

**FINAL
PHOSTER SYSTEM SOIL SAMPLING REPORT
(June 2006 Sampling Event)**

**Multi Site G
Operation, Maintenance & Monitoring**

***SMS Instruments Site
Deer Park, Suffolk County, NY
Site 1-52-026***

**Work Assignment No.
D004445-14**

Prepared for:



**SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
625 Broadway
Albany, New York 12233**

October 2006

Prepared by:

**Earth Tech Northeast, Inc.
300 Broadacres Drive
Bloomfield, New Jersey**

SAMPLING TRIP REPORT

Site Name: SMS INSTRUMENTS, INC. SITE

NYSDEC Superfund Site Number: 1-52-026

Sampling Dates: June 28 – June 29, 2006

Site Location: 120 Marcus Boulevard, Deer Park, New York, 11729

Sample Descriptions: Soil Sampling Event- Evaluation of Current Conditions of Soils in Main Area of Concern

Laboratories Receiving Samples:

Case Number	Sample Type/ Parameters	Name and Address of Laboratory
N/A	Soil/ VOCs, SVOCs, Moisture	Mitkem Corporation 175 Metro Center Boulevard Warwick, RI 02886-1755
N/A	Soil/ PLFA, Methanotrophs	Microbial Insights, Inc. 2340 Stock Creek Blvd. Rockford, TN 37853-3044

Sample Dispatch Data:

A total of six soil borings were advanced over a two day period to collect soil samples from varying depths for laboratory analyses. On the first day (June 28, 2006), samples from four soil borings (SMS-DW, SMS-SB-21, SMS-SB-10, and SMS-SB-12), were shipped to Mitkem Corporation and Microbial Insights, Inc. for analysis of VOCs, SVOCs, Moisture, and PLFA, Methanotrophs, respectively. Extra volume was taken from SMS-SB-10 and SMS-DW for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis and two field duplicate samples (SMS-SB-22, SMS-DRYWELL), were collected from SMS-SB-21 and SMS-DW, respectively. The soil samples were collected from depths ranging from sixteen to thirty-one feet.

On the second day (June 29, 2006), samples from two soil borings (SMS-SB-15 and SMS-SB-16), were shipped to Mitkem Corporation and Microbial Insights, Inc. for analysis of VOCs, SVOCs, Moisture, and PLFA, Methanotrophs, respectively. Extra volume was taken from SMS-SB-16 for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. The soil samples were collected from depths ranging from sixteen to thirty feet.

FedEx Airbill No.	Number of Coolers	Number and Type of Samples	Time and Date of Shipping
8553 6780 9131	1	Thirteen soil samples. Extra volume for two MS/MSDs and two duplicates for a total of seventeen samples for analysis of VOCs, SVOCs, and Moisture.	6/28/06@18:30 TO: Mitkem Corporation
8553 6780 9083	1	Six soil samples for PLFA Analysis/ Methanotrophs.	6/28/06 @18:30 TO: Microbial Insights, Inc.
8553 6780 7610	1	Seven soil samples. Extra volume for one MS/MSD for a total of eight samples for analysis of VOCs, SVOCs, and Moisture.	6/29/06@12:15 TO: Mitkem Corporation
8553 6780 7643	1	Two soil samples for PLFA Analysis/ Methanotrophs.	6/29/06 @12:15 TO: Microbial Insights, Inc.

Sampling Personnel:

Name	Organization	Site Duties
Urbie Nash	Earth Tech Northeast, Inc.	Senior Program Manager
Tom Williams	Earth Tech Northeast, Inc.	Response Manager
Greg Carter	Earth Tech Northeast, Inc.	PHOSter System Technical Expert/Evaluation Write-Up
Helen Mongillo	Earth Tech Northeast, Inc.	P.G. Environmental Engineer/ Hydrogeologist Geosciences Department Manager
James Kearns	Earth Tech Northeast, Inc.	Task Manager/Health and Safety
Frank Mahalski	Earth Tech Northeast, Inc.	Field Sampling
Robert Derrick	Earth Tech Northeast, Inc.	Field Sampling/Report Generation
Paul Kareth	Earth Tech Northeast, Inc.	Project Manager

Sample Numbers and Collection Points:

Appendix A includes a map of SMS Instruments and existing well locations. Appendix B displays a map with the REAC/USEPA ERT soil boring results (August 2004 Event) Concentrations of BTEX in Soil. Appendix C includes a table with a list of all the soil boring collection points, sample IDs, depths of collection and PID reading as well as a comparison of the BTEX concentrations in the soil from the August 2004 event and the June 2006 event. Samples were usually collected at the start of the water table (16 feet below ground surface [ft bgs]), the “hot zone” (20-24 ft bgs), and at the bottom of the soil core boring (30 ft bgs). Appendix D includes a table showing the Methanotroph population results. Appendix E includes a VOC results table and Appendix F includes an SVOC results table.

Additional Comments:

Copies of the Chain of Custody forms and a copy of the FedEx air bill are included in Appendix G and H, respectively. The well logs are included in Appendix I

Data Interpretation/Evaluation:

At the SMS site, gaseous phase bioremediation amendments are being injected in site groundwater to biodegrade the remaining volatile organic compounds (VOCs) in the saturated zone following the application of multiple remediation technologies including years of pump and treat system operation. The pump and treat system operation was suspended in 2005 based on a number reasons including the lack of VOC concentrations in the extracted groundwater and fouling/treatment issues detailed in previous correspondence. The VOC concentrations in groundwater, following pump and treat suspension, continues to indicate that VOC concentrations have not rebounded and remain below action levels. The groundwater seepage velocity was estimated to be on the order of 0.27 feet per day in the Remediation System Evaluation Report dated December 2003. The groundwater data coupled with the soil data, discussed in the following paragraphs, are consistent with the continued suspension of the pump and treat operation and decommissioning of the existing ineffective pump and treat system.

Bioremediation Process Description

The gaseous phase bioremediation amendments include air (oxygen source), nitrous oxide (nitrogen source), triethyl phosphate (phosphorus source), and methane (carbon source). This combination of amendments will stimulate bacterial populations capable of direct aerobic and aerobic cometabolic bioremediation. The advantage of the aerobic cometabolic bioremediation is that at low VOC concentrations (as at this site) there may not be adequate carbon source available to support bacterial growth. With the addition of an alternative carbon source (methane), the microbial population (methanotrophs) can multiply and produce an enzyme (soluble methane monooxygenase) that fortuitously degrades a number of VOCs to non toxic end products. Furthermore, these methanotrophs typically adhere to soil grain surfaces and would be ideally located for the degradation of the remaining residual adsorbed contaminants.

Biosparging and air sparging are very similar technologies with the primary difference being the addition of gaseous phase nutrients and cosubstrates to stimulate bioremediation. Air sparging can be an efficient groundwater cleanup technology for the removal of elevated dissolved phase contamination through volatilization during the initial phases of groundwater cleanup. For this site, the transfer of the adsorbed

contaminants to the dissolved phase appears to be a slow process based on the low VOC concentrations in groundwater. Therefore, the most effective cleanup technology at this stage in the site cleanup would be bioremediation. Several types of data are used to evaluate biodegradation with the two primary data results being the microbial population and contaminant concentration which are discussed in the following sections.

Microbial Data Results

A total of eight soil samples were collected from varying depths and locations within the water-bearing zone and analyzed for the abundance of methanotrophs. Methanotrophs are a group of bacteria that are considered ubiquitous in the environment (Hanson and Hanson, 1996), but are often a minor group within the natural subsurface bacterial populations. Appendix D presents the methanotroph data for the soil samples. As expected, methanotrophs were detected in all eight soil samples. An abundant methanotroph population (10^6 to 10^8 cells per gram) was reported for soil samples collected at the shallower depths (16 to 23 ft bgs). This methanotroph population size is consistent with a successfully stimulated subsurface in the range that is conducive for VOC degradation. This coincides with the amendment injection that indicates the successful stimulation of the methanotrophs in the shallower saturated depths. Due to buoyancy of the gaseous phase amendments, the amendments flow up through the saturated zone from the deeper injection locations into the targeted capillary and shallow groundwater zones. The deeper (>24 ft BGS) soil samples contained methanotrophs; however, at lower concentrations (10^4 to 10^6 cells per gram) which are consistent with expected background concentrations that would support natural attenuation. This was expected as gaseous phase amendments were more readily available for increased microbial growth above the deep zone in the shallow depths.

VOC and SVOC Data Results

The recent laboratory results for quarterly groundwater samples had indicated that the low VOC concentrations detected in groundwater above the cleanup goals prior to initiation of the enhanced bioremediation system had subsequently been reduced to below detection in many cases and at others below the cleanup goals. Therefore soil sampling and analyses was performed to ascertain the current status of VOCs adsorbed to soil in the saturated zone.

A total of 25 soil samples were collected and laboratory tested for VOCs and semivolatile organic compounds (SVOCs) from locations and depths at the SMS site that had been reported by REAC in 2004 to contain elevated benzene, toluene, ethylbenzene and total xylenes (BTEX) concentrations. Appendix C presents a comparison of the BTEX results for the previous soil samples (2004) and the recently collected soil samples (2006). This data suggests a significant (70 to 99.9%) reduction in the targeted BTEX concentrations in the soil at these locations.

Appendices E and F present the detailed VOC and SVOC results for the recent 2006 soil sampling event along with the NYSDEC Recommended Soil Cleanup Objective (note all units are in ppb). The SVOCs were below the NYSDEC Cleanup objective except for some low concentrations of phenol compounds. The majority of the VOCs, that were detected, were reported to be below the NYSDEC Soil Cleanup Objectives (RSCO). The total xylene and total VOC concentrations were reported to persist above their NYSDEC RSCO of 1,200 ppb and 10,000 ppb, respectively, in six of the soil samples. Concentrations of total xylenes for these six soil samples ranged from 3,400 ppb (SMS-DW 24-25') to 33,000 ppb (SMS-DW 24-25') and concentrations of total VOCs for these samples ranged from 11,194 ppb (SMS-DW 21.5-22.5') to 144,493 ppb (SMS-SB-12 23.5-24.5). Five of the six samples that were above the RSCO were collected from the soil boring in the area of the former drywell. All six samples that had

concentrations above the RSCO were collected from depths ranging between 19 and 24.5 feet in depth (smear zone). Dichlorobenzenes and trichlorobenzenes were reported above the NYSDEC Cleanup objective in only two soil (SMS-DW- 19-20' and SMS-Drywell) samples both of which were collected from the former drywell location at 19 to 20 feet in depth (sample SMS-Drywell was a duplicate of sample SMS-DW- 19-20'). The figure in Appendix B of this report depicts the location of the former drywell. Acetone was reported above the NYSDEC Cleanup objective in three soil samples; however, this compound may not be representative of actual soil concentrations since it is a common laboratory contaminant and can be difficult to analyze.

Recommendations

Based on the soil and groundwater results discussed above, Earth Tech recommends that gaseous phase bioremediation amendment injection be continued with system modifications to focus on the limited areas (former dry well and soil boring SMS-SB-12 locations) that were reported above the cleanup objectives for soil. The current injection system would be modified by reducing the number of amendment injection locations and install an additional 1 to 3 injection points at the dry well location. The new bioremediation amendment injection configuration would be operated for an additional six month period followed by resampling and analysis of the soil in these final remaining areas.

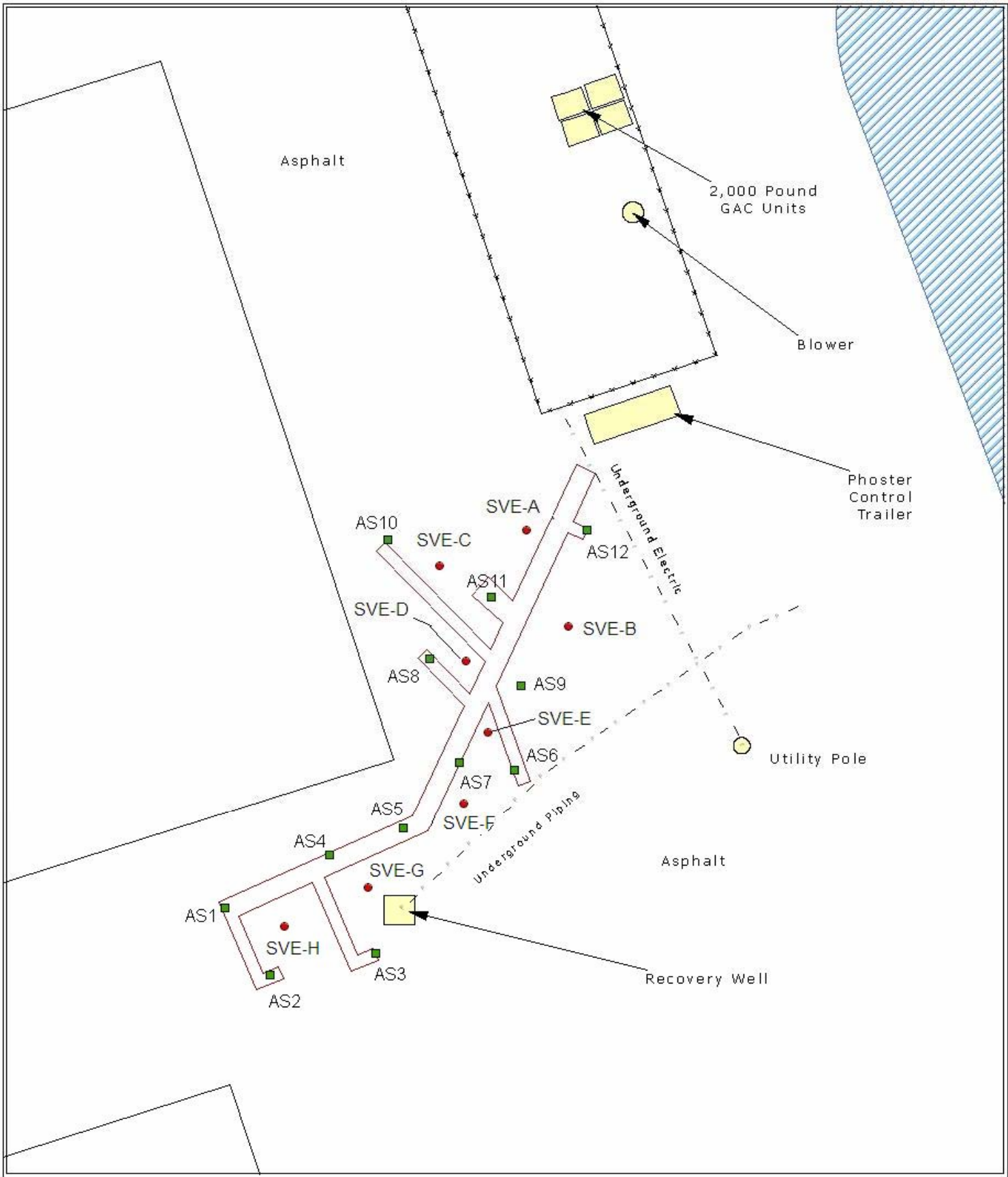
The next semi-annual groundwater monitoring and sampling event was completed during the week of September 11, 2006.

Reference

Hanson, R. S. and T. E. Hanson, 1996, "Methanotrophic Bacteria", Microbiological Reviews, Vol. 6 No. 2, American Society for Microbiology, p. 439-471.

Appendix A

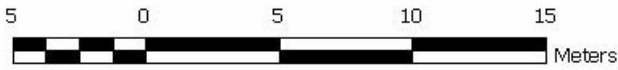
Site Map



Map created using New York State DEP Digital
Orthorectified Quadrangles (DOQ) and site-survey GPS data.
GPS collected in Lat., Lon., Decimal Degrees, WGS84

Map Creation Date: 04August2005

Coordinate system: UTM
Zone: 18N
Units: Meters
Datum: NAD83



Legend

- Air Sparge Well
- Soil Vapor Extraction Well
- si_047_trench
- Fenceline
- Underground Electric
- Underground Piping
- Building Footprint
- Pond

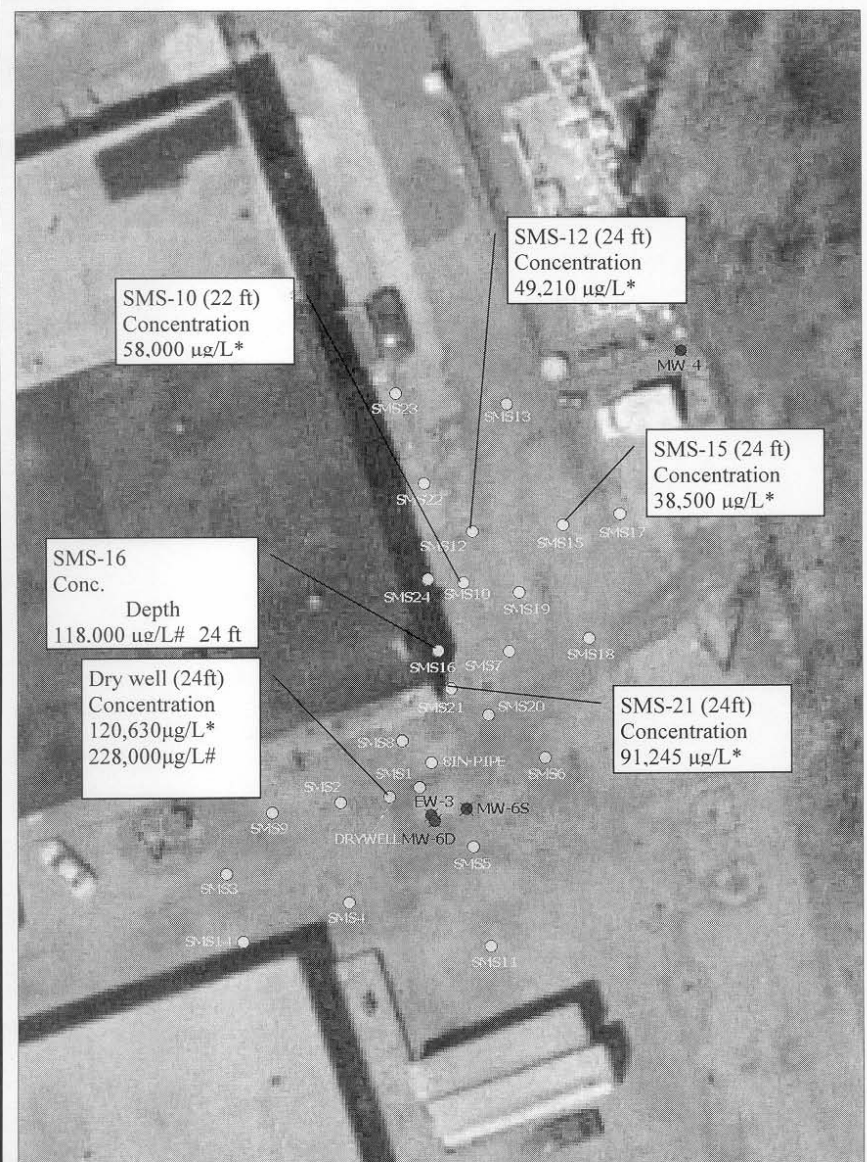


Location of Air Sparge and
Soil Vapor Extraction Wells
SMS Instruments
Deer Park, Long Island, NY

Data: g:\arcviewprojects\year4\0-047
MXD file: g:\arcinfo\projects\year4\EA00047_SMS\047_airspargevwells_f4rev003
Revision Number: 003

Appendix B

**REAC/U.S. EPA ERT Soil Boring Results (August 2004 Event)
Concentrations of BTEX in Soil
SMS Instruments Site, Deer Park, NY**



Map created using New York State DEP
Digital Orthorectified Quadrangles (DOQs)
and site survey GPS data.
GPS data collected in Lat, Lon,
Decimal Degrees, WGS84.
Map Creation Date: 25 April 2005
Coordinate system: UTM
Datum: 1983
Zone: 18N
Units: Meters
Data: g:\archive\projects\hvac-400-047
MID file: g:\archive\projects\hvac-400-047_SMS-047_solid

Legend

● Soil Borings



U.S. EPA ENVIRONMENTAL RESPONSE TEAM CENTER
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
EP-CO4-002
W.A. # EAC00047

FIGURE
SOIL BORING LOCATIONS
SMS INSTRUMENTS
DEER PARK, LONG ISLAND, NY

Legend
* Analysis using Voyager Gas Chromatography

Appendix C

**Soil Boring Collection Data Table for June 2006 Event
(includes total BTEX Results Comparison of 2004 and 2006 Events)**

Sample ID	Analyses	Collection Depth	PID Reading	2004 BTEX Results	2006 BTEX Results
SMS-DW-19-20	VOCs, SVOCs, DNA	19-20'	84.7-100	24 ft.- 120,630 ^A 228,000 ^B µg/kg	24 ft.- 36,700 ^C µg/kg
SMS-DRYWELL	Duplicate sample	19-20'	84.7-100		
SMS-DW-21.5-22.5-MS/MSD	MS/MSD	21.5-22.5'	44.7-87.8		
SMS-DW-21.5-22.5	VOCs, SVOCs	21.5-22.5'	44.7-87.8		
SMS-DW-24-25	VOCs, SVOCs	24-25'	87.8		
SMS-DW-30-31	VOCs, SVOCs, DNA	30-31'	1.3		
SMS-SB21-19-20	VOCs, SVOCs	19-20'	0	24 ft.- 91,245 ^A µg/kg	22-23 ft.- 6 ^C µg/kg
SMS-SB21-22-23	VOCs, SVOCs, DNA	22-23'	35.5-44.1		
SMS-SB22-22-23	Duplicate sample	22-23'	35.5-44.1		
SMS-SB21-29-30	VOCs, SVOCs	29-30'			
SMS-SB10-18-19	VOCs, SVOCs, DNA	18-19'	24.2-84.3	22 ft.- 58,000 ^A µg/kg	24-25 ft.- 150 ^C µg/kg
SMS-SB10-18-19-MS/MSD	MS/MSD	18-19'	24.2-84.3		
SMS-SB10-24-25	VOCs, SVOCs	24-25'	12-1.7		
SMS-SB10-28.5-29.5	VOCs, SVOCs	28.5-29.5'	2.9-2.6		
SMS-SB12-16-17	VOCs, SVOCs, DNA	16-17'	0	24 ft.- 49,210 ^A µg/kg	23.5-24.5 ft.- 3600 ^C µg/kg
SMS-SB12-23.5-24.5	VOCs, SVOCs	23.5-24.5'	25.7-60.5		
SMS-SB12-29-30	VOCs, SVOCs, DNA	29-30'	0		
SMS-SB16-16.5-17.5	VOCs, SVOCs	16.5-17.5'	0	24 ft.- 118,000 ^B µg/kg	22.5-23.5 ft.- 16,200 ^C µg/kg
SMS-SB16-19-20	VOCs, SVOCs, DNA	19-20'	0		
SMS-SB16-22.5-23.5	VOCs, SVOCs	22.5-23.5'	147		
SMS-SB16-29-30	VOCs, SVOCs	29-30'	0		
SMS-SB16-29-30-MS/MSD	MS/MSD	29-30'	0		
SMS-SB15-16.5-17.5	VOCs, SVOCs	16.5-17.5'	0	24 ft.- 38,500 ^A µg/kg	22-23 ft.- Not Detected
SMS-SB15-22-23	VOCs, SVOCs	22-23'	0		
SMS-SB15-27-28	VOCs, SVOCs, DNA	27-28'	0		

^A-Analysis using Voyager Gas Chromatography

^B- Analysis based on Lab Results

^C- Analysis based on Lab Result

Appendix D

Methanotroph Population Results

SMS Instruments Site

Methanotrophs Cell Count

	Methanotrophs (total)	Type I MOB	Type II MOB
SMS-DW-19-20	2.9 E + 08	7.28 E + 07	2.17 E + 08
SMS-DW-30-31	8.49 E + 05	2.52 E + 05	5.97 E + 05
SMS-SB21-22-23	2.31 E + 08	1.26 E + 08	1.05 E + 08
SMS-SB10-18-19	3.77 E + 08	2.07 E + 08	1.7 E + 08
SMS-SB12-16-17	3.2 E + 07	1.56 E + 07	1.65 E + 07
SMS-SB12-29-30	7.37 E + 06	7.45 E + 05	6.62 E + 06
SMS-SB16-19-20	5.07 E + 06	1.46 E + 05	4.92 E + 06
SMS-SB15-27-28	7.27 E + 04	1.27 E + 04	6 E + 04

Appendix E

Volatile Organic Compound Results- June 2006 Soil Sampling Event

SMS Instruments Inc., Site

Volatile Organic Compound Results- June 2006 Soil Sampling Event

Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-DW-19-20	Sample ID: DRYWELL1	Sample ID: SMS-DW-21.5-22.5	Sample ID: SMS-DW-24-25
Acetone	200	66	64	70	ND
2-Butanone	300	ND	ND	ND	ND
Chloroform	300	18 J	ND	ND	ND
Trichloroethene	700	ND	ND	2 J	ND
4-Methyl-2-pentanone	1000	ND	ND	ND	ND
Toluene	1500	ND	ND	8	ND
1,1,2-Trichloroethane	*	ND	ND	ND	ND
2-Hexanone	*	ND	ND	ND	ND
Chlorobenzene	1700	37	200	ND	ND
Ethylbenzene	5500	400	ND	130	3700
Xylenes (total)	1200	20,000 D	4500 D	3400 D	33,000
Isopropylbenzene	*	210	ND	130	1900
n-Propylbenzene	*	280	1200	93	2400
2-Chlorotoluene	*	ND	ND	72	ND
1,3,5-Trimethylbenzene	*	34,000 D	16,000 D	9700 D	17000
tert-Butylbenzene	*	ND	ND	ND	600 J
1,2,4-Trimethylbenzene	*	22,000 D	9600 D	7800 D	30,000
sec-Butylbenzene	*	300	780	100	ND
4-Isopropyltoluene	*	1000	1000	170	ND
1,3-Dichlorobenzene	1600	8700 D	1200	140	ND
1,4-Dichlorobenzene	8500	41,000 D	11,000 D	4600 D	3900
n-Butylbenzene	*	ND	ND	ND	ND
1,2 Dichlorobenzene	7900	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	10,000 D	210	ND	ND
Naphthalene	*	1900 D	810	69	1800
1,2,3-Trichlorobenzene	*	330	50	ND	ND
Total VOCs	<10000	140,241	46,614	11,194	94,300

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO)

¹ DRYWELL is a duplicate sample of SMS-DW-19-20

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but less than the method detection limit, value is estimated

E: Result exceeds the calibration range

D: Dilution run

Sample SMS-DW-30-31 had no detections of any analyte

For samples containing 'DW': This sample was taken from the Dry Well and the two numbers represent the depth, in feet, at which the sample was collected.

Data validation has NOT been performed on this data.

SMS Instruments Site

Volatile Organic Compound Results- June 2006 Soil Sampling Event

Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-10-24-25	Sample ID: SMS-SB-10-28.5-29.5	Sample ID: SMS-SB-12-23.5-24.5	Sample ID: SMS-SB-12-29-30
Acetone	200	230	ND	3500 E¹	ND
2-Butanone	300	ND	ND	ND	ND
Chloroform	300	ND	2 J	ND	3 J
Trichloroethene	700	ND	ND	ND	ND
4-Methyl-2-pentanone	1000	ND	ND	ND	ND
Toluene	1500	ND	ND	ND	ND
1,1,2-Trichloroethane	*	ND	ND	ND	ND
2-Hexanone	*	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	ND	ND
Ethylbenzene	5500	4 J	ND	ND	ND
Xylenes(total)	1200	150	ND	3800 D	ND
Isopropylbenzene	*	ND	ND	ND	ND
n-Propylbenzene	*	ND	ND	7000 D	3 J
2-Chlorotoluene	*	ND	ND	ND	ND
1,3,5-Trimethylbenzene	*	750 D	4 J	50,000 D	44
tert-Butylbenzene	*	72	ND	1800 DJ	ND
1,2,4-Trimethylbenzene	*	420 D	3 J	55,000 D	72
sec-Butylbenzene	*	ND	ND	4400 D	ND
4-Isopropyltoluene	*	450 E	ND	360 E ¹	40
1,3-Dichlorobenzene	1600	ND	ND	210	ND
1,4-Dichlorobenzene	8500	ND	ND	320 E ¹	ND
n-Butylbenzene	*	620 D	ND	18,000 D	240
1,2 Dichlorobenzene	7900	ND	ND	98	ND
1,2,4-Trichlorobenzene	3400	ND	ND	2 J	ND
Naphthalene	*	4 J	ND	3 J	4 J
1,2,3-Trichlorobenzene	*	ND	ND	ND	ND
Total VOCs	<10000	3,670	9	144,493	406

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO)

¹ This result exceeded the detection limit. A diluted sample was analyzed and reported as not-detected

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but less than the method detection limit, value is estimated

E: Result exceeds the calibration range

D: Dilution run

For samples containing 'SB': The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected.

Data validation has NOT been performed on this data.

SMS Instruments Site

Volatile Organic Compound Results- June 2006 Soil Sampling Event

Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-21-19-20	Sample ID: SMS-SB-21-22-23	SampleID: SMS-SB-22^A	Sample ID: SMS-SB-10-18-19
Acetone	200	ND	110	30	320 E¹
2-Butanone	300	ND	ND	ND	ND
Chloroform	300	2 J	ND	ND	ND
Trichloroethene	700	ND	ND	ND	4 J
4-Methyl-2-pentanone	1000	ND	ND	ND	ND
Toluene	1500	ND	6	ND	ND
1,1,2-Trichloroethane	*	ND	ND	ND	ND
2-Hexanone	*	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	4 J	ND
Ethylbenzene	5500	ND	ND	ND	ND
Xylenes(total)	1200	3 J	ND	ND	ND
Isopropylbenzene	*	ND	ND	ND	ND
n-Propylbenzene	*	ND	140	ND	ND
2-Chlorotoluene	*	ND	ND	ND	ND
1,3,5-Trimethylbenzene	*	ND	300 DJ	180	2500 D
tert-Butylbenzene	*	ND	ND	ND	180
1,2,4-Trimethylbenzene	*	ND	170 DJ	230	51
sec-Butylbenzene	*	ND	190	ND	72
4-Isopropyltoluene	*	ND	360 E ¹	61	93
1,3-Dichlorobenzene	1600	ND	ND	ND	270 E ¹
1,4-Dichlorobenzene	8500	3 J	ND	ND	330 DJ
n-Butylbenzene	*	ND	490 D	ND	140
1,2 Dichlorobenzene	7900	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND
Naphthalene	*	ND	ND	ND	ND
1,2,3-Trichlorobenzene	*	ND	ND	ND	ND
Total VOCs	<10000	8	1576	505	3960

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO)

^A SMS-SB-22 is a duplicate sample of SMS-SB-21-22-23

¹ This result exceeded the detection limit. A diluted sample was analyzed and reported as not-detected

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but less than the method detection limit, value is estimated

E: Result exceeds the calibration range

D: Dilution run

Sample SMS-DW-30-31 had no detections of any analyte

For samples containing 'DW': This sample was taken from the Dry Well and the two numbers represent the depth, in feet, at which the sample was collected.

Data validation has NOT been performed on this data.

SMS Instruments Site

Volatile Organic Compound Results- June 2006 Soil Sampling Event

Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-16-16.5-17.5	Sample ID: SMS-SB-16-22.5-23.5	SampleID: SMS-SB-15-16.5-17.5	Sample ID: SMS-SB-15-22-23
Acetone	200	ND	960	ND	ND
2-Butanone	300	ND	ND	ND	ND
Chloroform	300	2 J	ND	ND	ND
Trichloroethene	700	ND	ND	ND	ND
4-Methyl-2-pentanone	1000	ND	ND	ND	ND
Toluene	1500	ND	ND	ND	ND
1,1,2-Trichloroethane	*	ND	ND	ND	ND
2-Hexanone	*	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	ND	ND
Ethylbenzene	5500	ND	2100 E ¹	ND	ND
Xylenes(total)	1200	ND	13,000 D	ND	ND
Isopropylbenzene	*	ND	1400 DJ	ND	ND
n-Propylbenzene	*	ND	1200 E ¹	ND	ND
2-Chlorotoluene	*	ND	ND	ND	ND
1,3,5-Trimethylbenzene	*	4 J	24,000 D	ND	ND
tert-Butylbenzene	*	ND	ND	ND	ND
1,2,4-Trimethylbenzene	*	6	32,000 D	ND	ND
sec-Butylbenzene	*	ND	1000	ND	ND
4-Isopropyltoluene	*	ND	ND	ND	ND
1,3-Dichlorobenzene	1600	ND	ND	ND	ND
1,4-Dichlorobenzene	8500	ND	1800 E ¹	ND	ND
n-Butylbenzene	*	7	1700 E ¹	ND	ND
1,2 Dichlorobenzene	7900	ND	ND	ND	ND
1,2,4-Trichlorobenzene	3400	ND	ND	ND	ND
Naphthalene	*	ND	130	4 J	3 J
1,2,3-Trichlorobenzene	*	ND	ND	ND	ND
Total VOCs	<10000	19	79,290	4	3

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO)

¹ This result exceeded the detection limit. A diluted sample was analyzed and reported as not-detected

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but the result is less than the method detection limit; value is estimated

E: Result exceeds detection limit

D: Dilution run

Sample SMS-SB 16-19-20, SMS-SB-16-29-30 and SMS-15-27-28 had no detections of any analyte

For samples containing "SB": The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected

Data validation has NOT been performed on this data.

Appendix F

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-10-18-19	Sample ID: SMS-SB-10-24-25	Sample ID: SMS-SB-10-28.5-29.5	Sample ID: SMS-SB-12-16-17
Phenol	30 or MDL	ND	ND	ND	ND
1,3-Dichlorobenzene	50,000*	ND	120 J	ND	ND
1,4-Dichlorobenzene	50,000*	ND	260 J	ND	ND
2-Methylphenol	100 or MDL	ND	ND	ND	ND
4-Methylphenol	900	ND	ND	ND	ND
2,4-Dimethylphenol	50,000*	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50,000*	ND	ND	ND	ND
Naphthalene	13,000	ND	770	ND	ND
2-Methylnaphthalene	36,400	ND	2400	ND	ND
Acenaphthene	50,000	ND	100 J	ND	ND
Dibenzofuran	6200	ND	ND	ND	ND
Fluorene	50,000*	ND	60 J	ND	ND
Phenanthrene	50,000*	ND	ND	ND	ND
Di-n-butylphthalate	50,000*	ND	ND	ND	ND
Fluoranthene	50,000*	ND	ND	ND	ND
Pyrene	50,000*	ND	ND	ND	ND
Butylbenzylphthalate	50,000*	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	50,000	190 J	200 J	75 J	42 J
Di-n-octylphthalate	50,000*	ND	ND	ND	ND
Total SVOCs	<500,000	190	3910	75	42

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but the result is less than the method detection limit; value is estimated

D: Dilution run

For samples containing "SB": The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected

Data validation has NOT been performed on this data.

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-12-23.5-24.5	Sample ID: SMS-SB-12-29-30	Sample ID: SMS-SB-15-16.5-17.5	Sample ID: SMS-SB-15-22-23
Phenol	30 or MDL	ND	ND	ND	ND
1,3-Dichlorobenzene	50,000*	66 J	ND	ND	ND
1,4-Dichlorobenzene	50,000*	110 J	ND	ND	ND
2-Methylphenol	100 or MDL	ND	ND	ND	ND
4-Methylphenol	900	ND	ND	ND	ND
2,4-Dimethylphenol	50,000*	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50,000*	ND	ND	ND	ND
Naphthalene	13,000	ND	ND	ND	ND
2-Methylnaphthalene	36,400	910	ND	ND	ND
Acenaphthene	50000*	ND	ND	ND	ND
Dibenzofuran	6200	ND	ND	ND	ND
Fluorene	50,000*	52 J	ND	ND	ND
Phenanthrene	50,000*	ND	ND	ND	ND
Di-n-butylphthalate	50,000*	ND	ND	ND	ND
Fluoranthene	50,000*	ND	ND	ND	ND
Butylbenzylphthalate	50,000*	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	50000*	160 J	160 J	50 J	67 J
Total SVOCs	<500,000	1298	160	50	67

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but the result is less than the method detection limit; value is estimated

D: Dilution run

For samples containing "SB": The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected

Data validation has NOT been performed on this data.

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-15-27-28	Sample ID: SMS-SB-16-16.5-17.5	Sample ID: SMS-SB-16-19-20	Sample ID: SMS-SB-16-22.5-23.5
Phenol	30 or MDL	ND	ND	ND	ND
1,3-Dichlorobenzene	50,000*	ND	ND	ND	430
1,4-Dichlorobenzene	50,000*	ND	ND	ND	1500
2-Methylphenol	100 or MDL	ND	ND	ND	ND
4-Methylphenol	900	ND	ND	ND	ND
2,4-Dimethylphenol	50,000*	ND	ND	45 J	ND
1,2,4-Trichlorobenzene	50,000*	ND	ND	ND	ND
Naphthalene	13,000	ND	ND	ND	7800 D
2-Methylnaphthalene	36,400	ND	ND	ND	16,000 D
Acenaphthene	50,000	ND	ND	ND	ND
Dibenzofuran	6200	ND	ND	ND	180 J
Fluorene	50,000*	ND	ND	ND	200 J
Phenanthrene	50,000*	ND	ND	ND	88 J
Di-n-butylphthalate	50,000*	ND	ND	ND	41 J
Fluoranthene	50,000*	ND	ND	ND	ND
Pyrene	50,000*	ND	ND	ND	ND
Butylbenzylphthalate	50,000*	ND	ND	ND	ND
bis(2-Ethylhexyl)	50,000	130 J	61 J	190 J	670
Di-n-octylphthalate	50,000*	ND	ND	ND	ND
Total SVOCs	<500,000	130	61	235	26,909

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but the result is less than the method detection limit; value is estimated

D: Dilution run

For samples containing "SB": The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected

Data validation has NOT been performed on this data.

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-16-29-30	Sample ID: SMS-SB-21-19-20	Sample ID: SMS-SB-21-22-23	Sample ID: SMS-SB-21-29-30
Phenol	30 or MDL	ND	ND	ND	ND
1,3-Dichlorobenzene	50,000*	ND	ND	170 J	ND
1,4-Dichlorobenzene	50,000*	ND	ND	310 J	ND
2-Methylphenol	100 or MDL	ND	ND	ND	ND
4-Methylphenol	900	ND	ND	ND	ND
2,4-Dimethylphenol	50,000*	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50,000*	ND	ND	ND	ND
Naphthalene	13,000	ND	ND	630	ND
2-Methylnaphthalene	36,400	ND	ND	6800 D	ND
Acenaphthene	50000*	ND	ND	ND	ND
Dibenzofuran	6200	ND	ND	140 J	ND
Fluorene	50,000*	ND	ND	140 J	ND
Phenanthrene	50,000*	ND	ND	60 J	ND
Di-n-butylphthalate	50,000*	ND	ND	ND	ND
Fluoranthene	50,000*	ND	ND	ND	ND
Butylbenzylphthalate	50,000*	ND	ND	ND	ND
bis(2-Ethylhexyl) phthalate	50000*	64 J	53 J	1100	11,000
Total SVOCs	<500,000	64	53	9350	11,000

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but the result is less than the method detection limit; value is estimated

D: Dilution run

For samples containing "SB": The first number represents the particular soil boring while the second and third numbers represent the depth, in feet, at which the sample was collected

Data validation has NOT been performed on this data.

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-SB-22-22-23	Sample ID: DRYWELL	Sample ID: SMS-DW-19-20
Phenol	30 or MDL	ND	ND	93 J
1,3-Dichlorobenzene	50,000*	ND	1400	730
1,4-Dichlorobenzene	50,000*	ND	9500 D	3900
2-Methylphenol	100 or MDL	ND	480	550
4-Methylphenol	900	ND	890	580
2,4-Dimethylphenol	50,000*	ND	ND	820
1,2,4-Trichlorobenzene	50,000*	ND	240 J	1900
Naphthalene	13,000	ND	ND	740
2-Methylnaphthalene	36,400	220 J	2300	2200
Acenaphthene	50,000	ND	ND	ND
Dibenzofuran	6200	ND	ND	ND
Fluorene	50,000*	ND	190 J	ND
Phenanthrene	50,000*	ND	82 J	ND
Di-n-butylphthalate	50,000*	ND	250 J	250 J
Fluoranthene	50,000*	ND	150 J	480
Pyrene	50,000*	ND	41 J	ND
Butylbenzylphthalate	50,000*	ND	220 J	350 J
bis(2-Ethylhexyl) phthalate	50,000	640	5700	15,000 D
Di-n-octylphthalate	50,000*	ND	ND	130 J
Total SVOCs	<500,000	860	21,443	25,723

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but is less than the method detection limit; value is estimated

D: Dilution run

For samples containing 'DW': This sample was taken from the Dry Well and the two numbers represent the depth, in feet, at which the sample was collected.

Data validation has NOT been performed on this data.

SMS Instruments Site

Semi-Volatile Organic Compound Results- June 2006 Soil Sampling Event

Semi Volatile Organic Compound Analytes:	NYSDEC RSCO (ppb)	Sample ID: SMS-DW-21.5-22.5	Sample ID: SMS-DW-24-25	Sample ID: SMS-DW-30-31
Phenol	30 or MDL	48 J	ND	ND
1,3-Dichlorobenzene	50,000*	97 J	260 J	ND
1,4-Dichlorobenzene	50,000*	690	1200	ND
2-Methylphenol	100 or MDL	120 J	320 J	ND
4-Methylphenol	900	190 J	600	ND
2,4-Dimethylphenol	50,000*	300 J	ND	ND
1,2,4-Trichlorobenzene	50,000*	ND	340 J	ND
Naphthalene	13,000	370 J	1000	ND
2-Methylnaphthalene	36,400	1800	3000	ND
Acenaphthene	50000*	ND	ND	ND
Dibenzofuran	6200	51 J	89 J	ND
Fluorene	50,000*	76 J	140 J	ND
Phenanthrene	50,000*	ND	56 J	ND
Di-n-butylphthalate	50,000*	56 J	260 J	ND
Fluoranthene	50,000*	39 J	65 J	ND
Butylbenzylphthalate	50,000*	ND	220 J	ND
bis(2-Ethylhexyl) phthalate	50000*	1300	5400	200 J
Total SVOCs	<500,000	5137	12,950	200

* No official NYSDEC Recommended Soil Cleanup Objective (RSCO) listed; number represents objective for individual SVOC

Notes:

All results reported in parts per billion (ppb)

Bold indicates the result was above the NYSDEC Recommended Soil Cleanup Objective (RSCO)

J: Analyte detected but is less than the method detection limit; value is estimated

D: Dilution run

For samples containing 'DW': This sample was taken from the Dry Well and the two numbers represent the depth, in feet, at which the sample was collected.

Data validation has NOT been performed on this data.

Appendix G

Chains of Custody



Custody Chain and Analytical Request

EARTH TECH Project No. 81616
 EARTH TECH Project Name CM5
 Custody No./LIMS No. _____

Project location: SMS Instruments Site

Client Name: _____

Collected By: Frank Malinski

Sample ID (Minimize Characters)	Date	Time (24-Hour)	See Comments			Sample Information (location, depth, filtered, etc.)	# Of Containers	SAMPLE ANALYSIS (SPECIFY METHOD)										Cooler Letter
			Comp	Grab	Well													
SMS-DW-14-20	6-24-06	10:25	X			Soil 14'20'	2	1	1									
DEF WELL	6-24-06	10:25	X			Soil 14'20'	2	1	1									
SMS-DW-21-5-22	6-28-06	10:55	X			Soil 21.5'-22.5'	2	1	1									
SMS-DW-24-25	6-28-06	11:00	X			Soil 24'25'	2	1	1									
SMS-DW-30-31	6-28-06	11:40	X			Soil 30'31'	2	1	1									
SMS-SB-21-19-20	6-28-06	12:22	X			Soil 19'20'	2	1	1									
SMS-SB-21-22-23	6-28-06	12:30	X			Soil 22'23'	2	1	1									
SMS-SB-22-22	6-28-06	13:30	X			Soil 22'	2	1	1									
SMS-SB-21-29-30	6-28-06	13:49	X			Soil 29'30'	2	1	1									
SMS-SB-10-18-19	6-28-06	14:35	X			Soil 18'19'	2	1	1									
SMS-SB-10-18-19/mud	6-28-06	14:35	X			Soil 18'19'	2	1	1									
SMS-SB-10-24-25	6-28-06	14:50	X			Soil 24'25'	2	1	1									
SMS-SB-10-24-25	6-28-06	15:05	X			Soil 24'25'	2	1	1									
SMS-SB-12-16-17	6-28-06	15:41	X			Soil 16'17'	2	1	1									
SMS-SB-12-23-24	6-28-06	15:55	X			Soil 23'24'	2	1	1									
SMS-SB-12-24-30	6-28-06	16:11	X			Soil 24'30'	2	1	1									

Custody Transfers Prior to Receipt By Laboratory

Relinquished by (Signed) (Organization)	Received by (Signed) (Organization)	Date	Time
<u>[Signature]</u>		<u>6-28-06</u>	<u>13:30</u>
1. _____			
2. _____			
3. _____			

Sample Delivery Details/Laboratory Receipt

Delivered Directly to Lab ☐ Shipped ☐

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Recipient: _____ Date: _____ Time: _____

(Signature)

Additional Remarks:
(Condition Upon Lab Receipt, Etc.)

Custody Chain and Analytical Request

Page 1 of 1

EARTH TECH Project No. 07/16-001
 EARTH TECH Project Name CMC
 Custody No./LIMS No. _____

Project/Location: SOS T. 12-14-15

Client Name: _____

Collected By: Frank Melville

Sample ID (Minimize Characters)	Date	Time (24-Hour)	See Comments			Sample Information (location, depth, filtered, etc.)	# Of Containers	SAMPLE ANALYSIS (SPECIFY METHOD)										COMMENTS (add preservative information) A = Aqueous, S = Solid, M = Aqueous / Solid Mixture, W = Waste	Cooler Letter
			Comp	Grab	Well														
SOS-DW-14-20	1/28/16	10:25	X			Sol 10-16'	1												
SAS-DW-20-21		11:40	X			Sol 30-31'	1												
SOS-DW-21-22		12:00	X			Sol 20-23'	1												
SOS-DW-22-23		11:45	X			Sol 18-19'	1												
SOS-DW-23-24		15:41	X			Sol 11-17'	1												
SOS-DW-24-25		16:11	X			Sol 39-20'	1												

Custody Transfers Prior to Receipt By Laboratory

1. Relinquished by (Signed) Paul Received by (Signed) _____ Date 1-28-16 Time 18:30
 (Organization) _____ (Organization) _____
 2. _____
 3. _____

Sample Delivery Details/Laboratory Receipt

Delivered Directly to Lab ☐ Shipped ☐
 Method of Shipment: _____ Airbill #: _____
 Analytical Lab: _____ Location: _____
 Lab Recipient: _____ Date: _____ Time: _____
 (Signature)

Additional Remarks:
 (Condition Upon Lab Receipt, Etc.)



Custody Chain and Analytical Request

Page 1 of 1

EARTH TECH Project No. 874110
 EARTH TECH Project Name 1001
 Custody No./LIMS No. 1001

Project/Location: SPS T. station

Client Name:

Collected By: Frank Mahabadi

Sample ID (Minimize Characters)	Date	Time (24-Hour)	See Comments			Sample Information (location, depth, filtered, etc.)	# Of Containers	SAMPLE ANALYSIS (SPECIFY METHOD)										Cooler Letter
			Comp	Grab	Well													
SPS-SQ16-16.5-12.5	6/12/11	0840				C-1 16.5-12.5	2											
SPS-SQ16-16.5-12.5		0855	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		0905	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1005	X			C-1 16.5-12.5	2											
SPS-SQ16-16.5-12.5		1105	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1205	X			C-1 14.5-12.5	2											
SPS-SQ16-16.5-12.5		1305	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1405	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1505	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1605	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1705	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1805	X			C-1 2.5-12.5	2											
SPS-SQ16-16.5-12.5		1905	X			C-1 2.5-12.5	2											

Custody Transfers Prior to Receipt By Laboratory

Relinquished By (Signed)
(Organization)

Received By (Signed)
(Organization)

Date

Time

Sample Delivery Details/Laboratory Receipt

Delivered Directly to Lab ☐

Shipped ☐

Method of Shipment: _____ Airbill #: _____

Analytical Lab: _____ Location: _____

Lab Recipient: _____ Date: _____ Time: _____

(Signature)

Additional Remarks:
(Condition Upon Lab Receipt, Etc.)

Rev. 07/03/96

White - Laboratory; Yellow - EARTH TECH; Pink - Project Files

Unidate Business Forms

Appendix H

FedEx Airbills

FedEx
Tracking
Number

8553 6780 9083

1 From Please print and press hard.

Date _____ Sender's FedEx Account Number 243 977 100

Sender's Name James Kearns Phone (804) 283-5981

Company Earth Tech, Inc.

Address 288 New Hyde Park Rd. Dept./Floor/Suite/Room _____

City Franklin Square State NY ZIP 11010

2 Your Internal Billing Reference 87616 0204 OPT-08AL
First 24 characters will appear on invoice.

3 To Recipient's Name Craig Davis Phone (865) 593-8188

Company Microbial Insights, Inc.

Recipient's Address 2340 Stock Creek Blvd. Dept./Floor/Suite/Room _____

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address _____
To request a package be held at a specific FedEx location, print FedEx address here.

City Norfolk State VA ZIP 23785-3044

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

Questions? Go to our Web site at fedex.com
or call 1.800.GoFedEx 1.800.463.3339.

Form ID No. **0200** Sender's Copy

4a Express Package Service To add SATURDAY Delivery, see Section 6. Packages up to 150 lbs. To meet locations.

☐ FedEx Priority Overnight Next business morning.* ☐ FedEx Standard Overnight Next business afternoon.* ☐ FedEx First Overnight Earliest next business morning delivery to select locations.*

☐ FedEx 2Day Second business day.* ☐ FedEx Express Saver Third business day.*
FedEx Evening rate not available. Minimum charge, One-pound rate.

4b Express Freight Service To add SATURDAY Delivery, see Section 6. Packages over 150 lbs. To meet locations.

☐ FedEx 1Day Freight* Next business day.* ☐ FedEx 2Day Freight Second business day.* ☐ FedEx 3Day Freight Third business day.*

* Call for Confirmation.

5 Packaging ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other
FedEx Pak* includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. * Declared value limit \$500.

6 Special Handling Include FedEx address in Section 3.

☐ SATURDAY Delivery Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes. ☐ HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight. ☐ HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? ☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 x _____ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. ☐ Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages 1 Total Weight _____ Total Declared Value* \$.00
* Our liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

☐ No Signature Required Package may be left without obtaining a signature for delivery. ☐ Direct Signature Anyone at recipient's address may sign for delivery. ☐ Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. ☐ Free applies. **520**

Rev. Date 9/05-Pan #1382-D1194-2005 FedEx-PRINTED IN U.S.A. SRF

FedEx
Tracking
Number

8553 6780 9131

1 From Please print and press hard.

Date _____ Sender's FedEx Account Number 243 977 100

Sender's Name James Kearns Phone (804) 283-5981

Company Earth Tech, Inc.

Address 288 New Hyde Park Rd. Dept./Floor/Suite/Room _____

City Franklin Square State NY ZIP 11010

2 Your Internal Billing Reference 87616 0204 OPTIONAL
First 24 characters will appear on invoice.

3 To Recipient's Name Ben Dodge Phone (401) 732-3400

Company Mithkem Corporation

Recipient's Address 175 Metro Center Blvd. Dept./Floor/Suite/Room _____

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address _____
To request a package be held at a specific FedEx location, print FedEx address here.

City Warwick State RI ZIP 02886-1755

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

Questions? Go to our Web site at fedex.com
or call 1.800.GoFedEx 1.800.463.3339.

Form ID No. **0200** Sender's Copy

4a Express Package Service To add SATURDAY Delivery, see Section 6. Packages up to 150 lbs. To meet locations.

☒ FedEx Priority Overnight Next business morning.* ☐ FedEx Standard Overnight Next business afternoon.* ☐ FedEx First Overnight Earliest next business morning delivery to select locations.*

☐ FedEx 2Day Second business day.* ☐ FedEx Express Saver Third business day.*
FedEx Evening rate not available. Minimum charge, One-pound rate.

4b Express Freight Service To add SATURDAY Delivery, see Section 6. Packages over 150 lbs. To meet locations.

☐ FedEx 1Day Freight* Next business day.* ☐ FedEx 2Day Freight Second business day.* ☐ FedEx 3Day Freight Third business day.*

* Call for Confirmation.

5 Packaging ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other
FedEx Pak* includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. * Declared value limit \$500.

6 Special Handling Include FedEx address in Section 3.

☐ SATURDAY Delivery Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes. ☐ HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight. ☐ HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? ☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 x _____ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. ☐ Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages 1 Total Weight _____ Total Declared Value* \$.00
* Our liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

☐ No Signature Required Package may be left without obtaining a signature for delivery. ☐ Direct Signature Anyone at recipient's address may sign for delivery. ☐ Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. ☐ Free applies. **520**

Rev. Date 9/05-Pan #1382-D1194-2005 FedEx-PRINTED IN U.S.A. SRF



FedEx Tracking Number 8553 6780 7643

1 From Please print and press hard.
Date 6/29/06 Sender's FedEx Account Number 243 977 100
Sender's Name James Kearns Phone (804) 283-5981
Company Earth Tech, Inc.
Address 288 New Hyde Park Rd.
City Franklin Square State NY ZIP 11010

2 Your Internal Billing Reference 87616 02.04 OPTIONAL
First 24 characters will appear on invoice.

3 To Recipient's Name Greg Davis Phone (865) 573-8188
Company Microbial Insights, Inc.
Recipient's Address 2340 Stock Creek Blvd.
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Address To request a package be held at a specific FedEx location, print FedEx address here.
City Rockford State TN ZIP 37853-3044

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.
Questions? Go to our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

Form ID No. 0200 Sender's Copy

4a Express Package Service To add SATURDAY Delivery, see Section 6. Packages up to 150 lbs. To meet location.
☒ FedEx Priority Overnight Next business morning.* ☐ FedEx Standard Overnight Next business afternoon.* ☐ FedEx First Overnight Earliest next business morning delivery to select locations.*
☐ FedEx 2Day Second business day.* ☐ FedEx Express Saver Third business day.*
FedEx Envelope rate not available. Minimum charge: One-pound rate.

4b Express Freight Service To add SATURDAY Delivery, see Section 6. Packages over 150 lbs. To meet location.
☐ FedEx 1Day Freight* Second business day.* ☐ FedEx 2Day Freight Second business day.* ☐ FedEx 3Day Freight Third business day.*
* Call for Confirmation.

5 Packaging ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. ☐ FedEx Box ☐ FedEx Tube ☒ Other
* Declared value limit \$500.

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Does this shipment contain dangerous goods? One box must be checked.
☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 x kg ☐ Cargo Aircraft Only
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

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☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check
FedEx Acct. No. Credit Card No. Exp. Date
Total Packages 1 Total Weight \$ Total Declared Value* .00
Your liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

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Rev. Date 5/04/Part # 50200-D1094-2005 FedEx-PRINTED IN U.S.A. SRF



FedEx Tracking Number 8553 6780 7610

1 From Please print and press hard.
Date 6/29/06 Sender's FedEx Account Number 243 977 100
Sender's Name James Kearns Phone (804) 283-5981
Company Earth Tech, Inc.
Address 288 New Hyde Park Rd.
City Franklin Square State NY ZIP 11010

2 Your Internal Billing Reference 87616 02.04 OPTIONAL
First 24 characters will appear on invoice.

3 To Recipient's Name Ben Dodge Phone (401) 732-3400
Company Mitkem Corporation
Recipient's Address 1075 Metro Center Blvd.
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Address To request a package be held at a specific FedEx location, print FedEx address here.
City Warwick State RI ZIP 02886-1755

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4a Express Package Service To add SATURDAY Delivery, see Section 6. Packages up to 150 lbs. To meet location.
☒ FedEx Priority Overnight Next business morning.* ☐ FedEx Standard Overnight Next business afternoon.* ☐ FedEx First Overnight Earliest next business morning delivery to select locations.*
☐ FedEx 2Day Second business day.* ☐ FedEx Express Saver Third business day.*
FedEx Envelope rate not available. Minimum charge: One-pound rate.

4b Express Freight Service To add SATURDAY Delivery, see Section 6. Packages over 150 lbs. To meet location.
☐ FedEx 1Day Freight* Second business day.* ☐ FedEx 2Day Freight Second business day.* ☐ FedEx 3Day Freight Third business day.*
* Call for Confirmation.

5 Packaging ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. ☐ FedEx Box ☐ FedEx Tube ☒ Other
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FedEx Acct. No. Credit Card No. Exp. Date
Total Packages 1 Total Weight \$ Total Declared Value* .00
Your liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

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Appendix I

Soil Boring Logs - June 2006 Soil Boring Event

BORING LOG

Project Name: SMS Instruments
Street Address: 120 Marcus Boulevard
Deer Park, NY 11729

County: Suffolk

Boring Identification: SMS-DW
Drilling Method:
GeoProbe®

Sampling Method: Direct Push

Case Manager: Paul Kareth

Logged By: Robert Derrick

Project Number: 87616

Driller: Land, Air, Water Environmental Services

Driller's Address: Center Moriches, NY 11934

Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0	SMS-DW-19-20 (VOCs,SVOCs, DNA, DUP)	0	2 feet	Asphalt brown, medium to fine SAND, trace subangular medium to fine Gravel light brown fine SAND, and coarse to medium subangular to subrounded Gravel
2.5		0		light brown to pink coarse SAND and medium to coarse Gravel
5		0.9		brown medium to fine SAND and coarse angular Gravel
6				brown medium to fine SAND, trace subangular Gravel
7		0		brown medium to fine SAND some medium to coarse subangular to angular Gravel
10		0		
		0		
		0		
15		0		brown medium to fine SAND, trace medium to coarse subangular Gravel
17.5				dark brown medium to fine SAND, trace coarse to medium angular Gravel
20		84.7	51 inches	dark brown medium to fine SAND, trace coarse to medium angular Gravel, slight smell
21		100		dark brown medium to fine SAND, trace (-) coarse to medium angular Gravel, slight smell
		44.7		

	SMS-DW-21.5-22.5 (VOCs, SVOCs, MS/MSD)	87.8		
24	SMS-DW-24-25 (VOCs, SVOCs)	87.8		very dark brown medium to fine SAND, trace (-) medium rounded Gravel
25				Sample very wet, all was lost as they pulled it up
30	SMS-DW-30-31 (VOCs, SVOCs, DNA)	1.3		brown medium SAND
32.5		1.6		brown medium SAND, little medium rounded to subrounded Gravel
		1.3		
35				

Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.

BORING LOG

Project Name: SMS Instruments Street Address: 120 Marcus Boulevard, Deer Park, NY 11729 County: Suffolk Case Manager: Paul Kareth Project Number: 87616	Boring Identification: SMS-SB-10 Drilling Method: GeoProbe® Sampling Method: Direct Push Logged By: Robert Derrick Driller: Land, Air, Water Environmental Services Driller's Address: 32 Chichester Ave. Center Moriches, NY 11934
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Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0	SMS-SB-10-18-19 (DNA, VOCs, SVOCs, MS/MSD)	0	40 inches	Asphalt brown coarse to medium SAND some fine to medium subrounded Gravel
2		0.8 0.6 0.9		
5		0.6		light brown medium SAND, little fine to medium subrounded Gravel
8.5		0.3	44 inches	small band (several inches) of reddish brown coarse SAND light brown coarse SAND, some medium to coarse subrounded Gravel
10			36 inches	light brown coarse SAND, and fine to medium coarse subangular Gravel
12.5				light brown coarse to medium SAND, trace fine subrounded Gravel
13.5		0.4		light brown coarse SAND and fine to coarse subrounded Gravel
15		0.6 4.3 3.3	60 inches	Dark gray coarse SAND, some fine to coarse subangular Gravel (slight smell)
		24.2		light gray coarse SAND, some fine to coarse subangular Gravel

20		84.3		light brown coarse SAND, some fine to coarse subangular Gravel
		6.1	38 inches	light gray coarse SAND, trace fine to coarse subangular Gravel
		9.6		(sand gets darker towards 25 feet with a band of the same material but light brown 24-24.5 feet)
25	SMS-SB-10-24-25 (VOCs and SVOCs)	12		
		1.7	55 inches	light brown coarse SAND, trace fine subrounded Gravel
		2.7		
27.5	SMS-SB-10-28.5-29.5 (VOCs and SVOCs)			light brown coarse SAND and fine to medium subrounded Gravel
28.5		2.9		light brown medium to fine SAND
		2.6		light brown coarse SAND and fine to coarse subrounded Gravel
30				

Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.

BORING LOG

Sheet 1 of 1

Project Name: SMS Instruments
Street Address: 120 Marcus Boulevard
 Deer Park, NY 11729
County: Suffolk

Boring Identification: SMS-SB-12
Logged By: Robert Derrick
Drilling Method: GeoProbe®
Driller: Land, Air, Water Environmental Services
Driller's Address: 32 Chichester Ave.
 Center Moriches, NY

Case Manager: Paul Kareth
Project Number: 87616

11934

Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0	SMS-SB-12-16-17 (VOCs, SVOCs, DNA)	0.2	48 inches	Asphalt
2.5		0.2		dark brown coarse SAND some subangular fine to coarse Gravel
		0.2		brown medium to coarse SAND some fine to coarse subrounded Gravel
4.5		0.2	44 inches	light brown coarse SAND trace (+) medium subrounded Gravel
5		0		dark brown medium SAND some fine to medium subrounded Gravel
7		0		light brown coarse SAND some fine to coarse subrounded Gravel
9		0		light brown coarse SAND trace fine to coarse subrounded Gravel
10		0	40 inches	light brown coarse SAND some rounded to subangular fine to coarse Gravel
		0		
		0		
13		0	43 inches	light brown coarse SAND trace (+) fine subrounded Gravel
		0		
15		0		light brown coarse SAND and (-) fine to coarse subrounded Gravel
		0		
		0		(coarsens towards 14 feet)
		0		

		2.9		
20	SMS-SB-12-23.5-24.5 (VOCs, SVOCs)	3	52 inches	dark gray medium to coarse SAND trace(-) subrounded fine to coarse Gravel (slight smell)
		25.7		
		60.5		
25	SMS-SB-12-29-30 (VOCs, SVOCs, DNA)	0	55 inches	light brown medium to coarse SAND, trace subangular fine Gravel light brown medium to coarse SAND some (+) fine to coarse Gravel light brown coarse SAND and fine to coarse subrounded Gravel
26.5		0		
		0		
28.5		0		
30		0		
Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.				

BORING LOG

Project Name: SMS Instruments Street Address: 120 Marcus Boulevard, Deer Park, NY 11729 County: Suffolk	Boring Identification: SMS-SB-15 Drilling Method: GeoProbe® Sampling Method: Direct Push Robert Logged By: Derrick Driller: Land, Air, Water Environmental Services Driller's Address: 32 Chichester Ave. Center Moriches, NY 11934
Case Manager: Paul Kareth Project Number: 87616	

Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0	SMS-SB-165- 16.5-17.5 (VOCs and SVOCs)	0	42 inches	asphalt
1				brown fine to coarse SAND trace (-) fine
2.5				subrounded Gravel; light brown fine clay (1.5'-2.5')
				light brown coarse SAND some fine to coarse subangular Gravel
5		0	46 inches	light brown coarse SAND and (-) fine to coarse subangular Gravel
10		0	38 inches	light brown coarse SAND trace fine to medium subangular Gravel
12				bands of dark brown coarse SAND (several inches long, at 12', 13' and 13.5')
15		0	44 inches	light brown coarse SAND trace (-) fine to medium subangular Gravel

18	SMS-SB-15-22-23 (VOCs, SVOCs)	0	46 inches	light brown coarse SAND some (+) fine to coarse subangular Gravel
		0		
20		0		
21.5		0		
	SMS-SB-15-27-28 (VOCs, SVOCs, DNA)	0	60 inches	light brown coarse SAND light brown coarse SAND and fine to coarse subangular Gravel light brown coarse SAND; towards 30' trace fine rounded Gravel appears
		0		
25		0		
		0		
		0		
		0		
28		0		
		0		
30		0		

Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.

BORING LOG

Project Name: SMS Instruments Street Address: 120 Marcus Boulevard, Deer Park, NY 11729 County: Suffolk Case Manager: Paul Kareth Project Number: 87616				Boring Identification: SMS-SB-16 Drilling Method: GeoProbe® Sampling Method: Direct Push Logged By: Robert Derrick Driller: Land, Air, Water Environmental Services Driller's Address: 32 Chichester Ave. Center Moriches, NY 11934
Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0		0	27 inches	asphalt brown fine SAND brown medium to coarse SAND, trace subrounded medium to fine Gravel
2.5		0		
		0		
5		0	44 inches	brown coarse SAND little subangular fine to coarse Gravel light brown coarse SAND and subangular Gravel (6-6.5) brown medium to coarse SAND trace fine subangular Gravel (6.5'- 7.5')
6		0		brown coarse SAND little (+) fine to coarse subangular Gravel
7.5		0		light brown coarse SAND trace fine to coarse subrounded Gravel
		0		brown coarse SAND and (-) fine to coarse subangular Gravel
10		0	44 inches	brown coarse SAND trace (-) fine subrounded Gravel
12		0		
		0		
14.5		0		brown coarse SAND and fine to medium subrounded Gravel

15	SMS-SB-16-16.5-17.5 (VOCs, SVOCs)	0	43 inches	brown coarse SAND some (+) fine to coarse subrounded Gravel
17		0		light brown coarse SAND trace subrounded fine Gravel
17.5		0		dark brown medium to coarse SAND trace (-) subrounded fine Gravel
19	SMS-SB-16-19-20 (VOCs, SVOCs, DNA)	0	33 inches	brown coarse SAND some (+) subrounded fine to coarse Gravel
20		16.9		dark gray coarse SAND trace(-) subrounded fine Gravel (darker gray 21'-22.5'); lightens to 25'
25	SMS-SB-16-22.5-23.5 (VOCs, SVOCs)	147	60 inches	brown coarse SAND and (+) subrounded to rounded Gravel light brown medium to coarse SAND some (+) fine to coarse Gravel
		45		
		43.5		
28	SMS-SB-16-29-30 (VOCs, SVOCs, MS/MSD)	24	60 inches	brown coarse SAND some (-) subrounded fine to coarse Gravel
30		0		

Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel

is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.

BORING LOG

Project Name: SMS Instruments Street Address: 120 Marcus Boulevard, Deer Park, NY 11729 County: Suffolk	Boring Identification: SMS-SB-21 Drilling Method: GeoProbe® Sampling Method: Direct Push Logged By: Robert Derrick Driller: Land, Air, Water Environmental Services Driller's Address: 32 Chinchester Ave. Center Moriches, NY 11934
Case Manager: Paul Kareth Project Number: 87616	

Depth (feet)	Sample Number	PID (units)	Recovery (inches)	Lithology/Remarks (Modified Burmister Classification)
0		0		Asphalt
1.5			40 inches	dark grey subangular medium GRAVEL; dark brown medium to fine SAND trace fine to medium subangular Gravel (1.75'- 2')
2		0		light brown medium to fine SAND, some fine to coarse subangular to subrounded Gravel
5		0		light brown medium to fine SAND, trace (-) coarse subangular Gravel
8		0	42 inches	dark brown medium to fine SAND; darker sand at top light brown coarse to medium SAND some fine to medium subangular Gravel (8.5-10)
10		1		light brown coarse SAND, trace (-) medium to coarse subangular Gravel band of dark brown sand around 11 feet, larger band of dark sand at 13 feet
		0.4	42 inches	
		0.2		
		1		
15		0	40 inches	light brown coarse SAND, trace (-) fine subangular Gravel; 6 inches of red streak at 17 feet

17.5	SMS-SB-21-19-20 (VOCs and SVOCs)	0		light brown coarse SAND, some fine to medium subangular Gravel
20		0		light brown to light grey coarse SAND, some fine to medium subrounded Gravel
22	SMS-SB-21-22-23 (VOCs, SVOCs, DNA, DUP)	35.5	46 inches	dark gray coarse to fine SAND, some medium to coarse subrounded Gravel, gets finer deeper
23.5		44.1		gray fine SAND, trace medium to coarse subrounded Gravel
24.5		32.6		light brown fine SAND, trace medium subrounded Gravel
25	SMS-SB-21-29-30 (VOCs and SVOCs)		27 inches	light brown coarse to fine SAND, coarsens deeper
27.5				light brown coarse SAND and fine subrounded Gravel; thin section of fine to coarse subr. Gravel
28.5				light brown coarse SAND, trace fine subrounded Gravel
30				

Note: Soil sampling completed using direct-push to advance a 5-foot long 2.125-inch outer diameter core barrel into the subsurface. The core barrel is lined with a 1.5" diameter acetate sleeve. Numbers in the "Recovery" column refer to length of soil column recovered in the acetate sleeve.