SEPTEMBER 2014 GROUNDWATER SAMPLING DATA SUMMARY REPORT BETHPAGE, NY

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
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CTO WE15

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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

1.0 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 September 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.

2.0 FIELD PROGRAM

Field tasks were conducted in September 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 bladder 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 8260C 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 SW846-8260C. 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.

3.0 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.

4.0 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	
TT101D	350	325	345	335	5	VPB129
TT101D1	595	570	590	580	5	
TT101D2	765	740	760	750	5	

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE103D1	RE103D2	RE103D3	RE104D1
Sample Date		9/23/2014	9/23/2014	9/23/2014	9/24/2014
Sample ID		RE103D1-GW-09232014	RE103D2-GW-09232014	RE103D3-GW-09232014	RE104D1-GW-09242014
Sample type code		N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	**0.55 J**	< 0.50 U	< 0.50 U	**0.31 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	**16**	**5.3**	**2.6**	**5.9**
1,1,2-TRICHLOROETHANE	1	**0.82 J**	**0.47 J**	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	**1.3**	**0.73 J**	**0.55 J**	**0.40 J**
1,1-DICHLOROETHENE	5	**5.9**	**1.1**	**0.39 J**	**1.2**
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	**4.5**	**1.8 J**	**1.0 J**	**1.8 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	**21**	**2.2**	**1.0**	**9.1**
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
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 U	< 0.50 U	< 0.50 U	< 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	< 0.50 U	< 0.50 U	< 0.50 U	< 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	**1.0**	**1.1**	**0.69 J**	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**4.5**	**1.8**	**1.0**	**1.8**
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	**0.28 J**	< 1.0 U	< 1.0 U	**0.52 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	**4.7**	**1.1**	< 0.50 U	**2.8**
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	**850**	**1300**	**460**	**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

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE104D2	RE104D3	RE105D1	RE105D2
Sample Date		9/24/2014	9/24/2014	9/26/2014	9/26/2014
Sample ID		RE104D2-GW-09242014	RE104D3-GW-09242014	RE105D1-GW-09262014	RE105D2-GW-09262014
Sample type code		N	N	N	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	**0.52 J**	< 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	< 0.50 U	< 0.50 U	**12**	**28**
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	**1.2**
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	**0.33 J**	**1.5**
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	**1.6**	**5.5**
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 UJ***	***< 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	**1.5 J**	< 1.0 U	**1.9 J**	**3.5**
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	**0.14 J**	< 0.17 U	**12 J**	**5.8 J**
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 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 U	< 0.50 U	< 0.50 U	< 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	< 0.50 U	< 0.50 U	< 0.50 U	**3.5**
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	**0.54 J**	< 0.50 U	**0.40 J**	**2.2**
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**1.5**	< 0.50 U	**1.9**	**3.5**
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	< 1.0 U	< 1.0 U	**0.75 J**	< 1.0 U
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	**0.79 J**
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	**2.3**	< 0.50 U	**92**	**1500**
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

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE108D1	RE108D2	RE108D2	TT101D
Sample Date		9/24/2014	9/24/2014	9/24/2014	9/25/2014
Sample ID		RE108D1-GW-09242014	RE108D2-GW-09242014	DUP-GW-09242014	TT101D-GW-092514
Sample type code		N	N	FD	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	**1.2**	**1.1**	**0.42 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	**1.4**	**7.4**	**7.5**	**20**
1,1,2-TRICHLOROETHANE	1	< 0.50 U	**1.8**	**1.7**	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	**4.8**	**5.2**	**0.85 J**
1,1-DICHLOROETHENE	5	**0.43 J**	**7.6**	**7.6**	**4.0**
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 UJ***
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	**0.44 J**	**9.9**	**9.7**	**3.3**
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	**9.0 J**	**5.8**	**7.3**	**9.1 J**
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
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 U	< 0.50 U	< 0.50 U	< 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	< 0.50 U	**0.83 J**	**0.88 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 U
CHLOROFORM	7	< 0.50 U	**3.5**	**3.6**	**0.47 J**
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**0.44 J**	**9.9**	**9.7**	**3.3**
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	< 1.0 U	< 1.0 U	< 1.0 U	**2.1**
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	**1.6**	**1.7**	**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	**140 J**	**3700**	**3500**	**66**
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

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	TT101D1	TT101D2
Sample Date		9/25/2014	9/25/2014
Sample ID		TT101D1-GW-092514	TT101D2-GW-092514
Sample type code		N	N
VOC 8260C (ug/L)			
1,1,1-TRICHLOROETHANE	5	**0.62 J**	**0.49 J**
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	**16**	**22**
1,1,2-TRICHLOROETHANE	1	**0.40 J**	**0.63 J**
1,1-DICHLOROETHANE	5	**0.74 J**	**0.92 J**
1,1-DICHLOROETHENE	5	**4.7**	**5.7**
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 UJ***	***< 0.75 UJ***
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	**2.0**	**2.2**
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	**9.6 J**	**2.9 J**
2-BUTANONE	50	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ
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	**0.94 J**	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U
CHLOROFORM	7	**0.93 J**	**0.93 J**
CHLOROMETHANE	5	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	**2.0**	**2.2**
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	**1.8 J**	< 1.0 U
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	**160**	**560**
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 detected 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.

M = the matrix spike or matrix spike duplicate did not meet recovery or precision requirements.

September 2014
Groundwater Sampling Report
Naval Weapons Industrial
Reserve Plant, Bethpage, NY

Table 3.
Stabilized Field Parameters

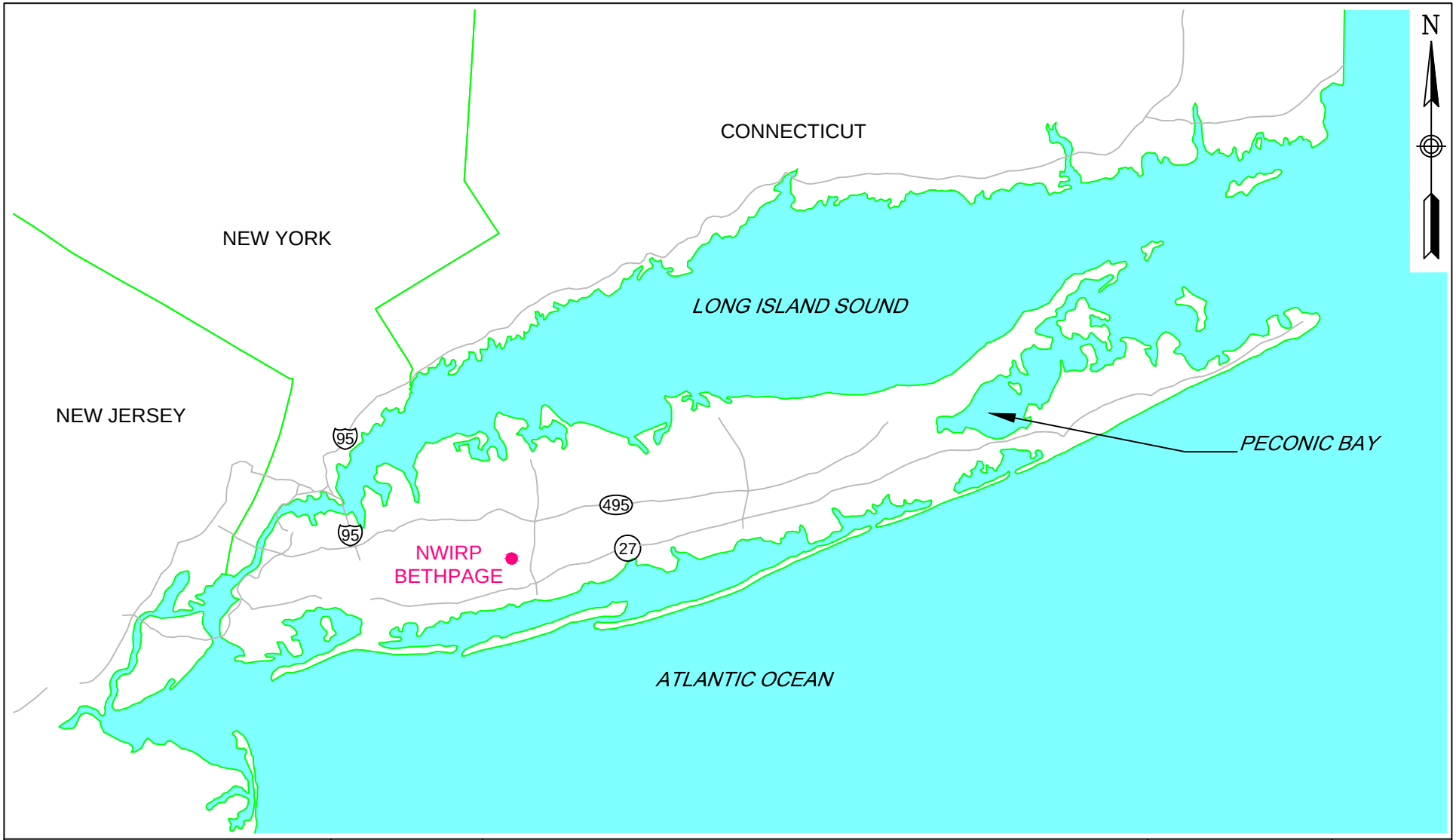
November 2014

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	9/23/2014	16.34	4.59	0.094	4.32	179.2	0.32	41.42	400	*
RE103 D2	9/23/2014	17.52	4.92	0.032	8.33	65.7	0.47	41.1	400	*
RE103 D3	9/23/2014	15.77	4.14	0.027	5.11	37.5	0.68	41.91	450	0.31
RE104 D1	9/24/2014	15.26	5.00	0.063	4.86	14.58	0.54	36.35	500	*
RE104 D2	9/24/2014	14.79	5.19	0.021	6.51	142.3	1.87	42.11	450	*
RE104 D3	9/24/2014	15.1	4.80	0.019	6.19	170.6	11.30	43.28	500	0.45
RE105 D1	9/26/2014	15.4	6.56	0.102	1.16	88.3	1.59	38.53	500	*
RE105 D2	9/26/2014	15.33	4.95	0.106	4.62	140.2	0.63	39.78	425	*
RE108 D1	9/24/2014	15.51	4.99	0.081	8.31	13.85	1.48	40.31	500	*
RE108 D2	9/24/2014	15.41	4.97	0.07	4.82	144.7	1.03	41.81	500	0.89
TT101D	9/25/2014	15.51	4.48	0.085	0.55	79.7	0.51	33.39	500	0.04
TT101D1	9/25/2014	15.84	4.42	0.085	0.51	184.5	1.3	35.5	500	*
TT101D2	9/25/2014	15.73	4.98	0.038	6.48	140.7	0.12	35.89	500	*

* 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

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 03.mxd

Former Northrop Grumman Site

Hooker Ruco

Bethpage Community Park

Former Naval Weapons Industrial Reserve Plant

Former Northrop Grumman Site

RE1018D1
RE1018D2

RE103D1
RE103D2
RE103D3

RE104D1
RE104D2
RE104D3

RE105D1
RE105D2

TT-101D
TT-101D1
TT-101D2

N

0 750 1,500 3,000 Feet

Legend

- Monitoring Well - Sampled
- Monitoring Well - Unsampled
- Vertical Profile Boring
- Water Supply Well
- Extraction Well

NAVFAC

LOCATION MAP
SEPTEMBER 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

Appendices

Appendix A

Groundwater Sampling Forms

RESOLUTION CONSULTANTS

Well ID: RE103 D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/23/14 | Time: Start 830 am/pm
Project No: 60266526 | Finish 1215 am/pm
Site Location: Avoca & Martin
Weather Conds: 65-70° sunny | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 645 c. Length of Water Column 603.5 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 41.55 d. Calculated System Volume (see back) 13.1

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	64425
	Hanna	HI98703	U615514X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
950									41.42	
1020		15.99	5.04	0.092	2.82	105.5		300		
1025		15.74	4.84	0.092	2.42	119.5		400		
1030		15.56	4.92	0.108	1.76	118.6				
1040		15.52	4.95	0.088	1.76	120.3			41.42	
1050		15.57	4.71	0.092	3.95	141.9		400		
1100	20L	15.61	4.71	0.093	4.04	147.0				

(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.

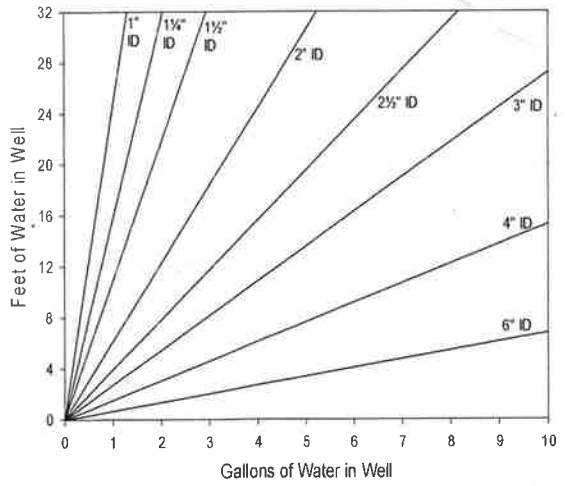
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D1-GW-092320114	40-mL vial	3	HCl	VOCs	1210
RE103D1-GW-092320114	1-L amber	2	none	1,4-Dioxane	1210

Comments

Signature Paul Kareth Date 9/23/14

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

2gal = 8L
5gal = 20L

Well ID: RE10301

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1105		15.72	4.84	0.094	4.11	144.2		400	41.42	
1110		15.84	4.81	0.095	4.17	149.6	0.63			
1115	24L	15.93	4.80	0.095	4.20	152.0				
1120		16.01	4.63	0.095	4.19	164.0				
1125		16.04	4.43	0.095	4.24	172.7		400	41.41	
1130		16.15	4.30	0.096	4.28	189.2				
1135		16.26	4.24	0.095	4.26	188.9				
1140	40L	16.24	4.34	0.095	4.25	181.2				
1145		16.27	4.42	0.095	4.25	188.0	0.32	400	41.42	
1150		16.26	4.58	0.094	4.23	173.5				
1155		16.28	4.53	0.094	4.29	1738				
1200		16.24	4.66	0.094	4.24	1731				
1205	52L	16.34	4.59	0.094	4.32	178.2				
1210										Sample

RESOLUTION CONSULTANTS

Well ID: RE103D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/23/14 | Time: Start 830 am/pm
Project No: 60266526 | Finish 1500 am/pm
Site Location: Avoca & Martin
Weather Conds: 65° sunny | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 67.3 c. Length of Water Column 63.1 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 4.46 d. Calculated System Volume (see back) 522 L / 138 gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	644125
	Hanna	HI 98703	U615RX

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1235									41.24	
1305		11.42	4.84	0.035	5.93	9.0				
1315		12.39	4.84	0.033	7.21	9.7		400		
1320		17.98	4.85	0.033	7.70	11.1				
1325	20L	12.64	4.91	0.033	7.86	8.9				
1330		12.52	4.85	0.032	8.16	14.5			41.18	
1335		12.59	4.87	0.032	8.19	25.4		400		

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)

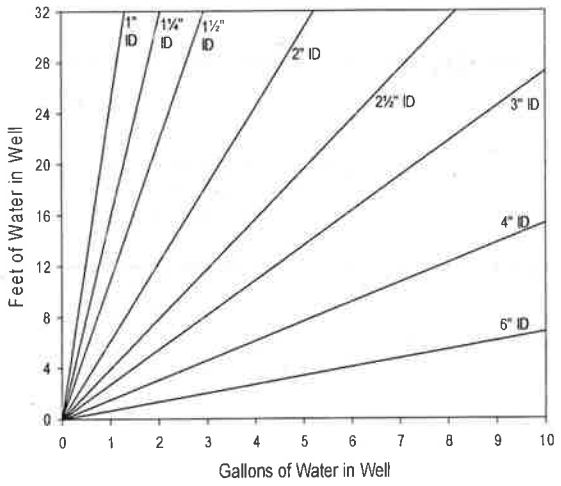
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D2-GW-09232014	40-mL vial	3	HCl	VOCs	1445
	1-L amber	2	none	1,4-Dioxane	1445

Comments

Signature Paul Kareth Date 9/23/14

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: RE103D2 Start 1235

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1340		17.54	4.89	0.038	8.27	40.0	3.86	400	41.18	
1345		17.43	4.88	0.032	8.31	54.1				
1350		17.54	4.96	0.032	8.31	73.2				
1355		17.56	4.97	0.032	8.32	64.1				
1400		17.57	4.95	0.032	8.33	53.6				
1405		17.45	4.98	0.032	8.35	70.5			14.12	
1410	40L	17.40	4.94	0.032	8.35	66.9				
1415		17.43	4.96	0.032	8.37	68.0	0.37			
1420		17.50	4.93	0.032	8.36	95.4				
1425		17.40	4.95	0.032	8.38	85.2	0.47			
1430		17.39	4.94	0.032	8.41	79.6				
1435		17.32	4.88	0.032	8.40	70.3				
1440	5L	17.38	4.91	0.032	8.38	67.2		400	14.10	(13gal)
1445		17.52	4.92	0.032	8.33	65.7				
1445										Sample.

RESOLUTION CONSULTANTS

Well ID: RE103D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/23/14 | Time: Start 830 am/pm
Project No: 60266526 | Finish 1130 am/pm
Site Location: Avocado Mountain
Weather Conds: sunny 65° | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 41.60 c. Length of Water Column 6.31 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 6.73 d. Calculated System Volume (see back) 52L / 13gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	46 1514x	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1015		16.31	5.17	0.027	4.84	7.8		500 ml/min		
1020		15.89	5.16	0.034	4.83	9.1				
1025		15.67	5.10	0.031	4.82	8.6				
1030		15.71	5.04	0.027	4.81	10.1			41.69	clear
1035		15.72	4.85	0.027	4.64	12.9				
1040		15.77	4.69	0.026	4.64	11.7	4.76		41.85	
1045		15.79	4.43	0.026	5.08	19.2				clear

(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.

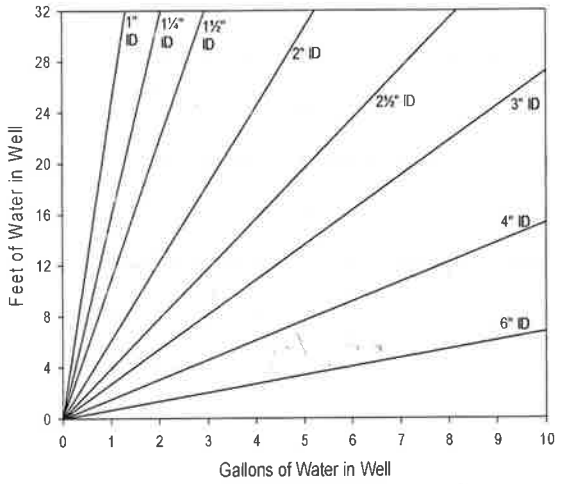
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE103D3-GW-09232014	40-mL vial	3	HCl	VOCs	1200
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature [signature] Date 9/23/14

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. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1050	16 L	15.81	4.43	0.026	5.12	20.8				clear
1055		15.82	4.27	0.026	5.07	21.9				
1100		15.79	4.30	0.026	5.00	17.5			41.82	
1105		15.83	4.31	0.026	5.04	18.5				
1110		15.85	4.26	0.027	5.13	24.9	1.87	450		clear
1115		15.84	4.27	0.027	5.18	26.6				
1120	32 L	15.79	4.22	0.027	5.14	30.3				clear
1125		15.84	4.26	0.027	5.13	27.7				
1130		15.83	4.24	0.027	5.17	28.4	1.20		41.91	clear
1135		15.80	4.26	0.027	5.16	29.8				
1140		15.80	4.21	0.027	5.16	29.2	1.18		41.91	clear
1145	[redacted]	15.84	4.20	0.027	5.16	27.4				
1150		15.79	4.16	0.027	5.15	37.6	0.58		41.91	clear
1155	13 gal	15.81	4.16	0.027	5.14	37.8				
1200		15.77	4.14	0.027	5.11	37.5				clear

RESOLUTION CONSULTANTS

Well ID: RE 104 DI

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9 / 24 / 14 | Time: Start 1030 am/pm | Finish 1240 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: 65 70's sunny | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 37.5 c. Length of Water Column 33.8 (a-b)

b. Water Table Depth 36.53 d. Calculated System Volume (see back) 13gal/52L

Casing Diameter/Material: 4-inch PVC

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	5.56	70390/55465
	Hanna	98703	11615/4X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1040								500	36.53	
1105		14.93	4.62	0.063	5.61	210.6				
1110		14.95	4.68	0.063	5.38	209.8				
1115		14.97	3.95	0.063	5.31	210.2				
1120	20L	15.07	4.42	0.063	5.19	212.0				
1125		15.06	7.45	0.063	5.11	213.5	1.45	500	36.49	
1130		15.20	5.23	0.063	5.09	190.0				

(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.

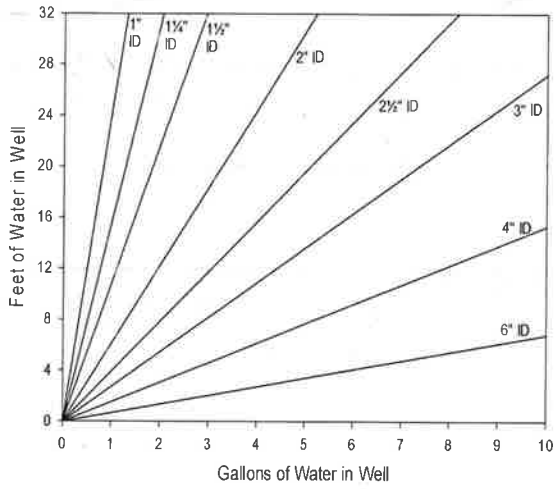
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104DI-GW-09242014	40-mL vial	3	HCl	VOCs	1225
RE104DI-GW-09242014	1-L amber	2	none	1,4-Dioxane	1225

Comments

Signature: Paul Kareth Date: 9/24/14

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: RE104D1 start 1040

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1135		15.11	5.73	0.063	5.14	170.4		500	36.48	
1140		15.17	5.32	0.063	5.01	158.6				
1145		15.13	5.24	0.063	5.13	154.5				
1150		15.19	4.85	0.063	5.03	150.3	0.65			
1155	40L	15.33	4.94	0.064	4.99	146.4				
1200		15.22	4.93	0.063	4.96	146.0	0.66			
1205		15.22	4.86	0.063	4.96	145.5		500	36.40	
1210		15.25	4.91	0.063	4.90	144.9	0.74			
1215		15.24	4.98	0.063	4.90	144.0				
1220	51L	15.26	5.00	0.063	4.86	145.8	0.54		36.35	13 gal
1225										Sample

RESOLUTION CONSULTANTS

Well ID: RE104D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/24/14 | Time: Start 840 am/pm
Project No: 60266526 | Finish 1030 am/pm
Site Location: Hilltop
Weather Conds: 72° F, sunny, clear | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 73.5 c. Length of Water Column 69.3 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 42.30 d. Calculated System Volume (see back) 13 gallons

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	11690847
Hanna	HI	57465

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0840		14.76	4.77	0.025	6.38	72.7		300 ml/m	42.45	clear
0845		14.75	4.73	0.025	6.30	77.1	7.86		42.48	
0850		14.77	4.72	0.025	6.03	88.7				clear
0855		14.75	4.86	0.025	5.84	100.3		425 ml/m → 10% Re 7.8 (mP CPM 3)		
0900		14.76	4.85	0.024	5.87	101.3			42.51	clear
0905		14.74	4.91	0.024	5.99	108.2				
0910		14.73	4.90	0.024	5.98	108.6	4.08			clear

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)

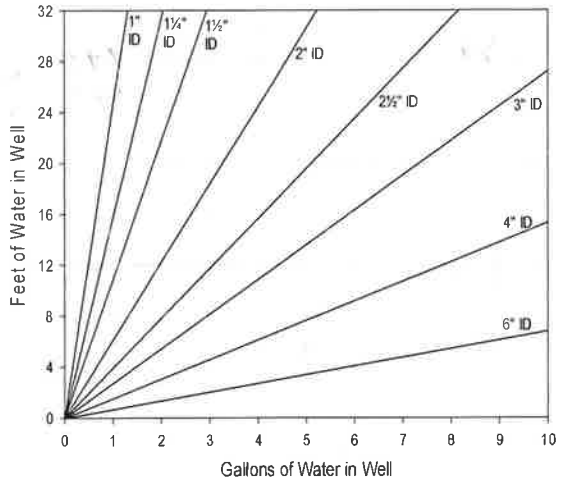
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D2-GW-09242014	40-mL vial	3	HCl	VOCs	1020
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature [signature] Date 9/24/14

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: RE104D2

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0915	15 L	14.74	4.93	0.023	6.21	110.5		425		clear
0920		14.75	5.00	0.021	6.51	114.0				
0925		14.78	5.07	0.021	6.57	120.4				clear
0930		14.78	5.06	0.021	6.58	120.9		450	42.56	
0935		14.77	5.11	0.021	6.59	127.8				clear
0940		14.76	5.11	0.021	6.61	128.9	2.34		42.44	
0945	32 L	14.77	5.14	0.021	6.59	132.9				clear
0950		14.81	5.15	0.021	6.55	134.9		450		
0955		14.80	5.15	0.021	6.53	135.1				clear
1000		14.78	5.16	0.021	6.57	137.2			42.11	
1005		14.79	5.18	0.021	6.52	141.7	1.87			clear
1010		14.79	5.17	0.020	6.50	141.8				
1015		14.79	5.19	0.021	6.53	142.1		450		clear
1020		14.79	5.19	0.021	6.57	142.3				

RESOLUTION CONSULTANTS

Well ID: RE104D3

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/24/14 | Time: Start 740 am/pm | Finish 1000 am/pm
Project No: 60266526
Site Location: Hilltop
Weather Conds: 65-75° Sunny | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 785 c. Length of Water Column 742 (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 42.83 d. Calculated System Volume (see back) 13gal/20L

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	544651703901
Hanna	HI 98703	08151

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
810									42.45	
830		14.97	5.02	0.021	5.67	57.0		500		
835		14.95	5.06	0.020	5.75	58.2				
840		14.94	4.90	0.019	6.02	64.1			43.81	
845	20L	14.96	4.83	0.019	6.33	75.0	17.6			
850		15.00	4.78	0.019	6.18	82.4				
855		15.03	4.91	0.019	6.23	89.8				

(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.

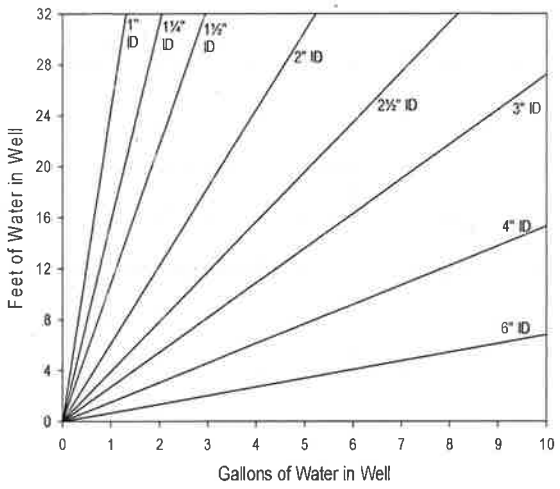
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE104D3-GW-09242014	40-mL vial	3	HCl	VOCs	950
RE104D3-GW-09242014	1-L amber	2	none	1,4-Dioxane	950

Comments

Signature Paul Kareth Date 9/24/14

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: RE10803 start 810

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
900		15.05	4.81	0.019	6.24	97.3	10.4	500	43.20	
905		15.06	4.77	0.019	6.22	110.0				
910		15.06	4.79	0.019	6.12	115.7				
915		15.07	4.92	0.019	6.12	127.7				
920		15.07	4.87	0.019	6.19	136.9				
925	40L	15.07	5.01	0.019	6.13	144.7	12.8			
930		15.13	4.85	0.019	6.14	152.6	10.5	500	43.28	
935		15.15	4.76	0.019	6.14	161.8	11.5			
940		15.13	4.86	0.019	6.15	164.3	11.2			
945	52L	15.10	4.80	0.019	6.19	170.6	11.3			
95										
950										sample

RESOLUTION CONSULTANTS

Well ID: RE108D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage Date: 9/24/14 Time: Start 1330 am/pm
Project No: 60266526 Finish 1600 am/pm
Site Location: Ceil and Greene
Weather Conds: 70° cloudy Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 54.5' c. Length of Water Column 50.5' (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 40.45 d. Calculated System Volume (see back) 52L/13gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	6442/54965
	Hanna	H198703	14615/14X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1400								500		
1425		15.72	5.10	0.082	10.12	138.2			40.39	
1430	20L	15.75	5.09	0.082	8.42	134.1				5gal
1435		15.70	5.05	0.082	8.43	133.9		500		
1440		15.67	5.10	0.082	8.41	133.7			40.35	
1445		15.58	5.00	0.082	8.41	134.9				
1450		15.56	4.97	0.081	8.38	136.1				

(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.

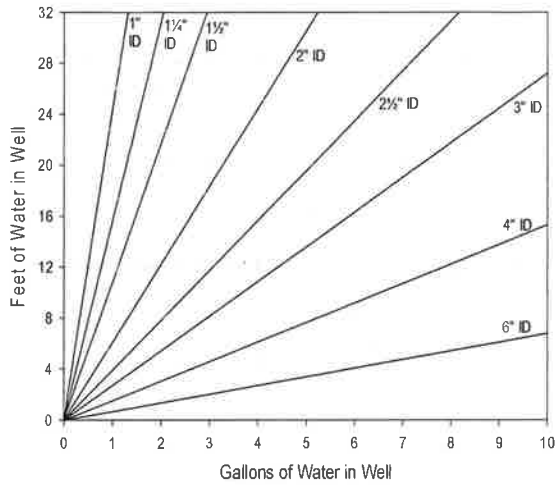
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE108D1-GW-09242014	40-mL vial	3	HCl	VOCs	
RE108D1-GW-09242014	1-L amber	2	none	1,4-Dioxane	1540
MS, MSD					

Comments

Signature Paul Kareth Date 9/24/14

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: RE108D1 start 1400

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1455		15.55	4.94	0.081	8.37	137.4		500	40.32	
1500		15.56	4.93	0.081	8.33	138.7	1.13			
1505	406	15.57	4.92	0.081	8.31	138.7				10 gal
1510		15.61	5.08	0.082	8.30	138.3				
1515		15.58	5.02	0.082	8.32	136.9	1.36			
1520		15.48	4.96	0.080	8.27	137.5	1.48		40.31	
1525		15.61	4.91	0.082	8.28	139.0				
1530	522	15.51	4.99	0.081	8.31	138.5				13 gal
1540										

Well ID: RE108D2

RESOLUTION CONSULTANTS

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage Date: 9/24/14 Time: Start 1420 am/pm
Project No: 60266526 Finish 1700 am/pm
Site Location: Ceil P1 and Corona
Weather Conds: 72°F sunny, light wind Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 655 c. Length of Water Column 614 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 40.92' d. Calculated System Volume (see back) 52L/13gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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 98703	0615HX

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1420		17.23	4.80	0.079	5.64	94.7		350ml/m	41.22'	clear
1425		17.24	4.72	0.077	5.41	106.2				
1430		16.86	4.72	0.077	4.29	107.9				clear
1435		16.83	4.73	0.077	4.23	108.0				
1440		16.81	4.73	0.077	4.20	108.2				
1445		16.79	4.73	0.077	4.14	108.5		375	40.89	clear
1450		16.65	7.75	0.076	4.02	117.6				

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)

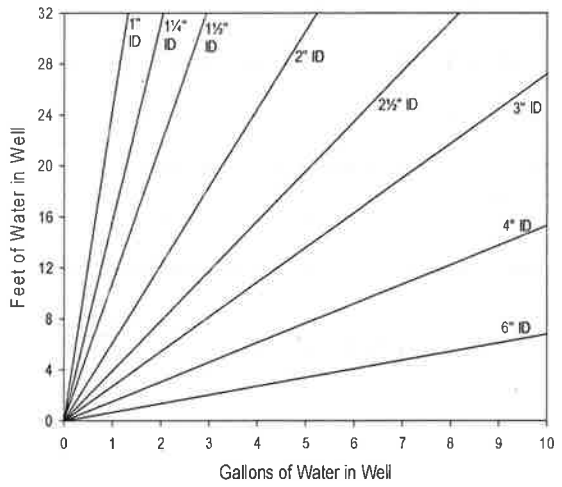
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE108D2-GW-09242014	40-mL vial	3	HCl	VOCs	1635
	1-L amber	2	none	1,4-Dioxane	
*Duplicate-GW-09242014	40-mL vial	3	HCl	VOCs	1800
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Date 9/24/14

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: RE108D2 –

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1455		16.45	4.83	0.073	3.85	117.8				clear
1500		16.43	4.84	0.075	3.81	118.6	3.59	400ml/m	40.90	
1505		16.67	4.95	0.075	3.73	120.6				clear
1510		16.67	4.97	0.074	3.66	119.6				
1515	18 L	16.81	5.09	0.075	3.81	116.4				clear
1520		16.09	4.82	0.073	4.34	135.6		400ml/m		
1525		16.10	4.81	0.073	4.32	136.0				clear
1530		16.09	4.90	0.072	4.36	135.2			41.85	
1535		16.08	4.92	0.072	4.36	136.6	1.93			clear
1540		16.02	4.97	0.072	4.33	136.1				
1545		15.95	4.97	0.072	4.36	137.9				
1550		15.93	4.97	0.072	4.37	138.2			41.84	clear
1555		15.53	4.98	0.071	5.46	147.7		500ml	→	switched to gasgen
1600		15.55	4.97	0.071	5.17	147.8				
1605		15.55	4.94	0.071	4.70	143.5				clear
1610		15.53	4.95	0.071	4.70	143.4	1.10		41.81	
1615		15.52	4.95	0.071	4.74	143.7				
1620		15.45	4.96	0.071	4.83	144.2	1.05			clear
1625		15.47	4.98	0.071	4.86	144.2				
1630		15.45	4.98	0.070	4.86	144.3	1.03			clear
1635	12 gal	15.41	4.97	0.070	4.82	144.7				

RESOLUTION CONSULTANTS

Well ID: TT101D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/25/14 | Time: Start 1115 am/pm
Project No: 60266526 | Finish 1300 am/pm
Site Location: 22 Wadsworth St
Weather Conds: 65°F, rain, windy | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 765 c. Length of Water Column 729 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 36.31 d. Calculated System Volume (see back) 526 / 139gal

2. WELL PURGE DATA

a. Purge Method: ~~Geotech bladder pump with drop tube assembly~~ dedicated 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	64425
Hanna		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1115		15.70	4.79	0.037	2.70	139.7		500 ml/m		clear
1120		15.71	4.82	0.037	2.79	136.8				
1125		15.71	4.88	0.037	2.99	133.6				
1130		15.71	4.91	0.037	3.34	131.8				
1135		15.72	4.94	0.037	3.79	130.7				
1140		15.73	4.96	0.037	4.03	130.2	0.89	500	36.05	
1145		15.75	4.97	0.037	4.14	129.9				

(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.

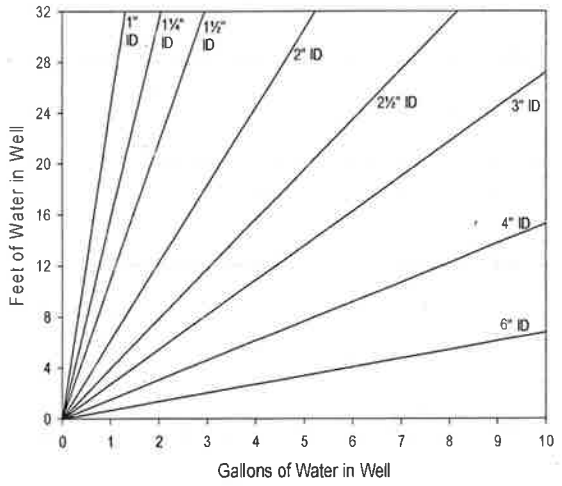
3. SAMPLE COLLECTION: Method: Geotech bladder pump, dedicated pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT101D2-GW-09252014	40-mL vial	3	HCl	VOCs	1245
	1-L amber	2	none	1,4-Dioxane	1245

Comments

Signature [signature] Date 9/25/14

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: TT10102

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1150		15.74	4.97	0.037	4.50	130.8	0.52	500	36.10	
1155		15.74	4.97	0.037	5.03	132.2				
1200		15.74	4.97	0.038	6.03	135.1				
1205		15.73	4.95	0.039	6.27	136.7			36.07	
1210		15.74	4.96	0.039	6.32	137.3	2.04			
1215		15.72	4.96	0.039	6.40	138.5	1.06		36.01	
1220	40L	15.72	4.96	0.039	6.38	139.0				10 gal
1225		15.72	4.97	0.039	6.35	139.7				
1230		15.72	4.97	0.039	6.48	140.1				
1235		15.72	4.97	0.039	6.50	140.5	0.12	500	35.98	
1240	52L	15.73	4.98	0.038	6.48	140.7			35.89	13 gal
1245										Sample

RESOLUTION CONSULTANTS

Well ID: TT101D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage | Date: 9/25/14 | Time: Start 900 am/pm | Finish 1115 am/pm
Project No: 60266526
Site Location: Wolfsworth
Weather Conds: rain 65-70° | Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 595 c. Length of Water Column 560 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 35.55 d. Calculated System Volume (see back) 139gal/526L

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly (Permanent 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 / 70390
Horiba

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
940								900	35.55	
945		15.73	4.93	0.108	1.35	112.5				
950		15.79	4.89	0.110	1.18	112.3	1.90	500	35.55	
955		15.81	4.32	0.102	0.76	118.2				
1000	20L	15.98	4.29	0.099	0.62	124.5			35.58	5gal
1005		15.97	4.41	0.096	0.57	132.3	2.82			
1010		15.86	4.52	0.086	0.68	140.7				

(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.

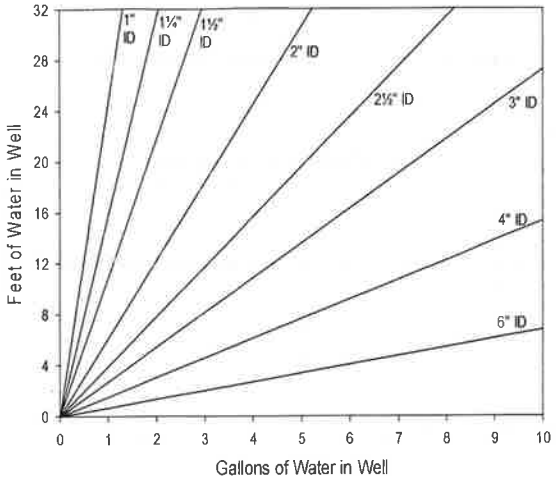
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT101D1-GW-092514	40-mL vial	3	HCl	VOCs	1100
	1-L amber	2	none	1,4-Dioxane	1100

Comments

Signature Paul Kareth Date 9/25/14

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: TT101D1 start 940

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1015		15.65	4.49	0.086	0.64	147.4		500	35.53	
1020		15.86	4.47	0.087	0.60	155.0	1.31			
1025		15.84	4.49	0.086	0.59	160.2				
1030	40L	15.84	4.51	0.089	0.56	162.0	1.37	500	35.50	
1035		15.84	4.50	0.085	0.54	171.2				
1040		15.83	4.46	0.085	0.55	174.7	1.30			
1045		15.84	4.48	0.084	0.52	179.0			35.50	
1050	52L	15.84	4.42	0.085	0.51	184.5				13 gal
1100										Sample

RESOLUTION CONSULTANTS

Well ID: TT101D

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage Date: 9/25/14 Time: Start 0950 am/pm
Project No: 60266526 Finish 1100 am/pm
Site Location: 22 Wadsworth Street, NY
Weather Conds: 65°F, heavy rain Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 350 c. Length of Water Column 317 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 33.35' d. Calculated System Volume (see back) 524/13 gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	
	Horiba		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0950		15.56	4.16	0.083	1.59	56.0		500 ml/min	33.35'	clear-yellow tint
0955		15.53	4.22	0.083	1.02	56.1				
1000		15.52	4.23	0.083	0.98	55.9		↓		
1005		15.51	4.36	0.083	0.60	57.2	5.89		33.41	" "
1010		15.51	4.37	0.084	0.60	57.4				
1015	5 gal	15.50	4.38	0.083	0.61	57.5		↓		
1020		15.55	4.43	0.083	0.66	60.8	4.82		33.42	clear

(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.

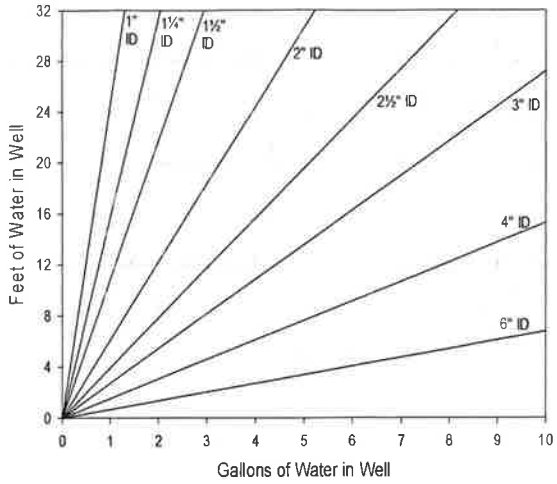
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TT101D-GW-09252014	40-mL vial	3	HCl	VOCs	1110
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature Date 9/25/14

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: TT101P

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
1025		15.55	4.45	0.084	0.65	64.7	1.89			clear
1030		15.54	4.46	0.084	0.61	67.7		500 ml/m		
1035	10gal	15.53	4.48	0.084	0.60	73.9			33.39	clear
1040		15.53	4.48	0.085	0.59	77.4	1.02			
1045		15.53	4.48	0.085	0.59	79.0				clear
1050		15.57	4.49	0.085	0.53	79.2	0.51			
1055		15.57	4.49	0.085	0.54	79.4				
1110		15.51	4.48	0.085	0.55	79.7				sampled
[redacted]										
[redacted]										
[redacted]										

RESOLUTION CONSULTANTS

Well ID: RE105D1

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage Date: 9 / / 14 Time: Start 840 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Lincoln
Weather Conds: _____ Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 555 c. Length of Water Column 516 (a-b)

Casing Diameter/Material: 4-inch PVC

b. Water Table Depth 38.79 d. Calculated System Volume (see back) 52 L / 13 gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	71293
	Hanna	HI98703	U61514X

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
900								450	38.75	
920		15.21	6.16	0.104	1.96	56.8			38.72	
925		15:28	6.12	0.103	1.65	58.5				
930		15:26	6.52	0.108	1.55	58.7		480	38.63	
935		15:31	6.53	0.106	1.48	58.7				
940	20L	15:31	6.52	0.105	1.40	61.1	2.39			Signt
945		15:41	6.55	0.105	1.44	61.7				

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)

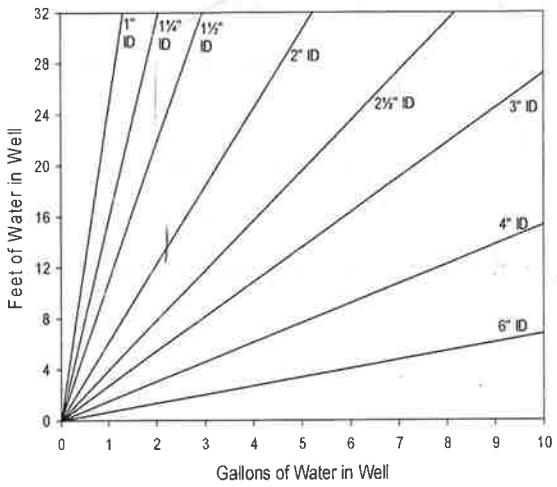
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
	40-mL vial	3	HCl	VOCs	
	1-L amber	2	none	1,4-Dioxane	

Comments _____

Signature _____ Date _____

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: KE105D1 start 9:00

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
950		15.39	6.61	0.104	1.42	62.4	2.07	490	38.60	
955		15.40	6.60	0.103	1.36	65.5				
1000		15.39	6.59	0.103	1.35	66.9				
1005		15.38	6.54	0.103	1.35	71.7	1.70	500	38.58	
1010		15.37	6.50	0.103	1.29	77.8				
1015	40L	15.39	6.58	0.103	1.26	76.0			38.55	10 gal
1020		15.40	6.57	0.102	1.24	78.1	1.32			
1025		15.40	6.56	0.103	1.20	82.7			38.53	
1030		15.41	6.57	0.102	1.18	84.0				
1035		15.37	6.55	0.102	1.16	88.3				
1040	52L	15.40	6.56	0.102	1.16	89.3	1.59			13 gal
1050										Sample

RESOLUTION CONSULTANTS

Well ID: RE105D2

Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Betrhpage Date: 9/26/14 Time: Start 0815 am/pm
Project No: 60266526 Finish _____ am/pm
Site Location: Lincoln
Weather Conds: Sunny 60-70° Collector(s): P. Kareth, S. Meissner

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

a. Total Well Length 756 c. Length of Water Column 712 (a-b) Casing Diameter/Material 4-inch PVC

b. Water Table Depth 41.61 d. Calculated System Volume (see back) 52L/13gal

2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

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	469804
	Hanna	HI 98703	461514

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0840		15.91	5.32	0.101	5.54	90.6		300ml/m		clear
0845		15.76	5.31	0.101	5.43	92.6				
0850		15.64	5.32	0.102	5.38	92.7				
0855		15.62	5.33	0.100	5.37	92.6				clear
0900		15.61	5.33	0.101	5.30	93.1				
0905		15.59	5.30	0.100	5.24	93.4				
0910		15.58	5.28	0.100	5.18	94.4	1.31		40.11	clear

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)

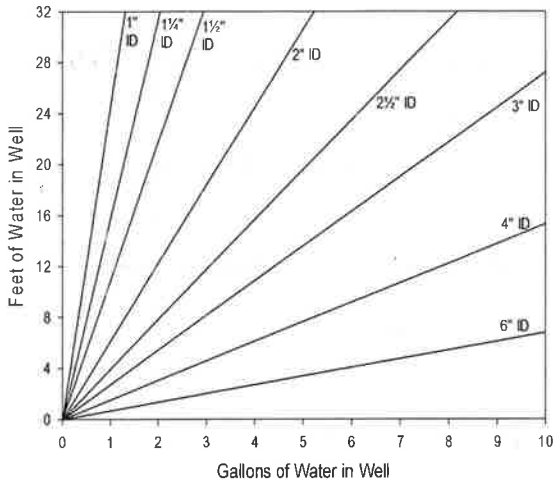
3. SAMPLE COLLECTION: Method: Geotech bladder pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RE105D2-GW-09262014	40-mL vial	3	HCl	VOCs	1040
	1-L amber	2	none	1,4-Dioxane	

Comments

Signature _____ Date 9/26/14

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: RE105D2

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Depth to water (ft)	Color/Odor
0915		15.35	5.15	0.100	4.51	101.3		425 mL/m		clear
0920		15.34	5.12	0.100	4.43	103.1		↓	40.13	
0925	5 gal	15.31	5.08	0.100	4.33	105.0		↓		
0930		15.29	5.02	0.101	4.32	107.8			39.90	clear
0935		15.29	4.98	0.106	4.77	117.6	0.57			
0940		15.34	4.98	0.106	4.83	126.2				clear
0945		15.34	5.06	0.105	4.77	132.8				
0950		15.34	5.06	0.105	4.76	132.5				clear
0955		15.33	5.07	0.105	4.73	132.3			39.80	
1000		15.35	5.04	0.105	4.71	135.8		425		clear
1005	10 gal	15.35	5.05	0.105	4.71	135.4	0.63			
1010		15.32	5.01	0.106	4.78	137.5				clear
1015		15.30	5.02	0.106	4.75	137.2			39.78	
1020		15.32	5.05	0.106	4.64	139.6				clear
1025		15.33	4.95	0.106	4.63	142.7				
1030		15.34	4.94	0.106	4.64	141.9				
1035		15.33	4.95	0.106	4.62	140.2				clear
1040	→ Sampled									

Appendix B

Analytical Lab Sheets

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-1
Client ID: RE103D1-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9149.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	J	0.28	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		5.9	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		16	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~~ UJ	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		4.5	ug/L	1	1	1.0	0.21	0.50
Chloroform		1.0	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.55	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	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~~ 850	~~1000~~ 3500	ug/L	20 1	1	20 ~~1.0~~ 5.6	~~0.28~~	10 ~~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	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	0.82	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene		4.7	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: SH8060-1
Client ID: RE103D1-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9149.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		4.5	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		93.3	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		96.4	%					
Dibromofluoromethane		89.6	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-2
Client ID: RE103D2-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9150.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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		1.1	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		5.3	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~~ UJ	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	0.73	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.8	ug/L	1	1	1.0	0.21	0.50
Chloroform		1.1	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	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~~ 1300	~~760~~	ug/L	20 ✗	1	20	~~1.0~~ 5.6	~~0.28~~ 10 ~~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	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	0.47	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene		1.1	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: SH8060-2
Client ID: RE103D2-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9150.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)	J	1.8	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		91.7	%					
Toluene-d8		97.7	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		95.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-3
Client ID: RE103D3-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9151.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	0.39	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		2.6	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~~ UJ	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	0.55	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.69	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	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~~ 460	~~490~~	ug/L	10 ~~1~~	1	10 ~~1.0~~	2.8 ~~0.28~~	5.0 ~~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	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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10/31/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-3
Client ID: RE103D3-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9151.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)	J	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		92.3	%					
Toluene-d8		99.1	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		96.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-6
Client ID: RE104D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9154.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	J	0.52	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		1.2	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		5.9	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~~ UJ	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	0.40	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		1.8	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	J	0.31	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	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		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	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		2.8	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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RE 10/2/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-6
Client ID: RE104D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9154.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)	J	1.8	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		92.3	%					
Toluene-d8		98.6	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		96.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-5RA
Client ID: RE104D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9199.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	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~~ UJ	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		1.5	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.54	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	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		2.3	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	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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10/31/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-5RA
Client ID: RE104D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9199.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)	J	1.5	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~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.5	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		104.	%					

10/31/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-4RA
Client ID: RE104D3-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9172.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 26-SEP-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG150911

Analysis Date: 26-SEP-14
Analyst: DJP
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	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~~ UJ	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	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	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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10/31/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-4RA
Client ID: RE104D3-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9172.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 26-SEP-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG150911

Analysis Date: 26-SEP-14
Analyst: DJP
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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		98.0	%					
1,2-Dichloroethane-d4		98.9	%					
Dibromofluoromethane		94.4	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-7
Client ID: RE108D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9155.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	0.43	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		1.4	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~~ UJ	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	0.44	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	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	~~M~~ J	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	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		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	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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10/21/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-7
Client ID: RE108D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9155.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)	J	0.44	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		92.0	%					
Toluene-d8		97.4	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		96.5	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-8
Client ID: RE108D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9156.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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		7.6	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		7.4	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~~ UJ	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		4.8	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		3.5	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane		1.2	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	J	0.83	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~~ 3700	~~1700~~	ug/L	40 ~~1~~	1	40 ~~1.0~~	11 0.28	20 ~~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	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		1.7	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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10/21/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-8
Client ID: RE108D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9156.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		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		96.4	%					
Toluene-d8		104.	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		98.2	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-9
Client ID: DUP-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9157.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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		7.6	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		7.5	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~~ UJ	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		5.2	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		9.7	ug/L	1	1	1.0	0.21	0.50
Chloroform		3.6	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane		1.1	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	J	0.88	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~~ 3500	1700	ug/L	40 1	1	40 ~~1.0~~	11 0.28	20 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	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		1.7	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	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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10/31/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-9
Client ID: DUP-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: C9157.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG150828

Analysis Date: 25-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		9.7	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		92.2	%					
Toluene-d8		101.	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		97.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-1DL
Client ID: RE103D1-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3986.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		21	ug/L	3	.25	0.71	0.24	0.51
1,4-Dioxane-D8		94.2	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-2
Client ID: RE103D2-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3976.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		2.2	ug/L	1	.25	0.24	0.081	0.17
1,4-Dioxane-D8		80.8	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-3
Client ID: RE103D3-GW-09232014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3977.D

Sample Date: 23-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-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		108.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-4
Client ID: RE104D3-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3978.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-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		85.0	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-5
Client ID: RE104D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3979.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	0.14	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		110.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-6
Client ID: RE104D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3980.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		9.1	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		71.1	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-6
Client ID: RE104D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3980.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		9.1	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		71.1	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-7
Client ID: RE108D1-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3981.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	~~MM~~ J	9.0	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		89.5	%					

10/31/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-8DL
Client ID: RE108D2-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N4033.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 03-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		5.8	ug/L	2	.25	0.47	0.16	0.34
1,4-Dioxane-D8		60.8	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8060-9
Client ID: DUP-GW-09242014
Project: Navy Clean WE15-03-06 NW
SDG: SH8060
Lab File ID: N3985.D

Sample Date: 24-SEP-14
Received Date: 25-SEP-14
Extract Date: 25-SEP-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG150840

Analysis Date: 29-SEP-14
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 07-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane		7.3	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		92.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-1
Client ID: TT101D1-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9207.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	J	1.8	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	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		4.7	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		16	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~~ UJ	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	0.74	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		2.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.93	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	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	0.94	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	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	0.40	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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R 10/2/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-1
Client ID: TT101D1-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9207.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		2.0	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~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.0	%					
Toluene-d8		99.0	%					
1,2-Dichloroethane-d4		105.	%					
Dibromofluoromethane		103.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-2
Client ID: TT101D-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9208.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane		2.1	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	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		4.0	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		20	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~~ UJ	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	0.85	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		3.3	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	0.42	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	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		66	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	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: SH8166-2
Client ID: TT101D-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9208.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		3.3	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 UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.9	%					
Toluene-d8		101.	%					
1,2-Dichloroethane-d4		108.	%					
Dibromofluoromethane		106.	%					

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-3
Client ID: TT101D2-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9209.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	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		5.7	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		22	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~~ UJ	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	0.92	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene		2.2	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.93	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.49	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	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~~ 560	~~600~~	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	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	0.63	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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R 10/22/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-3
Client ID: TT101D2-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9209.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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)		2.2	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~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.6	%					
Toluene-d8		104.	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		108.	%					

R 10/22/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-4
Client ID: TRIP BLANK
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9196.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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	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~~ UJ	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	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	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: SH8166-4
Client ID: TRIP BLANK
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: C9196.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 29-SEP-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151040

Analysis Date: 29-SEP-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 01-OCT-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~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.3	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		104.	%					
Dibromofluoromethane		99.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-1DL
Client ID: TT101D1-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: N4035.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 01-OCT-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG151243

Analysis Date: 03-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	9.6	ug/L	2	.25	0.48	0.16	0.34
1,4-Dioxane-D8		90.9	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-2
Client ID: TT101D-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: N4022.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 01-OCT-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG151243

Analysis Date: 02-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	9.1	ug/L	1	.25	0.24	0.080	0.17
1,4-Dioxane-D8		74.5	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8166-3
Client ID: TT101D2-GW-09252014
Project: Navy Clean WE15-03-06 NW
SDG: SH8166
Lab File ID: N4023.D

Sample Date: 25-SEP-14
Received Date: 27-SEP-14
Extract Date: 01-OCT-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG151243

Analysis Date: 02-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	2.9	ug/L	1	.25	0.24	0.082	0.17
1,4-Dioxane-D8		61.2	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-1
Client ID: RE105D1-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9252.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	J	0.75	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		1.6	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	0.33	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	0.40	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	J	0.52	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	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		92	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	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: SH8194-1
Client ID: RE105D1-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9252.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-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)	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		92.0	%					
Toluene-d8		98.0	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		97.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-2
Client ID: RE105D2-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9253.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-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		5.5	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		28	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		3.5	ug/L	1	1	1.0	0.21	0.50
Chloroform		2.2	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		3.5	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~~ 1500	~~1200~~	ug/L	20 ~~1~~	1	20 ~~1.0~~	5.6 ~~0.28~~	10 ~~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	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	0.79	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: SH8194-2
Client ID: RE105D2-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9253.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-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)		3.5	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		93.9	%					
Toluene-d8		100.	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		99.8	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-3
Client ID: TRIP BLANK
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9246.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-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	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	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	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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FE 10/21/14

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-3
Client ID: TRIP BLANK
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: C9246.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG151252

Analysis Date: 01-OCT-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-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		92.0	%					
Toluene-d8		98.0	%					
1,2-Dichloroethane-d4		99.0	%					
Dibromofluoromethane		97.9	%					

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ANALYTICAL SERVICES

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nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-1DL
Client ID: RE105D1-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: N4034.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG151243

Analysis Date: 03-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	12	ug/L	3	.25	0.71	0.24	0.51
1,4-Dioxane-D8		84.9	%					

10/31/14

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ANALYTICAL SERVICES

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nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH8194-2
Client ID: RE105D2-GW-09262014
Project: Navy Clean WE15-03-06 NW
SDG: SH8194
Lab File ID: N4020.D

Sample Date: 26-SEP-14
Received Date: 30-SEP-14
Extract Date: 01-OCT-14
Extracted By: HG
Extraction Method: SW846 3520
Lab Prep Batch: WG151243

Analysis Date: 02-OCT-14
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 08-OCT-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,4-Dioxane	J	5.8	ug/L	1	.25	0.25	0.085	0.18
1,4-Dioxane-D8		92.3	%					

JR 10/31/14

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Appendix C

Data Validation

RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH8060	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 8270D-SIM for SVOCs (GC/MS), 1,4-Dioxane Only	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 10/22/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH8060_8260B and 8270D_SIM

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on September 23 and 24, 2014.

Sample ID	Matrix/Sample Type
DUPLICATE-GW-09242014	Field Duplicate of RE108D1-GW-09242014
RE103D1-GW-09232014	Groundwater
RE103D2-GW-09232014	Groundwater
RE103D3-GW-09232014	Groundwater
RE104D1-GW-09242014	Groundwater
RE104D2-GW-09242014	Groundwater
RE104D3-GW-09242014	Groundwater
RE108D1-GW-09242014	Groundwater
RE108D2-GW-09242014	Groundwater

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), *SW-846 Method 8270D, Semivolatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (USEPA, 2007), *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
✗	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 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.

The laboratory truncated the ID for the Duplicate in the report. The submitted EDD file reflects the full sample ID.

Holding Times and 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 8260B 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.

The 8270C data were reviewed to ensure that the decafluorotriphenylphosphine (DFTPP) 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 (ICV) percent recovery (%R) criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Tables A-1 and A-2.

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

VOC 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) nondetects 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.

VOC 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.

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). An equipment blank was not submitted with the samples in this data set.

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

Method 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

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

VOC nonconformances are summarized in Attachment A in Table A-3.

Data qualification to the analytes associated with the specific MS/MSD nonconformances was as follows:

Nonconformance	Action	
	Detected Compounds	Nondetected Compounds
%R> UL	J	No qualification
20% ≤ %R < LL	J	UJ
%R <20% (see note 1)	J	R*
%RPD > UL (see note 2)	J	No qualification
Note: Actions are applied to the native unspiked sample only (see note 3) *When the native sample concentration is >4X the concentration of the spike added (based on Region I criteria), evaluate the MS, MSD, and native sample with regards to %RSD rather than %R (professional judgment)		

Notes:

1. Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) nondetects 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.
2. In the absence of Region 2 guidance, RPD actions are based on professional judgment.
3. If a field duplicate sample was also collected for the native sample chosen for MS/MSD analysis, professional judgment is used to apply MS/MSD actions to the corresponding field duplicate sample as well as the native sample.

Qualified sample results are shown in Table 1.

LCS/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (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 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 not detected (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
DUPLICATE-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
DUPLICATE-GW-09242014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE103D1-GW-09232014	WG	ACETONE		2.5	UG/L	UJ	c
RE103D1-GW-09232014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE103D2-GW-09232014	WG	ACETONE		2.5	UG/L	UJ	c
RE103D2-GW-09232014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE103D3-GW-09232014	WG	ACETONE		2.5	UG/L	UJ	c
RE103D3-GW-09232014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE104D1-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
RE104D1-GW-09242014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE104D2-GW-09242014	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
RE104D2-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
RE104D3-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
RE104D3-GW-09242014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE108D1-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
RE108D1-GW-09242014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE108D1-GW-09242014	WG	TRICHLOROETHENE	140	0.50	UG/L	J	m
RE108D1-GW-09242014	WG	1,4-DIOXANE	9.0	0.17	UG/L	J	m,md
RE108D2-GW-09242014	WG	ACETONE		2.5	UG/L	UJ	c
RE108D2-GW-09242014	WG	CHLOROETHANE		1.0	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV ID	Compound	% R	Limits
WG150662-7	ACETONE	151	80-120%
Associated samples: all samples in SDG SH8060			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG150828-4	CHLOROETHANE	-25	≤20%
	ACETONE	-23	≤20%
Associated samples: RE103D1-GW-09232014, RE103D2-GW-09232014, RE103D3-GW-09232014, RE104D1-GW-09242014, RE108D1-GW-09242014, RE108D2-GW-09242014, DUPLICATE-GW-09242014			
WG150911-4	CHLOROETHANE	-26	≤20%
Associated samples: RE103D1-GW-09232014, RE103D2-GW-09232014, RE104D3-GW-09242014, RE108D2-GW-09242014, DUPLICATE-GW-09242014			
WG151040-4	ACETONE	-21	≤20%
	1,2-DRBROMO-3-CHLOROPROPANE	-25	≤20%
Associated samples: RE103D3-GW-09232014, RE104D2-GW-09242014			

Table A-3 - Matrix Spikes

Sample ID	Compound	MS % Recovery	MSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit
RE108D1-GW-09242014	BENZENE	116	124	80	120	7	30
RE108D1-GW-09242014	BROMODICHLOROMETHANE	114	124	75	120	8	30
RE108D1-GW-09242014	1,4-DIOXANE	179	5.83	10	93	31	30
RE108D1-GW-09242014	TRICHLOROETHENE	132	110	70	125	5	30
RE108D1-GW-09242014	TOLUENE	114	121	75	120	7	30
RE108D1-GW-09242014	XYLENES, TOTAL	111	119	89	116	6	30

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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CHAIN of CUSTODY

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Page ____ of ____

Client: AECOM
Contact: Eleanor Vivaudou
Phone #: (845) 425-4980
Fax #: (845) 425-498

Address: 100 Schoolhouse Rd Suite B-1
City: Chestnut Ridge
State: NY
Zip Code: 10977

Purchase Order #:
Proj. Name / No.: NWIRP Bethpage
Katahdin Quote #:

Bill (if different than above): ____ Address ____

Sampler (Print / Sign): Paul Kareth | Sara Meissner (signature)
Copies To:

LAB USE ONLY
WORK ORDER #: 5H8060
KATAHDIN PROJECT NUMBER ____

REMARKS: ____

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES [redacted]

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs (Filt. ☐Y ☐N)	1,4-Dioxane (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
RE103D1-GW-09232014	9/23/2014 / 1210	GW	5	X	X								
RE103D2-GW-09232014	9/23/2014 / 1445	GW	5	X	X								
RE103D3-GW-09232014	9/23/2014 / 1200	GW	5	X	X								
RE104D3-GW-09242014	9/24/2014 / 950	GW	5	X	X								
RE104D2-GW-09242014	9/24/2014 / 1020	GW	5	X	X								
RE104D1-GW-09242014	9/24/2014 / 1225	GW	5	X	X								
RE108D1-GW-09242014	9/24/2014 / 1540	GW	5	X	X								
RE108D1-GW-09242014MSD	9/24 / 1540	GW	5	X	X								
RE108D2-GW-09242014	9/24/2014 / 1635	GW	5	X	X								
DUPLICATE-GW-09242014	9/24/2014 / 1800	GW	5	X	X								
RE108D1-GW-09242014MS	9/24/2014 / 1540	GW	5	X	X								
	/												
	/												
	/												
	/												
	/												

COMMENTS
X RE108D1-GW-09242014MS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
(signature)	9/24/14 1730	(signature) 9-25-14/0900			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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COC1

RESOLUTION CONSULTANTS

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH8166	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 8270D-SIM for SVOCs (GC/MS), 1,4-Dioxane Only	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 10/29/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH8166_8260B and 8270D_SIM

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on September 25, 2014.

Sample ID	Matrix/Sample Type
TT101D1-GW-09252014	Groundwater
TT101D2-GW-09252014	Groundwater
TT101D-GW-09252014	Groundwater
TRIP BLANK_09252014	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), *SW-846 Method 8270D, Semivolatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (USEPA, 2007), *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)/laboratory control sample duplicate (LCSD) 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 and 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.

The 8270C data were reviewed to ensure that the decafluorotriphenylphosphine (DFTPP) 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 (ICV) percent recovery (%R) criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Tables A-1 and A-2.

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

VOC 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) nondetects 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.

VOC 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.

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). An equipment blank was not submitted with the samples in this data set.

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

Method 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/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

SVOC nonconformances are summarized in Attachment A in Table A-3.

Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:

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

Qualified sample results are shown in Table 1.

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 not detected (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
TRIP BLANK_09252014	WQ	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
TRIP BLANK_09252014	WQ	ACETONE		2.5	UG/L	UJ	c
TT101D1-GW-09252014	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
TT101D1-GW-09252014	WG	ACETONE		2.5	UG/L	UJ	c
TT101D1-GW-09252014	WG	1,4-DIOXANE	9.6	0.34	UG/L	J	lp
TT101D2-GW-09252014	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
TT101D2-GW-09252014	WG	ACETONE		2.5	UG/L	UJ	c
TT101D2-GW-09252014	WG	1,4-DIOXANE	2.9	0.17	UG/L	J	lp
TT101D-GW-09252014	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
TT101D-GW-09252014	WG	ACETONE		2.5	UG/L	UJ	c
TT101D-GW-09252014	WG	1,4-DIOXANE	9.1	0.17	UG/L	J	lp

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV ID	Compound	% R	Limits
WG150662-7	ACETONE	151	80-120%
Associated samples: all samples in SDG SH8166			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG151040-4	ACETONE	21	≤20%
	1,2-DIBROMO-3-CHLOROPROPANE	25	≤20%
Associated samples: all samples in SDG SH8166			

Table A-3 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	LCSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit	Associated Samples
WG151243-2	1,4-DIOXANE	64	87.5	10	93	31	30	TT101D-GW-09252014, TT101D1-GW-09252014, TT101D2-GW-09252014

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

RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH8194	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 8270D-SIM for SVOCs (GC/MS), 1,4-Dioxane Only	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 10/29/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH8194_8260B and 8270D_SIM

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on September 26, 2014.

Sample ID	Matrix/Sample Type
RE105D1-GW-09262014	Groundwater
RE105D2-GW-09262014	Groundwater
TRIP BLANK_09262014	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), *SW-846 Method 8270D, Semivolatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (USEPA, 2007), *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/equpment blanks/trip blanks
- ✓ Surrogate spike recoveries
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results

✗	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) 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 and 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.

The 8270C data were reviewed to ensure that the decafluorotriphenylphosphine (DFTPP) 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 (ICV) percent recovery (%R) criteria were met;
- the continuing calibration verification standard (CCV) method percent difference or percent drift (%Ds) and RF acceptance criteria were met; and/or
- the retention time method acceptance criteria were met.

Nonconformances are summarized in Attachment A in Table A-1

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

VOC 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.

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). An equipment blank was not submitted with the samples in this data set.

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

Method 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/LCSD Results

The LCS/LCSD %Rs and/or relative percent recoveries (RPDs) were reviewed for conformance with the QC acceptance criteria.

SVOC nonconformances are summarized in Attachment A in Table A-2.

Data qualification to the analytes associated with the specific LCS %Rs or RPDs was as follows:

Nonconformances[1]	Action	
	Detected Compounds	Nondetected Compounds
%R or RPD > UL	J	No qualification
%R < LL	J	UJ
%R < 20% (see note 1)	J	R
(LL = lower limit, UL = upper limit)		

Notes:

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

Qualified sample results are shown in Table 1.

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 not detected (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
RE105D1-GW-09262014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE105D1-GW-09262014	WG	1,4-DIOXANE	12	0.51	UG/L	J	lp
RE105D2-GW-09262014	WG	CHLOROETHANE		1.0	UG/L	UJ	c
RE105D2-GW-09262014	WG	1,4-DIOXANE	5.8	0.18	UG/L	J	lp
TRIP BLANK_09262014	WQ	CHLOROETHANE		1.0	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG151252-4	CHLOROETHANE	-30	≤20%
Associated samples: all samples in SDG SH8194			

Table A-2 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	LCSD % Recovery	Lower Limit	Upper Limit	RPD	RPD Limit	Associated Samples
WG151243-2	1,4-DIOXANE	64	87.5	10	93	31	30	RE105D1-GW-09262014, RE105D2-GW-09262014

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

Katahdin
ANALYTICAL SERVICES
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

Page 1 of 1

Client: RESCON | Contact: Eleanor Vivaudou | Phone #: (845) 425-4980 | Fax #: ( )

Address: 100 Red Schoolhouse Rd | City: Chestnut Ridge | State: NY | Zip Code: 10977

Purchase Order # | Proj. Name / No.: NWIRP Bethpage | Katahdin Quote #

Bill (if different than above) | Address

Sampler (Print / Sign): Paul Karchh | Copies To:

LAB USE ONLY | WORK ORDER #: 548194 | KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE / PRESERVATIVES: Filt. ☐Y ☐N VOCs	Filt. ☐Y ☐N 1,4-Dioxane	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
RE105D1-GW-092614	9-26-14 / 1050	GW	5	3	2								
RE105D2-GW-092614	9-26-14 / 1040	GW	5	3	2								
TRIP BLANK	9-19-14 / 1130	W	3	3									
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COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Paul Karchh	9-26-14 12:30			9-29-14 1400	Fedex
Relinquished By: (Signature)	Date / Time	Received By: (Signature) 9-30-2014 0900	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

COC1

000011

Katahdin ANALYTICAL SERVICES
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	Contact	Phone #	Fax #
ENCOM	Eleanor Vivaudou	(845) 425-4980	(845) 425-498

Address 100 Red Schoolhouse Rd, Suite 8 City Chestnut Ridge State New York Zip Code 10977

Purchase Order # Proj. Name / No. Bethpage Katahdin Quote #

Bill (if different than above) Address

Sampler (Print / Sign) Paul Karath / Sara Meitner Copies To: Eleanor Vivaudou

LAB USE ONLY WORK ORDER #: SH8166

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: VOCs (Filt. ☐Y ☐N)	1,4-Dioxane (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 ☐
TT101D1-GW-09252014	9/25/14 1100	GW	5	X	X								
TT101D-GW-09252014	9/25/14 1110	GW	5	X	X								
TT101D2-GW-09252014	9/25/14 1245	GW	5	X	X								
TRIP BLANK	9/19/14 1130	W	3	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	9/25/14 1460	Fedex	FedEx	092514 09:40	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)