TETRA TECH

NOR-00800

August 10, 2010

Mr. Stephen Scharf
New York Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE06

Subject: Soil Gas Sampling Work Plan Addendum
Site 1 – Former Drum Marshalling Area
NWIRP Bethpage, New York

Dear Mr. Scharf:

On behalf of the Navy, please find the enclosed copy of the "Soil Gas Sampling Work Plan Addendum" for Site 1 – Former Drum Marshalling Area at NWIRP Bethpage that presents the planned field activities and sampling procedures for the gas sampling scheduled for the week of August 23, 2010.

This testing is being conducted to evaluate the effectiveness of the Site 1 – Soil Vapor Extraction Containment System at reducing the concentration of VOCs in the residential neighborhood adjacent to Site 1.

If you have any questions please contact Ms. Lora Fly, NAVFAC Mid-LANT, at (757) 341-2012.

Sincerely,

Dave Brayack
Project Manager

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Enclosure: Soil Gas Sampling Work Plan Addendum

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SOIL GAS SAMPLING

WORK PLAN ADDENDUM

NWIRP BETHPAGE

Bethpage, New York

Naval Facilities Engineering Command
Mid-Atlantic

Contract No. N62470-08-D-1001
Contract Task Order WE06

AUGUST 2010

WORK PLAN ADDENDUM

SOIL GAS SAMPLING

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT

BETHPAGE, NEW YORK

1.0 INTRODUCTION

This Work Plan has been prepared for the soil gas sampling activities at the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York. Site 1 was identified as having been impacted by historic releases of chlorinated solvents and was remediated via an air sparging/soil vapor extraction (AS/SVE) system between 1998 and 2002. The treatment and remedial goals were based on protection of groundwater. Soil vapor testing conducted in January 2008, October 2008, and January 2009 indicated elevated concentrations of VOCs existing along the eastern boundary of Site 1 and in the nearby residential neighborhood. See Table 1 for a summary of soil gas results from these sampling events.

From January through April 2009, soil vapor intrusion sampling was conducted in the residential neighborhood located east and adjacent to Site 1. A total of 18 residential homes were sampled during investigation activities through April 2009. As an interim measure, air purification units (APUs) were placed in homes to treat vapors that may have entered the homes. Based on the sample results, eight homes did not require further sampling/remediation. Based on sub-slab soil vapor and indoor air sampling results, Sub-slab Depressurization (SSD) systems were installed in six residential homes in May 2009. Residential homes were sampled and monitored from June 2009 to March 2010.

In December 2009, construction of an SVE Containment System along the eastern boundary of Navy property was completed. System start up activities began in December 2009. The SVE Containment System is currently in operation at Site 1.

The purpose of the soil gas sampling outlined in this work plan is to evaluate the effectiveness of the SVE Containment System on reducing the concentrations of VOCs observed in the 2008 and 2009 soil gas sampling events and the SSD system stack sampling conducted in March 2010. Field activities will include the sampling of 13 existing soil vapor monitoring (SVPM) points and 5 SSD system stacks. Soil gas and SSD system stack samples will be analyzed for volatile organic compounds (VOCs) via EPA TO-15 method. With concurrence from the New York State Department of Health (NYSDOH) and the New York State Department of Environmental

Conservation (NYSDEC) the TO-15 list was previously modified to analyze for site specific compounds associated with Site 1.

2.0 FIELD ACTIVITIES

The soil gas sampling locations are presented on Figure 1. The specific activities for the soil gas sampling are as follows:

1. Collect an initial round of vacuum readings from the 13 SVPMs
2. Construct ¼ inch sampling points within the offsite SVPMs
3. Conduct another round of vacuum readings from the 13 SVPMs
4. Collect air samples from the five SSD system stacks
5. Turn the SVE Containment System off
6. Evaluate the integrity of the onsite monitoring point SVPM 11
7. Collect soil gas samples from the 13 SVPMs
8. Restart the SVE Containment System

Sample nomenclature and analysis for the soil gas and SSD system stack sampling are presented in Table 2. The field sampling team will maintain a Soil Gas Sample Log Sheet, as presented in Attachment A, for each sample collected. Other pertinent information regarding sample identification or sample collection will be recorded in the field logbook.

SUMMA® canisters will be utilized for collecting all soil gas and SSD stack samples. The soil gas and SSD stack samples will be obtained over a 30 minute time period. SUMMA® canisters will be shipped to the laboratory via overnight carrier (e.g., Federal Express) for analysis.

Ambient air samples will also be collected simultaneously during the soil gas sampling. The SUMMA® canister will be positioned at an upwind location near the associated SVPM at a height of 4 ft above grade. The ambient air sample will be obtained over an eight-hour period. If more than one set of SVPMs is sampled in an eight-hour day, then the canister will be moved as sampling progresses to sequential SVPMs. Ambient air samples will be shipped to the laboratory as described above.

3.0 SAMPLING PROCEDURES

A vacuum reading and flow rate will be recorded from the SVE Containment System. An initial round of vacuum readings will also be collected from the 13 SVPMs with a pressure gauge to confirm the SVE Containment System is running.

To minimize potential surface air infiltration and purge time, the existing offsite SVPMs in the neighborhood will be converted to sampling/pressure monitoring points. These will be constructed a similar manner as the onsite SVPMs (see Attachment B for existing SVPM construction diagrams). Tubing (1/4 inch) with a 6-inch long stainless steel screen will be placed in the 1-inch PVC down to the screened interval in each SVPM. Annular space inside the PVC casing will be filled with filter sand and a bentonite seal (approximately 2-foot thick) will be installed approximately 2 or 3 feet above the screen. The bentonite will be allowed to hydrate a minimum of 24 hours prior to sampling. The remaining annular space will be filled with sand to the ground surface and the poly tubing will be fixed with barbed fittings to a PVC cap and sampling port.

SSD system stack samples will be collected prior to the SVE Containment System shutdown. The same procedures followed during the previous sampling of the SSD stacks will be used as presented in the Indoor Air Sampling work plan.

The SVE Containment System will be shutdown prior to soil gas sampling to avoid potential interferences and insure collection of representative soil gas. After SVE Containment System shutdown and prior to soil gas sampling, integrity testing will be conducted at BPS1-SVPM11 to determine whether it is a viable SVPM and soil gas sampling point. Historical vacuum readings collected from BPS1-SVPM11 during the SVE Pilot test (January 2009) have indicated no response or vacuum at this SVPM during SVE operation. Therefore, the integrity of this SVPM is in question.

Utilizing a vacuum pump and a vacuum gauge, a flow rate of approximately 0.2 liters per minute or more will be applied to BPS1-SVPM11S (for baseline) and BPS1-SVPM11. Vacuum readings will be collected over time (approximately every 2 to 5 minutes) at both SVPM's. If vacuum readings indicate an increasing vacuum at BPS1-SVPM11 over time, and/or a significantly higher vacuum at BPS1-SVPM11 when compared to the readings at BPS1-SVPM11S, then the SVPM will be determined unusable/unreliable and no soil gas sample will be collected at BPS1-SVPM11.

The soil gas sampling procedures for each SVPM will be as follows:

1. Connect tee and valve assembly to the sampling port of the SVPM.

2. Connect a vacuum pump to the tee and valve assembly. Purge 2500 to 3000 mL volumes of air from the soil gas point and sampling line using the vacuum pump at a rate of approximately 100 to 200 milliliter per minute (mL/min).

3. Record on the Soil Gas Sample Log Sheet and/or field notebook the flow controller number with the appropriate SUMMA® canister number. Isolate vacuum pump and collect soil gas sample with SUMMA® canister.

After all soil gas samples are collected, the SVE Containment System will be re-started.

TABLE 1
ANALYTICAL SUMMARY OF DETECTIONS
SOIL GAS SAMPLING - JANUARY 2008 THROUGH JANUARY 2009
NWIRP BETHPAGE, NEW YORK

	EPA Regional Screening Levels Residential Air[1]	NYSDOH Air Guideline Values[2]	Proposed WP Levels	BPS1-SG1001-07	BPS1-SG1001-20	BPS1-SG1001-40	BPS1-SG1002-08	BPS1-SG1002-08 DUP	BPS1-SG1002-20	BPS1-SG1002-45	BPS1-SG1003-05.5	BPS1-SG1003-20	BPS1-SG1003-45	BPS1-SG1004-05.5	BPS1-SG1004-22	BPS1-SG1004-46	BPS1-SG1005-08	BPS1-SG1005-20	BPS1-SG1005-45	BPS1-SG1006-07	BPS1-SG1006-20	BPS1-SG1006-45	SVPM11S-24	SVPM11-49	SVPM12S-25	SVPM12-50	BPS1-SG2001-08	BPS1-SG2001-20	BPS1-SG2001-49	BPS1-SG2002-08	BPS1-SG2002-20
Date				Jan. 2008	Jan. 2008	Jan.	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Jan. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008
Compound	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**
Trichloroethene	1.20	5/250	5	**19,000**	**180,000**	**1,400**	**3300 J**	**4,600**	**4,400**	**320**	**110**	**590**	**750**	**5.2**		**820**	1.5	**16**	**71**	1.2	2.0	2.1	**7,200**	0.29	**73,000**	**150,000**	**1,700**	**2,700**	**1,500**	**34,000**	**89,000**
Tetrachloroethene	0.41	100/1000	100	**170**	**1,200**	5.9	**1,700**	**2,100**	**960**	20	**540J**	**1,300**	**250**	22		78	15	59	60	19	28	44	**5,300**				**4,000**	**5,000**	**720**	**420**	**740**
1,1,1-Trichloroethane	5200.00	NA/1000	5200.00	**16,000**	**90,000**	890	740	970	1,900	550	440J	790	780	3.9		430	3.4	11	27			0.95	2,400		**36,000**	**75,000**	1,300	1,700	1,400	**21,000**	**52,000**
1,1-Dichloroethane	1.50		5 - 150	**130**	**1,700**	**14**	**15**		**62**	**16**	1.2	**19**	**95**			**460**							**63**		**710**	**1,400**	**11**	**29**	**26**	**170**	**680**
1,1-Dichloroethene	210.00		210.00	**490**	**2,400**	15			20	6.6J	0.94	5.8	8.8			4.1									**1,700**	**4,700**	9.2 J	16	27	**220**	**890**
Benzene	0.31		5 - 31			1.1J	**5.1J**		**33**	**56**	3.3	**6.2**	**9.4**	**7.6**	1.4	**5.2**	**7.1**	**22**	**8.4**	**5.1**	**7.2**	**23**		1			**7.8 J**	4.7 J	**9.1**	**28 J**	
Chloroform	0.11		5 - 11			0.52 J	**5.6J**		**7.3J**		1.2	4.9	**5.7**			2.6J		1.7	1.2	2.4	**53**	**28**					**110**	**24**	**8.2**	**41 J**	**32 J**
cis-1,2-Dichloroethene	NA		36.50	24 J	**560J**		**160**	**200**	**800**	**92J**		3.7	8.1			**79**							**860**		**200J**	**780**	20	**94**	**73**	**49 J**	**170**
Carbon Tetrachloride	0.16	5/250												0.67	0.47J		0.30J		0.28J	41	130	99		0.75J					0.13 J		
Methylene Chloride	5.20	60/NA				150																								
1,2,4-Trichlorobenzene	NA																													
1,2-Dichlorobenzene	210.00																													
1,2-Dichloroethane	0.09																													
1,2-Dichloropropane	0.24																													
1,3-Dichlorobenzene	NA																													
1,4-Dichlorobenzene	0.22																													
2-Butanone	NA			35					50	230	10	12	22	16	0.87	15	11J	53J	37	26J	21J	50		0.75			50	56	65	78	
4-Methyl-2-pentanone	NA													2.1	0.11J			1.8		0.66							2.3J				
Acetone	32000.00			370		14	64	72	1500	2000	95	120	340	330J	230J	470	230J	490 J	740J	110	160J	570J	49J	9.3	320J	500J	470	440	500	300	250
Bromomethane	5.20																0.27J														
Carbon Disulfide	730.00						3.5J		3.9J	6.0J	1.1J	2.8J	1.3J	3.6	0.15J	1.6J	2.5	4.6	2.3	3.2	4.7	2.4					3.0J	3.3J			
Chlorobenzene	52.00													0.061J																	
Chloroethane	NA																														
Chloromethane	1.40									5.2J				0.83	1.1		0.79	0.34	0.18J	0.25J		0.5		1.1							
Ethyl Benzene	0.97								5.9J	8.4J	7.8	12	4.4	9.1	0.53J	2.7J	1.8	6.4	4.7	1.8	3.2	5.2		0.49J			4.7J	4.4J	7.9	170	
Freon 11	NA					2.3J	4.4J				1.8	1.4J	2.0J	1.3	1.5	1.7J	1.3	1.6	2.3	1.1	1.7	1.4		1.2			6.5J	6.1J	6.5J		
Freon 113	NA			19 J		2.1J	2200J	2900J	5100J	2400J	790J	1400J	2200J	4J	0.69J	600J	2.4	3	15	0.73J	0.64J	0.70J	4900J	0.79J			2,200	2,800	2,500		
Freon 12	NA					4.1					0.86		2.8J	1.6	1.9		1.8	1.6	1.4	1.6	1.4	1.2		1.8			2.9J	2.8J	2.6J		
m,p-Xylene	730.00								9.1J	20	27	34	14	32	1.9	7.4	5.1	12	13	5	8.4	14	26	1.2			12	14	26	290.0	32J
Methyl tert-butyl ether	9.40												8.2																	
o-Xylene	730.00									7.6J	8.3	11	2.4J	11	0.63	1.6J	1.2	3.2	2.6	1.6	2.2	2.7	12J	0.47J			3.5J	3.4J	9.2	80J	
Styrene	1000.00										0.92	1.0J		0.76	0.084J		0.26J	0.89	0.46J		0.74	0.54J		0.085J			2.0J	1.8J	17		
Toluene	5300.00			13 J		2.1J			31	66	25	41	24	32	3.6	15	10	37	30	8.8	18	40	23	2.2			33	32	65	500	46J
trans-1,2-Dichloroethene	63.00						22	25	58	92J	0.22J	3.0J	5.6			22							64				7.9J	16.0	11		

[1]Residential air criteria from Regional Screening Tables (September 2008), http://www.epa.gov/reg3hwmd/risk/human/rb-
[2] Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). Air Guideline Values read as Indoor air/sub-slab
µg/m³ = micrograms per cubic meter of air
NA : Not Available
Bolded values are exceedances of Proposed Work Plan (WP) Levels (TTNUS, 2008)
Shaded values are exceedances of NYSDOH Air guideline values for Indoor air/Sub-Slab concentrations
J = estimated value
Blank cells indicate a non-detect value.
Note: Initial onsite sampling took place January 2008 and initial offsite sampling took place October 2008 through January 2009

TABLE 1
ANALYTICAL SUMMARY OF DETECTIONS
SOIL GAS SAMPLING - JANUARY 2008 THROUGH JANUARY 2009
NWIRP BETHPAGE, NEW YORK

	EPA Regional Screening Levels Residential Air[1]	NYSDOH Air Guideline Values[2]	Proposed WP Levels	BPS1-SG2002-44	BPS1-SG2003-08	BPS1-SG2003-20	BPS1-SG2003-49	BPS1-SG2004-08	BPS1-SG2004-20	BPS1-SG2004-49	BPS1-SG2005-08	BPS1-SG2005-20	BPS1-SG2005-49	BPS1-SG2006-08	BPS1-SG2006-20	BPS1-SG2006-49	BPS1-SG2007-08	BPS1-SG2007-20	BPS1-SG2007-49	BPS1-SG2008-08	BPS1-SG2008-20	BPS1-SG2008-49	BPS1-SG2009-08	BPS1-SG2009-25	BPS1-SG2009-48	BPS1-SG2010-08	BPS1-SG2010-24	BPS1-SG2010-49	BPS1-SG2011-08	BPS1-SG2011-24	BPS1-SG2011-48
Date				Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Oct. 2008	Jan. 2009	Jan. 2009	Jan. 2009	Jan. 2009	Jan. 2009	Jan. 2009
Compound	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**
Trichloroethene	1.20	5/250	5	**26,000**	**20**	**82**	**710**	1.0	**550**	**600**	0.52	0.8	1.0	**32**	**71**	**61**	**29**	**87**	**400**	4.7	**6.8**	**26.0**	0.2	0.23	0.4	2.8	**19.0**	**5.5**	0.9	0.14 J	0.34
Tetrachloroethene	0.41	100/1000	100	48 J	19	14	8.9	1.8	**1,000**	**580**	16	9.7	3.8	14	29	11	13	25	5.3 J	12	2.1	7.4	4.8	3.2	2.0	3.7	4.9	2.3	1.6	0.57 J	2.9
1,1,1-Trichloroethane	5200.00	NA/1000	5200.00	**27,000**	66	170J	720J	1.4	460	480	3.2	3.2	3.2	12	22	35	150	260	870	52	80	130	1.1	1.6	1.1	1.4	2.2	1.0	1.5	0.50 J	1.0
1,1-Dichloroethane	1.50		5 - 150	**490**		0.49 J	**8.6**		**44**	**74**									3.0 J												
1,1-Dichloroethene	210.00		210.00	**480**		2	23		7.1						0.62	1.2	0.26 J	0.69 J	13			1									
Benzene	0.31		5 - 31	**11 J**	3.5	**6.4**	**8.5**	1.1	3.5	**15.0**	4.5	3.9	**5.8**	2.5	**7**	**5.4**	**5.7**	**5.8**	**11**	**5.4**	**13**	**9.3**	2.9	3.4	**19.0**	3.5	3.7	**7.8**	2.8	3.3	**19.0**
Chloroform	0.11		5 - 11	**19 J**	4.6	3	**9.4**	0.25 J	**25**	**24.0**	**5.0**	**8.7**	**16**	3.0	3.7	**6.1**	1	0.72 J	4.1 J	1.2	3.4	**9.1**	0.92	**5.8**	**6.1**	**16.0**	2.2	0.9	0.29 J	0.46 J	2.7
cis-1,2-Dichloroethene	NA		36.50	**130**			1.6		4.6					4.1	**45**	**89**															
Carbon Tetrachloride	0.16	5/250						0.55J			110	140	130	0.94J	2.10	2.50	0.33J			0.40J	0.52J	0.85					0.32 J	0.56 J		0.45 J	
Methylene Chloride	5.20	60/NA															0.66J									0.58 J				0.56 J	
1,2,4-Trichlorobenzene	NA																	0.37J													
1,2-Dichlorobenzene	210.00																0.19J														
1,2-Dichloroethane	0.09							0.25J																		6.9					0.73
1,2-Dichloropropane	0.24							0.59J																		8.3					
1,3-Dichlorobenzene	NA				0.25J	0.26J																									0.17 J
1,4-Dichlorobenzene	0.22				0.33J	0.31J		0.36J			0.32J	0.27J	0.28J			0.35J	0.26J								0.23J		0.38 J				
2-Butanone	NA			78	19	31	47	4	30	100	60	60	44	68	59	140	58	41	200	44	160	100	20	25	26	25	66	110	50	72	290 E
4-Methyl-2-pentanone	NA				2			0.47J		1.2J	1.10	0.60	0.93	0.47J	1.10	0.80	0.62	0.67J	2.0J	1.60	1.60	4.10	1.00	0.82					5.9	3.3	
Acetone	32000.00			1,200	120	170J	410J	29	240	640	630J	790J	700J	1200J	860J	1100J	850J	630J	3400J	460J	1200J	860J	230J	400J	230J	44	55	130	34	56	240 J
Bromomethane	5.20										0.81		1.10	2.30	0.73		0.93	0.78J		0.43J	1.60	1.20	0.51J	0.68	1.10	0.21 J	0.20 J				0.40 J
Carbon Disulfide	730.00				2	3.0	2.5J	1.1	2.2J	3.4J	6.6J	2.7J	1.9J	2.1J	1.5J	2.2	2.7J	2.5J	4.9J	2.8J	3.7J	1.2J	2.1J	2.2J	0.90J	0.96 J	2.10	0.95 J	2.30	1.1 J	2.50
Chlorobenzene	52.00												0.12J		0.15J							0.17J									
Chloroethane	NA												0.25J		0.15J										0.39						
Chloromethane	1.40				0.23J	0.13J	0.46J	1			0.22J		0.53		0.27J	0.25J	0.11J			0.14J	0.24J	0.46	0.29	0.32	0.83	0.26 J	0.27	1.00	0.26 J	1.00	0.91
Ethyl Benzene	0.97			12J	6	8	7.8	1.0	3.6	7.3	3.1	4.1	4.0	8.8	6.2	6.5	1.5	2.9	7.3	3.5	2.8	4.4	3.2	4.2	5.6	4.8	5.8	2.5	4.0	2.6	5.0
Freon 11	NA				13.0	13.0	40.0	1.5	4.7	3.4J	7.7J	4.7J	2.5J	2.3J	2.3J	2.8J	2.5J	2.7	2.6J	3.9J	4.1J	3.3J	16J	12J	7.3J	14	28	11	5.1	3.6	5.5
Freon 113	NA			34J	1	2	4	.79J	1,200	1,300	10J	10J	14J	170J	280J	300J	11J	16J	41.0	0.94J	1.4J	1.3J	0.65J	0.57J	0.46J	0.69 J	0.81 J	0.66 J	0.39 J	0.81 J	0.72 J
Freon 12	NA				1.3	1.2	3.9	2.5	3.6	2.9J	1.4	1.3	1.1	2.3	1.2	1.5	1.1	2.8		1.2	2.1	2.2	3.7	5.6	5.8	1.8	1.4	2.0	1.6	2.2	2.3
m,p-Xylene	730.00			40J	20.0	25.0	25.0	3.1	12.0	21.0	9.6	13.0	13.0	33.0	20.0	19.0	3.6	10.0	27.0	12.0	7.2	13.0	11.0		17.0	13.0	14.0	7.1	11	5.8	15.0
Methyl tert-butyl ether	9.40								1.7J	11																					
o-Xylene	730.00			16J	8.4	9.8	10.0	1.2	3.3	5.8	2.2	3.4	2.8	12.0	7.2	5.3	0.60J	2.3	8.4	2.7	1.7	2.8	3.0		4.1	6.1	5.2	2.6	49.0	2.2	5.9
Styrene	1000.00				21.0	26.0	24.0	1.4	2.0J		1.8	1.6	1.90	37.00	21.00	2.10	0.12J	0.84J	2.10	0.91	0.53J	0.95	0.66		0.91	9.60	8.40	2.80	8.20	2.70	0.57
Toluene	5300.00			65J	20	35	63	6.7	24	52	26	38.0	55.0	35	34	60	20	20	65	27	49	57.0	24.0	38	71.0	170.0	170	48.0	100	97.0	52.0
trans-1,2-Dichloroethene	63.00								3.9						1.4J	2.7															

[1]Residential air criteria from Regional Screening Tables (September 2008), http://www.epa.gov/reg3hwmd/risk/human/rb-
[2] Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). Air Guideline Values read as Indoor air/sub-slab
µg/m³ = micrograms per cubic meter of air
NA : Not Available
Bolded values are exceedances of Proposed Work Plan (WP) Levels (TTNUS, 2008)
Shaded values are exceedances of NYSDOH Air guideline values for Indoor air/Sub-Slab concentrations
J = estimated value
Blank cells indicate a non-detect value.
Note: Initial onsite sampling took place January 2008 and initial offsite sampling took place October 2008 through January 2009

TABLE 2
SOIL GAS SAMPLING - AUGUST 2010
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	Matrix	VOCs-TO15A [(1)]
SVPM 2002	BPS1-SVPM2002S-XXXXXX	Air	1
	BPS1-SVPM2002I-XXXXXX	Air	1
	BPS1-SVPM2002D-XXXXXX	Air	1
SVPM 2003	BPS1-SVPM2003I-XXXXXX	Air	1
	BPS1-SVPM2003D-XXXXXX	Air	1
SVPM 2004	BPS1-SVPM2004I-XXXXXX	Air	1
	BPS1-SVPM2004D-XXXXXX	Air	1
SVPM 2007	BPS1-SVPM2007I-XXXXXX	Air	1
	BPS1-SVPM2007D-XXXXXX	Air	1
SVPM 11	BPS1-SG2008-XXXXXX	Air	1
SVPM 11S	BPS1-SG2008-XXXXXX	Air	1
SVPM 12	BPS1-SG2008-XXXXXX	Air	1
SVPM 12S	BPS1-SG2008-XXXXXX	Air	1
AR002	BPS1-AR002-ST05	Air	1
AR003	BPS1-AR003-ST05	Air	1
AR004	BPS1-AR004-ST05	Air	1
AR013	BPS1-AR013-ST05	Air	1
AR014	BPS1-AR014-ST05	Air	1
Duplicate (SVPM)	BPS1-DUP01	Air	1
Duplicate (SVPM)	BPS1-DUP02	Air	1
Duplicate (SSD Stack)	BPS1-DUP03	Air	1
Field Blank	BPS1-FB2001-XXXXXX	Air	1
Field Blank	BPS1-FB2002-XXXXXX	Air	1
Field Blank	BPS1-FB2003-XXXXXX	Air	1

VOCs: Volatile organic compounds. (Site specific list: 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, vinyl chloride)

XXXXXX: Sample date. For example, BPS1-SVPM2004D-082610, would be collected on August 26, 2010.

1 : 21-Day results from Navy-approved laboratory via method TO-15.

SSD: Sub-slab Depressurization system

SVPM: Soil Vapor Pressure Monitoring

112G02091\1031\112G02091GM011.DWG 08/04/10 MKB

SITE 1

SVE-106I
SVE-106D

SVE-105I
SVE-105D

SVE-104I
SVE-104D

SVE-103I
SVE-103D

SVE-101D
SVE-101I

SVE-102I
SVE-102D

SVPM-2004I
SVPM-2004D

SVPM11
SVPM11S

SVPM12
SVPM12S

SVPM-2002S
SVPM-2002I
SVPM-2002D

SVPM-2007I
SVPM-2007D

SVPM-2003I
SVPM-2003D

FORMER MANUFACTURING PLANT NO. 3

FORMER MANUFACTURING PLANT

WAREHOUSE

WAREHOUSE

SYCAMORE AVENUE

MAPLE AVENUE

11TH STREET

10TH STREET

9TH STREET

N

LEGEND

- SOIL VAPOR PRESSURE MONITORING POINT (SVPM)
- PILOT TEST SVE CONTAINMENT WELL
- APPROXIMATE SVE CONTAINMENT WELL LOCATION
- PROPERTY LINE
- FENCE LINE
- SITE BOUNDARY

0 100 200

SCALE IN FEET

TETRA TECH NUS, INC.

SOIL VAPOR PRESSURE MONITORING POINT LOCATION MAP SITE 1 NWIRP BETHPAGE BETHPAGE, NEW YORK

FILE	SCALE
112G02019GM01	AS NOTED
FIGURE NUMBER	REV / DATE
FIGURE 1	0 / 08/04/10

ATTACHMENT A

SOIL GAS SAMPLING LOG

Tetra Tech NUS, Inc. **SOIL GAS SAMPLING LOG SHEET**

Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.:
Sample Location: Home #
Sampled By:

SAMPLING DATA:						
Date:	**Wind speed**	**Wind Direction**	**Ambient temperature**	**Barometric Pressure**	**Relative Humidity**	Other
Time:	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method:						

Summa Canister #		**Duplicate**		
Filter Type/Flow		(if collected)		

Start Time Vacuum		in Hg		in Hg
End Time Vacuum		in Hg		in Hg

He check	**Start**	**Stop**	**Reading**

Purge Data	**Start**	**Stop**	**Notes:**

Readings:
Liters/minute
_____ @ _____
_____ @ _____
_____ @ _____

Notes:

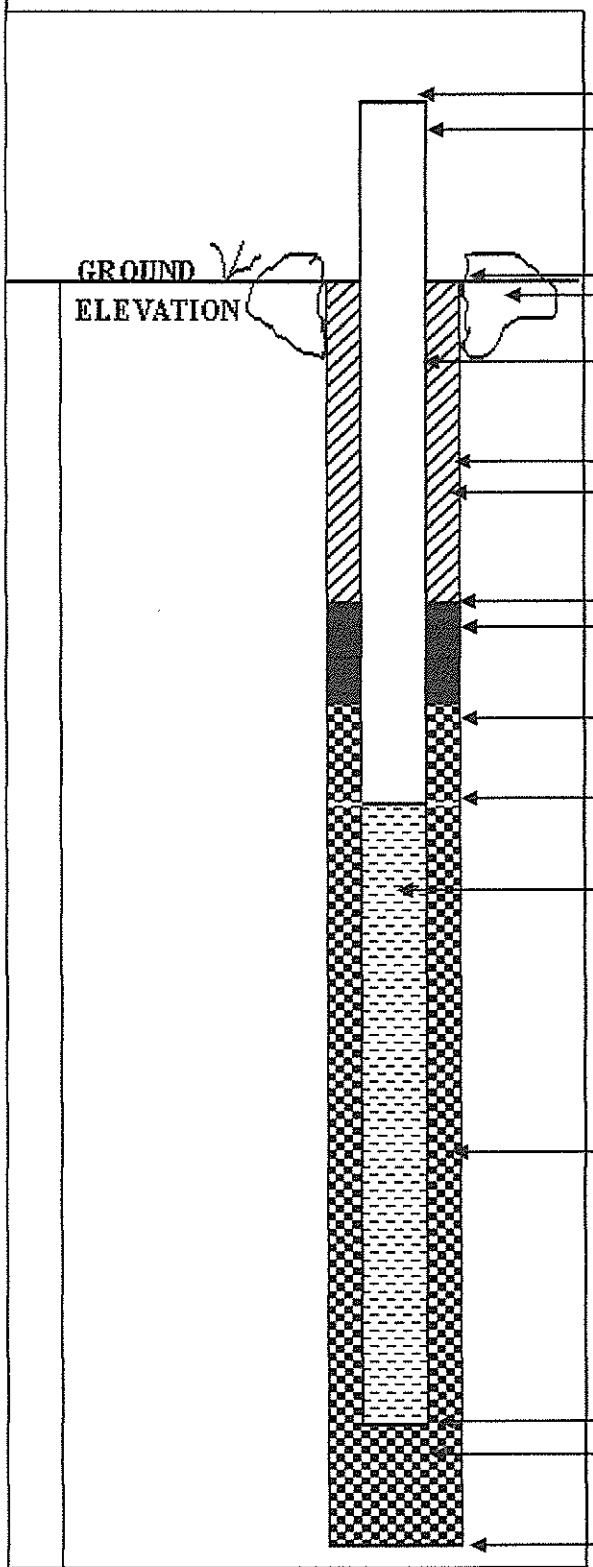
ATTACHMENT B

SVPM CONSTRUCTION DIAGRAMS

BORING NO.: 2002S

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.: BPSI- PZ 2002S	
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	1/7/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION:

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2 1/4"

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 12

TYPE OF SEAL: SAND/ BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 15

ELEVATION / DEPTH TOP OF SCREEN: 18

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 10

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 10

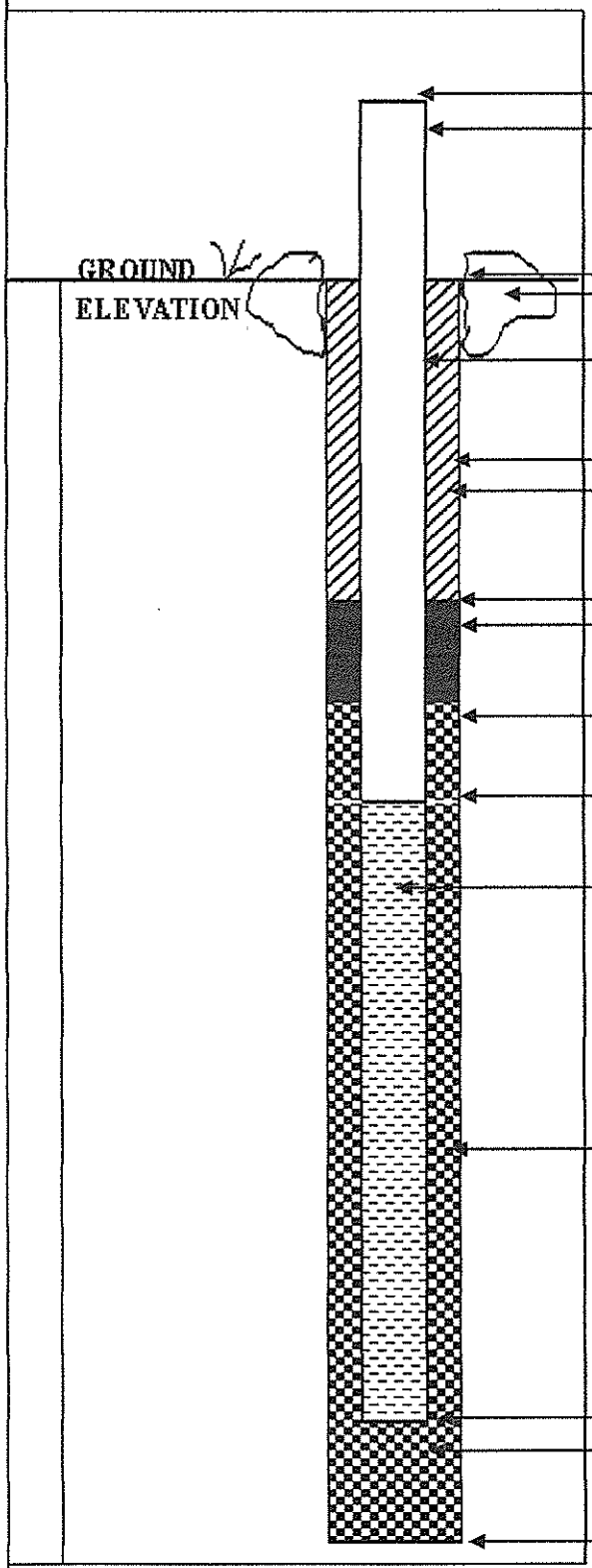
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 10

BORING NO.: 2002 I

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.: BPS1- PZ 2002I	
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	11/7/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

NA

GROUND ELEVATION:

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2¼

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 18

TYPE OF SEAL: BENTONITE/SAND

ELEVATION / DEPTH TOP OF FILTER PACK: 18

ELEVATION / DEPTH TOP OF SCREEN: 23

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10 SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 25

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 25

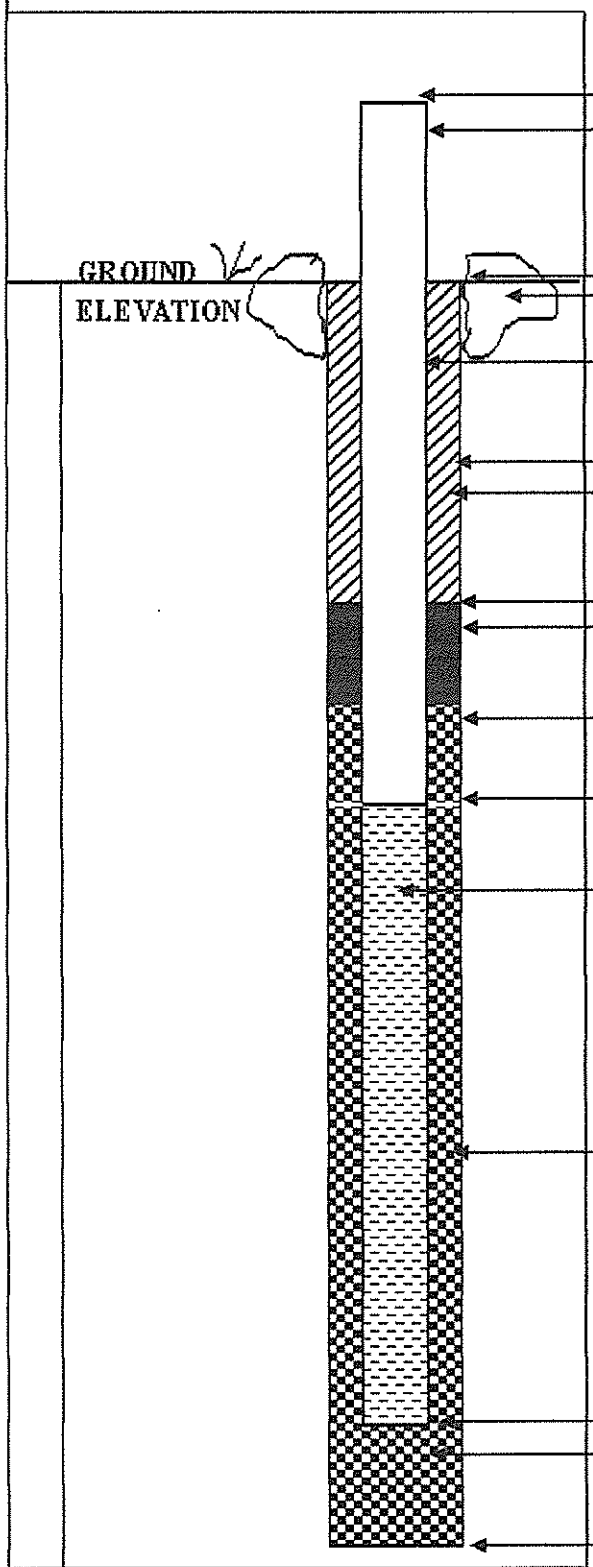
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 25

BORING NO.: 2002D

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.:	BPS1-PZ2002D
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	1/7/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION:

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2 1/4

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 127

TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 137

ELEVATION / DEPTH TOP OF SCREEN: 142

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10 SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: SAND #1

ELEVATION / DEPTH BOTTOM OF SCREEN: 144

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 144

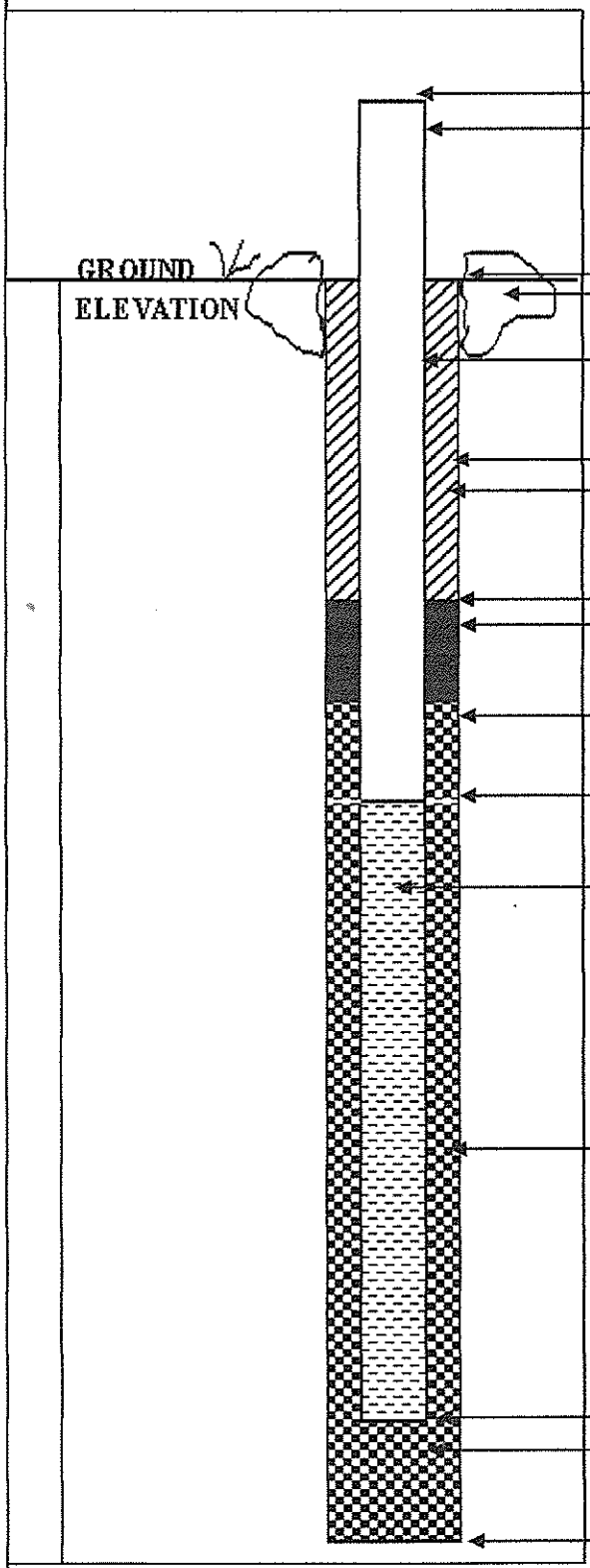
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 144

BORING NO.: 2003I

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.:	BPSI-PZ 2003I
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	1/6/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:	—	EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION:

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2¼"

TYPE OF SEAL:

ELEVATION / DEPTH OF SEAL: 18

TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 118

ELEVATION / DEPTH TOP OF SCREEN: 123

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10 SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 125

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 125

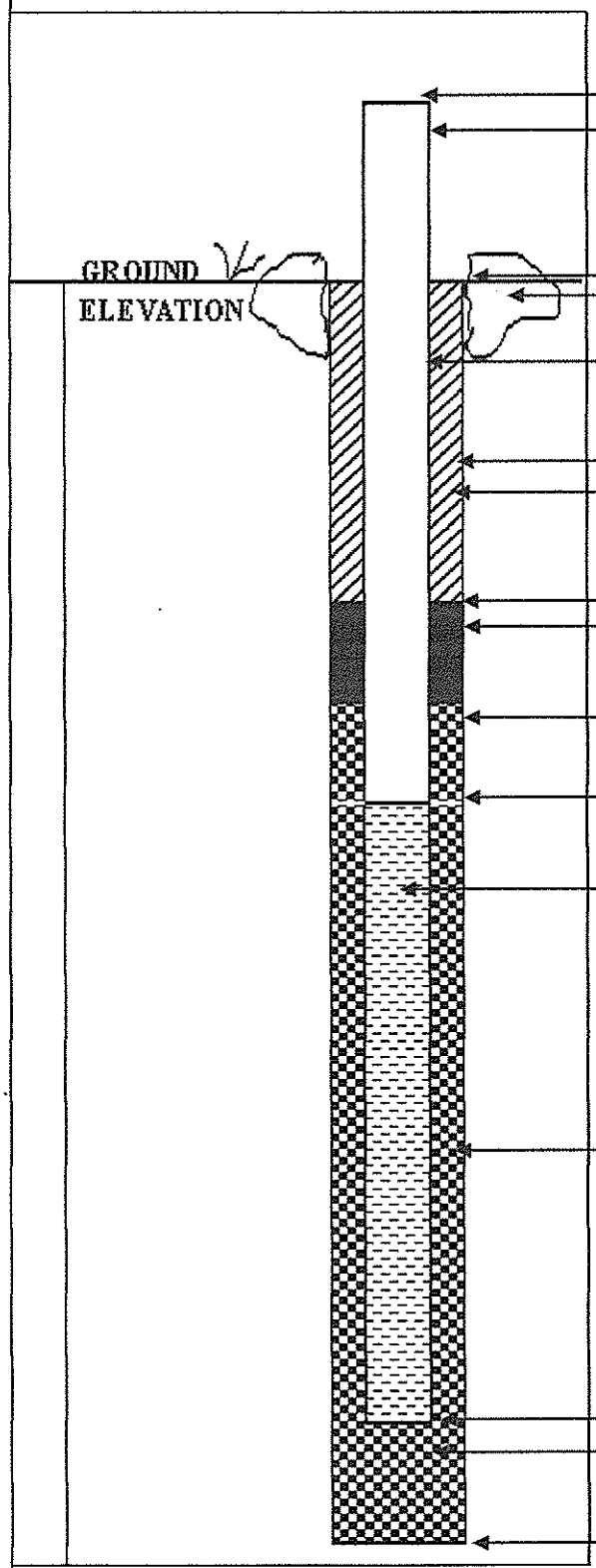
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 125

BORING NO.: 2003D

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.:	BPSI-PZ2003D
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	1/6/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:	—	EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION:

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2¼"

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 128

TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 138

ELEVATION / DEPTH TOP OF SCREEN: 143

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: SAND #1

ELEVATION / DEPTH BOTTOM OF SCREEN: 145

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 145

TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 145

PROJECT NWIRP – BETHPAGE SITE 1

JOB NO. 106–3570

DRILLING SUBCONTRACTOR DELTA WELL AND PUMP CO.

DRILLER J. GUECI

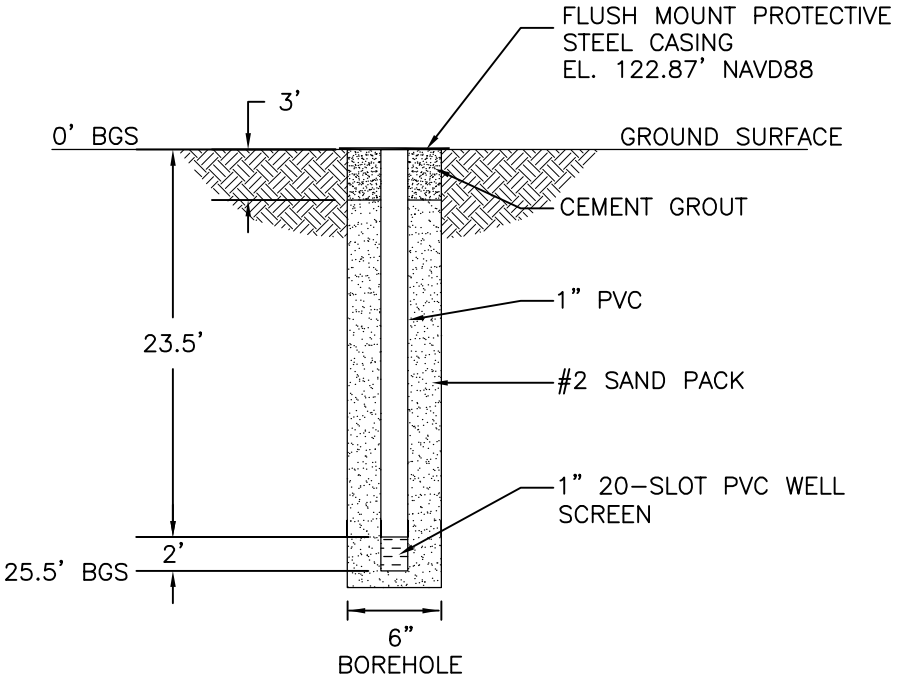
DRILLING METHOD HSA

WELL NO. SVPM–2004I

DATE OF WELL INSTALLATION 10–12–09

DATE OF WELL DEVELOPMENT N/A

GEOLOGIST C. JOBLON/TTECI



NAVAL FACILITIES ENGINEERING COMMAND MID–ATLANTIC
NWIRP BETHPAGE SITE 1 SVE CONTAINMENT SYSTEM
INTERMEDIATE SOIL VAPOR MONITORING POINT CONSTRUCTION DIAGRAM – SVPM–2004I
TETRA TECH EC, INC.

PROJECT NWIRP – BETHPAGE SITE 1

JOB NO. 106–3570

DRILLING SUBCONTRACTOR DELTA WELL AND PUMP CO.

DRILLER J. GUECI

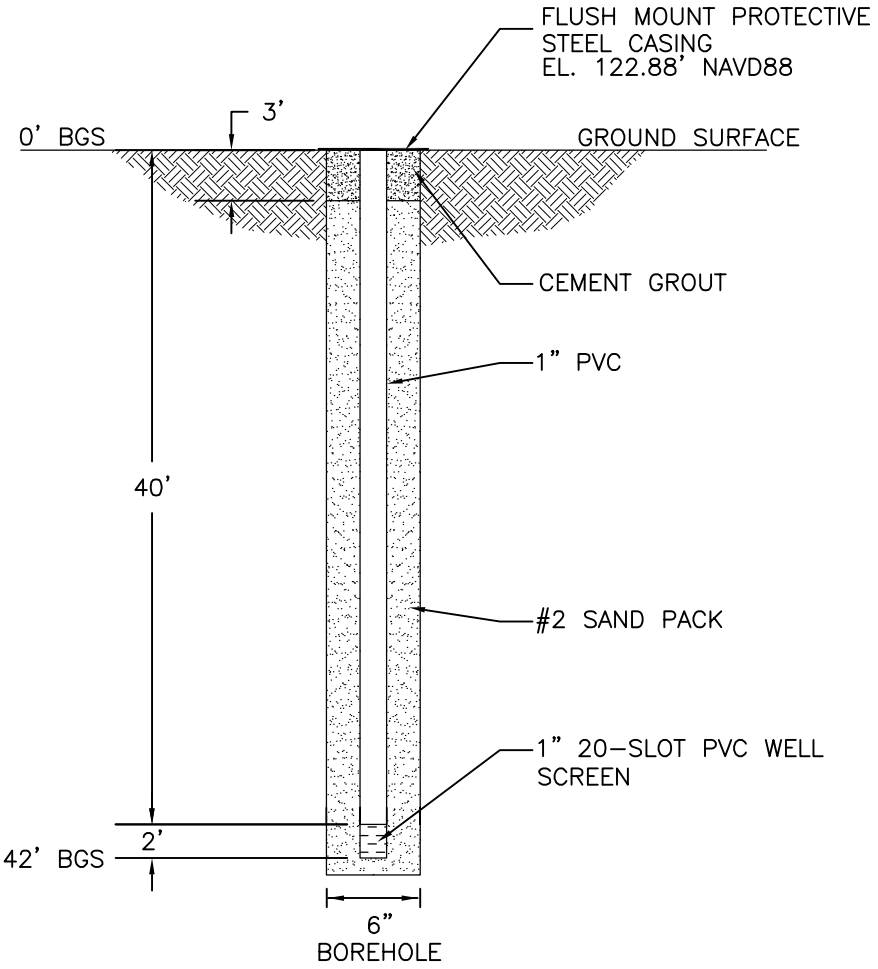
DRILLING METHOD HSA

WELL NO. SVPM–2004D

DATE OF WELL INSTALLATION 10–12–09

DATE OF WELL DEVELOPMENT N/A

GEOLOGIST C. JOBLON/TTECI

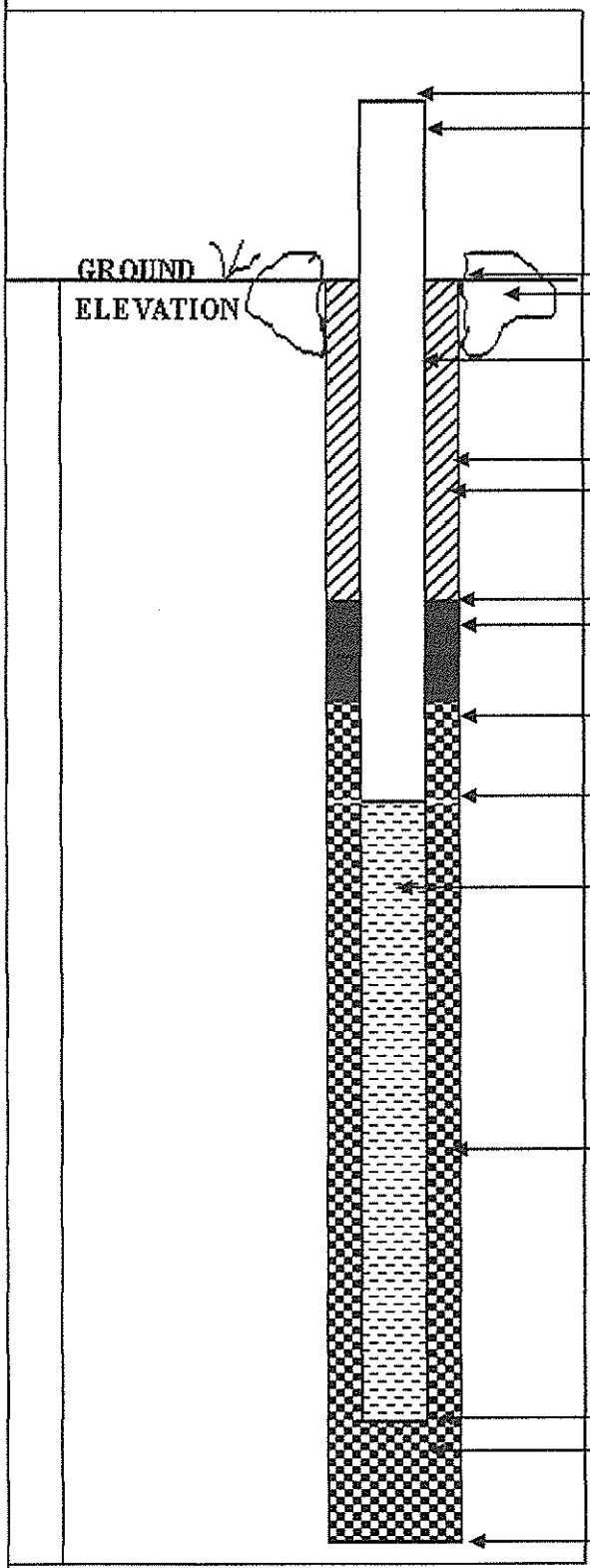


NAVAL FACILITIES ENGINEERING COMMAND MID–ATLANTIC
NWIRP BETHPAGE SITE 1 SVE CONTAINMENT SYSTEM
DEEP SOIL VAPOR MONITORING POINT CONSTRUCTION DIAGRAM – SVPM–2004D
TETRA TECH EC, INC.

BORING NO.: 2007I

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.:	BPSI-PZ-2007I
PROJECT No.:	112G01687	DRILLER:	MORAITIS	DATE COMPLETED:	1/7/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION: 0

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2¼

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 18

TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 118

ELEVATION / DEPTH TOP OF SCREEN: 123

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10SLX 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 125

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 125

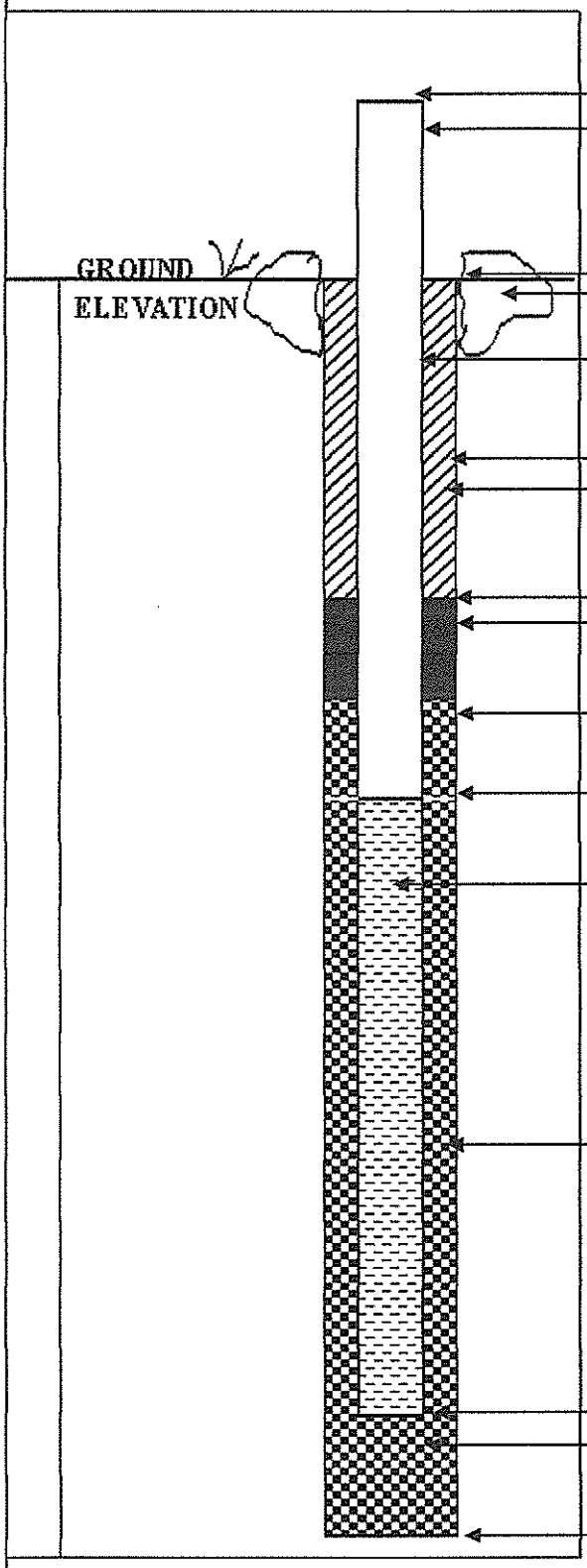
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 125

BORING NO.: 2007D

Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

PROJECT:	NWIRP Bethpage II	DRILLING Co.:	Zebra	BORING No.:	BPSI-PZ2007D
PROJECT No.:	112G01687	DRILLER:	MORANTS	DATE COMPLETED:	1/7/09
SITE:	Site 1	DRILLING METHOD	DPT	NORTHING:	
GEOLOGIST:	Conti	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION: 0

TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2¼"

TYPE OF SEAL: SAND

ELEVATION / DEPTH OF SEAL: 125

TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 135

ELEVATION / DEPTH TOP OF SCREEN: 140

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10SL x 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 142

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 142

TYPE OF BACKFILL BELOW WELL: NA

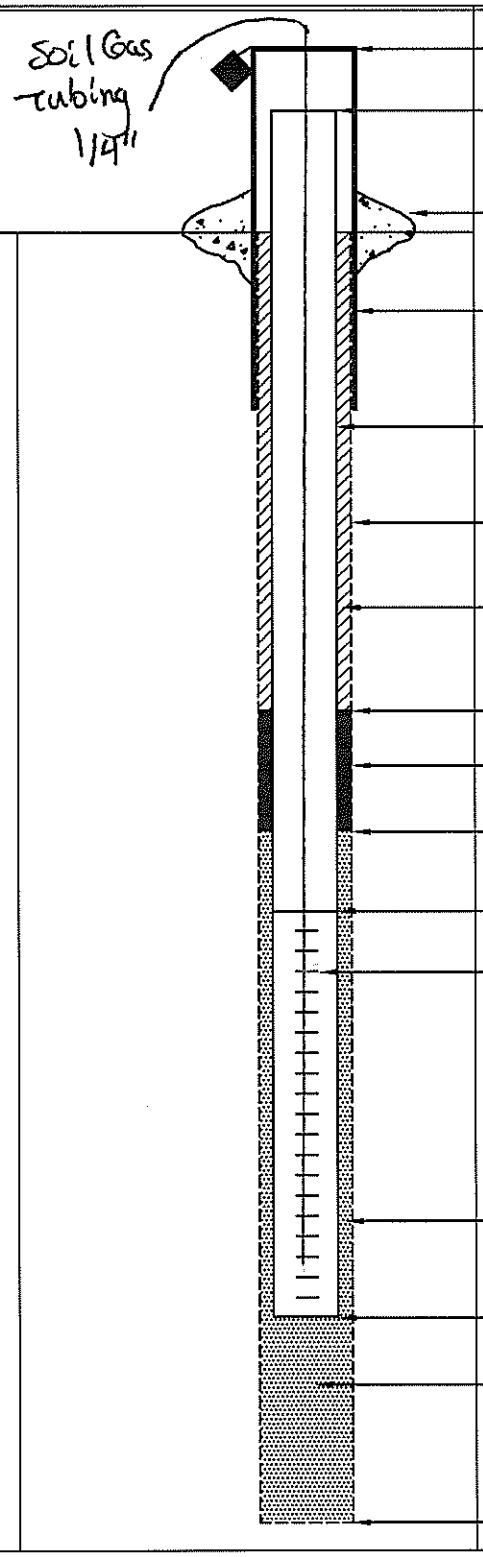
ELEVATION / DEPTH OF BOREHOLE: 142

WELL NO.: SVPM-11S

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

Tetra Tech NUS, Inc. Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER Luke Reiss	
PROJECT NO. CTO-002	BORING	DRILLING METHOD Geoprobe	
DATE BEGUN 1-22-08	DATE COMPLETED 1-22-08		
FIELD GEOLOGIST		DEVELOPMENT METHOD	
GROUND ELEVATION	DATUM		



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / NA

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / NA

TYPE OF SURFACE SEAL: NA

I.D. OF SURFACE CASING:
TYPE OF SURFACE CASING:

RISER PIPE I.D.:
TYPE OF RISER PIPE:

BOREHOLE DIAMETER:

TYPE OF BACKFILL:

ELEVATION/DEPTH TOP OF SEAL: / 10'

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: ~~/~~ 13'

ELEVATION/DEPTH TOP OF SCREEN: / 20'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE x LENGTH: NA

I.D. OF SCREEN: NA

TYPE OF SAND PACK: NA

ELEVATION/DEPTH BOTTOM OF SCREEN: / 24'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 25'
BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: / 25'

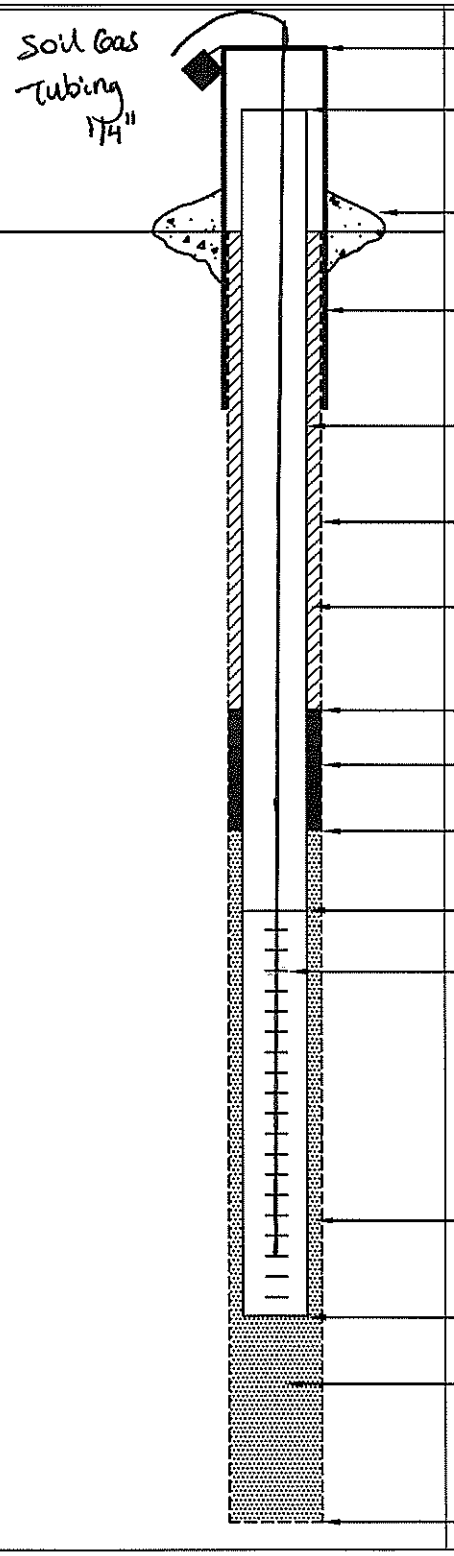
ACAD:FORM_MWSU.dwg 07/28/99 INL

WELL NO.: SVPM-11

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

Tetra Tech NUS, Inc. Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT NWIRP Bethpage	LOCATION Site 7	DRILLER Luke Kelss
PROJECT NO. CTO-0022	BORING	DRILLING METHOD Geoprobe
DATE BEGUN 1-22-08	DATE COMPLETED 1-22-08	
FIELD GEOLOGIST		DEVELOPMENT METHOD
GROUND ELEVATION	DATUM	



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / NA

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / NA

TYPE OF SURFACE SEAL: NA

I.D. OF SURFACE CASING:
TYPE OF SURFACE CASING:

RISER PIPE I.D.:
TYPE OF RISER PIPE:

BOREHOLE DIAMETER:

TYPE OF BACKFILL:

ELEVATION/DEPTH TOP OF SEAL: / 35'

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: 38'

ELEVATION/DEPTH TOP OF SCREEN: / 45'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE x LENGTH: NA

I.D. OF SCREEN: NA

TYPE OF SAND PACK: NA

ELEVATION/DEPTH BOTTOM OF SCREEN: / 49'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 50'
BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: / 50'

ACAD:FORM_MWSU.dwg 07/20/99 INL

WELL NO.: SVPM-12S

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

Tetra Tech NUS, Inc. Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER Luke Reiss	
PROJECT NO. CTO-WE02	BORING	DRILLING METHOD Geoprobe	
DATE BEGUN 1-22-08	DATE COMPLETED 1-22-08		
FIELD GEOLOGIST		DEVELOPMENT METHOD	
GROUND ELEVATION	DATUM		

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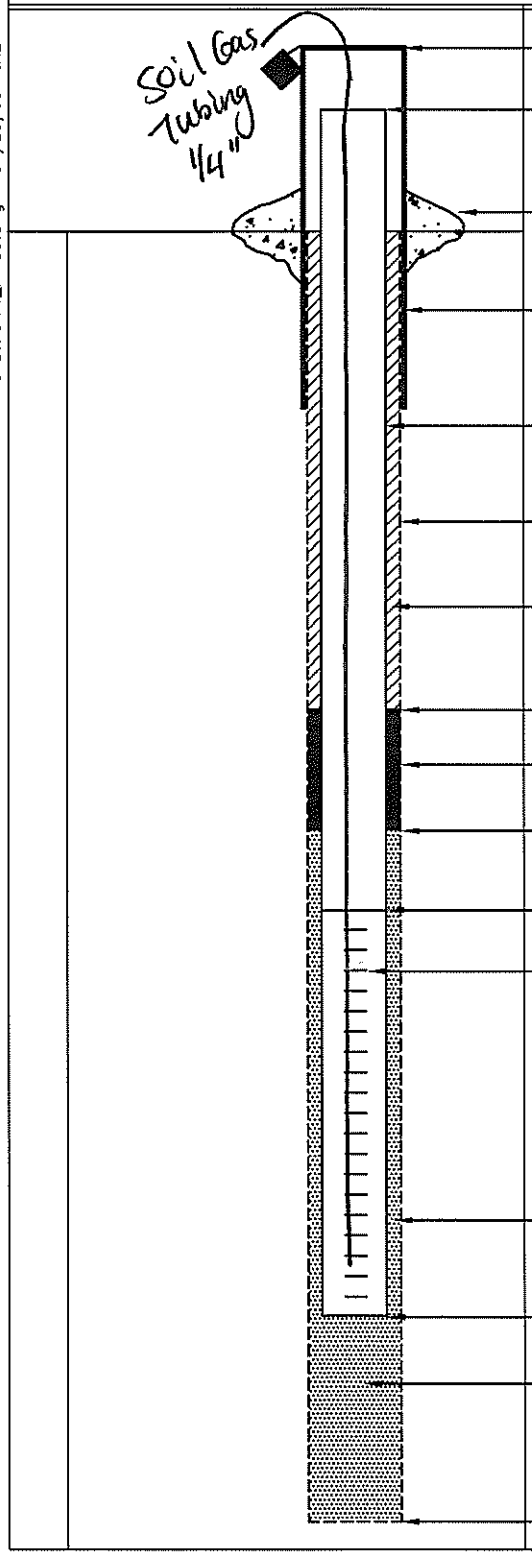


ELEVATION/HEIGHT OF TOP OF SURFACE CASING: /NA

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / NA

TYPE OF SURFACE SEAL: NA

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING:

RISER PIPE I.D.:

TYPE OF RISER PIPE:

BOREHOLE DIAMETER:

TYPE OF BACKFILL:

ELEVATION/DEPTH TOP OF SEAL: / 12'

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: 15'

ELEVATION/DEPTH TOP OF SCREEN: / 21'

TYPE OF SCREEN: Stainless steel

SLOT SIZE x LENGTH: NA

I.D. OF SCREEN: NA

TYPE OF SAND PACK: NA

ELEVATION/DEPTH BOTTOM OF SCREEN: / 25'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 27.1'

BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: / 27.1'

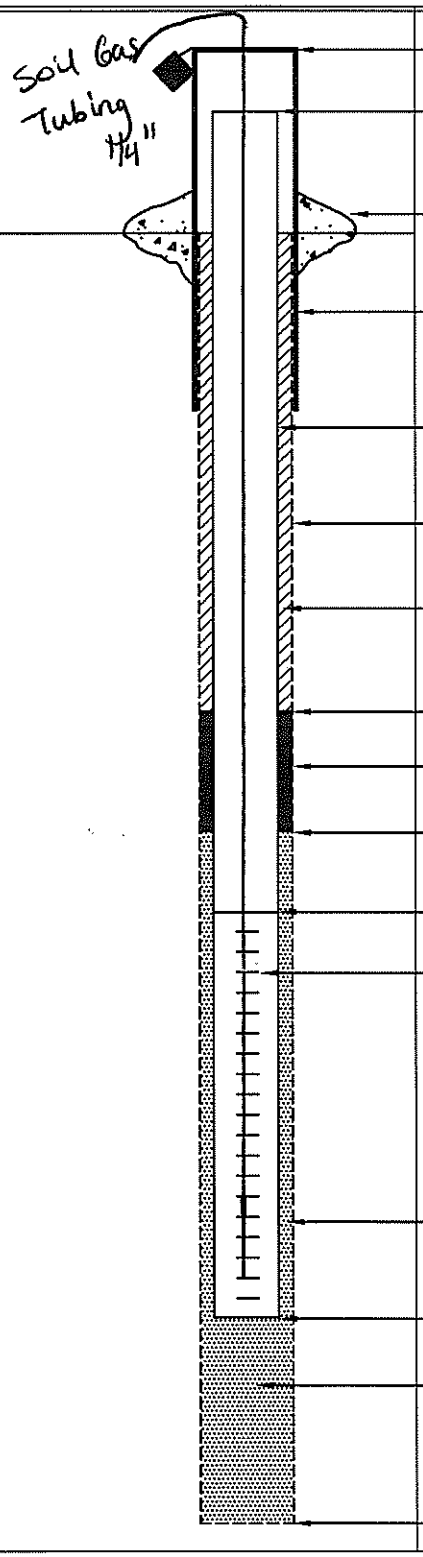
WELL NO.: SVPM-12

Tetra Tech NUS, Inc.

OVERBURDEN
MONITORING WELL SHEET
STICK-UP

Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT NWIRP Bethpage	LOCATION Site 1	DRILLER Luke Reiss	
PROJECT NO. C70-002	BORING	DRILLING METHOD Geoprobe	
DATE BEGUN 1-22-08	DATE COMPLETED 1-22-08		
FIELD GEOLOGIST		DEVELOPMENT METHOD	
GROUND ELEVATION	DATUM		



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: / NA

ELEVATION/HEIGHT OF TOP OF RISER PIPE: / NA

TYPE OF SURFACE SEAL: NA

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING:

RISER PIPE I.D.:

TYPE OF RISER PIPE:

BOREHOLE DIAMETER:

TYPE OF BACKFILL:

ELEVATION/DEPTH TOP OF SEAL: / 37'

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: 40'

ELEVATION/DEPTH TOP OF SCREEN: / 46'

TYPE OF SCREEN: Stainless steel

SLOT SIZE x LENGTH: NA

I.D. OF SCREEN: NA

TYPE OF SAND PACK: NA

ELEVATION/DEPTH BOTTOM OF SCREEN: / 50'

ELEVATION/DEPTH BOTTOM OF SAND PACK: / 52.1'

BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: / 52.1'

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