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JUNE 2014 GROUNDWATER SAMPLING DATA SUMMARY REPORT NWIRP BETHPAGE NY

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RESOLUTION CONSULTANTS

JUNE 2014 GROUNDWATER SAMPLING DATA SUMMARY REPORT BETHPAGE, NY

Prepared for:

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List of Acronyms and Abbreviations

DOT	Department of Transportation
IDW	Investigation Derived Waste
Katahdin	Katahdin Analytical Services, Inc.
NWIRP	Naval Weapons Industrial Reserve Plant
ONCT	Onsite Containment System
OU	Operable Unit
POTW	Publicly Owned Treatment Works
QA	Quality Assurance
QC	Quality Control
SAP	Sampling and Analysis Plan
UFP	Uniform Federal Policy
VOC	Volatile Organic Compounds

1. PROJECT BACKGROUND

Resolution Consultants has prepared this Data Summary Report for the Naval Facilities Engineering Command, Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. The report describes monitoring well sampling activities in June 2014 for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 offsite plume. NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City (Figure 1).

This data summary report provides information on sampling 13 monitoring wells. The purpose of this sampling is to provide information on the extent and magnitude of volatile organic compounds (VOCs) located in a narrow area immediately south of the Onsite Containment System (ONCT) in the western offsite plume, which could represent contamination that has bypassed the ONCT. The locations of monitoring wells sampled as part of this effort are shown in Figure 2.

Documentation of these activities is included in the appendices of this report. Appendix A contains the groundwater sampling forms, Appendix B contains analytical lab sheets, and Appendix C contains documentation of data validation.

2. FIELD PROGRAM

Field tasks were conducted in June of 2014 in accordance with the Uniform Federal Policy (UFP) Sampling and Analysis Plan (SAP) Addendum: Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol (Resolution Consultants, 2013). The field investigation included purging and sampling of the 13 monitoring wells.

2.1 Sampling

Wells were purged with a submersible pump with the intake placed at the approximate midpoint of the screened interval. The following field water quality parameters were continuously measured during purging: water temperature, pH, conductivity, oxidation-reduction potential, dissolved oxygen and turbidity. Groundwater analytical samples were collected when field water quality parameters stabilized. Samples were analyzed for VOCs via Method 8260B and 1,4-dioxane via Method 8270C by Katahdin Analytical Services (Katahdin). All purge water was managed as investigation derived waste (IDW). Samples were placed in a cooler containing ice and held for sample pick up by the laboratory courier. All samples were submitted to the laboratory for analyses of VOCs for the analytes listed in, and in accordance with, GC method SW846-8260B. Quality assurance (QA) and quality control (QC) samples were collected during the sampling effort.

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-impacting of samples. The sampling equipment included dedicated disposable polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment was decontaminated using an alconox and water wash, a potable water rinse followed by a distilled water rinse. Water was collected in 5-gallon pails or 55-gallon drums.

2.2 Investigation Derived Waste

Purge water was transported from point of generation to the designated staging area at NWIRP in Department of Transportation (DOT) approved 55-gallon drums. Purge water was then containerized in a frac tank and stored at NWIRP Bethpage for characterization and ultimate disposal to the Nassau County Publicly Owned Treatment Works (POTW) in accordance with the facility's existing discharge permit. A representative water sample will be collected from each of the frac tanks and submitted to Katahdin for analysis. No solid waste was generated during sampling.

3. SUMMARY

Well construction information is summarized in Table 1; analytical data is summarized in Table 2; stabilized field water quality parameters are summarized in Table 3. Groundwater sample logs, lab analytical sheets, and data validation packages are included in Appendix A, B and C, respectively.

4. REFERENCES

Resolution Consultants, 2013. UFP SAP Addendum, *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling* Protocol. November.

Tables

Table 1.
Monitoring Well
Construction Summary

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB affiliation
RE103 D1	645	625	640	630	5	VPB137
RE103 D2	673	653	673	663	0	
RE103 D3	735	715	730	720	5	
RE104 D1	375	350	370	360	5	VPB138
RE104 D2	735	710	730	720	5	
RE104 D3	785	760	780	770	5	
RE105 D1	554.9	530	550	540	5	VPB139
RE105 D2	755.9	730	750	740	5	
RE108D1	545	530	550	540	5	VPB142
RE108D2	655	630	650	640	5	
BPOW5-1	515	480	510	495	5	VPB132
BPOW5-2	585	540	580	560	5	
BPOW5-3	665	620	660	640	5	

Table 2. Analytical Data Summary

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE103D1	RE103D2	RE103D3	RE104D1
Sample Date		6/11/2014	6/11/2014	6/11/2014	6/12/2014
Sample ID		RE103D1-GW-061114	RE103D2-GW-061114	RE103D3-GW-061114	RE104D1-GW-061214
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	**0.41 J**
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	**18**	**3.8**	**2.9**	**6.7**
1,1,2-TRICHLOROETHANE	1	**0.68 J**	**0.37 J**	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	**1.3**	**0.67 J**	**0.64 J**	**0.44 J**
1,1-DICHLOROETHENE	5	**9.4**	**0.61 J**	**0.71 J**	**1.5**
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	**4.2**	**1.1 J**	**0.87 J**	**1.6 J**
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	**20**	**1.0**	**0.92**	**12**
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	**0.54 J**	< 0.50 U	**0.30 J**	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	**0.95 J**	**0.96 J**	**0.94 J**	**0.37 J**
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**4.2**	**1.1**	**0.87 J**	**1.6**
CIS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	**0.54 J**	< 1.0 U	< 1.0 U	**0.98 J**
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	**4.9**	**0.77 J**	< 0.50 U	**2.4**
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*
TRICHLOROETHENE	5	**1200 J**	**670 J**	**510 J**	**160**
TRICHLOROFLUOROMETHANE	5	**0.25 J**	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE104D2	RE104D3	RE105D1	RE105D1
Sample Date		6/12/2014	6/12/2014	6/11/2014	6/11/2014
Sample ID		RE104D2-GW-061214	RE104D3-GW-061214	RE105D1-GW-061114	GWDUP-061114
Sample type code		N	N	N	FD
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	**0.62 J**
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	**12**	**13**
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	**0.39 J**	**0.40 J**
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	**1.5**	**1.7**
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	**0.84 J**	< 1.0 U	**1.9 J**	**1.9 J**
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	< 0.17 U	< 0.17 U	**15**	**18**
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 U	**6.8 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 UJ	< 0.50 UJ	**0.24 J**	**0.27 J**
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	**0.50 J**	**0.47 J**
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**0.84 J**	< 0.50 U	**1.9**	**1.9**
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 UJ***	***< 0.50 UJ***	*< 0.50 U*	*< 0.50 U*
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	**1.4 J**	**1.4 J**
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 UJ***	***< 0.50 UJ***	*< 0.50 U*	*< 0.50 U*
TRICHLOROETHENE	5	**1.8 J**	< 0.50 U	**130**	**140**
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE105D2	RE108D1	RE108D2	BPOW5-1
Sample Date		6/11/2014	6/10/2014	6/10/2014	6/13/2014
Sample ID		RE105D2-GW-061114	RE108D1-GW-061014	RE108D2-GW-061014	BPOW5-1-GW-061314
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	**0.71 J**	< 0.50 U	**1.3**	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	**32**	**0.58 J**	**8.7**	< 0.50 U
1,1,2-TRICHLOROETHANE	1	**1.2**	< 0.50 U	**1.8**	< 0.50 U
1,1-DICHLOROETHANE	5	**1.5**	< 0.50 U	**5.8**	< 0.50 U
1,1-DICHLOROETHENE	5	**6.2**	< 0.50 U	**8.2**	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*	*< 0.75 U*
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	**3.1**	< 1.0 U	**9.9**	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	**6.2**	**7.1**	**6.9**	< 0.17 U
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	**4.7**	< 0.50 U	**2.0**	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	**2.3**	< 0.50 U	**4.2**	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**3.1**	< 0.50 U	**9.9**	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	**0.58 J**	< 1.0 U	**0.27 J**	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	**0.77 J**	**0.59 J**	**1.6**	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*	*< 0.50 U*
TRICHLOROETHENE	5	**1500 J**	**82**	**3400 J**	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	BPOW5-2	BPOW5-3
Sample Date		6/13/2014	6/13/2014
Sample ID		BPOW5-2-GW-061314	BPOW5-3-GW-061314
Sample type code		N	N
VOC 8260B (ug/L)			
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	*< 0.75 U*	*< 0.75 U*
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	< 0.17 U	**0.55**
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	*< 0.50 U*	*< 0.50 U*
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U

Notes:

1 New York State Department of Environmental Conservation Division of Water Technical and Operation Guidance series (6 NYCRR 700-706, Part 703.5 summarized in TOGS 1.1.1)

Ambient water quality standards and groundwater effluent limitations, class GA; NL = Not Listed

Bold = Detected; ***Bold and Italics*** =Not detect exceeds NYS Groundwater Standards or guidance value

Yellow highlighted values exceed Groundwater Standards or guidance value

Sample type codes: N - normal environmental sample, FD - field duplicate

U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

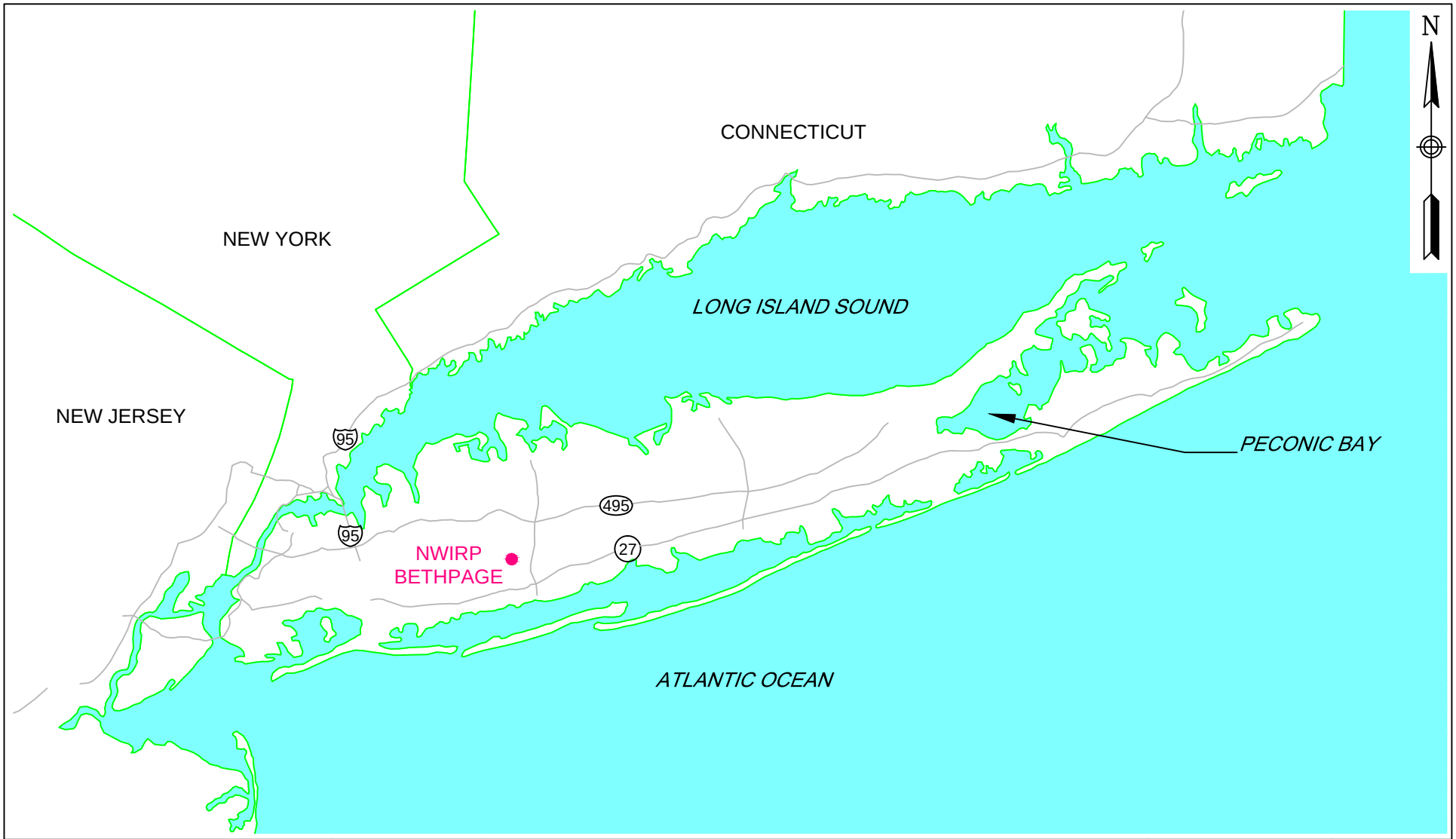
Table 3.
Stabilized Field Parameters

Well	Date	Temperature (°C)	pH	Specific Conductance (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to water (ft bgs)	Flow rate (ml/min)	Drawdown (ft)
RE103 D1	6/11/2014	15.3	4.83	101	4.32	293.8	0.17	39.45	450	*
RE103 D2	6/11/2014	16.26	4.56	31	7.9	46.1	14.60	40.43	400	0
RE103 D3	6/11/2014	15.4	4.07	30	4.82	290.3	1.29	39.48	450	*
RE104 D1	6/12/2014	16.24	4.64	65	3.71	226.9	1.01	35.78	400	0
RE104 D2	6/12/2014	15.3	4.46	19	4.27	151.1	3.54	38.55	500	*
RE104 D3	6/12/2014	15.5	4.10	20	4.06	175.5	18.00	40.75	400	*
RE105 D1	6/11/2014	15.14	5.01	111	1.80	102.1	1.06	36.5	450	0
RE105 D2	6/11/2014	15.3	4.73	59	4.07	210.7	0.60	37.28	450	*
RE108 D1	6/10/2014	15.9	5.02	0.093	5.82	112.8	1.46	39.38	300	*
RE108 D2	6/10/2014	15.53	4.87	0.076	5.05	316.2	0.67	40.04	500	*
BPOW5-1	6/13/2014	20.08	4.29	96	0.67	91.7	21.20	20.92	450	0
BPOW5-2	6/13/2014	16.19	4.07	76	0.63	130.7	8.78	21.22	450	0
BPOW5-3	6/13/2014	15.9	4.55	30	0.45	148.4	8.59	21.34	550	*

* Initial water level not equilibrated due to pump installation; drawdown during sampling not determined.

Figures

112G00622\0510\112G00622CM01.DWG 08/02/10 MKB

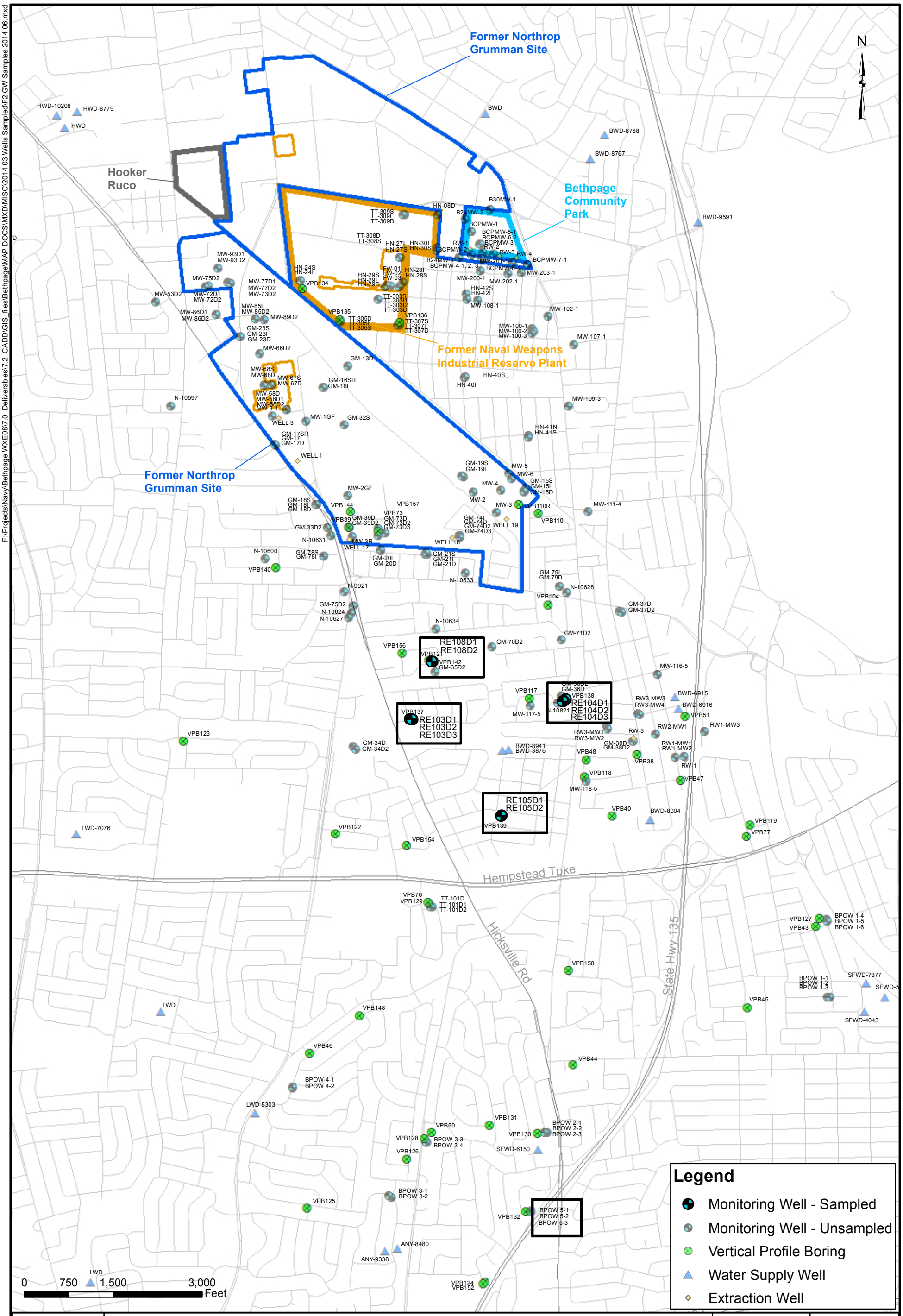


0 15 30
SCALE IN MILES

NAVFAC

GENERAL LOCATION MAP
NWIRP BETHPAGE
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D-8013	WE15
APPROVED BY --	DATE --
APPROVED BY --	DATE --
FIGURE NO. 1	REV 0



LOCATION MAP
JUNE 2014 GROUNDWATER SAMPLING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D8013	WE15
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. 2	REV 0

F:\Projects\Navy\Bethpage WXE08\7.0_Deliverables\7.2_CADD\GIS_files\Bethpage\MAP DOCS\MXD\MISC\2014 03 Wells Sampled\F2 GW Samples 2014 06.mxd

Appendices

Appendix A

Groundwater Sampling Forms

Well ID: MW-1080

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Date: 6/10/14
Time: Start 800 am/pm
Finish 1230 am/pm
Project No: 6026 6526
Site Location: Veil & Corona
Weather Conds: Cloudy, misting
Collector(s): PKaneth & Christopher

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 545
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 40.10
d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
	Hanna	HI	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1000										Strong
1010		15.4	3.64	0.100	7.20	153.7		450		
1025		15.5	4.67	0.092	6.87	103.4		450	39.60	
1035		15.7	4.83	0.092	6.83	94.7				
1050	5 gal			MP-50	overheated					
1110				back on						
1115		16.2	5.05	0.094	6.32	85.0		450	39.45	

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

pumped 2 hours, removed 9 gals

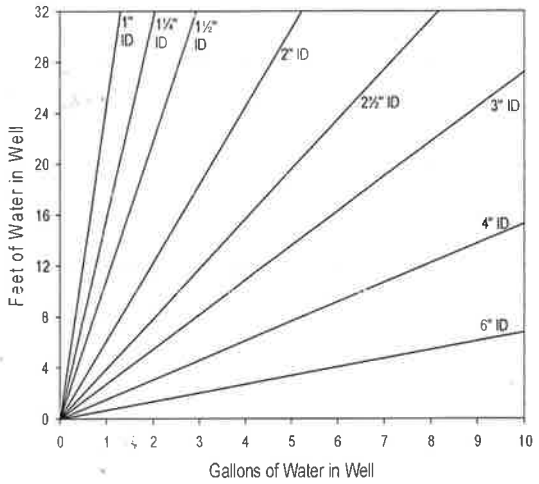
3. SAMPLE COLLECTION: Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE10BDI-GW-061014	VOA	3	HCl	VOCs	1210
	1-L amber	2	-	1,4 Dioxane	1210

Comments: sampled after 2 hrs parameters stable removed 9 gal

Signature: Paul Kaneth
Date: 6/10/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: 50 min 1hr 1110 am MW 108 D1

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. m ~~µ~~S/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1125	6gal	15.5	4.98	0.112	6.38	89.5		450	39.43	
1130		15.6	5.02	0.112	6.14	92.9				
1135		15.7	5.01	0.092	6.04	97.2	1.81	250	39.40	compressor issues
1145		15.7	5.02	0.092	6.00	115.3	2.22		39.38	
1150		15.8	4.98	0.092	5.90	111.1				
1155		15.8	4.99	0.092	5.87	111.9	1.46			
1200	9gal	15.9	5.02	0.093	5.82	112.8		300		2 hours

Well ID: MW-108D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage
Date: 6/10/14
Time: Start 800 am/pm
Finish 1200 am/pm
Project No: 60256526
Site Location: Cail & Corona
Weather Conds: Cloudy, misting
Collector(s): PKarch, J Christopher

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 655
c. Length of Water Column 613.98 (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 41.02
d. Calculated System Volume (see back) 400.8 gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	U52240X
Hanna	HI 9870J	U63890X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
905		18.85	6.62	0.114	7.06	153.2	4.89	250	40.98	Clear/None
910		16.97	4.53	0.094	6.21	272.1	4.76	500	40.99	Clear/None
915		15.58	3.36	0.080	5.73	347.0	4.66	500	40.92	Clear/None
920		15.42	3.38	0.079	5.21	348.3	4.79	500	40.90	Clear/None
925		15.54	3.97	0.078	4.76	323.0	3.16	400	40.87	Clear/None
930		15.53	4.49	0.077	4.58	303.6	2.54	400	40.85	Clear/None
1010		15.85	5.00	0.076	4.88	276.4	2.00	300	40.25	Clear/None

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

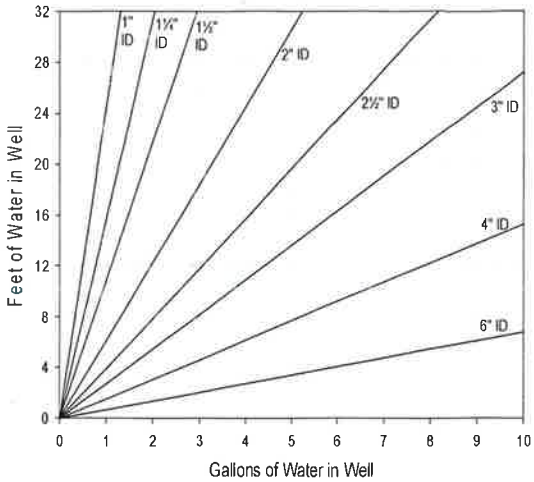
3. SAMPLE COLLECTION: Method: Low flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE108D2-GW061014	1LAG	2	-	1,4 Dioxane	1145
RE108D2-GW061014	40mL VOA	3	HCl	VOCs	1145

Comments * Power issues @ 930

Signature
Date 6/10/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

.2

Well ID:

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1015		15.76	4.77	0.075	4.98	304.9	1.70	500	40.27	Clear / None
1020		15.78	4.77	0.076	5.06	306.1	1.57	500	40.26	Clear / None
1025		15.82	4.79	0.091	5.01	307.9	1.27	500	40.26	Clear / None
1030		15.92	4.82	0.091	5.08	308.6	1.18	500	40.28	Clear / None
1035		15.55	4.84	0.087	5.23	311.9	1.00	500	40.28	Clear / None
1040		15.49	4.82	0.074	5.20	314.1	0.93	500	40.29	Clear / None
1045		15.48	4.75	0.074	5.24	317.5	0.99	500	40.18	Clear / None
1050		15.53	4.74	0.075	5.19	315.6	0.88	500	40.17	Clear / None
1055		15.47	4.79	0.075	5.17	313.0	0.94	500	40.12	Clear / None
1100		15.55	4.81	0.075	5.20	313.6	0.96	500	40.04	Clear / None
1110		15.53	4.85	0.075	5.12	312.3	1.05	500	40.06	Clear / None
1115		15.49	4.84	0.075	5.17	314.2	0.92	500	40.04	Clear / None
1120		15.48	4.85	0.075	5.14	314.9	0.68	500	40.04	Clear / None
1125		15.44	4.84	0.076	5.08	316.6	0.65	500	40.04	Clear / None
1130		15.47	4.85	0.076	5.12	316.9	0.62	500	40.04	Clear / None
1135		15.53	4.87	0.076	5.05	316.2	0.67	500	40.04	Clear / None

Well ID: RE103 D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/11/14
Time: Start 800 am/pm
Finish 1130 am/pm
Project No: 6026 6526
Site Location: Avenue & Martin
Weather Conds: Cloudy 65-70°
Collector(s): P. Kanath

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 645 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 40.52 d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Sp. Cond. ± 3%
- D.O. ± 10% (values >0.5 mg/L)
- ORP ± 10mV
- Drawdown < 0.3'
- Turbidity ± 10%

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	473912X
Hanna	HI	4638900

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
855										OH
900		15.8	4.99	121	7.81	320.1				
905		15.6	4.91	93	2.10	313		450		
910			4.93	93	2.27	300				
915			4.94	94	2.32	308				
920		15.0	4.95	95	2.49	304			40.15	
925										

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

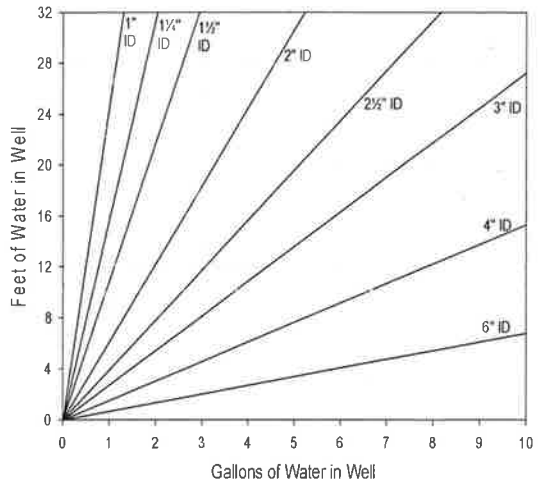
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D1-GW-061114	VOC vial	3	HCl	VOCs	1045
RE103D1-GW-061114	1-L amber	2	-	1,4 Dioxane	1045

Comments MS and MSD

Signature Paul Kanath Date 6/11/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: ON 855 30 min 103D1

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
930	5gal	15.0	4.72	103	4.15	320.0		450	39.95	
940		15.0	4.70	103	4.27	322.8	0.48			
945		15.0	4.72	103	4.21	322.6				
950		15.0	4.73	102	4.26	322.3			39.65	
955		15.0	4.74	102	4.25	321.8				
1000		15.1	4.74	102	4.26	321.2	0.30	450		
1005		15.1	4.76	101	4.32	319.8				
1010		15.1	4.76	101	4.30	317.6				
1015		15.2	4.77	101	4.28	316.5		450	39.45	
1020		15.3	4.81	101	4.29	311.1				
1025		15.2	4.81	100	4.27	305.7	0.16		39.45	
1030		15.3	4.84	100	4.29	302.6				
1035		15.3	4.83	100	4.31	297.5				
1040	13gal	15.3	4.83	101	4.32	293.8	0.17	450		
1045										sample

1 hr

Well ID: RE103 D3

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/11/14
Time: Start 800 am/pm
Finish 1400 am/pm
Project No: 60266526
Site Location: Avoca & Martin
Weather Conds: Cloudy 65-70°
Collector(s): Paul Kareth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 67.3
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 39.9
d. Calculated System Volume (see back) 13 gal
Screen

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	173912X
	Hanna	98703	HG5890X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1130								450	39.90	ON
1150		15.7	4.61	29	3.79	246.8	18.7			
1155		15.9	4.54	29	3.97	252.3				
1200		15.8	4.47	29	4.08	255.4				
1205		15.7	4.34	29	4.44	263.7			39.70	
1210	5 gal	15.7	4.24	30	4.51	274.0	3.07	450		
1215		15.6	4.24	30	4.55	275.4				

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

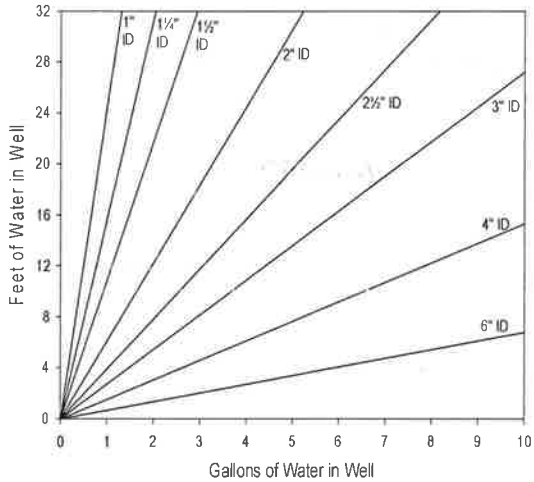
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D3-GW-061114	VOA vials	3	HCl	VOCs	1320
RE103D3-GW-061114	1-L amber	2	-	1,4 Dioxane	1320

Comments

Signature Paul Kareth
Date 06/11/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: 1130 ON RE103013

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1220		15.6	4.21	29	4.48	280.2				
1225		15.6	4.20	30	4.53	280.5	188	450	39.65	
1230		15.6	4.19	30	4.54	281.8				
1235		15.7	4.22	30	4.73	278.7				
1240		15.7	4.17	30	4.80	282.5				
1245	10 gal	15.6	4.15	30	4.77	284.4	1.26	450	39.52	
1250		15.6	4.14	30	4.85	284.7				
1255		15.5	4.12	30	4.80	286.0				
1300		15.5	4.10	30	4.78	287.6				
1305		15.4	4.08	30	4.80	290.5	1.29	450	39.48	
1310		15.4	4.07	30	4.82	290.3				
1315	13 gal									
1320										Sample

Well ID: RE105D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/11/14
Time: Start 1400 am/pm
Finish 1645 am/pm
Project No: 60266526
Site Location: Roosevelt & Lincoln
Weather Conds: cloudy
Collector(s): Paul Karetth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 75.92 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 37.54 d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	473912X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1445										ON
1500		15.9	5.00	56	4.74	217.3		400		
1505		15.7	4.97	56	4.62	213.3				
1510		15.7	4.97	56	4.55	212.5		500		
1515		15.7	4.97	56	3.86	206.6	1.76		37.40	
1520		16.1	4.93	57	3.34	204.6				
1525		16.3	4.98	59	3.54	200.1				

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

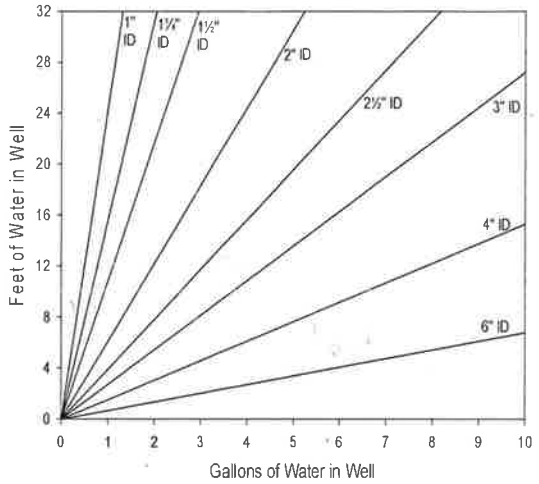
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE105D2-GW-061114	40 ml vial	3	HCl	VOCs	1645
RE105D2-GW-061114	1-Liter	2	-	1,4 Dioxane	1645

Comments

Signature Paul Karetth Date 6/11/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: 1445 - start RE105D2

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1530		16.1	4.95	59	3.74	202.1		350	37.38	
1535		16.0	4.85	59	4.03	206.6	1.15			
1540	5gal	15.7	4.76	59	4.29	212.5		450		
1545		15.8	4.75	59	4.25	212.6				
1550		15.6	4.77	59	4.28	211.6				
1555		15.4	4.72	58	4.21	213.6				
1600		15.6	4.74	59	4.17	212.0	1.35		37.34	
1605		15.7	4.81	59	4.11	208.9				
1610		15.5	4.80	59	4.13	209.4				
1615	10gal	15.4	4.74	59	4.10	212.4				
1620		15.4	4.73	59	4.06	213.1				
1625		15.3	4.70	59	4.06	214.8	0.98	450	37.31	
1630		15.3	4.70	59	4.05	214.9				
1635		15.4	4.74	59	4.02	212.4				
1640	13gal	15.3	4.73	59	4.07	210.7	0.60	450	37.28	
1645										Sample
1										

1645
2hr

Well ID: RE105D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Project No: 60266526
Site Location: Roosevelt & Lincoln
Weather Conds: Cloudy

Date: 6/11/14
Collector(s): G. Hicks

Time: Start 1400 am/pm
Finish 1700 am/pm

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 55.9
b. Water Table Depth 36.50
c. Length of Water Column _____ (a-b)
d. Calculated System Volume (see back) 13 gal

Casing Diameter/Material: 4" PVC

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

Make	Model	Serial Number
QED	Micropurge MPS0	MPS0-1112
Flow cell # 64432		
YSI 556 MPS: 54965		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1435		18.24	5.37	176	5.49	-71.3	11.8	200	0	clear/none
1440		17.52	5.23	121	5.87	-70.9	10.9	300	"	"
1445		16.07	5.13	117	5.83	-65.1	2.66	"	"	"
1450		15.52	4.41	114	2.51	-96.9	0.97	"	"	"
1455		15.50	4.82	114	2.21	-100.1	0.82	"	"	"
1500		15.46	5.00	113	2.03	-128.2	0.86	"	"	"
1505		15.57	5.02	113	1.93	-128.0	1.02	350	"	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: bladder pump

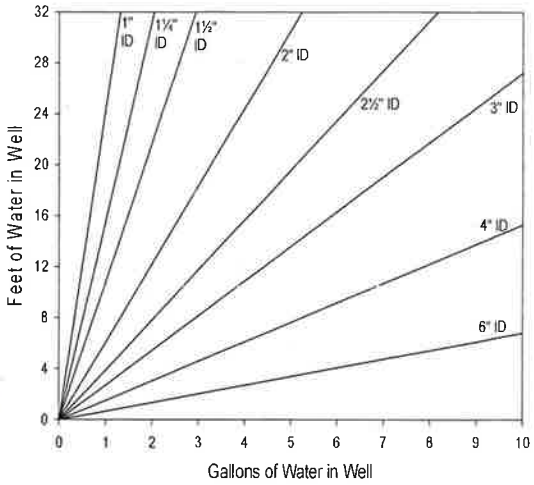
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE105D1-GW-061114	amb	2	—	1,4 Dioxane	1635
RE105D1-GW-061114	VOA	3	HCl	VOC	1635
GWDUP-061114	amb	2	—	1,4 Dioxane	1645
GWDUP-061114	VOA	3	HCl	VOC	1645

Comments

Signature

Date 6/11/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

1635

Well ID:

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1510	12	15.56	6.10	165	1.82	-159.7	8.65	350	0	clear / none
1515		15.55	6.30	199	1.41	-184.3	6.82	"	"	"
1520		15.72	6.20	182	1.37	-179.3	9.52	"	"	"
1525		16.01	6.02	169	1.46	-150.0	9.52	"	"	"
1530		16.23	5.88	150	1.62	-154.4	8.19	"	"	"
1535		15.96	5.69	136	1.84	-155.1	8.64	"	"	"
1540		15.84	5.56	129	2.00	-139.1	6.66	400	0	"
1545		15.91	5.38	123	2.22	-128.7	6.70	350	"	"
1550		15.44	5.28	118	1.90	-122.7	3.78	"	"	"
1555		15.25	5.21	115	1.91	-123.6	2.77	"	"	"
1600		15.48	5.20	115	1.91	-130.2	2.24	450	0	"
1605		15.54	5.19	114	1.86	-129.5	2.00	"	"	"
1610		15.49	5.16	113	1.92	-138.4	1.88	"	"	"
1615		15.27	5.10	112	1.94	-124.7	1.61	"	"	"
1620		15.17	5.02	111	1.93	-103.2	1.42	"	"	"
1625		15.14	5.05	111	1.93	-115.2	1.27			
1630		15.14	5.03	111	1.84	-105.8	1.23	"	"	"
1635	59	15.14	5.01	111	1.80	-102.1	1.06	"	"	"

Well ID: RE103D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Project No: 60266576
Site Location: Avoca & Martin
Weather Conds: Cloudy 65-70
Date: 6/11/14
Collector(s): GH
Time: Start 800 am/pm
Finish 1100 am/pm

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 735 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 40.43 d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3% - D.O. ± 10% (values >0.5 mg/L) Turbidity ± 10%
- pH ± 0.1 unit - ORP ± 10mV
- Sp. Cond. ± 3% - Drawdown < 0.3' Remove a minimum 1 screen volume

c. Field Testing Equipment used: Make Model Serial Number

YSI 556 MPS: 54965
Flow cell # 64432

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0840		15.56	3.92	35	10.72	86.5	8.61	200	0	Clear/none
0845		15.52	3.99	37	7.15	63.7	12.51	"	0	"
0850		15.50	4.00	32	7.07	54.5	6.98	"	0	"
0855		15.45	4.02	43	7.12	41.5	1.99	"	0.07	"
0900		15.40	3.76	43	5.19	28.9	1.59	"	–	"
0905		15.39	4.17	41	5.04	41.4	14.2	"	0	"
0910		15.01	4.32	40	6.91	43.7	12.9	"	0	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

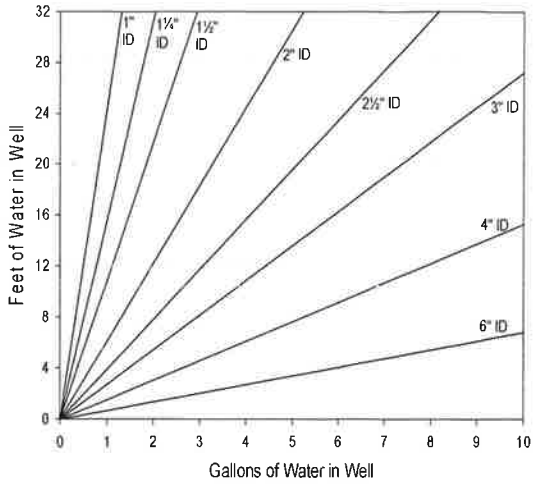
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D2	amb	2	—	1,4 Dioxane	1040
RE103D2	VOA	3	HCl	VOC	1040

Comments

Signature: [signature] Date 6-11-14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID:

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0915		15.62	4.42	36	6.78	14.3	168	275	0	Clear / none
0920	12	15.41	4.43	39	6.18	13.5	568	300	0	cloudy / none
0925		15.50	4.61	32	7.13	-25.1	809	400	0	cloudy / none
0930		15.56	4.61	31	7.24	-27.1	763	"	0	"
0935		15.55	4.64	32	7.15	-27.2	590	"	0	"
0940		15.52	4.55	31	7.11	-5.3	471	400	0	"
0945		15.59	4.04	30	7.73	48.9	368	"	"	"
0950		15.60	4.07	30	7.70	48.9	252	"	"	"
0955		15.62	3.53	30	7.90	82.2	133	"	"	"
1000	36	15.67	3.78	30	7.70	74.6	84.9	"	"	"
1005		15.86	4.51	31	7.62	44.2	76.5	"	"	"
1010		15.85	4.52	31	7.61	43.1	43.5	"	"	"
1015		15.93	4.48	31	7.88	48.3	35.5	"	"	"
1020		16.19	4.53	31	7.95	51.2	24.5	"	"	"
1025		16.17	4.41	31	7.51	51.8	17.1	"	"	"
1030		16.13	4.50	31	7.63	50.1	16.9	"	"	"
1035		16.26	4.56	31	7.90	46.1	14.6	"	"	"
1040	58									

Well ID: RE104D3

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/12/14
Time: Start 800 am/pm
Finish 1100 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: Cloudy 65-75° drizzle
Collector(s): Paul Karetki

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 735
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 41.60
d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
	Hanna	HI	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
910									41.60	ON
900		15.4	2.49	23	3.55	171.1		400	41.80	
920		15.3	3.56	21	4.54	174.0		400	41.85	
925		15.3	3.77	20	4.62	172.8	29.8			
930		15.4	3.81	20	4.61	173.7				
935	5gal	15.5	3.84	20	4.57	174.3				
940		15.6	3.88	20	4.50	175.0	21.5			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

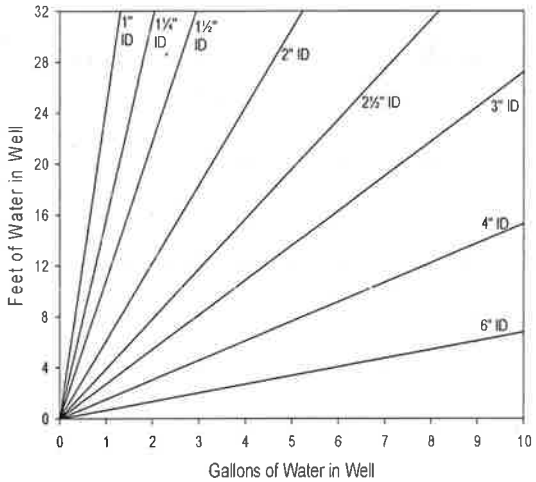
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D3-GW-061214	VOA vial	3	HCl	VOCs	1050
RE104D3-GW-061214	VOA vial	2	-	1,4 Dioxane	1050

Comments

Signature Paul Karetki
Date 6/12/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: 949 JN RE104D3

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
945		15.5	3.94	20	4.49	175.6	19.9	400	41.3	
950		15.5	3.98	20	4.43	173.3				
955		15.5	3.96	20	4.41	175.2				
1000		15.6	4.00	20	4.36	176.2				
1005		15.5	4.01	20	4.35	175.6	19.4		41.05	
1010		15.5	4.02	20	4.30	176.0				
1015	10gal	15.6	4.03	20	4.26	175.0				
1020		15.5	4.07	20	4.24	175.6			40.87	
1025		15.6	4.09	20	4.15	175.0	17.3			
1030		15.6	4.08	20	4.13	175.6	17.5		40.75	
1035		15.6	4.09	20	4.09	175.6	16.8			
2hr 1040	8gal	15.5	4.10	20	4.06	175.5	18.0			
1050										sample

Well ID: RE 104D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/12/14
Time: Start 800 am/pm
Finish 1435 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: Cloudy 65-75° drizzle
Collector(s): Paul Kaneth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 735
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 41.12
d. Calculated System Volume (see back) 13gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Sp. Cond. ± 3%
- D.O. ± 10% (values >0.5 mg/L)
- ORP ± 10mV
- Drawdown < 0.3'
- Turbidity ± 10%

Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	524 85
Hanna	HI	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1245										O.N
1250		15.8	4.58	24	8.11	160.4		500	39.80	
1310		15.4	4.71	23	5.37	-7.9				
1320	5gal	15.4	4.77	20	5.32	7.3	1.02	500	38.68	
1325		15.5	4.72	20	5.14	15.4				
1330		15.6	4.74	20	5.00	6.3	10.8			
1335		15.5	4.71	20	4.93	6.5				

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☑	☐

If no or N/A - Explain below.

problem with ORP probe

3. SAMPLE COLLECTION:

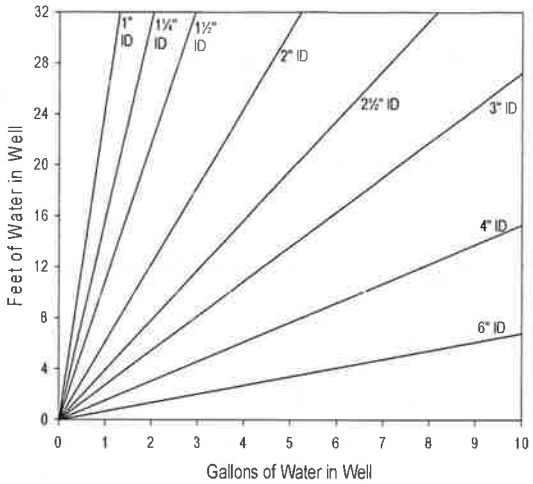
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D2-GW-061214	VOA vials	3	HCl	VOCs	1435
RE104D2-GW-061214	1-L amber	2	—	1,4 Dioxane	1435

Comments

Signature Paul Kaneth
Date 6/12/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: ON 1245 → 1445 ehr RE10402

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C) ±3%	pH ±0.1	Spec. Cond. (µS/cm) ±3%	DO (mg/L) ±10%	ORP (mV) 10 mV	Turbidity (NTU) ±10%	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1340	8gal	15.6	4.70	20	4.85	8.4	13.3	500	38.60	
1345		15.5	4.77	20	4.78	4.2				
1350		15.6	4.73	20	4.69	8.0	10.6		38.60	
1355		15.4	4.73	20	4.59	3.6	8.35			
1400		15.4	4.73	19	4.51	3.8	7.46			
1405		15.4	4.54	20	4.45	120.4	7.46	500	38.55	
1410		15.4	4.57	20	4.41	124.7	6.93			
1415	13gal	15.4	4.46	19	4.37	126.6	4.95			
1420		15.3	4.48	19	4.37	131.2	4.33			
1425		15.3	4.47	19	4.27	146.9	3.54			
1430		15.3	4.46	19	4.27	151.1				
1435										sample

Well ID: RE104D1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/12/14
Time: Start ~~800~~ 1050 GW am/pm
Finish 1330 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: Cloudy 65-75° drizzle
Collector(s): G. Hicks

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 375
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 35.78
d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	560 MP	U522400
	HI 98703 Turbidimeter		U638900
	QED (22937) Well Wizard and QED MPS0 (		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1050		16.00	6.78	69	7.65	185.3	1.11	350	0	clear/none
1055		15.98	5.57	69	8.28	192.1	0.89	400	0	"
1100		15.67	5.20	70	12.42	212.8	4.62	"	0	"
1105		15.66	4.95	66	6.28	313.8	11.12	"	0	"
1110		15.52	4.62	67	3.12	279.7	31.51	"	0	"
1115		15.49	4.61	66	4.87	262.5	6.20	"	0	"
1120	11	15.43	4.60	65	4.29	249.5	1.15	"	0	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: bladder pump

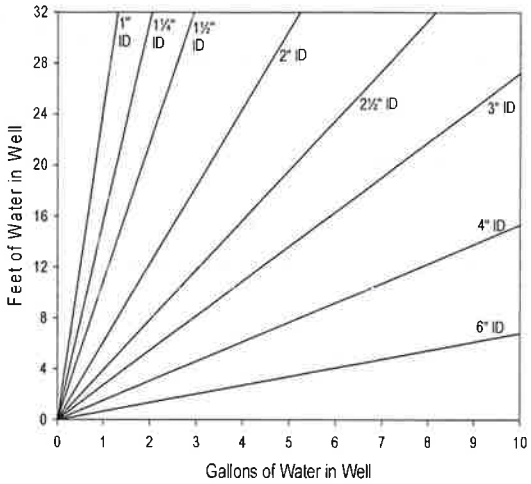
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D1-GW-061214	VOA/Amb.	3/2	HCl/none	VOC/1,4 Dioxane	1250

Comments

Signature

Date 6-12-14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID:

(1050 start) (continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1125		15.46	4.58	64	3.47	241.9	1.14	400	0	clear / none
1130		15.45	4.59	64	3.99	241.5	1.20	"	"	"
1135		15.54	4.61	65	3.85	236.9	1.23	"	"	"
1140		15.55	4.61	64	3.83	239.3	1.26	"	"	"
1145		15.62	4.61	64	3.80	241.3	1.02	"	"	"
1150		15.75	4.62	65	3.81	241.8	1.17	"	"	"
1155		15.78	4.62	65	3.70	241.5	1.05	"	"	"
1200	28	15.80	4.61	65	3.81	239.7	0.79	"	"	"
1205		15.81	4.60	65	3.79	237.6	1.11	"	"	"
1210		15.95	4.60	65	3.76	237.3	1.16	"	"	"
1215		16.06	4.61	65	3.78	236.5	1.49	"	"	"
1220		16.18	4.61	66	3.76	234.6	1.10	"	"	"
1225		16.20	4.61	66	3.74	234.7	0.83	"	"	"
1230		16.25	4.63	66	3.71	234.7	0.77	"	"	"
1235		16.25	4.64	66	3.72	229.7	1.03	"	"	"
1240		16.25	4.63	66	3.73	230.1	0.98	"	"	"
1245		16.24	4.64	65	3.74	229.9	1.02	"	"	"
1250	62	16.24	4.64	65	3.71	226.9	1.01	"	"	"

Well ID: BPOW5-2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Project No: 60266526
Site Location: Killdare Crescent
Weather Conds: Foggy 70°
Date: 6/13/14
Collector(s): GH
Time: Start 800 am/pm
Finish 1200 am/pm

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 585 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 21.22 d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity ± 10%
- pH	± 0.1 unit	- ORP	± 10mV	
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI 556 MPS	U52240X	
	Hann	HT	163890

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0915		15.81	7.36	75	12.18	228.8	32.12	400	0	Clear/none
0920		16.90	4.87	74	4.81	234.6	12.40	"	"	"
0925	4	17.10	4.78	74	3.32	231.5	8.97	"	"	"
0930		17.05	4.42	67	3.11	235.7	8.01	"	"	"
0935		17.10	4.41	74	2.60	249.2	8.85	"	"	"
0940		17.15	4.41	79	1.51	248.5	7.12	"	"	"
0945		17.19	4.41	79	1.51	250.0	8.19	"	"	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION:

Method: bladder pump

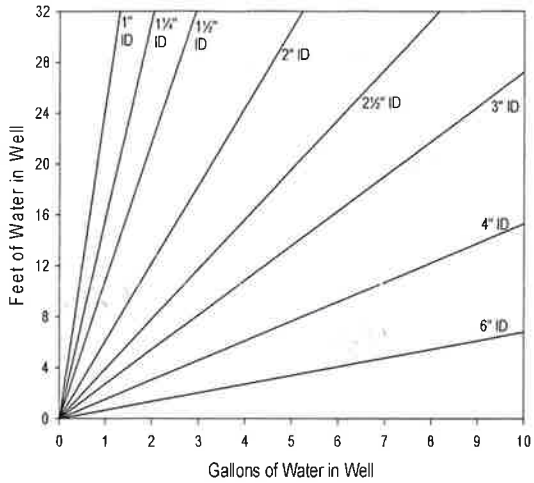
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
BPOW5-2-GW-061314	VOA/amb	3/2	HCl/none	VOC/1,4 Dioxane	1120

Comments

Signature

Date 6-13-14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID:

(continued from front)

0915 Start

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
~~1000~~ 0950		15.98	4.47	72	1.02	240.2	24.6	400	0	Clear/none
0955		16.72	4.51	71	0.98	189.7	68.3	400	"	"
1000	21	16.82	4.73	73	1.22	108.6	>1,000	"	"	"
1005		18.00	5.86	105	5.93	50.1	>1,000	200	0	Cloudy /none
1010		17.98	5.71	88	2.79	98.3	>1,000	"	"	"
1015		17.75	5.68	81	2.10	100.7	>1,000	"	"	"
1020		16.25	5.39	80	1.11	106.2	>1,000	"	"	"
1025		16.29	5.27	80	0.82	98.2	>1,000	300	0	"
1030		16.31	5.10	79	0.67	84.3	>1,000	450	"	"
1035		16.11	5.25	84	0.55	69.1	>1,000	450	"	"
1040		16.09	4.33	73	0.70	126.6	>1,000	"	0.1	"
1045		16.15	4.20	74	0.66	135.9	52.7	"	0	"
1050		16.25	4.17	75	0.68	136.5	61.4	"	"	Clear/none
1055	42	16.26	4.12	76	0.67	138.4	33.3	"	"	"
1100		16.20	4.05	76	0.64	139.0	16.3	"	"	"
1105		16.20	4.05	76	0.63	135.1	12.2	"	"	"
1110		16.19	4.05	76	0.63	135.1	9.66	"	"	"
1115		16.19	4.08	76	0.62	131.8	8.97	"	"	"
1120	52	16.19	4.07	76	0.63	130.7	8.78	"	"	"

Well ID: BPOWS-1

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NIOIRP Beth page
Date: 6/13/14
Time: Start 800 am/pm
Finish 1400 am/pm
Project No: 60266526
Site Location: Killdare Crescent
Weather Conds: Foggy 70°
Collector(s): Gordon Hicks

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 515 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 20.92 d. Calculated System Volume (see back) 13 gal

2. WELL PURGE DATA

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity	± 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume	

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI 556 MPS	U5224 0X	
	Hanna	HJ	463890

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1140		18.97	5.61	101	12.56	212.1	65.12	350	0	Clear / none
1145		18.76	5.49	97	6.79	176.5	31.75	400	0	clear / none
1150		18.64	5.40	97	3.09	145.7	10.81	400	0	Clear / none
1155		18.20	4.78	96	1.24	139.0	2.32	"	"	"
1200	4	18.26	4.55	97	1.22	152.7	8.33	450	0	"
1205		18.70	4.41	98	1.23	175.1	7.93	"	"	"
1210		19.16	4.65	98	1.14	174.5	6.27	"	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

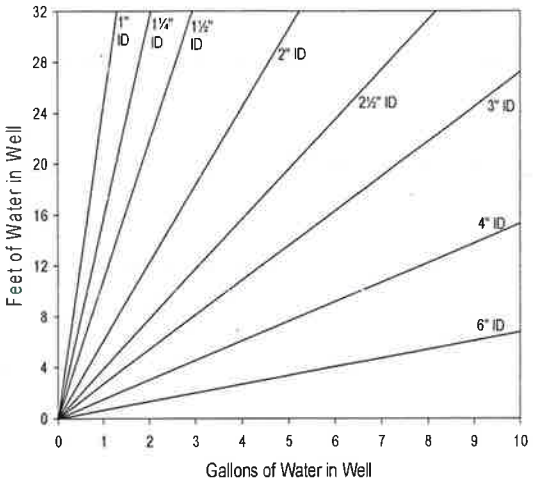
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
BPOWS-1-GW-061314	VOA/amb	3/2	HCl/none	VOC/1,4 Dioxane	1330

Comments

Signature _____ Date 6-13-14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID:

(continued from front)

1140 Start

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1215		19.07	5.78	130	1.16	115.5	>1,000	350	0	Cloudy / none
1220		18.50	4.68	92	1.03	89.1	781	400	0	"
1225		18.26	4.42	93	0.95	95.3	766	~~266~~ 420	0	"
1230		18.29	4.37	93	0.91	100.1	176.5	400	"	"
1235		18.38	4.28	94	0.86	106.4	61.9	"	"	"
1240		18.50	4.27	93	0.83	115.1	111	"	"	"
1245	28	18.92	4.27	94	0.81	111.9	50.3	"	"	"
1250		20.56	4.27	94	0.75	114.7	43.0	"	"	"
1255		19.82	4.26	94	0.76	107.4	32.3	450	"	"
1300		19.13	4.21	95	0.77	112.7	26.1	"	"	"
1305		20.03	4.20	95	0.71	111.5	26.5	"	"	"
1310	36	19.70	4.21	95	0.71	119.5	25.4	"	"	"
1315		19.51	4.21	95	0.69	116.6	24.9	"	"	"
1320		19.37	4.29	95	0.68	98.9	23.1	"	"	"
1325		20.01	4.29	96	0.67	93.2	21.9	"	"	"
1330	49	20.08	4.29	96	0.67	91.7	21.2	"	"	"
1335										
1340										

Well ID: BPOW-3

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: NWIRP Bethpage
Date: 6/13/14
Time: Start 800 am/pm
Finish 1130 am/pm
Project No: 60266526
Site Location: Kilduff Crescent
Weather Conds: Foggy 70°
Collector(s): Paul Kareth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 665
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 21.34
d. Calculated System Volume (see back) 15 gal

2. WELL PURGE DATA

a. Purge Method: bladder pump

b. Acceptance Criteria defined (see workplan)

- Temperature	± 3%	- D.O.	± 10% (values >0.5 mg/L)	Turbidity ± 10%
- pH	± 0.1 unit	- ORP	± 10mV	
- Sp. Cond.	± 3%	- Drawdown	< 0.3'	Remove a minimum 1 screen volume

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	54965
	Hanna	HI	1638904

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
920										OH
930		16.0	2.67	33	1.64	196.7		550		
940		16.2	3.37	32	1.24	103.0	>1000		21.55	
945		15.9	4.59	44	1.10	98.7				
950	5 gal	15.9	4.08	30	0.96	132.4			21.83	
955										clear flow cell
1000		16.1	4.30	30	1.72	140.8	268	550	21.85	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION:

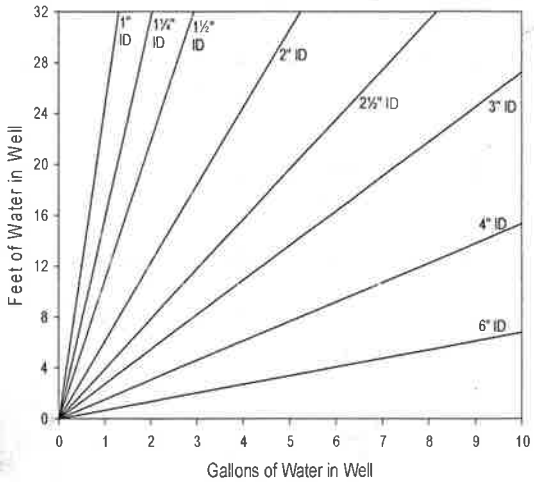
Method: bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
BPOW5-3-GW-061314	40ml vials	3	HCl	VOC	1100
BPOW5-3-GW-061314	1-L amber	2	-	1,4 Dioxane	1100

Comments: pump tagged bottom very short of 665, caused turbidity to go way up at 3.5 gal
ran at 945, pulled transducer during sampling

Signature: Paul Kareth
Date: 6/13/14

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

Well ID: 920AN BPOW 5-3

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1005		15.1	4.53	30	0.68	137.9	41.1	550	21.85	
1010		15.0	4.41	30	0.60	141.2				
1015		15.9	4.44	30	0.56	144.4	24.9			
1020	10 gal	15.9	4.44	30	0.55	145.4	17.7		21.87	
1025		16.0	4.50	30	0.52	146.5	15.0			
1030		15.9	4.50	30	0.51	148.6	16.1		21.41	
1035		16.0	4.53	30	0.49	148.1	10.3			
1040		16.0	4.54	30	0.47	147.8	9.61		21.95	
1045	15 gal	15.9	4.54	30	0.46	148.2	9.75			
1050		15.9	4.54	30	0.47	148.6	9.50			
1055		15.9	4.55	30	0.45	148.4	8.59			
1100										sample

Appendix B

Analytical Lab Sheets

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH melac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-2
Client ID: RE103D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7660.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	0.54	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	J	0.25	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		9.4	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		18	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane		1.3	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		4.2	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.95	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	J	0.54	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~E~~ J	~~1000~~ 1200	ug/L	~~1~~ 20	1	~~1.0~~ 20	~~0.285~~ 5.6	~~0.50~~ 10
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	UM	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	J	0.68	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene		4.9	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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9/12/14

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH melac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-2
Client ID: RE103D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7660.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)		4.2	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.5	%					
Toluene-d8		93.1	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		98.1	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH melac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-1
Client ID: RE103D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7659.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	J	0.61	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		3.8	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	J	0.67	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.1	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.96	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~E~~ J	670	ug/L	~~1~~ 10	1	~~1.0~~ 10	~~0.28~~ 2.8	~~0.50~~ 5.0
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	J	0.37	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	J	0.77	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-1
Client ID: RE103D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7659.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	1.1	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.2	%					
Toluene-d8		96.0	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		99.2	%					

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Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-5
Client ID: RE103D3-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7663.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	J	0.71	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		2.9	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	J	0.64	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	J	0.87	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.94	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	J	0.30	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~E~~ J	~~560~~ 510	ug/L	~~1~~ 10	1	~~1.0~~ 10	~~0.28~~ 2.8	~~0.50~~ 5.0
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-5
Client ID: RE103D3-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7663.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~J~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	0.87	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.4	%					
Toluene-d8		96.7	%					
1,2-Dichloroethane-d4		119.	%					
Dibromofluoromethane		105.	%					

3/12/14

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-10
Client ID: RE104D1-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7668.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	0.98	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		1.5	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		6.7	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	J	0.44	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.6	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.37	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.41	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		160	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene		2.4	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-10
Client ID: RE104D1-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7668.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	1.6	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.1	%					
Toluene-d8		92.7	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		98.6	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-11
Client ID: RE104D2-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7690.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144799

Analysis Date: 16-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	~~J~~ J	0.84	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	J	1.8	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-11
Client ID: RE104D2-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7690.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144799

Analysis Date: 16-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J J	0.84	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.4	%					
Toluene-d8		96.0	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		99.2	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-9
Client ID: RE104D3-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7689.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144799

Analysis Date: 16-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-9
Client ID: RE104D3-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7689.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144799

Analysis Date: 16-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.9	%					
Toluene-d8		94.2	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		97.1	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-6
Client ID: RE105D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7664.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	1.4	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		1.5	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		12	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	J	0.39	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.9	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	J	0.24	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		130	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-6
Client ID: RE105D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7664.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	1.9	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.4	%					
Toluene-d8		94.6	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		99.6	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-7
Client ID: RE105D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7665.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	0.58	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		6.2	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		32	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane		1.5	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		3.1	ug/L	1	1	1.0	0.21	0.50
Chloroform		2.3	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.71	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride		4.7	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~E~~ J	~~1200~~ 1500	ug/L	~~1~~ 40	1	~~1.0~~ 40	~~0.28~~ 11	~~0.50~~ 20
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane		1.2	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	J	0.77	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-7
Client ID: RE105D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7665.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)		3.1	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.5	%					
Toluene-d8		93.5	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		98.8	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-3
Client ID: RE108D1-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7661.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	J	0.58	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		82	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	J	0.59	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-3
Client ID: RE108D1-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7661.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.9	%					
Toluene-d8		95.4	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		98.8	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-4
Client ID: RE108D2-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7662.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	0.27	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		8.2	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		8.7	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane		5.8	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		9.9	ug/L	1	1	1.0	0.21	0.50
Chloroform		4.2	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane		1.3	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride		2.0	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	~~E~~ J	~~1800~~ 3400	ug/L	~~1~~ 40	1	~~1.0~~ 40	~~0.28~~ 11	~~0.50~~ 20
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane		1.8	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene		1.6	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-4
Client ID: RE108D2-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7662.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)		9.9	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		89.0	%					
Toluene-d8		91.3	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		97.5	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-8
Client ID: GWDUP-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7666.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~J~~ J	1.4	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene		1.7	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113		13	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	6.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	J	0.40	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.9	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.47	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.62	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	J	0.27	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		140	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-8
Client ID: GWDUP-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7666.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	J	1.9	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		88.8	%					
Toluene-d8		91.5	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		98.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-12
Client ID: RE-TB-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7654.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ UJ	~~0.28~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-12
Client ID: RE-TB-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: C7654.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144769

Analysis Date: 14-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 17-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.2	%					
Toluene-d8		95.8	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		99.1	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-2DL
Client ID: RE103D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1817.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	MM	20	ug/L	3	.25	0.77	0.26	0.56
1,4-Dioxane-D8		144.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-1
Client ID: RE103D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1797.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		1.0	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		120.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-5
Client ID: RE103D3-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1803.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		0.92	ug/L	1	.25	0.24	0.081	0.17
1,4-Dioxane-D8		121.	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH melac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-10DL
Client ID: RE104D1-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1813.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		12	ug/L	2	.25	0.47	0.16	0.34
1,4-Dioxane-D8		147.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-11
Client ID: RE104D2-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1810.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.17	ug/L	1	.25	0.24	0.081	0.17
1,4-Dioxane-D8		119.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-9
Client ID: RE104D3-GW-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1807.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.17	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		107.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-6DL
Client ID: RE105D1-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1811.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		15	ug/L	2	.25	0.50	0.17	0.36
1,4-Dioxane-D8		139.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-7
Client ID: RE105D2-GW-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1805.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		6.2	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		128.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-3
Client ID: RE108D1-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1801.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		7.1	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		111.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-4
Client ID: RE108D2-GW-061014
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1802.D

Sample Date: 10-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 19-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		6.9	ug/L	1	.25	0.24	0.083	0.18
1,4-Dioxane-D8		107.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4223-8DL
Client ID: GWDUP-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4223
Lab File ID: G1812.D

Sample Date: 11-JUN-14
Received Date: 13-JUN-14
Extract Date: 16-JUN-14
Extracted By: AC
Extraction Method: SW846 3520
Lab Prep Batch: WG144790

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		18	ug/L	2	.25	0.52	0.18	0.37
1,4-Dioxane-D8		146.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-3
Client ID: BPOWS-1-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7734.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-3
Client ID: BPOWS-1-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7734.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.4	%					
Toluene-d8		96.8	%					
1,2-Dichloroethane-d4		115.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-2
Client ID: BPOWS-2-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7733.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-2
Client ID: BPOWS-2-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7733.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		92.7	%					
Toluene-d8		96.7	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-1
Client ID: BPOWS-3-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7732.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-1
Client ID: BPOWS-3-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7732.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.2	%					
Toluene-d8		96.7	%					
1,2-Dichloroethane-d4		117.	%					
Dibromofluoromethane		102.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-4
Client ID: BPOWS-TB-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7724.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	J	0.35	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-4
Client ID: BPOWS-TB-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: C7724.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 18-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144955

Analysis Date: 18-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.7	%					
Toluene-d8		95.7	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-1
Client ID: BPOWS-3-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: G1822.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 19-JUN-14
Extracted By: JMS
Extraction Method: SW846 3520
Lab Prep Batch: WG145030

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		0.55	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		112.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-2
Client ID: BPOWS-2-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: G1823.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 19-JUN-14
Extracted By: JMS
Extraction Method: SW846 3520
Lab Prep Batch: WG145030

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.17	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		116.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4293-3
Client ID: BPOWS-1-GW-061314
Project: Navy Clean WE15-03-06 NW
SDG: SH4293
Lab File ID: G1824.D

Sample Date: 13-JUN-14
Received Date: 17-JUN-14
Extract Date: 19-JUN-14
Extracted By: JMS
Extraction Method: SW846 3520
Lab Prep Batch: WG145030

Analysis Date: 20-JUN-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	U	0.17	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		138.	%					

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Appendix C

Data Validation

AECOM

AECOM
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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH4223	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 08/13/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4223_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on June 10, 11, and 12, 2014.

Sample ID	Matrix/Sample Type
GWDUP-061114	Field Duplicate of RE105D1-GW-061114
RE103D1-GW-061114	Ground water
RE103D2-GW-061114	Ground water
RE103D3-GW-061114	Ground water
RE104D1-GW-061214	Ground water
RE104D2-GW-061214	Ground water
RE104D3-GW-061214	Ground water
RE105D1-GW-061114	Ground water
RE105D2-GW-061114	Ground water
RE108D1-GW-061014	Ground water
RE108D2-GW-061014	Ground water
RE-TB-061214	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓ Data completeness (chain-of-custody (COC))/sample integrity

✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification
✗ Laboratory blanks/trip blanks/equipment blanks
✓ Surrogate spike recoveries
✓ Matrix spike (MS) results
✓ Laboratory control sample (LCS) results
✓ Field duplicate results
✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated, negated, and/or rejected due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Due to limitations in the reporting system, the laboratory truncated the ID for Trip Blank in the report to "RE-TB-061214. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the initial calibration verification (ICV) percent recovery (%R) criteria were met; and
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds), %Rs, and/or RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICAL Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%RSD > 15% and quantitation based on mean RF	J	UJ
r or r^2 < 0.99 and quantitation based on linear	J*	UJ*
* No guidance in NFG, thus AECOM professional judgment was used		

ICV Recovery Nonconformances:

Nonconformance	Actions	
	Detected Compounds	Nondetected Compounds
%R > 120%	J	No qualification
20% < %R < 80%	J	UJ
%R <20% (see note)	J	R*

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) non-detects in all associated samples for any analyte with < 20% recovery. Also, professional judgment is used to estimate (UJ) rather the reject (R) sample results previously negated (U) on the basis of blank contamination.

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Tables A-1a, A-1b, and A-1c.

Laboratory Blanks/Trip Blanks/Equipment Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Sample results were qualified as follows:

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and ≤ 2x LOQ	Report the sample result with a U**
		≥ 2x the LOQ	No qualifications
	> LOQ	< LOQ	Report sample LOQ value with a U
		≥ LOQ and < blank contamination	Report the sample result with a U or reject the sample result as unusable R
		≥ LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
	TIC detected	Detects	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on RESCON professional judgment.			

LOQ - Limit of Quantitation

Nonconformances are summarized in Attachment A in Table A-2. Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS Results

The MS %Rs were reviewed for conformance with the QC acceptance criteria.

The MS %R for bromodichloromethane was slightly above the upper QC limit. However, the sample was nondetect, and the result was accepted without qualification.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate relative percent differences (RPDs) were reviewed for conformance with the QC criterion of ≤30% for aqueous matrices. This criterion applies if both results were greater than five times the Limit of Quantitation (LOQ).

All QC acceptance criteria were met.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
GWDUP-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
GWDUP-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
GWDUP-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
GWDUP-061114	WG	ACETONE	6.8	2.5	ug/L	J	c
GWDUP-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
GWDUP-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
GWDUP-061114	WG	DICHLORODIFLUOROMETHANE	1.4	1.0	ug/L	J	c
RE103D1-GW-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE103D1-GW-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE103D1-GW-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE103D1-GW-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
RE103D1-GW-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE103D1-GW-061114	WG	DICHLORODIFLUOROMETHANE	0.54	1.0	ug/L	J	c
RE103D1-GW-061114	WG	TRICHLOROETHENE	1200	10	ug/L	J	c
RE103D2-GW-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE103D2-GW-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE103D2-GW-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE103D2-GW-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
RE103D2-GW-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE103D2-GW-061114	WG	TRICHLOROETHENE	670	5.0	ug/L	J	c
RE103D3-GW-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE103D3-GW-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE103D3-GW-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE103D3-GW-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
RE103D3-GW-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE103D3-GW-061114	WG	TRICHLOROETHENE	510	5.0	ug/L	J	c
RE104D1-GW-061214	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE104D1-GW-061214	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE104D1-GW-061214	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE104D1-GW-061214	WG	BROMOFORM		0.50	ug/L	UJ	c
RE104D1-GW-061214	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE104D1-GW-061214	WG	DICHLORODIFLUOROMETHANE	0.98	1.0	ug/L	J	c
RE104D2-GW-061214	WG	1,2-DICHLOROETHENE, TOTAL	0.84	1.0	ug/L	J	c
RE104D2-GW-061214	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE104D2-GW-061214	WG	BROMOFORM		0.50	ug/L	U	c
RE104D2-GW-061214	WG	CARBON TETRACHLORIDE		0.50	ug/L	UJ	c
RE104D2-GW-061214	WG	CHLOROETHANE		1.0	ug/L	U	c
RE104D2-GW-061214	WG	CIS-1,2-DICHLOROETHENE	0.84	0.50	ug/L	J	c
RE104D2-GW-061214	WG	CIS-1,3-DICHLOROPROPENE		0.50	ug/L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
RE104D2-GW-061214	WG	DICHLORODIFLUOROMETHANE		1.0	ug/L	UJ	c
RE104D2-GW-061214	WG	TRANS-1,3-DICHLOROPROPENE		0.50	ug/L	UJ	c
RE104D2-GW-061214	WG	TRICHLOROETHENE	1.8	0.50	ug/L	J	c
RE104D3-GW-061214	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE104D3-GW-061214	WG	BROMOFORM		0.50	ug/L	U	c
RE104D3-GW-061214	WG	CARBON TETRACHLORIDE		0.50	ug/L	UJ	c
RE104D3-GW-061214	WG	CHLOROETHANE		1.0	ug/L	U	c
RE104D3-GW-061214	WG	CIS-1,3-DICHLOROPROPENE		0.50	ug/L	UJ	c
RE104D3-GW-061214	WG	DICHLORODIFLUOROMETHANE		1.0	ug/L	UJ	c
RE104D3-GW-061214	WG	TRANS-1,3-DICHLOROPROPENE		0.50	ug/L	UJ	c
RE105D1-GW-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE105D1-GW-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE105D1-GW-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE105D1-GW-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
RE105D1-GW-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE105D1-GW-061114	WG	DICHLORODIFLUOROMETHANE	1.4	1.0	ug/L	J	c
RE105D2-GW-061114	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE105D2-GW-061114	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE105D2-GW-061114	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE105D2-GW-061114	WG	BROMOFORM		0.50	ug/L	UJ	c
RE105D2-GW-061114	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE105D2-GW-061114	WG	DICHLORODIFLUOROMETHANE	0.58	1.0	ug/L	J	c
RE105D2-GW-061114	WG	TRICHLOROETHENE	1500	20	ug/L	J	c
RE108D1-GW-061014	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE108D1-GW-061014	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE108D1-GW-061014	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE108D1-GW-061014	WG	BROMOFORM		0.50	ug/L	UJ	c
RE108D1-GW-061014	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE108D2-GW-061014	WG	2-BUTANONE		2.5	ug/L	UJ	c
RE108D2-GW-061014	WG	2-HEXANONE		2.5	ug/L	UJ	c
RE108D2-GW-061014	WG	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE108D2-GW-061014	WG	BROMOFORM		0.50	ug/L	UJ	c
RE108D2-GW-061014	WG	CHLOROETHANE		1.0	ug/L	UJ	c
RE108D2-GW-061014	WG	DICHLORODIFLUOROMETHANE	0.27	1.0	ug/L	J	c
RE108D2-GW-061014	WG	TRICHLOROETHENE	3400	20	ug/L	J	c
RE-TB-061214	WQ	2-BUTANONE		2.5	ug/L	UJ	c
RE-TB-061214	WQ	2-HEXANONE		2.5	ug/L	UJ	c
RE-TB-061214	WQ	4-METHYL-2-PENTANONE		2.5	ug/L	UJ	c
RE-TB-061214	WQ	BROMOFORM		0.50	ug/L	UJ	c
RE-TB-061214	WQ	CARBON DISULFIDE		1.0*	ug/L	U	bl

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
RE-TB-061214	WQ	CHLOROETHANE		1.0	ug/L	UJ	c
*Carbon disulfide -LOQ							

Attachment A

Nonconformance Summary Tables

Table A-1a - Initial Calibration Verification

ICAL	Compound	% RSD	Limit
GCMS-C	CHLOROETHANE	36.2	<15%
	BROMOFORM	15.5	<15%
ICV	**Compound**	**% R**	**Limit**
WG141592	DICHLOROFLUOROMETHANE	142.1	80-120%
	ACETONE	120.4	80-120%
Associated samples: All samples in the SDG			

Table A-1b - Continuing Calibration Verification

CCV	Compound	% D	Limit
WG144769	CHLOROETHANE	22.1	<20%
	2-BUTANONE	20.5	<20%
	4-METHYL-2-PENTANONE	37.1	<20%
	2-HEXANONE	24.5	<20%
Associated samples: GWDUP-061114, RE-TB-061214, RE103D1-GW-061114, RE103D2-GW-061114 ,RE103D3-GW-061114, RE104D1-GW-061214, RE105D1-GW-061114, RE105D2-GW-061114, RE108D1-GW-061014, RE108D2-GW-061014			

Table A-1c - Continuing Calibration Verification

CCV	Compound	% D	Limit
WG144799	DICHLOROFLUOROMETHANE	74.6	<20%
	CARBON TETRACHLORIDE	22.1	<20%
	CIS-1,3-DICHLOROPROPENE	21.2	<20%
	4-METHYL-2-PENTANONE	28.3	<20%
	TRANS-1,3-DICHLOROPROPENE	20.6	<20%
Associated samples: RE104D2-GW-061214, RE104D3-GW-061214			

Table A-2 - Lab Blanks

Blank ID	Compound	Result	LOD	Units	Associated Samples
WG144769-2	CARBON DISULFIDE	0.30	0.50	ug/L	RE-TB-061214

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Inc.	
Service Request:	SH4223	
Analyses/Method:	EPA SW-846 Method 8270C-SIM for SVOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 08/13/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4223_SW7270D

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on June 10, 11, and 12, 2014.

Sample ID	Matrix/Sample Type
GWDUP-061114	Field Duplicate of RE105D2-GW-061114
RE103D1-GW-061114	Ground water
RE103D2-GW-061114	Ground water
RE103D3-GW-061114	Ground water
RE104D1-GW-061214	Ground water
RE104D2-GW-061214	Ground water
RE104D3-GW-061214	Ground water
RE105D1-GW-061114	Ground water
RE105D2-GW-061114	Ground water
RE108D1-GW-061014	Ground water
RE108D2-GW-061014	Ground water

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓ Data completeness (chain-of-custody (COC)/sample integrity

✓ Holding times and sample preservation

✓ Instrument tuning
✓ Initial calibration/continuing calibration verification
✓ Laboratory blanks/equipment blanks
✓ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
✓ Field duplicate results
✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no results were qualified based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. There were no results qualified on the basis of this data review.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria.

The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the decafluorotriphenylphosphine (DFTPP) tuning was performed at the correct frequency and that the method acceptance criteria were met. All samples were analyzed within 12 hours of the DFTPP tunes.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the initial calibration verification (ICV) percent recovery (%R) criteria were met; and
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds), %Rs, and/or RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

The QC acceptance criteria were met.

Laboratory Blanks/Equipment Blanks

Laboratory method blanks and equipment rinsate blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

MS/MSD Results

The MS/MSD %Rs and/or relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria.

The concentrations of 1,4-dioxane of in the native sample and the MS/MSD were outside the calibration curve and the %Rs could not be calculated. The RPD between the MS and MSD met the QC limits. No validation action was taken on this basis.

LCS/LCSD Results

The LCS/LCSD %Rs and/or RPDs were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the AECOM QC criteria of $\leq$30% for aqueous matrices. This criteria applies if both results were greater than five times the quantitation limit. (QL).

All QC acceptance criteria were met and/or qualification of the data was not required.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria.

All QC acceptance criteria were met.

Sample Results/Reporting Issues

All compounds detected at concentrations less than the quantitation limit (LOQ) but greater than the DL were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-targets was checked to ensure that the results and/or sample specific QLs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

No sample results were qualified as a result of this data review.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment A

Nonconformance Summary Tables

No nonconformances were identified in this data set.

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

RESOLUTION CONSULTANTS

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical Services, Scarborough, Maine	
Service Request:	SH4293	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 8270C-SIM for SVOCs (GC/MS)	
Validation Level:	Limited	
RESCON Project Number:	60266526.SA.DV	
Prepared by:	Sheena Blair/RESCON	Completed on: 9/12/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4293_8260B and 8270D_SIM

SUMMARY

The samples listed below were collected by Resolution Consultants (RESCON) from the Regional Groundwater Investigation - NWIRP Bethpage site on June 13, 2014.

Sample ID	Matrix/Sample Type
BPOW5-1-GW-061314	Groundwater
BPOW5-2-GW-061314	Groundwater
BPOW5-3-GW-061314	Groundwater
BPOW5-TB-061314	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 8270D-SIM, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (USEPA, 1996); USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

✓ Data completeness (chain-of-custody [COC])/sample integrity
✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification

✓ Laboratory blanks/equipment blanks/trip blanks
✓ Surrogate spike recoveries
NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS) results
NA Field duplicate results
✓ Internal standard results
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. The QC acceptance criteria were met.

GC/MS Performance Checks

The data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;

- the initial calibration verification standard (ICV) percent recoveries (%Rs) acceptance criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and
- the retention time method acceptance criteria were met.

Data qualification to the analytes associated with the specific ICAL and/or CCV was as follows:

ICAL Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%RSD > 15% and quantitation based on mean RF	J	UJ
r or r^2 < 0.99 and quantitation based on linear regression	J*	UJ*
* No guidance in NFG, thus RESCON professional judgment was used		

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift > 20%	J*	UJ*
* No guidance in NFG, thus professional judgment was used		

Qualified sample results are shown in Table 1. Nonconformances are summarized in Attachment A in Table A-1a and A1b.

Laboratory Blanks/Equipment Blanks/Trip Blanks

Laboratory method blanks, equipment rinsate and trip blanks were evaluated as to whether there were contaminants detected above the detection limit (DL).

Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method, equipment rinsate and trip blank results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

Surrogate Spike Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

MS/MSD Results

MS/MSD analyses were not performed on samples reported in this SDG. There were no validation actions taken on this basis.

LCS Results

The LCS %Rs were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Field Duplicate Results

There were no field duplicate samples submitted with this data set. No validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) recoveries were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as undetected (U) at the Limit of Detection (LOD).

Compounds detected at concentrations less than the LOQ but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

Any sample that was analyzed at a dilution due to high concentrations of target or non-target compounds or matrix interferences was checked to ensure that the results and/or sample specific LODs and LOQs were adjusted accordingly by the laboratory.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
BPOW5-1-GW-061314	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
BPOW5-1-GW-061314	WG	CHLOROETHANE		1.0	UG/L	UJ	c
BPOW5-1-GW-061314	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
BPOW5-1-GW-061314	WG	2-BUTANONE		2.5	UG/L	UJ	c
BPOW5-2-GW-061314	WG	2-BUTANONE		2.5	UG/L	UJ	c
BPOW5-2-GW-061314	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
BPOW5-2-GW-061314	WG	CHLOROETHANE		1.0	UG/L	UJ	c
BPOW5-2-GW-061314	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
BPOW5-3-GW-061314	WG	2-BUTANONE		2.5	UG/L	UJ	c
BPOW5-3-GW-061314	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
BPOW5-3-GW-061314	WG	CHLOROETHANE		1.0	UG/L	UJ	c
BPOW5-3-GW-061314	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
BPOW5-TB-061314	WQ	2-BUTANONE		2.5	UG/L	UJ	c
BPOW5-TB-061314	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
BPOW5-TB-061314	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
BPOW5-TB-061314	WQ	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1a – Initial Calibration

ICAL	Compound	% RSD	Limit
WG144357 GCMS-C	CHLOROETHANE	36.2	< 15%
Associated samples: All samples in the SDG			

Table A-1b - Continuing Calibration Verification

CCV ID	Compound	% D	Limit
WG144955-4 GCMS-C	DICHLORODIFLUOROMETHANE	56.1	< 20%
	2-BUTANONE	20.7	< 20%
	4-METHYL-2-PENTANONE	37.9	< 20%
Associated samples: All samples in this SDG			

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
co	Analyte carryover
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results
mc	Method compliance nonconformance

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600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: Resolution Consultants
Contact: Vivadon
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code: 10977
Purchase Order #:
Proj. Name / No.: NWIRP-Bethpage / 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Gordon Hicks
Copies To:

LAB USE ONLY
WORK ORDER #: 5H42-93
KATAHDIN PROJECT NUMBER:
REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT
AIRBILL NO:
TEMP°C: ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOC	1/4 Brown								
					Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	BPOWS-3-GW-061314	6-13-14/1100	GW	5	3	2								
	BPOWS-2-GW-061314	6-13-14/1120	GW	5	3	2								
	BPOWS-1-GW-061314	6-13-14/1330	GW	5	3	2								
	Trip Blank	6-5-14/1430	W	3	3									
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	6-16-14 1000	FedEx			8-17-14 0935
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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ORIGINAL

KAS-COC1