178.1	NA	11.70	NA	13.0	8.0	NC		NC	
7R19-25	178.1	NA	11.70	NA	13.0	7.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7R20	NA	NA	NA	NA	NA	NR	17	a	1	a
7R20-01	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R20-02	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R20-03	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R20-04	178.1	NA	11.70	NA	13.0	7.0	NC		NC	
7R20-05	178.1	NA	11.70	NA	13.0	7.5	NC		NC	
7R20-06	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R20-07	178.1	NA	11.70	NA	13.0	8.0	NC		NC	
7R20-08	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R20-09	178.1	NA	11.70	NA	13.0	9.5	NC		NC	
7R20-10	178.1	NA	11.70	NA	13.0	10.0	NC		NC	
7R20-11	178.1	NA	11.70	NA	13.0	10.5	NC		NC	
7R20-12	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-13	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-14	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R20-15	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R20-16	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-17	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R20-18	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-19	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R20-20	178.1	NA	11.70	NA	13.0	13.0	NC		NC	
7R20-21	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-22	178.1	NA	11.70	NA	13.0	11.5	NC		NC	
7R20-23	178.1	NA	11.70	NA	13.0	12.0	NC		NC	
7R20-24	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R20-25	178.1	NA	11.70	NA	13.0	11.0	NC		NC	
7R21	NA	NA	NA	NA	NA	NR	17	a	1	a
7S16	NA	NA	NA	NA	NA	NR	WIPE	c	WIPE	c
7S17	NA	NA	NA	NA	NA	NR	WIPE	c	WIPE	c
7S18	NA	NA	NA	NA	NA	NR	8	a	0.7	a
7S19	NA	NA	NA	NA	NA	NR	12	a	1.1	a

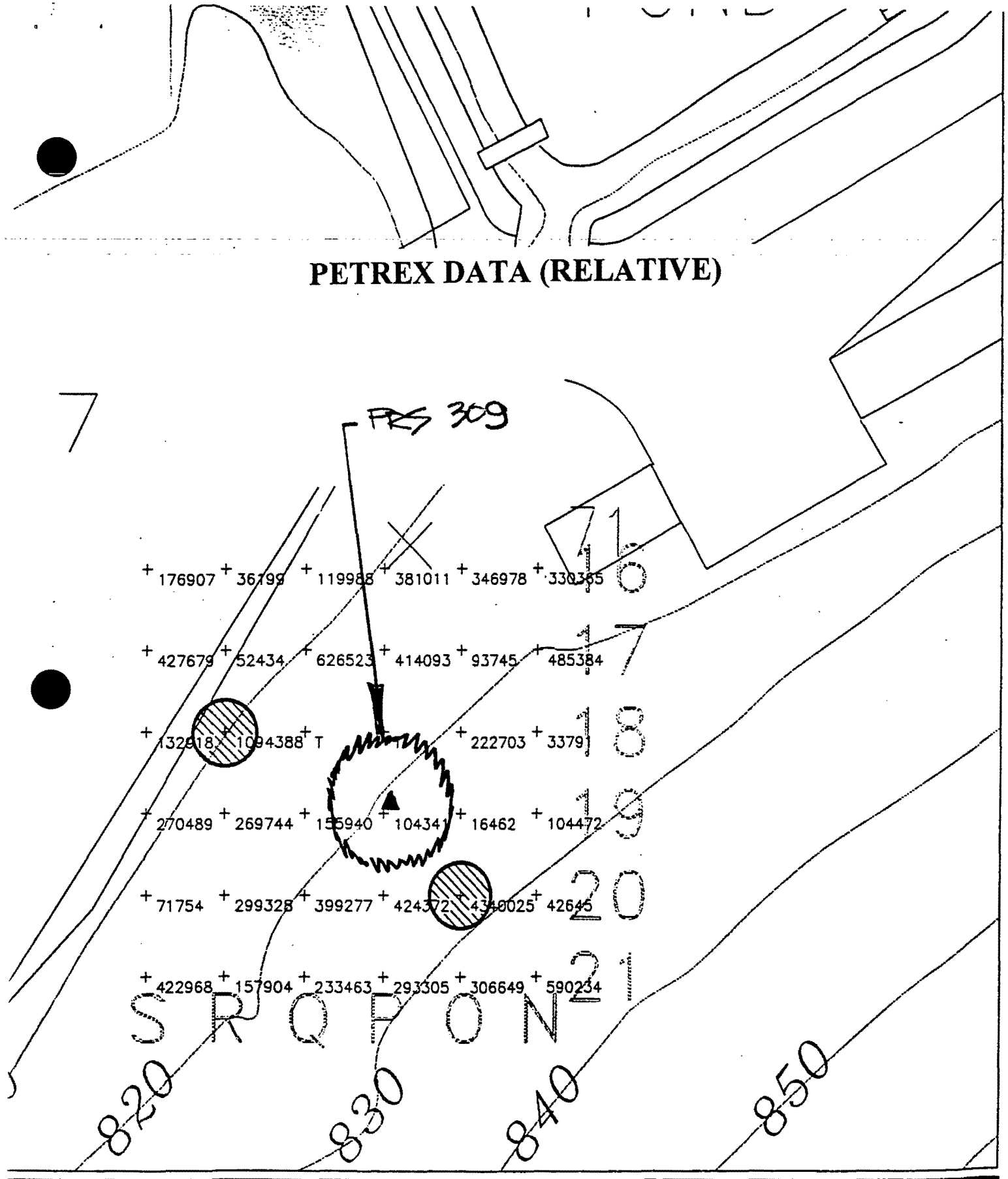
APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

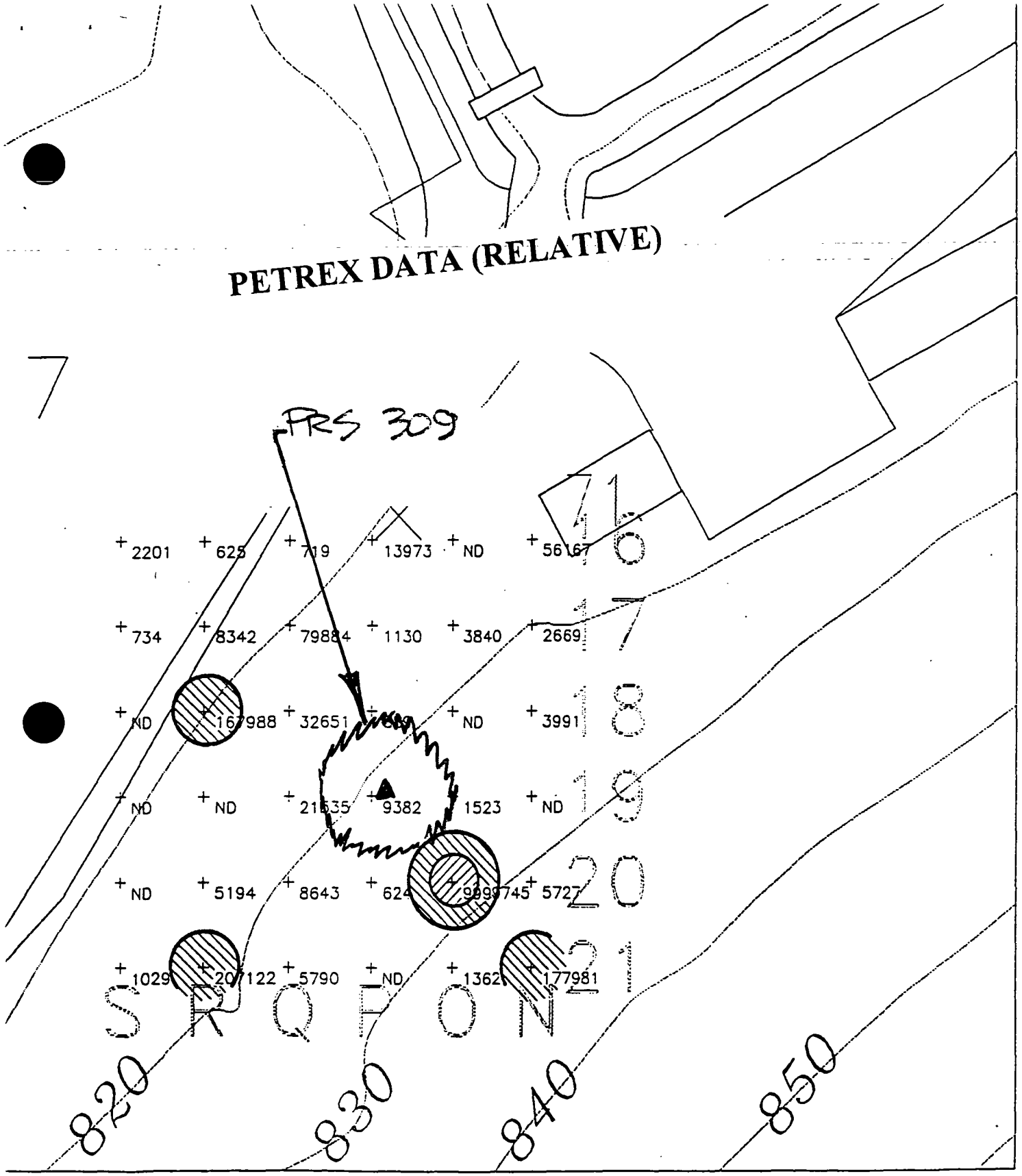
	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7S20	NA	NA	NA	NA	NA	NR	13	a	1	a
7S21	NA	NA	NA	NA	NA	NR	17	a	0.9	a

CH1 - Channel 1
CH2 - Channel 2
NR - Reading not recorded.
NC - No sample collected, location not at grid point.
NA - Reading not taken; contamination criteria not exceeded.
a - Mound Soil Screening Facility detection level of 25.0 pCi/g for Pu-238 and 2.0 pCi/g for Th-232 not exceeded.
b - Mound Soil Screening Facility detection level of 25.0 pCi/g for Pu-238 and 2.0 pCi/g for Th-232 exceeded.
c - Results of the wipe sample were less than 20 disintegrations per minute.
Sampling equipment was wiped when sufficient soil for analysis could not be collected. The wipes were screened at the Mound Soil Screening Facility.
CPM - Counts per minute
KCPM - Counts per minute x 1000
pCi/g - Picocuries per gram
SMPID - Sample identification number.

PETREX DATA (RELATIVE)



LEGEND		
Res[illegible]se Values: ion counts)	Features:	Relative Response
5,800,000	+ PETREX Sample Location	Total Aromatic Hydrocarbon
,000 – 5,799,999	T Denotes interference by terpenes; see text.	
	ND Not Detected	Plate 2



LEGEND

ponse Values:
counts)
0,0
) – 1,499,999

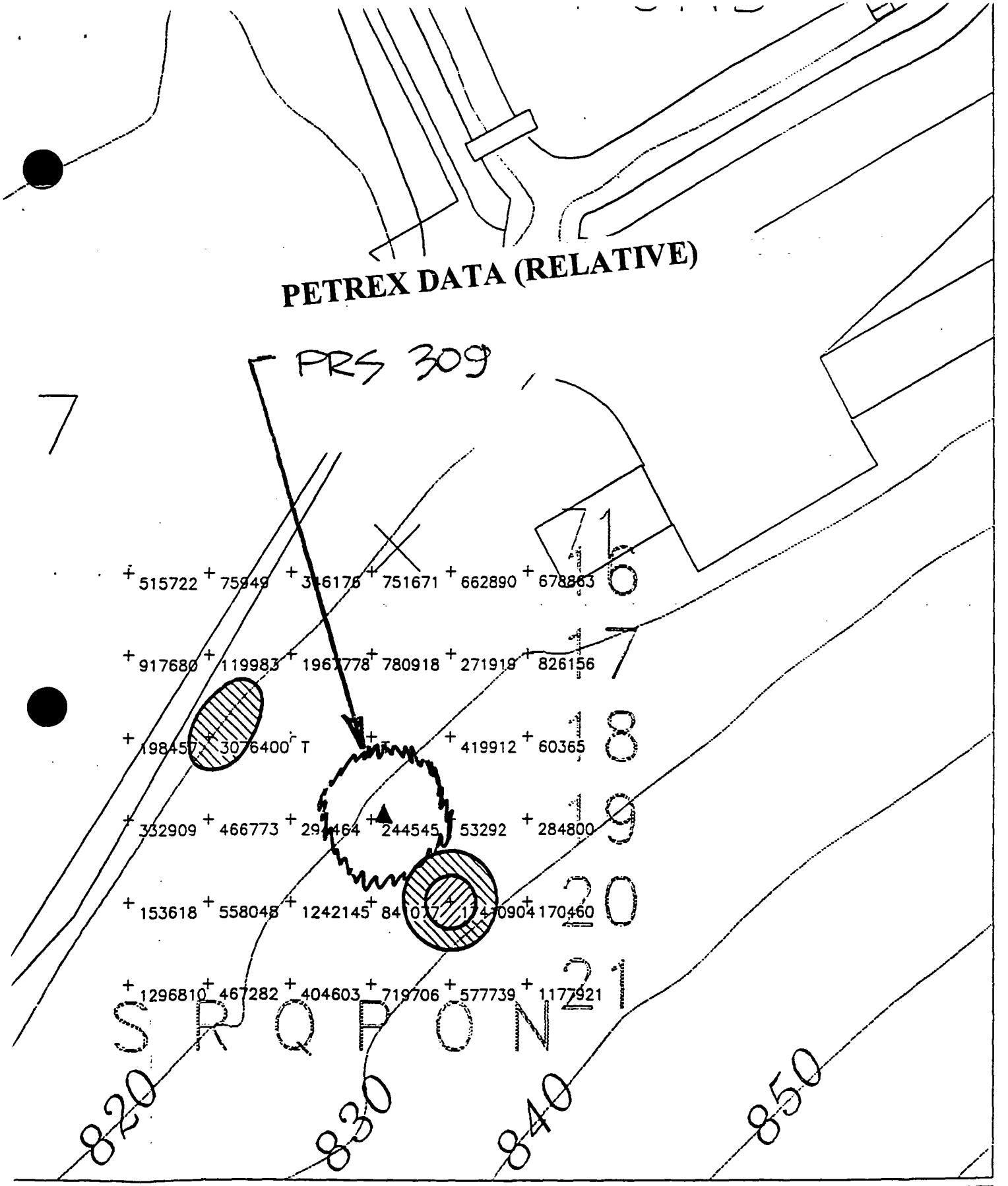
Features:

+ PETREX Sample Location
ND Not Detected

Relative Response

Total Semivolatile Hydrocarbons

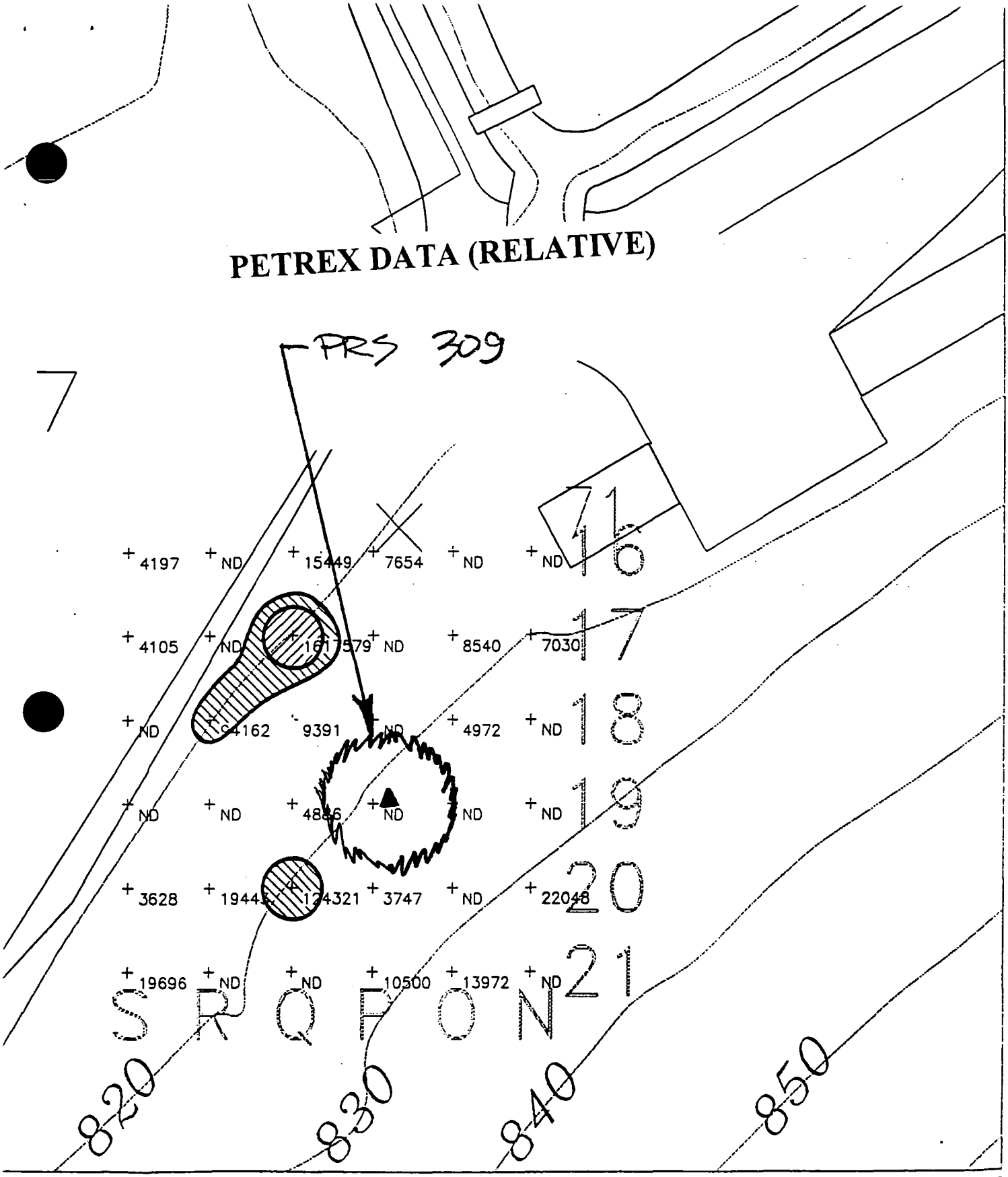
Plate 3



LEGEND

Spot values: (counts) 100,000 00 – 14,999,999	Features: + PETREX Sample Location T Denotes interference by terpenes; see text.	Relative Response Total C5–C11 Petroleum Hydrocar
		Plate 4

PETREX DATA (RELATIVE)



LEGEND

esponse Values:
in s)
0,00
0 – 699,999

Features:

+ PETREX Sample Location

H Denotes interference by petroleum hydrocarbons; see text.

ND Not Detected

Relative Response

Total Halogenated Hydrocarbor

Plate 5

RISK-BASED GUIDELINE VALUES

MOUND PLANT
MIAMISBURG, OHIO

December 1995

Submitted to the
Office of Southwestern Area Programs (EM-453)
Environmental Restoration
and the
Miamisburg Area Office
U.S. DEPARTMENT OF ENERGY

Prepared by
HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
Environmental Management and Enrichment Facilities
Managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

FINAL
(REVISION 0)

TABLE 4A

Construction/Mound Employee - Soil/Sediment Guideline Values: Chemicals (Units = mg/kg)

CHEMICAL	Ingestion				Inhalation				Ingestion + Inhalation			
	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1
High Explosives												
HMX				5.50e+04								
PETN												
RDX	2.70e+03	2.70e+02	2.70e+01	3.20e+03								
Inorganics												
Aluminum												
Antimony				4.25e+02								
Arsenic				3.20e+02	6.00e+05	6.00e+04	6.00e+03					
Barium				7.50e+04				1.55e+07				7.50e+04
Beryllium	7.00e+01	7.00e+00	7.00e-01	5.50e+03	3.65e+06	3.65e+05	3.65e+04		7.00e+01	7.00e+00	7.00e-01	
Cadmium (Diet)				1.05e+03	5.00e+06	5.00e+05	5.00e+04					
Chromium III				1.05e+06								
Chromium VI				5.50e+03	7.50e+05	7.50e+04	7.50e+03					
Cobalt												
Copper												

TABLE 4A

Construction/Mound Employee - Soil/Sediment Guideline Values: Chemicals (Units = mg/kg)

CHEMICAL	Ingestion				Inhalation				Ingestion + Inhalation			
	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1	GV for TR=10^{-4}	GV for TR=10^{-5}	GV for TR=10^{-6}	GV for HI=1
Cyanide				2.15e+04								
Iron												
Lead												
Lithium												
Manganese (Diet)				1.50e+05				1.55e+06				1.35e+05
Mercury				3.20e+02				9.50e+06				3.20e+02
Nickel				2.15e+04								
Silver				5.50e+03								
Thallium												
Vanadium				7.50e+03								
Zinc				3.20e+05								
Organics												
1,1,1-Trichloroethane												
1,1-Dichloroethane				1.05e+05				3.90e+01				3.90e+01
1,2-Dichloroethane	3.30e+03	3.30e+02	3.30e+01		1.70e+03	1.70e+02	1.70e+01		1.10e+03	1.10e+02	1.10e+01	

OTHER SOILS CHARACTERIZATION REPORT

MOUND PLANT
MIAMISBURG, OHIO

MAY 1996

U.S. DEPARTMENT OF ENERGY
OHIO FIELD OFFICE

DECONTAMINATION AND DECOMMISSIONING PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

Hot Spots with a data overlay have been included to facilitate interpretation, and aid in the computation of soil cleanup volumes.

Where Mound Rad Lab method detection limits exceed specified action levels, a symbol indicating the undetermined nature of the data ("U") accompanies the spreadsheet entry.

Table 5.2 shows the action levels used in the Other Soils Field Program to identify potentially contaminated soil.

Table 5.2 Field Action Levels

Field Instruments	Action Level
FIDLER	
Channel 1 (Pu)	1000 cpm Above Background
Channel 2 (Th)	5000 cpm Above Background
OVA	1 Meter Unit Above Background
OVM	1 Meter Unit Above Background
PXRF	
Arsenic	102.07 mg/Kg
Barium	1489 mg/Kg
Cadmium	NA
Chromium (High)	NA
Chromium (Low)	164.43 mg/Kg
Lead	172 mg/Kg
Mercury	NA
Selenium	NA
Silver	2559 mg/Kg
Mound Rad Lab	
Plutonium 238	25 pCi/g
Thorium 232	5 pCi/g
Radium 226	5 pCi/g
Cesium 137	15 pCi/g *
Americium 241	20 pCi/g

* NRC Limit

The action level for Cesium 137 was reduced for this report from the D&D action level of 80 pCi/g to the NRC action level of 15 pCi/g. The basis for adjusting this limit can be found in a communication with the Nuclear Regulatory Commission (NRC) which discusses decommissioning criteria and maximum acceptable isotope concentrations in soil. A copy of the communiqué may be found in Appendix H.

Area 5

Thirteen samples in Area 5 triggered field screening action levels:

- Eleven samples exceeded limits for hazardous compounds
- One sample exceeded limits for radionuclides

Key to interpreting sample data:

Sample nomenclature is of the form **XXYY-ZZ00**

Where:
XX = Area designation

YY = Sample Location
- 01 = Historical Hot Spot Location
- 02 = Approx 10 feet north of historical location
- 03 = Approx 10 feet south of historical location
- 04 = Approx 10 feet west of historical location
- 05 = Approx 10 feet east of historical location

ZZ = Sample Type
- 50 = Soil

00 = Sample Depth
- 01 = Surface
- 04 = 0-4 feet
- 08 = 4-8 feet
- 12 = 8-12 feet

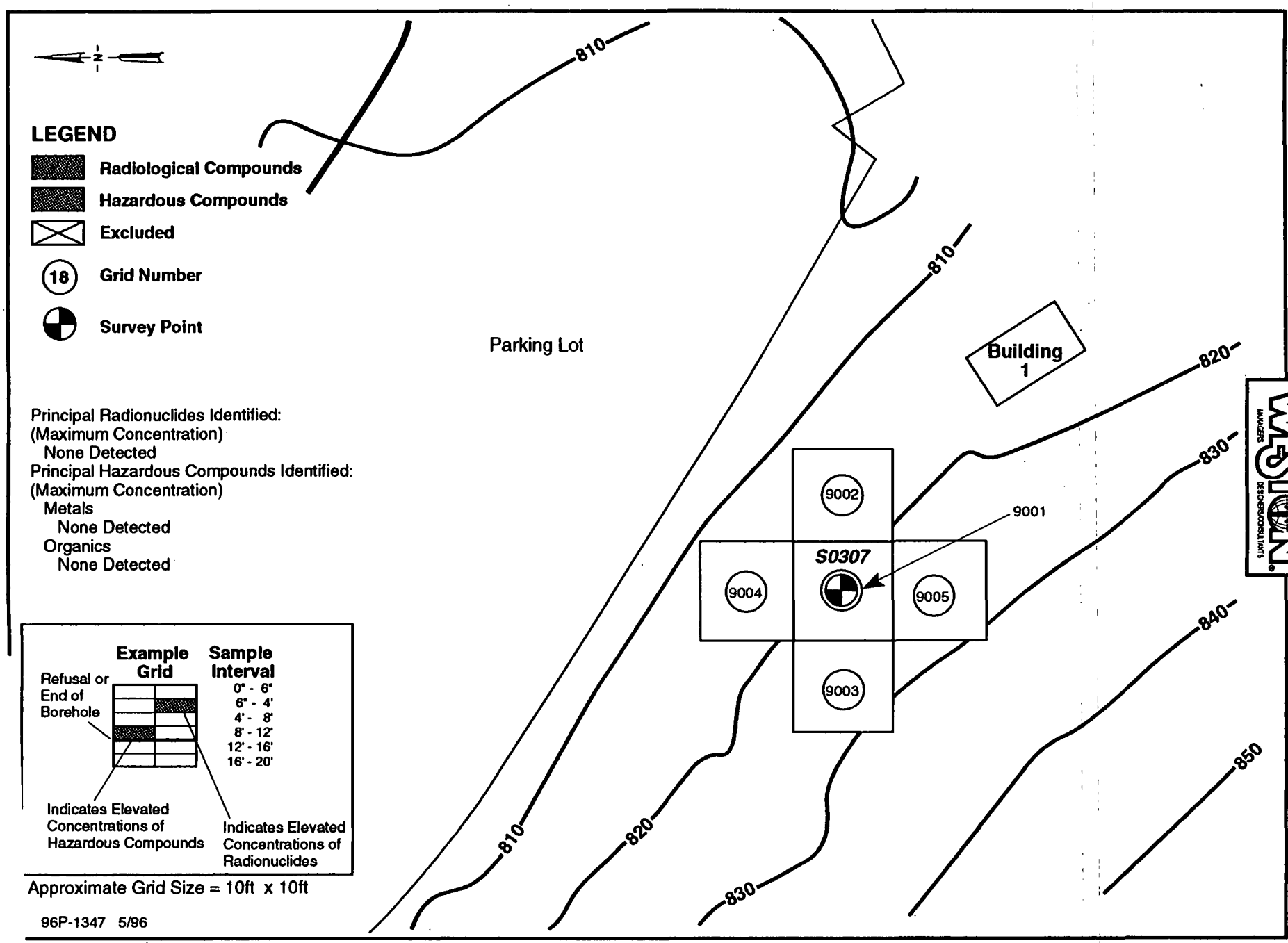


FIGURE 5.19 HOT SPOT S0307

C0028

Eight samples from hot spot C0028 (Area 87) triggered field screening action levels:

- Six samples exceeded limits for hazardous compounds
- Two samples exceeded limits for radionuclides

Elevated concentrations of chromium were detected by the PXRF in soil samples collected from the site. Elevated concentrations of Pu238 were found in excess of 106 pCi/g in soil samples collected from the site.

Table 5.14 shows Hot Spot C0028 field results exceeding action levels. Figure 5.18 graphically represents Hot Spot C0028 field sampling results.

Table 5.14 Hot Spot C0028 Field Sampling Results

Sample ID	FIDLER		Organics		Rad Laboratory					
	Channel 1 (1K)	Channel 2 (5K)	OVA	OVM	Pu 238 (25)	Th 232 (5)	Ra 226 (5)	Cs 137 (15)	Am 241(20)
8704-5001	<1000	<5000	<1	<1	35 *	<5	NA	NA	NA
8707-5001	<1000	<5000	<1	NA	<128.5 U	0.46	2.45	0.15	<0.11
8707-5004	<1000	<5000	<1	NA	<116.9 U	0.63	<1.36	<0.07	<0.14
8709-5004	<1000	<5000	<1	NA	<165.7 U	0.6	<2.21	<0.08	<0.15
8709-5007	<1000	<5000	<1	NA	106.3 *	0.71	2.78	<0.09	<0.12
8710-5004	<1000	<5000	<1	NA	<157 U	0.42	<1.42	<0.04	<0.15
8710-5006	<1000	<5000	<1	NA	<97.94 U	0.36	2.09	<0.1	<0.12
8713-5001	<1000	<5000	<1	NA	<52 U	0.7	1.8	0.07	<0.04

Sample ID	PXRF Metals								
	As (102.07)	Ba (1489)	Cd	Cr HI	Cr LO (164.43)	Pb (172)	Hg	Se	Ag (2559)
8704-5001	<34	265.13	<44.5	<347	<60.7	13.161	<37	<14	<29
8707-5001	106.23 *	215.11	<44.5	<347	<60.7	<10	<37	<14	42.1833
8707-5004	64.735	126.33	<44.5	<347	303.94 *	<10	<37	<14	<29
8709-5004	87.352	155.1	<44.5	<347	188.47 *	<10	<37	<14	84.0261
8709-5007	83.178	181.47	<44.5	<347	<60.7	<10	<37	<14	41.7236
8710-5004	78.23	93.517	<44.5	<347	186.1 *	<10	<37	<14	37.9839
8710-5006	93.688	45.76	<44.5	<347	165.47 *	<10	<37	<14	36.3587
8713-5001	<34	258.87	<44.5	<347	202.42 *	<10	37.288	<14	<29

S0307

Analyses of soil samples revealed no radiological, organic or inorganic compounds in concentrations exceeding the action levels defined in Section 5.1. Figure 5.19 graphically represents Hot Spot S0307 field sampling results.

Table 6.14 Area 86 Analysis

Area	Sub-Area	Contaminant Type	Contaminant Name	Extent Lateral (ft²)	Extent Vertical (ft)	Volume Net (yd³)	Volume Gross (yd³)	Minimum	Maximum	Mean
86 S0647	NA	None Detected		NA	NA	NA	NA			

Table 6.15 Area 87 Analysis

Area	Sub-Area	Contaminant Type	Contaminant Name	Extent Lateral (ft²)	Extent Vertical (ft)	Volume Net (yd³)	Volume Gross (yd³)	Minimum	Maximum	Mean
87 C0028	A	RAD, HAZ	Pu238 Cr	100	0.5'-8'	30	96	106.3	106.3	106.3
	B	HAZ	Cr	100	0.5'-8'	NA	NA			
	C	HAZ	As, Cr	100	0'-4'	NA	NA			
	D	RAD	Pu238	100	0'-0.5'	1.9	1.9	35	35	35
	E	HAZ	Cr	100	0'-0.5'	NA	NA			

Table 6.16 Area 90 Analysis

Area	Sub-Area	Contaminant Type	Contaminant Name	Extent Lateral (ft²)	Extent Vertical (ft)	Volume Net (yd³)	Volume Gross (yd³)	Minimum	Maximum	Mean
90 S0307	NA	NA	NA	NA	NA	NA	NA			

Table 6.17 Area 91 Analysis

Area	Sub-Area	Contaminant Type	Contaminant Name	Extent Lateral (ft²)	Extent Vertical (ft)	Volume Net (yd³)	Volume Gross (yd³)	Minimum	Maximum	Mean
91 S0472	A	RAD	Pu238	200	12'-16'	29.6	555	118.5	120.9	119.7
	B	RAD	Pu238	100	0'-0.5'	1.9	1.9	124.5	124.5	124.5
	C	HAZ	Cr	100	0'-0.5'	NA	NA			

Table 6.18 Area 92 Analysis

Area	Sub-Area	Contaminant Type	Contaminant Name	Extent Lateral (ft²)	Extent Vertical (ft)	Volume Net (yd³)	Volume Gross (yd³)	Minimum	Maximum	Mean
92 S1092	A	HAZ	Org	200	4'-12'	NA	NA			

Gamma Scan Data

PRS 309

Sample ID		Co 60	Cs 137	Ra 226	Ac 227	Th 230	Th 232	Pa 231	U 238	Pu 238	Am 241
8888-5008		<0.02	<0.02	1.43	<0.16	<3.73	0.77	<0.78	<3.73	<38.59	<0.04
[redacted]		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
9001-5004		<0.02	0.02	1.43	<0.13	<4.61	0.75	<0.79	<3.4	<48.95	<0.05
9002-5001		<0.02	0.08	1.99	<0.18	<4.31	0.6	<0.91	<3.54	<40.38	<0.06
9002-5004		<0.02	0.03	0.7	<0.13	<3.92	0.8	<0.56	0.7	<43.55	<0.04
9002-5008		<0.02	<0.02	0.58	<0.12	<3.65	0.73	<0.54	<0.38	<42.45	<0.04
9002-5012		<0.03	<0.02	1.57	<0.21	<4.6	0.74	<0.96	<3.63	<49.63	<0.05
9002-5014		<0.02	<0.02	0.58	<0.11	<3.73	0.74	<0.52	<0.22	<46.95	<0.04
9003-5001		<0.02	0.17	1.18	0.11	<4.65	1.04	<0.05	0.57	<47.15	<0.05
9003-5008		<0.02	<0.02	1.47	<0.19	<4.39	0.83	<0.83	<3.16	<44.98	<0.04
9003-5011		<0.02	0.02	0.58	0.27	<4.02	0.68	<0.58	0.47	<56.95	<0.04
9005-5001		<0.03	0.12	1.95	<0.2	<4.96	0.88	<1.12	<4.06	<45.19	<0.05
9005-5004		<0.02	0.06	0.7	<0.12	<1.32	0.79	<0.54	0.31	<43.55	<0.04
9005-5008		<0.02	<0.02	0.51	<0.13	<3.82	0.76	<0.56	0.26	<41.65	<0.04
9005-5011		<0.03	<0.03	1.2	<0.2	<8.4	0.7	<1.8	<5.1	<83	<0.07
[redacted]		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
9101-5004		<0.09	0.17	<1.24	<0.8	<16.2	0.66	<3.5	<10.5	<100.2	<0.17
9101-5008		<0.06	0.13	2.69	<0.59	<15.76	0.65	<3.67	<14.99	<133.1	<0.14
9101-5012		<0.11	0.15	1.86	<0.7	<16.44	1.04	<3.44	<15.39	<139.4	<0.19
9101-5014		<0.12	0.12	<1.32	0.7	<15.57	0.99	<4.59	<16.05	118.5	0.16
9103-5001		<0.13	<0.15	3.17	<0.56	<14.46	0.81	<4.04	<15.64	124.5	<0.17
9103-5004		<0.1	<0.09	<1.7	<0.6	<13.78	0.54	<3.45	8.44	<140.8	<0.16
9103-5008		<0.09	<0.09	<1	0.99	<15.13	0.71	<3.28	<10.81	<126.7	0.17
9103-5012		<0.12	0.13	<1.87	<0.63	<16.96	1.11	<3.89	<12.92	<161.7	<0.14
9104-5001		<0.12	0.3	<1.76	0.5	<13.01	0.73	<3.29	<17.28	<137.8	<0.14
9104-5004		<0.1	<0.12	3.17	<0.52	<12.01	0.53	<2.63	<13.46	<109.2	<0.13
9104-5008		<0.06	0.06	<0.92	0.49	<12.28	0.59	<2.65	<11.24	<111.6	<0.1
9104-5012		<0.07	<0.09	2.19	<0.51	<16.39	0.68	<4.24	<16.79	120.9	<0.15
9105-5001		<0.07	0.19	1.52	<0.7	<14.05	0.56	<3.28	<13.45	<120.2	<0.13
9105-5004		<0.1	0.22	2.89	<0.6	<15.08	0.62	<3.07	<12.84	<118	<0.12
9105-5008		<0.09	<0.09	<1.89	<0.71	<17.42	0.83	<3	<10.11	<174.6	<0.2
9105-5012		<0.09	<0.1	2.07	<0.56	<15.85	0.9	<3.89	<16.38	<122	<0.13
9106-5001		<0.02	0.3	1.2	<0.2	<5	0.6	<1.1	<3.2	<49	<0.06
9106-5004		<0.02	0.1	1.3	<0.2	<3.7	0.6	<1	<3.4	<36	<0.04
9106-5008		<0.03	<0.02	1.6	<0.1	<3.9	0.7	<1	<3.7	<36	<0.04
9107-5001		<0.03	0.4	1.9	<0.1	<4	0.7	<1.3	<4.7	<40.4	<0.04
9107-5004		<0.02	0.08	1.2	<0.2	<3.6	0.6	<0.9	<2.8	<36.1	<0.04
9107-5008		<0.02	<0.02	1.6	<0.2	<5	0.5	<1.2	<3.2	<47	<0.05
9108-5001		<0.03	0.4	0.6	<0.2	<4.4	0.8	<0.6	0.6	<49.6	<0.05
9108-5004		<0.02	0.0[illegible]						0.6	<43.2	<0.04
9108-5008		<0.02	<0.[illegible]						<3.9	<55	<0.08
9201-5004		<0.11	<0.[illegible]						<17.67	<117.7	<0.15
9201-5008		<0.14	<0.[illegible]						<19.99	<138.5	<0.18
9201-5012		<0.08	<0.[illegible]						<13.86	<47.19	<0.11
9201-5016		<0.1	0.0[illegible]						14.15	<106.1	<0.16
9202-5004		<0.11	<0.[illegible]						<7.18	<268.3	<0.3
9202-5008	D	<0.08	<0.[illegible]						<15.47	<144.6	<0.17
9202-5008		<0.12	0.1[illegible]						<18.78	<125.7	<0.15
9202-5012		<0.14	0.1[illegible]						<16.95	<142.1	<0.14
9203-5004		<0.12	<0.[illegible]						<13.97	<146.9	<0.18
9203-5008		<0.12	0.1[illegible]						<18.78	<125.7	<0.15
9203-5012		<0.08	<0.[illegible]						<11.68	<168.1	<0.17
9203-5016		<0.1	0.0[illegible]						10.23	<113.1	<0.15
9203-5020		<0.07	<0.0[illegible]						<10.65	<131.9	0.11
9204-5004		<0.08	0.06	<1.86	<0.61	14.89	0.84	<3.46	<18.63	<109.4	<0.15
9204-5008		<0.1	<0.1	<1.67	<0.82	<13.89	0.83	<3.58	<14.39	<179.5	<0.15
9204-5012		<0.11	<0.09	2.28	<0.66	<17.32	0.54	<4.01	<16.14	<171	<0.18
9204-5016		<0.13	<0.1	<1.95	<0.62	<17.14	0.94	<3.65	14.24	<129.9	<0.13
9205-5004		<0.06	<0.05	<1.73	<0.7	<17.23	0.67	<3.76	<15.52	<147.9	<0.15
9205-5008		<0.09	<0.09	<2.03	<0.6	<14.81	0.64	<4.26	8.54	<142.4	<0.19
9205-5012		<0.11	<0.1	<1.86	0.94	<16.2	0.83	<3.43	<9.18	<147.1	0.16
9301-5002		<0.01	<0.01	0.9	<0.06	<2.6	0.2	<0.7	<2	<28	<0.03
9302-5002		<0.02	0.04	1.19	<0.14	<3.39	0.54	<0.57	<2.71	<30.83	<0.04
9303-5002		<0.01	<0.02	0.96	<0.14	<3.5	0.52	<0.61	<2.69	<34.74	<0.04
9304-5002		<0.02	<0.02	0.6	<0.1	<3	0.3	<0.4	0.4	<33.6	<0.03
9402-5008		<0.01	<0.01	0.6	<0.1	<2.5	0.3	<0.6	<2.2	<23	<0.03
9403-5001		<0.01	<0.01	0.79	<0.1	<2.12	0.15	<0.5	<1.9	<22.6	<0.02
9403-5004	D	<0.01	0.03	1.45	<0.07	<1.62	0.66	<0.29	<1.34	<15.95	<0.02

Some soil screening radiological samples from the 900x area are missing; however, all samples from this area were FIDLER scanned and found to be "non-detects".

WESTON

SHEET ____ of ____

CLIENT/SUBJECT S0307 90XX W.O. NO. ____

TASK DESCRIPTION ____ TASK NO. ____

PREPARED BY ____ DEPT ____ DATE ____

MATH CHECK BY ____ DEPT ____ DATE ____

METHOD REV. BY ____ DEPT ____ DATE ____

APPROVED BY ____ DEPT ____ DATE ____

Sample ID	Rad Laboratory (ET) Plutonium	(ET) Thorium	Fidler (IK) Channel 1	(SK) Channel 2	α	β	Organics OVA	OVM	Metals
9001-5001			—	—	—	—	—		
5004		—	—	—	—	—	—		
5008			—	—	—	—	—		
5009			—	—	—	—	—		
9002-5001		—	—	—	—	—	—		
5004		—	—	—	—	—	—		
5008		—	—	—	—	—	—		
5012		—	—	—	—	—	—		
5014		—	—	—	—	—	—		
9003-5001		—	—	—	—	—	—		
5004			—	—	—	—	—		
5008		—	—	—	—	—	—		
5011		—	—	—	—	—	—		
9004-5001			—	—	—	—			
9005-5001		—	—	—	—	—	—		
5004		—	—	—	—	—	—		
5008		—	—	—	—	—	—		
5011		—	—	—	—	—	—		

DATE	FILE	ID	"TIME"	"CrHI"	"K"	"Ca"	"Ti"	"CrLO"	"Mn"	"Fe"	"Co"	"Ni"	"Cu"	"Zn"	"As"	"Se"
8-Sep-95	A090895A	8885-5008	10.784	-881.72	29432	139472	2722.9	-32.126	189.35	25688	156.88	-31.122	1.9095	35.849	37.091	-13.543
8-Sep-95	A090895A	8885-5012	11.148	-1153.8	27077	102894	2117	-56.878	9.1245	26900	-93.26	-43.186	-23.169	24.908	73.167	-21.554
7-Sep-95	A090795A	8886-5001	14.433	-867.35	24579	71286	2542.9	60.205	-114.14	28335	201.5	-12.031	-17.664	77.469	52.07	-11.697
7-Sep-95	A090795A	8886-5004	14.648	-1083.8	19502	61968	2488.4	82.578	326.82	22336	179.45	36.039	-17.605	49.115	76.759	-18.308
7-Sep-95	A090795A	8886-5008	14.936	-662.54	27575	140503	2552.2	-89.729	29.632	26037	220.15	-16.084	-13.794	72.443	63.855	-27.601
7-Sep-95	A090795A	8886-5012	15.142	-781.03	26654	88867	2155.2	21.602	609.11	32528	121.26	-12.306	53.063	15.152	65.264	-20.711
29-Aug-95	A082995A	9004-5001	20.154	-601	19061	21117	2771.4	59.756	664.78	25368	-37.035	76.328	-0.68998	57.398	61.691	-26.53
21-Aug-95	A082195A	9005-5001	9.414	-430.6	17119	8675.9	3055.7	5.4447	821.27	24634	163.17	-57.885	-27.31	100.21	31.074	-12.347
21-Aug-95	A082195A	9005-5004	9.623	-557.1	18912	89420	2391.7	93.284	525.3	24096	377.19	-11.473	-13.266	54.839	-17.13	-28.328
21-Aug-95	A082195A	9005-5008	10.517	-547.21	22823	126513	2178.6	127	502.62	24767	410.16	-11.787	-27.863	57.933	-28.082	-23.446
21-Aug-95	A082195A	9005-5011	10.766	-425.93	26880	94474	2438	102.22	533.93	27955	292.25	-28.232	-59.111	54.833	-7.4795	-3.6742
26-Jul-95	A072695A	9101-5001	10.859	-764.75	25605	60126	2334.5	8.1345	562.89	24719	119.87	-64.375	60.505	61.387	16.97	12.394
26-Jul-95	A072695A	9101-5004	11.111	-683.02	20580	80380	2173.3	-47.572	423.56	22920	133.8	-41.927	60.949	66.277	42.669	8.3169
26-Jul-95	A072695A	9101-5008	11.351	-763.57	34480	63852	3114.4	-107.03	481.06	29852	142.92	-48.088	45.66	59.458	22.793	14.489
26-Jul-95	A072695A	9101-5012	11.658	-570.64	35418	56964	3073.6	-88.939	623.33	31366	179.8	-1.3186	63.226	128.74	13.675	18.922
26-Jul-95	A072695A	9101-5014	14.239	-420.53	36537	69692	3306.9	-154.09	758.37	31122	229.75	-141.43	37.114	75.087	26.33	18.082
26-Jul-95	A072695A	9103-5001	13.33	-648.74	29475	56477	2493.1	65.998	417.99	27633	124.22	24.759	17.017	80.014	16.634	16.062
26-Jul-95	A072695A	9103-5004	14.634	-507.67	19508	89341	1996.3	-6.5417	445.63	20354	-127.04	-17.1	12.413	84.661	33.506	5.3087
26-Jul-95	A072695A	9103-5008	14.853	-853.19	30536	71916	2864.1	-85.005	708.91	27232	55.033	-61.324	51.292	69.528	36.574	28.338
26-Jul-95	A072695A	9103-5012	15.067	-691.91	34404	55833	3026.6	-72.343	917.46	28139	3.9561	-66.457	18.807	44.668	31.752	20.658
26-Jul-95	A072695A	9103-6001	13.548	-502.78	32261	62316	2796.6	-30.432	365.01	28751	-115.4	-12.61	29.792	104.96	13.185	14.288
30-Aug-95	A083095A	9104-5001	14.057	-656.42	24131	56820	2200.9	50.32	375.08	24054	-40.507	-25.157	-10.908	47.281	53.816	-26.25
30-Aug-95	A083095A	9104-5004	14.261	-724.19					.43	18673	-18.717	19.603	-5.9593	66.636	59.038	-9.9776
30-Aug-95	A083095B	9104-5008	15.882	-543.46					.13	22162	156.27	36.711	23.093	38.117	77.045	-29.357
30-Aug-95	A083095B	9104-5012	16.094	-847.52					.48	27959	178.18	16.035	-1.7318	24.835	77.629	-29.023
29-Aug-95	A082995A	9105-5001	14.98	-504.37					.32	24549	152.34	-150.63	-45.795	27.205	84.481	-26.095
29-Aug-95	A082995A	9105-5004	15.191	-343.61					.76	19034	128.84	-117.64	-17.582	44.041	52.882	-30.104
29-Aug-95	A082995A	9105-5008	15.397	-212.3					.46	26760	405.42	-106.34	-20.93	26.531	63.097	-36.225
29-Aug-95	A082995A	9105-5012	15.602	-21.008					.71	30595	109.25	-38.335	-30.714	-7.2702	65.947	-35.997
	092995A	9106-5001	15.479	-835.32	28502	66045	2452.1	48.748	1190.3	26309	103.76	-148.33	-122.57	97.244	66.95	-19.63
	092995A	9106-5004	15.901	-467.93	29548	81521	2706.7	-38.643	484.05	27740	354.12	-181.26	-63.881	51.428	68.611	-19.127
	092995A	9106-5008	16.113	-676.73	22712	89938	2124.8	-58.955	493.68	19873	93.837	-141.2	-58.565	67.443	52.557	-21.513
	092995A	9106-6001	15.693	-946.61	30441	74250	2647.6	-8.5676	533.57	27328	-112.51	-147.9	-108.78	85.176	41.68	-25.87
	092995A	9107-5001	16.333	-973.81	31104	100209	2661.2	-52.036	715.33	26888	-126.85	-103.43	-112.83	85.089	66.849	-16.506
	092995A	9107-5004	16.989	-454.94	25299	139530	2461.6	-105.65	461.2	24522	449.95	-182.38	-59.172	89.815	37.33	-16.537
	092995A	9107-5008	17.206	-692.64	23095	105790	2424.3	-51.048	77.638	21597	-40.822	-150.74	-69.004	54.49	50.496	-12.933
	092995A	9108-5001	17.47	-792.29	35940	65825	3146	10.504	660.71	30868	27.138	-146.66	-63.821	52.177	61.942	-14.732
	092995A	9108-5004	17.779	-1032.9	23123	95304	1943.1	-101.27	793.92	21848	-253.33	-183.67	-54.728	80.161	51.233	-21.738
	092995A	9108-5008	17.981	-787.45	18035	93858	2120.5	47.915	275.79	18853	38.704	-118.47	-51.493	64.908	50.185	-10.505
	072795A	9201-5001	15.636	-900.33	6340.6	140293	1118.9	63.381	183.29	9198.8	-17.086	-85.963	-21.687	56.768	-9.501	11.3
	072795A	9201-5004	15.862	-590.81	26918	86116	2593.2	-68.081	918.07	27360	-37.814	-16.107	35.649	55.037	12.721	10.23
	072795A	9201-5016	16.113	-707.45	30834	92408	3001.2	-44.948	685.53	29243	187.75	-44.867	9.0759	69.347	40.148	31.331
	072695A	9202-5008	15.296	-661.21	32055	85081	3279.7	-161.36	932.53	34705	166.24	-21.2	69.454	87.215	13.8	22.06
	072695A	9202-5012	15.508	-371.11	28254	102377	3072.6	-131.46	639.87	28954	315.63	-51.943	74.819	43.432	50.648	9.7048
	072695A	9203-5004	15.759	-764.75	17262	140481	1675.5	-164.38	363.42	17889	-106.05	12.008	24.159	32.851	20.088	18.101
	072695A	9203-5008	16.069	-498.24	27746	119687	2739.5	-141.26	779.01	28160	153.81	-55.053	39.541	76.627	18.604	19.565
	072695A	9203-5012	16.306	-714.59	33006	85217	3133.5	-174.2	717.63	30818	70.049	53.852	51.172	104.38	4.2323	12.261

Additional metals data attached.

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 08:43:45
ID: <#ECALCKA>
( ) ( )

	Value	Std. dev.	
CrHI	397.883	863.832	ppm
K	565.757	251.918	ppm
Ca	11166.2	307.745	ppm
Ti	119.856	76.2579	ppm
CrLO	366.730	138.501	ppm
Mn	401.090	642.231	ppm
Fe	140.330	312.975	ppm
Co	-11.2924	234.474	ppm
Ni	-91.6766	153.768	ppm
Cu	249.573	107.558	ppm
Zn	95.2566	76.8328	ppm
As	-1639.23	936.887	ppm
Se	165.210	99.7834	ppm
Sr	57.0274	49.8578	ppm
Zr	328.347	53.4185	ppm
Mo	-167.854	29.0404	ppm
Hg	394.491	139.825	ppm
Pb	168246	1631.84	ppm
Rb	-223.607	59.8247	ppm
Cd	493.589	89.2939	ppm
Sn	181.793	54.7013	ppm
Sb	157.302	39.9837	ppm
Ba	108.349	15.0610	ppm
Ag	247.496	53.7371	ppm
U	124.688	24.1156	ppm
Th	-371.762	54.3495	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 09:01:36
ID: <#RESCKA>
( ) ( )

	Value	Std. dev.	
CrHI	183.212	122.411	ppm
K	94.2182	128.760	ppm
Ca	-839.754	63.9245	ppm
Ti	-6.40716	48.4199	ppm
CrLO	-199.331	75.8318	ppm
Mn	4655.14	1478.12	ppm
Fe	1.46714e+06	9551.67	ppm
Co	-3280.10	2561.58	ppm
Ni	-129.796	1252.14	ppm
Cu	367.444	321.129	ppm
Zn	353.818	213.983	ppm
As	436.263	177.331	ppm
Se	348.539	68.8943	ppm
Sr	-52.8749	23.7255	ppm
Zr	13.2474	16.1009	ppm
Mo	-2.60542	18.2786	ppm
Hg	-478.797	173.859	ppm
Pb	-28.9673	138.288	ppm
Rb	-44.2815	55.8418	ppm
Cd	1594.69	313.876	ppm
Sn	60.0463	149.620	ppm

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Sb	212.923	112.531	ppm
Ba	26.4284	24.0838	ppm
Ag	-98.6823	161.609	ppm
U	-8.84387	4.89307	ppm
Th	-17.1266	3.58156	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 09:26:30
ID: <#TEFLONA>
( ) ( )

	Value	Std. dev.	
CrHI	-114.561	311.242	ppm
K	148.805	129.416	ppm
Ca	-282.091	69.1461	ppm
Ti	78.4207	42.7376	ppm
CrLO	97.1317	76.6537	ppm
Mn	-66.0518	242.124	ppm
Fe	225.540	137.315	ppm
Co	181.918	119.964	ppm
Ni	73.6114	78.6455	ppm
Cu	-37.4530	47.9319	ppm
Zn	-6.57571	46.3825	ppm
As	-3.42392	28.4671	ppm
Se	-15.5376	17.0571	ppm
Sr	-2.59233	3.68534	ppm
Zr	-6.05396	2.31059	ppm
Mo	4.56287	3.41977	ppm
Hg	-59.0056	33.6260	ppm
Pb	-11.9440	14.9785	ppm
Rb	2.48601	8.38987	ppm
Cd	65.0743	50.7162	ppm
Sn	14.5016	25.8690	ppm
Sb	12.5360	17.9270	ppm
Ba	-2.57567	4.69172	ppm
Ag	-1.31163	29.5014	ppm
U	0.287589	9.64533	ppm
Th	2.89826	6.96324	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 09:55:29
ID: <9003-5001>
( ) ( )

	Value	Std. dev.	
CrHI	-353.484	159.046	ppm
K	16587.4	228.908	ppm
Ca	12943.5	135.922	ppm
Ti	2864.91	69.9986	ppm
CrLO	57.4294	42.8433	ppm
Mn	861.320	179.153	ppm
Fe	25314.7	384.283	ppm
Co	229.542	129.683	ppm
Ni	5.80197	40.5994	ppm
Cu	-5.56065	20.2481	ppm
Zn	118.645	21.5569	ppm
As	12.5547	13.4980	ppm
Se	7.47181	7.28709	ppm
Sr	93.4803	5.15678	ppm
Zr	317.881	5.62460	ppm
Mo	-0.248949	2.23929	ppm
Hg	-25.1613	15.5005	ppm

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Pb	11.6137	8.53645	ppm
Rb	78.8515	7.34549	ppm
Cd	-45.9398	24.5036	ppm
Sn	-6.84423	12.7992	ppm
Sb	6.95626	8.60383	ppm
Ba	290.330	6.21046	ppm
Ag	4.27109	14.5082	ppm
U	-1.33876	5.17635	ppm
Th	7.44463	3.45401	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 10:09:55
ID: <9003-5004>
( ) ( )

	Value	Std. dev.	
CrHI	-758.821	152.872	ppm
K	18186.6	246.298	ppm
Ca	60403.7	278.887	ppm
Ti	2410.06	68.3523	ppm
CrLO	43.7726	44.0187	ppm
Mn	813.372	183.316	ppm
Fe	24667.2	398.740	ppm
Co	207.845	135.047	ppm
Ni	-32.4437	40.8529	ppm
Cu	45.4495	23.3015	ppm
Zn	67.5914	20.2722	ppm
As	21.1727	13.8346	ppm
Se	4.35833	7.32125	ppm
Sr	148.085	6.60606	ppm
Zr	177.090	4.61747	ppm
Mo	0.710025	2.14822	ppm
Hg	-37.5627	15.6568	ppm
Pb	3.26682	8.57716	ppm
Rb	88.5018	7.95331	ppm
Cd	-33.1238	27.2171	ppm
Sn	-21.6114	14.0548	ppm
Sb	19.2638	9.65578	ppm
Ba	284.654	6.43441	ppm
Ag	43.2858	16.4723	ppm
U	-2.23873	5.04499	ppm
Th	5.82477	3.14475	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 10:23:09
ID: <9003-5008>
( ) ( )

	Value	Std. dev.	
CrHI	-742.756	183.032	ppm
K	19237.0	257.885	ppm
Ca	150724	434.519	ppm
Ti	2024.02	70.6560	ppm
CrLO	-14.5021	50.3717	ppm
Mn	959.867	210.037	ppm
Fe	23930.7	427.271	ppm
Co	339.226	149.538	ppm
Ni	-39.3801	46.1539	ppm
Cu	73.7118	27.1287	ppm
Zn	99.5965	23.4073	ppm
As	41.8225	15.1402	ppm
Se	20.1738	8.81370	ppm

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Sr	220.653	8.64716	ppm
Zr	136.394	4.66487	ppm
Mo	-3.67636	2.21178	ppm
Hg	-10.2498	19.2818	ppm
Pb	-19.1429	9.03440	ppm
Rb	101.053	9.05975	ppm
Cd	-25.8160	31.8686	ppm
Sn	-51.1964	16.0609	ppm
Sb	0.792380	10.9586	ppm
Ba	191.454	5.91126	ppm
Ag	50.0315	19.2642	ppm
U	-6.41140	4.75710	ppm
Th	2.18374	2.89672	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 10:39:29
ID: <9003-5011>
( ) ( )

	Value	Std. dev.	
CrHI	-811.225	181.011	ppm
K	16297.0	245.028	ppm
Ca	158010	441.781	ppm
Ti	1876.61	70.3615	ppm
CrLO	-17.0087	51.0261	ppm
Mn	964.662	210.589	ppm
Fe	24371.2	432.341	ppm
Co	7.48985	144.088	ppm
Ni	-30.2258	45.6680	ppm
Cu	54.6218	26.1899	ppm
Zn	57.1225	21.7069	ppm
As	50.0255	16.2342	ppm
Se	14.9929	8.59779	ppm
Sr	250.195	9.19797	ppm
Zr	130.065	4.64984	ppm
Mo	0.999137	2.28926	ppm
Hg	-10.7072	19.3364	ppm
Pb	-1.88535	9.71881	ppm
Rb	87.3105	8.73709	ppm
Cd	12.1250	32.7430	ppm
Sn	-61.4356	16.3232	ppm
Sb	13.7355	11.4214	ppm
Ba	429.046	8.35618	ppm
Ag	50.9998	19.5869	ppm
U	-5.88832	4.65744	ppm
Th	0.521986	2.88109	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 10:53:25
ID: <9003-6011>
( ) ( )

	Value	Std. dev.	
CrHI	-933.355	194.627	ppm
K	14470.3	237.068	ppm
Ca	219653	518.806	ppm
Ti	1699.93	76.9816	ppm
CrLO	-141.852	58.1410	ppm
Mn	1447.63	241.399	ppm
Fe	21246.1	424.780	ppm
Co	234.399	149.986	ppm
Ni	-22.2286	50.2128	ppm

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Cu	91.4520	30.0538	ppm
Zn	100.280	25.2024	ppm
As	8.16794	15.6754	ppm
Se	19.7123	9.58227	ppm
Sr	352.098	11.3094	ppm
Zr	121.129	4.94227	ppm
Mo	-1.06504	2.33914	ppm
Hg	-5.97397	21.3034	ppm
Pb	-11.0533	10.1244	ppm
Rb	76.8357	8.75237	ppm
Cd	15.7352	36.2793	ppm
Sn	-29.2130	18.5492	ppm
Sb	14.4739	12.6223	ppm
Ba	927.679	12.4563	ppm
Ag	88.3940	21.9149	ppm
U	-11.5261	4.32974	ppm
Th	4.16503	2.94842	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 11:07:38
ID: <9001-5001>
( ) ( )

	Value	Std. dev.	
CrHI	-327.302	161.512	ppm
K	15676.1	224.558	ppm
Ca	18882.1	160.452	ppm
Ti	2545.81	67.4130	ppm
CrLO	-7.76358	41.4497	ppm
Mn	680.518	173.194	ppm
Fe	24015.4	375.804	ppm
Co	107.477	125.189	ppm
Ni	-51.6455	37.5282	ppm
Cu	54.6682	23.0346	ppm
Zn	55.0145	19.5402	ppm
As	25.5608	13.3934	ppm
Se	7.35673	7.29309	ppm
Sr	98.5026	5.27888	ppm
Zr	310.023	5.54902	ppm
Mo	1.12967	2.33335	ppm
Hg	-25.6765	15.5024	ppm
Pb	-0.263833	8.12313	ppm
Rb	66.2997	7.21625	ppm
Cd	-14.9398	24.4328	ppm
Sn	-15.4042	12.6041	ppm
Sb	10.8769	8.62999	ppm
Ba	265.578	5.96240	ppm
Ag	17.1021	14.4946	ppm
U	10.8789	5.36279	ppm
Th	5.66076	3.38456	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 11:23:29
ID: <9001-5004>
( ) ( )

	Value	Std. dev.	
CrHI	-536.188	156.316	ppm
K	16327.0	232.628	ppm
Ca	39884.2	227.784	ppm
Ti	2289.50	64.6099	ppm
CrLO	20.8428	41.1101	ppm

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Mn	593.133	170.577	ppm
Fe	23065.6	376.411	ppm
Co	278.441	129.210	ppm
Ni	-40.0456	38.9022	ppm
Cu	63.4697	23.3357	ppm
Zn	53.7151	19.1720	ppm
As	24.7138	13.5043	ppm
Se	19.5620	7.70641	ppm
Sr	102.794	5.47162	ppm
Zr	227.492	4.91642	ppm
Mo	-0.444901	2.14628	ppm
Hg	-26.0437	15.4232	ppm
Pb	3.75910	8.34277	ppm
Rb	81.3287	7.51415	ppm
Cd	-60.4372	24.8374	ppm
Sn	-27.3005	12.8549	ppm
Sb	19.8900	8.86824	ppm
Ba	247.338	5.86968	ppm
Ag	21.7989	14.9658	ppm
U	1.18280	5.13353	ppm
Th	3.48848	3.18167	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 12:42:21
ID: <9001-5008>
( ) ( )

	Value	Std. dev.	
CrHI	-545.744	190.876	ppm
K	18656.6	255.239	ppm
Ca	147200	428.915	ppm
Ti	1863.64	68.4688	ppm
CrLO	-83.4480	48.2317	ppm
Mn	771.489	201.280	ppm
Fe	22458.4	412.495	ppm
Co	317.904	144.885	ppm
Ni	-28.9455	45.9195	ppm
Cu	78.0904	27.1057	ppm
Zn	49.9552	21.2880	ppm
As	16.4248	14.2760	ppm
Se	14.1479	8.46477	ppm
Sr	172.118	7.66302	ppm
Zr	116.217	4.28334	ppm
Mo	0.568913	2.24503	ppm
Hg	-31.1959	18.0774	ppm
Pb	-14.1469	8.91993	ppm
Rb	107.120	9.16465	ppm
Cd	20.8503	32.0436	ppm ←
Sn	-34.5959	16.1258	ppm
Sb	5.97065	11.0914	ppm
Ba	206.299	6.05683	ppm
Ag	35.8931	19.0353	ppm
U	-6.55297	4.83972	ppm
Th	0.170750	2.78710	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 12:56:02
ID: <9001-5009>
) ( )

	Value	Std. dev.	
CrHI	-859.401	179.449	ppm

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K	19363.4	258.488	ppm
Ca	159073	446.349	ppm
Ti	1938.39	69.2112	ppm
CrLO	-157.871	48.1060	ppm
Mn	684.312	200.297	ppm
Fe	24645.5	436.285	ppm
Co	272.763	150.828	ppm
Ni	-13.4885	47.7189	ppm
Cu	75.0054	27.3851	ppm
Zn	83.7110	22.8612	ppm
As	37.9872	15.5641	ppm
Se	15.0741	8.63988	ppm
Sr	222.070	8.74369	ppm
Zr	106.180	4.32835	ppm
Mo	-0.639735	2.21566	ppm
Hg	-24.6520	18.7741	ppm
Pb	-10.1572	9.52349	ppm
Rb	85.6160	8.78070	ppm
Cd	-22.1026	32.7801	ppm
Sn	-20.4589	16.7966	ppm
Sb	4.71237	11.3138	ppm
Ba	189.318	5.95586	ppm
Ag	49.8872	19.7794	ppm
U	-4.74832	4.61747	ppm
Th	5.12390	2.91820	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 13:10:34
ID: <9002-5001>
) ( )

	Value	Std. dev.	
CrHI	-588.511	159.086	ppm
K	15035.1	228.245	ppm
Ca	54066.6	263.026	ppm
Ti	2623.84	69.9215	ppm
CrLO	8.56814	44.5861	ppm
Mn	825.249	182.108	ppm
Fe	22141.0	374.025	ppm
Co	-38.7231	123.207	ppm
Ni	-52.6616	38.4233	ppm
Cu	29.5081	22.7797	ppm
Zn	69.2550	20.8192	ppm
As	18.6286	13.9005	ppm
Se	12.4823	7.86545	ppm
Sr	100.698	5.50102	ppm
Zr	211.446	4.83107	ppm
Mo	-0.164532	2.16224	ppm
Hg	-26.8434	16.2710	ppm
Pb	-0.481815	8.71260	ppm
Rb	70.0062	7.23869	ppm
Cd	-30.1153	26.1718	ppm
Sn	-32.3104	13.3126	ppm
Sb	14.9427	9.25058	ppm
Ba	229.873	5.76775	ppm
Ag	2.03207	15.4145	ppm
U	-4.23959	4.86673	ppm
Th	11.7123	3.34152	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 13:23:56

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ID: <9002-5~~007~~>
( ) ( )

	Value	Std. dev.	
CrHI	-502.815	175.672	ppm
K	19161.7	254.739	ppm
Ca	91957.7	341.886	ppm
Ti	2074.26	68.4393	ppm
CrLO	38.8953	46.9352	ppm
Mn	871.074	193.675	ppm
Fe	23712.5	403.703	ppm
Co	61.4115	134.802	ppm
Ni	11.2844	43.9177	ppm
Cu	29.1210	23.2794	ppm
Zn	87.0397	21.5205	ppm
As	40.9353	13.8231	ppm
Se	16.8368	8.10083	ppm
Sr	147.895	6.82025	ppm
Zr	156.236	4.52524	ppm
Mo	-2.22273	2.12664	ppm
Hg	-30.5716	16.6585	ppm
Pb	-21.0838	8.02588	ppm
Rb	76.0721	7.90044	ppm
Cd	-8.68898	29.1494	ppm
Sn	9.77180	15.1652	ppm
Sb	4.34803	10.1158	ppm
Ba	223.423	5.98161	ppm
Ag	18.7857	17.2620	ppm
U	-0.394843	4.80588	ppm
Th	7.37961	3.04942	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 13:38:51
ID: <#ECALCKB>
( ) ( )

	Value	Std. dev.	
CrHI	-195.122	830.608	ppm
K	108.917	232.358	ppm
Ca	10407.1	295.694	ppm
Ti	171.081	73.8235	ppm
CrLO	260.798	133.221	ppm
Mn	98.8266	616.430	ppm
Fe	215.158	312.300	ppm
Co	379.561	250.449	ppm
Ni	-107.667	153.319	ppm
Cu	246.408	106.093	ppm
Zn	316.802	84.2313	ppm
As	-4499.55	914.094	ppm
Se	-132.374	94.6290	ppm
Sr	33.7002	48.5574	ppm
Zr	-191.870	53.5310	ppm
Mo	114.971	29.5229	ppm
Hg	252.916	131.738	ppm
Pb	163557	1592.63	ppm
Rb	215.002	59.7446	ppm
Cd	647.679	91.8949	ppm
Sn	328.679	57.0389	ppm
Sb	80.5620	37.1012	ppm
Ba	126.166	15.8047	ppm
Ag	61.0654	42.8373	ppm
U	-105.981	24.9070	ppm

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Th	235.598	57.4525 ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 13:56:42
ID: <#RESCKB>
( ) ( )

	Value	Std. dev.
CrHI	198.023	123.329 ppm
K	-91.4608	119.883 ppm
Ca	-720.421	61.7610 ppm
Ti	-46.6108	49.5053 ppm
CrLO	-298.265	71.6771 ppm
Mn	5565.95	1494.51 ppm
Fe	1.45857e+06	9501.83 ppm
Co	740.843	2582.89 ppm
Ni	-1966.70	1215.53 ppm
Cu	154.108	293.173 ppm
Zn	266.137	203.417 ppm
As	833.828	166.451 ppm
Se	410.360	77.3772 ppm
Sr	-65.7209	22.1523 ppm
Zr	-25.8428	12.7667 ppm
Mo	-6.22044	15.7815 ppm
Hg	-84.2129	222.080 ppm
Pb	-401.107	106.726 ppm
Rb	-40.9434	56.1975 ppm
Cd	953.856	300.906 ppm
Sn	334.879	158.033 ppm
Sb	-28.5413	100.431 ppm
Ba	10.2674	22.8442 ppm
Ag	276.722	172.699 ppm
U	-13.3592	4.33458 ppm
Th	-10.9742	3.63196 ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 14:10:37
ID: <#TEFLONB>
( ) ( )

	Value	Std. dev.
CrHI	-149.122	307.691 ppm
K	63.2034	126.233 ppm
Ca	-267.533	69.2381 ppm
Ti	-64.8351	44.1936 ppm
CrLO	29.3150	76.1396 ppm
Mn	-509.032	206.313 ppm
Fe	152.655	130.360 ppm
Co	-127.767	99.7164 ppm
Ni	-1.57203	72.5145 ppm
Cu	-50.4132	46.8003 ppm
Zn	-57.9809	44.1832 ppm
As	17.9476	29.2049 ppm
Se	-10.3438	17.2009 ppm
Sr	0.134497	3.89112 ppm
Zr	-3.19606	2.46133 ppm
Mo	-2.11957	3.05039 ppm
Hg	-30.4920	34.8580 ppm
Pb	-10.6098	15.1852 ppm
Rb	-10.7909	7.67774 ppm
Cd	-17.8065	50.0010 ppm
Sn	5.39862	25.8320 ppm

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Sb	47.5315	18.2109	ppm
Ba	1.66165	4.81866	ppm
Ag	26.0872	29.8518	ppm
U	-1.18523	8.79269	ppm
Th	6.07571	7.04508	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 14:21:49
ID: <9002-5008>
( ) ( )

	Value	Std. dev.	
CrHI	-1165.39	167.052	ppm
K	18400.4	254.231	ppm
Ca	180081	473.552	ppm
Ti	1622.28	67.8275	ppm
CrLO	-130.626	50.3514	ppm
Mn	569.757	195.504	ppm
Fe	21465.1	413.499	ppm
Co	3.92894	139.431	ppm
Ni	-76.8839	43.5961	ppm
Cu	26.1175	24.8659	ppm
Zn	74.1284	22.5136	ppm
As	26.2894	14.9505	ppm
Se	15.6098	8.72319	ppm
Sr	222.140	8.80530	ppm
Zr	98.2553	4.23143	ppm
Mo	0.410914	2.22880	ppm
Hg	-31.4487	18.5671	ppm
Pb	-12.6640	9.08475	ppm
Rb	83.9632	8.71984	ppm
Cd	1.95657	33.1232	ppm
Sn	-29.2826	16.7472	ppm
Sb	-2.79296	11.3341	ppm
Ba	194.340	6.04579	ppm
Ag	23.7051	19.6097	ppm
U	-5.86539	4.56372	ppm
Th	1.43236	2.78670	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 14:37:44
ID: <9002-5012>
( ) ( )

	Value	Std. dev.	
CrHI	-529.580	171.976	ppm
K	29239.9	299.325	ppm
Ca	70315.6	306.997	ppm
Ti	2374.73	70.3106	ppm
CrLO	-9.61194	44.9557	ppm
Mn	650.029	186.500	ppm
Fe	29621.3	448.184	ppm
Co	-181.381	142.118	ppm
Ni	43.7888	45.4697	ppm
Cu	53.9256	24.5712	ppm
Zn	88.4353	21.5097	ppm
As	27.7058	13.4230	ppm
Se	11.5558	7.82562	ppm
Sr	146.830	6.82756	ppm
Zr	105.490	3.94088	ppm
Mo	-3.93613	2.05918	ppm
Hg	-38.7169	16.2387	ppm

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Pb	-18.5361	8.04594	ppm
Rb	130.224	9.24571	ppm
Cd	-48.2492	27.9846	ppm
Sn	-25.5582	14.4756	ppm
Sb	17.6788	9.89593	ppm
Ba	221.998	5.96740	ppm
Ag	47.4298	17.0522	ppm
U	-4.69449	5.28009	ppm
Th	8.43216	3.08146	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 14:52:26
ID: <9002-5014>
( ) ( )

	Value	Std. dev.	
CrHI	-553.660	175.595	ppm
K	29235.5	299.741	ppm
Ca	85907.4	337.990	ppm
Ti	2563.07	75.0200	ppm
CrLO	-71.3762	47.0428	ppm
Mn	542.453	185.027	ppm
Fe	28113.3	443.038	ppm
Co	295.524	150.261	ppm
Ni	-51.0123	43.2954	ppm
Cu	26.6420	23.3328	ppm
Zn	48.3467	20.1440	ppm
As	17.8518	13.4753	ppm
Se	9.14108	7.82627	ppm
Sr	169.000	7.36420	ppm
Zr	100.380	3.94851	ppm
Mo	1.25313	2.07928	ppm
Hg	-14.6467	17.6151	ppm
Pb	-13.1475	8.24268	ppm
Rb	100.370	8.46842	ppm
Cd	-71.6522	28.7024	ppm
Sn	-32.4180	14.8166	ppm
Sb	13.4232	10.0752	ppm
Ba	211.141	5.91230	ppm
Ag	38.0910	17.4600	ppm
U	-11.5738	4.75477	ppm
Th	7.20454	2.96858	ppm

Application:SOILS with U,Th,Ag Q065 09-28-1994
Meas Time: 17-AUG-1995 15:05:31
ID: <8601-5003>
( ) ( )

	Value	Std. dev.	
CrHI	-995.600	171.593	ppm
K	12461.3	228.063	ppm
Ca	187028	475.345	ppm
Ti	1222.83	58.4498	ppm
CrLO	-16.5364	48.6155	ppm
Mn	313.773	176.310	ppm
Fe	13244.4	325.916	ppm
Co	-17.2029	114.599	ppm
Ni	-123.333	37.7222	ppm
Cu	54.8656	24.9309	ppm
Zn	94.0130	22.1473	ppm
As	12.2914	14.2754	ppm
Se	10.5756	8.01136	ppm

8/17/95