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letter._____._____-_____.File spillfile.pdf

report.hw9151413.2001-11-30.CONSTRUCTION COMPLETE REPORT.pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

non-releasable - put .nf.pdf
Example: letter.sp9875693.1998-01.Filespillfile.nf.pdf

New York State Department of Environmental Conservation

See NYS DEC letter dated December 4, 2001

☒ Approved ☐ Approved As Noted ☐ Resubmit With Revisions ☐ Disapproved

COMMISSIONER OF ENVIRONMENTAL CONSERVATION

Designated Representative

Date 12/4/01

ThermoRetec

9-5-1418

Construction Complete Report

Northern DNAPL Recovery System

Scajaquada Creek Remediation Project
Buffalo, New York

Prepared by:

RETEC ENGINEERING, P.C.

Under Contract to:
ThermoRetec Consulting Corporation
1001 West Seneca Street, Suite 204
Ithaca, NY 14850-3342

ThermoRetec Project Number: NFGD1-02111-700

Prepared for:

National Fuel Gas Distribution Corporation
10 Lafayette Square
Buffalo, NY 14203

November 30, 2001

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ThermoRetec Project Number: NFGD1-02111-700

Prepared for:

National Fuel Gas Distribution Corporation
10 Lafayette Square
Buffalo, NY 14203

Prepared by:

Mark Hofferbert, P.E., Project Engineer

Reviewed by:

Bruce D. Coulombe, Senior Hydrogeologist

November 30, 2001

Engineer's Certification and Statement of Limitations

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and condition of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of National Fuel Gas Distribution Corporation for specific application to the Scajaquada Creek Sediment Remediation Project in Buffalo, New York. No other warranty, express or implied, is made.

Table of Contents

List of Appendices

List of Figures

1 Introduction

This document presents the Construction Complete Report for the second (Northern) Dense Non-Aqueous Phase Liquid (DNAPL) recovery system to be installed as a component of the Scajaquada Creek Sediment Remediation Project in Buffalo, NY (Consent Decree CIV-90-1324C of July 10, 1995). The principal organizations involved in permitting, designing, and constructing the Northern DNAPL Recovery System were National Fuel Gas Distribution Corporation (NFG), New York State Department of Environmental Conservation (NYSDEC), and The RETEC Group, Inc. (RETEC).

The following specific remedial goals apply to the Scajaquada Creek DNAPL Recovery Systems (both this North System and the previously constructed South system):

- Remove additional contaminant mass in two areas containing DNAPL in gravel zones;
- Avoid damage to existing structures and properties within and adjacent to the site; and
- Avoid short-term adverse effects of remediation activities on human health and the environment.

This Construction Complete Report includes:

- A description of the field work;
- As-built drawings; and
- The Engineer's Certification.

Construction of the Northern DNAPL Recovery System was in accordance with the approved *Northern DNAPL Recovery System – Design and Specifications, April 27, 2001* (RETEC, 2001).

2 Project Overview

The Northern DNAPL Recovery System consists of a 4-inch diameter HDPE and stainless steel recovery well, a 12-V DC peristaltic pump, a DNAPL holding tank, and a concrete vault.

The System is located south of the Conrail Railroad Bridge at Sta 9+95. This location contains DNAPL-saturated gravelly sediments which, due to their depth, remained after the Sediment Remediation Project was completed. An underlying confining clay layer provides a natural collection point for the DNAPL. The lowest elevation of the clay layer is approximately 555-feet (Great Lakes Datum, GLD) and is located at Sta 9+95 near the midpoint of the creek. This location is defined as the target area and was successfully penetrated by the 4-inch recovery well, per design.

Design constraints included the following:

- Location of the target area - The clay layer is at its lowest elevation at Sta 9+95, near the center of the creek. To maximize DNAPL recovery, the recovery well screen needed to penetrate this point.

- Proximity of the geosynthetic clay liner cap (GCL) - The western toe of the GCL at Sta 9+95 could not be inadvertently punctured during well construction.

- Slope of the well - The well was placed as steep as possible to minimize the depth of the eastern excavation (within the creek bank) and to raise the bottom elevation of the vault.

- Site access for vault placement - Permission to place the recovery system at a more accessible location (i.e. west of the Bicycle Pathway, or east of the creek), was not received from the respective property owners.

- Bank stability - Shoring and a trench box were required to protect site workers, the bicycle pathway, and the creek cap during excavation and construction.

Selection and installation of a long-term system pump will occur after initial operations, when actual recovery rates can be determined and an appropriate pump sized. A permanent power source and final system plumbing will also be installed at that time.

3 Construction Activities

The As-Built Drawings of the Northern DNAPL Recovery System are presented in the attached Figures. Photographs are provided in Appendix B.

3.1 Well Installation

The DNAPL Recovery well was constructed of the following materials:

- 20 feet of 0.040-slot spiral-wound stainless steel well screen, capped at the bottom end and fitted with NP threads at the top end;
- 80 feet of 4-inch diameter HDPE pipe, trimmed to 42.5 feet after installation;
- Approximately 21.5 linear feet of (#3 Morie) sandpack; and
- Approximately 5 linear feet of bentonite collar.

Well construction was performed as follows:

- Placed drill string, by directional drilling, through the design target location, 12 feet into the lower confining clay layer as shown in the Figures. Deviation of the as-built drilling path from the design, was negligible.
- Installed a 12-inch temporary iron casing, by pneumatic driving, over the full length of the drill string.
- Removed the directional drill string and bored out the 12-inch casing. All drill cuttings were containerized in drums, sampled, analyzed, transferred to a lined rolloff, and disposed offsite as non-hazardous waste. Analytical data is provided in Appendix A.
- Installed the 4-inch diameter well pipe and screen.
- Installed the sandpack by hydraulic recirculation.
- Installed the bentonite collar by hydraulic recirculation.

3.2 Excavation

Soil excavation was completed as follows:

- Opened the existing chain link fence and placed timber mats over the bicycle pathway.
- Excavated the bench for vault placement.

- Excavated a narrow trench to uncover the 12-inch iron casing below the vault footprint.
- Pulled the 12-inch iron casing back approximately 65 feet to expose the HDPE pipe.
- Cut the HDPE pipe and bent it up as shown in the Figures.
- Backfilled the narrow trench with compacted crushed stone.
- Placed geofabric across the bench, followed by additional compacted crushed stone for vault subbase.

Excavation sidewalls were maintained with a trench box and temporary sheetpiles.

Existing facilities and underground utilities were delineated and protected prior to any drilling or excavation work.

Clean excavation soils were reused on site. All excavation soils were determined to be clean by RETEC using PID measurements and olfactory and visual observations in consultation with NYSDEC.

3.3 Vault Construction

The DNAPL Recovery vault was constructed of the following materials with the following dimensions:

- 4000 psi portland cement concrete;
- 10-inch thick walls with #5 reinforcing rod @ 12-inches O.C. both ways;
- 10-inch thick floor and roof slabs, with two layers of #5 reinforcing rod @ 12-inches O.C. both ways;
- Inside vault dimensions of 8 feet wide, 10 feet long, 8 feet 3 inches high;
- Final floor elevation of approximately 576.7 feet above datum;
- Concrete keyway and PVC water stop between floor and walls;
- Fiberglass steps, 12-inches O.C; and
- 36-inch x 48-inch lockable aluminum access hatch.

Vault construction was as follows:

- Formed and placed vault floor.
- Formed and placed vault walls.
- Placed DNAPL holding tank in vault.
- Formed and placed vault roof and access hatch.
- Placed 4" diameter drain tile around outside base of vault.
- Placed utility pole and electrical conduit outside of vault.
- Backfilled with native material, followed by NYSDOT light stone fill.
- Restored disturbed areas and applied grass seed. (Three willow trees were removed during the work and will be replaced under the site-wide O&M program).
- Repaired existing bicycle pathway fence (that had been cut to allow access to the creek bank) to its pre-construction condition. New fence, of similar style and quality, was also installed between the vault and the pathway.
- Cleaned the bicycle pathway to its pre-construction condition.

3.4 General Activities

All work was conducted in accordance with the approved Site-Specific Health and Safety Plan (HASP), which was most recently amended by RETEC in October, 2000. Prior to the work, RETEC made a copy of the HASP available to all Subcontractors for review and signature.

Air monitoring (at the site perimeter and work area) was performed by RETEC to ensure that all action levels outlined in the HASP were followed. At no time was respirator use required, as determined by work area VOC measurements.

All work was conducted in a manner to minimize disturbance of vegetated areas, especially the creek bank. All disturbed areas were re-seeding immediately following the work.

Stream water quality was visually monitored by RETEC. No downstream sheen or increased turbidity was noted.

Excavation dewatering was not required during this work. Water generated during equipment decontamination (less than 30 gallons, total) was allowed to evaporate from the lined decon pad. Well development fluids (approximately 50 gallons, total) were heavily impacted with DNAPL and were containerized within the DNAPL holding tank. No other wastewater was generated.

Approximately three cubic yards of drill cuttings, contaminated PPE, and other impacted material was containerized, analyzed, and disposed off-site as non-hazardous waste.

To ensure the safety of the public, the bicycle pathway was barricaded while excavation or concrete placement was underway in that area.

4 Operations and Maintenance

During initial system operations and maintenance, the system will be operated with a temporary pump and potential DNAPL recovery rates will be evaluated. An appropriately sized pump and power source will then be selected and installed for long-term operations.

The first batch of recovered DNAPL will be sampled, analyzed and held on site. Based on the analyses, an off-site recycling/disposal facility will be selected. Future sampling and analyses will be as per the requirements of the receiving facility.

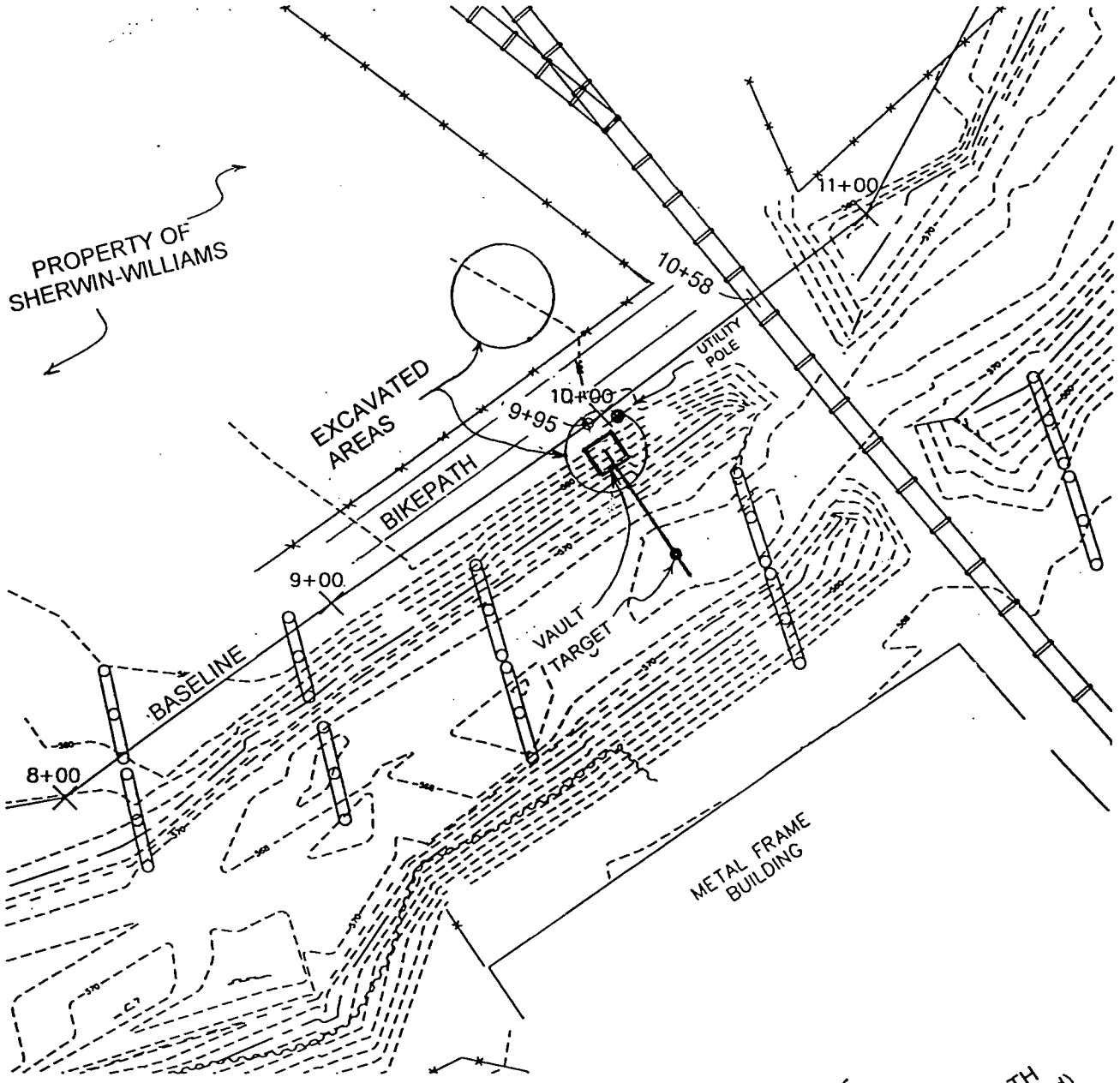
A high level shut off switch in the collection tank will prevent overfilling and spillage. The tank will be emptied periodically by a tanker or vac truck under RETEC or NFG technical supervision. System production and analytical results will be documented and reported to NYSDEC in quarterly reports.

5 References

RETEC, 1998. Final Preliminary Design/Remedial Action Work Plan, Scajaquada Creek Sediment Remediation, Buffalo, New York, RETEC Engineering, P.C. June 5, 1998.

RETEC, 2000. Final Engineering Report, Scajaquada Creek Sediment Remediation, Buffalo, New York, RETEC Engineering, P.C. August 30, 2000.

RETEC, 2001. Northern DNAPL Recovery System – Design and Specifications, Scajaquada Creek Remediation Project, Buffalo, New York, RETEC Engineering, P.C. April 27, 2001.

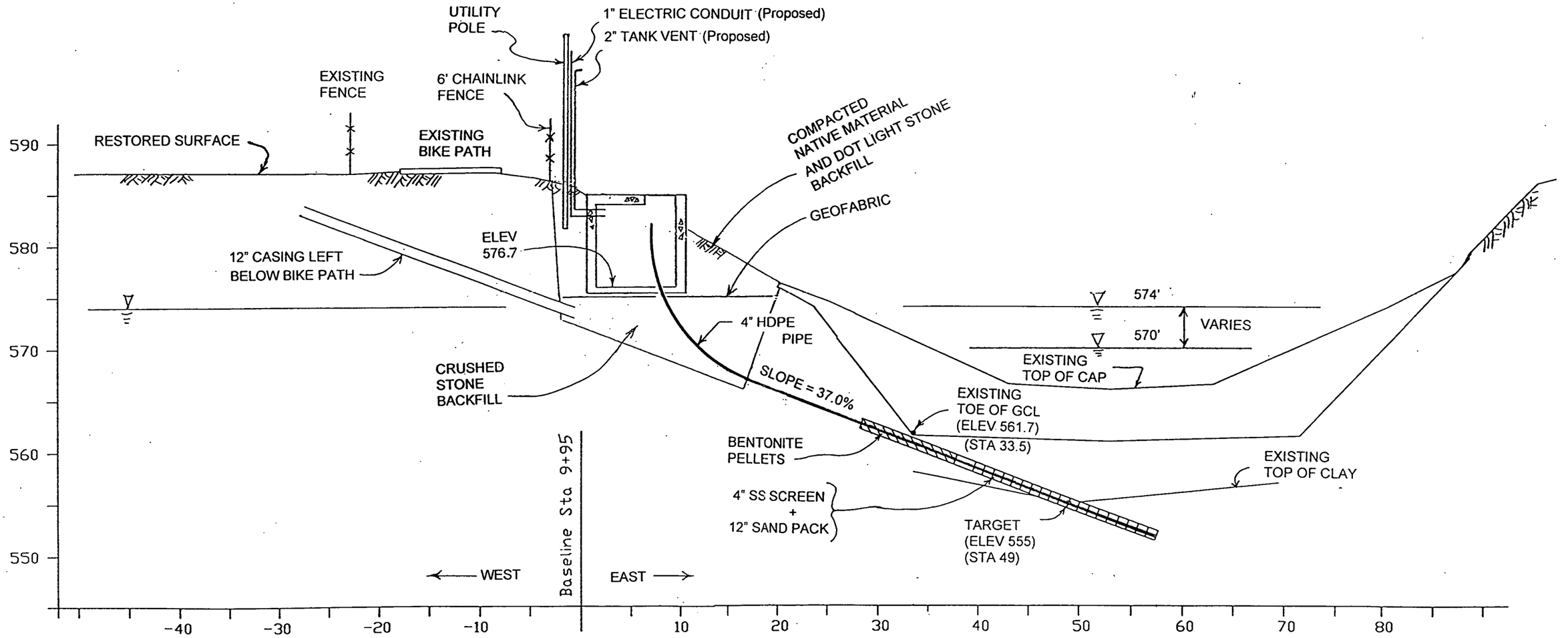


STATE OF NEW YORK
MARK R. HOFFERBERT
077870
LICENSED PROFESSIONAL ENGINEER

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

Scajaquada Creek
Northern DNAPL System
(As-Built)
Site Plan

RETEC
RETEC ENGINEERING, P.C.
Date: 11/30/01 By: mrh
Figure 1



NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE

STATE OF NEW YORK
MARK R. HOFFERBERT
077870
LICENSED PROFESSIONAL ENGINEER

Scajaquada Creek
Northern DNAPL System
(As-Built)
Well and Vault Placement

RETEC
RETEC ENGINEERING, P.C.
Date: 11/30/01 By: mrh
Figure 2

Appendix A

Analytical Laboratory Data

REIEC
REMEDIATION TECHNOLOGIES INC
1001 W. Seneca Street, Suite 204
Ithaca, NY 14850
(607) 277-5716
Fax (607) 277-9057

CHAIN OF CUSTODY RECORD 0940

PAGE 1 OF 1

PROJECT NAME:	PROJECT NUMBER: NFGDI-02111-700
SEND REPORT TO: ~~ATT: PAM WEAVER~~ Galson Laboratories	SAMPLER (PRINT NAME) Henry C. Spencer
ADDRESS: 6601 Kirkville rd.	SAMPLER (PRINT NAME)
P.O. Box 369	SHIPMENT METHOD: Fed-ex
East Syracuse, NY 13057	AIRBILL NUMBER: 8216 1202 2704
PHONE: (315) 432-0506	LABORATORY RECEIVING: Galson Labs
FAX:	

FIELD SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	NUMBER OF CONTAINERS	BTEX EPA 8260	PAH's EPA 8270	Ignitability	~~Toxicity Characteristic~~	COMMENTS, SPECIAL INSTRUCTIONS, ETC.	LAB SAMPLE ID (to be completed by lab)
1 sample - auger soils	6/6/01	2:35	Soil	5	X	X	X		Composite Jars for 1 sample, (composite ½ of jars 1-4, with all of 5) Call Mark Hofferbert w/ questions (607) 327-0551	

6/25/01 - Per Hank Spencer please analyze for ~~Toxicity~~ Ignitability also. PAW
Results due by 6/26/01

6/12 as per Mark Hofferbert - Do BTEX 8260 on jar # 4 and composite 1,2,3, & 5 for PAH 8270. MP
Fax to Dan Shearer 607-277-9057

There is NO separate jar of sample for BTEX. SS 6/12/01

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Henry Spencer			
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	M. Krause	6/12/01	10:15 AM

SAMPLE CUSTODIAN REMARKS (COMPLETED BY LABORATORY):

QA/QC LEVEL		TURNAROUND:	
LEVEL I	☐	ROUTINE	☐
LEVEL II	☐	24 HOUR	☐
LEVEL III	☐	1 WEEK	☐
OTHER	☐	OTHER 2 week	

SAMPLE RECEIPT	
TOTAL # CONTAINERS RECEIVED ?	5
COC SEALS PRESENT ?	
COC SEALS INTACT ?	
RECEIVED CONTAINERS INTACT ?	Yes
TEMPERATURE ?	

SEMIVOLATILE ANALYTICAL REPORT

Galson Laboratories
6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone: (315) 432-5227
Fax: (315) 437-0571
www.galsonlabs.com

Client : ThermoRetec
Account # : 12013
Site : NFGD1-02111-700

Date Received : 12-JUN-01
Date Sampled : 06-JUN-01
Date Extracted: 13-JUN-01

Matrix : Soil
Method : SW846 8270
Units : ug/kg

Galson ID:	L71848-1	L71848-1DL	WG33053-1
Client ID:	AUGER SOIL	AUGER SOIL	Method Blank
Naphthalene	150000 E	150000	<330
Acenaphthylene	16000 E	23000 J	<330
Acenaphthene	36000 E	38000 J	<330
Fluorene	22000 E	21000 J	<330
Phenanthrene	84000 E	80000	<330
Anthracene	22000 E	25000 J	<330
Fluoranthene	10000 E	20000 J	<330
Pyrene	91000 E	43000 J	<330
Benzo(a)anthracene	9100 E	13000 J	<330
Chrysene	6700 E	11000 J	<330
Benzo(b)fluoranthene	6200 E	8000 J	<330
Benzo(k)fluoranthene	1700	<46000	<330
Benzo(a)pyrene	8900 E	13000 J	<330
Indeno(1,2,3-cd)pyrene	2300	<46000	<330
Dibenzo(a,h)anthracene	1000	<46000	<330
Benzo(g,h,i)perylene	3700 E	<46000	<330
Percent Moisture (%)	28	28	NA
Analysis Date	06/15/01	06/18/01	06/15/01
Dilution Factor	1	100	1

Approved by : Oommen Kappil
Date : 19-JUN-01
QC by :
Date : 6/21/01
NYS DOH # : 11626
Footnotes:
Results are reported on a dry weight basis.
E : Compound concentration exceeds calibration range.
J : Estimated value. Value is below practical quantitation limit.

SEMIVOLATILE ANALYTICAL REPORT

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone: (315) 432-5227
Fax: (315) 437-0571
www.galsonlabs.com

Client : ThermoRetec
Account # : 12013
Site : NFGD1-02111-700

Date Received : 12-JUN-01
Date Sampled : 06-JUN-01
Date Extracted: 13-JUN-01

Matrix : Soil
Method : SW846 8270
Units : ug/kg

Galson ID: WG33053-2
Client ID: Blank Spike

Naphthalene	1200
Acenaphthylene	1900
Acenaphthene	1200
Fluorene	1300
Phenanthrene	1400
Anthracene	1400
Fluoranthene	1500
Pyrene	1300
Benzo(a)anthracene	1500
Chrysene	1400
Benzo(b)fluoranthene	2000
Benzo(k)fluoranthene	1900
Benzo(a)pyrene	1900
Indeno(1,2,3-cd)pyrene	1200
Dibenzo(a,h)anthracene	1300
Benzo(g,h,i)perylene	1000
Percent Moisture (%)	NA
Analysis Date	06/15/01
Dilution Factor	1

Approved by : Oommen Kappil
Date : 19-JUN-01
QC by :
Date : 6/19/01
NYS DOH # : 11626

Footnotes:
Results are reported on a dry weight basis.
E : Compound concentration exceeds calibration range.
J : Estimated value. Value is below practical quantitation limit.

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: GALSON LABORATORIES Contract:

Lab Code: . Case No.: 1 SAS No.: SDG No.: L71848

Level: (low/med) LOW

SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (DCB) #	S5 ( ) #	S6 ( ) #	S7 ( ) #	S8 ( ) #	TOT OUT
SBLK WG33053	77	69	92	72					0
SBLK WG33053BS	80	76	95	82					0
AUGER SOIL	36	29 *	122	67					1
AUGER SOILDL	D	D	D	D					0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(36-122)
S2 (FBP) = 2-Fluorobiphenyl	(35-129)
S3 (TPH) = Terphenyl-d14	(31-140)
S4 (DCB) = 1,2-Dichlorobenzene-d4	(36-136)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3D

SOIL SEMIVOLATILE BLANK SPIKE RECOVERY

Lab Name: GALSON LABORATORIES Contract:

Lab Code: Case No.: 1 SAS No.: SDG No.: L71848

Matrix Spike - NYSDEC Sample No.: Method Blank (WG33053-1)

COMPOUND	SPIKE ADDED (ug/kg)	BLANK CONCENTRATION (ug/kg)	BS CONCENTRATION (ug/kg)	BS % REC #	QC. LIMITS REC.
Naphthalene	1670	0.0	1170	70	50-130
Acenaphthylene	1670	0.0	1910	114	50-130
Acenaphthene	1670	0.0	1260	75	42-126
Fluorene	1670	0.0	1320	79	55-114
Phenanthrene	1670	0.0	1350	81	53-115
Anthracene	1670	0.0	1360	81	55-118
Fluoranthene	1670	0.0	1500	90	57-114
Pyrene	1670	0.0	1310	78	44-126
Benzo(a)anthracene	1670	0.0	1490	89	59-113
Chrysene	1670	0.0	1380	83	46-149
Benzo(b)fluoranthene	1670	0.0	2030	122	26-145
Benzo(k)fluoranthene	1670	0.0	1930	116	64-135
Benzo(a)pyrene	1670	0.0	1900	114	64-128
Indeno(1,2,3-cd)pyrene	1670	0.0	1240	74	40-122
Dibenzo(a,h)anthracene	1670	0.0	1340	80	38-131
Benzo(g,h,i)perylene	1670	0.0	1060	63	33-130

Column to be used to flag recovery values with an asterisk.
* Values outside of QC limits.

Spike Recovery: 0 out of 16 outside limits

COMMENTS: _____

_____

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone: (315) 432-5227
Fax: (315) 437-0571
www.galsonlabs.com

VOLATILE ANALYTICAL REPORT

Client : ThermoRetec
Account # : 12013
Site : NFGD1-02111-700

Date Received : 12-JUN-01
Date Sampled : 06-JUN-01
Date Extracted: NA

Matrix : Soil
Method : SW846 8260
Units : ug/kg

Galson ID:	L71848-1	WG33094-1
Client ID:	AUGER SOIL	Method Blank
Benzene	5300	<620
Toluene	3800	<620
Ethylbenzene	98000	<620
Xylene (total)	60000	<620
Percent Moisture (%)	28	NA
Analysis Date	06/15/01	06/15/01
Dilution Factor	4	1

Approved by : PJT
Date : 15-JUN-01
QC by : [signature]
Date : 6/21/01
NYS DOH # : 11626
Footnotes:
* : Sample analyzed as a medium level extract.
Results are reported on a dry weight basis.

SOIL VOLATILE SURROGATE RECOVERY

Client : ThermoRetec

Login # : L71848

Level: (low/med) MED

SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
METHOD BLANK	84	94	93	BG0615	0
AUGER SOIL	85	93	96	BG0615	0

	QC LIMITS
SMC1 (TOL) = Toluene-d8	(62-134)
SMC2 (BFB) = Bromofluorobenzene	(60-153)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(73-125)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM II-CLP-1

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone: (315) 432-5227
Fax: (315) 437-0571
www.galsonlabs.com

INORGANIC ANALYTICAL REPORT

Client : ThermoRetec
Account # : 12013
Site : NFGD1-02111-700

Date Received : 12-JUN-01
Date Sampled : 06-JUN-01

Matrix : Soil

		Galson ID: L72331-1	Client ID: L71848-1
	Method	Units	
Ignitability	SW846 1030	NEG	

Approved by : DM
Date : 26-JUN-01
QC by : MGW
Date : 6/26/01
NYS DOH # : 11626
Footnotes:

* The sample does not ignite or support combustion. Under these conditions the sample is non-ignitable.

Appendix B

Photographic Record

1A. Directional drilling to target area.

1B. Driving 12-inch casing over directional drill string.

2A. Containerizing drill cuttings.

2B. Installing well materials.

3A. Preparing for vault excavation.

3B. Vault Excavation

4A. Cutting HDPE pipe.

4B. Placing vault sub-base.

5A. Constructing vault form work.

5B. Placing holding tank.

6A. Completed system (from east).

6B. Completed system (from south).