



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

105 South Meridian Street
P.O. Box 6015
Indianapolis 46206-6015
Telephone 317/232-8603

Via Certified Mail

Cornell Holder
Defense Logistic Agency
3200 Sheffield Avenue
Hammond, Indiana 46327-1002

Roy Harbert - 317 243 5044
** Jeff Eads - 317 243 5047*
Steve McDaniel - 317 243 5076

Re: Underground Storage Tank (UST)
Initial Site Characterization
Case Number 9002504

Dear Mr. Holder:

A release from a UST system at your facility located at the Defense National Stockpile, State Road 14 (3 miles east of New Haven), in New Haven, Indiana, was reported by Mr. Phillip Voo and Mr. Mark Boyce on February 2, 1990 and February 8, 1990 (respectively). In accordance with 40 CFR Part 280.63, owners and operators of a petroleum or hazardous substance UST system which has had a release to the environment must assemble information about the size and the nature of the release. This site characterization must be submitted to the Indiana Department of Environmental Management (IDEM), Office of Environmental Response (OER).

The initial site characterization should contain, at a minimum the following items:

1. Data on the nature and estimated quantity of release.
2. Data from available sources/or site investigations concerning the following factors:
 - A. Surrounding population and land use,
 - B. Location and use of all groundwater wells within 1/4 mile,
 - C. Subsurface soil characteristics,
 - D. Locations of nearby subsurface sewers,
 - E. Location of surface water and drainage ditches within 1/4 mile,
 - F. Depth to groundwater.

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3. A short narrative of any sampling/cleanup work done at the site to date which includes the following:
 - A. Results of all site soil and/or groundwater sampling and site assessment work,
 - B. Description of sampling and analytical methods,
 - C. Description of disposal methods for contaminated soil and/or groundwater.
4. Results of an investigation to determine the possible presence of free product and a description of measures taken to begin free product removal if free product is present.

The above information must be submitted to the IDEM within 45 days of receipt of this letter. After reviewing the initial site characterization, the IDEM will determine the necessity for further investigation and remediation.

Failure to respond to this request for information may result in escalated enforcement action.

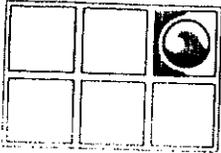
If you have any questions concerning this matter, please contact Mr Roy E. Harbert of this office at AC 317/243-5044.

Sincerely,

Anne D. Black, Chief
Underground Storage Tank Section
Office of Environmental Response

REH/bje

cc: Allen County Health Department
Office of Legal Counsel
Phillip Voo
Rivera-Cotta Corp
3607 W. 16th Street
Indianapolis, Indiana 46222



GROUNDWATER TECHNOLOGY, INC.

9188 Castlegate Drive, Indianapolis, IN 46256 U.S.A., (317) 849-0308

DEFENSE LOGISTICS AGENCY PRELIMINARY INVESTIGATION NEW HAVEN, INDIANA

PREPARED FOR:

MR. PHILIP VOO
RIVERA-COTTY CORPORATION
3607 WEST 16TH STREET
INDIANAPOLIS, INDIANA 46220

PREPARED BY:

GROUNDWATER TECHNOLOGY, INC.
9188 CASTLEGATE DRIVE
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Kendall S. Coad (aa)

KENDALL S. COAD
PROJECT GEOLOGIST

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Michael Brenoel

MICHAEL BRENOEL
VICE PRESIDENT

APRIL 9, 1990

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GROUNDWATER
TECHNOLOGY, INC.

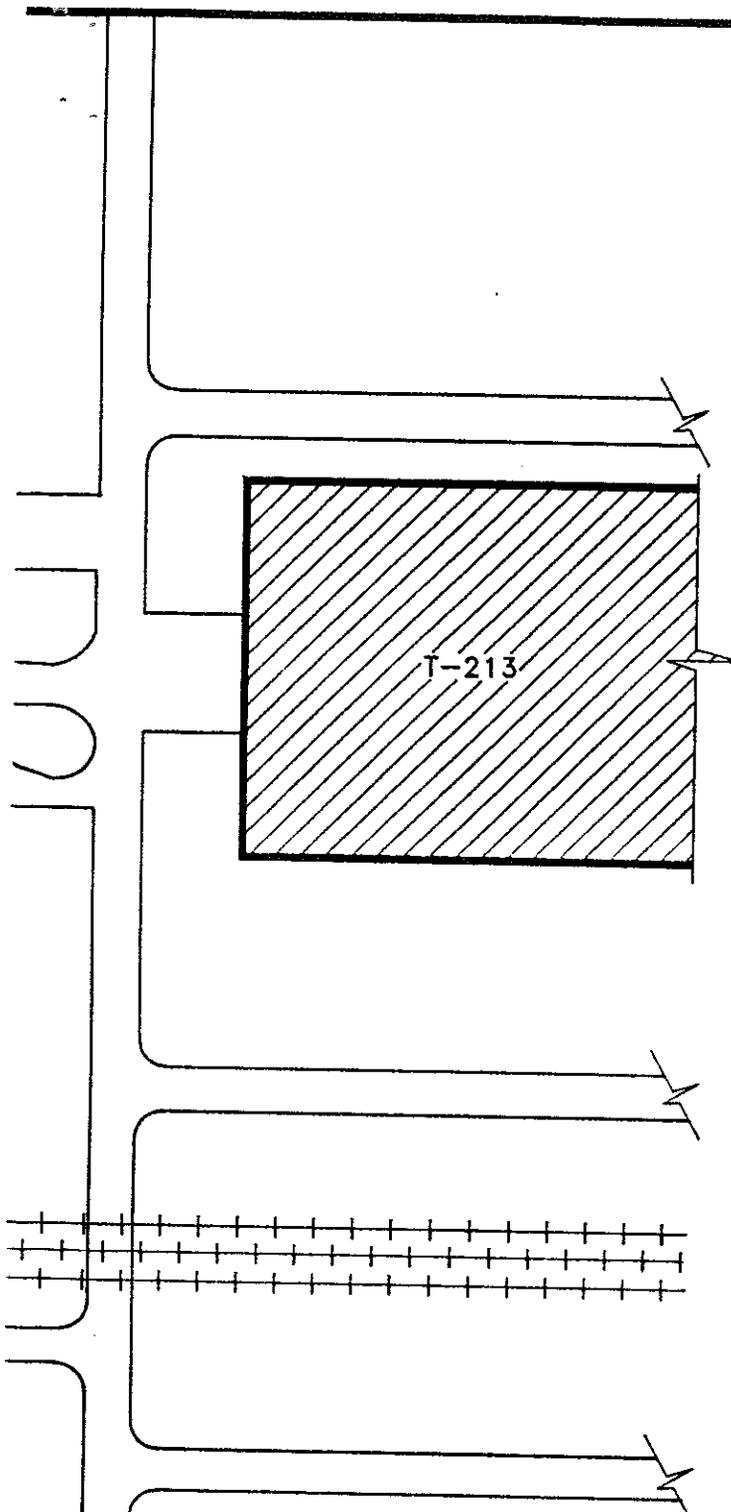
1.0 INTRODUCTION

Groundwater Technology, Inc. was retained by Rivera-Cotty Corporation to conduct a preliminary investigation at the Defense Logistics Agency located three miles east of New Haven, Indiana.

The investigation was initiated to assess the site for potential soil and groundwater contamination from former underground fuel tanks removed from the site during February, 1990.

The facility is an active raw materials storage area for the United States Government. The underground storage tanks, which contained diesel or heating oil, addressed in this investigation were located in the northern and southern portions of the property (Figure 1). The ground surface across the site is generally level with several drainage ditches to route surface run-off. Land use near the facility is primarily agricultural.

During excavation of the two 8,000 gallon underground diesel tanks at the southern portion of the property, verification soil samples were obtained by Rivera-Cotty which indicated petroleum contamination above 200 parts per million. Separate-phase hydrocarbons were noted on the water which entered the excavation. Soil samples were also collected by Rivera-Cotty from the northern excavation. This excavation contained a 1000 gallon heating oil tank. The results of the soil samples from the northern excavation indicated petroleum hydrocarbons were below detection limits. However, a slight sheen was noted on the water which had collected in the excavation.



LEGEND

● - MONITORING WELL
 MW-2 ← Well Identification

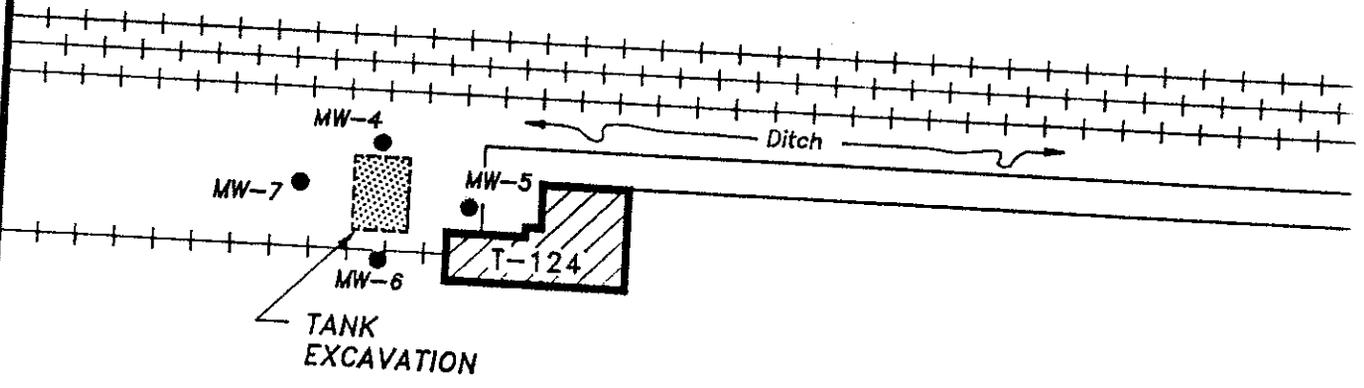
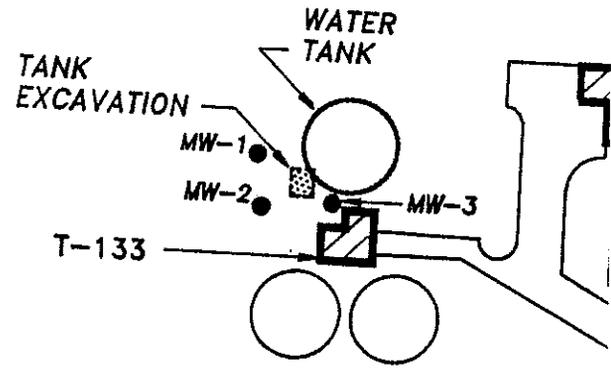
++++ - RAILROAD TRACKS

0 100 200

SCALE IN FEET

FIGURE 1

	GROUNDWATER TECHNOLOGY, INC.	2200 Stonington Avenue Suite 160 Hoffman Estates, IL 60195
PROJECT No.:	04020-9868	DATE: 4-6-90
		SHEET OF SHEETS
DETAILED MWS CHECKED KC APPROVED	TITLE: <h1 style="margin: 0;">SITE MAP</h1>	
CLIENT:		LOCATION:
RIVERA - COTTY CORPORATION		DEFENSE LOGISTICS AGENCY
COMPUTER AIDED DWG. FILE NUMBER		986801



2.0 SCOPE OF WORK

The preliminary investigation was initiated by Groundwater Technology, Inc. on February 21, 1990 at the Defense Logistics Agency and included the following:

- o Development of a Health and Safety Plan based on site specific conditions and chemicals to protect site personnel.
- o Scheduling and supervision of a drilling crew to install seven shallow monitoring wells to depths ranging from approximately 15 to 25 feet.
- o Collection of continuous split-spoon samples. Conducting headspace analyses of split-spoon samples with an Organic Vapor Analyzer (OVA). The soil sample with the highest OVA reading, from each boring was analyzed for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) per EPA Modified Method 5030/8020 and Total Petroleum Hydrocarbons (TPH) per SM Method 503.
- o Installation of monitoring wells using 2-inch diameter PVC casing and 0.01 inch slotted PVC screens. Filling annular space around and two foot above the screens with well sorted silica sand. Place one foot bentonite plug above the sand followed by a concrete grout slurry to the surface. Installation of flush-mounted protective covers at the surface with concrete.
- o Following completion of well installation, surveying all wells to a known permanent benchmark as a reference elevation, and development of wells.

- o Allowing one week for well stabilization, then measuring and recording water levels and product thickness in each well using an electronic interface probe. Determining groundwater flow direction.

- o Purging each well and collecting one groundwater sample from each well and analysis for BTEX as per EPA Modified Method 602 and TPH per 418.1.

- o Submitting a report of conditions encountered and recommendations for activities (if necessary).

3.0 SUBSURFACE INVESTIGATION

On February 21, 22, 23, 26, 27 and 28, 1990 a Groundwater Technology, Inc. geologist supervised the installation of seven monitoring wells at the site. The monitoring wells are numbered MW-1 through MW-7. Refer to the site map in Figure 1 for specific locations.

3.1 Health and Safety

Before the start of field activities, a site Health and Safety Plan was created and implemented for this investigation to supplement the standard safety protection used by Groundwater Technology, Inc. and our contractors. Personal protection for this project included general Level D protection with field monitoring using an OVA to determine if upgrading to Level C was necessary.

3.2 Soil Borings and Monitoring Well Installation

Three borings (MW-1, MW-2, and MW-3) were drilled around the perimeter of an excavation near the water tank and north of Building T-133 in the northern portion of the property. MW-1 and MW-3 were initially drilled to 15 feet. The borings were dry at completion of drilling. The borings were left overnight and checked in the morning. Water levels were encountered from 5 to 14 feet below ground surface. However, due to heavy rain which fell the night before (approximately 3 inches), it was questionable if the wells actually filled with groundwater, so the borings were advanced to 25 feet to assure that groundwater depth had been reached. The excavation previously contained a 1000 gallon underground

heating oil tank. The excavation was filled with water, to approximately 6 inches below ground surface. The water exhibited a slight sheen.

Four wells (MW-4, MW-5, MW-6, and MW-7) were installed around the perimeter of an excavation north and west of Building T-124 in the southern portion of the property. The wells were installed at depths of approximately 15 feet. The excavation previously contained two 8000 gallon underground diesel tanks. The excavation was filled with water to a depth of 2 feet below ground surface. Separate-phase hydrocarbons were noted on a portion of the surface of the water.

The wells were drilled using hollow stem augers. Soil samples were collected using a split-spoon sampler at two foot continuous intervals. Soil characteristics were recorded on drilling logs and are presented in Appendix A.

Augers and other drilling equipment were decontaminated by steam cleaning between each boring location. Split-spoon soil samplers were decontaminated with analconox soap/tap water solution wash, tap water rinse and distilled water rinse between each sample.

3.3 Soil Sampling and Analyses

Soil samples were collected from each monitoring well using a split-spoon sampler. Samples were sealed in glass sample jars and the headspace analyzed using a portable Organic Vapor Analyzer (OVA).

The OVA measures total volatile organic vapors with a sensitivity of approximately one part per million (ppm). The values indicate relative concentrations of volatile organic content in the vapor headspace but do not represent actual concentrations that may exist in the soil. The sample from each monitoring well boring with the highest organic vapor analyzer reading was submitted to a Groundwater Technology Environmental Laboratory for analysis for BTEX per EPA 8020/8015/5030 Modified and Total Petroleum Hydrocarbons (TPH) per Modified EPA 3550 and Standard Methods 15th Edition, 503 B and E. The samples were collected, prepared, packaged, and transported as per standard Groundwater Technology quality assurance procedures.

3.4 Well Development

Each well was developed using a 1 inch PVC bailer and nylon cord. The wells were purged until dry. The PVC bailer was decontaminated between each well using an alconox/tap water solution and distilled water rinse.

3.5 Well Surveying and Gauging

At completion of well installation, each well was surveyed to a common elevation datum point located on the southwest footing of the water tank.

Prior to gauging, the wells were allowed to stabilize for one week after development. The groundwater level in each monitoring well was gauged relative to the top of the casing elevations using an ORS Electronic Interface Probe. This probe is capable of measuring the depth to groundwater and the

thickness of separate-phase petroleum hydrocarbons to within 0.01 feet. The well surveying and gauging data is presented in Appendix B.

3.6 Groundwater Sampling and Analyses

Groundwater samples were collected on March 12, 1990 from MW-1 through MW-7. The samples were collected using a teflon bailer which was decontaminated with analconox soap solution wash and distilled water rinse procedure between monitoring wells. The wells were either purged until dry or three well volumes of water were bailed prior to sampling in order to obtain a representative groundwater sample. The water samples were analyzed for BTEX per Modified EPA 602 and TPH per EPA 418.1 Method.

4.0 RESULTS

4.1 Geology

The geologic profile as determined by drilling conducted at the site, generally consists of surficial materials to a depth of approximately one foot. The surficial materials were limestone and gravel in some areas and topsoil in others. The surficial materials were underlain by brown and gray silty clay with some sand and gravel and occasional sand seams. Gray silty sand or silt was encountered at depths below 17 feet in MW-1, MW-2, and MW-3. Refer to the drilling logs in Appendix A for detailed descriptions of the materials and conditions encountered during drilling.

4.2 Hydrogeology

Groundwater was encountered in occasional wet sand seams between 5 and 15 feet in MW-1, MW-2 and MW-3. At completion of drilling, the boreholes were dry. These holes were advanced to approximately 25 feet where silty sand strata was encountered. Groundwater was encountered in MW-4, MW-5, MW-6 and MW-7 from 4 to 5.5 feet. When the wells were gauged on March 12, 1990, groundwater levels were approximately 2 to 4.5 feet below grade in all seven wells. The well gauging data is presented in Table 1 and in Appendix B.

TABLE 1
GROUNDWATER ELEVATIONS

<u>Location</u>	<u>Elevation</u>
MW-1	95.95
MW-2	95.81
MW-3	96.65
MW-4	96.78
MW-5	95.19
MW-6	97.13
MW-7	95.87

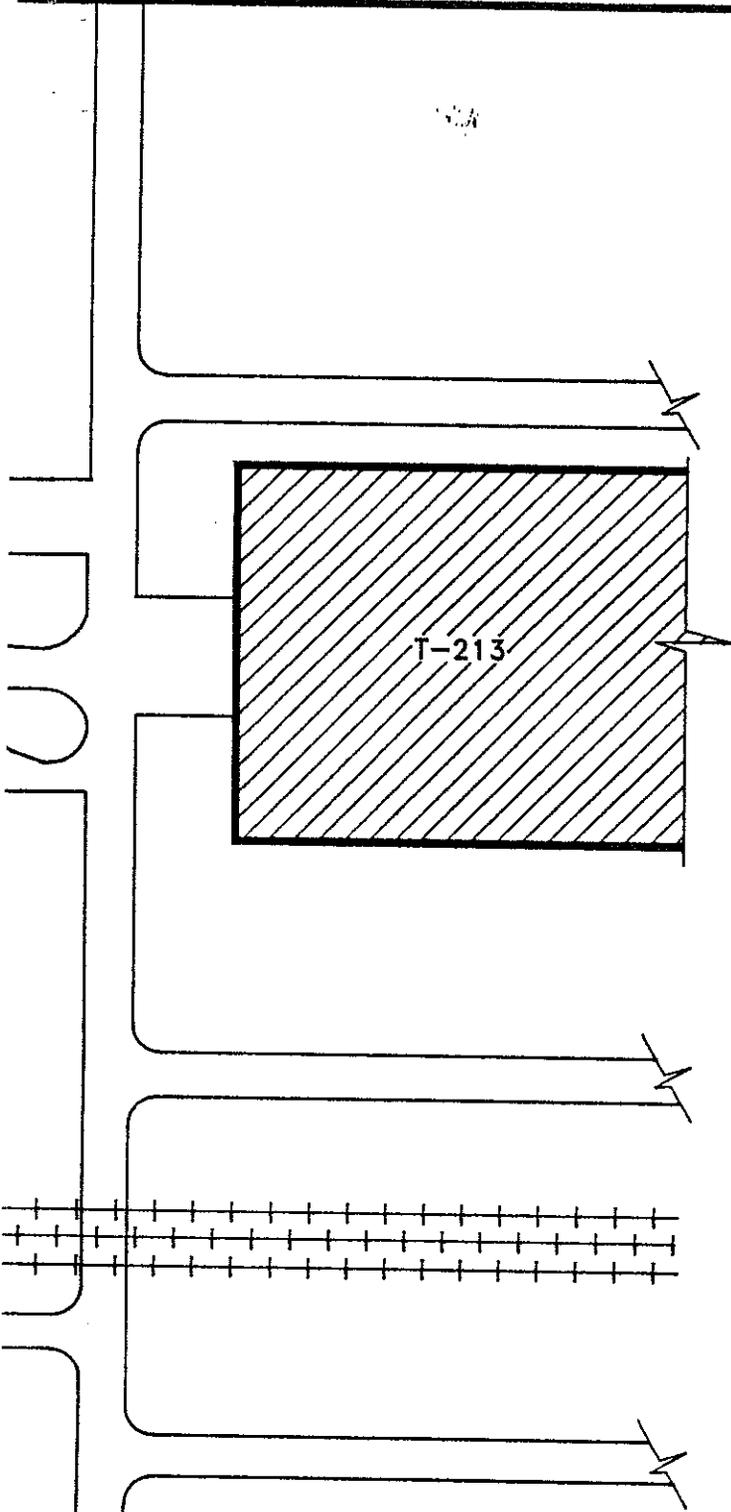
Elevations were calculated from an assumed Benchmark of 100.0 feet established on a concrete footing of the water tank.

Based on the local topography and monitoring well information on the site, the groundwater flows in a general northwest direction. Additional information is needed between the two monitoring areas to more accurately determine flow direction across the site. Refer to Figure 2 for the groundwater contour map.

It was noted that the first appearance of water when drilling occurred at a greater depth than the static water level as measured on March 12, 1990. This indicates that the aquifer at these locations is confined with an upward flow.

4.3 Soil Analyses

Soil sample headspace readings from each interval from each of the samples collected during monitoring well installation indicate soil vapor values ranging from 0 to 30 ppm. The OVA



LEGEND

● — MONITORING WELL
 MW-2 — Well Identification
 95.81 — Groundwater Elevation

+ + + + — RAILROAD TRACKS

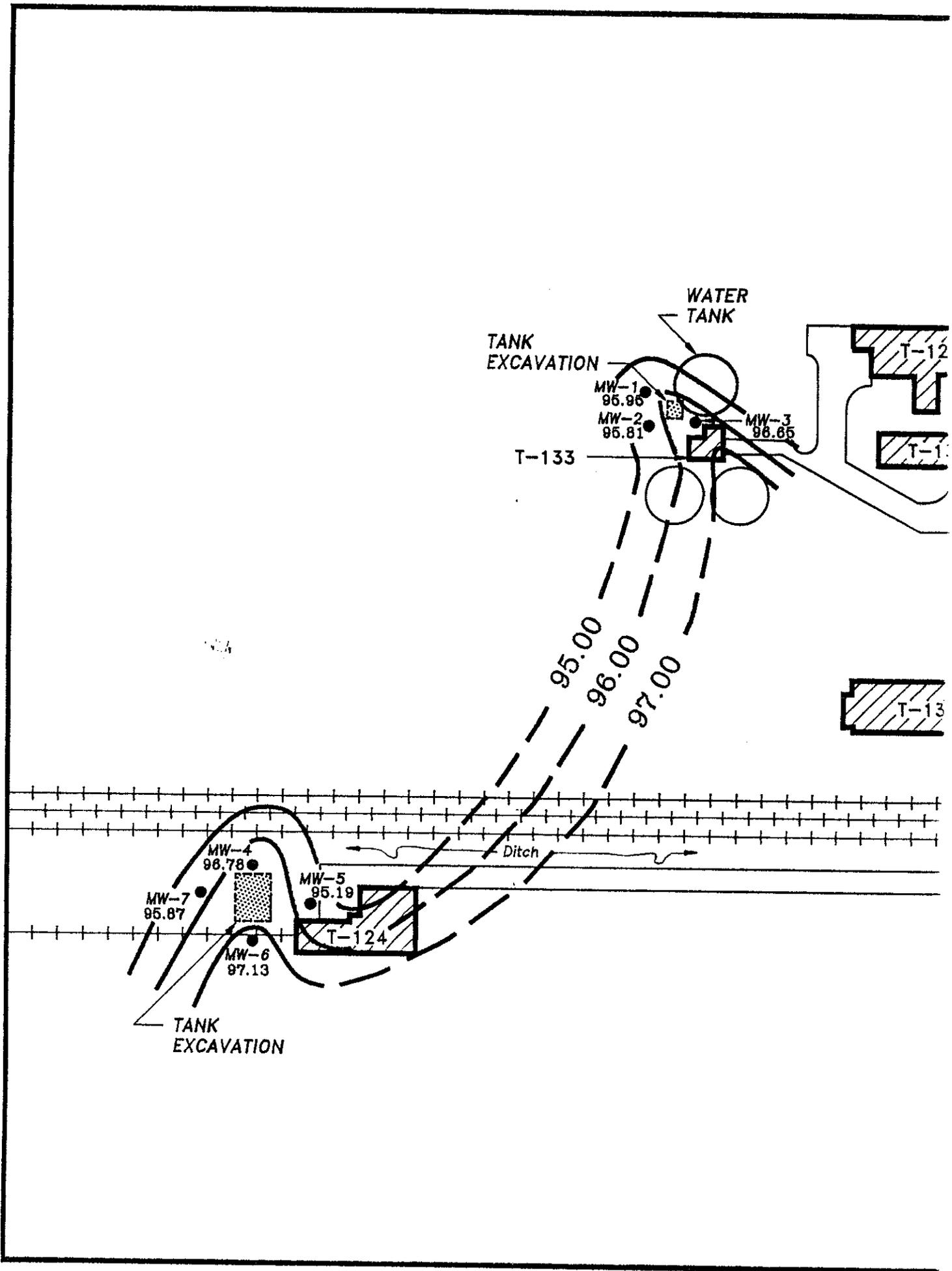
Data Collected March 1990
 Groundwater Elevation in Feet,
 Relative to Site Datum

0 100 200

 SCALE IN FEET

FIGURE 2

	GROUNDWATER TECHNOLOGY, INC.	2200 Stonington Avenue Suite 160 Hoffman Estates, IL 60195
PROJECT No.:	04020-9868	DATE: 4-6-90
		SHEET OF SHEETS
DETAILED MWS CHECKED KC APPROVED	TITLE: GROUNDWATER CONTOUR MAP	
CLIENT: RIVERA - COTY CORPORATION		LOCATION: DEFENSE LOGISTICS AGENCY
COMPUTER AIDED DWG. FILE NUMBER: 986802		



measurements of the soil samples collected during drilling are presented in Appendix C.

Soil samples from MW-1 through MW-7 were analyzed by a Groundwater Technology Environmental Laboratory for BTEX and Total Petroleum Hydrocarbons. The results are shown in Table 2.

TABLE 2
TOTAL PETROLEUM HYDROCARBONS AND
BTEX IN SOIL
(in ppm)

<u>Location</u>	<u>Depth</u>	<u>BTEX</u>	<u>TPH</u>
MW-1	5-7'	BDL	<5
MW-2	17-21'	BDL	5
MW-2 (dup)	17-21'	BDL	6
MW-3	22-23.5'	BDL	<5
MW-4	7-9'	BDL	<5
MW-5	1-3'	BDL	<5
MW-6	5-7'	BDL	7
MW-7	7-9'	BDL	<5

* BDL = Below Detection Limits

4.4 Water Analyses

Groundwater samples from MW-1 through MW-7 were analyzed by a Groundwater Technology Environmental Laboratories for BTEX and Total Petroleum Hydrocarbon. The results of the water samples submitted indicated BTEX and TPH were below detection limits in each of the samples. Refer to Appendix D for the laboratory report.

5.0 SUMMARY OF RESULTS

Based on the information collected during the hydrogeologic site assessment, Groundwater Technology, Inc. reports the following:

- o Separate-phase hydrocarbons were noted on the water in the southern excavation. The water contained in the northern excavation exhibited a slight sheen.
- o Volatile organic vapors ranging from 0 to 30 ppm were detected in soil sample jar headspace during drilling. This vapor data apparently indicates limited contamination at sample locations.
- o Separate-phase petroleum was not detected in the monitoring wells during drilling, water sampling or well gauging.
- o Analyses of soil and groundwater samples collected from MW-1 through MW-7 indicated BTEX in both soil and water samples to be below detection limits. TPH was detected in soil samples obtained from MW-2 and MW-6 between 5 and 7 ppm.
- o The groundwater table was between 2 and 4 feet below the land surface with groundwater flow in a northwesterly direction.

6.0 RECOMMENDATIONS

Groundwater Technology, Inc. makes the following recommendations:

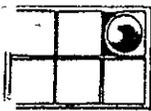
- Before replacing backfill material into the northern excavation, the water present should be removed. Under state regulations, it is illegal to discharge directly into ditch or Indiana waterway without an NPDES permit. We recommend using a vacuum truck to remove the water and transport it to a local treatment facility for disposal. After the water is removed, the backfill material should be analyzed for BTEX and TPH. It may be placed in the excavation if no petroleum contamination is noted in the soil.
- The large southern excavation should also be purged of the floating separate-phase hydrocarbons and water present. Several vacuum trucks may be necessary to remove the liquid from this location.

Since previous verification soil samples collected from the excavation indicated hydrocarbon concentrations above general state guidelines and the presence of separate-phase hydrocarbons in the water, the excavation should be over dug to remove soils which exhibit visual staining or petroleum odors.

- Soil samples should then be collected from the bottom and side walls of the excavation and analyzed for BTEX and TPH to verify the level of clean-up obtained. The soils removed during excavation at the southern location will need to be composite sampled and analyzed for a number of constituents including (but not limited to): TPH, BTEX, PCB and EP Toxicity Lead for approval of disposal into an appropriate

landfill. Since analytical requirements vary from facility to facility, it will be necessary to contact the specific landfill to determine specific requirements.

- o If groundwater flows back into the excavation quicker than the vacuum trucks can remove it, it may be necessary to design a dewatering system to be used during removal of contaminated soil and installation of new underground tanks.



**GROUNDWATER
TECHNOLOGY, INC.**

DRILLING LOG

WELL NUMBER: MW-1

PROJECT: Defense Logistic Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/21 & 2/27/90 Total Depth of Hole: 25.0' Diameter: 8"

W.C. Elev.: 98.80 Water Level, Initial: 11.0' 24 Hours: N/R

Screen: Dia.: 2" Length: 20.0' Slot Size: .010"

Casing: Dia.: 2" Length: 4.0' Type: PVC

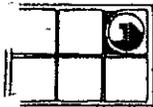
Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Goid

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Road box				0-1' Topsoil
1-2	Concrete				
2-3	Bentonite		1		1.0-11.0' Brown and gray mottled, moist, stiff to hard, SILTY CLAY with trace sand. (Occasional wet silt seam at 9 and 10 ft.)
3-4	Riser		2		
4-5			3		
5-6			4		
6-7			5		
7-8			6		
8-9			7		
9-10			8		
10-11	Silica Sand		9		
11-12			10		11.0-17.0' Gray, damp to moist, hard SILTY CLAY with trace to some sand and gravel (glacial till). Moist sand seam at 14.5'.
12-13			11		
13-14					
14-15					
15-16	Screen				
16-17					
17-18			8		17.0-21.0' Gray, moist, hard, CLAYEY SILT with some sand.
18-19			9		
19-20					
20-21					
21-22			10		21.0-23.0' Gray, wet, very dense SILTY SAND.
22-23					
23-24					23.0-25.0' Gray, moist, hard, SANDY CLAY. Boring dry at completion.
24-25			11		End of Boring 25.0'.



**GROUNDWATER
TECHNOLOGY, INC.**

DRILLING LOG

WELL NUMBER: MW-2

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/28/90 Total Depth of Hole: 25.0' Diameter: 8"

.O.C. Elev.: 99.38 Water Level, Initial: 7.0' 24-Hours: N/R

Screen: Dia.: 2" Length: 20.0' Slot Size: .010"

Casing: Dia.: 2" Length: 4.0' Type: PVC

Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Goad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Road box	Concrete			0-0.5' Topsoil
1-2	Bentonite		1		0.5-17.0' Brown and gray mottles, moist to wet at 7.0', medium stiff to hard SILTY CLAY with trace sand and gravel. Occasional silt and seam at 15.0'.
2-3	Riser		2		
3-4			3		
4-5			4		
5-6	Screen		5		
6-7			6		
7-8			7		
8-9	Silica Sand		8		
9-10			9		
10-11			10		
11-12			11		
12-13			12		
17.0-25.0'					Gray, moist, hard, SILT with trace clay and sand, grave. Boring dry at completion.
25.0'					End of Boring 25.0'.



WELL NUMBER: MW-3

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/21 & 22/90 Total Depth of Hole: 25.0' Diameter: 8"

F.O.C. Elev.: 99.05 Water Level, Initial: 9.0' 24-Hours: N/R

Screen: Dia.: 2" Length: 20.0' Slot Size: .010"

Casing: Dia.: 2" Length: 4.5' Type: PVC

Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Coad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Flush cover				0-0.5' Topsoil
1-2	Concrete				
2-3	Bentonite plug		1		
3-4			2		
4-5			3		
5-6			4		
6-7			5		
7-8			6		
8-9			7		
9-10			8		
10-11			9		
11-12			10		
12-13	Silica sand		11		
13-14			12		
14-15			13		
15-16			14		
16-17					
17-18	Screen				
18-19					
19-20					
20-21					
21-22					
22-23					
23-24					
24-25					

0.5-23.0' Brown and gray mottles (all gray at 11.0'), moist, medium stiff to hard, SILTY CLAY with trace to some sand and gravel. Occasional wet sand and silt seams at 5, 10 and 19 feet.

23.0-24.1' Gray, wet, dense, fine grained SILTY SAND.

24.1-25.0' Gray, damp, SILTY CLAY with trace to some sand and gravel. Occasional sand seams.



WELL NUMBER: MW-4

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/26/90 Total Depth of Hole: 15.0' Diameter: 8"

O.C. Elev.: _____ Water Level, Initial: 5.0' 24-Hours: N/R

Screen: Dia.: 2" Length: 2.5' Slot Size: .010"

Casing: Dia.: 2" Length: 10.0' Type: PVC

Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Coad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Flush casing				0-0.5' Crush limestone gravel.
1-2	Bentonite				
2-3	Riser		1		0.5-5.0' Brown and gray mottles, moist, stiff, SILTY CLAY with trace sand. Black staining throughout. Wet at 4.0'.
3-4			2		
4-5	Screen		3		5.0-5.5' Brown, wet, medium dense SAND with trace silt.
5-6			4		5.5-9.0' Brown and gray, wet, hard SANDY CLAY with trace gravel. Sand seam at 7.1'.
6-7			5		9.0-15.0' Gray, moist, hard SILTY CLAY with trace to some sand and gravel.
7-8			6		
8-9			7		
9-10	Sand pack				
10-11					
11-12					
12-13					
13-14					
14-15					
15-16	Natural material				End of Boring 15.0'.
16-17					
17-18					
18-19					
19-20					
20-21					
21-22					
22-23					
23-24					



WELL NUMBER: MW-5

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/23/90 Total Depth of Hole: 16.0' Diameter: 8"

T.O.C. Elev.: _____ Water Level, Initial: 9.5' 24-Hours: N/R

Screen: Dia.: 2" Length: 10.0' Slot Size: .010"

Casing: Dia.: 2" Length: 5.0' Type: PVC

Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Coad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Road box				0-1.5' Crushed Limestone
1-2	Concrete				
2-3	Bentonite				0.5-15.0' Brown and gray, moist to wet at 9.5', stiff to hard SILTY CLAY with trace to some sand and gravel. Wet sand and gravel at 5.5'. Wet clay parting at 9.5'.
3-4	Screen				
4-5					
5-6					
6-7					
7-8					
8-9	Sand pack				
9-10					
10-11					
11-12	Natural material				
12-13					
13-14					
14-15					
15-16					
16-17					End of Boring 16.0'.
17-18					
18-19					
19-20					
20-21					
21-22					
22-23					
23-24					



**GROUNDWATER
TECHNOLOGY, INC.**

DRILLING LOG

WELL NUMBER: MW-6

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO.: 040209868

Date Drilled: 2/27/90 Total Depth of Hole: 25.0' Diameter: 8"

M.O.C. Elev.: _____ Water Level, Initial: 5.5' 24-Hours: N/R

Screen: Dia.: 2" Length: 20.0' Slot Size: .010"

Casing: Dia.: 2" Length: 4.5' Type: PVC

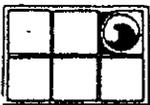
Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Coad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1	Road box Concrete				0-0.5' Limestone gravel
1-2	Bentonite				0.5-17.0' Gray/black with brown mottles, moist to wet at 5.5', very stiff to hard SILTY CLAY with trace sand and gravel.
2-3	Riser				
3-4					
4-5					
5-6					
6-7	Screen				
7-8					
8-9					
9-10					
10-11	Sand pack				
11-12					
12-13					
13-14					
14-15					
15-16					
16-17					
17-18	Natural material				End of Boring 17.0'.
18-19					
19-20					
20-21					
21-22					
22-23					
23-24					



DRILLING LOG

WELL NUMBER: MW-7

PROJECT: Defense Logistics Agency OWNER: Rivera-Cotty Corporation

LOCATION: New Haven, IN PROJECT NO. 0020098

Date Drilled: 2/26/90 Total Depth of Hole: 15.0' Diameter: 8"

T.O.C. Elev.: _____ Water Level, Initial: 3.0' 24 Hours: N/R

Screen: Dia.: 2" Length: 10.0' Slot Size: .010"

Casing: Dia.: 2" Length: 2.5' Type: PVC

Drilling Company: Belasco Drilling Drilling Method: Hollow Stem Auger

Driller: A. Dudley Log By: K. Coad

Sketch Map

Notes

Depth in Feet	Well Construction	Notes	Sample Numbers	Graphic Log	Description/Soil Classification (Color, Texture, Structures)
0-1		Road box			0-0.5' Topsoil
1-2		Concrete			
2-3		Bentonite			
3-4		Riser			0.5-15.0' Dark brown to gray at 9.0', moist to wet at 3.0', very stiff to hard SILTY CLAY with trace to some sand and gravel.
4-5					
5-6					
6-7		Sand pack			
7-8					
8-9		Screen			
9-10					
10-11					
11-12					
12-13					
13-14					
14-15					
15-16					
16-17		Natural material			End of Boring 15.0'.
17-18					
18-19					
19-20					
20-21					
21-22					
22-23					
23-24					



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
DATE RCVD: 02-24-90
DATE RPTD: 03-06-90
LAB NUMBER: X0-02-364
ANALYZED BY: J. Sattler

SAMPLE SUBMITTED: Three jars of soil
Defense Logistics Agency (#4020-9868) (01)

<u>SAMPLE I.D.</u>	<u>TOTAL PETROLEUM HYDROCARBONS CONCENTRATION & UNITS</u>	<u>METHOD</u>
MW-1 (5-7')	< 5 mg/Kg	*
MW-3 (22-23.5')	< 5 mg/Kg	*
MW-5 (1-3')	< 5 mg/Kg	*

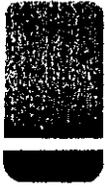
*Modified EPA 3550 and Std. Mtds. 15th Ed., 503 B&E

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION



Terry R. Loucks
LABORATORY DIRECTOR



GTEL

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LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
DATE RCVD: 03-02-90
DATE RPTD: 03-16-90
LAB NUMBER: X0-03-059
ANALYZED BY: J. Sattler

SAMPLE SUBMITTED: Five glass jars of soil
Defense Logistics Agency (#4020-9868) (01)

<u>SAMPLE I.D.</u>	<u>TOTAL PETROLEUM HYDROCARBONS CONCENTRATION & UNITS</u>		<u>METHOD</u>
MW-7 (7-9')	< 5	mg/Kg	*
MW-4 (7-9')	< 5	mg/Kg	*
MW-6 (5-7')	7	mg/Kg	*
MW-2 (17-21')	5	mg/Kg	*
MW-2 Dup	6	mg/Kg	*

*Modified EPA 3550 and Std. Mtds. 15th Ed, 503 B&E

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION

Terry B. Loucks
LABORATORY DIRECTOR



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LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-21-90
DATE RCVD: 02-24-90
DATE ANALYZED: 03-01-90
DATE RPTD: 03-06-90
LAB NUMBER: X0-02-363-01
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-1 5-7'
Defense Logistics Agency (#4020-9868)

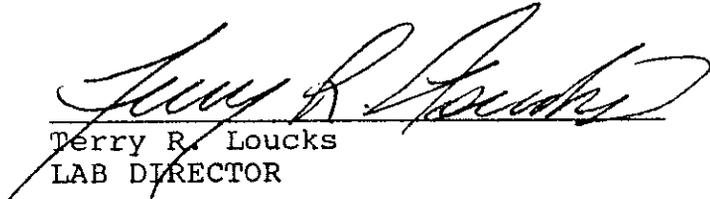
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< 0.03
Toluene.....	< 0.06
Ethylbenzene.....	< 0.05
Total Xylenes.....	< 0.10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

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LABORATORIES, INC.

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Wichita, KS 67209
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(800) 633-7936

CLIENT: GROUNDWATER TECHNOLOGY, INC.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-28-90
DATE RCVD: 03-02-90
DATE ANALYZED: 03-07-90
DATE RPTD: 03-08-90
LAB NUMBER: X0-03-058-05
ANALYZED BY: M. Belluomo

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-2 (Dup)
Defense Logistics Agency (#4020-9868)

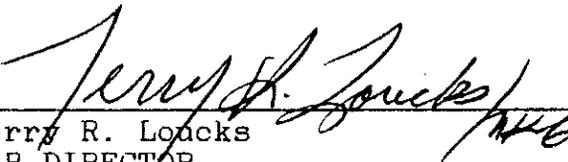
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< .03
Toluene.....	< .06
Ethylbenzene.....	< .05
Total Xylenes.....	< .10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


 Terry R. Loucks
 LAB DIRECTOR



GTEL

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LABORATORIES, INC.

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(800) 633-7936

CLIENT: GROUNDWATER TECHNOLOGY, INC.
9188 Castelgate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-28-90
DATE RCVD: 03-02-90
DATE ANALYZED: 03-07-90
DATE RPTD: 03-08-90
LAB NUMBER: XO-03-058-04
ANALYZED BY: M. Belluomo

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-2 (17-21')
Defense Logistics Agency (#4020-9868)

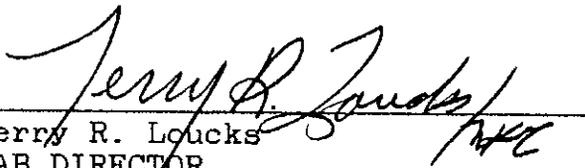
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< .03
Toluene.....	< .06
Ethylbenzene.....	< .05
Total Xylenes.....	< .10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


 Terry R. Loucks
 LAB DIRECTOR



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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-22-90
DATE RCVD: 02-24-90
DATE ANALYZED: 02-28-90
DATE RPTD: 03-06-90
LAB NUMBER: X0-02-363-02
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-3 22-23.5'
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< 0.03
Toluene.....	< 0.06
Ethylbenzene.....	< 0.05
Total Xylenes.....	< 0.10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION



Terry R. Loucks
LAB DIRECTOR



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CLIENT: GROUNDWATER TECHNOLOGY, INC.
9188 Castelgate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-26-90
DATE RCVD: 03-02-90
DATE ANALYZED: 03-07-90
DATE RPTD: 03-08-90
LAB NUMBER: X0-03-058-02
ANALYZED BY: M. Belluomo

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-4 (7-9')
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< .03
Toluene.....	< .06
Ethylbenzene.....	< .05
Total Xylenes.....	< .10

Respectfully submitted,

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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-23-90
DATE RCVD: 02-24-90
DATE ANALYZED: 02-28-90
DATE RPTD: 03-06-90
LAB NUMBER: X0-02-363-03
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-5 1-3'
Defense Logistics Agency (#4020-9868)

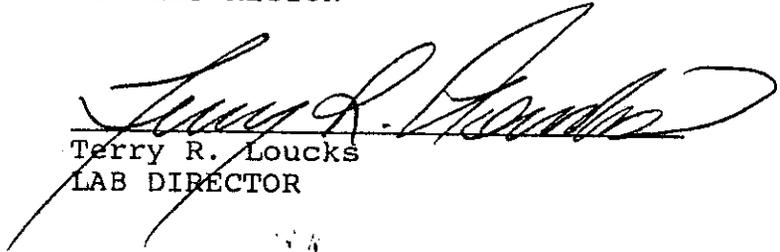
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< 0.03
Toluene.....	< 0.06
Ethylbenzene.....	< 0.05
Total Xylenes.....	< 0.10

Respectfully submitted,

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Terry R. Loucks
LAB DIRECTOR



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CLIENT: GROUNDWATER TECHNOLOGY, INC.
9188 Castelgate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-27-90
DATE RCVD: 03-02-90
DATE ANALYZED: 03-07-90
DATE RPTD: 03-08-90
LAB NUMBER: XO-03-058-03
ANALYZED BY: M. Belluomo

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-6 (5-7')
Defense Logistics Agency (#4020-9868)

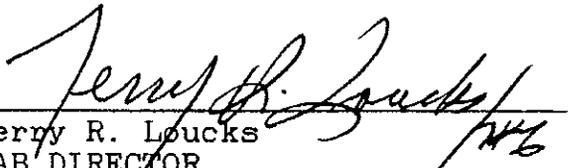
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< .03
Toluene.....	< .06
Ethylbenzene.....	< .05
Total Xylenes.....	< .10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



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CLIENT: GROUNDWATER TECHNOLOGY, INC.
9188 Castelgate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 02-26-90
DATE RCVD: 03-02-90
DATE ANALYZED: 03-07-90
DATE RPTD: 03-08-90
LAB NUMBER: X0-03-058-01
ANALYZED BY: M. Belluomo

SAMPLE SUBMITTED: Three 40-mL vials of soil labeled: MW-7 (7-9')
Defense Logistics Agency (#4020-9868)

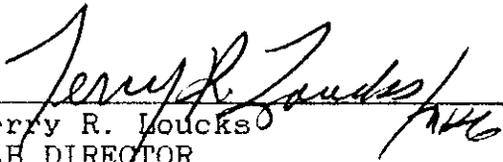
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 8020/8015/5030 Modified

CONCENTRATIONS IN (mg/Kg)

<u>ANALYTE</u>	<u>mg/Kg</u>
Benzene.....	< .03
Toluene.....	< .06
Ethylbenzene.....	< .05
Total Xylenes.....	< .10

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


 Terry R. Loucks
 LAB DIRECTOR



GTEL

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LABORATORIES, INC.

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4211 May Avenue
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(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-01
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-1
Defense Logistics Agency (#4020-9868)

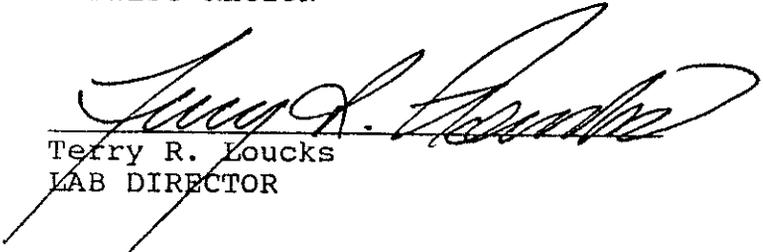
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
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(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-02
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-2
Defense Logistics Agency (#4020-9868)

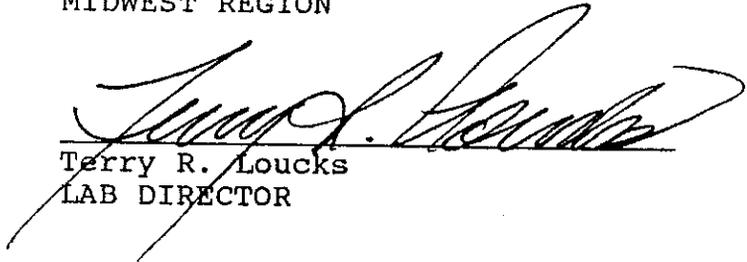
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

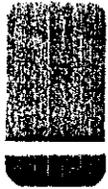
CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-03
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-3
Defense Logistics Agency (#4020-9868)

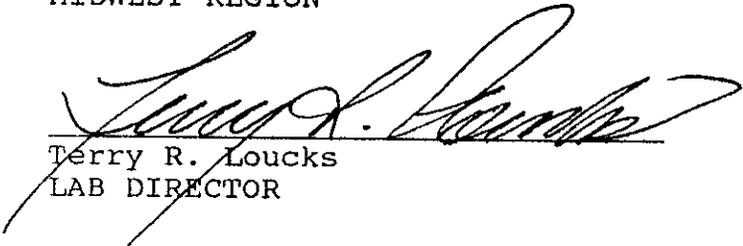
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

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Wichita, KS 67209
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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-04
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-4
Defense Logistics Agency (#4020-9868)

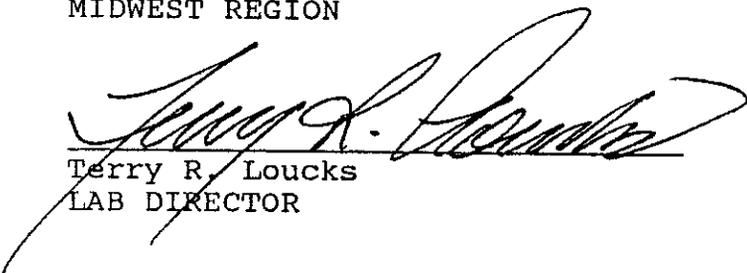
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

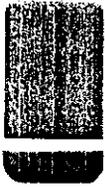
CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

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LABORATORIES, INC.

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4211 May Avenue
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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-05
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-5
Defense Logistics Agency (#4020-9868)

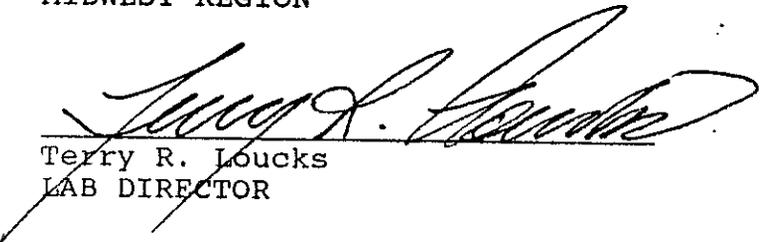
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION



Terry R. Loucks
LAB DIRECTOR



GTEL

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(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-06
ANALYZED BY: M.J. McCawle6

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-6
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-07
ANALYZED BY: M.J. McCawle6

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-7
Defense Logistics Agency (#4020-9868)

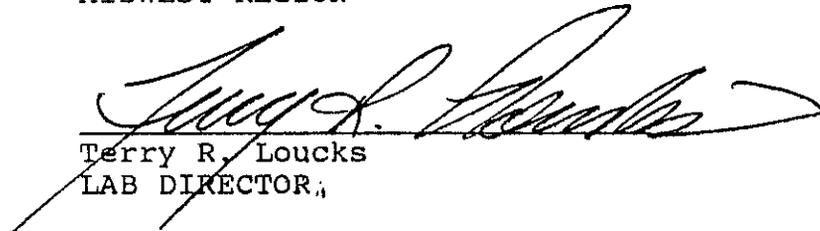
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



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CLIENT: Groundwater Technology, Inc.
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Indianapolis, IN 46256

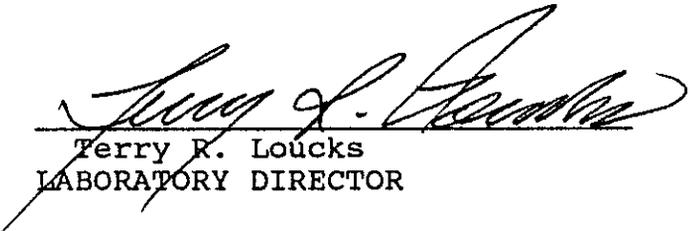
ATTN: Ken Coad
DATE RCVD: 03-14-90
DATE RPTD: 03-29-90
LAB NUMBER: X0-03-298
ANALYZED BY: J. Sattler

SAMPLE SUBMITTED: Seven 1-liter bottles of water
Defense Logistics Agency (#4020-9868) (01)

<u>SAMPLE I.D.</u>	<u>TOTAL PETROLEUM HYDROCARBONS CONCENTRATION & UNITS</u>	<u>METHOD</u>
MW-1	< 0.2 mg/L	EPA 418.1
MW-2	< 0.2 mg/L	EPA 418.1
MW-3	< 0.2 mg/L	EPA 418.1
MW-4	< 0.2 mg/L	EPA 418.1
MW-5	< 0.2 mg/L	EPA 418.1
MW-6	< 0.2 mg/L	EPA 418.1
MW-7	< 0.2 mg/L	EPA 418.1

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LABORATORY DIRECTOR

RIVERA-COTTY CORPORATION
 3607 West 16th Street
 INDIANAPOLIS, INDIANA 46222

LETTER OF TRANSMITTAL

(317) 635-8224

DATE 04/03/90	JOB NO. #2418
ATTENTION CORNEL A. HOLDER	
RE: CONTRACT #DLA302-90-C-0038	

TO DEFENSE LOGISTICS AGENCY
3200 SHEFFIELD AVENUE
HAMMOND, INDIANA 46237-1002

WE ARE SENDING YOU Attached Under separate cover via U.S. MAIL the following items:

- Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order WATER TEST RESULTS

COPIES	DATE	NO.	DESCRIPTION
1	03/12/90		LAB NUMBER XO-03-297-01 TO XO-03-297-07
1			TPH LAB NUMBER XO-03-298

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ 19 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO T.BUNTON; FILE

SIGNED: PHILIP L. VOO, V.P. & G.M.



ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-01
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-1
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

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4211 May Avenue
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(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-02
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-2
Defense Logistics Agency (#4020-9868)

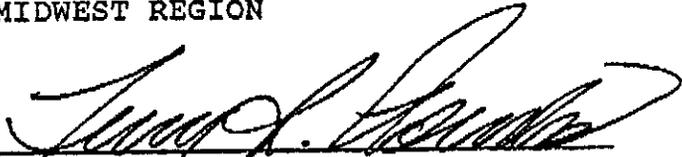
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

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LABORATORIES, INC.

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-03
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-3
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-04
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-4
Defense Logistics Agency (#4020-9868)

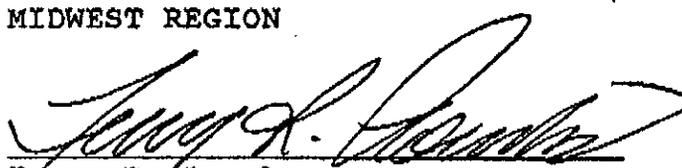
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-05
ANALYZED BY: M.J. McCawley

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-5
Defense Logistics Agency (#4020-9868)
TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR

REF 02 20 10:20 GROUNDWATER TECH

GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region
4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-06
ANALYZED BY: M.J. McCawle6

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-6
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION



Terry R. Loucks
LAB DIRECTOR



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(316) 945-2624
(800) 633-7936

CLIENT: Groundwater Technology, Inc.
9188 Castlegate Drive
Indianapolis, IN 46256

ATTN: Ken Coad
SAMPLER: Ken Coad
DATE SAMPLED: 03-12-90
DATE RCVD: 03-14-90
DATE ANALYZED: 03-21-90
DATE RPTD: 03-22-90
LAB NUMBER: X0-03-297-07
ANALYZED BY: M.J. McCawle6

SAMPLE SUBMITTED: Four 40-mL vials of water from: MW-7
Defense Logistics Agency (#4020-9868)

TYPE OF ANALYSIS: Volatile Aromatic Compound Analysis
per EPA 602 Modified

CONCENTRATIONS IN (ug/L)

<u>ANALYTE</u>	<u>ug/L</u>
Benzene.....	< 0.2
Toluene.....	< 0.5
Ethylbenzene.....	< 0.4
Total Xylenes.....	< 0.8

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LAB DIRECTOR



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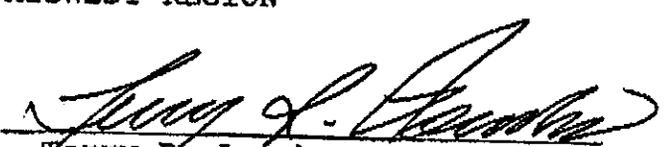
ATTN: Ken Coad
DATE RCVD: 03-14-90
DATE RPTD: 03-29-90
LAB NUMBER: X0-03-298
ANALYZED BY: J. Sattler

SAMPLE SUBMITTED: Seven 1-liter bottles of water
Defense Logistics Agency (#4020-9868) (01)

<u>SAMPLE I.D.</u>	<u>TOTAL PETROLEUM HYDROCARBONS CONCENTRATION & UNITS</u>	<u>METHOD</u>
MW-1	< 0.2 mg/L	EPA 418.1
MW-2	< 0.2 mg/L	EPA 418.1
MW-3	< 0.2 mg/L	EPA 418.1
MW-4	< 0.2 mg/L	EPA 418.1
MW-5	< 0.2 mg/L	EPA 418.1
MW-6	< 0.2 mg/L	EPA 418.1
MW-7	< 0.2 mg/L	EPA 418.1

Respectfully submitted,

GTEL ENVIRONMENTAL LABORATORIES, INC.
MIDWEST REGION


Terry R. Loucks
LABORATORY DIRECTOR

DEFENSE LOGISTICS AGENCY
Inter-Office Memorandum

IN REPLY
REFER TO DNSZ-HMD (Robert H. Bretz/(FTS) 370-5383/sc)

22 Feb 90

SUBJECT: Replacement of Underground Fuel Storage Tanks,
New Haven, Indiana Depot

TO: DNSC-D

1. On 11 December 1989, Contract DLA302-90-C-0038 was placed with Rivera Cotty Corporation for Removal and Replacement of Underground Storage Tanks at the New Haven Depot. We have been advised by the contractor that because of the deteriorated condition of the old steel tanks, a large area surrounding the tanks is contaminated with hydrocarbon and contamination has reached the water table.
2. In order to identify the extent of the contaminated area, it was recommended by the contractor that eight (8) shallow wells be installed for monitoring purposes. This proposal has been presented to and concurred with by DNSC-O (Kevin Reilly), and DNSC-OF (John Dattoli), for validation of the technical soundness of the proposal.
3. We are proceeding with the installation at an added cost to the contract of not to exceed \$18,790.00. This amount, we have been advised, will be appropriated from the Defense Environmental Restoration Account (DERA).

Encl


ROBERT H. BRETZ
Zone Administrator
Defense National Stockpile Zone



GROUNDWATER TECHNOLOGY, INC.

Page No. of Pages.

PROPOSAL

TO: Mr. Philip Voo
Rivera-Cotty Corporation
3607 W. 16th Street
Indianapolis, IN 46222

PROPOSAL #	DATE February 9, 1990
JOB NAME / LOCATION	Defense Logistics Facility New Haven, IN
CONTRACT / PROJECT #	

We Heroby Submit Specifications And Estimates For:

Professional and Subcontracted Services at the Defense Logistics Facility located in New Haven, Indiana per:

- Attachment A: Scope of Work and Cost Estimate
- Attachment B: Fee Schedule

We Propose hereby to furnish material and labor in accordance with the above specifications, for the sum of: Time and materials not to exceed without prior approval.

Payment to made as follows: dollars (\$18,790.00)

Per Terms and Conditions As stated on Item 1 on the reverse side.

Professional services provided by Groundwater Technology, Inc. shall be performed, findings obtained, and recommendations prepared in accordance with generally accepted industry principles and practices. In THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED. This proposal is subject to the terms and conditions on the reverse side.

Groundwater Technology, Inc.

Note: This proposal may be withdrawn by us if not accepted within _____ days.

Date of Acceptance:

Signature

ATTACHMENT A

SCOPE OF WORK AND COST ESTIMATE
PRELIMINARY SITE INVESTIGATION
NEW HAVEN, INDIANA

- 1) Develop a Health and Safety Plan based on site specific conditions and chemicals to protect site personnel.
- 2) Arrange for and supervise a drilling crew to install and develop eight shallow monitoring wells 15 feet in depth (four wells around each tank pit excavation where floating hydrocarbons were noted on the water table). Each well will be constructed in the following manner:
 - o Hollow stem auger;
 - o 2-inch diameter PVC casing material;
 - o 2-inch diameter PVC, 0.01 inch slot size screen, 10 feet in length;
 - o Flush-mounted at the surface with protective covers and PVC caps;
 - o Annular space around the screens will be filled with well-sorted silica sand. A bentonite/grout slurry mixture will be placed on top of the silica sand in the remaining annular space up to the surface. The protective cover will be cemented in place at the surface.

The placement of these wells will be approximately 50 feet from the center of each sidewall of the tank excavation. (If buildings are blocking their placement, their locations can be adjusted accordingly).
- 3) During drilling, describe soil samples continuously using a split-spoon sampling device.

We Heroby Submit Specifications And Estimates For:

Professional and Subcontracted Services at the Defense Logistics Facility located in New Haven, Indiana per:

- Attachment A: Scope of Work and Cost Estimate
- Attachment B: Fee Schedule

We Proposo hereby to furnish material and labor in accordance with the above specifications, for the sum of Time and materials not to exceed without prior approval.

dollars (\$18,790.00)

Payment to made as follows:

Per Terms and Conditions As stated on Item 1 on the reverse side.

Professional services provided by Groundwater Technology, Inc. shall be performed, findings obtained, and recommendations prepared in accordance with generally accepted industry principles and practices, in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED. This proposal is subject to the terms and conditions on the reverse side.

Groundwater Technology Inc.

Note: This proposal may be withdrawn by us if not accepted within _____ days.

Acceptance of Proposal - The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Date of Acceptance: _____

Signature _____

PROP - 6/88

CUSTOMER COPY

FEB 9 '90 15:08

3176359695 PAGE.003

DEFENSE LOGISTICS AGENCY
Inter-Office Memorandum

IN REPLY
REFER TO DNSZ-HMD (Robert H. Bretz/370-5383/pa)

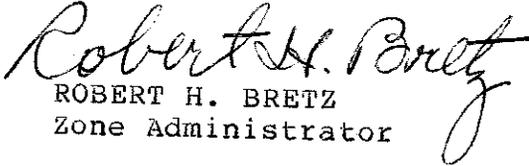
18 Jul 90

SUBJECT: Generator's Special Waste Profile Sheet,
at the New Haven Depot, Reference to
Contract Number DLA302-90-C-0038

TO: DNSC-OD, Kevin Reilly

1. I am herewith forwarding General Special Waste Profile Sheet of the Underground Storage Tanks soil tests that were taken at the HMW-New Haven Depot.
2. The above are being sent to you for further handling.

Encl


ROBERT H. BRETZ
Zone Administrator



GENERATOR'S SPECIAL WASTE PROFILE SHEET

TYPE A Waste
PLEASE PRINT IN INK OR TYPE

 WMA 05950
Waste Profile Sheet Code

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

(Shaded Area For WMNA Use Only)

Renewal Date of Service Agreement: _____

WMNA Sales Rep#: _____

A. WHERE IS THE WASTE GENERATED?

- Generator Name: DEFENSE LOGISTICS AGENCY, DEFENSE NATIONAL STOCKPILE ZONE
- Facility Address (site of waste generation): HMW-NEW HAVEN DEPOT, S.R. 14, 3 MI. EAST OF NEW HAVEN
- Generator City, State/Province: NEW HAVEN, INDIANA
- Generator USEPA/Federal ID: N/A
- Generator State/Province ID: N/A
- Technical Contact: MR. FRED BROOKS
- Zip/Postal Code: 46774-96
- Phone: (219) 749-5953

B. WHERE ARE WASTE MANAGEMENT, INC. INVOICES SENT?

- Generating Facility (A, above), or
- Company Name: RIVERA-COTTY CORPORATION
- Address: 3607 WEST 16TH STREET, SUITE B-3
- Generator City, State/Province: INDIANAPOLIS, INDIANA
- Phone: (317) 635-8224
- Zip/Postal Code: 46222

C. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions)

- Name of Waste: SOIL WITH DIESEL FUEL
- Process Generating Waste: UNDERGROUND STORAGE TANK LEAKAGE
- Special Handling Instructions: NONE

4. Color <u>EARTH</u>	5. Does the waste have a strong incidental odor? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes if so, describe: _____	6. Physical State @ 70°F/21°C: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder Other: _____	7. Layers <input type="checkbox"/> Multi-layered <input type="checkbox"/> Bi-layered <input checked="" type="checkbox"/> Single Phased	8. Specific Gravity: Range _____	9. Free Liquids <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volume: _____
10. pH: <input type="checkbox"/> ≤ 2 <input type="checkbox"/> > 2-4 <input type="checkbox"/> 4-7 <input type="checkbox"/> 7 <input type="checkbox"/> 7-10 <input type="checkbox"/> 10- < 12.5 <input type="checkbox"/> ≥ 12.5 <input type="checkbox"/> Range <input checked="" type="checkbox"/> NA					
11. Flash Point: <input checked="" type="checkbox"/> None <input type="checkbox"/> < 140°F/60°C <input type="checkbox"/> 140°-199°F/60°-83°C <input checked="" type="checkbox"/> ≥ 200°F/93°C > 700°F <input type="checkbox"/> Closed Cup <input checked="" type="checkbox"/> Open Cup					

D. TRANSPORTATION INFORMATION

- Method of Shipment: Bulk Liquid Bulk Sludge Bulk Solid Drum/Box Other _____
- Annual Amount/Units: ± 400 C.Y.
- Supplemental Information: _____

- Is this a DOT hazardous material? No Yes (if so, complete 5, 6 & 7)
- Reportable Quantity/ Units (lb/kg): _____
- Shipping Name: _____
- Hazard Class/ID #: _____

Check this box if additional information is attached.

Turn Page and Complete Side 2

JWB

18 OCT 90

FUEL STORAGE TANK QUESTIONNAIRE

- 1. DEPOT - *Wesley Haven*
- 2. DEPOT TANK NUMBER - *G-1*
- 3. LOCATION OF TANK - *North of T-118*
- 4. INSTALLATION - ABOVE/UNDERGROUND
- 5. IF TANK IS ABOVE GROUND, IS IT IN A CONTAINMENT AREA/IF NOT WHAT TYPE BASE IS UNDER THE TANK -
- 6. DISTANCE FROM NEAREST STORM DRAIN OR DRAINAGE DITCH - *120 ft*
- 7. CAPACITY OF TANK - *2295 gals*
- 8. CONTENTS OF TANK - *Regular unleaded Gas*
- 9. CONSTRUCTION- SINGLE/DOUBLE WALLED
METAL/FIBERGLASS/OTHER
- 10. DOES TANK REQUIRE A MONITORING SYSTEM (Y/N) *Yes*
- 11. IF #10 IS YES WHAT TYPE IS USED - *flexible dipstick*
- 12. WHAT IS THE MONITORING FREQUENCY - *Monthly*
- 13. EPA/STATE REGULATED (Y/N) - *N/A*
- 14. IF #13 IS YES WHAT IS THE PERMIT # - *N/A*
- 15. EXPIRATION DATE OF PERMIT IF APPLICABLE - *N/A*
- 16. PERMIT FEE IF APPLICABLE - *N/A*

had Area of 200 sq ft
Tank Diameter 11' 3"
Tank Length 12' 0"
Depth To Top of Tank from Ground 5'
Depth To Bottom of Tank from Ground 11' 3"
all tanks have over spill containment

J-B

18 OCT 98

FUEL STORAGE TANK QUESTIONNAIRE

1. DEPOT - New Haven
2. DEPOT TANK NUMBER - FO-1
3. LOCATION OF TANK - South Bldg T-111
4. INSTALLATION - ABOVE/UNDERGROUND
5. IF TANK IS ABOVE GROUND, IS IT IN A CONTAINMENT AREA/IF NOT WHAT TYPE BASE IS UNDER THE TANK -
6. DISTANCE FROM NEAREST STORM DRAIN OR DRAINAGE DITCH - 30 FT
7. CAPACITY OF TANK - 2285 gals
8. CONTENTS OF TANK - #2 Fuel oil
9. CONSTRUCTION- SINGLE/DOUBLE WALLED
METAL/FIBERGLASS/OTHER
10. DOES TANK REQUIRE A MONITORING SYSTEM (Y/N) yes
11. IF #10 IS YES WHAT TYPE IS USED - Flexible Diaphragm
12. WHAT IS THE MONITORING FREQUENCY - Monthly
13. EPA/STATE REGULATED (Y/N) - N/A
14. IF #13 IS YES WHAT IS THE PERMIT # - N/A
15. EXPIRATION DATE OF PERMIT IF APPLICABLE - N/A
16. PERMIT FEES IF APPLICABLE - N/A

How About Above Ground Dimensions:

Tank Diameter - 5' 3"

Tank Length - 12' 7"

Depth To Top Of Tank - 5'

Depth To Bottom Of Tank - 11' 3"

all tanks have over spill containers

Job B
18 Oct 90

FUEL STORAGE TANK QUESTIONNAIRE

1. DEPOT - New Haven
2. DEPOT TANK NUMBER - F0-3
3. LOCATION OF TANK - South Bldg T-124
4. INSTALLATION - ABOVE/UNDERGROUND
5. IF TANK IS ABOVE GROUND, IS IT IN A CONTAINMENT AREA/IF NOT WHAT TYPE BASE IS UNDER THE TANK -
6. DISTANCE FROM NEAREST STORM DRAIN OR DRAINAGE DITCH - 45 FT
7. CAPACITY OF TANK - 871 Gallons
8. CONTENTS OF TANK - #2 Fuel oil
9. CONSTRUCTION - SINGLE/DOUBLE WALLED
METAL/FIBERGLASS/OTHER
10. DOES TANK REQUIRE A MONITORING SYSTEM (Y/N) yes
11. IF #10 IS YES WHAT TYPE IS USED - Flexible Dipstick
12. WHAT IS THE MONITORING FREQUENCY - Monthly
13. EPA/STATE REGULATED (Y/N) N/A
14. IF #13 IS YES WHAT IS THE PERMIT # - N/A
15. EXPIRATION DATE OF PERMIT IF APPLICABLE - N/A
16. PERMIT FEE IF APPLICABLE - N/A

how about Adding Dimensions!

Tank Diameter - 4' 3"

Tank Length - 11' 6"

Depth To Top Of Tank From Ground 5'

Depth To Bottom Of Tank From Ground 9' 3"

all tanks have over spill containers

JWB
18 OCT 90

FUEL STORAGE TANK QUESTIONNAIRE

1. DEPOT - New Haven
2. DEPOT TANK NUMBER - F0-5
3. LOCATION OF TANK - West Big T-216B
4. INSTALLATION - ABOVE/UNDERGROUND
5. IF TANK IS ABOVE GROUND, IS IT IN A CONTAINMENT AREA/IF NOT WHAT TYPE BASE IS UNDER THE TANK -
6. DISTANCE FROM NEAREST STORM DRAIN OR DRAINAGE DITCH - 48 FT
7. CAPACITY OF TANK - 2285 gals
8. CONTENTS OF TANK - #2 Fuel oil
9. CONSTRUCTION- SINGLE/DOUBLE WALLED METAL/FIBERGLASS/OTHER
10. DOES TANK REQUIRE A MONITORING SYSTEM (Y/N) yes
11. IF #10 IS YES WHAT TYPE IS USED - Flexible Dip Stick
12. WHAT IS THE MONITORING FREQUENCY - Monthly
13. EPA/STATE REGULATED (Y/N) N/A
14. IF #13 IS YES WHAT IS THE PERMIT # - N/A
15. EXPIRATION DATE OF PERMIT IF APPLICABLE - N/A
16. PERMIT FEE IF APPLICABLE - N/A

how deep - Adding Dimensions?
 Tank Diameter 6' 3"
 Tank Length 12' 7"
 Depth To Top Of Tank From Ground 55"
 Depth To Bottom Of Tank From Ground 10' 8"
 all tanks are in above soil containers

10/22/90

JWB
18 OCT 90

FUEL STORAGE TANK QUESTIONNAIRE

1. DEPOT - New Haven
2. DEPOT TANK NUMBER - 90-7
3. LOCATION OF TANK - West @lg T-136
4. INSTALLATION - ABOVE/UNDERGROUND
5. IF TANK IS ABOVE GROUND, IS IT IN A CONTAINMENT AREA/IF NOT WHAT TYPE BASE IS UNDER THE TANK -
6. DISTANCE FROM NEAREST STORM DRAIN OR DRAINAGE DITCH - 45 FT
7. CAPACITY OF TANK - 876 gals
8. CONTENTS OF TANK - #2 Fuel oil
9. CONSTRUCTION - SINGLE/DOUBLE WALLED
METAL/FIBERGLASS/OTHER
10. DOES TANK REQUIRE A MONITORING SYSTEM (Y/N) yes
11. IF #10 IS YES WHAT TYPE IS USED - Flexible Dipstick
12. WHAT IS THE MONITORING FREQUENCY - Monthly
13. EPA/STATE REGULATED (Y/N) N/A
14. IF #13 IS YES WHAT IS THE PERMIT # - N/A
15. EXPIRATION DATE OF PERMIT IF APPLICABLE - N/A
16. PERMIT FEE IF APPLICABLE - N/A

how deep: Above Ground Dimensions:

Tank Diameter 4' 3"

Tank Length 11' 6"

Depth To Top Of Tank From Grade 4' 2"

Depth To Bottom Of Tank From Grade 7' 9"

all tanks have overfill constraints

FUEL STORAGE TANKS LOCATED AT NEW HAVEN

TABLE TYPE CONTENTS CAP/GAL INSTALLED LOC..... REGULATED MONIT/FREQ PERMIT/FEE/EXP.....

ID	TYPE	CONTENTS	CAP/GAL	INSTALLED	LOC	REGULATED	MONIT/FREQ	PERMIT/FEE/EXP
FD-3	UST	#2 FUEL OIL	871		SOUTH OF T-124	N	IM/M	
FD-5	UST	#2 FUEL OIL	2,285		WEST OF T-216B	N	IM/M	
FD-1	UST	#2 FUEL OIL	2,285		SOUTH OF T-111	N	IM/M	
FD-7	UST	#2 FUEL OIL	871		WEST OF T-136	N	IM/M	
G-1	UST	GASOLINE	2,285		NORTH OF T-118	Y	IM/M	

DNSZ-HMO

26 Feb 91

Indiana Department of Environmental Management
Office of Environmental Response
U.S.T. Program
P. O. Box 7015
Indianapolis, Indiana 46207-7015

Dear Sir:

I am requesting the underground storage tanks listed for the DLA Hammond Depot, Hammond Indiana be deleted from your list of registered tanks as it is no longer required to register tanks used for storing heating oil consumed on the premises.

I am enclosing the Notification for Underground Storage Tanks at our DLA New Haven Depot, New Haven Indiana. This is the only tank containing gasoline at this location. We completed a project to remove and replace underground storage tanks with double wall fiberglass tanks in 1990. The following tanks previously registered have been removed altogether: G-1, G-2, G-3, G-4, G-5, G-6, F01, F02, F03, F04, F05, F06 and F07.

The following tanks have been replaced and contain No. 2 fuel used for heating and consumed at this location:

<u>Tank No.</u>	<u>Location</u>	<u>Gallons</u>
F01	Bldg. T-111	2285
F05	Bldg. T-216B	2285
F03	Bldg. T-124	871
F07	Bldg. T-136	871

I trust this information satisfies the notification requirements. Any questions regarding this submittal can be directed to the undersigned.

Yours truly,

Robert H. Bretz
ROBERT H. BRETZ
Zone Administrator

Official

DNSZ-HMO: *Dennis M. Lynch* CONCUR
DENNIS M. LYNCH
Chief, Storage Operations
Division

NOTIFICATION FOR UNDERGROUND STORAGE TANKS

FORM APPROVED
DMD NO. 2070-2060
APPROVAL EXPIRES 6-30-89

FOR
TANKS
IN
IN

RETURN
COMPLETED
FORM
TO

Indiana Department of Environmental Management
Office of Environmental Response
UST Program
P.O. Box 7015
Indianapolis, Indiana 46207-7015

(317) 243-5022

STATE USE ONLY

ID Number

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1988, or that are brought into use after May 8, 1988. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief or recollection.

Why Must Notify? Section 9002 of RCRA, as amended, requires that unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the contents of their tanks. Owner means:

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides, or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes.

2. tanks used for storing heating oil for consumptive use on the premises where stored.

3. storm tanks.

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws.

5. surface impoundments, pits, ponds, or lagoons.

6. storm water or waste water collection systems.

7. flow-through process tanks.

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations.

9. storage tanks situated in an underground area (such as a basement, cellar, mine, or tunnel, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When to Notify? 1. Owners of underground storage tanks in use of that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1988. 2. Owners who bring underground storage tanks into use after May 8, 1988, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, individual, Public Agency, or Other Entity)

DLA/Defense National Storage

Street Address

1745 Jefferson Davis Hwy #100

County

Arlington

City
Arlington, Virginia

State

ZIP Code

22202

Area Code

703

Phone Number

746-7338

Type of Owner (mark all that apply)

Current

State or Local Gov't

Private or Corporate

Former

Federal Gov't

Ownership uncertain

(GSA facility) I. D. no.

II. LOCATION OF TANK(S)

(If same as Section I, mark box here)

Facility Name or Company Site Identifier, as applicable

DLA New Haven Depot

Street Address or State Road, as applicable

State Highway 14

County

Allan

City (nearest)

New Haven

State

Indiana

ZIP Code

46774

Indicate number of tanks at this location

1

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands

III. CONTACT PERSON AT TANK LOCATION

Name (if same as Section I, mark box here)

FRED BROOKS

Job Title
DEPOT MANAGER

Area Code

219

Phone Number

749-5953

IV. TYPE OF NOTIFICATION

Mark box here only if this is an amended or subsequent notification for this location

V. CERTIFICATION (READ AND SIGN AFTER COMPLETING SECTION VII)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

FRED BROOKS, Depot Manager

Signature

Date Signed

VI DESCRIPTION OF UNDERGROUND STORAGE TANKS (COMPLETE FOR EACH TANK AT THIS LOCATION)

Tank Identification No (e.g., ABC-123) or Arbitrarily Assigned Sequential Number e.g., 1,2,3...	Tank No. G-1	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (mark all that apply) Currently in Use <input checked="" type="checkbox"/> Temporarily Out of Use <input type="checkbox"/> Permanently Out of Use <input type="checkbox"/> Brought into Use after 5/8/86 <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Year Installed (e.g., 1986)	1990				
3. Estimated Total Capacity (Gallons)	2500				
4. Material of Construction (mark all that apply) Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass Reinforced Plastic <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
5. Internal Protection (mark all that apply) Cathodic Protection <input type="checkbox"/> Interior Lining (e.g., epoxy resins) <input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Other Please Specify <u>Double wall tank</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6. External Protection (mark all that apply) Cathodic Protection <input type="checkbox"/> Painted (e.g., asphaltic) <input type="checkbox"/> Fiberglass Reinforced Plastic Coated <input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Other Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7. Piping (mark all that apply) Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Cathodically Protected <input type="checkbox"/> Unknown <input type="checkbox"/> Other Please Specify <u>Copper</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8. Substance Currently or Last Stored in Greatest Quantity by Volume (mark all that apply) a. Empty <input type="checkbox"/> b. Petroleum <input type="checkbox"/> Diesel <input type="checkbox"/> Kerosene <input type="checkbox"/> Gasoline <input checked="" type="checkbox"/> Used Oil <input type="checkbox"/> Other Please Specify _____ C. Hazardous Substance <input type="checkbox"/> Please Indicate Name of Principal CERCLA Substance or Chemical Abstract Service (CAS) No. _____ Mark box if tank stores a mixture of substances <input type="checkbox"/> D. Unknown <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
9. Additional Information (for tanks permanently taken out of service) a. Closure Date (mo./yr.) <u>1</u> b. Mark box if removed from the ground <input type="checkbox"/> c. Mark box if tank filled with inert material (e.g., sand, concrete gravel) <input type="checkbox"/>	<u>1</u> <input type="checkbox"/> <input type="checkbox"/>	<u>1</u> <input type="checkbox"/> <input type="checkbox"/>	<u>1</u> <input type="checkbox"/> <input type="checkbox"/>	<u>1</u> <input type="checkbox"/> <input type="checkbox"/>	<u>1</u> <input type="checkbox"/> <input type="checkbox"/>

VII, CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW OR EXISTING UPGRADED TANKS AT THIS LOCATION)

10. The information in items 11 through 14 applies to all tanks at this facility
 The information in items 11 through 14 applies to tank number _____

(Refer to the tank numbers used on page 2 in completing this item. Then use copies of page 3 to supply information for each remaining tank.)

11. Release Detection (mark all that apply):

- Manual tank gauging.
- Tank tightness testing with inventory controls.
- Automatic tank gauging.
- Vapor monitoring.
- Ground-water monitoring.
- Interstitial monitoring within a secondary barrier.
- Interstitial monitoring within secondary containment.
- Automatic line leak detectors.
- Line tightness testing.
- Another method allowed by the implementing agency. Please specify:

12. Cathodic Protection (if applicable):

- As specified for coated steel tanks with cathodic protection. Circle one: Impressed current / Sacrificial anodes
- As specified for coated steel piping with cathodic protection. Circle one: Impressed current / Sacrificial anodes
- Another method allowed by the implementing agency. Please specify:

13. Spill and Overfill Control:

- Catchment basins.
- Automatic shut off devices.
- Overfill alarms.
- Ball float valves
- Another method allowed by the implementing agency. Please specify:

14. Installation, Upgrade or Closure (mark all that apply):

- The installer has been certified by the tank and piping manufacturers.
- The installer or closure contractor has been certified or licensed by the State Fire Marshal's Office
- The installation has been inspected and certified by a registered professional engineer.
- The installation or closure has been inspected and approved by the State Fire Marshal's Office.
- All work listed on the manufacturer's installation checklists has been completed
- Another method was used as allowed by the implementing agency. Please specify:

(Section VII continued on Page 4)

VII. CERTIFICATION OF COMPLIANCE (CONTINUED FROM PAGE 3)

15. OATH: I certify that the information concerning installation, upgrade or closure provided in Item 14 is true to the best of my belief and knowledge

Installer: (Print) _____
Name _____ Date _____
Position _____
Company _____
(Signature) _____ Certification Number: _____
Name _____

16. I have financial responsibility in accordance with Subpart 1. Please specify:

Method: _____
Insurer: _____
Policy Number: _____

VIII. DIAGRAM OF TANK FACILITY (INCLUDE ALL NEW OR EXISTING TANKS AND THEIR ASSOCIATED PIPING AND DISPENSERS)



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

January, 2001

Re: Underground Storage Tank (UST)
Upgrade Requirement Inspections

Dear Underground Storage Tank Owner:

The federal regulations required as of December 22, 1998 that underground storage tank systems meet the standards for spill and overfill prevention and corrosion protection. Tanks were required to meet the leak detection requirement as of December 22, 1993. The IDEM inspection of your facility will determine if your facility is compliant with the new standards. Inspections will be conducted between the hours of 8:00 a.m. and 5:00 p.m. weekdays.

Part of the inspection requirement is to evaluate the records kept at the facility. In accordance with 329 IAC 9-3-1(d) (Reporting and Record Keeping), IDEM requires that all pertinent records be maintained at the facility. A similar letter and checklist have been mailed to each regulated facility.

Enclosed is a checklist to assist you in gathering and maintaining the proper documentation the inspectors will request. Should you have any questions please contact the Underground Storage Tank Section at 317-308-3064 or toll free at 800-451-6027, extension 308-3064.

*Faded KONT
HM
3/13/01*

Sincerely,

Skip Powers, Chief
Underground Storage Tank Section

SP/bjh

Enclosure

IDEM

Underground Storage Tank Section

Compliance Check List

On August 18, 1999, the Underground Storage Tank (UST) Rule (329 IAC 9-3-1(d)) became effective. The Rule requires UST records be permanently kept and immediately available at the UST site for inspection by IDEM as well as at an alternative site. To assist you to comply with the new provision of the rule, we have identified the following records that need to be kept at the facility for IDEM's inspectors to review:

- Notification for Underground Storage Tank form (State Form 45223)**
- Affidavit of Compliance**
- Documentation from the installer of the upgrade for:**
 - Corrosion Protection**
 - Leak Detection**
 - Spill and Overfill Prevention**
- Documentation of maintenance and repairs**
- IDEM Inspection Sheets**

If you have any questions regarding the record keeping requirements, please call IDEM's Underground Storage Tank Section at (317) 308-3064.

For Emergency Spill Reporting, please call IDEM's 24-hour EMERGENCY RESPONSE SPILL HOTLINE:

(888) 233-7745

NOTIFICATION FOR UNDERGROUND STORAGE TANKS



RETURN **Indiana Department of Environmental Management**
 COMPLETED **Office of Environmental Response, UST Branch**
 FORM **N1255, 100 North Senate Avenue**
 TO **P.O. Box 7015**
Indianapolis, Indiana 46207-7015
UST: (317) 233-6419 LUST: (317) 233-6418

Facility ID Number	017479
Owner ID Number	10022
Federal ID Number	
EPA ID Number	

Notification is required by Federal and State laws for all storage tanks that are operational or have been used to store regulated substances since January 1, 1974. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA) and Indiana Code 329 IAC 9, as amended. Specific detailed instructions for the completion of this form may be found in the Underground Storage Tank Branch Guidance Manual (Rev. 9/94), on page 5 of this form or by contacting the UST Branch at the above address.

TYPE OF NOTIFICATION

THIS NOTIFICATION FORM PROVIDES INFORMATION FOR (CHECK ALL THAT APPLY):

- | | | |
|---|---|---|
| <input type="radio"/> A NEW FACILITY | <input type="radio"/> A CHANGE OF OWNERSHIP | <input type="radio"/> A TEMPORARY CLOSURE |
| <input type="radio"/> A NEW OWNER | <input type="radio"/> A SYSTEM UPGRADE | <input type="radio"/> A REQUEST FOR CLOSURE |
| <input checked="" type="radio"/> A NEW TANK | <input type="radio"/> AN ADDRESS CHANGE | <input type="radio"/> A PERMANENT CLOSURE |
| <input type="radio"/> A NEW OPERATOR | <input type="radio"/> OTHER | |

OWNER OF TANKS

OWNER NAME: **SLA/DNSC NEW HAVEN DEPOT**

MAILING ADDRESS: **STATE HIGHWAY 14**

CITY: **NEW HAVEN** STATE: **IN**

ZIP CODE: **46774** TELEPHONE: **(219) 744-5953**

OPERATOR OF FACILITY

OPERATOR NAME (IF SAME AS OWNER, MARK BOX HERE)

MAILING ADDRESS

CITY STATE

ZIP CODE TELEPHONE

TANK/FACILITY LOCATION

FACILITY NAME (IF SAME AS OWNER, MARK BOX HERE)

MAILING ADDRESS (IF SAME AS OWNER, MARK BOX HERE)

LOCATION OF TANKS

CITY

ZIP CODE COUNTY

TYPE OF FACILITY/OWNER

<p>TYPE OF OWNER (Please Check One)</p> <p><input type="radio"/> PRIVATE/BUSINESS</p> <p><input type="radio"/> STATE GOVERNMENT</p> <p><input type="radio"/> LOCAL GOVERNMENT</p> <p><input checked="" type="radio"/> FEDERAL GOVERNMENT</p> <p>GSA FACILITY ID # _____</p> <p><input type="radio"/> OTHER _____</p>	<p>TYPE OF OPERATION (Please Check One)</p> <p><input type="radio"/> MOTOR VEHICLE FUEL DISPENSING STATION</p> <p><input type="radio"/> COMMERCIAL</p> <p><input type="radio"/> RESIDENTIAL</p> <p><input type="radio"/> INDUSTRIAL</p> <p><input type="radio"/> AGRICULTURAL</p> <p><input checked="" type="radio"/> OTHER</p>
<p>EFFECTIVE DATE OF OWNERSHIP</p> <p>FEDERALLY OWNED</p>	<p>GEOGRAPHICAL COORDINATES (UTM - UNIVERSAL TRANSVERSE MERCATOR)</p> <p>EASTINGS W0550054</p> <p>NORTHINGS N410412</p> <p style="font-size: small;">MEASURED IN METERS</p>

CONSULTANT/CONTRACTOR COMPLIANCE CERTIFICATION

OATH: I certify that the information concerning installation, upgrade, or closure provided in this notification is true and correct to the best of my knowledge.

NAME OF CONTRACTOR/CONSULTANT: **N/A** NAME OF COMPANY: **N/A**

SIGNATURE OF CONTRACTOR (IN INK - NO PHOTOCOPIES WILL BE ACCEPTED): **N/A** CERTIFICATION NUMBER: **N/A** DATE: **1/1**

CONTACT AT TANK LOCATION

NAME OF CONTACT PERSON AT TANK LOCATION: **FRED BROOKS** NUMBER OF TANKS AT THIS LOCATION: **2**

JOB TITLE: **DEPOT MANAGER** TELEPHONE NUMBER: **(219) 744-5953** NUMBER OF PAGES ATTACHED TO THIS NOTIFICATION: _____

STATE USE ONLY

OWNER CERTIFICATION

OATH: I certify that under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

NAME AND TITLE OF OWNER OR AUTHORIZED REPRESENTATIVE: **F. KEVIN KELLY, ENVIRO PROT SPEC.**

SIGNATURE OF OWNER (IN INK - NO PHOTOCOPIES WILL BE ACCEPTED): **[Signature]** DATE: **12/4/96**

FACILITY NAME DLA/DNSC NEW HAVEN DEP. FACILITY I.D. 017479 PAGE 3 OF 3

DESCRIPTION OF UNDERGROUND STORAGE TANK SYSTEMS (CONTINUED)

COMPLETE A COLUMN FOR EACH TANK. ATTACH ADDITIONAL SHEETS WHEN THE NUMBER OF TANKS EXCEEDS SIX.

		Sequential Tank Number					
RELEASE DETECTION	(J)	Manual Tank Gauging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Tank Tightness Testing With Inventory Controls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Automatic Tank Gauging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Vapor Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Ground Water Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Interstitial Monitoring Within a Secondary Barrier	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Interstitial Monitoring Within Secondary Containment	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Automatic Line Leak Detectors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Line Tightness Testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Statistical Inventory Reconciliation (SIR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Another Method (Please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
CATHODIC PROTECTION	(K)	For Coated Steel Tanks with Cathodic Protection - Impressed Current	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Sacrificial Anodes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		For Coated Steel Piping with Cathodic Protection - Impressed Current	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Sacrificial Anodes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Another Method (Please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
		<u>COPPER</u>					
SPILL CONTROL	(C)	Catchment Basins	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Automatic Shutoff Devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Overfill Alarms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Bail Float Valves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Another Method (Please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
CONTRACTOR INFORMATION	(M)	Indicate compliance specific to this installation, upgrade, or closure	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Installer is certified by the tank and piping manufacturers.	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Contractor is certified by the Office of the State Fire Marshal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Work inspected/certified by a registered professional engineer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Work inspected by the Office of the State Fire Marshal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All work has been completed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Another method of compliance was used (specify below).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

CERTIFICATION OF FINANCIAL RESPONSIBILITY

(N) I have financial responsibility in accordance with Subtitle 1, Subpart H. (Specify below).

<input checked="" type="radio"/> Self-Insurance	<input type="radio"/> Letter of Credit
<input type="radio"/> Insurance & Risk Retention Group Coverage	<input type="radio"/> Local Government - Bond Rating Test
<input type="radio"/> Trust Agreement	<input type="radio"/> Local Government - Financial Test
<input type="radio"/> Guarantee	<input type="radio"/> Local Government - Guarantee
<input type="radio"/> Surety Bond	<input type="radio"/> Local Government - Fund

FEDERAL GOVERNMENT

30-DAY REQUEST FOR TANK CLOSURE

(O) To request a tank closure, mark the Request for Closure oval in Type of Notification of Section A, complete sections B, C, D, E, and mark D. REQUESTING CLOSURE in section F. Complete the remaining sections (G-N) and fill in the requested information below.

CLOSURE REQUEST	PROPOSED CONTRACTOR		LUST INCIDENT INFORMATION	
	CONTRACTOR NAME		LUST INCIDENT NUMBER, IF APPLICABLE	
	MAILING ADDRESS		DATE INCIDENT REPORTED	
	CITY		<p><i>*NOTE: Any tank closures must be performed by persons certified by the Indiana State Fire Marshal. City/County Fire Departments, the Indiana State Fire Marshal, and IDEM's UST Section must be notified 14 days prior to closure. Please report to the Leaking Underground Storage Tank Section at (317) 233-6418 if signs of soil or groundwater contamination are observed.</i></p> <p style="text-align: center;">Indiana State Fire Marshal (317) 232-2222</p>	
	STATE	TELEPHONE		
	ZIP CODE	()		
CONTACT PERSON		CERTIFICATION NUMBER*		

K. Reilly

March 28, 1986

Division of Land Pollution Control,
USF Program
Indiana State Board of Health
P. O. Box 7015
Indianapolis, Indiana 46207

Dear Sir:

Reference is made to my previous letter dated March 21, 1986, regarding the existence of underground tanks at National Defense Stockpile Depots in Indiana.

Please substitute the enclosed revised form received from the GSA/FPRS Casad (New Haven) Depot for the one originally provided with my letter.

Corrections are as follows:

Page 1 of 3 - Item 9b - Add a zero (0) for Tank Number G-4

Page 3 of 3 - Item 8 - Tank Numbers FO-5, FO-6 and FO-7 should be shown as diesel and not kerosene.

Sincerely,

/s/ ROBERT H. BRETZ

ROBERT H. BRETZ
Manager, Zone 2
Office of National Defense Stockpile, FPRS

Enclosure

cc: Official File: DN-5
Reading File: DN-5
DN - Attn: K. Reilly

DN5:PCJAMES:pj:370-5383:3-28-86

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

**FOR
TANKS
IN
IN**

**RETURN
COMPLETED
FORM
TO**

Division of Land Pollution Control
UST Program
Indiana State Board of Health
P.O. Box 7015
Indianapolis, IN 46207

(317) 243-5060

I.D. Number

STATE USE ONLY

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds, or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached

3

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

GSA/FPRS Casad Depot

Street Address

State Route 14

County

Allen

City

New Haven

State

Indiana

ZIP Code

46774

Area Code

219

Phone Number

749-9544

Type of Owner (Mark all that apply)

Current

State or Local Gov't

Private or Corporate

Former

Federal Gov't (GSA facility I.D. no. _____)

Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here)

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest)

State

ZIP Code

Indicate number of tanks at this location

13

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here)

Thomas L. Hepler

Job Title

Depot Manager

Area Code

219

Phone Number

749-9544

IV. TYPE OF NOTIFICATION

Mark box here only if this is an amended or subsequent notification for this location.

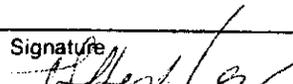
V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

THOMAS L. HEPLER, Depot Manager

Signature



Date Signed

3-26-86

CONTINUE ON REVERSE SIDE

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. G-1	Tank No. G-2	Tank No. G-3	Tank No. G-4	Tank No. G-5	
1. Status of Tank (Mark all that apply <input checked="" type="checkbox"/>) Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
2. Estimated Age (Years)	44	44	44	44	7	
3. Estimated Total Capacity (Gallons)	12000	500	500	500	500	
4. Material of Construction (Mark one <input checked="" type="checkbox"/>) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____					
5. Internal Protection (Mark all that apply <input checked="" type="checkbox"/>) Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> _____					
6. External Protection (Mark all that apply <input checked="" type="checkbox"/>) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> _____					
7. Piping (Mark all that apply <input checked="" type="checkbox"/>) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> _____					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply <input checked="" type="checkbox"/>) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify _____ c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box <input checked="" type="checkbox"/> if tank stores a mixture of substances d. Unknown	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (mo/yr) b. Estimated quantity of substance remaining (gal.) c. Mark box <input checked="" type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	 <input type="checkbox"/>	1961 / 0 <input type="checkbox"/>	1961 / 0 <input type="checkbox"/>	1979 / 0 <input type="checkbox"/>	 <input type="checkbox"/>	

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. G-6	Tank No. FO-1	Tank No. FO-2	Tank No. FO-3	Tank No. FO-4
1. Status of Tank (Mark all that apply <input checked="" type="checkbox"/>) Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Estimated Age (Years)	44	25	44	44	44
3. Estimated Total Capacity (Gallons)	500	2000	12000	8000	5000
4. Material of Construction (Mark one <input checked="" type="checkbox"/>) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Internal Protection (Mark all that apply <input checked="" type="checkbox"/>) Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
6. External Protection (Mark all that apply <input checked="" type="checkbox"/>) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
7. Piping (Mark all that apply <input checked="" type="checkbox"/>) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply <input checked="" type="checkbox"/>) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify _____ c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance _____ OR Chemical Abstract Service (CAS) No. _____ Mark box <input checked="" type="checkbox"/> if tank stores a mixture of substances d. Unknown	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (mo/yr) b. Estimated quantity of substance remaining (gal.) c. Mark box <input checked="" type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	/	/	/	/	/

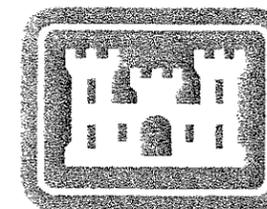
VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. FO-5	Tank No. FO-6	Tank No. FO-7	Tank No.	Tank No.
1. Status of Tank (Mark all that apply) <input type="checkbox"/> Currently in Use <input type="checkbox"/> Temporarily Out of Use <input type="checkbox"/> Permanently Out of Use <input type="checkbox"/> Brought into Use after 5/8/86	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Estimated Age (Years)	15	25	25		
3. Estimated Total Capacity (Gallons)	2000	1000	1000		
4. Material of Construction (Mark one) <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify _____	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Internal Protection (Mark all that apply) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Interior Lining (e.g., epoxy resins) <input type="checkbox"/> None <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. External Protection (Mark all that apply) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Painted (e.g., asphaltic) <input type="checkbox"/> Fiberglass Reinforced Plastic Coated <input type="checkbox"/> None <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Piping (Mark all that apply) <input type="checkbox"/> Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Cathodically Protected <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply) a. Empty <input type="checkbox"/> b. Petroleum <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Kerosene <input type="checkbox"/> Gasoline (including alcohol blends) <input type="checkbox"/> Used Oil <input type="checkbox"/> Other, Please Specify _____ c. Hazardous Substance <input type="checkbox"/> Please Indicate Name of Principal CERCLA Substance _____ OR Chemical Abstract Service (CAS) No. _____ Mark box <input type="checkbox"/> if tank stores a mixture of substances d. Unknown <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (mo/yr) _____ b. Estimated quantity of substance remaining (gal.) _____ c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final Report For:

**LEAKING UNDERGROUND STORAGE TANK (LUST)
SITE INVESTIGATIONS FOR
BUILDINGS T-118, T-111, T-124, T-133 AND T-135
NEW HAVEN DEPOT
NEW HAVEN, INDIANA**

Prepared For:



**U.S. Army Corps of Engineers
Huntsville Center**

Contract No. DACA87-02-D-0005

Delivery Order 0005

Prepared By:

PARSONS

290 Elwood Davis Road, Suite 312

Liverpool, New York 13088

Phone: (315) 451-9560

Fax: (315) 451-9570

REVIEWED AND APPROVED BY:

Project Manager:

Craig Blom

11/18/04
Date

Technical Manager:

Craig E. Butler / Cheryl [Signature]

11/18/04
Date

NOVEMBER 2004

PARSONS

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JUNE 9, 2004**

APPENDIX B SOIL BORING LOGS

APPENDIX C DATA USABILITY REPORT

APPENDIX D PHOTOGRAPHIC LOG

EXECUTIVE SUMMARY

1.0 The New Haven Depot facility near New Haven, Indiana, is operated under the National Stockpile Program for the purpose of storing metallurgical ores and other materials necessary for manufacturing defense materials or strategic materials used in national defense. The site is roughly trapezoidal and currently covers approximately 268 acres.

2.0 In June 2003, the Defense National Stockpile Center (DNSC) removed a 2,500-gallon gasoline underground storage tank (UST) and all associated piping which was installed in the early to mid 1990's. Following the removal of the UST system, an environmental assessment was performed in which petroleum hydrocarbon impacted soils were observed within the tank excavation. Over-excavations activities were performed in an attempt to remove the impacted soils and confirmatory soil sampling was performed to verify if any of the petroleum hydrocarbon soils remained within the tank excavation. Confirmatory soil sampling results indicated that impacted soil still remained along the eastern wall of the excavation. However, no further soil was removed due to the presence of Building T-118, located very close to the east wall of the excavation.

3.0 On March 4, 2004, DNSC received a notice of violation letter from the Indiana Department of Environmental Management (IDEM) requesting that initial site characterizations be conducted at two former UST locations (Area T-118 and T-124). The violation issued was in reference to IDEM Code 329 IAC 9-4 which stated that a release of a regulated substance from a UST system is required to be reported within 24 hours of initial observation. The violation and request for site characterization was made by IDEM following a routine tank inspection by Mr. Brian Davenport of the Underground Storage Tank Section of IDEM. During this inspection, two confirmed releases from two former separate UST systems were discovered. The releases were discovered from review of a 1990 LUST site investigation report prepared by Groundwater Technology, Inc. (GTI) and from the 2,500-gallon gasoline UST closure report (June 2003). The IDEM letter also assigned two IDEM leaking underground storage tank (LUST) numbers to the areas of concern, LUST number 200402505 for Area T-118 and LUST number 200403500 for Area T-124.

4.0 On June 9, 2004, DNSC received an additional letter from IDEM requesting that an investigation be conducted at Areas T-124 and T-133 due to evidence of soil contamination in these areas associated with the 1990 UST removals. The purposes of the requested investigations were to confirm that the sites were remediated and that no subsurface contamination existed at each location. In addition, IDEM also requested that confirmation soil sampling also be conducted at former tank locations T-111 and T-135 due to additional site analytical data that were generated during the 1990 tank removals. The sampling was requested to confirm that no subsurface contamination existed at the former UST sites.

5.0 In July 2004, Parsons conducted five LUST Site Investigations at the locations mentioned above. The site investigations were conducted to satisfy IDEM's requests as stated in their letters to DNSC dated March and June 2004. The LUST Site Investigations were performed and the following conclusions on soil and groundwater quality within the vicinities of the LUST locations were determined:

6.0 SOIL QUALITY

- Benzene, toluene, ethylbenzene, total xylenes, and total petroleum hydrocarbons for gasoline range organics were detected in soil samples (NH-SS-05, NH-SS-06, NH-SS-08, NH-SS-09, NH-SS-11, NH-SS-12, NH-SS-13, NH-SS-15, and NH-SS-17) collected from Area T-118 that exceeded IDEM residential default closure levels; and
- No exceedences of IDEM residential default closure levels were detected in any of the soil samples collected from the LUST Site Investigations performed at Buildings T-111, T-124, T-133, and T-135.

7.0 GROUNDWATER QUALITY

- Benzene and ethylbenzene were detected in groundwater samples (NH-SS-01, NH-SS-05, NH-SS-06, NH-SS-08, NH-SS-09, NH-SS-11, NH-SS-12, NH-SS-15, and NH-SS-17) collected from Area T-118 that exceeded IDEM residential default closure levels; and
- No exceedences of IDEM residential default closure levels were detected in any of the groundwater samples collected from the LUST Site Investigations performed at Buildings T-111, T-124, T-133, and T-135.

8.0 RECOMMENDATIONS

- Request closure from IDEM for LUST number 200403500 for Building T-124, as well as the current investigation issues related to Buildings T-111, T-133, and T-135. Request for closures should be made on the basis that no soil or groundwater samples collected during the LUST Site Investigations performed at the aforementioned LUST locations exceeded IDEM residential default closure levels and that no residual petroleum hydrocarbon soils or impacts to the groundwater exist at these four LUST locations; and
- Request from IDEM directional input as to what course of action would satisfy the state in order to achieve closure of LUST Number 200402505 (Area T-118).

SECTION 1

INTRODUCTION

1.1 PROJECT AUTHORIZATION

Parsons received Contract No. DACA87-02-D-0005, Delivery Order No. 0005, from the United States Army Engineering and Support Center, Huntsville (USAESCH), to conduct LUST site investigations at a total of five former UST locations at DNSC depot located in New Haven, Indiana (see Figure 1.1). These LUST site investigations were performed in accordance with applicable State of Indiana and United States Environmental Protection Agency (USEPA) guidances and regulations.

1.2 SITE LOCATION AND DESCRIPTION

1.2.1 The New Haven Depot is currently owned by the Federal Government and operated by the Department of Defense (DoD), Defense Logistics Agency (DLA), DNSC. The facility is operated under the National Stockpile Program for the purpose of storing metallurgical ores and other materials necessary for manufacturing defense materials or strategic materials used in national defense. The location is:

DLA/DNSC New Haven (Casad) Depot
15411 Dawkins Road
New Haven, Indiana 46774-9644
Phone: (280) 749-9544

1.2.2 The Depot is located on the north side of State Route 14, approximately three miles east of New Haven, Indiana. New Haven is located in the central part of Allen County, Indiana, which is to the east of the City of Fort Wayne.

1.2.3 The northwestern most fence corner of the site is situated at 41° 04' 43.42141" North latitude, and 84° 57' 04.01352" West longitude. The site lies in all of the northwest quarter and part of the northeast quarter of Section 10, and all of the northeast quarter and part of the northwest quarter of Section 9, Township 30 North, Range 14 East of the Second Principal Meridian. The site location is depicted on Figure 1.2. The site is currently an active storage depot, engaged in the storage of various materials, including metallic ores, refined metals, mineral substances such as fluorspar, and certain natural organic materials such as rubber.

1.2.4 The site is roughly trapezoidal and currently covers approximately 268 acres. The maximum east-west axis extends roughly 7,500 feet and the maximum north-south axis extends approximately 2,600 feet. The site is bordered to the south by the main line of the Norfolk Southern Railroad and State Route 14. The northwestern portion of the site is bordered by Edgerton Road. The northern and northeastern portions of the site are bordered by a small industrial park located between Edgerton Road and the Depot. Farmland borders the western portion of the site. The property bordering the east side of the Depot is owned by Jefferson Township.

1.3 PROJECT BACKGROUND

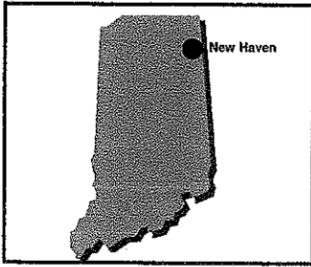
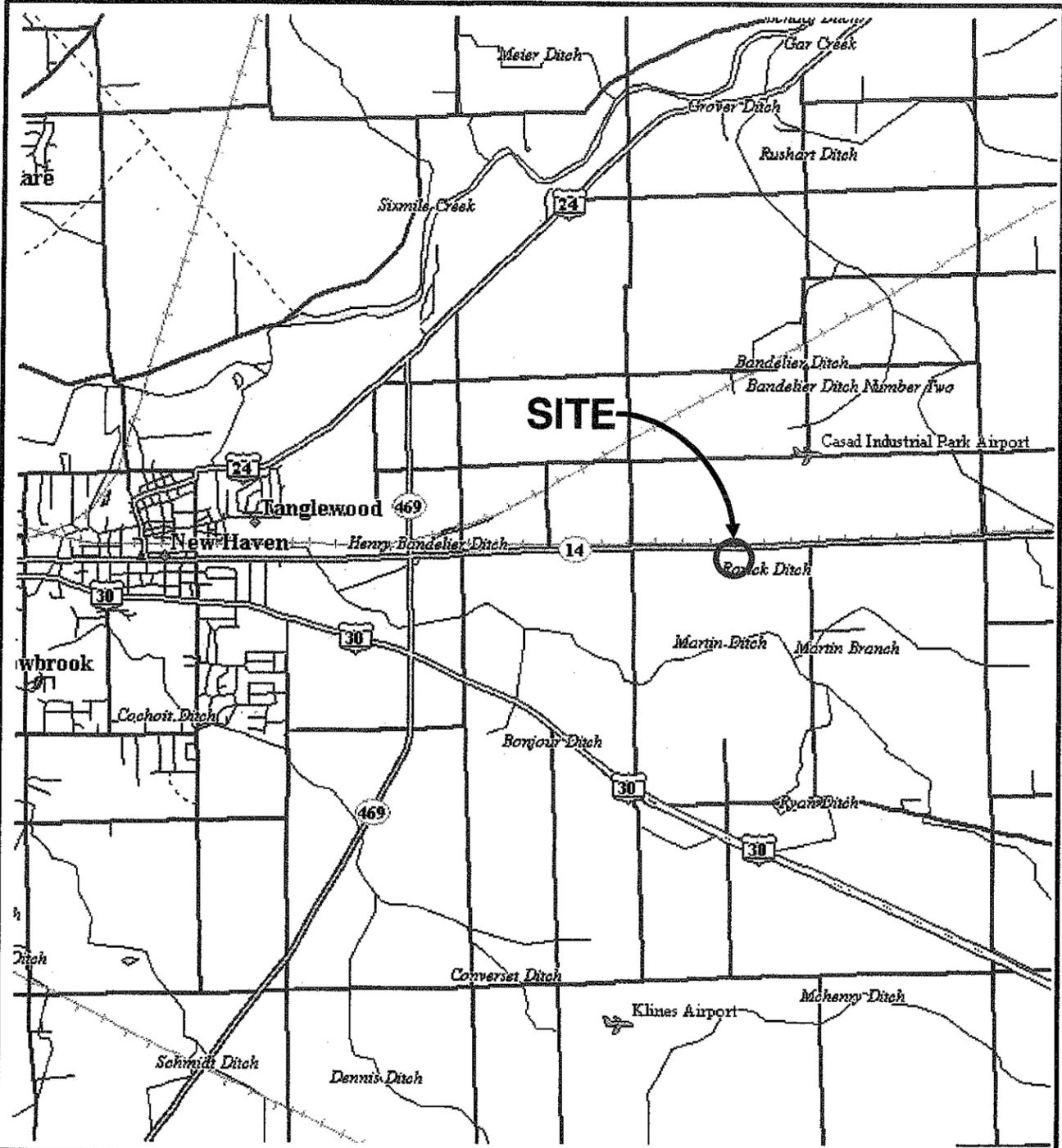
1.3.1 In June 2003, DNSC contracted SES Environmental (SES) to remove a 2,500-gallon gasoline UST and all associated piping that had been installed in the early to mid-1990's (see Figure 1.3). Following the removal of the UST system, SES performed an environmental assessment, during which soil and groundwater samples were collected. Soil samples were collected along the sidewalls of the tank excavation and beneath the associated piping and fuel dispensers. Groundwater was collected from the bottom of the tank excavation. All soil samples were analyzed for total petroleum hydrocarbons (TPH) and all groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE). Results of the investigation indicated no BTEX or MTBE concentrations were above detection limits in the groundwater samples, but TPH concentrations were above regulatory criteria in the soil samples. SES excavated additional soil at the former dispenser area, and confirmatory soil sampling indicated that TPH concentrations greater than the IDEM's default cleanup value of 100 parts per million (ppm) still existed along the east excavation wall. However, no further soil was removed due to the proximity of Building T-118, which was located very close to the east wall of the excavation.

1.3.2 On March 4, 2004, DNSC received a notice of violation letter from IDEM requesting that initial site characterizations be conducted at two former UST locations (Area T-118 and T-124) (see Appendix A). The violation issued from IDEM was in reference to IDEM Code 329 IAC 9-4, which states that a release of a regulated substance from a UST system will be reported within 24 hours of initial observation. The violation and request for site characterization was made by IDEM following a routine tank inspection by Mr. Brian Davenport of the Underground Storage Tank Section of IDEM, in which two confirmed releases from two former, separate UST systems were discovered. The releases were discovered from review of a 1990 LUST site investigation report prepared by GTI and the aforementioned 2003 SES report. Two IDEM LUST numbers were assigned in the letter; LUST number 200402505 for Area T-118 and LUST number 200403500 for Area T-124.

1.3.3 On June 9, 2004, DNSC received another letter from IDEM (see Appendix A) requesting that a subsurface investigation be conducted at Areas T-124 and T-133, due to evidence of soil contamination in these areas associated with the 1990 UST removals (see Figure 1.4). The purposes of these investigation(s) were to confirm that the sites were remediated and that no subsurface contamination existed at each location. In addition, IDEM requested that confirmation soil sampling be conducted at former tank locations T-111 and T-135, due to additional site analytical data that was generated during the 1990 tank removals (see Figure 1.4). The sampling was requested to confirm that no subsurface contamination remained at these former UST sites.

1.4 ORGANIZATION OF THIS REPORT

In addition to this introduction, the report is presented as four sections and four appendices. Section 2 presents the investigation procedures and results. Section 3 presents conclusions that follow from the results. Section 4 is a list of project references. Appendix A provides copies of IDEM's letters to DNSC dated March 4, 2004 and June 9, 2004. Appendix B includes the soil boring logs. Appendix C is the data usability report, which was part of the data validation effort, and includes detailed analytical results tables. Finally, Appendix D is a project photographic log.



Indiana
Quadrangle

LATITUDE: N41° 4' 18.3"
LONGITUDE: W84° 56' 55.8"



SOURCE: DeLORME
MapExpert v2.0

-----| 1 mi

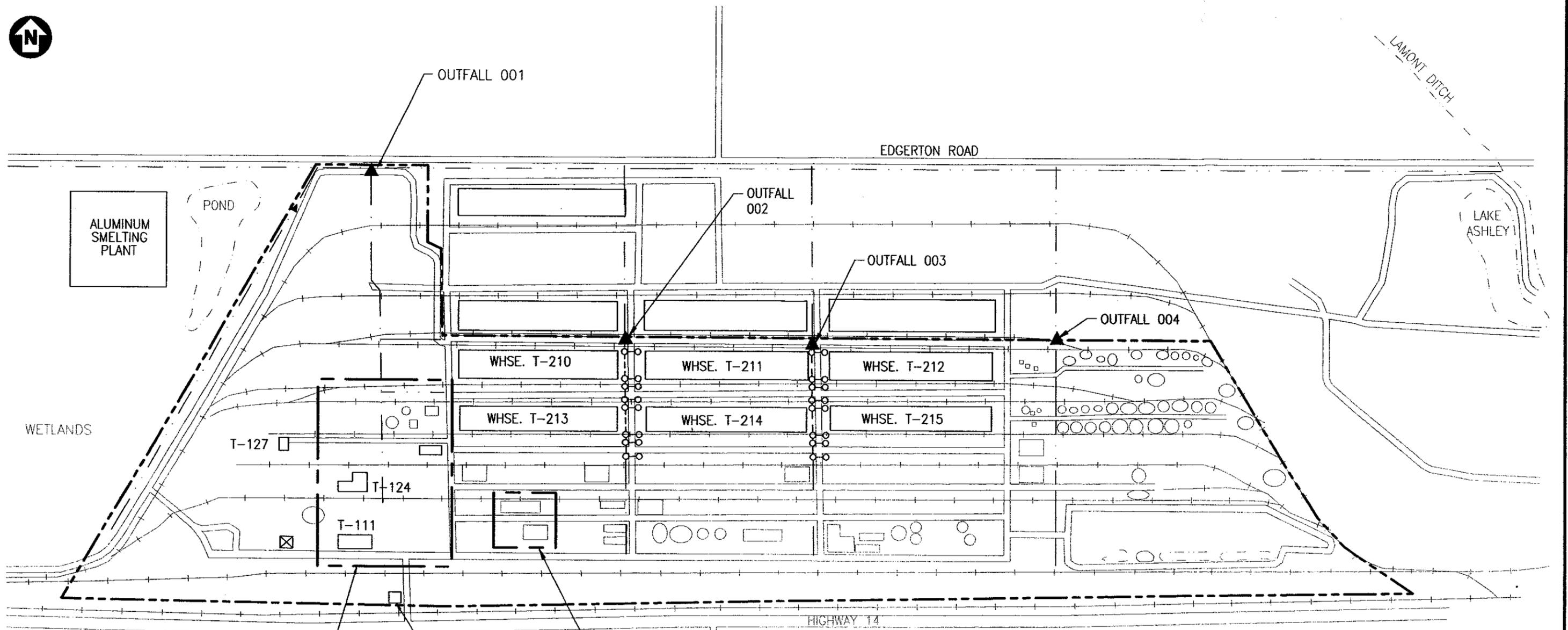
FIGURE 1.1

DLA/DNSC New Haven (Casad) Depot
15411 Dawkins Road
New Haven, Indiana 46774-9644

SITE LOCATION MAP

PARSONS

290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, NY 13088 PHONE: (315) 451-9560

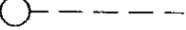


SEE FIGURE 1.4
FOR OIL PRODUCT STORAGE

GUARD SHACK

TANK AREAS T-118 AND T-119
LOCATED WITHIN AREA. SEE FIGURE
1.3 FOR DETAILS.

LEGEND:

-  T-111 BUILDING AND BUILDING NUMBER
-  SITE BOUNDARY LINE
-  DITCH AND POND
-  MANHOLE AND STORM SEWER LINE
-  COMMODITY STOCKPILES OR STORAGE
-  RAILROAD



SCALE: 1"=600'

FIGURE 1.2
NEW HAVEN DEPOT
NEW HAVEN, INDIANA
SITE MAP

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FO-2 G-1

APPROXIMATE LOCATIONS OF FORMER TANKS:
G-1 - 12,000 GAL GASOLINE UST
FO-2 - 12,000 GAL GASOLINE UST
(REMOVED 1990) (SEE NOTE 1)

NOTE: UST LOCATION APPROXIMATED BASED ON HISTORICAL MAPS. EXACT LOCATIONS UNKNOWN.

LEGEND:

-  T-118 BUILDING AND BUILDING NUMBER
-  APPROXIMATE LIMITS OF FORMER EXCAVATION
-  COMMODITY STOCKPILES OR STORAGE
-  RAILROAD
-  G-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER

NOTE:

1. USTs DID NOT HAVE SOIL CONTAMINATION ASSOCIATED WITH THEM WHEN REMOVED IN 1990 AND WERE NOT PART OF JULY 2004 SUBSURFACE INVESTIGATION.

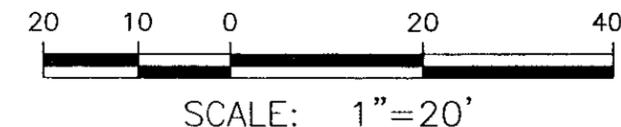
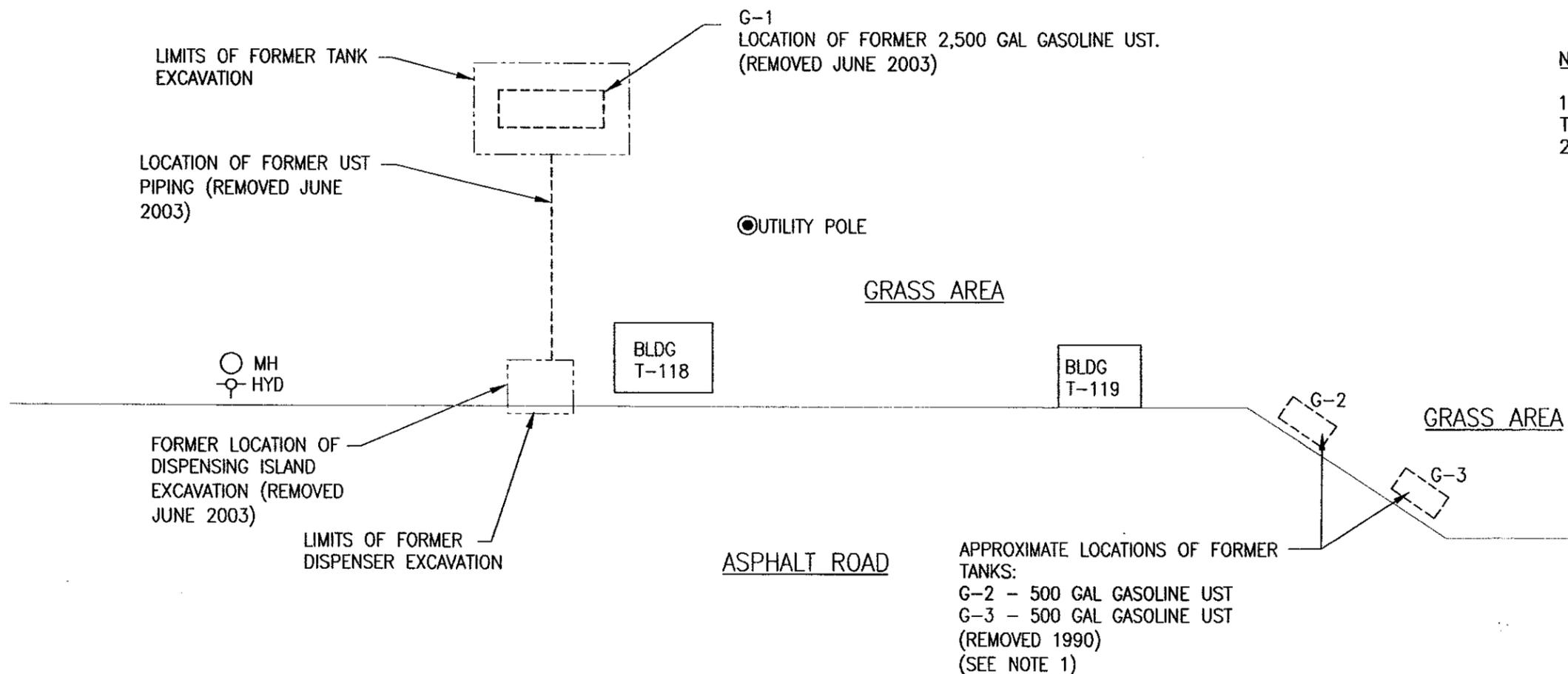
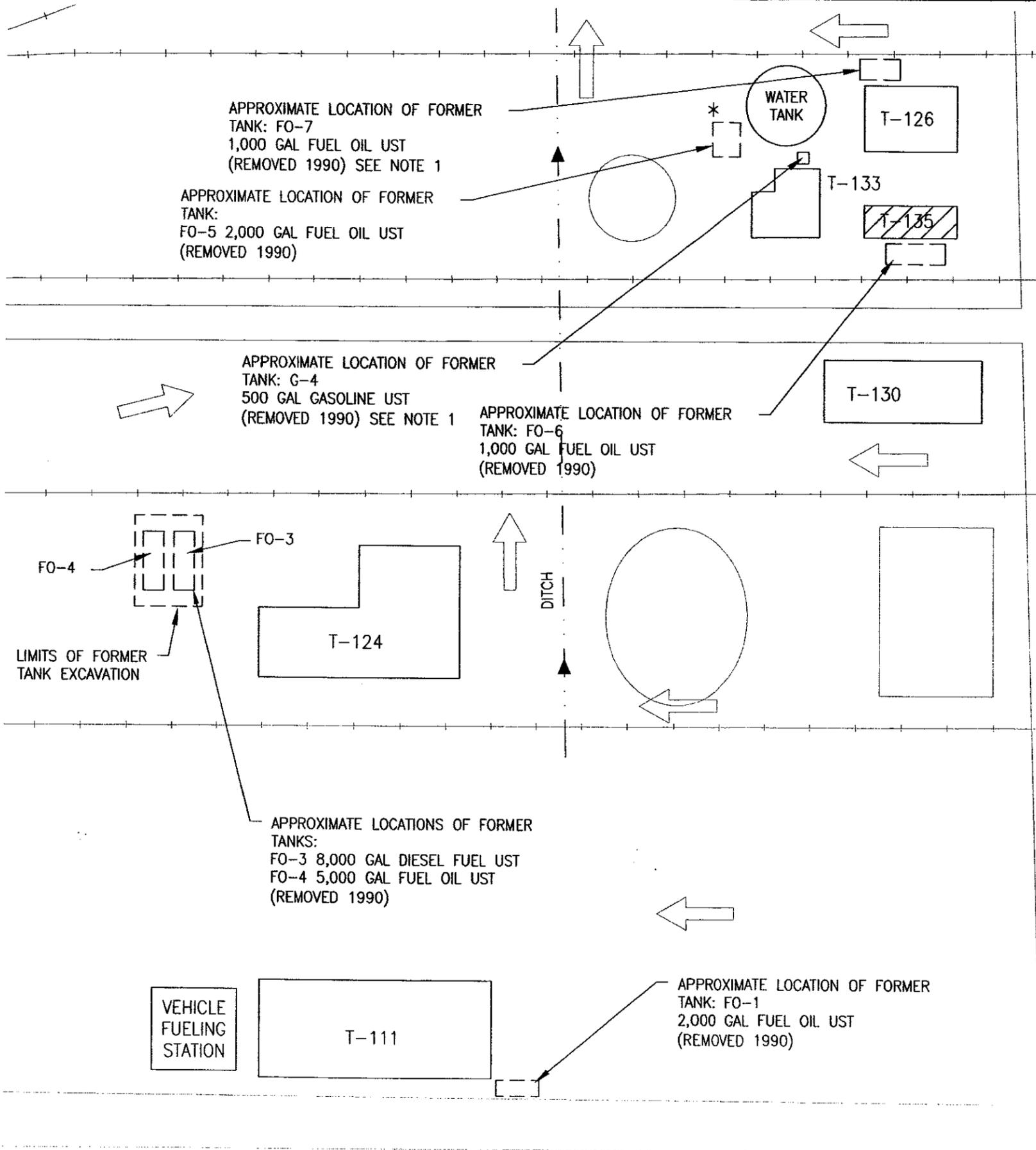


FIGURE 1.3
 NEW HAVEN DEPOT
 NEW HAVEN, INDIANA
 BLDG T-118 AND T-119 AREAS WITH
 FORMER TANK LOCATIONS SHOWN

PARSONS
 290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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LEGEND:

- T-111 BUILDING AND BUILDING NUMBER
- SURFACE FLOW DIRECTION
- COMMODITY STOCKPILES OR STORAGE
- RAILROAD
- FO-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER
- BUILDING NO LONGER EXISTS

NOTE:

1. USTs DID NOT HAVE SOIL CONTAMINATION ASSOCIATED WITH THEM WHEN REMOVED IN 1990 AND WERE NOT PART OF JULY 2004 SUBSURFACE INVESTIGATION.



SCALE: 1"=100'

FIGURE 1.4
NEW HAVEN DEPOT
NEW HAVEN, INDIANA
OIL PRODUCT STORAGE WITH FORMER
TANK LOCATIONS SHOWN - WEST AREA

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SECTION 2

SCOPE OF WORK AND RESULTS

2.1 SITE INVESTIGATION OVERVIEW

2.1.1 The LUST Site Investigations were conducted at Buildings T-118, T-111, T-124, T-133, and T-135 in July 2004. All field work was conducted in accordance with IDEM's LUST Site Characterization and Risk Integrated System of Closure (RISC) guidelines, and directives explained by IDEM in a letter dated June 9, 2004 to DNSC, as well as directives given to Parsons during a telephone conversation on June 21, 2004 between Mr. Craig Butler of Parsons and Ms. Amy Fardy of IDEM. All field work was also performed in accordance with the IDEM-approved work plan for the site (Parsons, 2004). The work plan included a Field Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan; provisions within these plans were followed when conducting the investigation work described herein.

2.1.2 Field work conducted during the LUST site investigations included the following:

- Drilling a total of 22 soil borings in the vicinity of five former UST locations to identify the extent and nature of any petroleum hydrocarbon impacts in the subsurface soil and groundwater that might have taken place from past operation of UST systems, and to confirm that these former UST locations have been remediated to the fullest extent possible;
- Collecting subsurface soil samples from each soil boring to assess subsurface soil conditions;
- Collecting groundwater samples from each soil boring to assess groundwater quality within the subsurface at each of the five former UST locations;
- Collecting and analyzing 44 subsurface soil samples and 22 groundwater samples from a total of 22 soil borings to fully characterize these media; and
- Conducting other related work elements, including managing wastes generated during the investigation, and completing quality assurance procedures and validation of laboratory data.

Investigation procedures are summarized in the following sections.

2.2 SOIL BORING INSTALLATION AND SUBSURFACE SOIL SAMPLING

2.2.1 During the period July 26 through July 30, 2004, a total of 44 subsurface soil samples were collected from 22 soil borings that were installed within the vicinity of five former UST locations (T-118, T-111, T-124, T-133, and T-135). Soil boring locations are shown on Figures 2.1 and 2.2. Each subsurface soil sample was collected either by a Geoprobe® direct-push sampling unit, or a truck-mounted mobile drill rig with hollow-stem augers utilizing continuous stainless steel split-spoon sampling techniques. The sampling method used was based on subsurface conditions at the time of drilling activities. All drilling equipment that came

into contact with the subsurface was decontaminated between each soil boring location by either utilizing a steam cleaner (truck-mounted mobile drill rig) or by utilizing an Alconox® and distilled water wash and rinse (Geoprobe®).

2.2.2 The LUST site investigation for Area T-118 was performed as described in Section 3.5 of IDEM's RISC User's Guide, while the remaining site investigation areas were addressed by installing one soil boring in the center of each former UST excavation. A detailed description of this procedure is presented later in this report. The investigated UST systems formerly contained gasoline, diesel, or fuel oil and were removed from the subsurface in the early 1990s and in 2003. Therefore, the site investigations were conducted following the guidance as described in Appendix 4 of the Technical Guide (Petroleum Guidance).

2.2.3 The RISC guidance for petroleum UST systems specifies a two-step process for screening and determining the extent of contamination within subsurface soil. This two-step process was performed at the LUST location situated at Area T-118. The first step of the soil characterization process was to advance five soil borings in the immediate area of the release. One boring was drilled at the spot expected to be the most contaminated (center of former UST location), while the remaining four borings were drilled at a uniform distance (15 to 20 feet) from the center boring in each of the four compass directions at perpendicular axes.

2.2.4 Two soil samples were then collected from each of the five borings and analyzed for petroleum compound contaminants of concern (COCs) (BTEX and MTBE) and TPH for gasoline range organics (GRO). Soil samples were selected for analysis based on organic vapor readings using a photoionization detector (PID). In each boring, the soil sample exhibiting the highest organic vapor reading, and the sample interval just above the soil/water interface, were selected and submitted for chemical analyses. The soil samples were collected for analysis utilizing an Encore® sampler and were analyzed for BTEX and MTBE by EPA Method SW 8260B and TPH-GRO by EPA Method SW8015B. Analytical results were then compared to IDEM residential default closure levels.

2.2.5 If default closure levels were exceeded in any of the five soil borings, then additional borings were advanced from the center boring in each direction where residential default closure levels were exceeded. The additional borings were continuously placed at intervals of 15 to 20 feet along the axis until soil COC concentrations were at or below the default closure levels. PID headspace measurements were also used to determine if additional borings were required. If soils exhibited elevated headspace measurements (greater than 100 parts per million (ppm) then an additional soil boring was drilled. If headspace measurements were less than 100 ppm and the soil did not exhibit any signs of petroleum impacts, (i.e., petroleum odor or staining) then no additional soil boring was drilled. A headspace measurement of 100 ppm was used as the cut-off limit for initial field screening purposes, since gasoline was formerly used at this LUST location. A total of 18 soil borings were installed at Area T-118 to a maximum depth of 20 feet below ground surface (bgs). Soil boring locations are shown on Figure 2.1, and soil boring logs are provided in Appendix B.

2.2.6 All soil samples collected during site investigation activities were immediately placed in a laboratory-prepared sample container, labeled, and recorded in the field notebook.

The samples were placed on ice and sealed inside an insulated shipping container for overnight shipment to General Engineering Laboratories, Inc. (GEL) located in Charleston, South Carolina.

2.2.7 Upon completion of drilling activities at each soil boring, a temporary well point was installed inside the borehole. The temporary well point consisted of a one-inch diameter Schedule 40 PVC well screen and riser that was installed from the bottom of the borehole to the surface. The well point was installed in each of the 18 soil boring locations at Area T-118 to collect a groundwater sample from the subsurface for chemical analysis. This process complies with IDEM guidelines that require groundwater screening be performed at each site investigation location where soil contamination is observed.

2.3 LUST INVESTIGATIONS AT BUILDINGS T-111, T-124, T-133, AND T-135

2.3.1 Following completion of the site investigation at Area T-118, the remaining four LUST locations (Buildings T-111, 124, 133, and 135) were investigated by drilling one soil boring within the center of each former tank excavation, or source area, or directly adjacent to the former tank excavation. A soil boring was drilled adjacent to the former tank excavation only if a concrete pad was encountered within the former excavation itself and drilling through it could not be accomplished. This occurred at Buildings T-111, T-124, and T-133, due to the presence of a concrete pad at the bottom of the former tank pit. The soil borings were drilled to confirm that all petroleum hydrocarbon impacted soil had been remediated and no longer existed within the subsurface. The soil borings were advanced utilizing the same drilling methodology as described for the investigation at Area T-118. The borings were advanced to a maximum depth of 20 feet or to the soil/water interface, whichever was encountered first. All soil samples collected from the borings were screened with a PID for organic vapor readings. The soil samples exhibiting the highest organic vapor reading, and from the interval just above the soil/water interface, were submitted for chemical analyses. If groundwater was not encountered and no soil/water interface existed, then a sample from the bottom of the boring was submitted instead.

2.3.2 Soil samples were analyzed for TPH diesel range organics (DRO) by EPA Method SW8015B, BTEX and MTBE by EPA Method SW8260B, and polynuclear aromatic hydrocarbons (PAHs) by EPA method SW8310. The analytical results were then compared to IDEM residential default closure levels.

2.3.3 If COC concentrations from the borings exceeded IDEM residential default closure levels, then additional soil borings would have been installed following the same procedure used for the site investigation conducted at Area T-118. However, no additional soil borings were required at any of the four LUST locations that were investigated. PID headspace measurements were also used to assist in determining whether additional soil borings were required. A headspace measurement of 1,000 ppm was used as the cut-off limit for initial field screening purposes, since diesel or fuel oil was formerly used at these LUST locations. A total of four soil borings, one at T-111, T-124, T-133, and T-135 were installed. Soil boring locations are shown on Figure 2.2, while soil boring logs are provided in Appendix B.

2.3.4 Temporary well points were also installed at each soil boring location once drilling activities were completed. Each temporary well point was installed in the same manner as at Area T-118 and for the same purpose.

2.4 GROUNDWATER SAMPLING

2.4.1 Groundwater was encountered at a depth of eight to ten feet below grade. Regional groundwater flow, based on topography, flows in a northwesterly direction. The regional groundwater flow direction was determined based on information presented in the Groundwater Technology, Inc. 1990 Preliminary Investigation, and the SES Environmental 2003 Underground Storage Tank Closure Assessment reports.

2.4.2 After the completion of all drilling activities, the temporary well points were developed using dedicated polyurethane tubing and a peristaltic pump. Groundwater was evacuated until each well point produced clear, sediment-free samples.

2.4.3 The temporary well points were sampled using the same equipment mentioned above, following installation and recovery from development. Each temporary well point was purged of three to five well volumes of water prior to sampling so that representative samples of groundwater in the aquifer near the well points were collected. The well points were sampled after the groundwater in each well point recovered to near static levels. Each groundwater sample was immediately placed in a laboratory-prepared sample container, labeled, and recorded in the field notebook. The samples were placed on ice and sealed inside an insulated shipping container for overnight shipment to GEL, Inc. located in Charleston, South Carolina.

2.4.4 In accordance with IDEM requirements, all groundwater samples collected from Area T-118 were analyzed for BTEX and MTBE by EPA Method SW8260B, and TPH-GRO by EPA Method SW8015B. All samples collected from Buildings T-111, T-124, T-133, and T-135 were analyzed for BTEX and MTBE by EPA Method SW8260B, TPH-DRO by EPA Method SW8015B, and PAHs by EPA Method 8310.

2.4.5 Following completion of all groundwater sampling activities, each temporary well point was removed from the borehole and abandoned by placing bentonite from the bottom of the borehole up to within six inches beneath the ground surface. An asphalt or concrete patch was then placed over the borehole to restore the surface to its original condition prior to drilling activities.

2.5 INVESTIGATION-DERIVED WASTE

All investigation-derived waste (IDW), including soil cuttings, development water, and decontamination water were contained in 55-gallon 17-H, Department of Transportation (DOT) drums and labeled. Soil and water were contained separately. The drums were staged at an approved location onsite for future disposal by the DNSC.

2.6 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

2.6.1 SAMPLES

2.6.1.1 Field duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples were collected to obtain laboratory QA/QC data that could be used to evaluate the field sampling procedures and laboratory methods. Field duplicate samples were collected at a rate of one per 10 field samples. MS/MSD samples were submitted at a rate of one pair per 20 field samples submitted, or one pair per seven days, whichever was more frequent. Field duplicates and MS/MSD samples were analyzed for the same list of parameters as the corresponding field samples.

2.6.1.2 Equipment blank samples were prepared and submitted for analysis to assess the effectiveness of decontamination procedures. Equipment blanks were prepared by pouring laboratory-supplied analyte-free water over decontaminated sampling equipment, and were submitted for each type of sampling equipment used (split-spoon, stainless steel bowl, and polypropylene bailer). The equipment blank samples were analyzed for the same list of parameters as the corresponding field samples.

2.6.1.3 Laboratory-prepared trip blanks, consisting of 40-milliliter vials containing analyte-free water, accompanied the sample containers for volatile analyses during shipment from and back to the laboratory. The trip blanks were analyzed for benzene, toluene, ethylbenzene, and xylenes to confirm that cross-contamination did not occur during sample shipment. Chain-of-custody records and custody seals were used to ensure that sample integrity was not compromised during all sample shipments.

2.6.2 DATA VALIDATION

As specified in the work plan, laboratory analytical data were validated by an IDEM-approved data validator. Data qualifiers were adjusted in accordance with the data validator's recommendations. The data usability report (see Appendix C) presents the data validation results.

2.7 LABORATORY ANALYTICAL RESULTS

2.7.1 Forty-four subsurface soil and twenty-two groundwater samples were submitted for laboratory analysis as part of these investigations. The analytical results are summarized in Tables 2.1 and 2.2 and graphically depicted in Figures 2.3 through 2.6.

2.7.2 Detailed analytical results generated during these investigations were stored and managed by Parsons using Access™ database software. Analytical results were provided by the laboratory on diskettes and imported directly into the database. The results were subsequently adjusted to reflect any changes resulting from data validation results. Detailed laboratory results, including laboratory reporting limits for each analyzed compound, are presented in tables within Appendix C.

2.7.1 Soil Results

2.7.1.1 AREA T-118

Benzene, toluene, ethylbenzene, total xylenes, and total petroleum hydrocarbons for gasoline range organics were detected in soil samples (NH-SS-05, NH-SS-06, NH-SS-08, NH-SS-09, NH-SS-11, NH-SS-12, NH-SS-13, NH-SS-15, and NH-SS-17) collected from Area T-118 that exceeded IDEM residential default closure levels.

2.7.1.2 BUILDINGS T-111, T-124, T-133, AND T-135

No exceedences of IDEM residential default closure levels were detected in any of the soil samples collected from the LUST Site Investigations performed at Buildings T-111, T-124, T-133, and T-135.

2.7.2 GROUNDWATER RESULTS

2.7.2.1 AREA T-118

Benzene and ethylbenzene were detected in groundwater samples (NH-SS-01, NH-SS-05, NH-SS-06, NH-SS-08, NH-SS-09, NH-SS-11, NH-SS-12, NH-SS-15, and NH-SS-17) collected from Area T-118 that exceeded IDEM residential default closure levels.

2.7.2.2 BUILDINGS T-111, T-124, T-133, AND T-135

2.7.2.2.1 No exceedences of IDEM residential default closure levels were detected in any of the groundwater samples collected from the LUST Site Investigations performed at Buildings T-111, T-124, T-133, and T-135.

2.7.2.2.2 A photographic log documenting field activities associated with the LUST Site Investigations is provided as Appendix D.

**TABLE 2.1
SOIL ANALYTICAL RESULTS FOR LUST INVESTIGATIONS
DNSC DEPOT
NEW HAVEN, INDIANA**

Lab Sample ID	Field ID	117744001	117744002	117744003	117744004	117744005	117744006	117850012	117850013	117850014	117850002	117850003	117850001	117850008	117850009	117744007	117744008	117850015	117850016	
Sampling Location	Sampling Depth (ft.)	NH-SS-01-0-5	NH-SS-01-12-14	NH-SS-02-0-2.5	NH-SS-02-12-14	NH-SS-03-6-8	NH-SS-03-14-16	NH-SS-04-0-4*	NH-SS-04-12-14	NH-SS-04-12-14	NH-SS-05-4-6	NH-SS-05-12-14	NH-SS-06-2.5-5	NH-SS-06-10-12.5	NH-SS-06-10-12.5	NH-SS-08-2.5-5	NH-SS-08-12.5-15	NH-SS-09-2.5-5	NH-SS-09-12.5-15	
Sampling Date	Sampling Type	7/26/04	7/27/04	7/26/04	7/26/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	7/27/04	
Default Closure Level (mg/Kg)		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal	Normal	Normal	Duplicate	Normal	Normal	Normal	Normal	
Analytes	CAS																			
SVOcs - 8270C (SIM mode) (mg/kg)																				
Total PAHs (calculated)																				
2-Chloronaphthalene	91-58-7	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	91-57-6	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	83-32-9	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	208-96-8	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	120-12-7	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	56-55-3	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	50-32-8	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	205-99-2	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	191-24-2	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g)perylene	207-08-9	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenz(a,h)anthracene	53-70-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	206-44-0	880	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	86-73-7	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	91-20-3	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	85-01-8	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	129-00-0	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1-Methylnaphthalene	90-12-0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene	91-57-6	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	56-55-3	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	50-32-8	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	205-99-2	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	207-08-9	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	218-01-9	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	91-20-3	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	129-00-0	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TPH (mg/kg)																				
Diesel Range Organics	68334-30-5	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Gasoline Range Organics	86290-81-5	100	0.29	28.2	3.6 U	3.7 U	3.7 U	3.8 U	3 J	2.2 U	2.9 U	1.7 U	58.4	64.9 J	3.2 UJ	2.5 U	89.3	4.4		
VOCs - 8260B (mg/kg)																				
Total BTEX (calculated) (2)			0.0026J	0.1223J	0.017	0.00124J	0.02289J	0.0026	0.00511J	0.00096U	0.00090U	39.72J	0.001452J	0.717	14.27J	0.0472J	5.5J	0.00412J	94.2J	0.00116J
Benzene	71-43-2	0.034	0.0012 U	0.014	0.0011 U	0.00091 U	0.00042 J	0.00090 U	0.00056 J	0.00096 U	0.00090 U	1.4	0.00098 U	0.002	1.2 J	0.11 J	1.2	0.00049 J	4.2 J	0.00087
Ethylbenzene	100-41-4	13	0.001 J	0.1	0.0026	0.00051 J	0.00037 J	0.00042 U	0.00055 J	0.00096 U	0.00090 U	5.9	0.00052 J	0.41	1.5 J	0.041 J	4.3 J	0.00053 J	14.5 J	0.00085 U
tert-Butyl methyl ether	1634-04-4	0.18	0.0012 U	0.0011 U	0.0011 U	0.00091 U	0.00092 U	0.00090 U	0.0011 U	0.00096 U	0.00090 U	0.11 U	0.00098 U	0.0011 U	0.23 U	0.00096 U	0.11 UJ	0.00089 U	0.11 U	0.00085 U
Toluene	108-88-3	12	0.0011 U	0.0083	0.0024	0.00073 J	0.003	0.0026	0.0016	0.00096 U	0.00090 U	0.42	0.00098 U	0.035	0.67 J	0.061 J	10.2 UJ	0.0035 U	9.6 J	0.00029 J
Xylenes (total)	1330-27-7	170	0.0018	0.76 UJ	0.012	0.00091 U	0.0021	0.0021 U	0.0024	0.00096 U	0.00090 U	32 J	0.0014	0.18	8.9 J	0.26 J	22 UJ	0.0031	65.8 J	0.00085 U

(1) Total PAHs calculated by Parsons

(2) Total BTEX calculated by Parsons; data qualifier applied based on qualifiers for individual analyte results.

exceeds residential default closure level

J = The analyte was analyzed for and was positively identified but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

U = The analyte was analyzed and is not present above the level of the associated value the approximate concentration. The associated numerical value indicates necessary to detect the analyte in this sample (e.g., the project reporting level).

UJ = A combination of the "U" and "J" qualifiers. The analyte analyzed was not present above the level of the associated value. The numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in the sample.

NA = Not Analyzed.

*Split Sample

Parsons ID	Split Sample ID
NH-SS-15-2.5-5	NH-SS-115-2.5-5
NH-SS-17-12.5-15	NH-SS-117-12.5-15
NH-SS-04-0-4	0-4
NH-SS-22-12-14	NH-SS-122-12-14

**TABLE 2.1
SOIL ANALYTICAL RESULTS FOR LUST INVESTIGATIONS
DNSC DEPOT
NEW HAVEN, INDIANA**

Analytes	CAS	Lab Sample ID Field ID Sampling Location Sampling Depth (ft.) Sampling Date Sampling Type	117850004	117850005	117850011	117850018	117850006	117850007	117850010	117850017	118074001	118074002	117928001	117928002	117928003	117928004	117928005	117928006	117928007	117928008	
			NH-SS-10-5-7.5	NH-SS-10-12.5-15	NH-SS-11-2.5-5	NH-SS-11-12.5-15	NH-SS-12-7.5-10	NH-SS-12-12.5-14	NH-SS-13-4-6	NH-SS-13-12-14	NH-SS-14-0-2	NH-SS-14-12-14	NH-SS-15-2.5-5*	NH-SS-15-7.5-10	NH-SS-16-2-4	NH-SS-16-12-14	NH-SS-17-5-7.5	NH-SS-17-12.5-15*	NH-SS-17-12.5-15	NH-SS-17-12.5-15	NH-SS-17-12.5-15
Default Closure Level (mg/Kg)																					
SVOCs - 8270C (S/M mode) (mg/kg)																					
Total PAHs (calculated)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	191-24-2	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	880	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH (mg/kg)																					
Diesel Range Organics	68334-30-5	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics	86290-81-5	100	32.7	1.4 U	2.0 J	2 U	9	2.2 U	1.8 J	2.9 U	0.025 J	2 J	220	139	6.2 U	1.5 U	18.8	2.2 U	1.5 UJ	1.2 J	
VOCs - 8260B (mg/kg)																					
Total BTEX (calculated) (2)			0.0008J	0.00089U	13.49	0.00089U	0.477J	0.00169J	0.0106J	0.00089U	0.0011U	0.00082UJ	33.89J	1181.1J	0.0085J	0.00416J	0.1022	0.00352J	0.00086J	0.0011J	
Benzene	71-43-2	0.034	0.0011 U	0.00089 U	1.2	0.00089 U	0.1 J	0.00042 J	0.0033	0.00089 U	0.0011 U	0.00082 UJ	1.6 J	384 J	0.005	0.0023 J	0.048	0.002 J	0.00046 J	0.0083	
Ethylbenzene	100-41-4	13	0.0011 U	0.00089 U	6	0.00089 U	0.013	0.00038 J	0.0024	0.00089 U	0.0011 U	0.00082 UJ	7.1 J	174 J	0.0025	0.0012 J	0.0064	0.00084 J	0.0004 J	0.0026	
tert-Butyl methyl ether	1634-04-4	0.18	0.0011 U	0.00089 U	0.11 U	0.00089 U	0.0012 U	0.00081 U	0.0012 U	0.00089 U	0.0011 U	0.00082 UJ	0.11 UJ	5.1 UJ	0.0014 U	0.00099 U	0.0016 U	0.00096 U	0.00093 U	0.0011 U	
Toluene	108-88-3	12	0.0011 U	0.00089 U	0.59	0.00089 U	0.024	0.00033 J	0.0009 J	0.00089 U	0.0011 U	0.00082 UJ	0.89 J	22 J	0.001 J	0.00066 J	0.0048	0.00096 U	0.00093 U	0.0011 J	
Xylenes (total)	1330-27-7	170	0.0008 J	0.00089 U	5.7	0.00089 U	0.34	0.00056 J	0.004	0.00089 U	0.0011 U	0.00082 UJ	24.1 J	401 J	0.0056 U	0.0035 UJ	0.042	0.00066 J	0.002 UJ	0.005 U	

(1) Total PAHs calculated by Parsons

(2) Total BTEX calculated by Parsons; data qualifier applied based on qualifiers for individual analyte results.

exceeds residential default closure level

J = The analyte was analyzed for and was positively identified but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

U = The analyte was analyzed and is not present above the level of the associated value the approximate concentration. The associated numerical value indicates necessary to detect the analyte in this sample (e.g., the project reporting level).

UJ = A combination of the "U" and "J" qualifiers. The analyte analyzed was not present above the level of the associated value. The numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in the sample.

NA = Not Analyzed.

*Split Sample

Parsons ID	Split Sample ID
NH-SS-15-2.5-5	NH-SS-115-2.5-5
NH-SS-17-12.5-15	NH-SS-117-12.5-15
NH-SS-04-0-4	0-4
NH-SS-22-12-14	NH-SS-122-12-14

**TABLE 2.1
SOIL ANALYTICAL RESULTS FOR LUST INVESTIGATIONS
DNSC DEPOT
NEW HAVEN, INDIANA**

Lab Sample ID	117928009	117928012	117928013	117928010	117928011	118074003	118074004	118074005	118074006	118074007		
Field ID	NH-SS-18-7.5-10	NH-SS-19-2-4	NH-SS-19-12-14	NH-SS-20-2.5-5	NH-SS-20-12.5-15	NH-SS-21-4-6	NH-SS-21-14-16	NH-SS-22-10-12	NH-SS-22-12-14*	NH-SS-22-12-14		
Sampling Location	NH-SS-18	NH-SS-19	NH-SS-19	NH-SS-20	NH-SS-20	NH-SS-21	NH-SS-21	NH-SS-22	NH-SS-22	NH-SS-22		
Sampling Depth (ft.)	7.5-10	2-4	12-14	2.5-5	12.5-15	4-6	14-16	10-12	12-14	12-14		
Sampling Date	7/28/04	7/29/04	7/29/04	7/28/04	7/28/04	7/29/04	7/29/04	7/29/04	7/29/04	7/29/04		
Sampling Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Duplicate		
Analytes	CAS	Default Closure Level (mg/kg)										
SVOCs - 8270C (SIM mode) (mg/kg)												
Total PAHs (calculated)			NA	0.041U	0.038U	0.041U	0.040U	0.042U	0.038U	0.040U	0.038U	NA
2-Chloronaphthalene	91-58-7	42	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
2-Methylnaphthalene	91-57-6	16	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Acenaphthene	83-32-9	130	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Acenaphthylene	208-96-8	18	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Anthracene	120-12-7	51	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(a)anthracene	56-55-3	5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(a)pyrene	50-32-8	0.5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(b)fluoranthene	205-99-2	5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(g,h)perylene	191-24-2	16	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(k)fluoranthene	207-08-9	39	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Chrysene	218-01-9	25	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Dibenzo(a,h)anthracene	53-70-3	0.5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Fluoranthene	206-44-0	880	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Fluorene	86-73-7	170	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Naphthalene	91-20-3	0.7	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Phenanthrene	85-01-8	13	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Pyrene	129-00-0	570	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
1-Methylnaphthalene	90-12-0	NA	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
2-Methylnaphthalene	91-57-6	16	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(a)anthracene	56-55-3	5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(a)pyrene	50-32-8	0.5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(b)fluoranthene	205-99-2	5	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Benzo(k)fluoranthene	207-08-9	39	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Chrysene	218-01-9	25	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Indeno(1,2,3-cd)pyrene	193-39-5	3.1	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Naphthalene	91-20-3	0.7	NA	0.041 U	0.038 U	0.041 U	0.040 U	0.042 U	0.038 U	0.040 U	0.038 U	NA
Pyrene	129-00-0	570	NA	0.041 U	0.038 U	0.041 U	0.040 U	NA	0.038 U	0.040 U	0.038 U	NA
TPH (mg/kg)												
Diesel Range Organics	68334-30-5	100	NA	86.3 J	3.9	2.0 U	17.3	3.1	27.3	38.4	22.7	NA
Gasoline Range Organics	86290-81-5	100	1.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs - 8260B (mg/kg)												
Total BTEX (calculated) (2)			0.01333J	0.00148J	0.00086U	0.00155J	0.00114J	0.0010U	0.00089U	0.00087U	0.00082UJ	0.0010UJ
Benzene	71-43-2	0.034	0.0096	0.00091 J	0.00086 U	0.00091 J	0.00046 J	0.0010 U	0.00089 U	0.00087 U	0.00082 UJ	0.0010 UJ
Ethylbenzene	100-41-4	13	0.0015	0.00057 J	0.00086 U	0.00064 J	0.00057 J	0.0010 U	0.00089 U	0.00087 U	0.00082 UJ	0.0010 UJ
tert-Butyl methyl ether	1634-04-4	0.18	0.0014 UJ	0.0010 U	0.00086 U	0.00098 U	0.00097 U	0.0010 U	0.00089 U	0.00087 U	0.00082 UJ	0.0010 UJ
Toluene	108-88-3	12	0.00083 J	0.0010 U	0.00086 U	0.00098 U	0.00097 U	0.0010 U	0.00089 U	0.00087 U	0.00082 UJ	0.0010 UJ
Xylenes (total)	1330-27-7	170	0.0014 J	0.00069 U	0.00086 U	0.0018 U	0.00043 U	0.0010 U	0.00089 U	0.00087 U	0.00082 UJ	0.0010 UJ

(1) Total PAHs calculated by Parsons

(2) Total BTEX calculated by Parsons; data qualifier applied based on qualifiers for individual analyte results.

exceeds residential default closure level

J = The analyte was analyzed for and was positively identified but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

U = The analyte was analyzed and is not present above the level of the associated value the approximate concentration. The associated numerical value indicates necessary to detect the analyte in this sample (e.g., the project reporting level).

UJ = A combination of the "U" and "J" qualifiers. The analyte analyzed was not present above the level of the associated value. The numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in the sample.

NA = Not Analyzed.

*Split Sample

Parsons ID	Split Sample ID
NH-SS-15-2.5-5	NH-SS-115-2.5-5
NH-SS-17-12.5-15	NH-SS-117-12.5-15
NH-SS-04-0-4	0-4
NH-SS-22-12-14	NH-SS-122-12-14

**TABLE 2.2
GROUNDWATER ANALYTICAL RESULTS FOR LUST INVESTIGATIONS
DNSC DEPOT
NEW HAVEN, INDIANA**

Lab Sample ID	Field ID	118101002	118101004	118101001	118101003	118101008	118101018	11812009	11812008	118101019	11812007	118101011	118101017	118101009	118101016	118101012	118101010	118101015	118101013
Sampling Location	NH-SS-01	NH-SS-02	NH-SS-03	NH-SS-04	NH-SS-05	NH-SS-06	NH-SS-06	NH-SS-08	NH-SS-09	NH-SS-10*	NH-SS-210	NH-SS-11	NH-SS-12	NH-SS-13	NH-SS-14	NH-SS-15	NH-SS-16	NH-SS-17	NH-SS-18*
Sampling Date	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04	7/30/04
Sampling Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Duplicate	Normal							
Analytes	CAS	Default Closure Level (mg/L)																	
SVOCs - 8270C (mg/L)																			
Total PAHs (calculated)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	83-32-9	0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	191-24-2	0.00026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	0.0008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	0.0016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	0.00012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	0.31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	0.0083	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	85-01-8	0.023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	183-39-5	0.00022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH (mg/L)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics	68334-30-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics	86290-81-5	NA	26.1	0.050 U	0.05	0.028 U	1.9	7.8	5.4	3.7	0.028 J	0.050 U	0.46	2.1	0.3	0.050 U	28.7	0.050 U	1.4
VOCs - 8260B (mg/L)																			
(2) Total BTEX (calculated)			5.856	0.00039J	0.0010U	0.0024J	0.4108	1.69	1.188	1.1	0.00193J	0.00071J	0.0656	0.4136J	0.0010U	0.00159J	10.98	0.0010U	0.3423
Benzene	71-43-2	0.005	0.16	0.0010 U	0.0010 U	0.0010 U	0.21	1	0.15	0.43	0.00056 J	0.00071 J	0.019	0.37	0.0010 U	0.0010 U	9.4	0.0010 U	0.28
Ethylbenzene	100-41-4	0.7	1.3	0.0010 U	0.0010 U	0.00093 J	0.034	0.28	0.078	0.085	0.00037 J	0.0010 U	0.022	0.0046 J	0.0010 U	0.00039 J	0.74	0.0010 U	0.0081
tert-Butyl methyl ether	1634-04-4	0.04	0.0050 U	0.00039 J	0.0010 U	0.00037 J	0.0010 U	0.050 U	0.010 U	0.004	0.0010 U	0.0010 U	0.0010 U	0.0050 U	0.0010 U	0.0010 U	0.20 U	0.0010 U	0.0010 U
Toluene	108-88-3	1	0.096	0.0010 U	0.0010 U	0.0010 U	0.0068	0.098 U	0.56	0.061	0.0010 U	0.00045 U	0.0036	0.0095 U	0.0010 U	0.00055 U	0.19 U	0.0010 U	0.0082
Xylenes (total)	1330-27-7	10	4.3	0.0010 U	0.0010 U	0.0011	0.16	0.41	0.4	0.47	0.001	0.0010 U	0.021	0.039	0.0010 U	0.0012	0.84	0.0010 U	0.046

(1) Total PAHs calculated by Parsons

(2) Total BTEX calculated by Parsons; data qualifier applied based on qualifiers for individual analyte results.

J exceeds residential default closure level

J = The analyte was analyzed for and was positively identified but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

U = The analyte was analyzed and is not present above the level of the associated value the approximate concentration. The associated numerical value indicates necessary to detect the analyte in this sample (e.g., the project reporting level).

UJ = A combination of the "U" and "J" qualifiers. The analyte analyzed was not present above the level of the associated value. The numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in the sample.

NA = Not Analyzed.

*Split Sample

Parsons ID	Split Sample ID
NH-SS-18	NH-SS-118
NH-SS-10	NH-SS-110
NH-SS-22	NH-SS-122

**TABLE 2.2
GROUNDWATER ANALYTICAL RESULTS FOR LUST INVESTIGATIONS
DNSC DEPOT
NEW HAVEN, INDIANA**

Lab Sample ID	118101014	118112001	118112004	118630001	118112002	118112003		
Field ID	NH-SS-218	NH-SS-19	NH-SS-20	NH-SS-21	NH-SS-22*	NH-SS-222		
Sampling Location	NH-SS-18	NH-SS-19	NH-SS-20	NH-SS-21	NH-SS-22	NH-SS-22		
Sampling Date	7/30/04	7/30/04	7/30/04	8/5/04	7/30/04	7/30/04		
Sampling Type	Duplicate	Normal	Normal	Normal	Normal	Duplicate		
Analytes	CAS	Default Closure Level (mg/L)						
SVOCs - 8270C (mg/L)								
Total PAHs (calculated)		NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U	
2-Methylnaphthalene	91-57-6	0.15	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Acenaphthene	83-32-9	0.46	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Acenaphthylene	208-96-8	0.071	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Anthracene	120-12-7	0.043	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Benzo(b)fluoranthene	205-99-2	0.0012	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Benzo(ghi)perylene	191-24-2	0.00026	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Benzo(k)fluoranthene	207-08-9	0.0008	NA	0.000243 U	0.000245 U	0.000248 U	0.000243 U	0.000240 U
Chrysene	218-01-9	0.0016	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Dibenzo(a,h)anthracene	53-70-3	0.00012	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Fluoranthene	206-44-0	0.21	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Fluorene	86-73-7	0.31	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Naphthalene	91-20-3	0.0083	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Phenanthrene	85-01-8	0.023	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Pyrene	129-00-0	0.14	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
1-Methylnaphthalene	90-12-0	NA	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Benzo(a)anthracene	56-55-3	0.0012	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Benzo(a)pyrene	50-32-8	0.0002	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.00022	NA	0.000485 U	0.000490 U	0.000495 U	0.000485 U	0.000481 U
TPH (mg/L)								
Diesel Range Organics	68334-30-5	NA	NA	0.058	0.051 J	0.11 J	0.089 J	0.41 J
Gasoline Range Organics	86290-81-5	NA	0.050 U	NA	NA	NA	NA	NA
VOCs - 8260B (mg/L)								
(2) Total BTEX (calculated)		0.00254 J	0.0010 U	0.00043 J				
Benzene	71-43-2	0.005	0.0010 U					
Ethylbenzene	100-41-4	0.7	0.00054 J	0.0010 U				
tert-Butyl methyl ether	1634-04-4	0.04	0.0010 U					
Toluene	108-88-3	1	0.0010 U	0.0010 U	0.00045 U	0.0010 U	0.0010 U	0.00043 U
Xylenes (total)	1330-27-7	10	0.002 J	0.0010 U				

(1) Total PAHs calculated by Parsons

(2) Total BTEX calculated by Parsons; data qualifier applied based on qualifiers for individual analyte results.

 exceeds residential default closure level

J = The analyte was analyzed for and was positively identified but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

U = The analyte was analyzed and is not present above the level of the associated value the approximate concentration. The associated numerical value indicates necessary to detect the analyte in this sample (e.g., the project reporting level).

UJ = A combination of the "U" and "J" qualifiers. The analyte analyzed was not present above the level of the associated value. The numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in the sample.

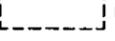
NA = Not Analyzed.

*Split Sample

Parsons ID	Split Sample ID
NH-SS-18	NH-SS-118
NH-SS-10	NH-SS-110
NH-SS-22	NH-SS-122

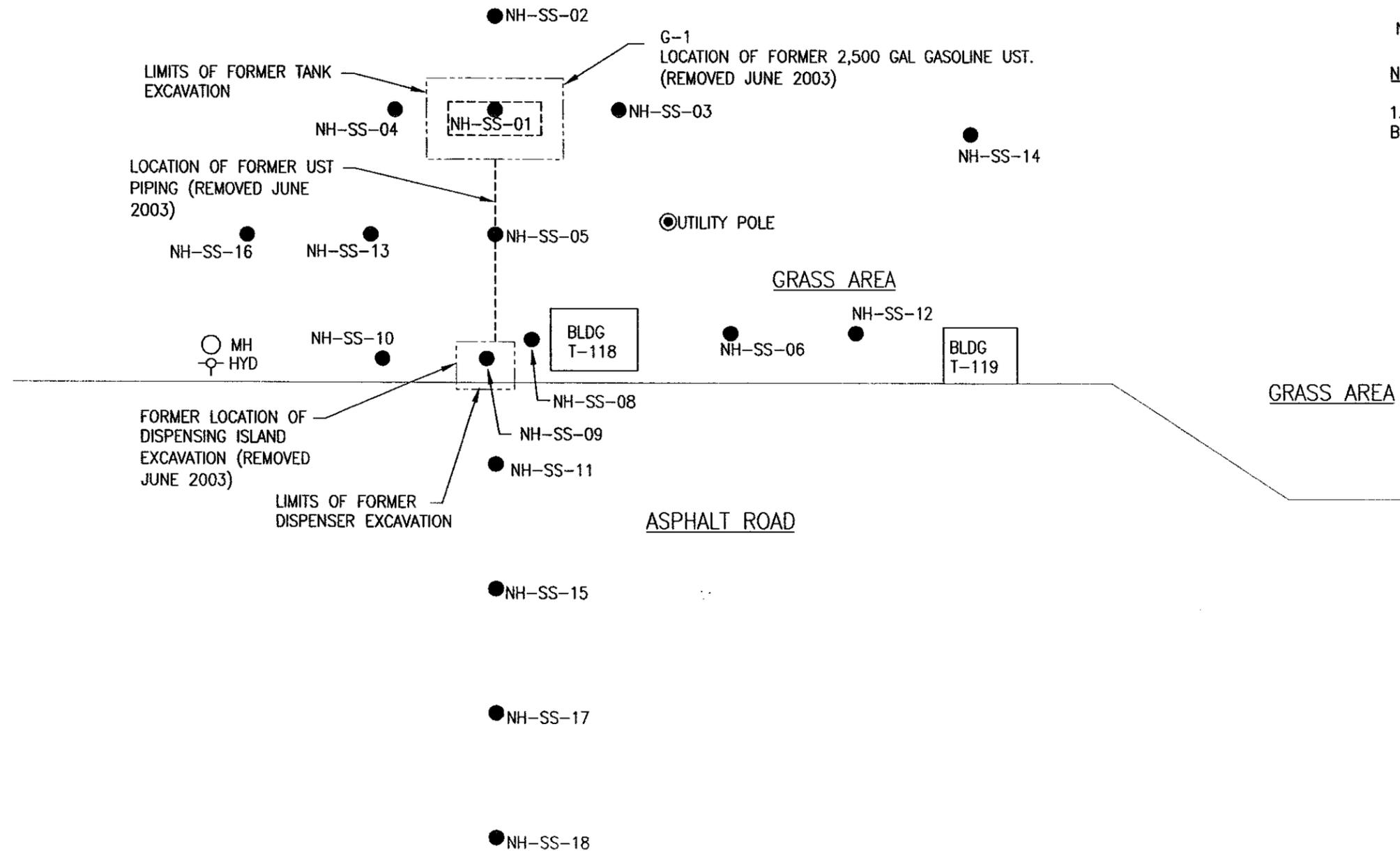


LEGEND:

-  T-118 BUILDING AND BUILDING NUMBER
-  APPROXIMATE LIMITS OF FORMER EXCAVATION
-  COMMODITY STOCKPILES OR STORAGE
-  RAILROAD
-  G-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER
- NH-SS-01  SOIL BORING LOCATION (INSTALLED JULY 2004)

NOTE:

1. NO SOIL BORING NH-SS-07 DRILLED DUE TO REVISED BORING NUMBERING SCHEME USED DURING SITE WORK.



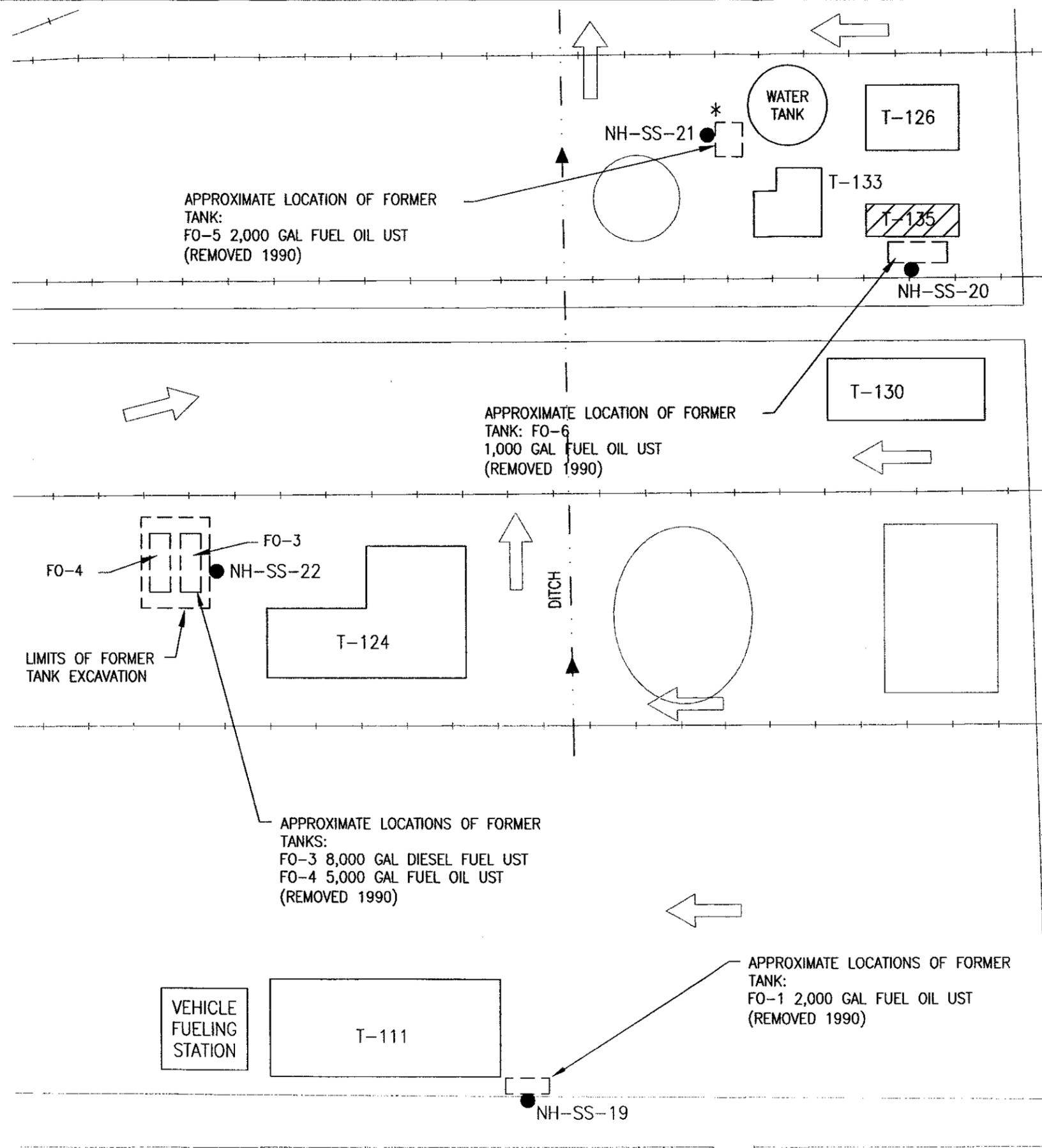
SCALE: 1"=20'

FIGURE 2.1

NEW HAVEN DEPOT
 NEW HAVEN, INDIANA
 BLDG T-118 AND T-119 AREAS
 WITH SOIL BORING LOCATIONS

PARSONS

290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560



- LEGEND:**
- T-111 BUILDING AND BUILDING NUMBER
 - SURFACE FLOW DIRECTION
 - COMMODITY STOCKPILES OR STORAGE
 - RAILROAD
 - FO-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER
 - NH-SS-19 SOIL BORING LOCATION (INSTALLED JULY 2004)
 - BUILDING NO LONGER EXISTS

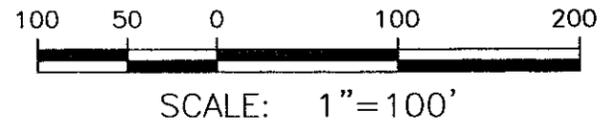
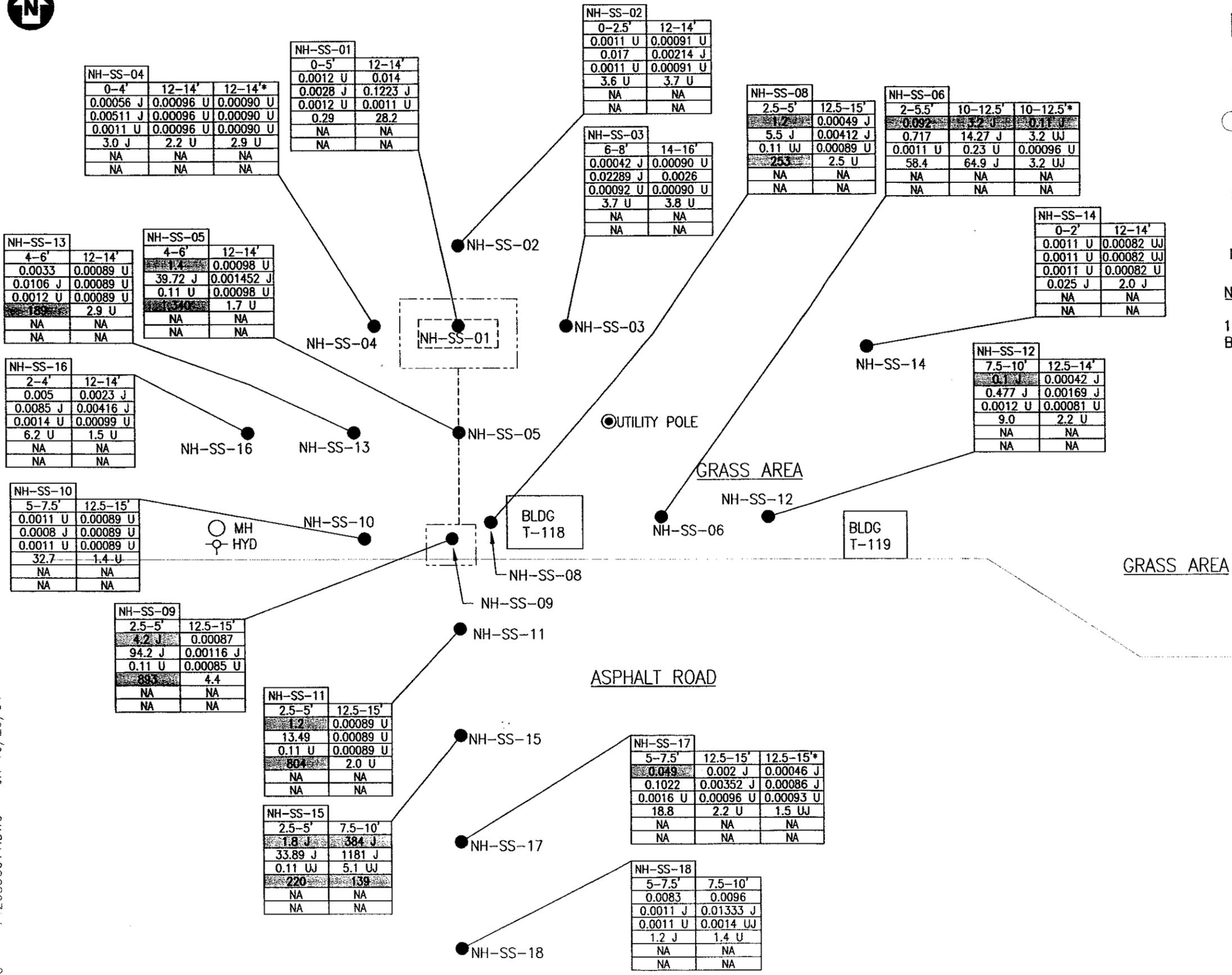


FIGURE 2.2
 NEW HAVEN DEPOT
 NEW HAVEN, INDIANA
 OIL PRODUCT STORAGE WITH
 SOIL BORING LOCATIONS

PARSONS
 290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

742685.06000 ** 742685C010.DWG ** JR 11/04/04



LEGEND:

- T-118 BUILDING AND BUILDING NUMBER
- APPROXIMATE LIMITS OF FORMER EXCAVATION
- COMMODITY STOCKPILES OR STORAGE
- RAILROAD
- G-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER

NH-SS-01 ● SOIL BORING LOCATION (INSTALLED JULY 2004)

NOTE:

1. NO SOIL BORING NH-SS-07 DRILLED DUE TO REVISED BORING NUMBERING SCHEME USED DURING SITE WORK.

NH-SS-01	SAMPLE ID
0-5'	DEPTH (FEET)
0.0012 U	BENZENE mg/kg
0.0028 J	TOTAL BTEX mg/kg
0.0012 U	MTBE mg/kg
0.29	TPH GRO mg/kg
NA	TPH DRO mg/kg
NA	TOTAL PAHs mg/kg

3.2 PARAMETER EXCEEDS IDEM DEFAULT CLOSURE LEVEL

NA NOT ANALYZED

* DUPLICATE SAMPLE

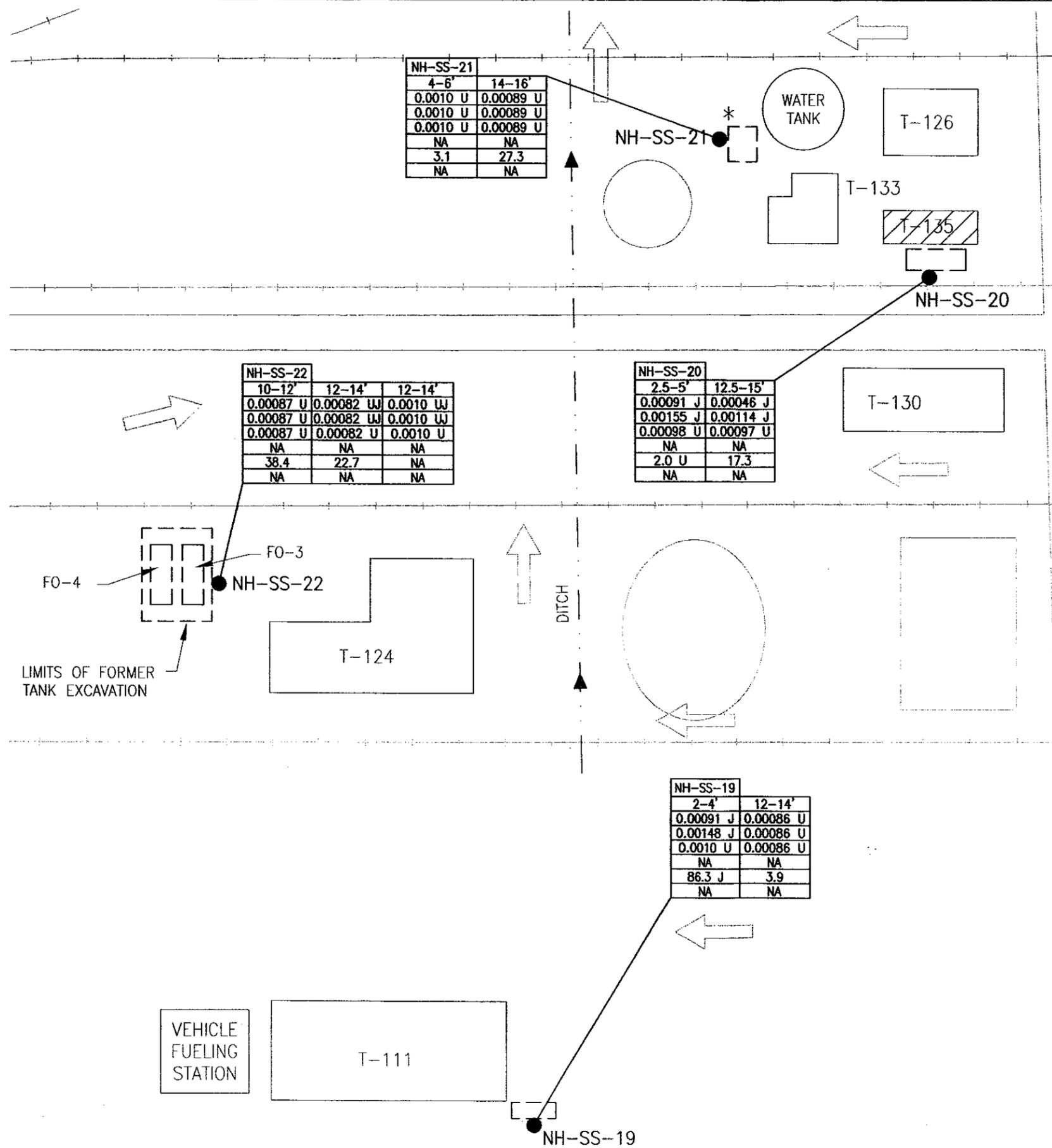
U/J SEE TABLE 2.1 FOR EXPLANATION



SCALE: 1"=20'

FIGURE 2.3
 NEW HAVEN DEPOT
 NEW HAVEN, INDIANA
 BLDG T-118 AND T-119 AREAS
 WITH SOIL ANALYTICAL DATA

742685.06000 ** 742685C011.DWG ** JR 10/25/04



NH-SS-21	
4-6'	14-16'
0.0010 U	0.00089 U
0.0010 U	0.00089 U
0.0010 U	0.00089 U
NA	NA
3.1	27.3
NA	NA

NH-SS-22		
10-12'	12-14'	12-14'
0.00087 U	0.00082 U	0.0010 U
0.00087 U	0.00082 U	0.0010 U
0.00087 U	0.00082 U	0.0010 U
NA	NA	NA
38.4	22.7	NA
NA	NA	NA

NH-SS-20	
2.5-5'	12.5-15'
0.00091 J	0.00046 J
0.00155 J	0.00114 J
0.00098 U	0.00097 U
NA	NA
2.0 U	17.3
NA	NA

NH-SS-19	
2-4'	12-14'
0.00091 J	0.00086 U
0.00148 J	0.00086 U
0.0010 U	0.00086 U
NA	NA
86.3 J	3.9
NA	NA

- LEGEND:**
- T-111 BUILDING AND BUILDING NUMBER
 - SURFACE FLOW DIRECTION
 - COMMODITY STOCKPILES OR STORAGE
 - RAILROAD
 - FO-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER
 - NH-SS-19 SOIL BORING LOCATION (INSTALLED JULY 2004)
 - BUILDING NO LONGER EXISTS

NH-SS-01	
0-5'	SAMPLE ID
0.0012 U	DEPTH (FEET)
0.0028 J	BENZENE mg/kg
0.0012 U	TOTAL BTEX mg/kg
0.29	MTBE mg/kg
NA	TPH GRO mg/kg
NA	TPH DRO mg/kg
NA	TOTAL PAHs mg/kg

- 3.2 PARAMETER EXCEEDS IDEM DEFAULT CLOSURE LEVEL
- NA NOT ANALYZED
- * DUPLICATE SAMPLE
- U/J SEE TABLE 2.1 FOR EXPLANATION



SCALE: 1"=100'

FIGURE 2.4

NEW HAVEN DEPOT
NEW HAVEN, INDIANA
OIL PRODUCT STORAGE WITH
SOIL ANALYTICAL DATA

PARSONS

290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

742685.06000 ** 742685C012.DWG ** JR 10/25/04

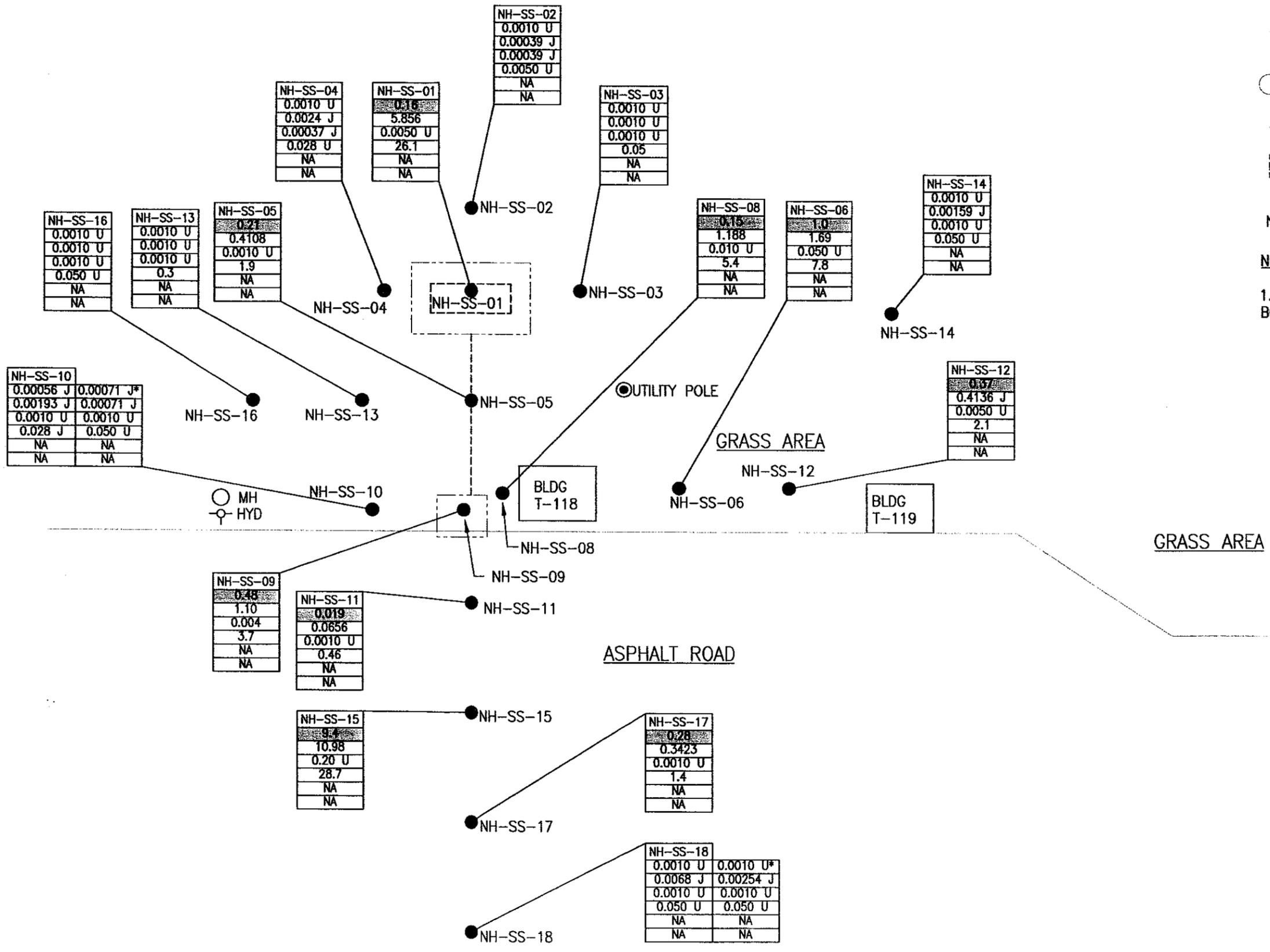


LEGEND:

- T-118 BUILDING AND BUILDING NUMBER
- APPROXIMATE LIMITS OF FORMER EXCAVATION
- COMMODITY STOCKPILES OR STORAGE
- RAILROAD
- G-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER
- NH-SS-01 ● SOIL BORING LOCATION (INSTALLED JULY 2004)

NOTES:

1. NO SOIL BORING NH-SS-07 DRILLED DUE TO REVISED BORING NUMBERING SCHEME USED DURING SITE WORK.



NH-SS-01	SAMPLE ID
0.0012 U	BENZENE mg/L
0.0028 J	TOTAL BTEX mg/L
0.0012 U	MTBE mg/L
0.29	TPH GRO mg/L
NA	TPH DRO mg/L
NA	TOTAL PAHs mg/L

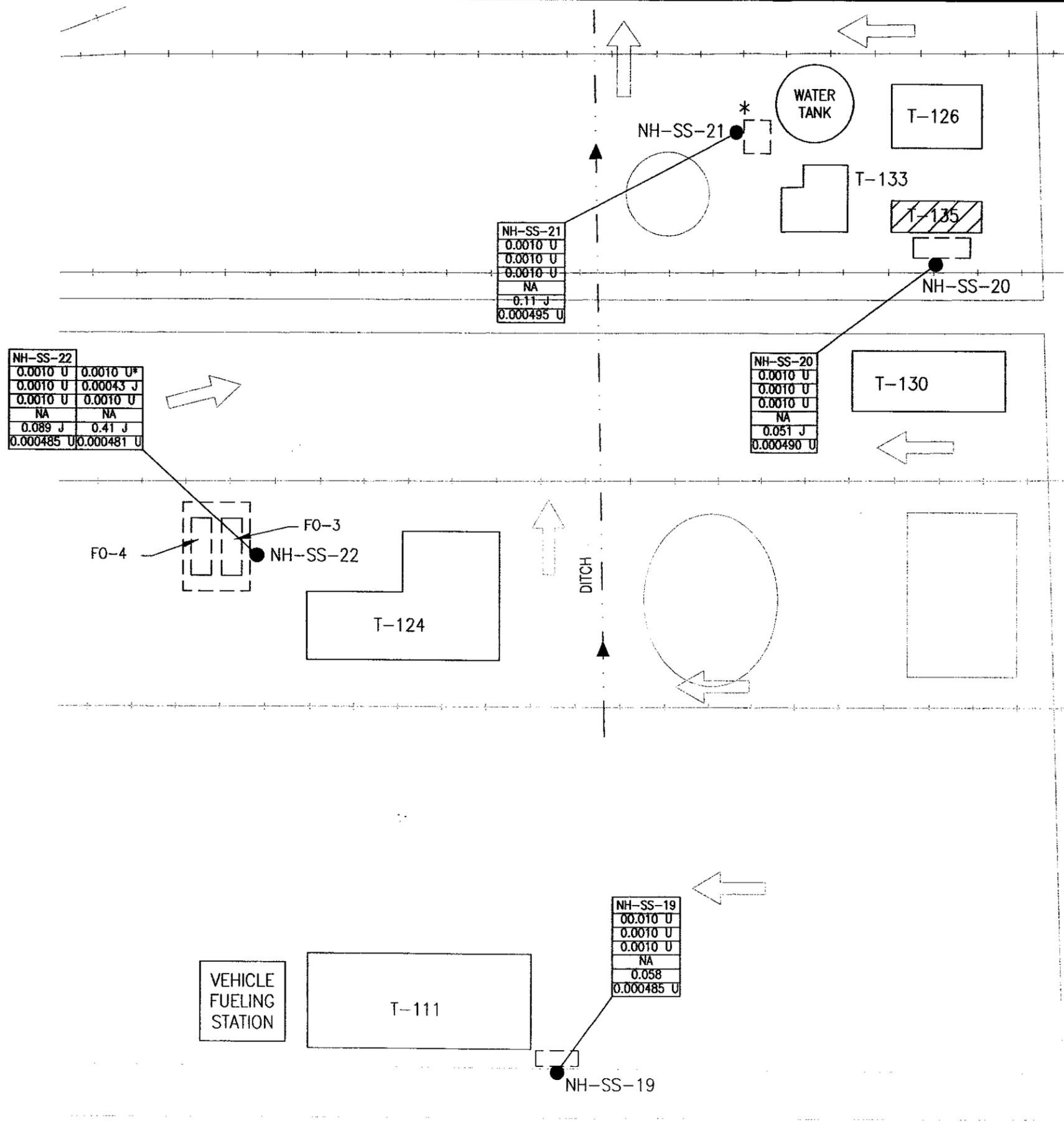
- 3.2 PARAMETER EXCEEDS IDEM DEFAULT CLOSURE LEVEL
- NA NOT ANALYZED
- * DUPLICATE SAMPLE
- U/J SEE TABLE 2.2 FOR EXPLANATION



SCALE: 1"=20'

FIGURE 2.5
 NEW HAVEN DEPOT
 NEW HAVEN, INDIANA
 BLDG T-118 & T-119 AREAS
 WITH GROUNDWATER ANALYTICAL DATA

742685.06000 ** 742685C013.DWG ** JR 10/25/04



LEGEND:

T-111 BUILDING AND BUILDING NUMBER

SURFACE FLOW DIRECTION

COMMODITY STOCKPILES OR STORAGE

RAILROAD

FO-1 LOCATION OF FORMER UST WITH TANK IDENTIFICATION NUMBER

NH-SS-19 SOIL BORING LOCATION (INSTALLED JULY 2004)

T-135 BUILDING NO LONGER EXISTS

NH-SS-01	SAMPLE ID
0.0012 U	BENZENE mg/L
0.0028 J	TOTAL BTEX mg/L
0.0012 U	MTBE mg/L
0.29	TPH GRO mg/L
NA	TPH DRO mg/L
NA	TOTAL PAHs mg/L

3.2 PARAMETER EXCEEDS IDEM DEFAULT CLOSURE LEVEL

NA NOT ANALYZED

* DUPLICATE SAMPLE

U/J SEE TABLE 2.2 FOR EXPLANATION



SCALE: 1"=100'

FIGURE 2.6

NEW HAVEN DEPOT
NEW HAVEN, INDIANA
OIL PRODUCT STORAGE WITH
GROUNDWATER ANALYTICAL DATA

PARSONS

290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

742685.06000 ** 742685C014.DWG ** JR 10/25/04

NH-SS-22	
0.0010 U	0.0010 U*
0.0010 U	0.00043 J
0.0010 U	0.0010 U
NA	NA
0.089 J	0.41 J
0.000485 U	0.000481 U

NH-SS-21	
0.0010 U	
0.0010 U	
0.0010 U	
NA	
0.11 J	
0.000495 U	

NH-SS-20	
0.0010 U	
0.0010 U	
0.0010 U	
NA	
0.051 J	
0.000490 U	

NH-SS-19	
00.010 U	
0.0010 U	
0.0010 U	
NA	
0.058	
0.000485 U	

SECTION 3

CONCLUSIONS

3.1 CONCLUSIONS

3.1.1 Based on the results of the drilling program, the site was found to be underlain by fill material underlain by silt and clay deposits. Groundwater was encountered at a depth of eight to ten feet below grade. Regional groundwater flow, based on topography, flows in a northwesterly direction.

3.1.2 Analytical results indicate the presence of residual petroleum hydrocarbon impacts to the soil and groundwater in the immediate vicinity of Area T-118. Concentrations of petroleum constituents in the soil and groundwater exceeded IDEM residential default closure levels. Soil boring locations in which exceedences were detected were NH-SS-05, NH-SS-06, NH-SS-08, NH-SS-09, NH-SS-11, NH-SS-12, NH-SS-13, NH-SS-15, and NH-SS-17.

3.1.3 No exceedences of IDEM's residential default closure levels were detected in any of the soil or groundwater samples collected from the LUST Site Investigations performed at Buildings T-111, T-124, T-133, and T-135. Therefore, no residual petroleum hydrocarbon soils or impacts to the groundwater exist at these four former LUST locations.

3.1.4 If DNSC chooses to pursue closure/remediation of Area T-118 under industrial/commercial default closure levels instead of residential default closure levels (as used in this report), then the DNSC would have to use an Environmental Restrictive Covenant (ERC), as according to the IDEM document entitled "IDEM Office of Land Quality, LUST-RISC, Chapter 3 Users Guide." The ERC would have to provide information on the nature and extent of residual contamination present and the methods to be used to control the residual contamination. The ERC must stipulate that the exposure prevention control(s) established at the site will be maintained, and that it will prohibit future changes to the site that would interfere with any controls. The ERC also must be recorded on the deed of the affected property.

3.2 RECOMMENDATIONS

3.2.1 Based on the results and conclusions of the LUST Site Investigations, there are no petroleum hydrocarbon impacts to the subsurface soil or groundwater that exceed IDEM residential risk standards at former LUST locations Building T-124, or Buildings T-111, T-133, and T-135. On this basis Parsons recommends that DNSC request closure from IDEM for LUST number 200403500 for Building T-124, as well as the current investigation issues related to Buildings T-111, T-133, and T-135. Request for closures should be made on the basis that no soil or groundwater samples collected during the LUST Site Investigations performed at the aforementioned LUST locations exceeded IDEM residential default closure levels and that no residual petroleum hydrocarbon soils or impacts to the groundwater exist at these four LUST locations.

SECTION 4

REFERENCES

- Aneptek, 1999, *Draft Treatability Study/Technical Memorandum for Petroleum, Oil, and Lubricant Facility, Site 15*. 174th Fighter Wing, New York Air National Guard, Hancock Field, Syracuse, New York, Prepared by Aneptek Corporation for the Air National Guard Readiness Center, Andrews AFB, Maryland, December 1999.
- Groundwater Technology, Inc., 1990, *Defense Logistics Agency Preliminary Investigation, New Haven, Indiana*, April 9, 1990.
- Indiana Department of Environmental Management, 2001, *IDEM Leaking Underground Storage Tank Program, RISC User's Guide – Chapter 3*, February 15, 2001.
- Indiana Department of Environmental Management, 2004, *IDEM RISC Technical Guide*, January 1, 2004.
- Indiana Department of Environmental Management, 2004, *Letter from IDEM to DNSC*, March 4, 2004.
- Indiana Department of Environmental Management, 2004, *Letter from IDEM to DNSC*, June 9, 2004.
- SES Environmental, 2003, *Underground Storage Tank Closure Assessment Area – T-119, DLA, DNSC New Haven Depot, 15440 Dawkins Road, New Haven, Indiana 46774*, August 20, 2003.
- Parsons Engineering Science, Inc, 2001, *Final Focused Site Investigation Report, New Haven Depot, New Haven, Indiana*, February 2001.
- Parsons, 2004, *Revised LUST Site Investigation Work Plan for Defense National Stockpile Center Depot in New Haven, Indiana; Area T-118 -LUST # 200402505, Area T-124 - LUST # 200403500, and Other Former LUST Sites*, October 2004.

APPENDIX A

**IDEM'S LETTERS TO DNSC DATED
MARCH 4, 2004 AND JUNE 9, 2004**



Joseph E. Kernan Governor

Lori F. Kaplan Commissioner

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

March 4, 2004

VIA CERTIFIED MAIL

70023150000330387200

Ms. Nikki Horther
General Supply Specialist
DLA/Defense National Stockpile
8725 John J Kingman Road
Fort Belvoir, VA 22060

Re: **Violation Letter and
Initial Site Characterization Request**
New Haven Depot -
Area T-118 and Area T-124
15411 Dawkins Road
FID # 17479
LUST # 200402505 and 200403500

Dear Ms. Horther:

Based on the information found in your Underground Storage Tank (UST) Closure Report of August 20, 2003 and a recent tank inspection by Brian Davenport of the Underground Storage Tank Section, there have been two confirmed releases from USTs at your facility. As the Owner and/or Operator of the facility New Haven Depot located at 15411 Dawkins Road, New Haven, Indiana, you are in violation of 329 IAC 9-4 for failure to report releases of regulated substances from your UST systems within 24 hours. The releases were assigned incident numbers 200402505 (Area T-118) and 200403500 (Area T-124).

In the future, you must report all suspected or confirmed UST system releases to the Indiana Department of Environmental Management (IDEM) in the following manner:

Non-emergency, UST system releases from USTs, piping dispensers below the ground must be reported within 24 hours. Call 317/232-8900 (toll free at 317/451-6027; ext. 2-8900)

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between 8:15 AM and 4:45 PM or call 317/233-7745 (toll free at 888/233-7745) on weekends, holiday or after hours.

Non-emergency surface spills and overfills greater than 25 gallons must be reported within 24 hours and all spills and releases subject to reporting pursuant to the Indiana Spill Rule (327 IAC 2-6.1) must be reported within two hours at 317/233-7745 (toll free at 888/233-7745).

In addition, you must develop and submit an Initial Site Characterization in accordance with IC 13-23-13,329 IAC 9-5-5.1. Within 45 days of the release notification an Initial Site Characterization (ISC) report must be submitted to IDEM. The ISC report must contain the information outlined in 329 IAC 9-5-5.1 and the Risk Integrated System of Closure. User's Guide, Appendix 1.1, February 15, 2001. A copy of this information is available at www.in.gov/idem/land/lust or may be obtained by calling 317/232-8900. In general, the ISC should include site background and history, actual or potential pathways and receptors, and the nature and extent of contamination. Please submit two paper copies of the ISC report to the following address:

67-18
Indiana Department of Environmental Management
Leaking Underground Storage Tank Section
100 N. Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

In addition, IDEM requests one digital copy of the report. For formatting and submittal guidance, please refer to <http://www.in.gov/idem/land/lust/electronicreporting.html>. If an electronic copy of the report is submitted, only one paper copy is required. In an effort to help the IDEM conserve resources and reduce paper volume, please double-side documents when practical (i.e. narrative text, laboratory reporting, etc.).

IDEM requests that all future sampling data (air, soil, and water analytical sampling results) are submitted electronically to LeakingUST@dem.state.in.us. Guidance on formatting analytical results for electronic submittal are posted at <http://www.in.gov/idem/land/lust/electronicreporting.html>. IDEM is requesting electronic submission to improve the quality and timeliness of technical reviews.

For all sites with the potential to exhibit petroleum contamination, total petroleum hydrocarbons (TPH) must be evaluated in soil. For sites potentially contaminated with gasoline, RISC stipulates that methyl tertiary butyl ether (MTBE) and benzene, toluene, ethylbenzene, and xylene (BTEX) also be evaluated as Chemicals of Concern (COCs) for both soil and groundwater. Likewise, if the potential exists for contamination from a high-end liquid hydrocarbon fuel, such as diesel or kerosene, in addition to BTEX and MTBE, RISC will require screening for carcinogenic polynuclear aromatic hydrocarbons (cPAHs) listed in Appendix 4.1 of the RISC User's Guide. **Please note:** naphthalene has recently been added to this list of COC's for high-end liquid hydrocarbons. Laboratory detection limits for all analyses should be low enough to effectively evaluate contaminant concentrations against RISC residential default closure levels. For sites contaminated with waste oil, please contact IDEM staff for guidance on waste oil analysis for RISC sites.

In an effort to enable IDEM Office of Land Quality staff to provide meaningful evaluation and interpretation of analytical results, minimum documentation of analytical quality assurance/quality control information must be provided. Please find enclosed the "Minimum Data Documentation Requirements" document. Documentation requirements as specifically outlined in the document. should be provided with any LUST program related correspondence which contain analytical results. This requirement applies to all samples collected on or after March 3, 2003. If you have any questions regarding technical issues, please call Wilfred Michira, Chemistry Section, at 317/234-0847 or email him at wmichira@dem.state.in.us.

Failure to report future releases and/or submit the ISC within the specified time frame may result in a referral to the Office of Enforcement. The significance of a formal enforcement action is the assessment of civil penalties not to exceed \$10,000 per violation per day. In addition, as long as you are not in compliance with these requirements, you are not eligible for reimbursement of claims from the Excess Liability Trust Fund (ELTF).

If you have any questions or comments, please contact Rebecca Travis at 317/234-0981

Sincerely,



Craig Schroer, Section Chief
Leaking Underground Storage Tank Section
Office of Land Quality

cc:
Allen County Health Department
Brian Davenport, IDEM UST Section

Indiana Department of Environmental Management
Minimum Data Documentation Requirements
Leaking Underground Storage Tank Sites
February 13, 2003

General requirements applicable to all samples are followed by requirements specific to analysis type.

GENERAL REQUIREMENTS FOR ALL SAMPLES

Sampling Quality Control Data and Information: . Chain-of-Custody

- . Date and time each sample was taken
- . Map or diagram indicating sample locations
- . Any notable observations (color, clarity, texture, reaction with preservatives, etc) . Trip blank (or field blank)
- . Equipment blank (rinsate blank)
- . Identity of field duplicates (a minimum of one duplicate for every 20 or fewer samples) .
Sample for site specific MS/MSD

Laboratory Quality Control Data and Information:

- . Completed Chain-of-Custody
- Date and time of receipt at the laboratory.
- Condition of samples upon receipt at the laboratory
- Sample identification number or designation
- Sample preparation, extraction, cleanup, or digestion method(s) and date(s).
- Analytical method (name, number, and source) and date of analysis.
- Final analytical results
- Case narrative (Includes deviation from standard analytical or preparatory procedure(s); quality control problems encountered--whether stemming from system, instrumentation, analyst error, or sample matrix; corrective measures taken; if corrective measures as called for in the method were not taken; results of corrective measures taken; etc.)

SPECIFIC REQUIREMENTS BY ANALYSIS TYPE

Organic Analyses

VOLATILE ORGANIC ANALYSIS VOA and SEMIVOLATILE ORGANIC ANALYSIS (SVOA)
BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

- Method blank summary sheet with results, including detections .
- Detection/quantitation limit for each compound. Internal standards summary
- Surrogate (System Monitoring Compound) results (concentration of surrogate spikes added, measured concentrations, and % Recoveries of all surrogates) for each sample
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) results (sample concentration for analyte, concentration of spike added, results, % Recovery for each compound, and Relative Percent Difference between MS and MSD for each compound)
- Laboratory Control Sample results

ANALYSIS OF VOLATILE ORGANIC COMPOUNDS and SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY (GC) Using Method-Specified Detectors (Fill, PID, HECD, etc.) and - ANALYSIS OF SEMIVOLATILE AND NONVOLATILE ORGANIC COMPOUNDS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

- . Method of sample introduction (direct injection or purge and trap)
- . Detection/quantitation limit for each compound
- . Method blank summary
- . Surrogate recoveries for samples, blanks, and spikes
- . Matrix spike/matrix spike duplicate (MS/MSD) analysis or lab duplicates
- . Laboratory Control Sample results
- . Method blank summary
- . Detection/quantitation limit for each compound (in each sample)
- . Surrogate recoveries for samples, blanks, and spikes
- . Matrix spike/matrix spike duplicate (MS/MSD) analysis or laboratory duplicates
- . Laboratory Control Sample results

ANALYSIS OF PCBS BY GAS CHROMATOGRAPHY (GC) WITH ELECTRON CAPTURE DETECTOR (ECD) OR ELECTROLYTIC CONDUCTIVITY DETECTOR (ELCD OR HECD).

- . Method blank summary
- . Detection quantitation limit for each compound (in each sample)
- . Surrogate recoveries for samples, blanks, and spikes
- . Matrix spike matrix spike duplicate (MS/MSD) analysis or laboratory duplicates
- Laboratory Control Sample Results

Metals and General Chemistry Analysis

TOTAL AND DISSOLVED METALS BY Inductively Couple Plasma Atomic Emission Spectroscopy (ICP) or Atomic Absorption Spectroscopy (AA) and **GENERAL CHEMISTRY ANALYSIS**

Method/sample quantitation limits

Instrument detection limits

Blank results

Matrix spike (sample number of sample spiked, sample concentration for analyte, concentration of spike added, results and % Recovery)

Matrix spike duplicate or laboratory duplicate (results and Relative Percent Difference (RPD); if matrix spike duplicate, also report % Recovery)

Laboratory control sample (QC standard or lab-fortified blank: results and % Recovery)

WEB AVAILABILITY AND ADDITIONAL INFORMATION

If full QA/QC documentation is requested, the requirements can be found in Appendix 2 of the Risk Integrated System of Closure (RISC) Technical Guide, pages 8-11. The RISC Technical Guide is available on the IDEM web site at:

<http://www.in.gov.idem/land/risc/techguide/riscapp2.pdf>



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

June 9, 2004

VIA CERTIFIED MAIL: 7002 3150 0003 3221 5747

Mr. Kevin Reilly
Dla/Defense National Stockpile
8725 John J. Kingman Road
Fort Belvoir, VA 22060

GEORGE M.
Rob Struch

Dear Mr. Reilly:

Re: **Further Site Investigation Request**
Dla New Haven Depot
State Highway 14
New Haven, Allen County
FID # 17479
LUST # 199002516

The technical staff of a private consultant under contract to the Indiana Department of Environmental Management (IDEM) reviewed the file pertaining to a release of petroleum product for the Dla New Haven Depot facility in New Haven, Indiana. Specifically, the following documents were reviewed:

- Initial Incident Report Log, February 1, 1990
- Preliminary Investigation Report, Groundwater Technology, Inc., April 9, 1990

Based upon the information submitted to date, we have determined that the nature and extent of the petroleum contamination has not yet been defined at the above-referenced site. Accordingly, you must conduct a Further Site Investigation (FSI) in order to fully delineate the contamination in accordance with IC 13-23 and 329 IAC 9-5-6.

According to IDEM review, it has been ascertained that additional documentation is required in order to determine the current status of the underground storage tanks that existed on the property. In particular IDEM is concerned with the status of the 1990 reported diesel releases associated with the removal of underground storage tanks.

You must submit two (2) paper copies of the FSI report within 45 days from your receipt of this letter. In addition, IDEM requests one (1) digital copy of the report. For formatting and

submittal guidance, please refer to <http://www.in.gov/idem/land/lust/electronicreporting.html>. If an electronic copy of the report is submitted, only one (1) paper copy is required.

Please refer to the Underground Storage Tank Branch Guidance Manual, October 1994 or the Risk Integrated System of Closure, February 15, 2001 when conducting and reporting these activities. Both of these non-rule policy documents are available at the web address, www.in.gov/idem/land/lust or can be obtained by calling 317/232-8900.

Please submit the FSI to the following address:

67-18
Indiana Department of Environmental Management
Office of Land Quality
Leaking Underground Storage Tank Section
P.O. Box 6015
Indianapolis, Indiana 46206-6015

If you have any questions, please contact Amy Fardy at 317/234-2955 or toll free from within Indiana at 800/451-6027.

Sincerely,

Kathleen M. Simonson
Kathleen M. Simonson
Environmental Project Manager
Leaking Underground Storage Tank Section
Office of Land Quality

KMS/af
cc: IDEM file

APPENDIX B
SOIL BORING LOGS



Contractor: EFS, Inc.					PARSONS		BORING/ WELL NO NH-SS-01	
Driller: Jay McFall					DRILLING RECORD		Sheet 1 of 1	
Inspector: Ed Ashton					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation		Location Description:	
Rig Type: Geoprobe 6610					PROJECT NUMBER: 742685.04000		See site plan	
GROUNDWATER OBSERVATIONS					Weather: Cloudy, 65°F/Light Rain in PM & 75°F		Location Plan	
Water Level	5.2				Date/Time Start: August 26, 2004/1010 & August 27, 2004/1130		See site plan	
Date	7/30/04				Date/Time Finish: August 27, 2004/1200			
Time	-							
Meas. From	TOC							
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL		SCHEMATIC	COMMENTS
0	NH-SS-01 (0'-5')		50%	5.4	0'-2.5' : Wet, -, brown, CLAY, some silt, little roots and fine gravel, no odor or stains. (Fill)			
1								
2								
3				6.1	2.5'-5' : Wet, -, brown to dark brown, FINE-MEDIUM GRAVEL, no odor or stains. (Fill)			
4								
5					5'-10' : No Recovery.			
6								
7								
8								
9								
10			60%	523	10'-12' : Wet, -, black, FINE-MEDIUM GRAVEL, sheen, petroleum odor. (Fill)			
11								
12	NH-SS-01 (12'-14')	50/6	0.6	95	12'-14' : Wet, hard, brown, SILT, some clay and fine gravel, sheen, petroleum odor. (Fill). Encountered refusal at approx. 14 feet bgs. Attempted to drill past obstruction, but was unsuccessful. Obstruction potential concrete pad from former UST.			
13					Remnants of concrete at tip of splitspoon. Hollow stem auger rig used to drill from 12 to 14 feet due to difficult subsurface conditions.			
14					Terminated soil boring at 14 feet bgs.			
15								
16					Note: Inserted PVC screen from 4' to 14' bgs.			
17								
18								
19								
20								
21								
SAMPLING METHOD					COMMENTS:			
SS = SPLIT SPOON					Collected soil samples from 0'-5' and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.			
A = AUGER CUTTINGS					Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.			
GP = GEOPROBE - DIRECT PUSH								

Contractor: EFS, Inc.					PARSONS		BORING/ WELL NO NH-SS-02	
Driller: Jay McFall					DRILLING RECORD		Sheet 1 of 1	
Inspector: Ed Ashton					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation		Location Description:	
Rig Type: Geoprobe 6610					PROJECT NUMBER: 742685.04000		See site plan	
GROUNDWATER OBSERVATIONS					Weather: Cloudy, 65°F/Light Rain in PM & 75°F			
Water Level	5.18				Date/Time Start: August 26, 2004/1115			
Date	7/30/04				Date/Time Finish: August 26, 2004/1410			
Time	-				Location Plan			
Meas. From	TOC				See site plan			
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL		SCHMATIC	COMMENTS
0	NH-SS-02 (0'-2.5')		50%	45.1	0'-2.5' : Dry, -, brown, SILT, little clay, trace roots, no odor or stains. (ML)			
1								
2								
3			-	14.7	2.5'-5' : Dry, -, brown, SILT, little clay, no odor or stains. (ML)			
4								
5			-	10.6	5'-7.5' : Moist to wet, -, brown, CLAY, some silt, trace fine gravel, stiff, low plasticity, no odor or stains. (CL/ML)			
6								
7								
8			-	10.1	7.5'-10' : Same as above. (CL/ML)			
9								
10			100%	6.5	10'-12' : Moist, -, brown to gray, CLAY, some silt, stiff, low plasticity, no odor or stains. (CL/ML)			
11								
12	NH-SS-02 (12'-14')		100%	7.2	12'-14' : Moist to wet, -, brown, CLAY, some silt, med. stiff, med. plasticity, seams of fine sand, no odor or stains. (CL/ML)			
13								
14			100%	8.5	14'-16' : Moist to wet, -, brown, CLAY, some silt, stiff, low plasticity, seam of fine sand (4-in thick) and wet at seam, no odor or stains. (CL/ML)			
15								
16			-	-	16'-18' : Blind probing to 18' bgs and inserted PVC screen. Screen from 3' to 18' bgs.			
17								
18					Terminated soil boring at 18 feet bgs.			
19								
20								
21								

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
Collected soil samples from 0'-2.5' and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.
Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

Contractor: EFS, Inc.					PARSONS DRILLING RECORD		BORING/ WELL NO NH-SS-03	
Driller: Cameron Mason					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation		Sheet 1 of 1	
Inspector: Ed Ashton					PROJECT NUMBER: 742685.04000		Location Description: See site plan	
Rig Type: CME-55								
GROUNDWATER OBSERVATIONS					Weather: Cloudy, 65°F		Location Plan	
Water Level	3.52				Date/Time Start: August 27, 2004/0745		See site plan	
Date	7/30/04				Date/Time Finish: August 27, 2004/0900			
Time	-							
Meas. From	TOC							
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL		SCHMATIC	COMMENTS
0		2/4/6/9	15	13.9	0'-2' : Dry, stiff, brown, SILT, some clay, little roots, no odor or stains. (ML/CL)			
1								
2		2/4/6/8	15	7.2	2'-3' : Dry to moist, med. stiff, brown, SILT, some clay, no odor or stains. (ML/CL)			
3					3'-4' : Moist, stiff, brown to gray, CLAY, some silt, little fine sand seams, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
4		3/5/6/9	15	40.4	4'-6' : Moist, stiff, gray, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
5								
6	NH-SS-03 (6'-8')	3/6/8/9	20	41.1	6'-8' : Moist, stiff, brown, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
7								
8		8/13 21/24	22	38.2	8'-10' : Moist, very stiff, brown, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
9								
10		4/9 13/14	22	22.7	10'-12' : Moist, very stiff, brown to gray, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
11								
12		5/9 13/15	22	25.1	12'-14' : Moist, very stiff, brown to gray, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)			
13								
14	NH-SS-03 (14'-16')	4/8 8/17	22	22.3	14'-15.5' : Moist, very stiff, gray to brown, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)			
15								
16		12/50/4 -	9	10.1	15.5'-16' : Wet, medium dense, brown, FINE TO MEDIUM SAND, little fine gravel and silt, no odor or stains. (SM) 16'-16.9' : Moist to wet, hard, brown to gray, SILT, some clay, low plasticity, stiff, no odor or stains, little fine sand, remnants of potential limestone at bottom of spoon. (ML)			
17					Refusal at 16.9' bgs.			
18		8/50/4 -	9	8	18'-18.9' : Moist to wet, hard, gray to brown, SILT, some fine sand, little clay and fine gravel, no odor or stains. (ML) Refusal at 18.9' feet and drilled with augers to 20' bgs. Inserted PVC screen from 5' to 20' bgs.			
19								
20					Terminated soil boring at 20 feet bgs.			
21								

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
Collected soil samples from 6'-8' and 14'-16' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B
Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

Contractor: EFS, Inc.					PARSONS DRILLING RECORD		BORING/ WELL NO NH-SS-04	
Driller: Cameron Mason					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation		Location Description: See site plan	
Inspector: Ed Ashton					PROJECT NUMBER: 742685.04000			
Rig Type: CME-55								
GROUNDWATER OBSERVATIONS					Weather: Cloudy, 65°F		Location Plan	
Water Level	3.05				Date/Time Start: August 27, 2004/1000		See site plan	
Date	7/30/04				Date/Time Finish: August 27, 2004/1115			
Time	-							
Meas. From	TOC							
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL		SCHEMATIC	COMMENTS
0	NH-SS-04 (0'-4')	2/6/8/10	12	46.4	0'-2' : Moist, stiff, brown, SILT, little clay, little roots, no odor or stains. (ML/CL)			
1	NH-SS-104 (0'-4')							
2		4/4/6/9	12	49.6	2'-4' : Same as above. (ML/CL)			
3								
4		3/3/6/10	22	24.8	4'-6' : Moist, stiff, brown, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)			
5								
6		3/6	22	25.2	6'-8' : Moist, very stiff, brown, CLAY, some silt, little fine sand, low plasticity, stiff, no odor or stains. (CL/ML)			
7		12/12						
8		6/12	22	28.8	8'-10' : Moist, very stiff, brown, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)			
9		14/21						
10		3/8/9/9	20	17.7	10'-12' : Moist, very stiff, gray to gray, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)			
11								
12	NH-SS-04 (12'-14')	7/7/8/9	22	22.7	12'-14' : Moist to wet, very stiff, gray to gray, CLAY, some silt, seam of fine sand present at end of splitspoon, low plasticity, stiff, no odor or stains. (CL/ML)			
13	NH-SS-204 (12'-14')							
14		9/18	20	20.1	14'-15.5' : Moist, hard, gray, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)			
15		21/50/3						
16		21/50/2	7	12.9	15.5'-15.8' : Moist to wet, hard, gray, SILT, little clay, minor seam of fine sand, no odor or stains. (ML) Refusal at 15.8' bgs.			
17		-/-			16'-16.7' : Same as interval 15.5'-15.8' with the exception dry to moist and no seam of fine sand. (ML) Refusal at 16.7' bgs.			
18		8/50/2	7	26.2	18'-18.7' : Wet, very dense, gray, FINE TO MEDIUM SAND, trace silt, no odor or stains. (SP) Refusal at 18.7 feet and drilled with augers to 20' bgs. Inserted PVC screen from 5' to 20' bgs.			
19		-/-						
20								
21					Terminated soil boring at 20 feet bgs.			
SAMPLING METHOD					COMMENTS:			
SS = SPLIT SPOON					Collected soil samples from 6'-8' and 14'-16' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.			
A = AUGER CUTTINGS					Collected soil split sample (NH-SS-104) from 0'-4' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.			
GP = GEOPROBE - DIRECT PUSH					Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.			
					Collected duplicate soil sample (NH-SS-204) from 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.			

PARSONS DRILLING RECORD					BORING/ Sheet 1 of 1 WELL NO NH-SS-05		
Contractor: EFS, Inc. Driller: Cameron Mason Inspector: Ed Ashton Rig Type: CME-55					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685.04000		
GROUNDWATER OBSERVATIONS					Location Description: See site plan		
Weather: Cloudy, 65F Date/Time Start: August 27, 2004/0745 Date/Time Finish: August 27, 2004/0900					Location Plan See site plan		
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0		1/1/1	12	11.9	0'-2': Moist, soft, brown, SILT, some clay, little roots, trace fine gravel, no odor or stains. (Fill)		
1							
2		2/2/3	6	242			
3					2'-4': Moist to wet, soft, gray, CLAY, some silt, pea-gravel, no stains, petroleum odor. (Fill)		
4	NH-SS-05 (4'-6')	2/4/5	22	2052	4'-6': Moist, stiff, gray, CLAY, some silt, low plasticity and stiff, no stains, petroleum odor. (CL/ML)		
5							
6		4/6/9/15	22	118	6'-8': Moist, very stiff, brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
7							
8		12/5	22	140			
9		15/18			8'-10': Same as above. (CL/ML)		
10		4/9	22	22.7			
11		15/21			10'-12': Moist to wet, very stiff, brown to gray, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
12	NH-SS-05 (12'-14')	6/12	20	34.5	12'-14': Moist, hard, gray, CLAY, some silt, small fine sand seam, low plasticity and stiff, no odor or stains. (CL/ML)		
13		15/21					
14		10/10	20	21.1			
15		11/13			14'-16': Moist, hard, gray, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
16		2/25	18	22.5			
17		50/6'			16'-17.7': Dry to moist, hard, gray, SILT, little clay, trace fine gravel, no odor or stains. Refusal at 17.7' bgs. (ML)		
18		50/5'	6	46.9			
19		-/-			18'-18.5': Dry, hard, brown, CLAY, some silt, trace fine gravel, low plasticity and stiff, no odor or stains. (CL/ML) Refusal at 18.5' feet and drilled with augers to 20' bgs. Inserted PVC screen from 5' to 20' bgs.		
20							
21					Terminated soil boring at 20 feet bgs.		

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

COMMENTS:
 Collected soil samples from 4'-6' and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

PARSONS DRILLING RECORD					BORING/ Sheet 1 of 1 WELL NO NH-SS-08		
Contractor: <u>EFS, Inc.</u> Driller: <u>Jay McFall</u> Inspector: <u>Ed Ashton</u> Rig Type: <u>Geoprobe 6610</u>					PROJECT NAME: <u>DNSC New Haven Depot Subsurface Investigation</u> PROJECT NUMBER: <u>742685.04000</u>		
GROUNDWATER OBSERVATIONS					Location Description: See site plan		
Water Level	7.91				Weather: Cloudy, 65F		
Date	7/30/04				Date/Time Start: August 27, 2004/0745		
Time	-				Date/Time Finish: August 27, 2004/0900		
Meas. From	TOC				Location Plan See site plan		
Sample Depth	Sample ID.	SPT	Rec. %/in/ft	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0			4 ft.	427	0'-2.5' : Moist, -, brown, CLAY, some silt and fine to medium gravel, little roots and wood, medium plasticity and stiffness, no stains, petroleum odor. (Fill)		
1							
2							
3	NH-SS-08 (2.5'-5')		-	2389	2.5'-5' : Moist, -, gray, CLAY, some silt, medium plasticity and stiffness, minor black stains at 2.5 to 3 feet, petroleum odor. (Fill)		
4							
5			5 ft.	427			
6					5'-7.5' : Moist, -, gray to brown, CLAY, some silt, little fine gravel and wood, medium plasticity and stiffness, no stains, petroleum odor. (Fill)		
7							
8				73.5	7.5'-10' : Moist, -, brown, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)		
9							
10			5 ft.	50	10'-12.5' : Moist, -, brown, CLAY, some silt, medium plasticity and stiffness, no odor or stains. (CL/ML)		
11							
12	NH-SS-08 (12.5'-15')		-	45.1	12.5'-15' : Same as above, with the exception of soil gray to brown. (CL/ML)		
13							
14							
15			5 ft.	38.1	15'-17.5' : Moist, -, gray to brown, CLAY, some silt, low plasticity, stiff, no odor or stains. (CL/ML)		
16							
17							
18				36.9	17.5'-20' : Dry to moist, -, gray, SILT, little clay and fine to medium gravel, no odor or stains. (ML)		
19					Inserted PVC screen from 5' to 20' bgs.		
20							
21					Terminated soil boring at 20 feet bgs.		

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

COMMENTS:
 Collected soil samples from 2.5'-5' and 12.5'-15' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

PARSONS DRILLING RECORD					BORING/ Sheet 1 of 1 WELL NO NH-SS-13		
Contractor: EFS, Inc. Driller: Cameron Mason Inspector: Ed Ashton Rig Type: CME-55					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685,04000		
GROUNDWATER OBSERVATIONS					Location Description: See site plan		
Weather: Sunny, 80°F Date/Time Start: August 28, 2004/0750 Date/Time Finish: August 28, 2004/0900					Location Plan See site plan		
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0		1/1/1	22	3	0'-2' : Moist, soft, brown, CLAY, some silt, little roots, trace fine gravel, low plasticity and stiff, no odor or stains. (CL/ML)		
1							
2		3/3/3/4	22	9.1			
3					2'-4' : Moist, medium stiff, brown, CLAY, some silt, medium plasticity, medium stiff, no odor or stains. (CL/ML)		
4	NH-SS-13 (4'-6')	2/3/4/7	18	115	4'-5.5' : Moist, medium stiff, brown, CLAY, some silt, medium plasticity and stiff, no odor or stains. (CL/ML)		
5					5.5'-6' : Moist to wet, medium stiff, brown, SILT, some fine sand, little clay, trace fine gravel, no odor or stains. (ML/SM)		
6		4/6/8/13	22	4.1	6'-8' : Moist, stiff, brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
7							
8		8/12	22	4.5			
9		14/16			8'-10' : Same as above except very stiff. (CL/ML)		
10		6/6	22	7.4			
11		7/10			10'-12' : Moist, stiff, brown to gray, CLAY, some silt, medium plasticity and medium stiffness, no odor or stains. (CL/ML)		
12	NH-SS-13 (12'-14')	6/8	22	3.4			
13		10/12			12'-14' : Moist to wet, very stiff, brown to gray, CLAY, some silt, little fine sand seam (13.5'-14'), low plasticity and stiff, no odor or stains. (CL/ML)		
14		8/10	22	5			
15		16/21			14'-16' : Same as above. (CL/ML)		
16		28/50/5	9	5.5			
17		-/-			16'-16.9' : Dry to moist, hard, brown, SILT, little clay, trace fine gravel, no odor or stains. Refusal at 16.9' bgs. (ML)		
18		16/50/4	9	6.4			
19		-/-			18'-18.9' : Same as above. (ML) Refusal at 18.9' feet and drilled with augers to 20' bgs. Inserted PVC screen from 5' to 20' bgs.		
20							
21					Terminated soil boring at 20 feet bgs.		

COMMENTS:

SAMPLING METHOD

SS = SPLIT SPOON

A = AUGER CUTTINGS

GP = GEOPROBE - DIRECT PUSH

Collected soil samples from 4'-6' and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

Contractor: EFS, Inc.					PARSONS DRILLING RECORD		BORING/ WELL NO NH-SS-14	
Driller: Cameron Mason					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation		Sheet 1 of 2	
Inspector: Ed Ashton					PROJECT NUMBER: 742685.04000		Location Description: See site plan	
Rig Type: CME-55								
GROUNDWATER OBSERVATIONS							Location Plan	
Water Level	11.85				Weather: Sunny, 80°F		See site plan	
Date	7/30/04				Date/Time Start: August 29, 2004/1420			
Time	-				Date/Time Finish: August 29, 2004/1600			
Meas. From	TOC							
Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHMATIC	COMMENTS	
0	NH-SS-14 (0'-2')	2/2/3/3	12	27.5	0'-0.5' : Moist, soft, dark brown, SILT, little clay, trace roots, no odor or stains. (ML)			
1					6'-2' : Moist, medium stiff, brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)			
2		3/4/4/5	22	10.1	2'-4' : Moist, medium stiff, gray, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)			
3								
4		3/3/3/3	22	5.4	4'-6' : Same as above except soil moist to wet. (CL/ML)			
5								
6		6/10 10/12	22	1.2	6'-8' : Moist, very stiff, brown, CLAY, some silt, trace fine gravel, low plasticity and stiff, no odor or stains. (CL/ML)			
7								
8		5/10 12/14	22	2.5	8'-10' : Same as above. (CL/ML)			
9								
10		6/10 10/12	22	0	10'-12' : Same as above. (CL/ML)			
11								
12	NH-SS-14 (12'-14')	8/8/8/8	22	0	12'-14' : Same as above. (CL/ML)			
13								
14		12/28 50/5/-	15	0	14'-15.5' : Moist, hard, brown, SILT, some clay, trace fine gravel, no odors or stains. (ML/CL) Refusal at 15.5' bgs.			
15								
16		-	-	-	16'-20' : Drilled to 20' bgs and inserted PVC screen from 5' to 20' bgs.			
17								
18		-	-	-				
19								
20								
21					Terminated soil boring at 20 feet bgs.			

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
GP = GEOPROBE - DIRECT PUSH

COMMENTS:
Collected soil samples from 0'-2 and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.
Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

PARSONS DRILLING RECORD					BORING/ Sheet 1 of 1 WELL NO. NH-SS-18		
Contractor: EFS, Inc. Driller: Jay McFall Inspector: Ed Ashton Rig Type: Geoprobe 6610					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685.04000		
GROUNDWATER OBSERVATIONS					Location Description: See site plan		
Weather: Sunny, 80°F Date/Time Start: August 28, 2004/1115 Date/Time Finish: August 28, 2004/1215					Location Plan See site plan		
Sample Depth	Sample I.D.	SPT	Rec. %/in/ft	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0			3.5 ft.	3.8	0'-3" : Asphalt		
1					3"-2.5' : Moist, -, gray to brown, CLAY, some silt, little fine sand and gravel below asphalt (fill material), low plasticity and stiff, no stains, petroleum odor. (Fill)		
2							
3				27.6	2.5'-5' : Moist, -, gray to brown, CLAY, some silt, low plasticity and stiff, no stains or odor. (CL/ML)		
4							
5	NH-SS-18 (5'-7.5')		5 ft.	47.6	5'-7.5' : Moist, -, brown, CLAY, some silt, medium plasticity and medium stiff, no stains or odor. (CL/ML)		
6							
7							
8	NH-SS-18 (7.5'-10')			105	(CL/ML)		
9							
10			5 ft.	51.8	10'-12.5' : Moist to wet, -, brown, CLAY, some silt, low to medium plasticity and stiff, no odor or stains. (CL/ML)		
11							
12				79.5	12.5'-15' : Same as above. (CL/ML)		
13							
14							
15					15'-20' : Blind probed to 20' bgs and inserted PVC screen from 5' to 20' bgs.		
16							
17							
18							
19							
20							
21					Terminated soil boring at 20 feet bgs.		

COMMENTS:
 Collected soil samples from 5'-7.5' and 7.5'-10' for BTEX/MTBE analysis by EPA Method 8260B and TPH-GRO analysis by EPA Method 8015B.
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.
 Collected groundwater split sample (NH-SS-118) and duplicate sample (NH-SS-218) for same analysis.

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

PARSONS DRILLING RECORD					BORING/ Sheet 1 of 1 WELL NO NH-SS-20	
Contractor: EFS, Inc. Driller: Jay McFall Inspector: Ed Ashton Rig Type: Geoprobe 6610					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685.04000	
GROUNDWATER OBSERVATIONS					Location Description: See site plan	
Water Level: 6.50 Date: 7/30/04 Time: - Meas. From: TOC					Weather: Sunny, 80°F Date/Time Start: August 28, 2004/1345 Date/Time Finish: August 28, 2004/1430	
FIELD IDENTIFICATION OF MATERIAL					Location Plan See site plan	
Sample Depth	Sample I.D.	SPT	Rec. %/in/ft	PID (ppm)	SCHEMATIC	COMMENTS
0			4 ft.	19.1		0'-2.5' : Dry to moist, -, brown, SILT, little clay, trace roots, no odor or stains. (Fill)
1						
2						
3	NH-SS-20 (2.5'-5')		-	12.9		2.5'-5' : Moist, -, brown, CLAY, some silt, low plasticity and stiff, no stains or odor. (Fill)
4						
5			5 ft.	6.7		5'-7.5' : Same as above. (CL/ML)
6						
7						
8			-	7.2		7.5'-10' : Same as above except. (CL/ML)
9						
10			5 ft.	6.8		10'-12.5' : Same as above except. (CL/ML)
11						
12			-	10.3		12.5'-15' : Same as above with the exception that soil was moist to wet. (CL/ML)
13	NH-SS-20 (12.5'-15')					
14						
15			5 ft.	11.9		15'-17.5' : Same as above with the exception that soil was moist. (CL/ML)
16						
17						
18			-	15.9		17.5'-20' : Moist, -, brown, SILT, little clay, no odor or stains. (ML) Inserted PVC screen from 5' to 20' bgs.
19						
20						
21						Terminated soil boring at 20 feet bgs.

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

COMMENTS:

Collected soil samples from 2.5'-5' and 12.5'-15' for BTEX/MTBE analysis by EPA Method 8260B, TPH-DRO analysis by EPA Method 8015B, and PAHs analysis by EPA Method 8270C.
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

Contractor: EFS, Inc. Driller: Cameron Mason Inspector: Ed Ashton Rig Type: CME-55	PARSONS DRILLING RECORD		BORING/ WELL NO NH-SS-21	Sheet 1 of 2
	PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685.04000		Location Description: See site plan	
	GROUNDWATER OBSERVATIONS			

Weather: Sunny, 80°F Date/Time Start: August 29, 2004/1230 Date/Time Finish: August 29, 2004/1415	Location Plan See site plan
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Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0		3/3/4	22	10.2	0'-2' : Moist, medium stiff, brown, CLAY, some silt, clay, low plasticity and stiff, no odor or stains. (CL/ML)		
1							
2		8/10 10/11	22	5.8	2'-4' : Moist, very stiff, brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
3							
4	NH-SS-21 (4'-6')	6/8/8/13	22	24.8	4'-6' : Same as above. (CL/ML)		
5							
6		6/8 12/12	22	2.1	6'-8' : Same as above. (CL/ML)		
7							
8		8/12 14/16	22	0.2	8'-10' : Same as above. (CL/ML)		
9							
10		8/8 8/10	12	0.1	10'-12' : Moist, very stiff, gray to brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
11							
12		4/4/7/12	0	NA	12'-14' : No recovery.		
13							
14	NH-SS-21 (14'-16')	10/10 11/14	22	0.3	14'-16' : Moist to wet, very stiff, gray, CLAY, some silt, trace fine gravel, low plasticity and stiff, no odors or stains. (CL/ML)		
15							
16		18/21 25/32	22	0.1	16'-18' : Same as above with the exception soil dry to moist and hard. (CL/ML)		
17							
18		50/0/- -/-	0	NA	18'-20' : No recovery. Refusal at 18' bgs. Drilled to 20' bgs and inserted PVC screen from 5' to 20' bgs.		
19							
20							
21					Terminated soil boring at 20 feet bgs.		

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

COMMENTS:
 Collected soil samples from 4'-6 and 14'-16' for BTEX/MTBE analysis by EPA Method 8260B, TPH-DRO analysis by EPA Method 8015B, and PAHs analysis by EPA Method 8270C.
 Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above.

Contractor: EFS, Inc. Driller: Cameron Mason Inspector: Ed Ashton Rig Type: CME-55					PARSONS DRILLING RECORD		BORING/ Sheet: 1 of 2 WELL NO NH-SS-22				
					PROJECT NAME: DNSC New Haven Depot Subsurface Investigation PROJECT NUMBER: 742685.04000		Location Description: See site plan				
GROUNDWATER OBSERVATIONS					Weather: Sunny, 80°F Date/Time Start: August 29, 2004/1030 Date/Time Finish: August 29, 2004/1215		Location Plan See site plan				
Water Level	Date	Time	Meas. From	Sample Depth	Sample I.D.	SPT	Rec. %/in.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
8.87	7/30/04	-	TOC	0		6/7/7/11	3	13.4	stains. (Fill)		
				1							
				2		4/5/5/5	0	NA	2'-4': No recovery.		
				3							
				4		3/3/3/3	22	1.6	4'-6' : Moist, medium stiff, brown, CLAY, some silt, medium plasticity and medium stiff, no odor or stains. (CL/ML)		
				5							
				6		3/4/6/6	22	7.8	6'-8' : Moist to wet, stiff, brown, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
				7							
				8		6/8/8/13	22	8.1	8'-10' : Same as above with the exception soil very stiff and trace gravel present. (CL/ML)		
				9							
				10	NH-SS-22 (10'-12')	8/12 14/15	22	11.1	10'-12' : Same as above. (CL/ML)		
				11							
				12	NH-SS-22 (12'-14')	6/6/6/13	22	5.4	12'-14' : Moist to wet, stiff, gray, CLAY, some silt, low plasticity and stiff, no odor or stains. (CL/ML)		
				13	NH-SS-122 (12'-14')						
				14	NH-SS-222 (12'-14')	12/14 18/23	22	7.8	14'-15' : Moist to wet, very stiff, brown to gray, CLAY, some silt, low plasticity and stiff, no odors or stains. (CL/ML) (SM)		
				15							
				16		8/21 23/50/4	22	2	16'-17.8' : Moist to wet, hard, gray, CLAY, some silt, seams of fine sand, low plasticity and stiff, no odors or stains. (CL/ML) Refusal at 17.8'bgs.		
				17							
				18		21/23 50/4/-	22	5.4	18'-20' : Same as above with the except soil moist to wet. (ML/CL) Refusal at 19.3' bgs. Drilled to 20' bgs and inserted PVC screen from 5' to 20' bgs.		
				19							
				20							
				21					Terminated soil boring at 20 feet bgs.		

SAMPLING METHOD
 SS = SPLIT SPOON
 A = AUGER CUTTINGS
 GP = GEOPROBE - DIRECT PUSH

COMMENTS:

Collected soil samples from 10'-12 and 12'-14' for BTEX/MTBE analysis by EPA Method 8260B, TPH-DRO analysis by EPA Method 8015B, and PAHs analysis by EPA Method 8270C. Also, collected soil split sample (NH-SS-122 (12'-14')) and duplicate sample (NH-SS-222) for same analysis. Also, collected groundwater sample from temporary PVC well point for same analysis mentioned above. Collected groundwater split sample (NH-SS-122) and duplicate sample (NH-SS-222) for same analysis.

APPENDIX C

DATA USABILITY REPORT

DATA VALIDATION SUMMARY REPORT

for samples collected from

NEW HAVEN DEPOT

New Haven, Indiana

Data Validation by: Richard Cheatham

Parsons – Denver, Colorado

INTRODUCTION

The following data validation summary report covers eight (8) soil samples collected from New Haven Depot on July 26-27, 2004. Samples were collected in Encore® samplers. The samples in the following Sample Delivery Group (SDG) were analyzed for one or more of the following analytical parameters: project specific Volatile Organic Compounds (VOCs) by Method SW8260B and Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-GRO) by Method SW8015B. The required data flag changes are summarized on Table 1.

Sample ID	Sample Date	Lab Sample ID	VOCs (BTEX + MTBE)	PAHs	TPH (GRO)	TPH (DRO)
NH-SS-01-0-5	07/26/04	117744001	X		X	
NH-SS-01-12-14	07/27/04	117744002	X		X	
NH-SS-01-12-14 DL	07/27/04	117744002	X			
NH-SS-02-0-2.5	07/26/04	117744003	X		X	
NH-SS-02-12-14	07/26/04	117744004	X		X	
NH-SS-03-6-8	07/27/04	117744005	X		X	
NH-SS-03-14-16	07/27/04	117744006	X		X	
NH-SS-08-2.5-5	07/27/04	117744007	X		X	
NH-SS-08-12.5-15	07/27/04	117744008	X		X	

All samples were collected by Parsons and analyzed by General Engineering Laboratories, LLC (GEL) following the procedures outlined in the Statement of Work (SOW).

The cooler associated with this SDG was received by the laboratory at a temperature of 3°C.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES

General

The Method SW8260B (VOCs) portion of this SDG consisted of eight (8) soil samples, two method blanks, two LCSs and one LCSD. The samples were collected on July 27-28, 2004 with Encore® samplers and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

- The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCS/LCSD and surrogate spikes.

- The LCSs and LCSD recoveries were within acceptance criteria.
- The reported result for Xylenes in sample NH-SS-01-12-14 exceeded the calibration range and has been qualified as estimated (J).
- Surrogate recoveries were within acceptance criteria within the following samples for which reanalysis was not performed due to insufficient sample volume.

Sample ID	Surrogate Compound	% R	Qual
NH-SS-01-12-14 DL	Toluene-d8	78	J/UJ
	Bromofluorobenzene	73	J/UJ
NH-SS-08-2.5-5	Bromofluorobenzene	79	J/UJ

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD results.

- LCS/LCSD %RPDs were compliant.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and

- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- Samples were prepared and analyzed within the holding time required by the method.
- Samples NH-SS-001-12-14 and NH-SS-08-2.5-5 were diluted using the methanol extraction procedure for high-level concentration samples.
- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- Internal standard criteria were met.
- There was one methanol blank associated with this SDG. The methanol blank was not free of any target VOCs at or above half of the reporting limit (RL). Results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (ug/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
Toluene	NH-SS-01-12-14 DL	0.11	MBLK01	0.086	0.430	43.0	0.13	U
Xylenes	NH-SS-01-12-14 DL	0.76	MBLK01	0.074	0.370	37.0	0.13	U
Toluene	NH-SS-08-2.5-5	10.2	MBLK01	0.086	0.430	43.0	0.00089	U
Xylenes	NH-SS-08-2.5-5	22.0	MBLK01	0.074	0.370	37.0	0.00089	U

- There were two method blanks associated with this SDG. The method blanks were not free of any target VOCs at or above half of the reporting limit (RL). Results are as follows: VBLK01 contained detectable levels of Toluene, Ethylbenzene, and Xylene at levels <0.5RL so sample reanalysis was not required. VBLK02 contained detectable level of Toluene at level >0.5RL so sample reanalysis was required but no performed due to holding time and instrumentation constraints. Sample results have been qualified as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (mg/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
Ethylbenzene	NH-SS-03-14-16	0.00042	VBLK01	0.00038	0.0019			U
Xylenes	NH-SS-03-14-16	0.0021	VBLK01	0.00042	0.0021			U
Toluene	NH-SS-01-0-5	0.0011	VBLK02	0.00087	0.00435			U
Toluene	NH-SS-03-6-8	0.0021	VBLK02	0.00087	0.00435			U
Toluene	NH-SS-08-12.5-15	0.0035	VBLK02	0.00087	0.00435			U

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected(R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Data qualified as estimated (J or UJ) based on low surrogate compound recoveries should be considered to be possibly biased low. Data qualified as undetected (U) based on methanol blank contamination should be considered as potential false-positives. Data qualified as estimated (J) based on exceeding calibration range should be considered estimates; results from dilution analyses should preferentially be used.

TPH – GASOLINE RANGE ORGANICS (GRO)

General

The TPH – GRO portion of this SDG consisted of eight (8) soil samples. The samples were collected on July 26-27, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCS, MS/MSD, and surrogate spikes. There were two analytical batches involved in this SDG.

- The LCS recoveries were within acceptance criteria.
- MS/MSD recovery results met acceptance criteria. Laboratory reported results from sample NH-SS-14-12-14 (SDG 118074).
- All surrogate recoveries for reported sample result were within the surrogate acceptance criteria. Laboratory reported that two sets of low-level analyses were completed with similar results: low surrogate recoveries and purging difficulties in the initial analyses and that due to depleted sample volume it was necessary to analyze the medium-level sample aliquots to achieve acceptable results. Samples affected include: NH-SS-01-12-14, NH-SS-02-0-2.5, NH-SS-02-12-14, NH-SS-03-6-8, NH-SS-03-14-16, NH-SS-08-2.5-5, and NH-SS-08-12.5-15.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD and MS/MSD results.

- LCS/LCSD RPD results met acceptance criteria.
- MS/MSD RPD results met acceptance criteria. Laboratory reported results from sample NH-SS-14-12-14 (SDG 118074).

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL.

- All samples were prepared and analyzed within the holding time required by the method.
- All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- Greater than samples including the LCS and the blank were run between the 1st and 2nd CCVs of the analytical sequence. The LCS recovery was acceptable. The 2nd CCV was compliant. No project samples from this SDG were affected. The associated LCS recoveries were acceptable. No data have been qualified based on this circumstance.
- All manual integration were performed properly and verified by the data validator.
- Laboratory reported that the following samples were analyzed via methanol extraction (medium-level) because Encore® aliquots were not available to allow for another (third) low-level analysis: NH-SS-01-12-14, NH-SS-02-0-2.5, NH-SS-02-12-14, NH-SS-03-6-8, NH-SS-03-14-16, NH-SS-08-2.5-5, NH-SS-08-12.5-15.
- There were two method blanks associated with this SDG. Both method blanks were free of GRO at or above half of the reporting limit (RL); VBLK01 contained GRO at 42% of R; GRO in associated samples was >5x blank amount so no sample results were qualified.

- There was one methanol blank (medium level) is associated with this SDG. The methanol blank was free of any target VOCs at or above half of the reporting limit (RL), but a detectable quantity of GRO was reported. Evaluation results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (ug/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
GRO	NH-SS-02-0-2.5	3.6	HBLK01	3.3	16.5		50.0	U
GRO	NH-SS-02-12-14	3.7	HBLK01	3.3	16.5		50.0	U
GRO	NH-SS-03-14-16	3.8	HBLK01	3.3	16.5		50.0	U
GRO	NH-SS-03-6-8	3.7	HBLK01	3.3	16.5		50.0	U
GRO	NH-SS-08-12.5-15	2.5	HBLK01	3.3	16.5		50.0	U

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples. Data qualified as undetected (U) based on methanol blank contamination should be considered as potential false-positives. All data quality objectives (DQO) were met and all data are usable.

The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/kg)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Tert-Butyl methyl ether	0.13	U	UJ	Surrogate %R
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Benzene	0.16	D	J	Surrogate %R
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Toluene	0.11	DJB	J	Surrogate %R
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Ethylbenzene	0.17	D	J	Surrogate %R
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Xylenes	0.76	D	J	Surrogate %R
NH-SS-08-2.5-5	07/27/04	117744	117744007	Tert-Butyl methyl ether	0.11	U	UJ	Surrogate %R
NH-SS-08-2.5-5	07/27/04	117744	117744007	Benzene	1.2		J	Surrogate %R
NH-SS-08-2.5-5	07/27/04	117744	117744007	Toluene	10.2	B	J	Surrogate %R
NH-SS-08-2.5-5	07/27/04	117744	117744007	Ethylbenzene	4.3		J	Surrogate %R
NH-SS-08-2.5-5	07/27/04	117744	117744007	Xylenes	22.0		J	Surrogate %R
NH-SS-01-12-14	07/27/04	117744	117744002	Xylenes	0.35	EB	J	Calibration range exceeded

NH-SS-03-14-16	07/27/04	117744	117744006	Ethylbenzene	0.00042		U	Method blank
NH-SS-03-14-16	07/27/04	117744	117744006	Xylenes	0.0021		U	Method blank
NH-SS-01-0-5	07/26/04	117744	117744001	Toluene	0.0011		U	Method blank
NH-SS-03-6-8	07/27/04	117744	117744005	Toluene	0.0021		U	Method blank
NH-SS-08-12.5-15	07/27/04	117744	117744008	Toluene	0.0035		U	Method blank
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Toluene	0.11	DJB	U	Methanol blank
NH-SS-01-12-14 DL	07/27/04	117744	117744002	Xylenes	0.76	D	U	Methanol blank
NH-SS-08-2.5-5	07/27/04	117744	117744007	Toluene	10.2	B	U	Methanol blank
NH-SS-08-2.5-5	07/27/04	117744	117744007	Xylenes	22.0		U	Methanol blank
NH-SS-02-0-2.5	07/26/04	117744	117744003	Gasoline Range Organics	3.6	J	U	Methanol blank
NH-SS-02-12-14	07/26/04	117744	117744004	Gasoline Range Organics	3.7	J	U	Methanol blank
NH-SS-03-14-16	07/27/04	117744	117744006	Gasoline Range Organics	3.8	J	U	Methanol blank
NH-SS-03-6-8	07/27/04	117744	117744005	Gasoline Range Organics	3.7	J	U	Methanol blank
NH-SS-08-12.5-15	07/27/04	117744	117744008	Gasoline Range Organics	2.5	J	U	Methanol blank

DATA VALIDATION SUMMARY REPORT

for samples collected from

NEW HAVEN DEPOT

New Haven, Indiana

Data Validation by: Richard Cheatham

Parsons – Denver, Colorado

INTRODUCTION

The following data validation summary report covers eighteen (18) soil samples collected from New Haven Depot on July 27-28, 2004. Samples were collected in Encore® samplers. The samples in the following Sample Delivery Group (SDG) were analyzed for one or more of the following analytical parameters: project specific volatile organic compounds (VOCs) by Method SW8260B and Total petroleum hydrocarbons-gasoline range organics (TPH-GRO) by Method SW8015B. The required data flag changes are summarized on Table 1.

Sample ID	Sample Date	Lab Sample ID	VOCs (BTEX + MTBE)	PAHs	TPH (GRO)	TPH (DRO)
NH-SS-06-2.5-5	07/27/04	117850001	X		X	
NH-SS-06-2.5-5 DL	07/27/04	117850001	X			
NH-SS-05-4-6	07/27/04	117850002	X		X	
NH-SS-05-4-6 DL	07/27/04	117850002	X			
NH-SS-05-12-14	07/27/04	117850003	X		X	
NH-SS-10-5-7.5	07/27/04	117850004	X		X	
NH-SS-10-12.5-15	07/27/04	117850005	X		X	
NH-SS-12-7.5-10	07/27/04	117850006	X		X	
NH-SS-12-7.5-10 DL	07/27/04	117850006	X			
NH-SS-12-12.5-14	07/27/04	117850007	X		X	
NH-SS-06-10-12.5	07/27/04	117850008	X		X	
NH-SS-206-10-12.5	07/27/04	117850009	X		X	
NH-SS-206-10-12.5 DL	07/27/04	117850009	X			
NH-SS-13-4-6	07/28/04	117850010	X		X	
NH-SS-11-2.5-5	07/28/04	117850011	X		X	
NH-SS-04-0-4	07/27/04	117850012	X		X	
NH-SS-04-12-14	07/27/04	117850013	X		X	
NH-SS-204-12-14	07/27/04	117850014	X		X	
NH-SS-09-2.5-5	07/27/04	117850015	X		X	
NH-SS-09-2.5-5 DL	07/27/04	117850015	X			
NH-SS-09-12.5-15	07/27/04	117850016	X		X	
NH-SS-13-12-14	07/28/04	117850017	X		X	
NH-SS-11-12.5-15	07/28/04	117850018	X		X	

The field quality control samples collected in association with this SDG included two field duplicate samples.

All samples were collected by Parsons and analyzed by General Engineering Laboratories, LLC (GEL) following the procedures outlined in the Statement of Work (SOW).

The cooler associated with this SDG was received by the laboratory at a temperature of 2°C.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES

General

The Method SW8260B (VOCs) portion of this SDG consisted of one set of MS/MSD, and three sets of method blanks and of LCSs. The eighteen (18) soil samples were collected on July 27-28, 2004 using Encore® samplers and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

- The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method, with the exception of the reanalyses for samples NH-SS-05-4.6, NH-SS-12-7.5-10, and NH-SS-09-2.5-5.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes.

- The LCS recoveries were within acceptance criteria.
- Sample NH-SS-06-2.5-5 was used for MS/MSD. Recoveries were within acceptance criteria.
- Not all sample results were within calibration range. The following results have been qualified as estimated (J) because the results exceeded the calibration range:

Sample ID	Analyte	Qualifier	Reason
NH-SS-06-2.5-5	Ethylbenzene	J	Calibration range exceeded
NH-SS-06-2.5-5	Xylenes	J	Calibration range exceeded

NH-SS-09-2.5-5	Benzene	J	Calibration range exceeded
NH-SS-09-2.5-5	Toluene	J	Calibration range exceeded
NH-SS-09-2.5-5	Ethylbenzene	J	Calibration range exceeded
NH-SS-09-2.5-5	Xylenes	J	Calibration range exceeded
NH-SS-12-7.5-10	Benzene	J	Calibration range exceeded
NH-SS-206-10-12.5	Benzene	J	Calibration range exceeded

- Surrogate recoveries were not within acceptance criteria within the following samples for which reanalysis was not performed due to insufficient sample volume and holding time expiration.

Sample ID	Surrogate Compound	% R	Qual
NH-SS-12-12.5-14	Toluene-d8	120	J
	Bromofluorobenzene	142	
NH-SS-206-10-12.5	Bromofluorobenzene	133	J
NH-SS-09-2.5-5	Toluene-d8	247	J
	Bromofluorobenzene	662	

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-06-2.5-5 was designated for MS/MSD.

- MS/MSD %RPDs were compliant.

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Two field duplicate pair were associated with this SDG: NH-SS-06-10-12.5/NH-SS-206-10-12.5, NH-SS-04-12-14/NH-SS-204-12-14. NH-SS-06-10-12.5 field duplicate RPD values for all four analytes exceeded the project advisory limit of 50%RPD. Sample results have been qualified as estimated (J). The reported results for NH-SS-04-12-14 and its duplicate were all "U" so the field duplicate criterion is considered met.

- Field duplicate results are as follows:

Duplicate Set	Analyte	PQL	Sample Conc (mg/kg)	Duplicate Conc (mg/kg)	% RPD	Diff (mg/kg)	Out of Limit (Y/N)
NH-SS-06-10-12.5/ NH-SS-206-10-12.5	Benzene		3.2	0.54			Y
NH-SS-06-10-12.5/ NH-SS-206-10-12.5	Toluene		0.67	0.061			Y
NH-SS-06-10-12.5/ NH-SS-206-10-12.5	Ethylbenzene		1.5	0.041			Y
NH-SS-06-10-12.5/ NH-SS-206-10-12.5	Xylenes		8.9	0.26			Y
NH-SS-04-12-14/ NH-SS-204-12-14	All "U"						-

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- Samples were prepared and analyzed within the holding time required by the method, with the exception of the dilution reanalyses for samples NH-SS-05-4-6, NH-SS-12-7.5-10, and NH-SS-09-2.5-5.

Sample	Collection Date	Days From Sampling to Extraction	Days From Sampling to Analysis	Properly Preserved (Y/N)	Qualification
NH-SS-05-4-6 DL	07/27/04		16	Y	J/UJ
NH-SS-12-7.5-10 DL	07/27/04		15	Y	J/UJ
NH-SS-09-2.5-5 DL	07/27/04		16	Y	J/UJ

- Samples NH-SS-06-2.5-5, NH-SS-05-4-6, NH-SS-12-7.5-10, NH-SS-06-10-12.5, NH-SS-206-10-12.5, NH-SS-11-2.5-5, NH-SS-09-2.5-5, NH-SS-06-2.5-5 MS/MSD were diluted using the methanol extraction procedure for high-level concentration samples.
- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- As reported by the laboratory, the analytical results for the following samples were potentially affected by "sample carryover": NH-SS-05-12-14, NH-SS-10-5-7.5, NH-SS-13-4-6, and NH-SS-04-0-4. No data were qualified based on this unverifiable information.
- Internal standard criteria were met, with the following exceptions: original analyses of NH-SS-12-2.5-5, NH-SS-206-10-12.5, NH-SS-09-2.5-5; samples reanalyses were not performed (not confirmed) due to insufficient sample volume.

Sample	Internal Standard	Identified Criteria	Group Affected*	Qual.
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		Failed		
NH-SS-12-12.5-14	1,4-Dichlorobenzene-d4	Area	3 (No target analytes)	-
NH-SS-206-10-12.5	1,4-Dichlorobenzene-d4	Area	3 (No target analytes)	-
NH-SS-09-2.5-5	1,4-Dichlorobenzene-d4	Area	3 (No target analytes)	-

- There were four method blanks associated with this SDG. All four method blanks were free of any target VOCs at or above half of the reporting limit (RL). No analytes were detected.
- There was one methanol blank (medium analysis) associated with this SDG. No analytes were detected.

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected (R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Data qualified as estimated (J or UJ) based on holding time exceedances should be considered to be possibly biased low. Data qualified as estimated (J) based on high surrogate compound recoveries should be considered to be possibly biased high. Data qualified as estimated (J) based on exceeding calibration range should be considered estimated; results from dilution analyses should preferentially be used. Data qualified as estimated (J) based on field duplicate results should be evaluated based on knowledge of sampling and site conditions.

TPH – GASOLINE RANGE ORGANICS (GRO)

General

The TPH – GRO portion of this SDG consisted of eighteen (18) soil samples, including two field duplicate samples, and one set of MS/MSD. The samples were collected on July 27-28, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCS, MS, and surrogate spikes. There was one analytical batches involved in this SDG.

- The LCS recovery was within acceptance criteria.

- The MS and MSD recoveries for sample NH-SS-06-2-5 were within acceptance criteria.
- All surrogate recoveries were within the surrogate acceptance criteria.

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD and parent/FD results. Samples NH-SS-06-10-12.5 and NH-SS-04-12-14 were collected in duplicate. The duplicate sample IDs are NH-SS-206-10-12.5 and NH-SS-204-12-14, respectively.

- MS/MSD RPD results for sample NH-SS-06-2-5 are within acceptance criteria.

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Two field duplicate pairs were associated with this SDG: NH-SS-06-10-12.5/NH-SS-206-10-12.5, NH-SS-04-12-14/NH-SS-204-12-14. NH-SS-06-10-12.5 field duplicate RPD values for GRO exceeded the project advisory limit of 50%RPD. Sample results have been qualified as estimated (J). The reported results for NH-SS-04-12-14 and its duplicate were both <RL so an RPD value has not been calculated. Evaluation results are as follows:

Duplicate Set	Analyte	PQL	Sample Conc (mg/kg)	Duplicate Conc (mg/kg)	% RPD	Diff (mg/kg)	Out of Limit (Y/N)
NH-SS-06-10-12.5/ NH-SS-206-10-12.5	GRO		64.9	3.2	179		Y
NH-SS-04-12-14/ NH-SS-204-12-14	GRO		2.2	2.9	27		N

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL.

- All samples were prepared and analyzed within the holding time required by the method.
- All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.

- Greater than ten samples including the LCS and the blank were run between the 1st and 2nd CCVs of the analytical sequence. The LCS recovery was acceptable. The 2nd CCV was compliant. No data have been qualified based on this circumstance.
- All manual integration were performed properly and verified by the data validator.
- There was one method blank associated with this SDG. The method blank was free of GRO at or above half of the reporting limit (RL). No analytes were detected.
- There was one methanol blank (medium level) associated with this SDG. The methanol blank was free of GRO at or above half of the reporting limit (RL) but contained GRO at 1.7 mg/kg. Evaluation results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (mg/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
GRO	NH-SS-04-0-4	3.0	HBLK01	1.7	8.5			U
GRO	NH-SS-04-12-14	2.2	HBLK01	1.7	8.5			U
GRO	NH-SS-05-12-14	1.7	HBLK01	1.7	8.5			U
GRO	NH-SS-10-12.5-15	1.4	HBLK01	1.7	8.5			U
GRO	NH-SS-11-12.5-15	2.0	HBLK01	1.7	8.5			U
GRO	NH-SS-12-12.5-14	2.2	HBLK01	1.7	8.5			U
GRO	NH-SS-13-12-14	2.9	HBLK01	1.7	8.5			U
GRO	NH-SS-204-12-14	2.9	HBLK01	1.7	8.5			U
GRO	NH-SS-206-10-12.5	3.2	HBLK01	1.7	8.5			U

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples and data qualifiers were applied. Data qualified as estimated (J) based on field duplicate results should be evaluated with knowledge of sampling and site conditions. All data quality objectives (DQO) were met and all data are usable.

The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/kg)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-12-12.5-14	07/27/04	117850	117850007	Benzene	0.00042	J	J	Surrogate %R
NH-SS-12-12.5-14	07/27/04	117850	117850007	Toluene	0.00033	J	J	Surrogate %R
NH-SS-12-12.5-14	07/27/04	117850	117850007	Ethylbenzene	0.00038	J	J	Surrogate %R
NH-SS-12-12.5-14	07/27/04	117850	117850007	Xylenes	0.00056	J	J	Surrogate %R
NH-SS-206-10-12.5	07/27/04	117850	117850009	Benzene	0.54	E	J	Surrogate %R
NH-SS-206-10-12.5	07/27/04	117850	117850009	Toluene	0.061		J	Surrogate %R
NH-SS-206-10-12.5	07/27/04	117850	117850009	Ethylbenzene	0.041		J	Surrogate %R
NH-SS-206-10-12.5	07/27/04	117850	117850009	Xylenes	0.26		J	Surrogate %R
NH-SS-09-2.5-5	07/27/04	117850	117850015	Benzene	1.0	E	J	Surrogate %R
NH-SS-09-2.5-5	07/27/04	117850	117850015	Toluene	2.1	E	J	Surrogate %R
NH-SS-09-2.5-5	07/27/04	117850	117850015	Ethylbenzene	1.7	E	J	Surrogate %R
NH-SS-09-2.5-5	07/27/04	117850	117850015	Xylenes	8.5	E	J	Surrogate %R
NH-SS-05-4-6 DL	07/27/04	117850	117850002	tert-Butyl methyl ether	0.22	U	UJ	Holding time
NH-SS-05-4-6 DL	07/27/04	117850	117850002	Benzene	1.7	D	J	Holding time
NH-SS-05-4-6 DL	07/27/04	117850	117850002	Toluene	0.32	D	J	Holding time
NH-SS-05-4-6 DL	07/27/04	117850	117850002	Ethylbenzene	7.3	D	J	Holding time
NH-SS-05-4-6 DL	07/27/04	117850	117850002	Xylenes	32.0	D	J	Holding time
NH-SS-12-7.5-10 DL	07/27/04	117850	117850006	tert-Butyl methyl ether	0.10	U	UJ	Holding time
NH-SS-12-7.5-10 DL	07/27/04	117850	117850006	Benzene	0.10	DJ	J	Holding time
NH-SS-12-7.5-10 DL	07/27/04	117850	117850006	Toluene	0.10	U	UJ	Holding time
NH-SS-12-7.5-10 DL	07/27/04	117850	117850006	Ethylbenzene	0.042	DJ	J	Holding time
NH-SS-12-7.5-10 DL	07/27/04	117850	117850006	Xylenes	0.36	D	J	Holding time
NH-SS-09-2.5-5 DL	07/27/04	117850	117850015	tert-Butyl methyl ether	0.43	U	UJ	Holding time
NH-SS-09-2.5-5 DL	07/27/04	117850	117850015	Benzene	4.2	D	J	Holding time
NH-SS-09-2.5-5 DL	07/27/04	117850	117850015	Toluene	9.6	D	J	Holding time
NH-SS-09-2.5-5 DL	07/27/04	117850	117850015	Ethylbenzene	14.6	D	J	Holding time

NH-SS-09-2.5-5 DL	07/27/04	117850	117850015	Xylenes	65.8	D	J	Holding time
NH-SS-06-10-12.5	07/27/04	117850	117850008	Benzene	3.2		J	Field dup RPD
NH-SS-06-10-12.5	07/27/04	117850	117850008	Toluene	0.67		J	Field dup RPD
NH-SS-06-10-12.5	07/27/04	117850	117850008	Ethylbenzene	1.5		J	Field dup RPD
NH-SS-06-10-12.5	07/27/04	117850	117850008	Xylenes	8.9		J	Field dup RPD
NH-SS-206-10-12.5	07/27/04	117850	117850009	Benzene	0.54	E	J	Field dup RPD
NH-SS-206-10-12.5	07/27/04	117850	117850009	Toluene	0.061		J	Field dup RPD
NH-SS-206-10-12.5	07/27/04	117850	117850009	Ethylbenzene	0.041		J	Field dup RPD
NH-SS-206-10-12.5	07/27/04	117850	117850009	Xylenes	0.26		J	Field dup RPD
NH-SS-206-10-12.5 DL	07/27/04	117850	117850009	Benzene	0.11	D	J	Field dup RPD
NH-SS-206-10-12.5 DL	07/27/04	117850	117850009	Xylenes	0.11	D	J	Field dup RPD
NH-SS-06-2.5-5	07/27/04	117850	117850001	Ethylbenzene	0.32	E	J	Calibration range exceeded
NH-SS-06-2.5-5	07/27/04	117850	117850001	Xylenes	0.70	E	J	Calibration range exceeded
NH-SS-09-2.5-5	07/27/04	117850	117850015	Benzene	1.0	E	J	Calibration range exceeded
NH-SS-09-2.5-5	07/27/04	117850	117850015	Toluene	2.1	E	J	Calibration range exceeded
NH-SS-09-2.5-5	07/27/04	117850	117850015	Ethylbenzene	1.7	E	J	Calibration range exceeded
NH-SS-09-2.5-5	07/27/04	117850	117850015	Xylenes	8.5	E	J	Calibration range exceeded
NH-SS-12-7.5-10	07/27/04	117850	117850006	Benzene	0.33	E	J	Calibration range exceeded
NH-SS-206-10-12.5	07/27/04	117850	117850009	Benzene	0.54	E	J	Calibration range exceeded
NH-SS-06-10-12.5	07/27/04	117850	117850008	Gasoline Range Organics	64.9	J	J	Field dup RPD
NH-SS-206-10-12.5	07/27/04	117850	117850009	Gasoline Range Organics	3.2	J	J	Field dup RPD

NH-SS-04-0-4	07/27/04	117850	117850012	Gasoline Range Organics	3.0	J	U	Methanol blank
NH-SS-04-12-14	07/27/04	117850	117850013	Gasoline Range Organics	2.2	J	U	Methanol blank
NH-SS-05-12-14	07/27/04	117850	117850003	Gasoline Range Organics	1.7	J	U	Methanol blank
NH-SS-10-12.5-15	07/27/04	117850	117850005	Gasoline Range Organics	1.4	J	U	Methanol blank
NH-SS-11-12.5-15	07/27/04	117850	117850018	Gasoline Range Organics	2.0	J	U	Methanol blank
NH-SS-12-12.5-14	07/27/04	117850	117850007	Gasoline Range Organics	2.2	J	U	Methanol blank
NH-SS-13-12-14	07/27/04	117850	117850017	Gasoline Range Organics	2.9	J	U	Methanol blank
NH-SS-204-12-14	07/27/04	117850	117850014	Gasoline Range Organics	2.9	J	U	Methanol blank
NH-SS-206-10-12.5	07/27/04	117850	117850009	Gasoline Range Organics	3.2	J	U	Methanol blank

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES

General

The Method SW8260B (VOCs) portion of this SDG consisted of one set of MS/MSD. The samples were collected on July 29, 2004 and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes.

- The LCS recoveries were within acceptance criteria.
- Samples NH-SS-14-12-14 and NH-SS-22-12-14 were used for MS/MSD. Recoveries were not within acceptance criteria. Field duplicate sample (NH-SS-222-12-14) results were also qualified based on NH-SS-22-12-14 MS/MSD results. Evaluation results are as follows:

Sample	Compound	%R MS	%R MSD	% RPD	Qual.
NH-SS-14-12-14	Benzene	53	42		J/UJ
NH-SS-14-12-14	Toluene	50	37		J/UJ
NH-SS-14-12-14	Ethylbenzene	50	32		J/UJ
NH-SS-14-12-14	Xylenes	45	29		J/UJ
NH-SS-22-12-14	Benzene	52	47		J/UJ
NH-SS-22-12-14	Toluene	50	42		J/UJ
NH-SS-22-12-14	Ethylbenzene	48	39		J/UJ
NH-SS-22-12-14	Xylenes	45	32		J/UJ

- All field sample surrogate recoveries were within acceptance criteria. In the LCS, the recovery of Bromofluorobenzene (84%) was slightly below the lower control limit. No data have been qualified based on this circumstance.

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results.

- MS/MSD %RPDs were compliant with the project PSAP control limit of 30%RPD, with the following exceptions. Sample results were reported as undetected (U) and are not required to be qualified. Evaluation results are as follows:

Sample	Compound	% RPD	Qual.
NH-SS-14-12-14	Ethylbenzene	44	None (sample result = U)
NH-SS-14-12-14	Xylenes	43	None (sample result = U)
NH-SS-22-12-14	Xylenes	34	None (sample result = U)

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. A duplicate sample of NH-SS-12-14 was collected. NH-SS-222-12-14 is the field duplicate sample. All analytes in both samples were reported as undetected so RPD values were not calculable. The field duplicate criterion is considered met.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package. Evaluation results are as follows:

- Samples were prepared and analyzed within the holding time required by the method.
- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- Internal standard criteria were met for all samples.
- There was one method blank associated with this SDG. The method blank was free of any target VOCs at or above half of the reporting limit (RL); no analytes were reported as detected.

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected(R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Data qualified as estimated (J or UJ) based on low matrix spike recoveries should be considered to be possibly biased low.

PAHs

General

The Method 8270C (PAHs) portion of this SDG consisted of four (4) soil samples and one set of MS/MSD. The samples were collected on July 29, 2004 and were analyzed for the project specific list of PAHs as specified in the SOW. Target compounds include: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.

The PAHs analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8270C. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs and surrogate spikes. MS/MSD analysis was performed on sample NH-SS-22-12-14.

There was one analytical batch involved in this SDG.

- All surrogate recoveries were within acceptance criteria, with the exception of two of the three surrogates for the method blank that were very slightly lower than the lower control limit. No data have been qualified based on this circumstance.
- All LCS and LCSD recoveries were within acceptance criteria.
- All MS and MSD recoveries were within acceptance criteria

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results.

- MS/MSD %RPD values were within acceptance criteria with the exception of the following: Indeno(1,2,3-cd) pyrene whose 121%R exceeded the DOD limits of 40-120% but was within the marginal exceedances limits of 21/135%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and,
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL including approved variances. All samples were prepared and analyzed within the holding time required by the method. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method.
- All initial calibration criteria were met.
- All calibration verification criteria were met (mean %D or drift for all target compounds <15%)
- All internal standard criteria were met.
- There was one method blank associated with this SDG. The method blank was reanalyzed due to an instrument error; the reanalysis was reported. The method blank was free of any target PAH at or above half of the RL; no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All PAH results for the sample in this SDG were considered usable. No samples results were qualified. The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was no target PAH detected above method detection limits (MDLs) in the field samples and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

TPH – DIESEL RANGE ORGANICS (DRO)

General

The TPH – DRO portion of this SDG consisted of four (4) soil samples and one set of MS/MSD. The samples were collected on July 29, 2004 and were analyzed for the TPH – DRO (C₁₀-C₂₈) fraction.

The TPH – DRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015A/B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-22-12-14 was designated for MS/MSD analysis on the COC.

There was one analytical batch involved in this SDG.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- Surrogate recoveries were within acceptance criteria.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-22-12-14 was designated for MS/MSD analyses.

- The %RPD for MS/MSD was within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method

- There were two injectors, two identical columns and two different detectors involved. All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.

There was one method blank associated with this SDG.

- The method blank was free of DRO at or above half of the reporting limit (RL); no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

The DRO results for the sample in this SDG are considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

The DRO results for all four samples in this SDG were reported as being detected above reporting limits (RLs). The DRO pattern was verified. All data quality objectives (DQO) were met and all data are usable. No sample results have been qualified.

TPH – GASOLINE RANGE ORGANICS (GRO)

General

The TPH – GRO portion of this SDG consisted of two (2) soil samples, including one field duplicate sample. The samples were collected on July 29, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCS, MS/MSD, and surrogate spikes. There was one analytical batch involved in this SDG. Sample NH-SS-14-12-14 was designated for MS/MSD analyses.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- The surrogate recoveries were within the surrogate acceptance criteria. Sample NH-SS-14-12-14 (and MS/MSD) was reanalyzed after unacceptable recoveries were achieved from the methanol extract. Acceptable recoveries were achieved in the second analyses; sample results are reported from the reanalyses.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD. Sample NH-SS-14-12-14 was designated for MS/MSD.

The %RPD for MS/MSD was within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL. All samples were prepared and analyzed within the holding time required by the method.

- All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- Greater than ten samples were analyzed between CCVV standards on 08/07/04. Affected samples include the blank, LCS, NH-SS-14-12-14, and MS/MSD. LCS and MS/MSD recoveries were well within the control limits. No sample results were qualified based on this circumstance.
- All manual integration were performed properly and verified by the data validator.
- Sample NH-SS-14-12-14 was analyzed using the medium level protocol (100x dilution).
- There were two method blanks associated with this SDG. Both method blanks were free of GRO at or above half of the reporting limit (RL). No analytes were detected in VBLK02. GRO was reported at 0.021 mg/kg in VBLK01. GRO level in associated sample NH-SS-19-0-2 is 0.025 mg/kg and <5x blank amount so sample result was qualified as undetected (0.025 U).
- There was one methanol blank associated with this SDG. The methanol blank (HBLK01) contained a reported quantity of 3.3 mg/kg. However, laboratory reported that the chromatogram patterns suggest baseline noise and not GRO. Sample NH-SS-12-14 results were not qualified.

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/kg)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-14-12-14	07/29/04	118074	118074002	Benzene	0.00082	U	UJ	MS/MSD %R
NH-SS-14-12-14	07/29/04	118074	118074002	Toluene	0.00082	U	UJ	MS/MSD %R
NH-SS-14-12-14	07/29/04	118074	118074002	Ethylbenzene	0.00082	U	UJ	MS/MSD %R
NH-SS-14-12-14	07/29/04	118074	118074002	Xylenes	0.00082	U	UJ	MS/MSD %R
NH-SS-22-12-14	07/29/04	118074	118074006	Benzene	0.00082	U	UJ	MS/MSD %R
NH-SS-22-12-14	07/29/04	118074	118074006	Toluene	0.00082	U	UJ	MS/MSD %R
NH-SS-22-12-14	07/29/04	118074	118074006	Ethylbenzene	0.00082	U	UJ	MS/MSD %R
NH-SS-22-12-14	07/29/04	118074	118074006	Xylenes	0.00082	U	UJ	MS/MSD %R
NH-SS-222-12-14	07/29/04	118074	118074007	Benzene	0.0010	U	UJ	MS/MSD %R
NH-SS-222-12-14	07/29/04	118074	118074007	Toluene	0.0010	U	UJ	MS/MSD %R
NH-SS-222-12-14	07/29/04	118074	118074007	Ethylbenzene	0.0010	U	UJ	MS/MSD %R
NH-SS-222-12-14	07/29/04	118074	118074007	Xylenes	0.0010	U	UJ	MS/MSD %R

DATA VALIDATION SUMMARY REPORT

for samples collected from
NEW HAVEN DEPOT

New Haven, Indiana

Data Validation by: Richard Cheatham
Parsons – Denver, Colorado

INTRODUCTION

The following data validation summary report covers groundwater samples, and the associated field quality control (QC) samples, collected from New Haven Depot on July 30, 2004. The samples in the following two Sample Delivery Groups (SDG), which were combined into a single analytical report, were analyzed for one or more of the following analytical parameters: project specific volatile organic compounds (VOCs) by Method SW8260B, polynuclear aromatic hydrocarbons (PAHs) by Method SW8270C, Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-GRO) by Method SW8015B, and Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) by Method SW8015A/B. The required data flag changes are summarized on Table 1.

Sample ID	Sample Date	Lab Sample ID	VOCs (BTEX + MTBE)	PAHs	TPH (GRO)	TPH (DRO)
NH-SS-03	07/30/04	118101001	X		X	
NH-SS-01	07/30/04	118101002	X		X	
NH-SS-04	07/30/04	118101003	X		X	
NH-SS-02	07/30/04	118101004	X		X	
NH-EB-01	07/26/04	118101005	X		X	
NH-EB-02	07/26/04	118101006	X		X	
NH-EB-03	07/28/04	118101007	X		X	
NH-SS-05	07/30/04	118101008	X		X	
NH-SS-13	07/30/04	118101009	X		X	
NH-SS-16	07/30/04	118101010	X		X	
NH-SS-11	07/30/04	118101011	X		X	
NH-SS-15	07/30/04	118101012	X		X	
NH-SS-18	07/30/04	118101013	X		X	
NH-SS-218	07/30/04	118101014	X		X	
NH-SS-17	07/30/04	118101015	X		X	
NH-SS-14	07/30/04	118101016	X		X	
NH-SS-12	07/30/04	118101017	X		X	
NH-SS-06	07/30/04	118101018	X		X	
NH-SS-10	07/30/04	118101019	X		X	
NH-SS-19	07/30/04	118112001	X	X		
NH-SS-22	07/30/04	118112002	X	X		X
NH-SS-222	07/30/04	118112003	X	X		X
NH-SS-20	07/30/04	118112004	X	X		X
NH-EB-04	07/30/04	118112005	X	X		X
NH-EB-05	07/30/04	118112006	X	X		X
NH-SS-210	07/30/04	118112007	X		X	

NH-SS-9	07/30/04	118112008	X		X	
NH-SS-8	07/30/04	118112009	X		X	
NH-TB-01	07/26/04	118112010	X		X	
NH-EB-06	07/29/04	118112011	X	X	X	X

The field quality control samples collected in association with these two SDGs included three field duplicate samples.

All samples were collected by Parsons and analyzed by General Engineering Laboratories, LLC (GEL) following the procedures outlined in the Statement of Work (SOW).

The cooler associated with this SDG was received by the laboratory at a temperature of 5°C.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES – SDG 118101

General

The Method SW8260B (VOCs) portion of this SDG consisted of one set of MS/MSD. The sixteen (16) groundwater samples and three equipment blanks were collected on July 30, 2004 and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

- The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-03 was used for MS/MSD

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- The surrogate recoveries were within acceptance criteria.

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results.

- MS/MSD %RPDs were compliant.

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Two field duplicate pairs were associated with this SDG: NH-SS-18/NH-SS-218 and NH-SS-10/NH-SS-210. RPD value for Xylenes in duplicate pair NH-SS-18/NH-SS-218 exceeded the project advisory limit of 50%RPD. However, the reported concentration was very low; therefore a high variance is expected. Xylenes values in sample NH-SS-18 and field duplicate sample NH-SS-218 have been qualified as estimated (J).

- Field duplicate results are as follows:

Duplicate Set	Analyte	PQL	Sample Conc (mg/L)	Duplicate Conc (mg/L)	% RPD	Diff (mg/L)	Out of Limit (Y/N)
NH-SS-18/ NH-SS-218	Ethylbenzene	0.0010	0.0015	0.00054	N/A		N/A
NH-SS-18/ NH-SS-218	Xylenes	0.0010	0.0053	0.0020	92		Y
NH-SS-10/ NH-SS-210	Benzene	0.0010	0.00056	0.00071	N/A		
NH-SS-10/ NH-SS-210	Toluene	0.0010	N/A	0.0045	N/A		
NH-SS-10/ NH-SS-210	Ethylbenzene	0.0010	0.00037	U	N/A		
NH-SS-10/ NH-SS-210	Xylenes	0.0010	0.0010	U	N/A		

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- Samples were prepared and analyzed within the holding time required by the method.

- The following samples were diluted (reanalyzed) because analyte concentrations exceeded calibration range: NH-SS-01, NH-SS-05, NH-SS-15, NH-SS-17, NH-SS-12, NH-SS-06. Two sets of data are reported for each sample.
- The following analytes exceeded the calibration range in the initial (non-dilution) analyses, are denoted by a laboratory data flag (E), and have been qualified as estimated (J):

Sample ID	Analyte	Reported Result	Qualifier
NH-SS-01	Ethylbenzene	1.3E	J
NH-SS-01	Xylenes	4.1E	J
NH-SS-05	Benzene	0.21E	J
NH-SS-17	Benzene	0.22E	J

- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- Internal standard criteria were met.
- There were four method blanks associated with this SDG. Each of the four method blanks were free of any target VOCs at or above half of the reporting limit (RL): no analytes were reported as detected.
- There were three equipment blanks associated with the samples in this SDG. Each of the three method blanks were free of any target VOCs at or above half of the reporting limit (RL). No analytes were reported as detected in EB-02 and EB-03. Toluene was reported as detected in EB-01 at a level of 0.00048 mg/L. Evaluation results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (mg/L)	Blank ID	Blank Result (mg/L)	Action Level (mg/L) 5X or 10X	Action Level X DF	PQL (mg/L)	Qual.
Toluene	NH-SS-06	0.098	EB-01	0.00048	0.0024	0.012	0.050	U
Toluene	NH-SS-12	0.0095	EB-01	0.00048	0.0024	0.012	0.050	U
Toluene	NH-SS-14	0.00055	EB-01	0.00048	0.0024	0.0024	0.0010	U
Toluene	NH-SS-15	0.19	EB-01	0.00048	0.0024	0.48	0.20	U

- There was one trip blank associated with the samples in this SDG. NH-TB-01 (reported in SDG 110112) was free of any target VOCs at or above half of the reporting limit (RL): no analytes were reported as detected.

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected(R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Data qualified as undetected (u) based on equipment blank results should be considered potential false positives. Data qualified as estimated (J) based on a reported result that exceeded the calibration range should be considered as estimated: results from dilution analyses should preferentially be used. Data qualified as estimated (J) based on field duplicate results should be evaluated with reference to reported concentration and to site and sampling conditions.

VOLATILES – SDG 118112

General

The Method SW8260B (VOCs) portion of this SDG consisted of one set of MS/MSD. The seven (7) groundwater samples, as well as two equipment blanks and one trip blank, were collected on July 30, 2004 and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

- The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-22 was used for MS/MSD.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- The surrogate recoveries were within acceptance criteria.

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-22 was used for MS/MSD.

- MS/MSD %RPDs were compliant.

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Field duplicate pair NH-SS-22/NH-SS-222 is associated with this SDG. All analytes were reported as undetected in sample NH-SS-22. Only Toluene was detected in sample NH-SS-222, with a reported level of 0.0043, which is less than the RL. Therefore, RPD values were not

calculable for any of the analytes. Results are considered compliant with the field duplicate criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- Samples were prepared and analyzed within the holding time required by the method.
- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- Internal standard criteria were met.
- The reported results for Benzene and Xylenes in NH-SS-9 exceeded the calibration range, were reported with a lab flag (E), and were qualified as estimated (J).
- There were three method blanks associated with this SDG. Two of the three method blanks had reported values of target VOCs at or above half of the reporting limit (RL): associated samples were not reanalyzed due to holding time considerations. A non-conformance report was generated. For method blank VBLK01, Toluene was detected at a level >0.5RL. For method blank VBLK03, Toluene, Ethylbenzene, and Xylenes were detected at a level >0.5RL. Results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (mg/L)	Blank ID	Blank Result (mg/L)	Action Level (mg/L) 5X or 10X	Action Level X DF	PQL (mg/L)	Qual.
Toluene	NH-EB-04	0.00047	VBLK01	0.00076	0.0038		0.0010	U
Toluene	NH-EB-05	0.00040	VBLK01	0.00076	0.0038		0.0010	U
Toluene	NH-SS-20	0.00045	VBLK02	0.00046	0.0023		0.0010	U
Toluene	NH-SS-210	0.00045	VBLK02	0.00046	0.0023		0.0010	U
Toluene	NH-SS-222	0.00045	VBLK02	0.00046	0.0023		0.0010	U
Ethylbenzene	None		VBLK02	0.00038	0.0019		0.0010	

Xylenes	None		VBLK02	0.00042	0.0021		0.0010	
Toluene	None		VBLK03	0.00087	0.0044		0.0010	
Ethylbenzene	None		VBLK03	0.00055	0.0028		0.0010	
Xylenes	None		VBLK03	0.00062	0.0031		0.0010	

- There was one trip blank associated with this SDG. No analytes were reported at or above half of the reporting limit (RL): no analytes were detected.
- There were two equipment blanks associated with this SDG. No analytes were reported at or above half of the reporting limit (RL): reported level of Toluene in each of two equipment blanks is considered attributable to associated method blank contamination. Sample results were qualified based on method blank results. Consequently, no sample results were qualified based on equipment blank results.

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected (R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Reported values qualified as undetected (U) based on associated method blank contamination should be considered as potential "false positive" values.

PAHs – SDG 118101

General

The Method 8310 (PAHs) portion of this SDG consisted of four (4) groundwater samples, three equipment blanks, and one set of MS/MSD. The samples were collected on July 30, 2004 and were analyzed for the project specific list of PAHs as specified in the SOW. Target compounds include 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.

The PAHs analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8310. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCS/LCSD, MS/MSD, and surrogate spikes. MS/MSD analysis was performed on sample NH-SS-22.

There was one analytical batch involved in this SDG

- All surrogate recoveries were within acceptance criteria.
- All LCS and LCSD recoveries were within acceptance criteria.
- MS/MSD recoveries were within acceptance criteria, with the following exceptions:

Sample ID	MS Compound	MS % R	MSD% R	Qual
NH-SS-22	Indeno (1,2,3-cd) pyrene		43.6	J/UJ

Precision

Analytical precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD and MS/MSD results. MS/MSD analysis was performed on sample NH-SS-22.

- LCS/LCSD %RPD values were within acceptance criteria.
- MS/MSD %RPD values were within acceptance criteria.

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Field duplicate pair NH-SS-22/NH-SS-222 is associated with this SDG. All analytes were reported as undetected in sample NH-SS-22 and its duplicate. Therefore, RPD values were not calculable for any of the analytes. Results are considered compliant with the field duplicate criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL including approved variances. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method.
- All initial calibration criteria were met.
- All calibration verification criteria were met (mean %D or drift for all target compounds <15%)

- All internal standard criteria were met.
- There was one method blank associated with this SDG. The method blank was free of any target PAH at or above half of the RL; no analytes were reported as detected.
- There were three equipment blanks associated with this SDG. The equipment blanks were free of any target PAH at or above half of the RL; no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All PAH results for the sample in this SDG were considered usable (no data were qualified). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There were no target PAHs detected above method detection limits (MDLs) in the field samples. All data quality objectives (DQO) were met and all data are usable. Reported undetected values qualified as estimated (UJ) based on a low matrix spike recovery value should be considered possible false negatives.

TPH – DIESEL RANGE ORGANICS (DRO) – SDG 118101

General

The TPH – DRO portion of this SDG consisted of four (4) soil samples, and one set of MS/MSD. The samples were collected on July 30, 2004 and were analyzed for the TPH – DRO (C₁₀-C₂₈) fraction.

The TPH – DRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015A/B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-22 was designated for MS/MSD analysis on the COC.

There was one analytical batch involved in this SDG.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- Surrogate recoveries were within acceptance criteria

Precision

Analytical precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-22 was designated for MS/MSD analyses.

- The %RPD for MS/MSD was within acceptance criteria

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. One field duplicate pair was associated with this SDG: NH-SS-22/NH-SS-222. The RPD value for DRO exceeded the advisory limit of 50%RPD; DRO results for the field duplicate pair have been qualified as estimated (J).

- Field duplicate results are as follows:

Duplicate Set	Analyte	PQL	Sample Conc (mg/L)	Duplicate Conc (mg/L)	% RPD	Diff (mg/L)	Out of Limit (Y/N)
NH-SS-22/ NH-SS-222	DRO	0.048	0.089	0.41	338		Y

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL. All samples were prepared and analyzed within the holding time required by the method. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method.
- There were two injectors, two identical columns and two different detectors involved. All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.

- There was one method blank associated with this SDG. The method blank was free of DRO at or above half of the reporting limit (RL); no analytes were reported as detected.
- There were two method blanks associated with this SDG. The equipment blanks were free of DRO at or above half of the reporting limit (RL); no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

The DRO results for the sample in this SDG are considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

The DRO results for samples NH-SS-19, NH-SS-22, and NH-SS-222 were reported as being detected above reporting limits (RLs). The DRO pattern was verified. All data quality objectives (DQO) were met and all data are usable. Reported values for the field duplicate sample pair were qualified as estimated (J) based on field duplicate results.

TPH – GASOLINE RANGE ORGANICS (GRO) – SDG 118101

General

The TPH – GRO portion of this SDG consisted of three (3) soil samples, including one field duplicate sample. The samples were collected on July 30, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS/MSDs (post-spike/post spike duplicate), and surrogate spikes. There was one analytical batches involved in this SDG. Sample NH-SS-210 was designated on the COC for MS/MSD analysis.

- LCS and LCSD recoveries were within acceptance criteria.
- MS and MSD (post-spike and post-spike duplicate) recoveries were within acceptance criteria.
- The surrogate recoveries were within the surrogate acceptance criteria.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD, MS/MSD results, and parent/FD results. Sample NH-SS-18 was collected in duplicate. The duplicate sample ID is NH-SS-218.

- LCS and LCSD RPD values were within acceptance criteria.
- MS and MSD RPD values were within acceptance criteria.
- One field duplicate pair was associated with this SDG. Both the parents and FD had no GRO detected at reporting limit (RL), therefore %RPD calculation was not applicable. GRO was reported as 0.028J in NH-SS-10 and undetected in NH-SS-210. Field duplicate results are considered to have met field duplicate criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and

- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL.

- All field samples were prepared and analyzed within the holding time required by the method. The holding time was exceeded for NH-TB-01; reported results have been qualified as estimated ("UJ").
- All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.
- There were two method blanks associated with this SDG. Both method blanks were free of GRO at or above half of the reporting limit (RL); no analytes were detected.
- There was one trip blank associated with this SDG. The trip blank was free of GRO at or above half of the reporting limit (RL); no analytes were detected. Trip blank was analyzed beyond analytical holding time so results should be evaluated accordingly; equipment blanks serve as trip blanks.
- There was one equipment blank associated with this SDG. The equipment blank was free of GRO at or above half of the reporting limit (RL); no analytes were detected.

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

TPH – GASOLINE RANGE ORGANICS (GRO) – SDG 118112

General

The TPH – GRO portion of this SDG consisted of nine (9) soil samples, including one field duplicate sample. The samples were collected on July 30, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015M. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS/MSD (post-digest spikes) and surrogate spikes. There was one analytical batch involved in this SDG.

- All LCS recoveries were within acceptance criteria.
- The MS/MSD (post-digest spike) recoveries were within acceptance criteria.
- The surrogate recoveries were within the surrogate acceptance criteria.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD (post-digestion spike) results.

- The MS/MSD (post-digest spike) RPD values were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL.

- All field samples were prepared and analyzed within the holding time required by the method. The holding time was exceeded for NH-TB-01; reported results have been qualified as estimated (“UJ”).
- All initial calibration criteria were met for both detectors.

- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.
- There was one method blank associated with this SDG. The method blank was free of GRO at or above half of the reporting limit (RL). No analytes were detected.
- There was one equipment blank associated with this SDG. The equipment blank was free of GRO at or above half of the reporting limit (RL). No analytes were detected.
- There was one trip blank associated with this SDG. The method blank was free of GRO at or above half of the reporting limit (RL). No analytes were detected.

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples and no data qualifiers were applied to field samples. Trip blank results were qualified as estimated (UJ) due to holding time exceedance; equipment blanks serve as trip blanks. All data quality objectives (DQO) were met and all data are usable.

The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/L)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-01	07/30/04	118101	118101002	Ethylbenzene	1.3	E	J	Exceeded calibration range
NH-SS-01	07/30/04	118101	118101002	Xylenes	4.1	E	J	Exceeded calibration range
NH-SS-05	07/30/04	118101	118101008	Benzene	0.21	E	J	Exceeded calibration range
NH-SS-17	07/30/04	118101	118101015	Benzene	0.22	E	J	Exceeded calibration range
NH-SS-06	07/30/04	118101	118101018	Toluene	0.098		U	Equipment Blank
NH-SS-12	07/30/04	118101	118010017	Toluene	0.0095		U	Equipment Blank
NH-SS-14	07/30/04	118101	118010016	Toluene	0.00055	J	U	Equipment Blank
NH-SS-15	07/30/04	118101	118010012	Toluene	0.19	J	U	Equipment Blank
NH-SS-18	07/30/04	118101	118101013	Xylenes	0.0053		J	Field duplicate RPD
NH-SS-218	07/30/04	118101	118101014	Xylenes	0.0020		J	Field duplicate RPD
NH-EB-04	07/29/04	1181121	118112005	Toluene	0.00047	JB	U	Method blank
NH-EB-05	07/29/04	118112	118112006	Toluene	0.00040	JB	U	Method blank
NH-SS-20	07/30/04	118112	118112004	Toluene	0.00045	JB	U	Method blank
NH-SS-210	07/30/04	118112	118112007	Toluene	0.00045	JB	U	Method blank
NH-SS-222	07/30/04	118112	118112003	Toluene	0.00043	JB	U	Method blank
NH-SS-20	07/30/04	118112	118112004	Indeno (1,2,3-cd) pyrene	0.000049	U	UJ	MSD %R

NH-SS-9	07/30/04	118112	118112008	Benzene	0.36	E	J	Exceeded calibration range
NH-SS-9	07/30/04	118112	118112008	Xylenes	0.34	E	J	Exceeded calibration range
NH-SS-22	07/30/04	118112	18112004	DRO	0.089	J	J	Field duplicate RPD
NH-SS-222	07/30/04	118112	18112003	DRO	0.41		J	Field duplicate RPD
NH-TB-01	07/26/04	118112	118112010	GRO	0.050	U	UJ	Holding time

DATA VALIDATION SUMMARY REPORT

for samples collected from

NEW HAVEN DEPOT

New Haven, Indiana

Data Validation by: Richard Cheatham
Parsons – Denver, Colorado

INTRODUCTION

The following data validation summary report covers three (3) groundwater samples and the associated field quality control (QC) samples collected from New Haven Depot on August 05, 2004. The samples in the following Sample Delivery Group (SDG) were analyzed for one or more of the following analytical parameters: project specific Volatile Organic Compounds (VOCs) by Method SW8260B, Polynuclear Aromatic Hydrocarbons (PAHs) by Method SW8270C, Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) by Method SW8015A/B. The required data flag changes are summarized on Table 1.

Sample ID	Sample Date	GEL SDG	Lab Sample ID	VOCs (BTEX + MTBE)	PAHs	TPH (DRO)
NH-SS-21	08/05/04	118630	118630001	X		
NH-SS-21	08/05/04	118630	118630004		X	
NH-SS-21	08/05/04	118630	118630005			X
NH-TB-02	08/05/04	118630	118630002	X		
NH-EB-07	08/05/04	118630	118630003	X		

The field quality control samples collected in association with this SDG were one set of matrix spike/matrix spike duplicate (MS/MSD), one equipment blank (EB), and one trip blank (TB). The TB and the EB were analyzed for project specific volatile organic compounds only.

All samples were collected by Parsons and analyzed by General Engineering Laboratories, LLC (GEL) following the procedures outlined in the Statement of Work (SOW).

The cooler associated with this SDG was received by the laboratory at a temperature of 5°C.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the

reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES

General

The Method SW8260B (VOCs) portion of this SDG consisted of one (1) groundwater sample, one set of MS/MSD, one EB, and one TB. The samples were collected on August 05, 2004 and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-21 was utilized for MS/MSD analysis.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- The surrogate recoveries were within acceptance criteria.

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results.

All %RPDs for MS/MSD were compliant.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL.

- All samples were prepared and analyzed within the holding time required by the method.

- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- All internal standard criteria were met.
- There was one method blank associated with this SDG. The method blank was free of any target VOCs at or above half of the reporting limit (RL). No analytes were reported as detected.
- There was one trip blank associated with this SDG. Toluene was reported at 0.00055 mg/L. No data qualifier is needed because all analytes were reported as undetected ("U") in the associated field sample.
- There was one equipment blank associated with this SDG. Toluene was reported at 0.00051 mg/L. No data qualifier is needed because all analytes were reported as undetected ("U") in the associated field sample.

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable (no data were qualified). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was no target VOCs detected above method detection limits (MDLs) in the field samples and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

PAHs

General

The Method 8270C (PAHs) portion of this SDG consisted of one (1) water sample and one set of MS/MSD. The sample was collected on August 05, 2004 and was analyzed for the project specific list of PAHs as specified in the SOW. Target compounds include 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.

The PAHs analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8270C. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs and surrogate spikes. MS/MSD analysis was not performed due to limited sample volume.

There was one analytical batch involved in this SDG

- All surrogate recoveries were within acceptance criteria.
- All LCS and LCSD recoveries were within acceptance criteria.

Precision

Analytical precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD results.

- LCS/LCSD %RPD values were within acceptance criteria with the exception of the following: Dibenzo(a,h)anthracene (58%RPD) and Benzo(ghi)perylene (56%RPD).

Applicable project documents do not specifically provide a control range for LCS/LCSD %RPD. The recovery of each of the two analytes in both the LCS and LCSD sample were compliant. Both analytes were reported as undetected in the associated sample NH-SS-21. No data have been qualified.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL including approved variances.

- All initial calibration criteria were met.
- All samples were prepared and analyzed within the holding time required by the method.
- All calibration verification criteria were met.
- All internal standard criteria were met.

There was one method blank associated with this SDG.

- The method blank was free of any target PAH at or above half of the RL. No analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All PAH results for the sample in this SDG were considered usable (no data were qualified). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was no target PAH detected above method detection limits (MDLs) in the field sample and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

TPH – DIESEL RANGE ORGANICS (DRO)

General

The TPH – DRO portion of this SDG consisted of one (1) groundwater sample and one set of MS/MSD. The sample was collected on August 05, 2004 and was analyzed for the TPH – DRO (C₁₀-C₂₈) fraction.

The TPH – DRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015A/B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-21 was designated for MS/MSD analysis on the COC.

There was one analytical batch involved in this SDG.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were **not** acceptance criteria. Although the laboratory reported in the case narrative that the MS and MSD recoveries were within control limits (and so did not generate an NCR), the data reported on Form 3C indicates that the MSD %R is 34%, which is slightly below the lab control limit of 36-138%R and below the PSAP control limit of 43-140%R. The reported DRO result for sample NH-SS-21 (0.11 mg/L) has been qualified as estimated (“J”).
- The surrogate recoveries were within acceptance criteria.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-21 was designated for MS/MSD analyses.

- The %RPD for MS/MSD was non-compliant. Although the laboratory reported in the case narrative that the MS/MSD %RPD was within control limit (and so did not generate an NCR), the data reported on Form 3C indicates that the MS/MSD %RPD is 78%, which is greater than the PSAP control limit of 33RPD and greater than the PSAP control limit of 29RPD. The reported DRO result for sample NH-SS-21 (0.11 mg/L) has been qualified as estimated ("J").

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL.

- All samples were prepared and analyzed within the holding time required by the method.
- There were two injectors, two identical columns and two different detectors involved. All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.

There was one method blank associated with this SDG.

- The method blank was free of DRO at or above half of the reporting limit (RL). No analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

The DRO results for the sample in this SDG is considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

The DRO result for sample NH-SS-21 was reported as being detected above reporting limits (RLs). The result was qualified as estimated ("J") based on the MSD %R result and the MS/MSD %RPD result. The DRO pattern was verified. All data quality

objectives (DQO) were met and all data are usable. The required data flag changes are summarized on Table 1.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/L)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-21	08/05/04	118630	118630005	Diesel Range Organics (DRO)	0.11	-	J	MS%R, MS RPD

DATA VALIDATION SUMMARY REPORT

for samples collected from

NEW HAVEN DEPOT

New Haven, Indiana

Data Validation by: Richard Cheatham

Parsons – Denver, Colorado

INTRODUCTION

The following data validation summary report covers thirteen (13) soil samples and the associated field quality control (QC) samples collected from New Haven Depot on July 28-29, 2004. The samples in the following Sample Delivery Group (SDG) were analyzed for one or more of the following analytical parameters: project specific volatile organic compounds (VOCs) by Method SW8260B, Polynuclear Aromatic Hydrocarbons (PAHs) by Method SW8270C, Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) by Method SW8015A/B, and Total Petroleum Hydrocarbons-Gasoline Range Organics (TPH-GRO) by Method SW8015B. The required data flag changes are summarized on Table 1.

Sample ID	Sample Date	Lab Sample ID	VOCs (BTEX + MTBE)	PAHs	TPH (GRO)	TPH (DRO)
NH-SS-15-2.5-5	07/28/04	117928001	X		X	
NH-SS-15-7.5-10	07/28/04	117928002	X		X	
NH-SS-16-2-4	07/28/04	117928003	X		X	
NH-SS-16-12-14	07/28/04	117928004	X		X	
NH-SS-16-12-14 reanalysis	07/28/04	117928004	X			
NH-SS-17-5-7.5	07/28/04	117928005	X		X	
NH-SS-17-12.5-15	07/28/04	117928006	X		X	
NH-SS-17-12.5-15 reanalysis	07/28/04	117928006	X			
NH-SS-217-12.5-15	07/28/04	117928007	X		X	
NH-SS-217-12.5-15 reanalysis	07/28/04	117928007	X			
NH-SS-18-5-7.5	07/28/04	117928008	X		X	
NH-SS-18-7.5-10 reanalysis	07/28/04	117928009	X		X	
NH-SS-18-7.5-10	07/28/04	117928009	X			
NH-SS-20-2.5-5	07/28/04	117928010	X	X		X
NH-SS-20-12.5-15	07/28/04	117928011	X	X		X
NH-SS-20-12.5-15 reanalysis	07/28/04	117928011	X			
NH-SS-19-2-4	07/29/04	117928012	X	X		X
NH-SS-19-12-14	07/29/04	117928013	X	X		X

The field quality control samples collected in association with this SDG included one field duplicate sample.

All samples were collected by Parsons and analyzed by General Engineering Laboratories, LLC (GEL) following the procedures outlined in the Statement of Work (SOW).

The cooler associated with this SDG was received by the laboratory at a temperature of 3°C.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and validated following the guidelines outlined in the DNSC Programmatic Sampling and Analysis Plan (PSAP) and SHELL. Information reviewed in the data package included sample results; laboratory control sample results (LCS); MS/MSD results; parent/FD results; method blanks; calibrations; case narrative; raw data; sample receipt checklist; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the SHELL including approved variances, DoD QSM, and PSAP were met.

VOLATILES

General

The Method SW8260B (VOCs) portion of this SDG consisted of one set of MS/MSD. The thirteen (13) soil samples were collected on July 28-29, 2004 and were analyzed for the project specific list of volatiles as specified in the SOW. Target compounds include: Benzene, Toluene, Ethylbenzene, Xylenes (total), and Methyl tert-butyl ether (MTBE).

- The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method, with the exception of the reanalyses for samples NH-SS-16-12-14, NH-SS-17-12.5-15, and NH-SS-217-12.5-15.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes.

- The LCS recoveries were within acceptance criteria.
- Sample NH-SS-15.2.5 was used for MS/MSD. Recoveries were within acceptance criteria, with the following exceptions:

Sample	Compound	%R MS	%R MSD	% RPD	Qual.
NH-SS-15-2.5-5	M,p-Xylenes	78			J/UJ

- The surrogate recoveries were not within acceptance criteria. Samples NH-SS-15-2.5-5 and NH-SS-15-7.5-10 did not meet DOD QSM acceptance limits, but were not reanalyzed. Samples NH-SS-16-12-14, NH-SS-17-12.5-15, and NH-

SS-217-12.5-15 (original analyses) did not meet acceptance limits, but were reanalyzed outside of holding time and met surrogate limits. Both sets of data are reported for these three samples. Note: laboratory stated in case narrative that surrogate recoveries were exceeded for NH-SS-20-12.5-15 and NH-SS-18-7.5-10 and so samples were reanalyzed, however, reported surrogate recoveries were compliant.

Sample ID	Surrogate Compound	% R	Qual
NH-SS-15-7.5-10	Toluene-d8	73	J/UJ
	Bromofluorobenzene	76	
NH-SS-15-2.5-5	Toluene-d8	71	J/UJ
	Bromofluorobenzene	70	
NH-SS-16-12-14	Toluene-d8	138	J
	Bromofluorobenzene	143	
NH-SS-17-12.5-15	Toluene-d8	120	J
	Bromofluorobenzene	130	
NH-SS-217-12.5-15	Bromofluorobenzene	132	J

Precision

Analytical Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results.

- MS/MSD %RPDs were compliant, with the following exceptions:

Sample	Compound	% RMS	%R MSD	% RPD	Qual.
NH-SS-15-2.5-5	o-Xylene			9	J

Overall Precision (of the sampling and analysis process) was evaluated based on the relative percent difference (%RPD) of sample/field duplicate results. Field duplicate RPD values for one of three analytes exceeded the project advisory limit of 50%RPD. However, the reported concentrations were very low and have been qualified as J based on non-compliant surrogate recoveries; therefore a high variance is expected.

- Field duplicate results are as follows:

Duplicate Set	Analyte	PQL	Sample Conc (mg/kg)	Duplicate Conc (mg/kg)	% RPD	Diff (mg/kg)	Out of Limit (Y/N)
NH-SS-17-12.5-15/ NH-SS-217-12.5-15	Benzene		0.0020	0.00046J	125		Y
	Ethylbenzene		0.00084J	0.00040J	71		N (<RL)
	Xylenes		0.0030	0.0020	40		N

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;

- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package. Evaluation results are as follows:

- Samples were prepared and analyzed within the holding time required by the method, with the exception of the reanalyses for samples NH-SS-16-12-14, NH-SS-17-12.5-15, NH-SS-18-7.5-10, NH-SS-20-12.5-15, and NH-SS-217-12.5-15. Both sets of data for these five samples are reported.

Sample	Collection Date	Days From Sampling to Extraction	Days From Sampling to Analysis	Properly Preserved (Y/N)	Qualification
NH-SS-16-12-14 Reanalysis	07/28/04		15	Y	J/UJ
NH-SS-17-12.5-15 reanalysis	07/28/04		15	Y	J/UJ
NH-SS-18-7.5-10 reanalysis	07/28/04		16	Y	J/UJ
NH-SS-20-12.5-15 reanalysis	07/28/04		16	Y	J/UJ
NH-SS-217-12.5-15 reanalysis	07/28/04		15	Y	J/UJ

- Samples NH-SS-15-2.5-5, NH-SS-15-7.5-10, and NH-SS-2.5-5MS/MSD were diluted using the methanol extraction procedure for high-level concentration samples.
- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- Internal standard criteria were met, with the following exceptions: original analyses of NH-SS-16-12-14, NH-SS-17-12.5-15, NH-SS-217-12.5-15, and NH-SS-20-12.5-15; samples reanalyses met criteria with exception of NH-SS-17-12.4-15. Both sets of data are reported for the four samples.

Sample	Internal Standard	Identified Criteria Failed	Group Affected*	Qual.
NH-SS-16-12-14	Chlorobenzene-d5	Area low	2 (Ethyl benzene, Xylenes)	
	1,4-Dichlorobenzene-d4	Area low	3 (No target analytes)	None
NH-SS-17-12.5-15	1,4-Dichlorobenzene-d4	Area low	3 (No target analytes)	None
NH-SS-217-12.5-15	1,4-Dichlorobenzene-d4	Area low	3 (No target analytes)	None
NH-SS-20-12.5-15	1,4-Dichlorobenzene-d4	Area low	3 (No target analytes)	None
NH-SS-17-12.5-15	1,4-Dichlorobenzene-d4	Area low	3 (No target analytes)	None

reanalysis			
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- There was one methanol blank associated with this SDG. Xylenes were reported at a level (0.13) above the reporting limit (RL), the other four analytes were reported as undetected. Samples NH-SS-15-2.5-5 and NH-SS-15-7.5-10 were diluted using the method extraction procedure for high concentration samples. Sample results were >5x blank amount so data were not qualified.
- There were three method blanks associated with this SDG. Two of the three method blanks were free of any target VOCs at or above half of the reporting limit (RL): no analytes were reported as detected. For method blank VBLK01, xylene was detected at a level above the reporting limit: samples were not reanalyzed and a non-conformance report was not generated. Results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (ug/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
Xylenes	NH-SS-16-12-14	0.0035	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-16-2-4	0.0058	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-17-12.5-15	0.0030	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-18-5-7.5	0.0050	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-18-7.5-10	0.0055	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-19-2-4	0.00069	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-20-12.5-15	0.00043	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-20-2.5-5	0.0018	VBLK01	0.0013	0.0065		0.0010	U
Xylenes	NH-SS-217-12.5-15	0.0020	VBLK01	0.0013	0.0065		0.0010	U

Completeness (laboratory completeness)

Laboratory completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All volatiles results for the samples in this SDG were considered usable: no data were qualified as rejected(R). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

All data quality objectives (DQO) were met and all data are usable. Reported values qualified as undetected (U) based on associated method blank contamination should be considered as potential "false positive" values. Data qualified as estimated (J or UJ) based on holding time exceedances should be considered to be possibly biased low. Data qualified as estimated (J) based on low surrogate compound recoveries or low internal standard recoveries should be considered to be possibly biased low.

PAHs

General

The Method 8270C (PAHs) portion of this SDG consisted of four (4) soil samples and one set of MS/MSD. The samples were collected on July 28-29, 2004 and were analyzed for the project specific list of PAHs as specified in the SOW. Target compounds include 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene.

The PAHs analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8270C. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs and surrogate spikes. MS/MSD analysis was performed on sample NH-SS-22-12-14 from SDG 118074.

There was one analytical batch involved in this SDG. Evaluation results are as follows:

- All surrogate recoveries were within acceptance criteria, with the exception of two of the three surrogates for the method blank that were very slightly lower than the laboratory lower control limit. No data have been qualified based on this circumstance.
- All LCS and LCSD recoveries were within acceptance criteria.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. MS/MSD analysis was performed on sample NH-SS-22-12-14 from SDG 118074.

- MS/MSD %RPD values were within acceptance criteria with the exception of the following: Indeno (1,2,3-cd) pyrene whose 121%R exceeded the DOD limits of 40-120% but was within the marginal exceedances limits of 21/135%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL including approved variances;

- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transportation and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SHELL including approved variances. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method.
- All initial calibration criteria were met.
- All calibration verification criteria were met (mean %D or drift for all target compounds <15%)
- All internal standard criteria were met.
- There was one method blank associated with this SDG. The method blank was free of any target PAH at or above half of the RL; no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All PAH results for the sample in this SDG were considered usable (no data were qualified). The laboratory completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was no target PAH detected above method detection limits (MDLs) in the field sample and no data qualifiers were applied. All data quality objectives (DQO) were met and all data are usable.

TPH – DIESEL RANGE ORGANICS (DRO)

General

The TPH – DRO portion of this SDG consisted of four (4) soil samples and one set of MS/MSD. The samples were collected on July 28-29, 2004 and were analyzed for the TPH – DRO (C₁₀-C₂₈) fraction.

The TPH – DRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015A/B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, MS, MSD, and surrogate spikes. Sample NH-SS-20-2.5-5 was designated for MS/MSD analysis on the COC.

There was one analytical batch involved in this SDG.

- The LCS recoveries were within acceptance criteria.
- The MS/MSD recoveries were within acceptance criteria.
- Surrogate recoveries were within acceptance criteria with the following exception:

Sample ID	Surrogate Compound	% R	Qual
NH-SS-19-2.4	o-Terphenyl	146	J

Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD results. Sample NH-SS-20-2.5-5 was designated for MS/MSD analyses.

- The %RPD for MS/MSD was within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL. All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

- All samples were prepared and analyzed within the holding time required by the method.
- There were two injectors, two identical columns and two different detectors involved. All initial calibration criteria were met for both detectors.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.

There was one method blank associated with this SDG.

- The method blank was free of DRO at or above half of the reporting limit (RL); no analytes were reported as detected.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

The DRO results for the sample in this SDG are considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

The DRO result for sample NH-SS-19-2-4 was reported as being detected above reporting limits (RLs). The result was qualified as estimated ("J") based on the surrogate %R result. The DRO pattern was verified. All data quality objectives (DQO) were met and all data are usable. The required data flag changes are summarized on Table 1.

TPH – GASOLINE RANGE ORGANICS (GRO)

General

The TPH – GRO portion of this SDG consisted of nine (9) soil samples, including one field duplicate sample. The samples were collected on July 28, 2004 and were analyzed for the TPH – GRO (C₄-C₁₀).

The TPH – GRO analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8015B. All samples in this SDG were analyzed following the procedures outlined in the SHELL and approved variances. All samples were prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from LCSs, and surrogate spikes. There was one analytical batches involved in this SDG.

- All LCS and LCSD recoveries were within acceptance criteria.
- The surrogate recoveries for the original analyses of samples NH-SS-16-2-4, NH-SS-16-12-4, NH-SS-17-12.5-15, NH-SS-217-12.5-15, NH-SS-18-5-7.5, and NH-SS-18-7.5-10 were not within the surrogate acceptance criteria. The samples were reanalyzed and the surrogate recoveries were acceptable. The reanalyses results are reported in the data package.

Precision

Precision was evaluated based on the relative percent difference (%RPD) of LCS/LCSD results and parent/FD results. Sample NH-SS-17-5-7.5 was collected in duplicate. The duplicate sample ID is NH-SS-217-5-7.5.

- The LCS/LCSD %RPD values were within acceptance criteria.
- Both the parent and FD had no GRO detected at reporting limit (RL), therefore %RPD calculation was not applicable.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the Work Plan and SHELL;
- Comparing actual analytical procedures to those described in the SOW and SHELL;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the SOW and SHELL. All initial calibration criteria were met for both detectors.

- All samples were prepared and analyzed within the holding time required by the method.
- All second source verification criteria were met.
- All manual integration were performed properly and verified by the data validator.
- There were two method blanks associated with this SDG. Both method blanks were free of GRO at or above half of the reporting limit (RL). No analytes were detected in VBLK01. GRO was reported at 0.012 mg/kg in VBLK02. GRO level in associated sample NH-SS-16-12-14 was (1.5mg/kg) <5x blank amount so data was not qualified.
- There was one methanol blank associated with this SDG. The methanol blank contained a reportable level (1.1 mg/kg) of GRO. The following samples were diluted using the methanol extraction procedures for medium-level concentration samples: NH-SS-15-2.5-5, NH-SS-15-7.5-10, NH-SS-16-2-4, NH-SS-16-12-14, NH-SS-17-5-7.5, NH-SS-17-12.5-15, NH-SS-217-12.5-15, NH-SS-18-5-7.5, NH-SS-18-7.5-10, HBLK01. Evaluation results are as follows:

Analyte	Assoc. Sample ID	Assoc. Sample Result (mg/kg)	Blank ID	Blank Result (mg/kg)	Action Level (mg/kg) 5X or 10X	Action Level X DF	PQL (mg/kg)	Qual.
GRO	NH-SS-16-12-14	1.5	HBLK01	1.1	5.5			U
GRO	NH-SS-17-12.5-15	2.2	HBLK01	1.1	5.5			U
GRO	NH-SS-18-5-7.5	1.2	HBLK01	1.1	5.5			U
GRO	NH-SS-18-7.5-10	1.4	HBLK01	1.1	5.5			U
GRO	NH-SS-217-12.5-15	1.5	HBLK01	1.1	5.5			U

All sample results for soil samples were reported as wet-weight with %moisture provided in the data package.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GRO results for the samples in this SDG were considered usable. The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Data Usability

There was GRO detected above method detection limits (MDs) in the field samples. Sample results qualified as undetected (U) based on associated methanol blank contamination should be considered to be potential false positives. All data quality objectives (DQO) were met and all data are usable.

The completeness of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

TABLE 1
DATA VALIDATION DATA QUALIFIERS AND DATA FLAG CHANGES

Sample ID	Sample Date	Sample Delivery Group	Lab ID	ANALYTE	Reported Concentration (mg/kg)	Old Flag (lab flag)	New Flag (Data Qualifier)	Reason
NH-SS-16-12-14	07/28/04	117928	117928004	Xylenes	0.0035	B	U	Method blank
NH-SS-16-2-4	07/28/04	117928	117928003	Xylenes	0.0058	B	U	Method blank
NH-SS-17-12.5-15	07/28/04	117928	117928006	Xylenes	0.0030	B	U	Method blank
NH-SS-18-5-7.5	07/28/04	117928	117928008	Xylenes	0.0050	B	U	Method blank
NH-SS-18-7.5-10	07/28/04	117928	117928009	Xylenes	0.0055	B	U	Method blank
NH-SS-19-2-4	07/28/04	117928	117928012	Xylenes	0.00069	JB	U	Method blank
NH-SS-20-12.5-15	07/28/04	117928	117928011	Xylenes	0.00043	JB	U	Method blank
NH-SS-20-2.5-5	07/28/04	117928	117928010	Xylenes	0.0018	B	U	Method blank
NH-SS-217-12.5-15	07/28/04	117928	117928007	Xylenes	0.0020	B	U	Method blank
NH-SS-15-2.5-5	07/28/04	117928	117928001	Xylenes	24.1	B	J	MS %R, MSRPD
NH-SS-15-7.5-10	07/28/04	117928	117928002	Tert-Butyl methyl ether	5.1	U	UJ	Surrogate %R
NH-SS-15-7.5-10	07/28/04	117928	117928002	Benzene	384		J	Surrogate %R
NH-SS-15-7.5-10	07/28/04	117928	117928002	Toluene	22.0		J	Surrogate %R
NH-SS-15-7.5-10	07/28/04	117928	117928002	Ethylbenzene	374		J	Surrogate %R
NH-SS-15-7.5-10	07/28/04	117928	117928002	Xylenes	401	B	J	Surrogate %R

NH-SS-15-2.5-5	07/28/04	117928	117928001	Tert-Butyl methyl ether	0.11	U	UJ	Surrogate %R
NH-SS-15-2.5-5	07/28/04	117928	117928001	Benzene	1.8		J	Surrogate %R
NH-SS-15-2.5-5	07/28/04	117928	117928001	Toluene	0.89		J	Surrogate %R
NH-SS-15-2.5-5	07/28/04	117928	117928001	Ethylbenzene	7.1		J	Surrogate %R
NH-SS-15-2.5-5	07/28/04	117928	117928001	Xylenes	24.1	B	J	Surrogate %R
NH-SS-16-12-14	07/28/04	117928	117928004	Benzene	0.0023		J	Surrogate %R
NH-SS-16-12-14	07/28/04	117928	117928004	Toluene	0.00066	J	J	Surrogate %R
NH-SS-16-12-14	07/28/04	117928	117928004	Ethylbenzene	0.0012		J	Surrogate %R
NH-SS-16-12-14	07/28/04	117928	117928004	Xylenes	0.0035	B	J	Surrogate %R
NH-SS-17-12.5-15	07/28/04	117928	117928006	Benzene	0.0020		J	Surrogate %R
NH-SS-17-12.5-15	07/28/04	117928	117928006	Ethylbenzene	0.00084J		J	Surrogate %R
NH-SS-17-12.5-15	07/28/04	117928	117928006	Xylenes	0.0030	B	J	Surrogate %R
NH-SS-217-12.5-15	07/28/04	117928	117928007	Benzene	0.00046	J	J	Surrogate %R
NH-SS-217-12.5-15	07/28/04	117928	117928007	Ethylbenzene	0.00040	J	J	Surrogate %R
NH-SS-217-12.5-15	07/28/04	117928	117928007	Xylenes	0.0020	B	J	Surrogate %R
NH-SS-17-12.5-15	07/28/04	117928	117928006	Benzene	0.0020		J	Field Dup RPD
NH-SS-217-12.5-15	07/28/04	117928	117928007	Benzene	0.00046	J	J	Field Dup RPD
NH-SS-16-12-14	07/28/04	117928	117928004	Ethylbenzene	0.0012		J	Internal standard area
NH-SS-16-12-14	07/28/04	117928	117928004	Xylenes	0.0035	B	J	Internal standard area
NH-SS-16-12-14 Reanalysis	07/28/04	117928	117928004	Tert-Butyl methyl ether	0.00099	U	UJ	Holding Time

NH-SS-16-12-14 Reanalysis	07/28/04	117928	117928004	Benzene	0.00051	J	J	Holding Time
NH-SS-16-12-14 Reanalysis	07/28/04	117928	117928004	Toluene	0.00099	U	UJ	Holding Time
NH-SS-16-12-14 Reanalysis	07/28/04	117928	117928004	Ethylbenzene	0.00099	U	UJ	Holding Time
NH-SS-16-12-14 Reanalysis	07/28/04	117928	117928004	Xylenes	0.00099	U	UJ	Holding Time
NH-SS-17-12.5-15 reanalysis	07/28/04	117928	117928006	Tert-Butyl methyl ether	0.00096	U	UJ	Holding Time
NH-SS-17-12.5-15 reanalysis	07/28/04	117928	117928006	Benzene	0.00058		J	Holding Time
NH-SS-17-12.5-15 reanalysis	07/28/04	117928	117928006	Toluene	0.00096	U	UJ	Holding Time
NH-SS-17-12.5-15 reanalysis	07/28/04	117928	117928006	Ethylbenzene	0.00041	J	J	Holding Time
NH-SS-17-12.5-15 reanalysis	07/28/04	117928	117928006	Xylenes	0.0030	B	J	Holding Time
NH-SS-18-7.5-10 reanalysis	07/28/04	117928	117928009	Tert-Butyl methyl ether	0.0011	U	UJ	Holding Time
NH-SS-18-7.5-10 reanalysis	07/28/04	117928	117928009	Benzene	0.0073		J	Holding Time
NH-SS-18-7.5-10 reanalysis	07/28/04	117928	117928009	Toluene	0.00041	J	J	Holding Time
NH-SS-18-7.5-10 reanalysis	07/28/04	117928	117928009	Ethylbenzene	0.00084	J	J	Holding Time
NH-SS-18-7.5-10 reanalysis	07/28/04	117928	117928009	Xylenes	0.0014		J	Holding Time
NH-SS-20-12.5-15 reanalysis	07/28/04	117928	117928011	Tert-Butyl methyl ether	0.0010	U	UJ	Holding Time
NH-SS-20-12.5-15 reanalysis	07/28/04	117928	117928011	Benzene	0.00046	J	J	Holding Time
NH-SS-20-12.5-15 reanalysis	07/28/04	117928	117928011	Toluene	0.0010	U	UJ	Holding Time
NH-SS-20-12.5-15 reanalysis	07/28/04	117928	117928011	Ethylbenzene	0.0010	U	UJ	Holding Time

NH-SS-20-12.5-15 reanalysis	07/28/04	117928	117928011	Xylenes	0.0010	U	UJ	Holding Time
NH-SS-217-12.5-15 reanalysis	07/28/04	117928	117928007	Tert-Butyl methyl ether	0.00085	U	UJ	Holding Time
NH-SS-217-12.5-15 reanalysis	07/28/04	117928	117928007	Benzene	0.0014		J	Holding Time
NH-SS-217-12.5-15 reanalysis	07/28/04	117928	117928007	Toluene	0.00085	U	UJ	Holding Time
NH-SS-217-12.5-15 reanalysis	07/28/04	117928	117928007	Ethylbenzene	0.00085	U	UJ	Holding Time
NH-SS-217-12.5-15 reanalysis	07/28/04	117928	117928007	Xylenes	0.00085	U	UJ	Holding Time
NH-SS-19-2.4-4	07/28/04	117928	117928012	Diesel Range Organics	86.3		J	Surrogate %R
NH-SS-16-12-14	07/28/04	117928	117928004	Gasoline Range Organics	1.5	J	U	Methanol blank
NH-SS-17-12.5-15	07/28/04	117928	117928006	Gasoline Range Organics	2.2	J	U	Methanol blank
NH-SS-18-5-7.5	07/28/04	117928	117928008	Gasoline Range Organics	1.2	J	U	Methanol blank
NH-SS-18-7.5-10	07/28/04	117928	117928009	Gasoline Range Organics	1.4	J	U	Methanol blank
NH-SS-217-12.5-15	07/28/04	117928	117928007	Gasoline Range Organics	1.5	J	U	Methanol blank

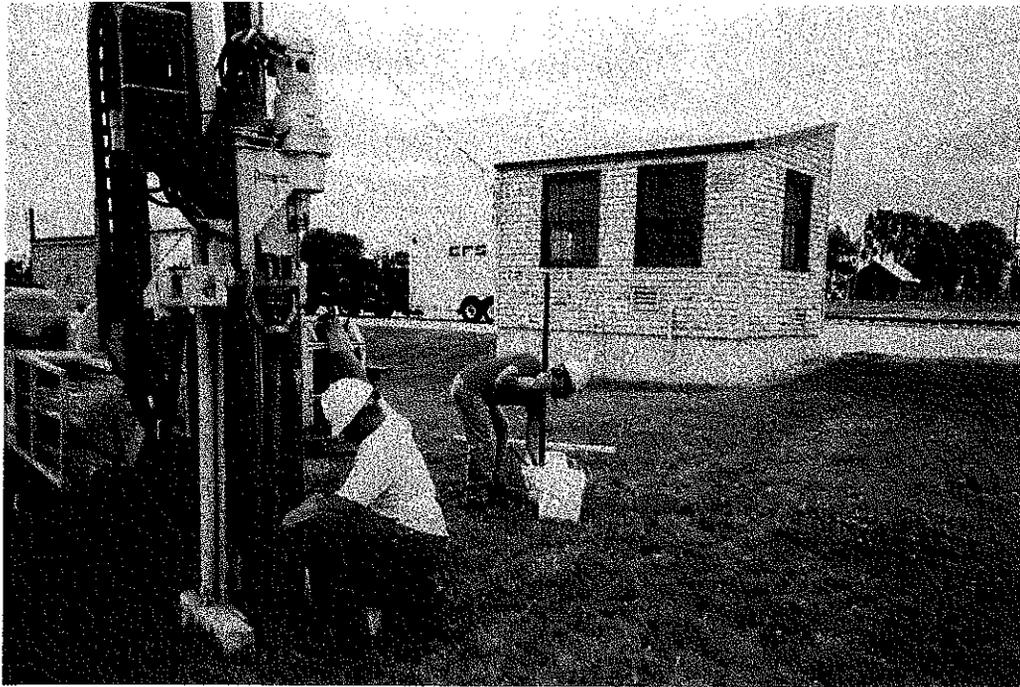
APPENDIX D
PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

PARSONS

PROJECT: LUST Site Investigations
PROJECT #: 742685.04000

LOCATION: DNSC New Haven Depot, New Haven, IN
CLIENT: DNSC



Status as of: July 2004

Description: Subcontractor drilling soil boring NH-SS-01 with Geoprobe® north of Building T-118.

Photo by: E.J. Ashton



Status as of: July 2004

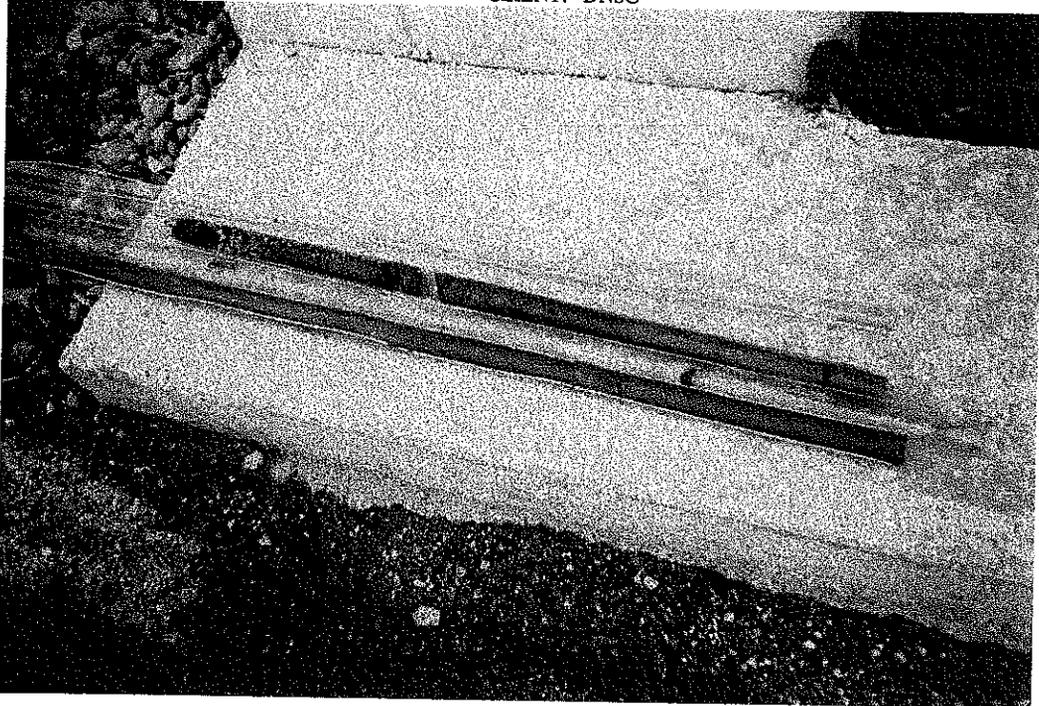
Description: Subcontractor drilling soil boring NH-SS-18 with Geoprobe® south of Building T-118.

Photo by: E.J. Ashton

PHOTOGRAPHIC LOG
PARSONS

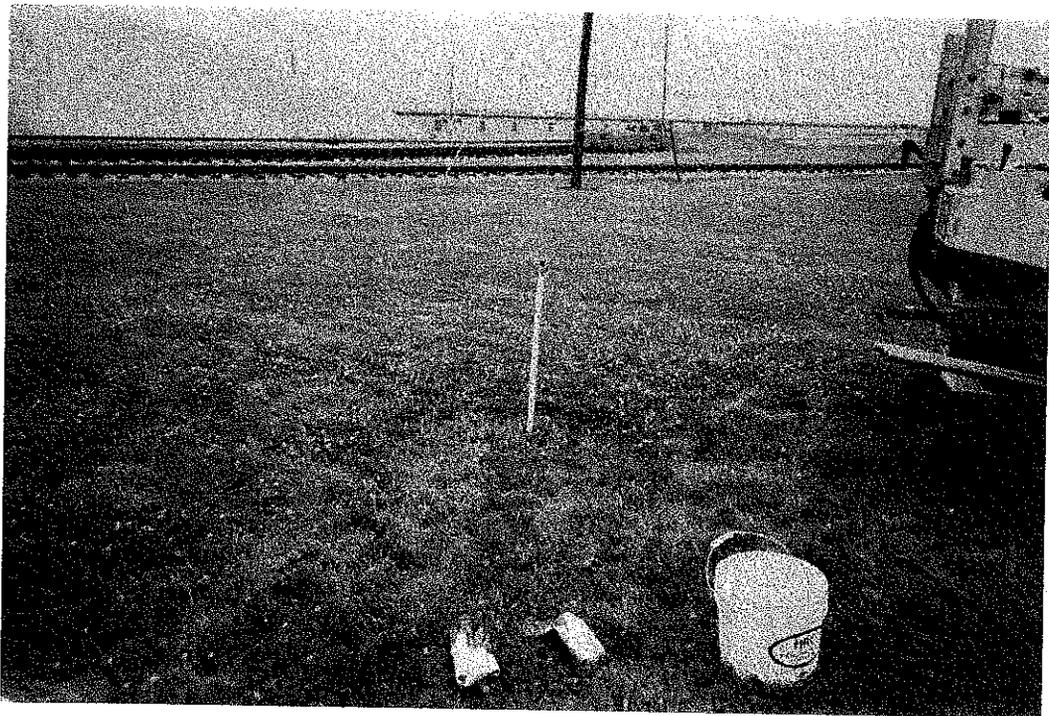
PROJECT: LUST Site Investigations
PROJECT #: 742685.04000

LOCATION: DNSC New Haven Depot, New Haven, IN
CLIENT: DNSC



Status as of: July 2004

Description: Soil sample collected from soil boring NH-SS-09 with Geoprobe®. Soil sample exhibits petroleum-impacted soil (grey soil).
Photo by: E.J. Ashton



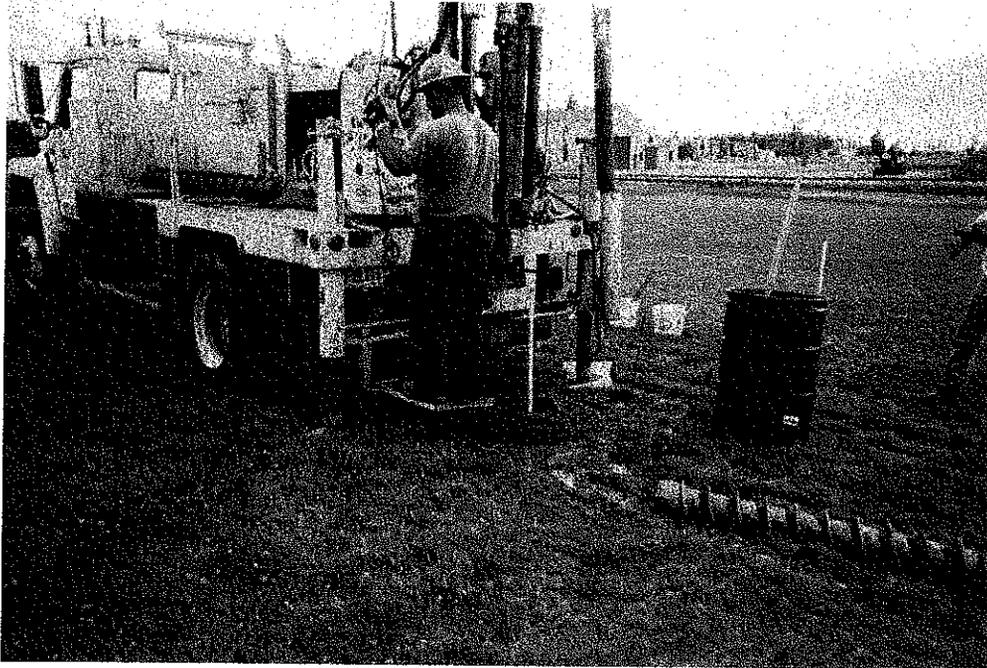
Status as of: July 2004

Description: View of temporary well point installed at soil boring NH-SS-02.
Photo by: E.J. Ashton

PHOTOGRAPHIC LOG
PARSONS

PROJECT: LUST Site Investigations
PROJECT #: 742685.04000

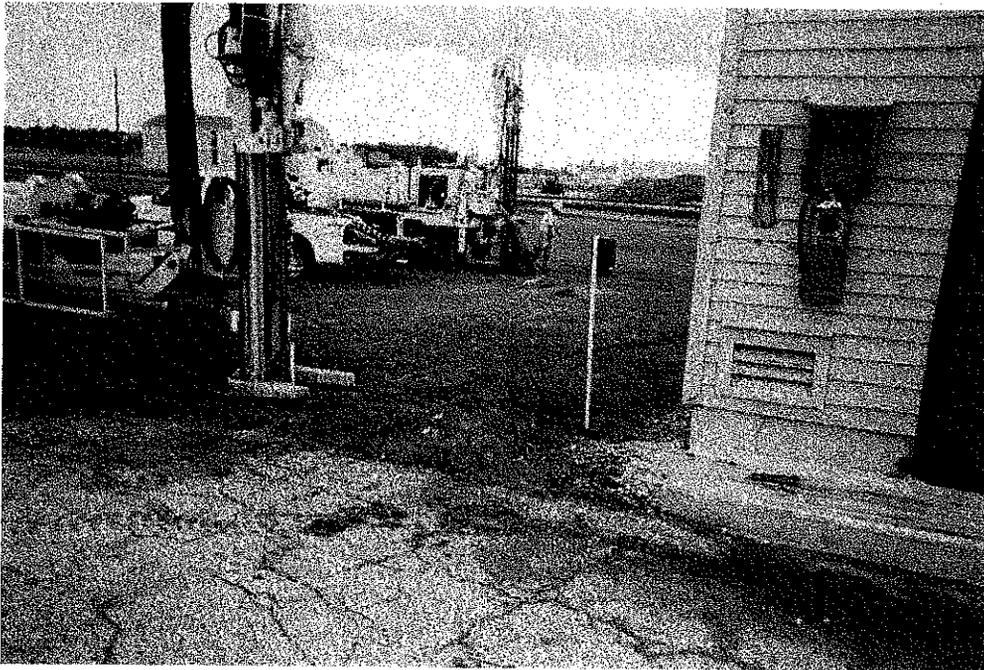
LOCATION: DNSC New Haven Depot, New Haven, IN
CLIENT: DNSC



Status as of: July 2004

Description: Subcontractor installing temporary well point at soil boring NH-SS-01. Drilling performed with a truck-mounted mobile drill rig with hollow stem augers.

Photo by: E.J. Ashton



Status as of: July 2004

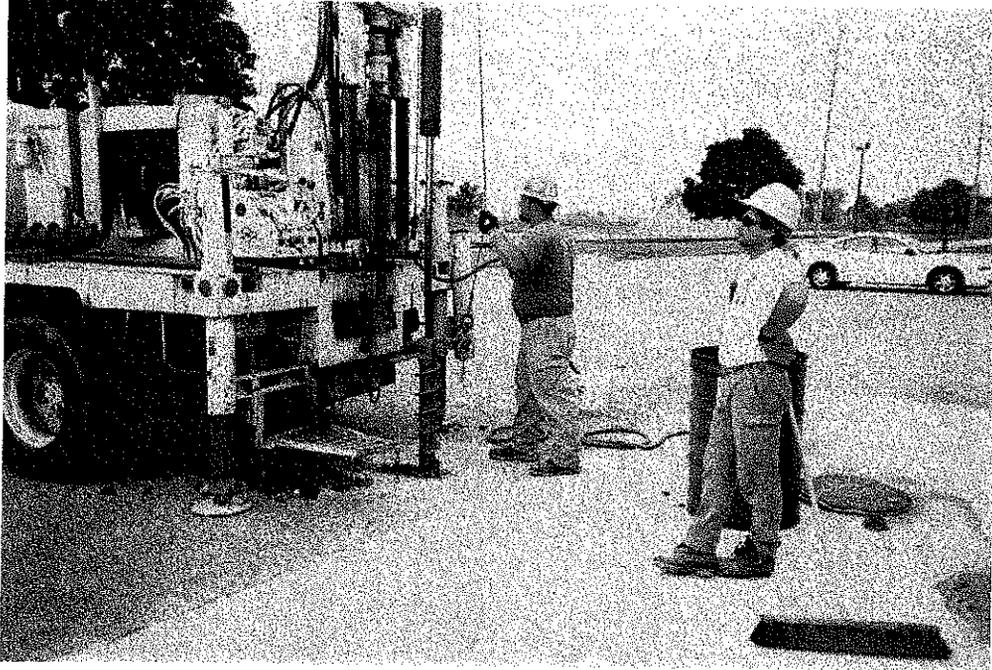
Description: View of subcontractors drilling soil borings NH-SS-01 and NH-SS-09. Soil borings drilled utilizing both a Geoprobe® unit and truck-mounted mobile drill rig.

Photo by: E.J. Ashton

PHOTOGRAPHIC LOG
PARSONS

PROJECT: LUST Site Investigations
PROJECT #: 742685.04000

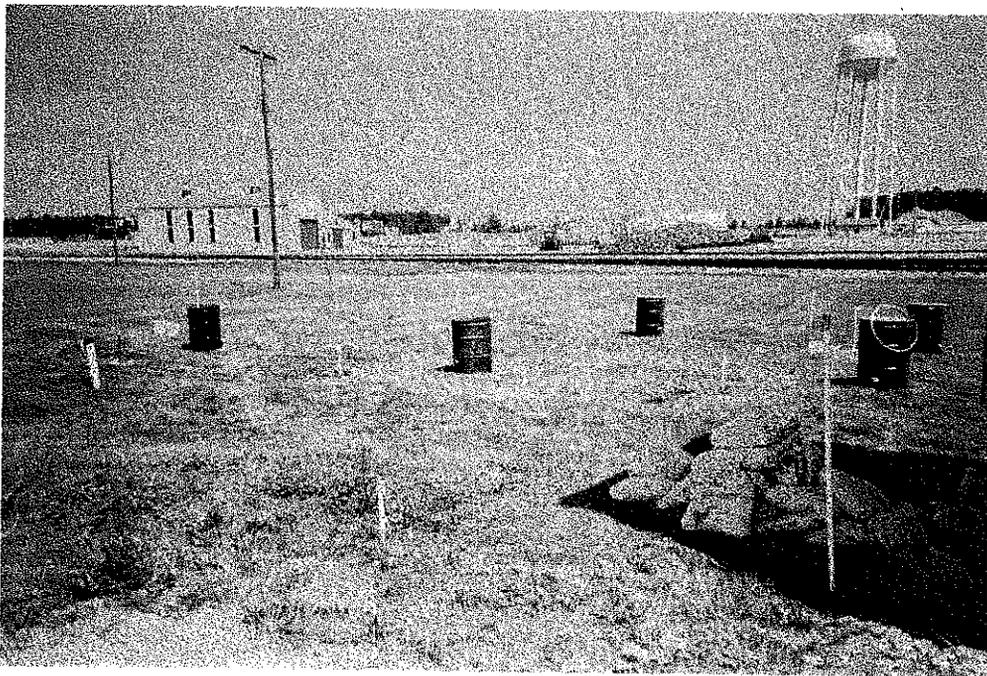
LOCATION: DNSC New Haven Depot, New Haven, IN
CLIENT: DNSC



Status as of: July 2004

Description: Subcontractor drilling soil boring NH-SS-19 south of Building T-111 in former UST location. Former UST location signified by concrete pad.

Photo by: E.J. Ashton



Status as of: July 2004

Description: View of temporary well points installed at Building T-118 prior to groundwater sampling activities.

Photo by: E.J. Ashton

PHOTOGRAPHIC LOG
PARSONS

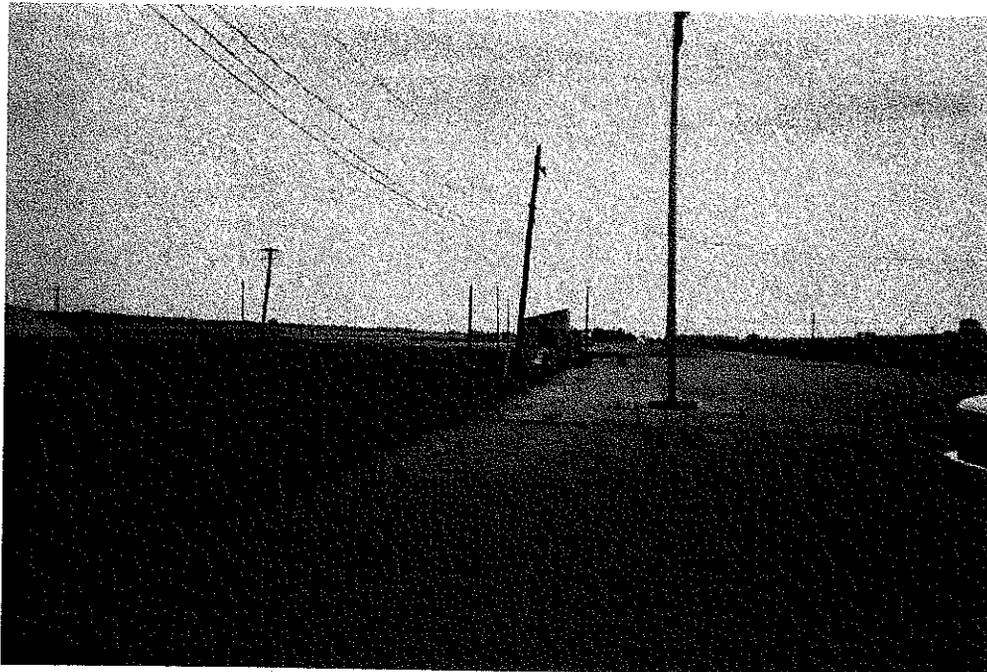
PROJECT: LUST Site Investigations
PROJECT #: 742685.04000

LOCATION: DNSC New Haven Depot, New Haven, IN
CLIENT: DNSC



Status as of: July 2004

Description: Subcontractor collecting groundwater samples from temporary well points at Building T-118 under the supervision of a Parsons geologist.
Photo by: E.J. Ashton



Status as of: July 2004

Description: View of Building T-118 after all temporary well points have been removed and boreholes abandoned. Drums containing soil cutting and purged groundwater also shown in picture prior to staging.
Photo by: E.J. Ashton