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LETTER REPORT REGARDING DIOXIN GROUNDWATER INVESTIGATION ADDENDUM TO GROUNDWATER MONITORING WORK PLAN SITE 7 NCBC GULFPORT MS
2/23/2001
ABB

NCBC Gulfport Administrative Record
Document Index Number

39501 - IRP
01.03.07.0001

LETTER REPORT: SITE 7 DIOXIN GROUNDWATER INVESTIGATION, ADDENDUM TO GROUNDWATER MONITORING WORK PLAN

NAVAL CONSTRUCTION BATTALION CENTER GULFPORT, MISSISSIPPI

UNIT IDENTIFICATION CODE: N62604
CONTRACT NO. N62467-89-D-0317/128

FEBRUARY 23, 2001

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010

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A MACTEC COMPANY

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February 23, 2001

Mr. Gordon Crane
Base Environmental Coordinator
NCBC Gulfport
5200 CBC 2nd Street
Building 322, SW Corner Environmental
Gulfport, MS 39501-5001

RE: **Submittal of *Letter Report: Site 7 Dioxin Groundwater Investigation, Addendum to Groundwater Monitoring Work Plan, Naval Construction Battalion, Gulfport, Mississippi*; Contract No. N62467-89-D-0317/128**

Dear Gordon:

Enclosed is the final *Letter Report: Site 7 Dioxin Groundwater Investigation, Addendum to Groundwater Monitoring Work Plan* for the Naval Construction Battalion Center, Gulfport, Mississippi. A copy has been sent to Mr. Bob Merrill of the Mississippi Office of Pollution Control. Copies have also been forwarded to Art Conrad and Bob Fisher at Tetra Tech NUS.

Please contact me at (865) 531-1922 if you have any questions.

Sincerely,

HARDING ESE, INC.

Ms. Penny Baxter, P.G.
Project Manager

[02540-088]

Enclosures

pc: Art Conrad, Southern Division
Bob Fisher, Tech NUS

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February 23, 2001

Mr. Art Conrad
Southern Division
Naval Facilities Engineering Command
215 Eagle Drive
North Charleston, SC 29418

Subject: **Letter Report: Site 7 Dioxin Groundwater Investigation, Addendum to Groundwater Monitoring Work Plan, Naval Construction Battalion Center (NCBC), Gulfport, Mississippi, Navy CLEAN No. N62467-89-D-0317/128**

Dear Mr. Conrad:

Harding Lawson Associates (HLA) was contracted by Southern Division, Naval Facilities Engineering Command, to conduct a geophysical investigation followed by a direct push technology (DPT) groundwater investigation of Site 7, located in the northwestern portion of the Naval Construction Battalion Center (NCBC), Gulfport, Mississippi (Figure 1, Attachment A).

INTRODUCTION

This abbreviated report describes the field investigation that was performed at Site 7, Rubble Disposal Area, from December 1999 to March 2000. The primary objective of the investigation was to identify if groundwater was impacted by dioxin and dioxin-related contaminants associated with the storage and handling of drums containing herbicide orange (HO). In this document, discussions of Site 7 will focus on the current and most recent previous investigation only. A comprehensive listing and description of previous HO investigations that have taken place on or off the base can be reviewed in the Onsite Delineation Workplan (ABB Environmental Services, Inc. [ABB-ES], 1996a), Offsite Delineation Workplan (ABB-ES, 1996b), and Groundwater Monitoring Report (HLA, 1999).

Site 7 is located just southeast of the intersection of Colby Avenue and 11th Street. Site 7 was reportedly used from 1978 to 1984 for the disposal of construction and demolition debris such as concrete, lumber, scrap metal, and similar inert materials. There is no report of hazardous waste disposal at this site. However, drums emptied of HO may have been disposed of in this landfill. The area is now a part of the NCBC Pine Bayou Golf Course.

Toxic Equivalency Factor Approach It should be noted that, in this report, dioxin values are reported as total toxic equivalents (TEQs). Total TEQ is a shortened form of total tetrachlorodibenzo-p-dioxin (TCDD) TEQ. The total TCDD TEQ is an expression of an equivalent amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) represented by the concentrations of various dioxin and furan congeners in a sample. 2,3,7,8-TCDD is the most toxic of the congeners. The method used to determine this equivalent amount was developed by the U.S. Environmental Protection Agency (USEPA) (1989). Each dioxin and furan congener is assigned a toxic equivalency factor (TEF) based on its toxicity relative to 2,3,7,8-TCDD. The

concentration of each congener in a sample is multiplied by its TEF and the resulting products are summed to obtain the total TCDD TEQ for that sample.

PREVIOUS SITE 7 GROUNDWATER MONITORING

A Groundwater Monitoring Workplan was generated in 1997 (ABB-ES) that included site conceptual models, a sampling plan, and an analytical program including a Quality Assurance Plan (QAP). The workplan described two phases of work to be implemented at NCBC Gulfport: Phase 1 described investigative activities designed to identify and delineate groundwater containing dioxin and dioxin-related compounds associated with Sites 4, 5, and 8; and Phase 2 consisted of the installation of downgradient monitoring wells at Sites 1, 2, 3, and 7. The workplan addressed potential groundwater contamination by dioxin resulting from the storage and handling of HO on the base.

Phase 1 of the groundwater sampling activities took place in October 1998 and Phase 2 took place in February 1999. During Phase 2 of the previous groundwater investigation in February 1999, a result of 51.6 parts per quadrillion (ppq) of dioxin was detected at Site 7 in a sample collected from monitoring well GPT-07-01. Of that value, an estimated maximum potential concentration (EMPC) value of 25.4 ppq was attributed to TCDD. Since the maximum contaminant level (MCL) for dioxin in groundwater is 30 ppq and TCDD is a strong indicator of the presence of HO, this level caused concern for this site. The presence of TCDD in this well is consistent with HO contamination found at Site 8. Additionally, it should be noted that the operations at Site 7 coincided with the activities associated with removing HO from the drums at Site 8. If confirmed, the TCDD congener could indicate HO handling or disposal of HO drums at this site.

During the Groundwater Monitoring Investigation (HLA, 1999), groundwater elevations derived from the on-base piezometers and several of the monitoring wells aided in the assessment of the potentiometric surface and groundwater flow directions beneath the Base. General groundwater flow direction at Site 7 was determined to be to the northwest and north-northwest, with a relatively flat gradient (Figure 2, Attachment A).

As a result of the dioxin level detected at Site 7, HLA conducted an investigation of Site 7 from December 1999 to March 2000.

OBJECTIVES AND SCOPE

The purpose of the investigation was to identify and delineate groundwater that may contain dioxin, as well as volatile organic compounds (VOCs), which may affect the fate and transport of dioxin, beneath Site 7. The investigation included the following tasks:

- a geophysical survey to determine areas of magnetic anomalies beneath Site 7, which may be associated with the disposal cell activities; and

- a DPT investigation, based on the locations of magnetic anomalies found during the geophysical survey, including collection of groundwater samples to determine whether dioxin and dioxin-related compounds are present under Site 7 as a result of the possible disposal of HO-containing drums.

If samples collected during the DPT investigation yielded dioxin results above 30 ppq, the following tasks were to be implemented:

- installation of groundwater monitoring wells at Site 7, and
- collection of groundwater samples from existing and newly installed wells at Site 7.

TECHNICAL APPROACH

A detailed geophysical study was conducted at Site 7 and at the northern part of Site 2 where the two sites intermingle to evaluate the size, location, and orientation of subsurface magnetic anomalies that might indicate disposal cells. DPT locations were chosen based on the findings of the geophysical investigation. HLA proposed to collect groundwater samples for dioxin and VOC analyses from eight DPT locations, with the possibility of adding two more samples while in the field. If groundwater sampling yielded results greater than 30 ppq of dioxin, monitoring wells were to be installed at up to four locations to characterize the groundwater conditions at Site 7. Groundwater sampling from the existing and newly installed Site 7 monitoring wells would then follow installation and development of the proposed wells.

Geophysical Survey During the week of December 5, 1999, HLA conducted a geophysical survey of Sites 2 and 7. The objective of the survey was to evaluate the nature and extent of landfill activities that took place in this area, as has been documented through personnel interviews and historical aerial photographs. Of particular concern are reports of drum disposal in landfilled areas, and the potential for groundwater contamination from leaking drums that may have been disposed at Site 7.

The geophysical technique employed during the survey was time domain metal detection (TDMD). The instrumentation used for this survey consisted of a Geonics EM-61 TDMD with Polycorder high-capacity data logger. The EM-61 was designed by Geonics to detect and map buried conductive objects such as metal tanks, drums, and utilities.

The survey was conducted on parallel traverses approximately 10 feet apart. A Trimble Pro-XL global positioning system (GPS) receiver was employed to derive the position of the EM-61 TDMD traverses. The survey area covered during this investigation was approximately 8 acres, over which more than 28,000 readings were acquired. The GPS unit was equipped with a Coast Guard beacon receiver that automatically applied a differential correction from the nearest Coast Guard base station to the raw field readings. The GPS data were output in Mississippi State Grid Coordinates (North American Datum 1983, Mississippi East Zone) to correspond with previous survey work completed at NCBC Gulfport.

The results of the geophysical investigation are presented in several figures. Figure 3 (Attachment A) presents the Site Plan as determined from GPS data. Prominent site features include the tree line surrounding the two fairways of holes No. 3 and No. 6 and the wooded "island" between the two fairways. Also shown are the tee boxes, greens, and sand traps for the two holes; the 100-, 150-, and 200-yard markers; and three monitoring wells installed during previous investigations. Figure 4 presents the results of the TDMD showing a zone of small, relatively high intensity magnetic anomalies throughout the north-central part of the surveyed area (Attachment A). This zone likely represents the limits of landfilling activities at Site 7. A smaller zone of small, relatively high intensity magnetic anomalies is present in the south-central part of the surveyed area, which corresponds with Site 2.

Based on the TDMD data from Phase I of this investigation, it was concluded that there is a zone underlying the No. 3 and No. 6 fairways within Site 7 that is likely underlain by landfill materials. The small, high intensity anomalies are likely caused by metallic debris and could indicate buried individual metal drums. The data from this investigation do not indicate a significant quantity of buried metal items, such as barrels, drums, etc. Refuse containing sufficient quantities of conductive material such as white goods, steel-reinforcing rod, and many household items could produce similar anomalies. Therefore, HLA

recommended that further exploration be completed at Site 7 to determine whether groundwater beneath Site 7 has been impacted by dioxin.

Direct Push Testing Program Groundwater sampling at Site 7 was performed using DPT. After consultation with Mississippi State Department of Environmental Quality (MSDEQ), eight direct push locations were selected in the immediate areas of magnetic anomalies based on the findings of the geophysical survey, with the possibility of choosing two additional locations in the nearby area as contingencies. The direct push equipment used to collect the groundwater samples was a Mobil B-61 unit mounted on a RAM 350 truck that used 1 1/8-inch-diameter hollow rods with a nested 4-foot section of 1-inch-diameter stainless-steel 0.005-inch slot screen. Once the desired boring depth was reached, the rods were pulled up approximately 2 feet to allow the stainless-steel screen to deploy, which allowed for easy groundwater collection. Groundwater samples were collected through the rods of the direct push equipment using a peristaltic pump and Teflon© tubing from depths ranging from 8 to 14 feet below land surface (bls). The direct push rods and screens were thoroughly decontaminated between locations, and new tubing was used for each sample location.

Figure 5 (Attachment A) presents areas of magnetic anomalies and the attempted DPT borings for Site 7. Ten direct push locations were attempted; only five produced water. This was partly due to various landfill materials and clay lenses that were encountered during DPT. Groundwater samples were collected from locations DPT-1, DPT-2, DPT-3, DPT-4, and DPT-7. Table 1 in Attachment B provides a summary of each direct push location result. Since only five groundwater samples were collected from DPT, a decision was made to collect groundwater samples from the three monitoring wells located on Sites 7 and 2: GPT-02-03, GPT-02-04, and GPT-07-01. Groundwater samples were collected from a total of eight locations (Figure 6, Attachment A). In addition, a duplicate sample, a field blank (potable water) sample, and an equipment rinseate sample were collected to ensure quality control of field and laboratory procedures.

GROUNDWATER SAMPLING RESULTS

All groundwater samples were analyzed for dioxins/furans using Method 8290 and for VOCs using Method 8260. Once laboratory analyses were complete and the laboratory reports were generated, the results were submitted for validation. Analytical results for dioxins/furans and VOCs are presented in Tables 2 and 3, respectively, in Attachment B. Validated analytical report sheets are presented in Attachment C.

As was previously mentioned, dioxin values are reported as their total TEQ. Dioxin concentrations ranged from nondetect (DPT-4, GPT-02-03, and GPT-02-04) to 0.71 ppq (DPT-7). Monitoring well GPT-07-01, which was previously found to have a dioxin concentration of 51.6 ppq in February 1999, contained 0.07 ppq of dioxin.

Of the VOC analyses, methylene chloride (dichloromethane) was detected above the MCL of 0.005 parts per million (ppm) in four of the locations at concentrations ranging from 0.05 ppm (DPT-2) to 5.2 ppm (DPT-7). No other VOCs were detected above MCLs.

All work identified in this report was conducted according to the existing QAP. For details on the QAP, please refer to the Groundwater Monitoring Workplan (ABB-ES, 1997).

CONCLUSIONS

Based on the results from groundwater samples collected from Site 7, groundwater beneath Site 7 does not appear to be impacted by dioxin. The location of downgradient wells, however, does leave some possible data gaps. The highest result yielded from the sample collection was 0.71 ppq, which is well below the MCL of 30 ppq. From current data, it is considered unlikely that dioxin-containing drums were disposed of at Site 7, or if they were, dioxin does not appear to be leaching into the groundwater.

Results from the VOC analyses showed that methylene chloride is present in high levels. Methylene chloride was detected above MCLs in four locations, ranging from 10 times the MCL to 1,000 times the MCL.

The groundwater flow in this area greatly reduces the probability that any contaminants would move to off-base locations.

RECOMMENDATIONS

The results of this site investigation are somewhat inconclusive. It is recommended that an expanded site investigation be conducted to fill the data gaps left from the dioxin investigation and to characterize the area contaminated by methylene chloride.

If there are additional questions or comments, please contact Ms. Penny Baxter at (865) 531-1922.

Respectfully,

Penny Baxter, P.G.
Project Manager

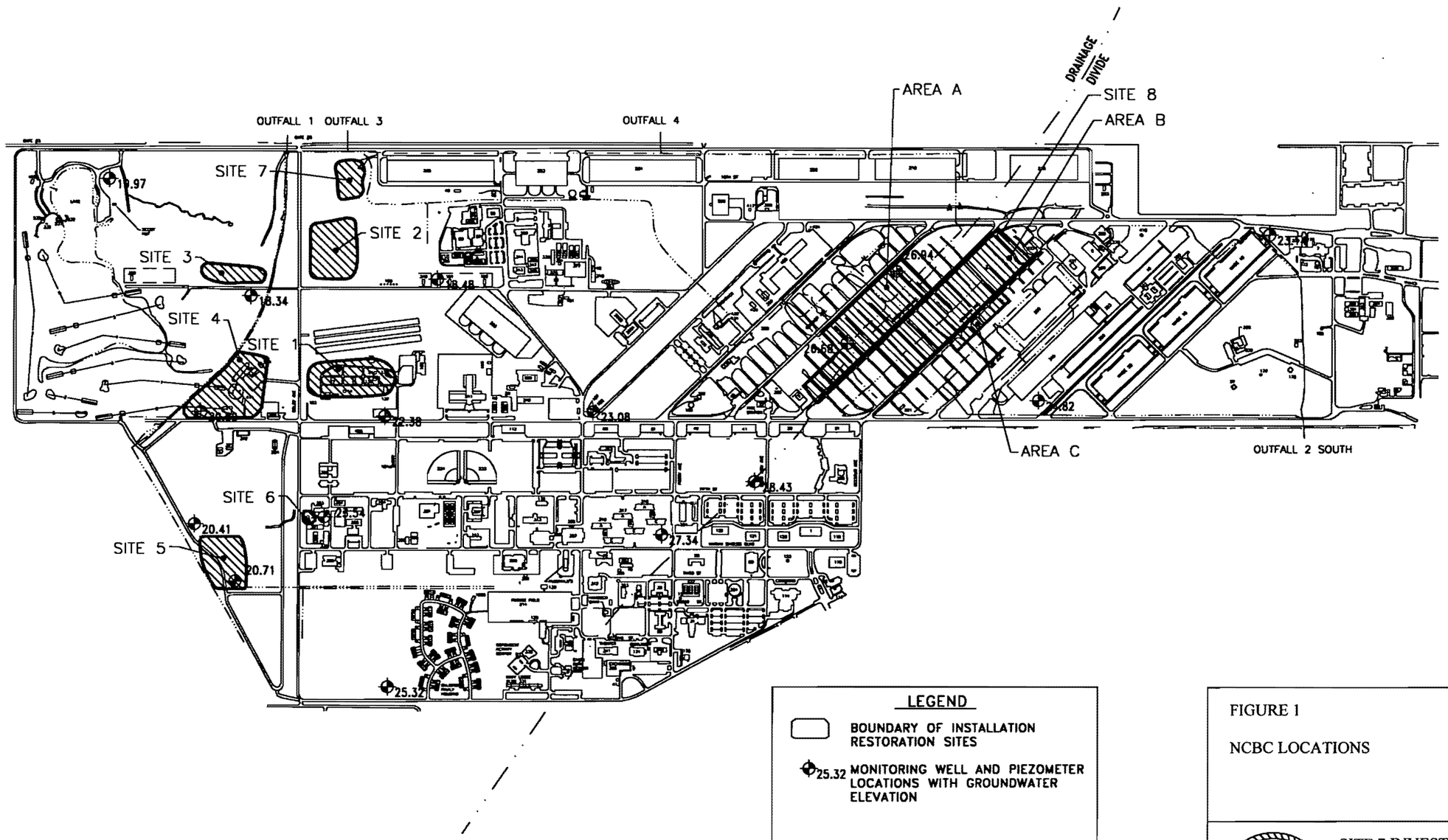
Deven Carigan, R.G.
Project Geologist

Attachments:

- Attachment A: Figures
- Attachment B: Tables
- Attachment C: Validated Laboratory Data Sheets
- Attachment D: Glossary
- Attachment E: References

ATTACHMENT A

FIGURES



LEGEND

BOUNDARY OF INSTALLATION RESTORATION SITES

25.32 MONITORING WELL AND PIEZOMETER LOCATIONS WITH GROUNDWATER ELEVATION

FIGURE 1

NCBC LOCATIONS

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION BATTALION CENTER
GULFPORT, MISSISSIPPI

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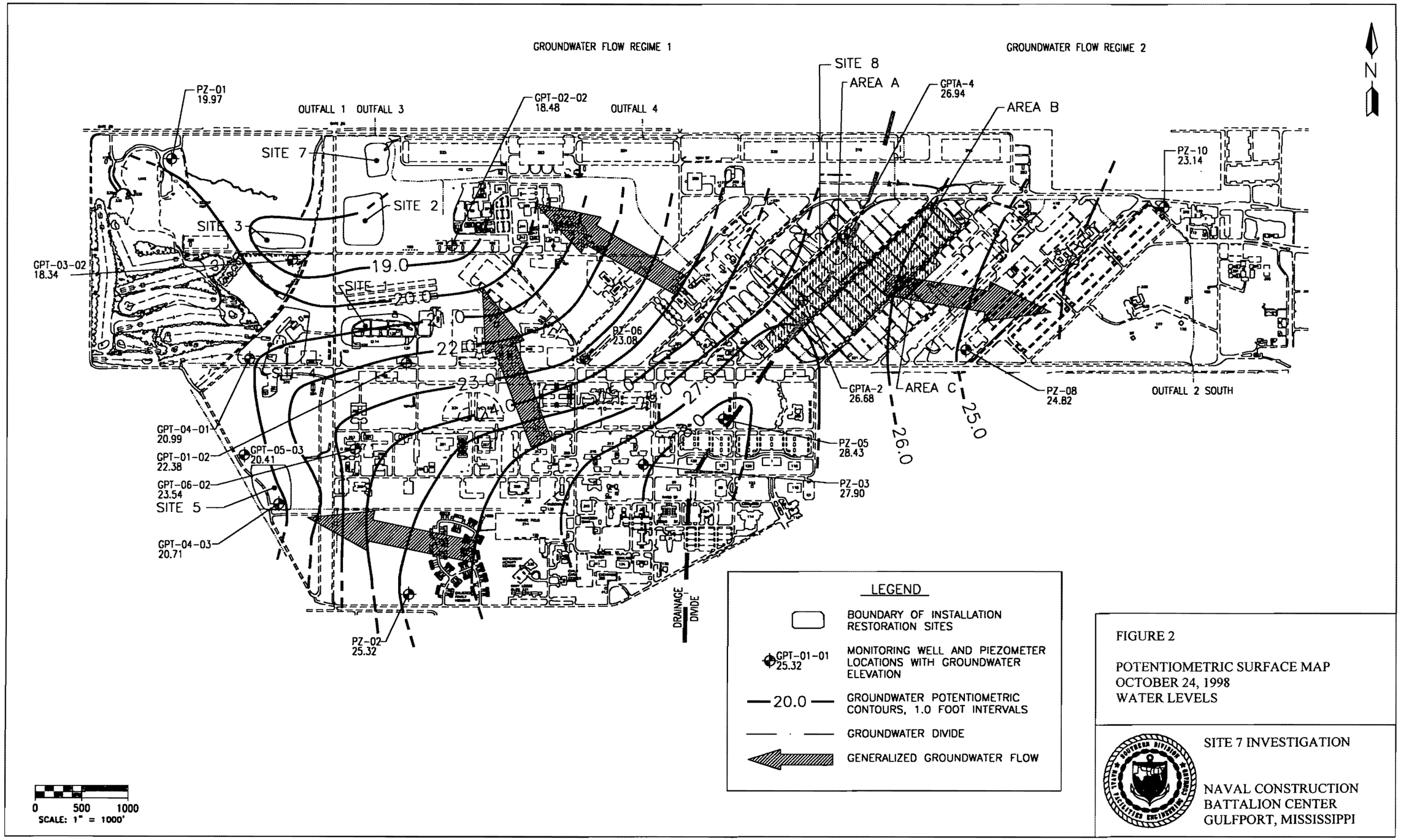

FIGURE 2

POTENTIOMETRIC SURFACE MAP
OCTOBER 24, 1998
WATER LEVELS

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION
BATTALION CENTER
GULFPORT, MISSISSIPPI

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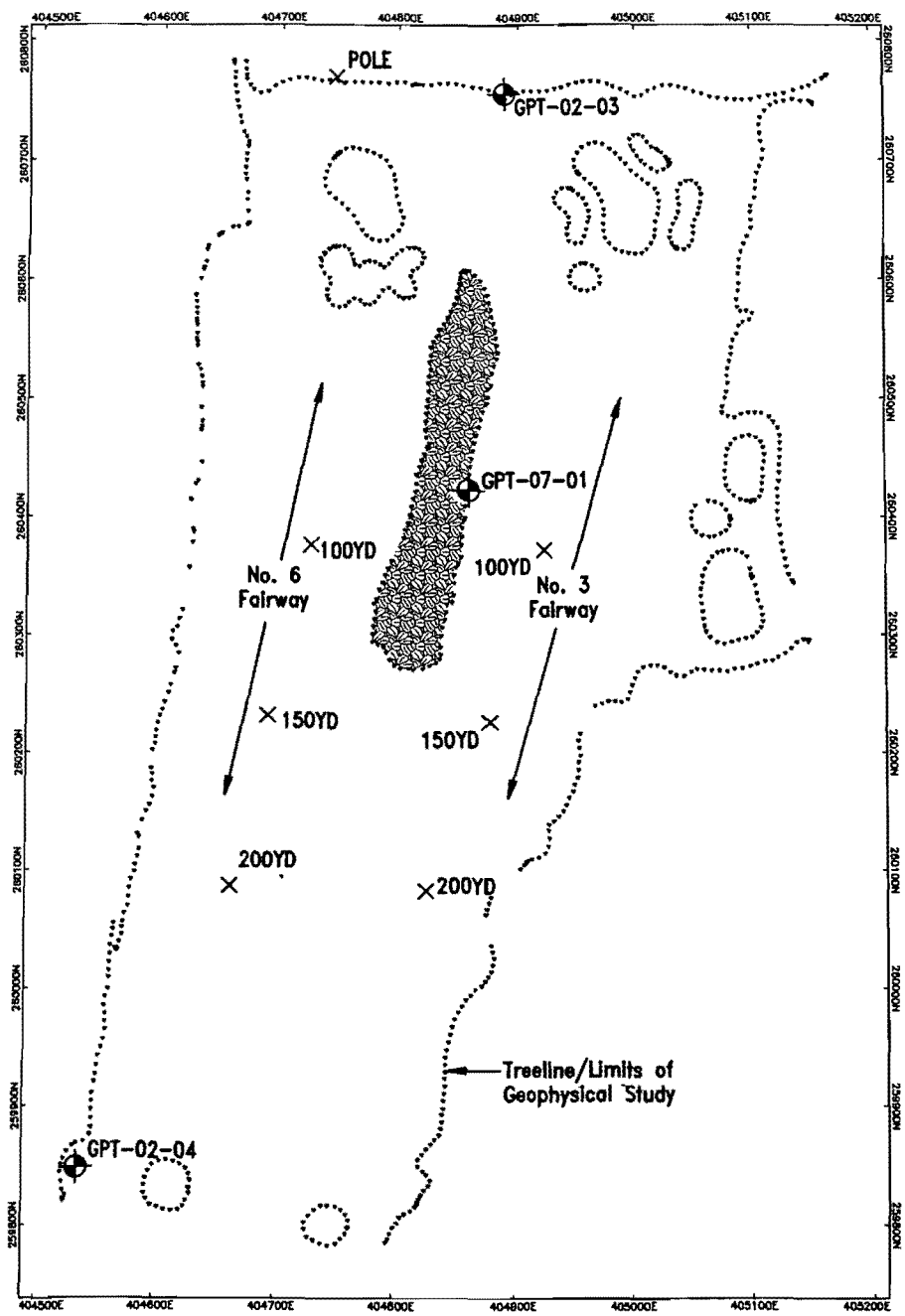

LEGEND

Vegetated area

0 80 160

SCALE: 1 INCH = 160 FEET

FIGURE 3
GPS SITE 7 MAP

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION BATTALION CENTER GULFPORT, MISSISSIPPI

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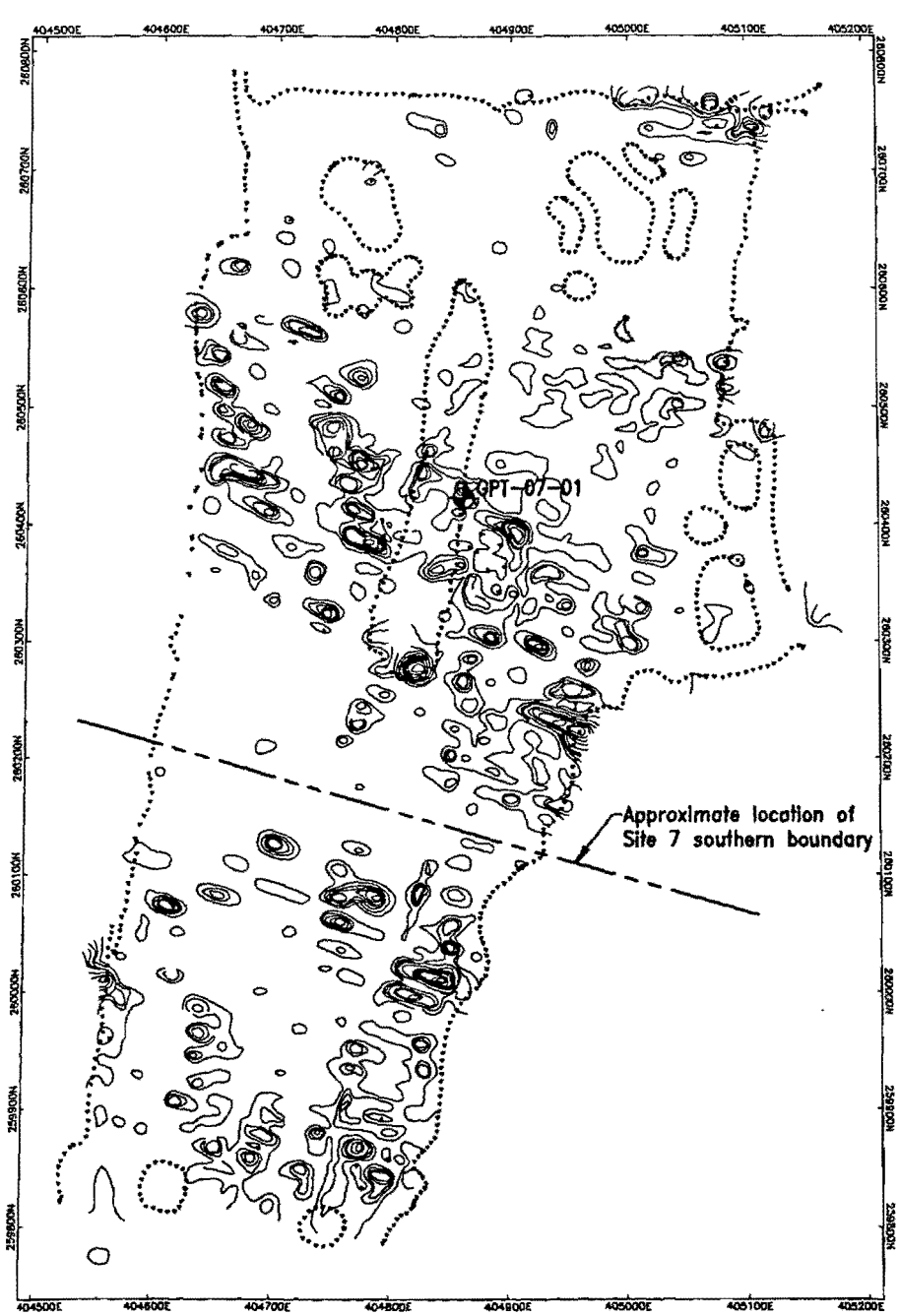

NOTE: Contour interval is 50mv.

0 80 160

SCALE: 1 INCH = 160 FEET

FIGURE 4
AREAS OF MAGNETIC ANOMALIES

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION
BATTALION CENTER
GULFPORT, MISSISSIPPI

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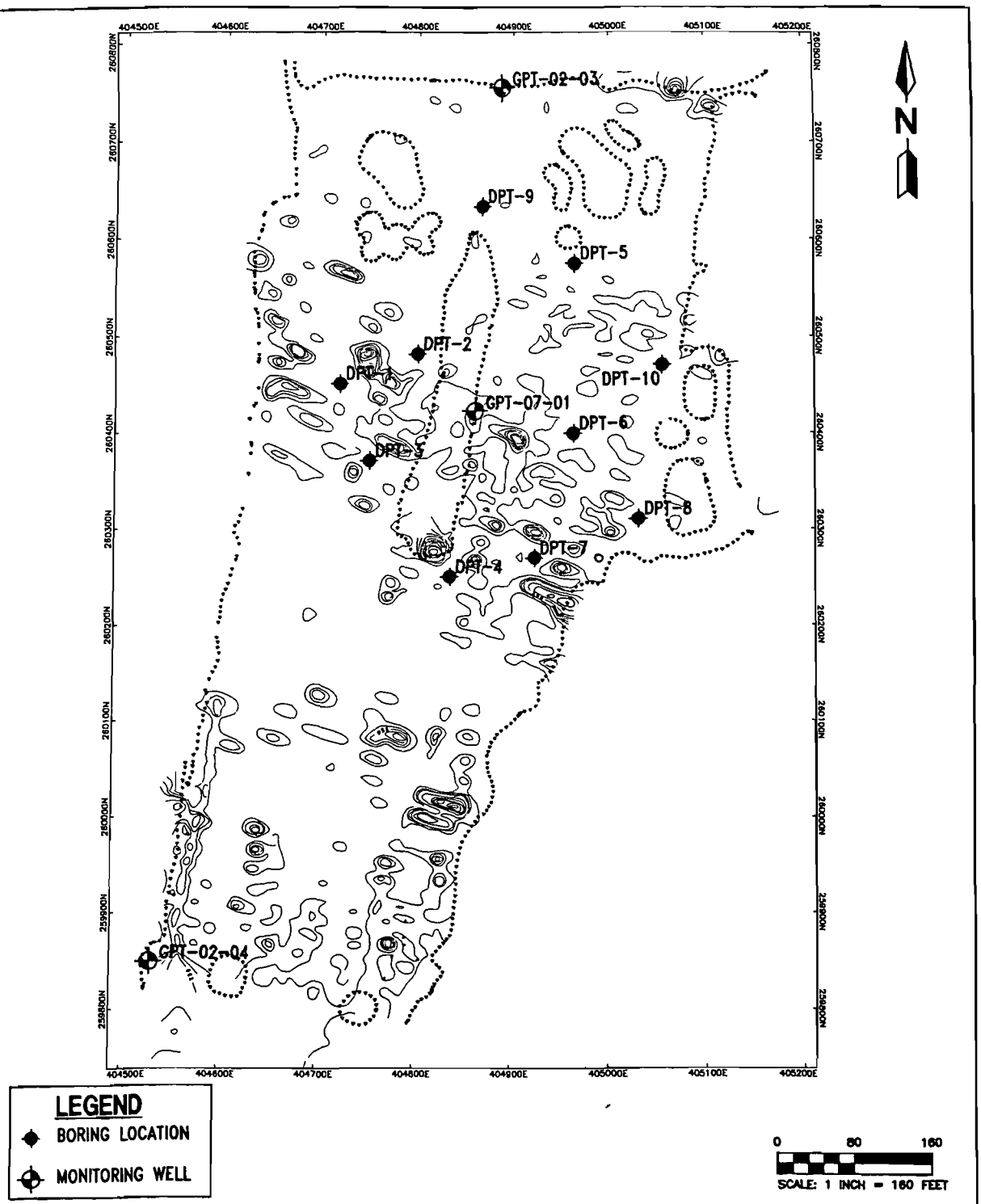

FIGURE 5
DIRECT PUSH LOCATIONS

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION
BATTALION CENTER
GULFPORT, MISSISSIPPI

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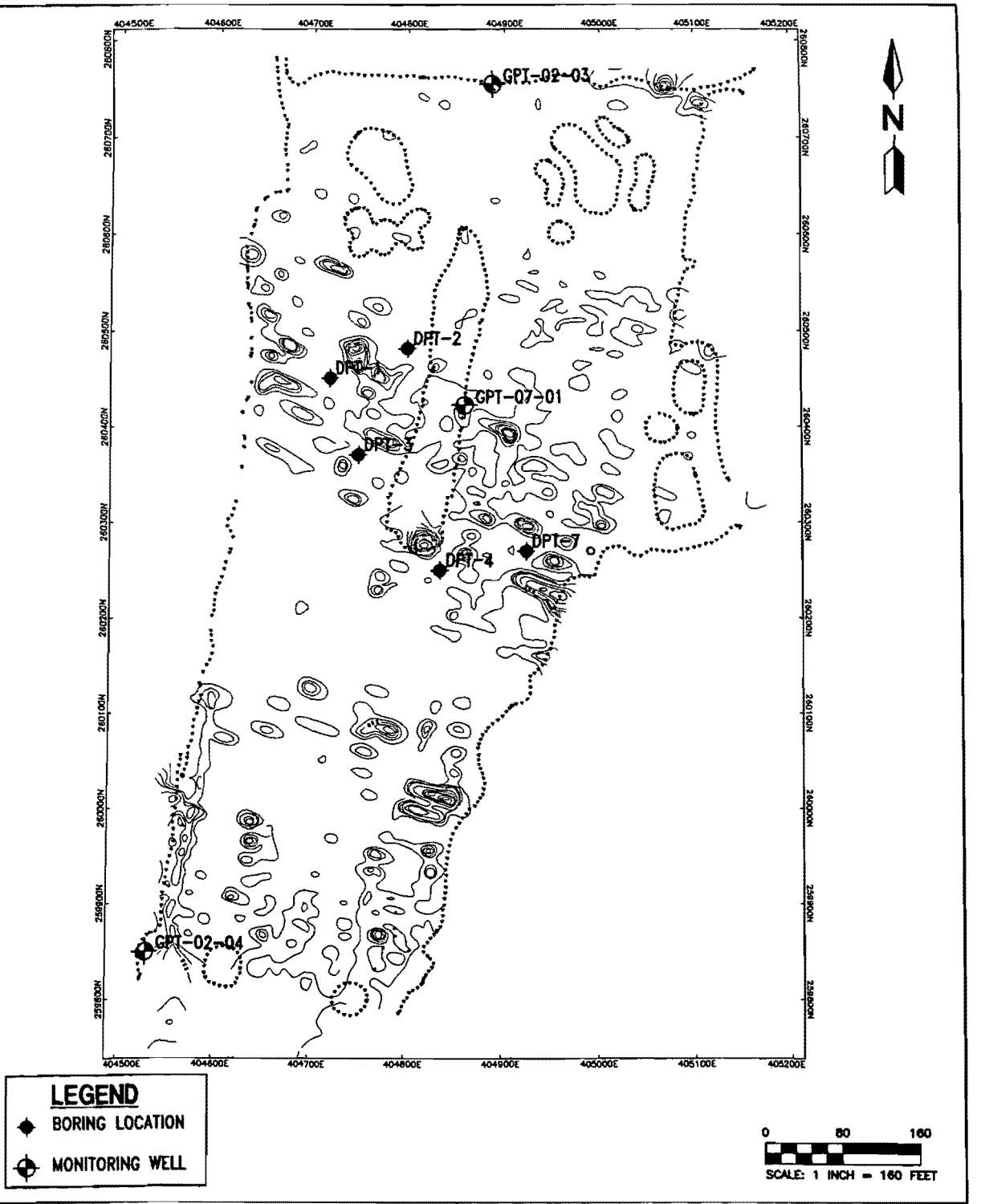

FIGURE 6
GROUNDWATER SAMPLE COLLECTION LOCATIONS

SITE 7 INVESTIGATION

NAVAL CONSTRUCTION BATTALION CENTER
GULFPORT, MISSISSIPPI

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ATTACHMENT B

TABLES

Table 1
Direct Push Technology Sampling Summary

Site 7 Groundwater Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

Location	Depth of attempted sample (ft bls)	Notes	Sample information
DPT-1	0.5	Concrete just below surface	
DPT-1 offset 1	NR	Screen broke off in hole	
DPT-1 offset 2	0.8	Very difficult pushing	
	25	No water	
	21	No water	
	14	Screen broke off in hole upon removal	Collected S7-0300-DPT-1
DPT-2	12		Collected S7-0300-DPT-2
DPT-3	12		Collected S7-0300-DPT-3
DPT-4	12		Collected S7-0300-DPT-4 Collected S7-0300-DPT-4D
DPT-5	2	Refusal	
DPT-5 offset 1	0.5	Refusal	
DPT-5 offset 2	12	No water, screen plugged with clay	
	17	No water, screen plugged with clay	
DPT-5 offset 3	12	No water	
	9	No water	
DPT-5 offset 4	6	No water	
DPT-6	9	No water	
	12	No water, screen plugged with clay	
	24	No water, still in clay	
DPT-7	8		Collected S7-0300-DPT-7
DPT-8	9	No water	
	12	No water	
	15	No water	
DPT-9	7	No water	
	11	No water	
DPT-10	2	Refusal	
DPT-10 offset 1	3	Concrete encountered, pushed through it	
	7	No water	
	11	No water, clay on end of rods	

Notes: ft bls = feet below land surface.
NR = not reported.

Table 2
Dioxin/Furan Results (pg/L)

Site 7 Groundwater Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

	DPT-1 S7-0300-DPT-1 3/27/00	DPT-2 S7-0300-DPT-2 3/27/00	DPT-3 S7-0300-DPT-3 3/27/00	DPT-4 S7-0300-DPT-4 3/27/00	DPT-4 S7-0300-DPT-4D 3/27/00
2,3,7,8-TCDD	10 U	10 U	10 U	10 U	10 U
1,2,3,7,8-PeCDD	10 U	10 U	10 U	10 U	10 U
1,2,3,4,7,8-HxCDD	25 U	25 U	25 U	25 U	25 U
1,2,3,6,7,8-HxCDD	25 U	25 U	25 U	25 U	25 U
1,2,3,7,8,9-HxCDD	25 U	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8-HpCDD	25 U	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8,9-OCDD	**147**	**165**	**54**	50 U	50 U
2,3,7,8-TCDF	10 U	10 U	10 U	10 U	10 U
1,2,3,7,8-PeCDF	10 U	10 U	10 U	10 U	10 U
2,3,4,7,8-PeCDF	10 U	10 U	10 U	10 U	10 U
1,2,3,4,7,8-HxCDF	25 U	25 U	25 U	25 U	25 U
1,2,3,6,7,8-HxCDF	25 U	25 U	25 U	25 U	25 U
1,2,3,7,8,9-HxCDF	25 U	25 U	25 U	25 U	25 U
2,3,4,6,7,8-HxCDF	25 U	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8-HpCDF	25 U	25 U	25 U	25 U	25 U
1,2,3,4,7,8,9-HpCDF	25 U	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8,9-OCDF	50 U	**82.5**	50 U	50 U	50 U
Total TCDD	10 U	10 U	10 U	10 U	10 U
Total PeCDD	10 U	10 U	10 U	10 U	10 U
Total HxCDD	**28.2**	25 U	25 U	25 U	25 U
Total HpCDD	25 U	25 U	25 U	25 U	25 U
Total TCDF	10 U	10 U	10 U	10 U	10 U
Total PeCDF	10 U	10 U	10 U	10 U	10 U
Total HxCDF	25 U	25 U	25 U	25 U	25 U
Total HpCDF	25 U	25 U	25 U	25 U	25 U
Total TEQ	**0.147**	**0.2475**	**0.054**	**0**	**0**

See notes at end of table.

Table 2 (Continued)
Dioxin/Furan Results (pg/L)

Site 7 Groundwater Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

	DPT-7 S7-0300-DPT-7 3/28/00	GPT-02-03 S7-0300-GPT-02-03 3/29/00	GPT-02-04 S7-0300-GPT-02-04 3/29/00	GPT-07-01 S7-0300-GPT-07-01 3/29/00
2,3,7,8-TCDD	**10.7 EMPC**	10 U	10 U	10 U
1,2,3,7,8-PeCDD	10 U	10 U	10 U	10 U
1,2,3,4,7,8-HxCDD	25 U	25 U	25 U	25 U
1,2,3,6,7,8-HxCDD	25 U	25 U	25 U	25 U
1,2,3,7,8,9-HxCDD	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8-HpCDD	**39.3**	25 U	25 U	25 U
1,2,3,4,6,7,8,9-OCDD	**319**	50 U	50 U	**72.7**
2,3,7,8-TCDF	10 U	10 U	10 U	10 U
1,2,3,7,8-PeCDF	10 U	10 U	10 U	10 U
2,3,4,7,8-PeCDF	10 U	10 U	10 U	10 U
1,2,3,4,7,8-HxCDF	25 U	25 U	25 U	25 U
1,2,3,6,7,8-HxCDF	25 U	25 U	25 U	25 U
1,2,3,7,8,9-HxCDF	25 U	25 U	25 U	25 U
2,3,4,6,7,8-HxCDF	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8-HpCDF	25 U	25 U	25 U	25 U
1,2,3,4,7,8,9-HpCDF	25 U	25 U	25 U	25 U
1,2,3,4,6,7,8,9-OCDF	50 U	50 U	50 U	50 U
Total TCDD	10 U	10 U	10 U	10 U
Total PeCDD	10 U	10 U	10 U	10 U
Total HxCDD	25 U	25 U	25 U	25 U
Total HpCDD	**85.7**	25 U	25 U	25 U
Total TCDF	10 U	10 U	10 U	10 U
Total PeCDF	10 U	10 U	10 U	10 U
Total HxCDF	25 U	25 U	25 U	25 U
Total HpCDF	25 U	25 U	25 U	25 U
Total TEQ	**0.712**	**0**	**0**	**0.0727**

Notes: **pg/L = picograms per liter (parts per quadrillion).**
U = not detected.
TEQ = toxic equivalent.
EMPC = estimated maximum potential concentration.

Table 3
Volatile Organic Compound Results (µg/L)

Site 7 Groundwater Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

	DPT-1 S7-0300-DPT-1 3/27/00	DPT-2 S7-0300-DPT-2 3/27/00	DPT-3 S7-0300-DPT-3 3/27/00	DPT-4 S7-0300-DPT-4 3/27/00	DPT-4 S7-0300-DPT-4D 3/27/00
1,1,1-Trichloroethane	25 U	25 U	25 U	25 U	25 U
1,1,2,2-Tetrachloroethane	25 U	25 U	25 U	25 U	25 U
1,1,2-Trichloroethane	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethane	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethene	25 U	25 U	25 U	25 U	25 U
1,2-Dichloroethane	25 U	25 U	25 U	25 U	25 U
1,2-Dichloroethene (total)	25 U	25 U	25 U	25 U	25 U
1,2-Dichloropropane	25 U	25 U	25 U	25 U	25 U
2-Butanone	25 U	25 U	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone	25 U	25 U	25 U	25 U	25 U
Acetone	25 U	25 U	25 U	25 U	25 U
Benzene	25 U	25 U	25 U	25 U	25 U
Bromodichloromethane	25 U	25 U	25 U	25 U	25 U
Bromoform	25 U	25 U	25 U	25 U	25 U
Bromomethane	25 U	25 U	25 U	25 U	25 U
Carbon disulfide	25 U	25 U	25 U	25 U	25 U
Carbon tetrachloride	25 U	25 U	25 U	25 U	25 U
Chlorobenzene	25 U	25 U	25 U	25 U	25 U
Chloroethane	25 U	25 U	25 U	25 U	25 U
Chloroform	25 U	25 U	25 U	25 U	25 U
Chloromethane	25 U	25 U	25 U	25 U	25 U
cis-1,3-Dichloropropene	25 U	25 U	25 U	25 U	25 U
Dibromochloromethane	25 U	25 U	25 U	25 U	25 U
Ethylbenzene	25 U	25 U	25 U	25 U	25 U
Methylene chloride	**270**	**53**	25 U	25 U	**140**
Styrene	25 U	25 U	25 U	25 U	25 U
Tetrachloroethene	25 U	25 U	25 U	25 U	25 U
Toluene	25 U	25 U	25 U	25 U	25 U
trans-1,3-Dichloropropene	25 U	25 U	25 U	25 U	25 U
Trichloroethene	25 U	25 U	25 U	25 U	25 U
Vinyl chloride	25 U	25 U	25 U	25 U	25 U
Xylenes (total)	25 U	25 U	25 U	25 U	25 U

See notes at end of table.

Table 3 (Continued)
Volatile Organic Compound Results (µg/L)

Site 7 Groundwater Investigation
Naval Construction Battalion Center
Gulfport, Mississippi

	DPT-7 S7-0300-DPT-7 3/28/00	GPT-02-03 S7-0300-GPT-02-03 3/29/00	GPT-02-04 S7-0300-GPT-02-04 3/29/00	GPT-07-01 S7-0300-GPT-07-01 3/29/00
1,1,1-Trichloroethane	25 U	25 U	25 U	25 U
1,1,2,2-Tetrachloroethane	25 U	25 U	25 U	25 U
1,1,2-Trichloroethane	25 U	25 U	25 U	25 U
1,1-Dichloroethane	25 U	25 U	25 U	25 U
1,1-Dichloroethene	25 U	25 U	25 U	25 U
1,2-Dichloroethane	25 U	25 U	25 U	25 U
1,2-Dichloroethene (total)	25 U	**3.4 J**	25 U	25 U
1,2-Dichloropropane	25 U	25 U	25 U	25 U
2-Butanone	**1.2 J**	25 U	25 U	25 U
2-Hexanone	25 U	25 U	25 U	25 U
4-Methyl-2-pentanone	25 U	25 U	25 U	25 U
Acetone	25 U	25 U	25 U	25 U
Benzene	25 U	25 U	25 U	25 U
Bromodichloromethane	25 U	25 U	25 U	25 U
Bromoform	25 U	25 U	25 U	25 U
Bromomethane	25 U	25 U	25 U	25 U
Carbon disulfide	25 U	25 U	25 U	25 U
Carbon tetrachloride	25 U	25 U	25 U	25 U
Chlorobenzene	25 U	25 U	25 U	25 U
Chloroethane	25 U	25 U	25 U	25 U
Chloroform	25 U	25 U	25 U	25 U
Chloromethane	25 U	25 U	25 U	25 U
cis-1,3-Dichloropropene	25 U	25 U	25 U	25 U
Dibromochloromethane	25 U	25 U	25 U	25 U
Ethylbenzene	25 U	25 U	25 U	25 U
Methylene chloride	**5,200**	25 U	25 U	25 U
Styrene	25 U	25 U	25 U	25 U
Tetrachloroethene	25 U	25 U	25 U	25 U
Toluene	25 U	25 U	25 U	25 U
trans-1,3-Dichloropropene	25 U	25 U	25 U	25 U
Trichloroethene	25 U	**1.6 J**	25 U	25 U
Vinyl chloride	25 U	25 U	25 U	25 U
Xylenes (total)	25 U	25 U	25 U	25 U

Notes: ug/L = micrograms per liter (parts per billion).
U = not detected.
J = estimated value.

ATTACHMENT C

VALIDATED LABORATORY DATA SHEETS

S7-0300-DPT-1

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372414
Matrix (soil/water):	W			Lab File ID:	0418000016
Sample wt/vol:	1060	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 18, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	4.13		10
51207-31-9	2,3,7,8-TCDF	U	2.69		10
40321-76-4	1,2,3,7,8-PeCDD	U	3.63		10
57117-41-6	1,2,3,7,8-PeCDF	U	3.36		10
57117-31-4	2,3,4,7,8-PeCDF	U	3.31		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.51		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.23		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.02		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	3.02		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.37		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	3.03		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.59		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	11.1		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.12		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.31		25
3268-87-9	OCDD	147		0.147	50
39001-02-0	OCDF	U	19.1		50
		Conc. (pg/L)			
NA	TOTAL TEQ	0.147	# of peaks		
41903-57-5	TOTAL TCDD	U	1		
55722-27-5	TOTAL TCDF	U	0		
36088-22-9	TOTAL PeCDD	U	0		
30402-15-4	TOTAL PeCDF	U	0		
34465-4808	TOTAL HxCDD	28.2	1		
55684-94-1	TOTAL HxCDF	U	0		
37871-00-4	TOTAL HpCDD	U	0		
38998-75-3	TOTAL HpCDF	U	0		
Internal Standard		Recovery (%)	Acceptance Criteria (%)		
76523-40-5	13C-2,3,7,8-TCDD-IS	71	40-135		
89059-46-1	13C-2,3,7,8-TCDF-IS	70	40-135		
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	86	40-135		
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	76	40-135		
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	92	40-135		
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	77	40-135		
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	55	40-135		
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	95	40-135		
114423-97-1	13C-OCDD-IS	46	40-135		

6100

S7-0300-DPT-2

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372415
Matrix (soil/water):	W			Lab File ID:	0418000017
Sample wt/vol:	1070	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 18, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N)	N				

CAS No	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	4.80		10
51207-31-9	2,3,7,8-TCDF	U	3.28		10
40321-76-4	1,2,3,7,8-PeCDD	U	4.72		10
57117-41-6	1,2,3,7,8-PeCDF	U	4.28		10
57117-31-4	2,3,4,7,8-PeCDF	U	4.21		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	7.56		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.80		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.88		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.28		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	3.37		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.31		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.10		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	18.6		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	11.0		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	7.54		25
3268-87-9	OCDD	165		0.165	50
39001-02-0	OCDF	82.5		0.0825	50

		Conc. (pg/L)	
NA	TOTAL TEC	0.248	
			# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	1
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	1
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	97	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	93	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	111	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	97	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	128	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	110	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	135	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	127	40-135
114423-97-1	13C-OCDD-IS	93	40-135

6/00

S7-0300-DPT-3

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372416
Matrix (soil/water):	W			Lab File ID:	0418000018
Sample wt/vol:	1034	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 18, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	2.50		10
51207-31-9	2,3,7,8-TCDF	U	1.65		10
40321-76-4	1,2,3,7,8-PeCDD	U	1.89		10
57117-41-6	1,2,3,7,8-PeCDF	U	1.78		10
57117-31-4	2,3,4,7,8-PeCDF	U	1.75		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	3.21		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	2.46		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	2.92		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	1.54		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	1.21		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	1.55		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.83		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.30		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	2.33		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	3.01		25
3268-87-9	OCDD	54.0		0.0540	50
39001-02-0	OCDF	U	14.5		50
		Conc. (pg/L)			
NA	TOTAL TEQ	0.0540	# of peaks		
41903-57-5	TOTAL TCDD	U	0		
55722-27-5	TOTAL TCDF	U	0		
36088-22-9	TOTAL PeCDD	U	0		
30402-15-4	TOTAL PeCDF	U	0		
34465-4808	TOTAL HxCDD	U	0		
55684-94-1	TOTAL HxCDF	U	0		
37871-00-4	TOTAL HpCDD	U	0		
38998-75-3	TOTAL HpCDF	U	0		
Internal Standard		Recovery (%)	Acceptance Criteria (%)		
76523-40-5	13C-2,3,7,8-TCDD-IS	98	40-135		
89059-46-1	13C-2,3,7,8-TCDF-IS	96	40-135		
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	128	40-135		
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	121	40-135		
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	131	40-135		
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	134	40-135		
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	112	40-135		
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	131	40-135		
114423-97-1	13C-OCDD-IS	44	40-135		

6/00

S7-0300-DPT-4

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372417
Matrix (soil/water):	W			Lab File ID:	0418000019
Sample wt/vol:	1060	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 18, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	4.64		10
51207-31-9	2,3,7,8-TCDF	U	2.57		10
40321-76-4	1,2,3,7,8-PeCDD	U	3.10		10
57117-41-6	1,2,3,7,8-PeCDF	U	3.04		10
57117-31-4	2,3,4,7,8-PeCDF	U	2.99		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	6.41		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.92		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.84		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	2.73		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.15		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	2.74		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.25		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	10.2		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.31		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.56		25
3268-87-9	OCDD	U	19.1		50
39001-02-0	OCDF	U	18.5		50

		Conc. (pg/L)	
NA	TOTAL TEQ	0.0000	# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	0
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	0
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	49	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	59	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	84	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	64	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	76	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	89	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	52	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	93	40-135
114423-97-1	13C-OCDD-IS	44	40-135

6/05

S7-0300-DPT-4D

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372418
Matrix (soil/water):	W			Lab File ID:	0418000020
Sample wt/vol:	1040	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 18, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	4.84		10
51207-31-9	2,3,7,8-TCDF	U	4.67		10
40321-76-4	1,2,3,7,8-PeCDD	U	3.91		10
57117-41-6	1,2,3,7,8-PeCDF	U	4.22		10
57117-31-4	2,3,4,7,8-PeCDF	U	4.16		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	7.37		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.66		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	6.71		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	3.30		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.60		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	3.32		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.93		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	19.7		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	7.09		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	9.15		25
3268-87-9	OCDD	U	26.5		50
39001-02-0	OCDF	U	25.7		50

		Conc. (pg/L)	
NA	TOTAL TEQ	0.0000	# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	0
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	0
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	41	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	57	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	108	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	85	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	92	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	93	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	51	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	74	40-135
114423-97-1	13C-OCDD-IS	42	40-135

6.05

S7-0300-DPT-7

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372421
Matrix (soil/water):	W			Lab File ID:	0418000023
Sample wt/vol:	990	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 19, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	10.7EMPC			10
51207-31-9	2,3,7,8-TCDF	U	3.93		10
40321-76-4	1,2,3,7,8-PeCDD	U	4.65		10
57117-41-6	1,2,3,7,8-PeCDF	U	4.45		10
57117-31-4	2,3,4,7,8-PeCDF	U	4.38		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	7.35		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.64		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	6.70		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	3.51		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.76		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	3.53		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.18		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	39.3		0.393	25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	9.13		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	6.74		25
3268-87-9	OCDD	319		0.319	50
39001-02-0	OCDF	U	38.7		50
		Conc. (pg/L)			
NA	TOTAL TEQ	0.712	# of peaks		
41903-57-5	TOTAL TCDD	U	0		
55722-27-5	TOTAL TCDF	U	0		
36088-22-9	TOTAL PeCDD	U	0		
30402-15-4	TOTAL PeCDF	U	0		
34465-4808	TOTAL HxCDD	U	0		
55684-94-1	TOTAL HxCDF	U	0		
37871-00-4	TOTAL HpCDD	85.7	2		
38998-75-3	TOTAL HpCDF	U	0		
Internal Standard		Recovery (%)	Acceptance Criteria (%)		
76523-40-5	13C-2,3,7,8-TCDD-IS	78	40-135		
89059-46-1	13C-2,3,7,8-TCDF-IS	73	40-135		
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	104	40-135		
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	92	40-135		
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	118	40-135		
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	113	40-135		
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	79	40-135		
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	132	40-135		
114423-97-1	13C-OCDD-IS	46	40-135		

6/00

S7-0300-GPT-02-04

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372422
Matrix (soil/water):	W			Lab File ID:	0418000024
Sample wt/vol:	1040	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 19, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	6.42		10
51207-31-9	2,3,7,8-TCDF	U	4.25		10
40321-76-4	1,2,3,7,8-PeCDD	U	4.09		10
57117-41-6	1,2,3,7,8-PeCDF	U	3.77		10
57117-31-4	2,3,4,7,8-PeCDF	U	3.71		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	6.03		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.63		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.49		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	2.84		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.24		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	2.86		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.39		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	10.3		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.72		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	6.09		25
3268-87-9	OCDD	U	14.1		50
39001-02-0	OCDF	U	13.6		50

		Conc. (pg/L)	
NA	TOTAL TEQ	0.000	# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	0
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	0
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	49	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	85	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	124	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	131	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	86	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	91	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	60	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	95	40-135
114423-97-1	13C-OCDD-IS	57	40-135

6/02

S7-0300-GPT-02-03

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372423
Matrix (soil/water):	W			Lab File ID:	0418000025
Sample wt/vol:	1050	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 19, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	5.36		10
51207-31-9	2,3,7,8-TCDF	U	3.80		10
40321-76-4	1,2,3,7,8-PeCDD	U	3.42		10
57117-41-6	1,2,3,7,8-PeCDF	U	3.83		10
57117-31-4	2,3,4,7,8-PeCDF	U	3.77		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	6.69		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.14		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	6.10		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	3.05		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.40		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	3.06		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.63		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	8.55		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.54		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.85		25
3268-87-9	OCDD	U	9.53		50
39001-02-0	OCDF	U	9.25		50

		Conc. (pg/L)	
NA	TOTAL TEQ	0.000	# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	0
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	0
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	62	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	58	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	100	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	73	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	111	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	126	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	107	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	131	40-135
114423-97-1	13C-OCDD-IS	120	40-135

6/05

S7-0300-GPT-07-01

Lab Name	Maxxam Analytics Inc.				
LAB CODE	KWO			Lab Sample ID:	A005952-372424
Matrix (soil/water):	W			Lab File ID:	0418000026
Sample wt/vol:	1060	(g/mL)	mL	Date Received:	March 31, 2000
Level (low/med)	low			Date Extracted:	April 4, 2000
% Moisture	n/a	Decanted (Y/N):	n/a	Date Analyzed:	April 19, 2000
Concentrated Extract Volume	20	(uL)		Dilution Factor:	1
Injection Volume	2	(uL)			
Acid Wash Cleanup	Y	pH	n/a		
Silica Column Cleanup (Y/N):	Y				
Alumina Column Cleanup (Y/N):	Y				
AX-21/Celite Column Cleanup (Y/N):	N				
GPC Cleanup (Y/N):	N				

CAS No.	Compound	Conc. pg/L	EDL pg/L	TE pg/L	Reporting Limit pg/L
1746-01-6	2,3,7,8-TCDD	U	7.68		10
51207-31-9	2,3,7,8-TCDF	U	5.39		10
40321-76-4	1,2,3,7,8-PeCDD	U	8.03		10
57117-41-6	1,2,3,7,8-PeCDF	U	5.18		10
57117-31-4	2,3,4,7,8-PeCDF	U	5.10		10
39227-28-6	1,2,3,4,7,8-HxCDD	U	11.6		25
57653-85-7	1,2,3,6,7,8-HxCDD	U	8.92		25
19408-74-3	1,2,3,7,8,9-HxCDD	U	10.6		25
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.02		25
57117-44-9	1,2,3,6,7,8-HxCDF	U	3.95		25
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.05		25
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.98		25
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	12.3		25
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	7.80		25
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	10.1		25
3268-87-9	OCDD	72.7		0.0727	50
39001-02-0	OCDF	U	17.9		50

		Conc. (pg/L)	
NA	TOTAL TEQ	0.0727	# of peaks
41903-57-5	TOTAL TCDD	U	0
55722-27-5	TOTAL TCDF	U	0
36088-22-9	TOTAL PeCDD	U	0
30402-15-4	TOTAL PeCDF	U	0
34465-4808	TOTAL HxCDD	U	0
55684-94-1	TOTAL HxCDF	U	0
37871-00-4	TOTAL HpCDD	U	0
38998-75-3	TOTAL HpCDF	U	0

Internal Standard		Recovery (%)	Acceptance Criteria (%)
76523-40-5	13C-2,3,7,8-TCDD-IS	52	40-135
89059-46-1	13C-2,3,7,8-TCDF-IS	47	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD-IS	70	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF-IS	62	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD-IS	74	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF-IS	85	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD-IS	86	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF-IS	93	40-135
114423-97-1	13C-OCDD-IS	72	40-135

6102

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT1

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FC101

Sample wt/vol: 2.000 (g/ml) ML Lab File ID: UX87304

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/05/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	25	U
75-09-2	Methylene Chloride	270	~~B~~
67-64-1	Acetone	25 ~~3~~	~~J~~ U
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
540-59-0	1,2-Dichloroethene (total)	25	U
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	25	U
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylenes (total)	25	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT2

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FH101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87308

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	52	~~B~~
67-64-1	Acetone	10 ~~2~~	~~B~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT3

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FJ101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87309

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~6~~	~~J~~BU
67-64-1	Acetone	10 ~~2~~	~~J~~U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT4

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FK101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87310

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~1~~	~~J~~BU
67-64-1	Acetone	10 ~~2~~	~~J~~U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT4D

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FL101

Sample wt/vol: 4.000 (g/ml) ML Lab File ID: UX87319

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	140	~~B~~
67-64-1	Acetone	12	~~J~~ U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylenes (total)	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT7

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FT201

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87315

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	~~2700~~	~~BB~~
67-64-1	Acetone	10 3	J U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	1	J
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT7DIL

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FT301

Sample wt/vol: 0.100 (g/ml) ML Lab File ID: UX87351

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/07/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	500	U
74-83-9	Bromomethane	500	U
75-01-4	Vinyl Chloride	500	U
75-00-3	Chloroethane	500	U
75-09-2	Methylene Chloride	5200	
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	500	U
75-35-4	1,1-Dichloroethene	500	U
75-34-3	1,1-Dichloroethane	500	U
540-59-0	1,2-Dichloroethene (total)	500	U
67-66-3	Chloroform	500	U
107-06-2	1,2-Dichloroethane	500	U
78-93-3	2-Butanone	500	U
71-55-6	1,1,1-Trichloroethane	500	U
56-23-5	Carbon Tetrachloride	500	U
75-27-4	Bromodichloromethane	500	U
78-87-5	1,2-Dichloropropane	500	U
10061-01-5	cis-1,3-Dichloropropene	500	U
79-01-6	Trichloroethene	500	U
124-48-1	Dibromochloromethane	500	U
79-00-5	1,1,2-Trichloroethane	500	U
71-43-2	Benzene	500	U
10061-02-6	trans-1,3-Dichloropropene	500	U
75-25-2	Bromoform	500	U
108-10-1	4-Methyl-2-pentanone	230	JB
591-78-6	2-Hexanone	500	U
127-18-4	Tetrachloroethene	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
108-88-3	Toluene	500	U
108-90-7	Chlorobenzene	500	U
100-41-4	Ethylbenzene	500	U
100-42-5	Styrene	500	U
1330-20-7	Xylenes (total)	140	JB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DPT7RE

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FT101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87346

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/07/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	3	JB
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	2	JB
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	1	JB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GPT0203

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FX101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87317

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~J~~	~~JB~~ U
67-64-1	Acetone	10 ~~J~~	~~J~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	3	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GPT0204

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8FW101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87342

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/07/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10 ~~2~~	JBU
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10 ~~3~~	JBU
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10 ~~2~~	JBU

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GPT0701

Lab Name: SEVERN TRENT LABORATORIES Contract:

Lab Code: QESOH Case No.: SAS No.: SDG No.: C30151

Matrix: (soil/water) WATER Lab Sample ID: DA8G0101

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: UX87318

Level: (low/med) LOW Date Received: 03/30/00

% Moisture: not dec. _____ Date Analyzed: 04/06/00

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~J~~	~~JB~~ U
67-64-1	Acetone	10 ~~J~~	~~J~~ U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (total)	10	U

ATTACHMENT D

GLOSSARY

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
DPT	direct push technology
EMPC	estimated maximum potential concentration
GPS	global positioning system
HLA	Harding Lawson Associates
HO	herbicide orange
MCL	maximum contaminant level
MSDEQ	Mississippi State Department of Environmental Quality
NCBC	Naval Construction Battalion Center
ppm	parts per million
ppq	parts per quadrillion
QAP	Quality Assurance Plan
2,3,7,8-TCDD	2,3,7,8-tetrachloro-p-dibenzodioxin
TCDD	tetrachlorodibenzo-p-dioxin
TDMD	time domain metal detector
TEF	toxic equivalency factor
TEQ	toxic equivalent
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

ATTACHMENT E

REFERENCES

REFERENCES

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