2014 OU2 GROUNDWATER INVESTIGATION
VPB 147
BETHPAGE, NY

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Ave.
Norfolk, VA 23511-3095

Comprehensive Long-Term Environmental Action Navy
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CTO WE15

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List of Acronyms and Abbreviations

AOC	Area of Concern
bgs	below ground surface
DoD	Department of Defense
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency, United States
ft	feet
GOCO	Government-Owned Contractor-Operated
GPS	Global Positioning System
IDW	Investigation Derived Waste
IR	Installation Restoration
Katahdin	Katahdin Analytical Services, Inc
NAD	North American Datum
NAVD	North American Vertical Datum
NAVFAC	Naval Facilities Engineering Command
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PID	Photoionization Detector
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
SAP	Sampling and analysis plan
SVOC	Semivolatile Organic Compounds
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
UFP	United Federal Programs
VOC	Volatile Organic Compounds
VPB	Vertical Profile Boring

1.0 PROJECT BACKGROUND

Resolution Consultants has prepared this Data Summary Report for the Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. This report describes vertical profile boring (VPB) installation activities (specifically at the VPB 147 location) in 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).

1.1 Scope and Objectives

This data summary report provides information on the installation of VPB 147. The purpose of the VPB 147 investigation was to ascertain subsurface conditions and contaminant levels upgradient of the Massapequa Water District wells and to design outpost wells that will be used to provide early warning of plume migration toward the Massapequa Water District wellfield. VPB locations within the general vicinity of VPB 147 are shown in Figure 2. VPB 147 was completed to 1030 feet (ft) below ground surface (bgs).

Field tasks were conducted in 2014 in accordance with the *United Federal Programs Sampling and Analysis Plan (UFP SAP)*, Bethpage, New York and the UFP SAP Addendum Installation of Vertical Profile Borings and Monitoring Wells (Resolution Consultants, 2013). The field investigation included completing one vertical profile boring, groundwater grab samples, geophysical logging and surveying.

Documentation of these activities is included in Appendix A of this report.

1.2 Site History

NWIRP Bethpage is in the Hamlet of Bethpage, Town of Oyster Bay, New York. Since its inception in 1941, the plant's primary mission was the research prototyping, testing, design, engineering, fabrication, and primary assembly of military aircraft. The facilities at NWIRP included four plants used for assembly and prototype testing, a group of quality control laboratories, two warehouse complexes (north and south), a salvage storage area, water recharge basins, the Industrial Wastewater Treatment Plant, and several smaller support buildings.

The Navy's property originally totaled 109.5 acres and was formerly a Government-Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. Prior to 2002, the NWIRP property was bordered on the north, west, and south

by current or former NG facilities, and on the east by a residential neighborhood. By March 2008, approximately 100 acres of NWIRP property were transferred to Nassau County in three separate actions. The remaining 9 acres and access easements were retained by the Navy to continue remedial efforts at Installation Restoration (IR) Site 1 – Former Drum Marshalling Area and Site 4 – Former Underground Storage Tanks (Area of Concern [AOC] 22). A parcel of land connecting the two sites was also retained. Currently, the 9-acre parcel of NWIRP is bordered on the east by the residential neighborhood and on the north, south, and west by Nassau County property. Access to the NWIRP is from South Oyster Bay Road.

1.3 Geology and Hydrogeology

Overburden at the site consists of well over 1,000 ft of Cretaceous deposits overlying crystalline bedrock of the Hartland Formation. Overburden is divided into four geologic units: the upper Pleistocene deposits, the Magothy Formation, the clay member of the Raritan Formation ("Raritan Clay") and the Lloyd Sand member of the Raritan Formation ("Lloyd Sand") (Geraghty and Miller, 1994).

The upper Pleistocene ranges in thickness from approximately 50 to 100 ft and consists of till and outwash deposits of medium to coarse sand and gravel with lenses of fine sand, silt and clay (Smolensky and Feldman, 1990); these deposits form the Upper Glacial Aquifer. Directly underlying this unit is the Magothy Formation with a thickness of 650 to 900 ft bgs observed onsite. The Magothy is characterized by fine to medium sands and silts interbedded with zones of clays, silty sands and sandy clays. Sand and gravel lenses are found in some areas between depths of 600 and 875 ft bgs; these deposits form the Magothy Aquifer.

Investigations performed by the Navy since 2012 indicate that the bottom of the Magothy (top of the Raritan Clay) can extend to depths of 700 to greater than 1,000 ft bgs. The top of the Raritan Clay deepens to the south southeast, as evidenced by clay depths of 1,000 ft bgs (or more) in borings installed in the offsite plume to date. The Raritan Clay Unit is of continental origin and consists of clay, silty clay, clayey silt, and fine silty sand. This member acts as a confining layer over the Lloyd Sand Unit. The Lloyd Sand Unit is also of continental origin, having been deposited in a large fresh water lacustrine environment. The material consists of fine to coarse-grained sands, gravel, interbedded clay, and silty sand. These deposits form the Lloyd Aquifer.

The Upper Glacial Aquifer and the Magothy Aquifer comprise the aquifers of interest at the NWIRP. Regionally, these formations are generally considered to form a common, interconnected aquifer as

the coarse nature of each unit near their contact and the lack of any regionally confining clay unit allows for the unrestricted flow of groundwater between the formations.

The Magothy Aquifer is the major source of public water in Nassau County. The most productive water bearing zones are the discontinuous lenses of sand and gravel that occur within the siltier matrix. The major water-bearing zones are course sand and gravel lenses located in the lower portion of the Magothy. The Magothy Aquifer is commonly regarded to function overall as an unconfined aquifer at shallow depths and a confined aquifer at deeper depths. The drilling program at the NWIRP has revealed that clay zones beneath the facility are common but laterally discontinuous. No confining clay units of facility-wide extent have been encountered.

Groundwater is encountered at a depth of approximately 50 ft bgs at the facility. Historically, because of pumping and recharge at the facility, groundwater depths have been measured to range from 40 to 60 ft bgs. The regional groundwater flow in the area is to the south-southeast.

2.0 FIELD PROGRAM

Field investigation activities at VPB 147 consisted of drilling, sampling, soil/groundwater analysis, geophysical logging, and surveying. Drilling during this investigation was performed by Delta Well and Pump Company of Ronkonkoma, New York. A description of these tasks is provided below.

2.1 Vertical Profile Borings

One vertical profile boring (VPB 147) was completed during this field effort between May 29, 2014 and July 14, 2014. The total depth of VPB 147 was 1030 ft. The location is shown in Figure 2 and details are summarized in Table 1.

2.1.1 Drilling

VPB 147 was installed by drilling a 9-inch diameter hole using mud rotary drilling techniques. Drilling mud consisted of potable water and polymer-free sodium bentonite or equivalent. Drilling mud was contained and re-circulated in baffled, high capacity mud tubs. A sand separator was used intermittently to remove fines from circulation.

2.1.2 Sampling

A total of 16 split spoon samples were collected from ground surface to the bottom of the boring. A change in geology was observed by the field geologist at 1003 ft bgs and six split spoon samples were subsequently collected to confirm the presence of the Raritan Clay. Samples were logged by the field geologist and screened for Volatile Organic Compounds (VOCs) utilizing a photoionization detector (PID). A detailed boring log for VPB 147 is included in Appendix A.

Groundwater grab samples were collected every 50 ft for the first 200 ft of borehole depth. After the first 200 ft, groundwater grab samples were collected approximately every 20 ft until the boring terminated in the Raritan. Groundwater grab samples were collected with a hydropunch sampler and analyzed for VOCs using Environmental Protection Agency (EPA) Method 8260B. The groundwater grab samples were analyzed by Katahdin Analytical Services (Katahdin), a Department of Defense (DoD), Environmental Laboratory Accreditation Program (ELAP), and New York State Department of Environmental Conservation (NYSDEC)-certified laboratory. During the collection of groundwater grab samples, field parameters were measured (pH, temperature, specific conductivity, oxidation reduction potential, dissolved oxygen, and turbidity). Data validation was performed by Resolution Consultants. Groundwater grab sample logs, data validation packages, and analytical data tables are included in Appendix A.

One soil sample was collected for laboratory analysis for total organic carbon (TOC) by EPA series SW-846 method 9060A. During drilling, air sampling was conducted under a Community Air Monitoring Plan. One air sample was collected per VPB using Summa canisters and submitted for laboratory analysis by EPA Method TO-15. All analyses were performed or sub-contracted by Katahdin. Data validation of both TOC and air data was performed by Resolution Consultants. Data validation packages and analytical data tables are included in Appendix A.

2.1.3 Geophysics

Borehole geophysical logs (gamma) were recorded after the borehole was drilled but prior to the removal of drill rods. A Mount Sopris Instrument model 2PGA-100 poly gamma was used. Starting at the top of the hole, the probe was advanced at a maximum rate of 12 ft per minute. A copy of the log was printed in the field for review once the probe reached the bottom of the borehole. The instrument was then raised to the top of the boring and a second log was generated and printed in the field. The down hole gamma log sheets and plots comparing the gamma log with trichloroethene (TCE) and tetrachloroethene (PCE) concentrations from hydropunch samples are included in Appendix A.

2.2 Decontamination and Investigation Derived Waste (IDW)

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

As part of the IDW management practices and in accordance with the SAP, the investigation waste (consisting of soil cuttings, drilling muds, IDW fluids, and personal protective equipment [PPE]) generated during the boring installation was containerized and staged at NWIRP Bethpage. IDW solids were characterized and disposed of properly. Representative samples from each roll off were submitted to Katahdin for analysis of:

- Target Compound List (TCL) VOCs
- TCL Semi-volatile Organic Compounds (SVOCs)
- Toxicity Characteristic Leaching Procedure (TCLP) Metals

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- Polychlorinated Biphenyls (PCBs)
- Total petroleum hydrocarbons
- Corrosivity
- Ignitability
- Reactive Cyanide
- Reactive Sulfide
- Paint Filter

IDW water was containerized in frac tanks and stored at NWIRP Bethpage for characterization and ultimate disposal to the Publicly Owned Treatment Works (POTW), in accordance with the facilities existing discharge permit. A representative water sample was collected from each frac tank and submitted to Katahdin for analysis of VOCs via Method SW 624, pH via Method SW 9040B, PCBs via Method 8082 and Total Metals via Method SW 846 (all waters). To the extent feasible, soil and water were not mixed. All analytical criteria were met for disposal of soil and water.

2.3 Surveying

A survey of the boring location was conducted at the end of fieldwork by C. T. Male, Inc., of Latham, NY, under the direct supervision of Resolution Consultants. The location was tied into the existing base map developed for this investigation. The survey elevation is referenced to the North American Vertical Datum (NAVD) 1988 and has a vertical accuracy of 0.01 foot. Vertical control is based on observations of COR Stations Queens and Central Islip. The horizontal location is referenced to the North American Datum (NAD) 1983 (2011) N.Y. Long Island Zone 3104 and has an accuracy of 0.1 foot. Local horizontal and vertical control is based on Global Positioning System (GPS) observations using the NYS Net Real Time Network.

A table of survey data (ground, latitude/longitude and northing/easting) and a survey map is included in Appendix A.

3.0 REFERENCES

Geraghty and Miller, Inc., 1994. *Remedial Investigation Report, Grumman Aerospace Corporation, Bethpage, New York*. Revised September 1994.

Naval Facilities Engineering Command (NAVFAC), 2003. *Record of Decision Naval Weapons Industrial Reserve Plant Bethpage, New York, Operable Unit 2 – Groundwater*, NYS Registry: 1-30-003B. April.

Resolution Consultants, 2013. *United Federal Programs Sampling and Analysis Plan*, *Site OU-2 Offsite TCE Groundwater Plume Investigation,* Bethpage, New York. April.

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

Resolution Consultants, 2013. UFP SAP Addendum*, Installation of Vertical Profile Borings and Monitoring Wells.* December.

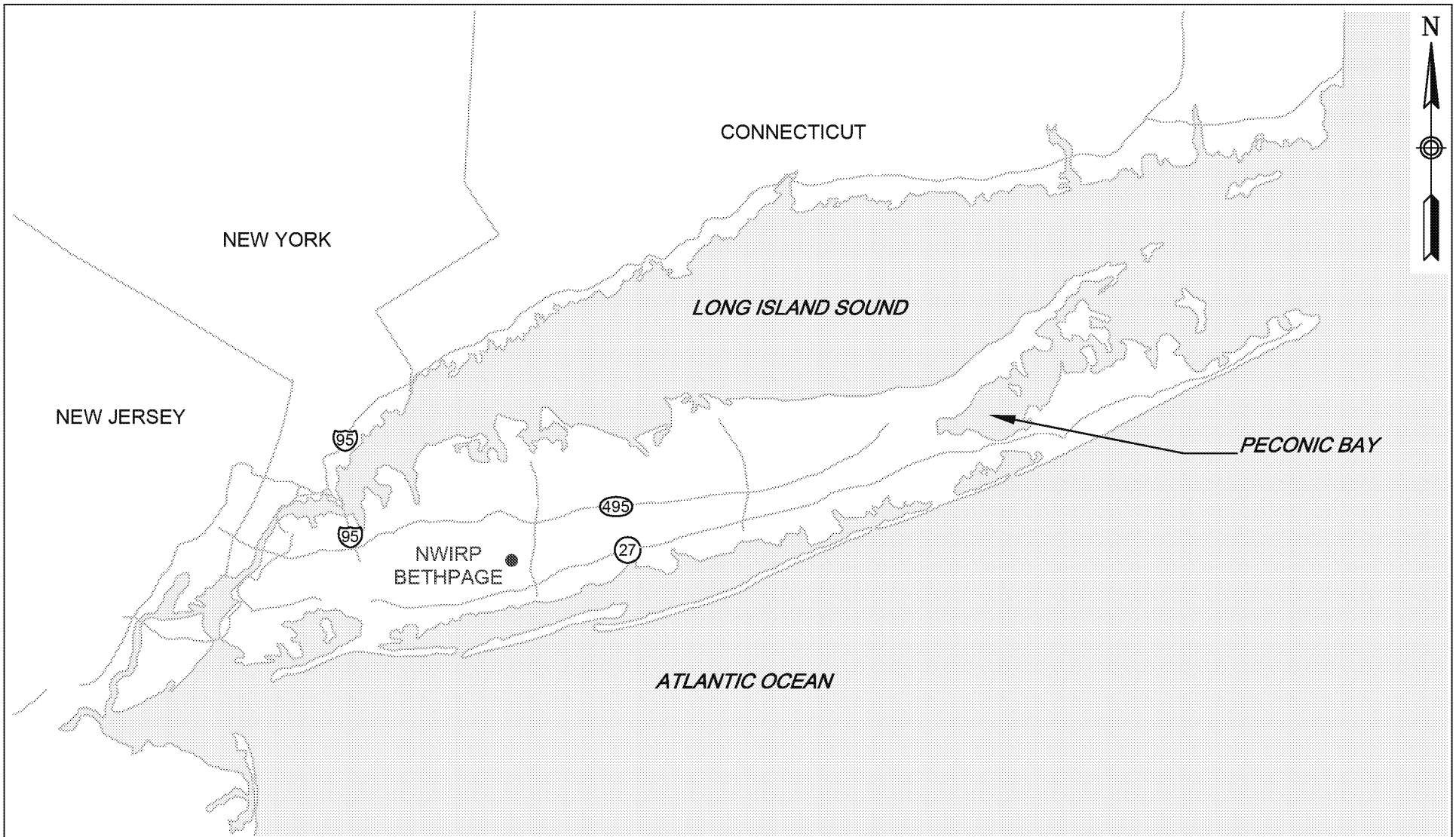
Smolensky, D., and Feldman, S., 1990. *Geohydrology of the Bethpage-Hicksville-Levittown Area, Long Island, New York, U.S.* Geological Survey Water-Resourced Investigations Report 88-4135, 25 pp.

Tables

TABLE 1
VERTICAL PROFILE BORING SUMMARY
2014 OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY

BORING	BORING START DATE	BORING COMPLETION DATE	GROUND ELEVATION (MSL)	TOTAL DEPTH (ft bgs)	SURFACE CASING SET AT (ft bgs)	NO. OF SPOON SAMPLES	GAMMA LOG (ft bgs)	NO. GW SAMPLES COLLECTED/ ATTEMPTED	TOC SAMPLES	DATE OF AIR SAMPLE	MONITORING WELLS INSTALLED AT LOCATION
VPB 147	5/29/2014	7/14/2014	44.92	1030	52.5	16	1028	40/49	1 (283 - 285 ft bgs)	6/24/2014	Pending

Figures



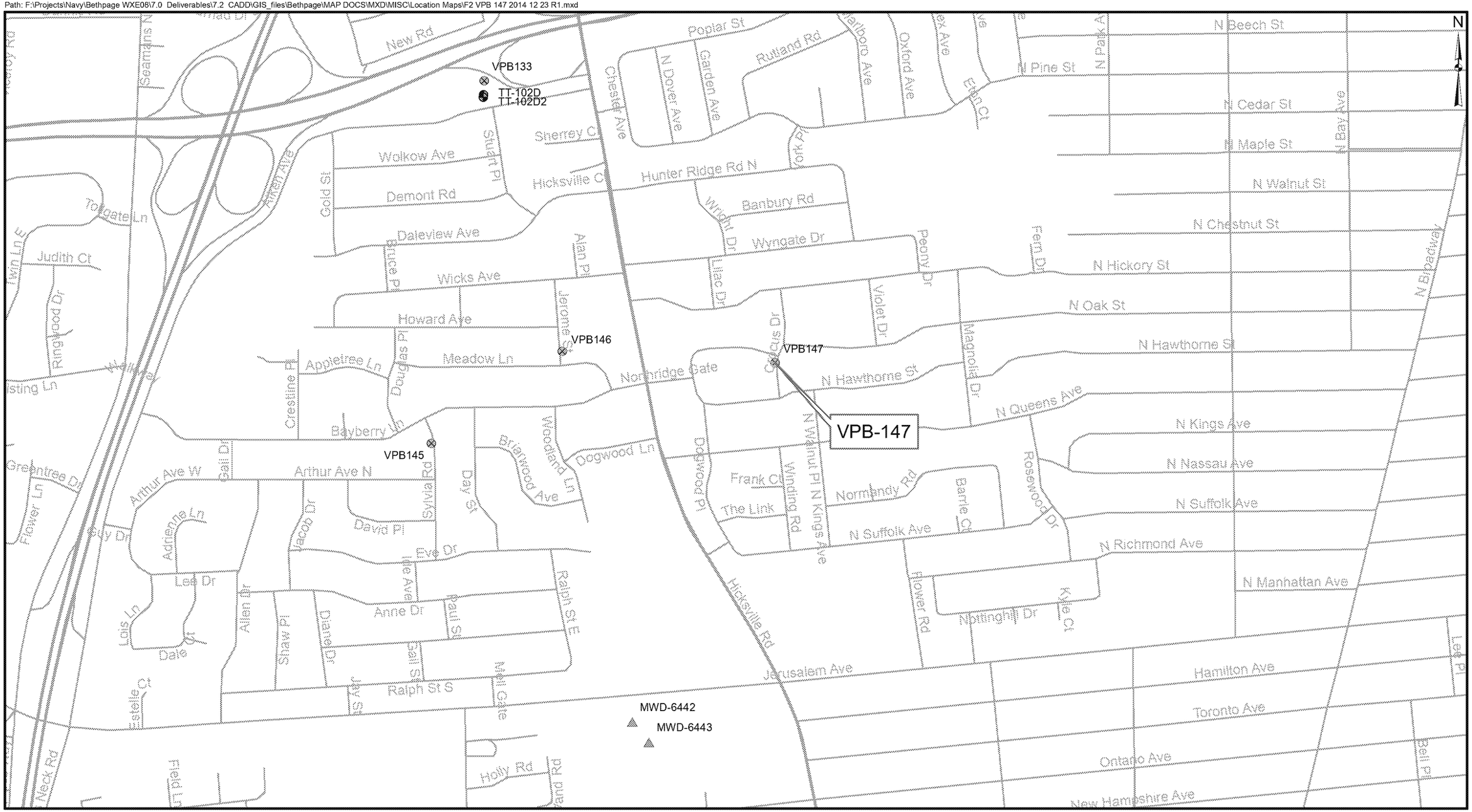
0 15 30
SCALE IN MILES

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.	REV
1	0

Path: F:\Projects\Navy\Bethpage WXE08\7.0 Deliverables\7.2 CADD\GIS_files\Bethpage\MAP DOCS\MXD\MISC\Location Maps\F2 VPB 147 2014 12 23 R1.mxd



- Vertical Profile Boring
- Monitoring Well
- Vertical Profile Boring - Proposed
- Water Supply Well
- Extraction Well

0 300 600 1,200 Feet

NAVFAC

VPB 147 LOCATION MAP
OPERABLE UNIT 2 (SITE 1)
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

CONTRACT NUMBER	CTO NUMBER
N62470-11-D-8013	WE15
APPROVED BY: PS	DATE: 12/23/2014
APPROVED BY: —	DATE: —
FIGURE NO. 2	REV 1

Appendix A

VPB 147

Section 1

VPB 147 Boring and Gamma Logs

Resolution Consultants

Boring Log

BORING #: VPB147

Client: Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		**Logged By:** V. Thayer
Location: Crocus Dr. and Sheep Pasture Ln., Massapequa, NY	**Northing:** 193658.09 **Easting:** 1128979.9	**Drilling Company:** Delta Well & Pump
Project #: 60266526	**Ground Elevation (ft amsl):** 44.92	**Well Screen Interval (ft):** NA
Start Date: 5/29/2014	**Drilling Method:** Auger (0-50' bgs) Mud Rotary (>50' bgs)	**Water Level (ft):** NA
Finish Date: 7/14/2014		**Total Depth (ft):** 1030.0

Mud Rotary Drilling Note: Unless denoted by a splitspoon sample (indicated by the presence of a PID reading), boundaries between strata are approximate only and may be transitional because they are based on screened wash samples collected during mud rotary drilling at 5 ft. intervals.

DEPTH (ft)	Gamma Ray	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	30 60 90							
2					Upper Glacial	SM		Top Soil
4						SM		Brown SILTY SAND
6						SW		Brownish yellow (10 YR 6/6) well graded fine to coarse Sand, trace fine gravel
8								
10								
12								
14						SM		Yellowish brown (10 YR 5/4) SILTY SAND, subrounded to subangular fine to coarse Sand, little silt, trace gravel
16								
18						SM		Yellowish brown (10 YR 5/4) SILTY SAND, fine to coarse Sand, little silt, fine to coarse gravel
20						SP		Strong brown (7.5 YR 5/6) poorly graded SAND with Gravel, medium sand, little coarse sand, little subrounded fine to coarse gravel, trace silt
22								
24								
26						SM		Light brownish yellow (10 YR 6/6) SILTY SAND with Gravel, fine to coarse gravel, little silt
28								
30						SW		Brownish yellow (10 YR 6/6) well graded fine to coarse SAND, few subrounded fine gravel, trace silt
32								
34								
36						SW		Brownish yellow (10 YR 6/6) well graded SAND with Gravel, medium sand, some coarse sand, little subrounded gravel
38								
40								
42						SW		Brownish yellow (10 YR 6/6) well graded SAND with Gravel, medium sand, some coarse sand, little subrounded gravel
44								
46						SW-SM		Light yellowish brown (10 YR 6/4) well graded SAND, little fine Gravel, trace subrounded coarse gravel, few silt
48								
50								
52						SW		Light yellowish brown (10 YR 6/4) well graded SAND, few subrounded fine Gravel
54						GP		

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Resolution Consultants

Boring Log

BORING #: VPB147

DEPTH (ft)	Gamma Ray	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
54	30 60 90							
56					Upper Glacial	GP		Yellow (10 YR 7/6) and very pale brown (10 YR 8/4) well graded GRAVEL, rounded fine Gravel, trace coarse gravel *(continued)*
58								
60			< 0.50	< 0.50		GW		Yellow (10 YR 7/6 and very pale brown (10 YR 8/4) well graded GRAVEL, subrounded fine Gravel, some subrounded to rounded coarse gravel
62								
64						GW		Yellow (10 YR 7/6 and very pale brown (10 YR 8/4) well graded GRAVEL, subrounded fine Gravel, some subrounded to rounded coarse gravel
66								
68								
70						SM		Grayish brown (10 YR 5/2) SILTY SAND, fine Sand, few coarse sand, fine gravel
72								
74						CL		Dark yellowish brown (10 YR 4/4) SANDY CLAY, Clay is dry and banding observed in nodules that came up in mud, few small gravel
76								
78								
80						CL		Dark yellowish brown (10 YR 4/4) SANDY CLAY with Gravel, some fine to coarse sand, little fine to coarse subrounded gravel
82								
84						SC		Dark yellowish brown (10 YR 4/4) CLAYEY SAND
86								
88								
90						SC		Grayish brown (10 YR 5/2) CLAYEY SAND, Lignite, few subrounded fine gravel, one orange band of clay
92								
94						SP-SM		Dark grayish brown (10 YR 4/2) poorly graded SAND with Silt, fine sand, trace fine gravel
96								
98								
100			< 0.50	< 0.50		SM/CL		Grayish brown (10 YR 5/2) SILTY SAND, fine to coarse Sand, little silt, interbedded clay layer
102					Magothy			
104						SM		Dark gray SILTY SAND with Lignite
106								
108								
110						SW-SM		Very dark gray (10 YR 3/1) well graded fine to medium SAND, trace coarse sand, some lignite
112								
114						SM		Gray SILTY SAND

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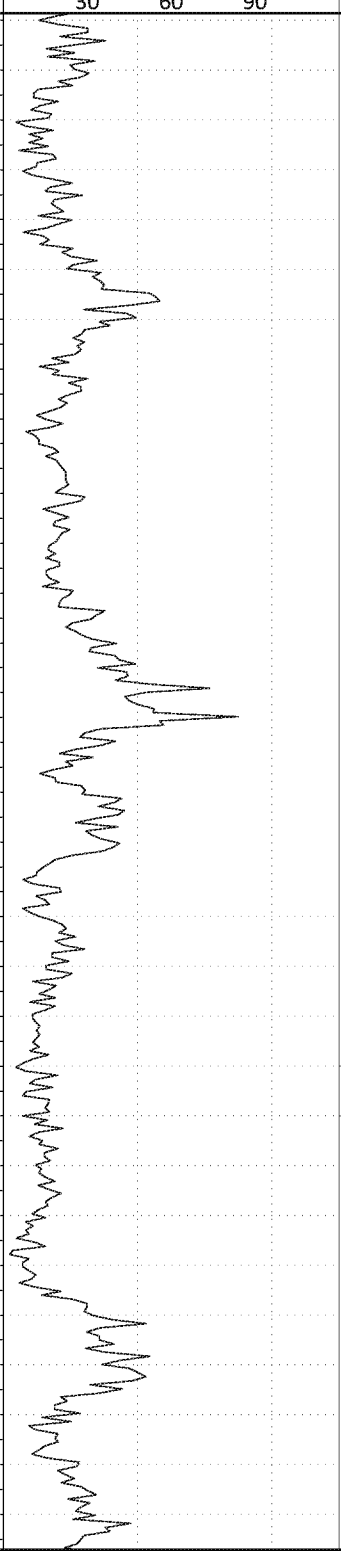
Resolution Consultants

Boring Log

BORING #: VPB147



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
116				Magothy	SM	Gray SILTY SAND *(continued)*
118						
120					SM	Very dark grayish brown (10 YR 3/2) SILTY SAND, fine to medium Sand, trace coarse sand, lignite
122						
124					PT/SM	Dark gray (7.5 YR 4/1) LIGNITE microlaminated with silty fine Sand
126						
128					SM	Dark gray (7.5 YR 4/1) SILTY SAND, fine to medium Sand, lignite, muscovite, some silt
130						
132						
134					SM	Dark gray (7.5 YR 4/1) SILTY SAND, fine to medium Sand, lignite, muscovite, some silt
136						
138					ML/PT	Very dark gray (Gley 1 3/1) SANDY SILT, fine to medium Sand, trace coarse sand, some lignite, nodules of lignite in friable layers
140						
142						
144					SM/PT	Dark gray (5 Y 4/1) SILTY SAND, medium to coarse Sand, little fine sand, little silt, some black lignite
146						
148						
150		< 0.50	< 0.50		SP-SM	Very dark gray (10 YR 4/1) medium SAND, little coarse Sand, few fine sand, trace subrounded fine gravel, lignite, pyrite concretion
152						
154					SP-SM	Very dark gray (10 YR 4/1) medium SAND, little coarse Sand, few fine sand, trace subrounded fine gravel, lignite, pyrite concretion
156						
158						
160	0.1				SP-SM	Light brownish gray (2.5 Y 6/2) poorly graded SAND with Silt, angular medium sand, little fine sand, few silt; (2 bands of 1/4" orange stained sand)
162						
164					SW	Dark gray (7.5 YR 4/1) well graded fine to coarse SAND, trace fine subrounded gravel, pyrite concretions
166						
168						
170					SW	Dark gray (7.5 YR 4/1) well graded angular medium SAND, little fine sand, little coarse sand
172						
174					SM	Gray SILTY SAND
176						

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Resolution Consultants

Boring Log

BORING #: VPB147

DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
178					Magothy			
180						SM		Gray (7.5 YR 4/1) SILTY SAND, fine to medium Sand, little silt, 1 pyrite concretion, trace angular coarse sand, lignite
182								
184						SP-SM		Gray (Gley 1 6/1) poorly graded SAND with Silt, angular medium sand, little fine sand, few silt
186								
188								
190						SP-SM		Dark gray (7.5 YR 4/1) poorly graded SAND with Silt, angular medium sand, few silt, trace coarse sand
192								
194						SM		Gray SILTY SAND
196								
198								
200			< 0.50	< 0.50		SM/ML		Gray (7.5 YR 5/1) SILTY SAND interbedded with Silt, fine sand, lignite, microlaminated clay, silt
202								
204						ML		Dark gray (Gley 1 4/1) SANDY SILT, fine Sand, little medium sand, lignite, silt
206								
208								
210						ML		Gray (7.5 YR 5/1) SANDY SILT, fine to medium Sand, lignite, silt
212								
214						SM		Dark gray (7.5 YR 4/1) SILTY SAND, angular medium Sand, little fine sand, some silt
216								
218								
220			< 0.50	< 0.50		SM		Very dark gray SILTY SAND, fine to coarse Sand, lignite, some silt
222								
224						SM		Gray (Gley 1 5/1) SILTY SAND, angular medium Sand, little fine sand, little silt
226								
228								
230						SP-SM		Dark gray (10 YR 4/1) poorly graded SAND with Silt, medium sand, few silt, lignite
232								
234						SP-SM		Dark gray (10 YR 4/1) poorly graded SAND with Silt, medium sand, few silt, lignite, thinly laminated lignite and fine sand
236								
238								
			< 0.50	< 0.50		SM		

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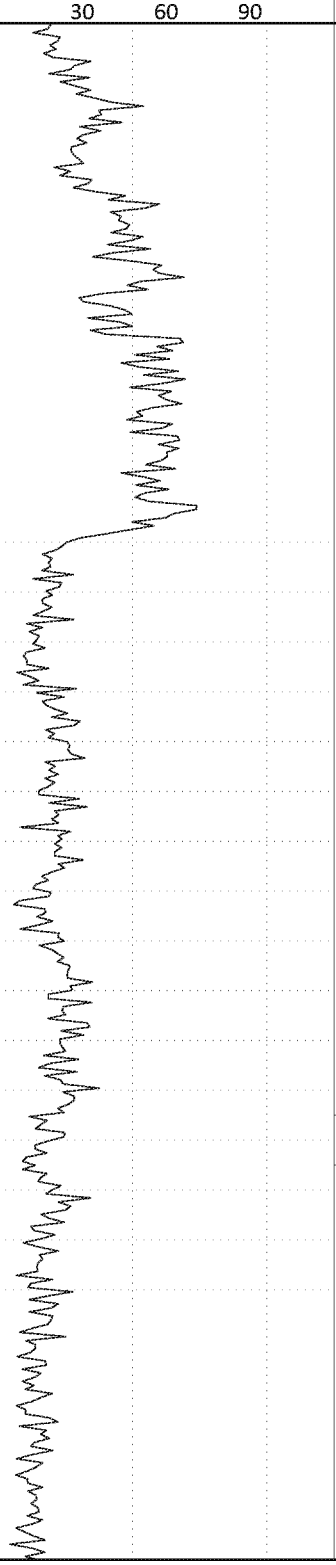

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
240		< 0.50	< 0.50	Magothy	SM	Dark gray (7.5 YR 4/1) SILTY SAND, angular medium Sand, little fine sand, little silt or clay, interbedded lignite, thinly laminated *(continued)*
242						
244					SM	Dark gray (7.5 YR 4/1) SILTY SAND
246						
248						
250					ML	Dark gray (7.5 YR 4/1) SANDY SILT, angular medium Sand, little fine sand, trace coarse sand, silt, lignite
252						
254					ML	Dark gray (7.5 YR 4/1) SANDY SILT, angular medium Sand, little fine sand, trace coarse sand, silt, lignite
256						
258						
260		< 0.50	< 0.50		SP-SM	Dark gray (7.5 YR 4/1) poorly graded SAND with Silt, medium sand, trace coarse sand, lignite, few nodules of thinly laminated sand and silt
262						
264					SM	Dark gray (7.5 YR 4/1) SILTY SAND, angular medium Sand, some silt, trace coarse sand
266						
268						
270					SM	Dark gray (7.5 YR 4/1) SILTY SAND, angular medium Sand, little silt, lignite
272						
274					ML	Dark gray (7.5 YR 4/1) SANDY SILT, fine to medium Sand, trace coarse sand, lignite.
276						
278						
280		< 0.50	< 0.50		SM	Gray (Gley 1) angular fine to coarse SAND, little Silt, lignite; thinly laminated lignite and fine sand
282						
284	0				SP-SM	Gray (Gley 1) poorly graded SAND with Silt, fine to medium sand, few silt, 2 bands of lignite, 1/2" of clay or silt
286						
288						
290					SP-SM	Gray (Gley 1 5/1) poorly graded SAND with Silt, medium sand, little fine sand, silt
292						
294					SP-SM	Gray (Gley 1 5/1) poorly graded SAND with Silt, lignite, few silt, pyrite, nodules of thinly laminated fine sand and lignite
296						
298						
300		< 0.50	< 0.50		SP-SM	Gray (Gley 1 5/1) poorly graded SAND with Silt, lignite, thinly laminated fine sand, lignite

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
302					Magothy	SP-SM		Gray (Gley 1 5/1) poorly graded SAND with Silt, lignite, thinly laminated fine sand, lignite *(continued)*
304, 306, 308						SM		Gray (7.5 YR 5/1) SILTY SAND, subangular to angular medium Sand, little lignite, little silt
310, 312						SM		Gray (Gley 1 5/1) SILTY SAND, angular fine to medium Sand, little silt, little lignite
314, 316, 318						SM		Dark gray (Gley 1 4/1) SILTY SAND, angular medium Sand
320, 322			< 0.50	< 0.50		SM		Dark gray (7.5 YR 4/1) SILTY SAND, fine to medium Sand, little silt
324, 326, 328						SW-SM		Very dark gray (Gley 1 4/0) well graded fine to coarse SAND, lignite, pyrite
330, 332						SW-SM		Very dark gray (Gley 1 4/1) well graded SAND, fine to coarse Sand, few silt, pyrite
334, 336, 338						SM		Dark gray SILTY SAND
340, 342			< 0.50	< 0.50		SM		Dark gray (Gley 4/0) SILTY SAND, medium Sand, little fine sand, lignite, little silt
344, 346, 348						SM		SILTY SAND, subangular medium Sand, few fine sand, trace coarse sand, lignite
350, 352						SP-SM		Gray (Gley 1 5/1) poorly graded SAND with Silt, angular medium sand, little fine sand, few silt, lignite
354, 356, 358						SP-SM		Gray (Gley 1 5/1) poorly graded SAND with Silt, angular medium sand, little fine sand, few silt, lignite
360, 362			< 0.50	< 0.50		SM		Gray (Gley 1 5/1) SILTY SAND, medium Sand, little fine sand, pyrite, lignite, little silt

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
364					Magothy	SP-SM		Dark gray (Gley 1 4/1) poorly graded SAND with Silt, angular medium sand, little fine sand, few coarse sand, lignite, few silt, pyrite
366								
368								
370						SM		SILTY SAND, fine to medium Sand, little silt, lignite
372								
374						SM		Gray (Gley 1 5/1) SILTY SAND, fine to medium Sand, some silt, little lignite interbedded fine sand and lignite
376								
378								
380			< 0.50	< 0.50		SM		Gray (Gley 1 5/1) SILTY SAND, subangular fine to coarse Sand, some lignite, trace pyrite, little silt
382								
384		0.1				SP-SM		Gray (Gley 1 5/1) poorly graded SAND with Silt, fine to medium sand, 3 bands of lignite, 1/4" thick, spaced 1.5 to 2" apart
386						SM		Gray (Gley 1 5/1) SILTY SAND, fine to medium Sand, few angular coarse sand, pyrite, lignite
388								
390						SM/CL		Silty Sand interbedded lignite, clay.
392								
394						SM		Dark gray (Gley 1 4/0) SILTY SAND, fine to medium Sand, trace coarse sand, lignite, pyrite, some silt, interbedded lignite, sand, silt
396								
398								
400			< 0.50	< 0.50		ML		Gray (Gley 1 5/1) SANDY SILT, fine to medium Sand, trace coarse sand, thinly laminated lignite, sand
402								
404						SM/CL		Gray (Gley 1 5/1) fine SAND interbedded with Lignite, thinly laminated, interbedded clay or silt
406								
408								
410						SM/CL		Gray (Gley 5/1) SILTY SAND, angular fine to medium Sand, laminated lignite, fine sand, microlayers of silt or clay
412								
414						SM		Gray (Gley 1 5/1), SILTY SAND, fine to medium Sand, trace coarse sand, lignite, some silt
416								
418								
420			< 0.50	< 0.50		SM/ML		Gray (Gley 1 5/1), SILTY SAND, microlaminated with Lignite and interbedded microlayers of silt
422								
424						SM		

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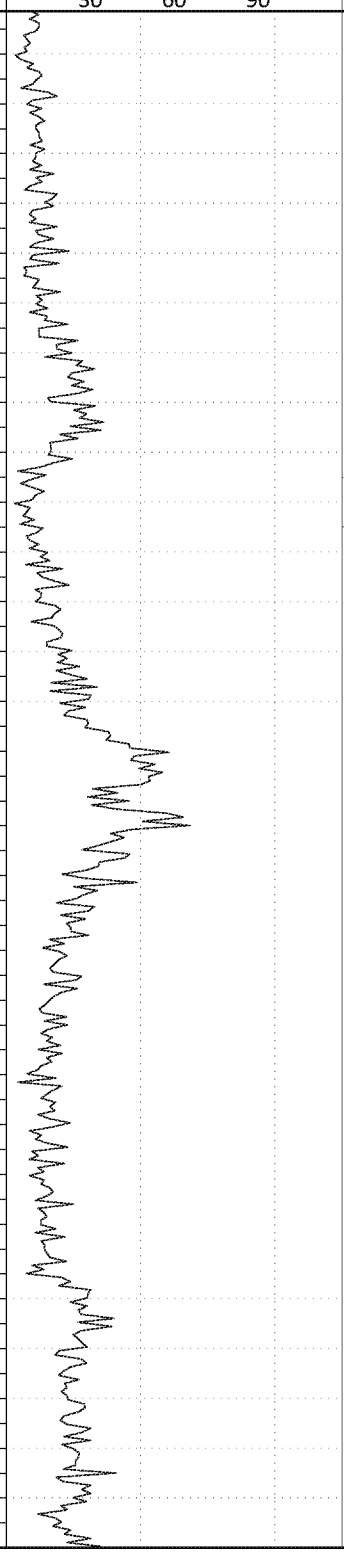
Boring Log



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
426				Magothy	SM	Dark gray (Gley 1 4/0) SILTY SAND, angular medium Sand, few coarse sand, little silt, lignite *(continued)*
428						
430					SP-SM	Dark gray (Gley 1 4/1) poorly graded SAND with Silt
432						
434					SP-SM	Dark gray (Gley 1 4/1) poorly graded SAND with Silt, angular medium sand, little fine sand, few silt
436						
438						
440		< 0.50	< 0.50			
442					ML	Dark gray (Gley 1 4/1) SANDY SILT
444	0				SM	Dark gray (10 YR 4/1) SILTY SAND, subangular fine to medium Sand, muscovite flakes, 1 (1/4") layer of lignite
446						
448						
450					SM	Dark gray (10 YR 4/1) SILTY SAND
452						
454					SM/ML	Dark gray (10 YR 4/1) SILTY SAND, fine to medium Sand, some lignite
456						
458						
460		< 0.50	< 0.50		ML	SANDY SILT
462						
464					SM	SILTY SAND, microlaminated fine Sand, lignite, pyrite concretion
466						
468						
470					ML	Very dark gray (Gley 1 3/1) SANDY SILT, fine Sand, Lignite, microlaminated fine sand and lignite, pyrite concretion
472						
474					ML	Dark gray (Gley 1 4/1) SANDY SILT, nodules of Clay/Silt, lignite
476						
478						
480		0.45	< 0.50		SM	Gray (2.5 Y 5/1) SILTY SAND, fine to medium Sand, lignite, some laminated fine sand and silt
482						
484					SM	Gray SILTY SAND, fine to medium Sand, lignite, trace coarse sand
486						

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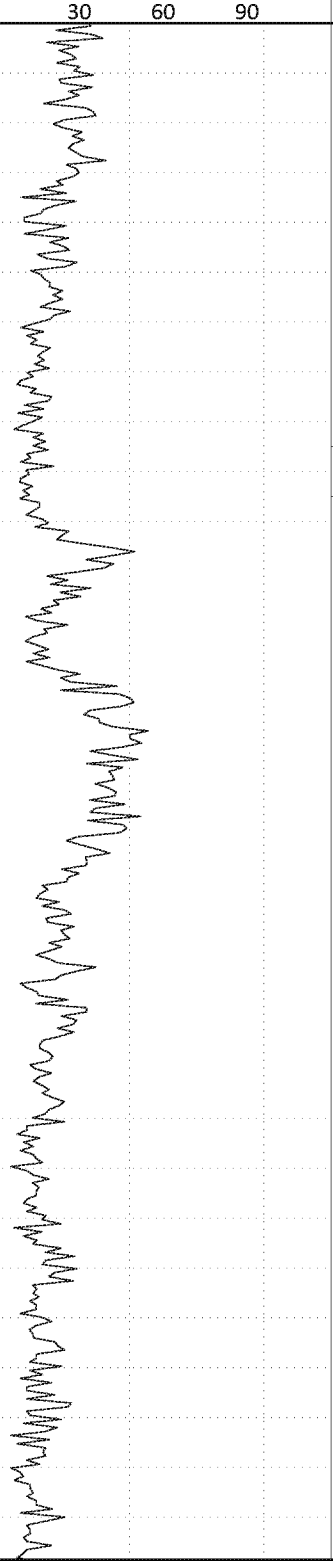

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
486						
488				Magothy	SM	Gray SILTY SAND, fine to medium Sand, lignite, trace coarse sand *(continued)*
490, 492					SM	Dark gray (10 YR 4/1) SILTY SAND, fine to coarse Sand, lignite, some silt
494, 496, 498					SM	Dark gray SILTY SAND
500, 502					SM	Gray (2.5 Y 6/1) SILTY SAND, fine Sand, lignite, thinly laminated fine sand and lignite
504	0				SM	Gray (2.5 Y 6/1) SILTY SAND, fine Sand, 3 bands of lignite, 1/4" thick interbedded with fine sand
506, 508, 510					SM	Gray SILTY SAND, fine to medium Sand, little silt, lignite, trace coarse sand, pyrite concretion
512, 514, 516, 518					CL	Dark gray (Gley 1 4/1) SANDY CLAY, some fine to medium Sand
520, 522					SM/CL	Dark gray (Gley 1 4/1) SANDY CLAY, nodules of Silty fine Sand, lignite and clay, microlaminated
524, 526, 528					SM/CL	SILTY SAND, fine Sand, laminated with lignite, clay
530		< 0.50	< 0.50		SP-SC	Dark gray (10 YR 4/1) poorly graded SAND with Clay
532, 534, 536, 538					SP-SC	Dark gray (10 YR 4/1) poorly graded SAND with Clay, angular medium sand, little fine sand, lignite, trace fine to few silt, (nodules of laminated fine sand and lignite)
540		< 0.50	< 0.50		SP-SC	Dark gray (10 YR 4/1) poorly graded SAND with Clay, angular medium sand, little fine sand, lignite, trace fine to few silt, (nodules of laminated fine sand and lignite)
542, 544, 546					SP-SC	Dark gray (7.5 YR 4/1) poorly graded SAND with Clay, angular medium sand, few silt

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
548					Magothy			
550, 552						SP-SM		Dark gray (7.5 YR 4/1) poorly graded SAND with Silt, angular medium sand, lignite, trace silt
554, 556, 558						SP		Dark gray (7.5 YR 4/1) poorly graded SAND, angular medium sand, lignite, trace silt
560			< 0.50	< 0.50				
562						SP		Dark gray (7.5 YR 4/1) angular medium SAND, little coarse Sand, trace silt
564, 566, 568						SP		Gray (Gley 1 5/1) poorly graded SAND, angular medium Sand
570, 572						SM		Dark gray (Gley 1) SILTY SAND
574, 576, 578						SP-SM		Gray (Gley 1 6/1) poorly graded SAND with Silt, subangular medium sand, trace coarse sand, few silt
580			< 0.50	< 0.50				
582						SP-SM		Gray (Gley 1 6/1) poorly graded SAND with Silt, subangular medium sand, trace coarse sand, few silt; microlaminated, silt, sand, lignite
584, 586, 588						SM		Gray (Gley 1 5/1) SILTY SAND, medium Sand, little fine sand, little silt, nodules of thinly laminated silt, sand, lignite
590, 592						SP-SC		Gray (Gley 1 6/1) poorly graded SAND with Clay, angular medium sand, few coarse sand, trace silt
594, 596, 598						SM		Gray (Gley 5/1) SILTY SAND, subangular medium Sand, little silt
600			< 0.50	< 0.50				
602						SP-SM		Gray (Gley 5/1) poorly graded SAND with Silt; angular medium to coarse sand, few silt, interbedded fine lignite seams
604, 606, 608						SP-SM		Gray (Gley 5/1) poorly graded SAND with Silt; angular medium to coarse sand, few silt, interbedded fine lignite seams
						SM		Gray (10 YR 5/1) SILTY SAND, fine Sand; some Silt

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
610					Magothy	SM		Gray (10 YR 5/1) SILTY SAND, fine Sand; some Silt *(continued)*
612								
614						SW-SM		Gray (Gley 1 6/1) well graded fine to coarse SAND with Silt, few subangular fine gravel, few silt
616								
618								
620			< 0.50	< 0.50		SP-SM		Gray (7.5 YR 5/1) poorly graded SAND with Silt, angular medium sand, few coarse sand, few silt, thinly laminated fine sand, lignite
622								
624						SP		Dark gray (10 YR 4/1) poorly graded SAND, angular medium Sand, trace silt
626								
628								
630						SM		Gray (7.5 YR 5/1) SILTY SAND, angular medium Sand, lignite, little silt
632								
634						SM		Gray (7.5 YR 5/1) SILTY SAND
636								
638								
640			< 0.50	< 0.50		SM		Gray SILTY SAND medium to coarse Sand, little silt
642								
644						SM		Dark gray (10 YR 4/1) SILTY SAND, medium Sand, little coarse sand, few silt
646								
648								
650						SC		Dark gray (10 YR 4/1) CLAYEY SAND, Pyrite
652								
654						SM		Gray (10 YR 5/1) SILTY SAND, medium Sand, little coarse sand, little silt
656								
658								
660						SM		Dark gray (10 YR 4/1) SILTY SAND, fine to medium Sand, pyrite concretion, some silt
662								
664		0				SM		Dark gray (10 YR 4/1) SILTY SAND, fine to medium Sand, pyrite concretion, some silt
666								
668								
670			< 0.50	< 0.50		SM		Dark gray (10 YR 4/1) SILTY SAND, fine to coarse Sand, lignite, trace gravel, some silt

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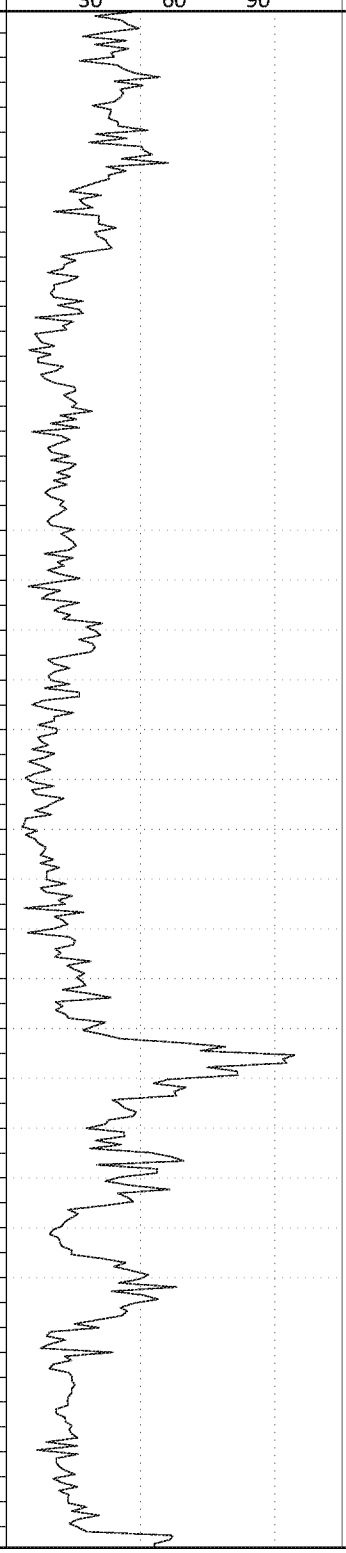

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
672				Magothy	SM	Dark gray (10 YR 4/1) SILTY SAND, fine to coarse Sand, lignite, trace gravel, some silt *(continued)*
674					ML	Dark gray (10 YR 4/1) SANDY SILT, fine to medium Sand
676						
678						
680		< 0.50	< 0.50		ML	Dark gray (10 YR 4/1) SANDY SILT, fine to medium Sand
682						
684					SM	Gray (7.5 YR 5/1) SILTY SAND, fine to medium Sand, some silt, lignite, interbedded fine sand and lignite, microlaminated
686						
688						
690					SM	Gray (7.5 YR 5/1) SILTY SAND, medium Sand, trace coarse sand, lignite, little to some silt
692						
694					SM	Gray (7.5 YR 5/1) SILTY SAND, medium Sand, trace coarse sand, lignite, little to some silt
696						
698						
700					ML	Gray (7.5 YR 5/1) SANDY SILT
702						
704					SP-SM	Gray (7.5 YR 6/1) SAND with Silt, angular medium sand, few to little silt
706						
708						
710					ML	Gray (7.5 YR 5/1) SANDY SILT, angular medium Sand, trace coarse sand, little silt, thin strip of clay or silt (nodules)
712						
714					SM	Gray (7.5 YR 5/1) SILTY SAND, medium to coarse Sand, little fine sand, little silt, trace gravel
716						
718						
720		< 0.50	< 0.50		SP-SM	Gray (Gley 1 5/1) poorly graded SAND with Silt; medium sand, little coarse sand, lignite
722						
724					SW	Gray (7.5 YR 5/1) well graded medium to coarse SAND, little fine sand, trace silt
726						
728						
730					SW-SM	Gray (7.5 YR 5/1) well graded medium to coarse SAND, little fine sand, few silt
732						

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DEPTH (ft)	Gamma Ray (30 60 90)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION
734					Magothy	SW-SM		Gray (7.5 YR 5/1) well graded SAND with Silt, subangular medium to coarse sand, little fine sand, few silt, trace subangular gravel
736								
738								
740			< 0.50	< 0.50		SW-SM		Gray (7.5 YR 5/1) well graded SAND with Silt, subangular medium to coarse sand, little fine sand, few silt
742								
744						SW-SM		Gray (Gley 1 5/1) well graded SAND with Gravel and Silt, subangular to angular fine gravel, fine to coarse sand, few silt, laminated fine sand and lignite
746								
748								
750						GP-GM		Gray (7.5 YR 6/1) poorly graded GRAVEL with Silt and Sand, subangular fine gravel, fine to coarse sand, few silt
752								
754						SP		Gray (7.5 YR 6/1) poorly graded SAND, angular medium Sand, little coarse sand
756								
758								
760			< 0.50	< 0.50		SP-SM		Gray (7.5 YR 6/1) poorly Graded SAND with Silt and gravel, angular medium sand, trace coarse sand, little fine gravel, few silt
762								
764						SP-SC		Gray (7.5 YR 6/1) poorly Graded SAND with Clay, angular medium sand, trace coarse sand, few clay
766								
768								
770						SP-SM		Gray (7.5 YR 6/1) poorly graded SAND with Silt
772								
774						SW-SM		Gray (7.5 YR 6/1) well graded SAND with Silt and gravel, fine to coarse sand, little subangular fine gravel, few silt
776								
778								
780						SW-SM		Gray (7.5 YR 6/1) well graded SAND with Silt and gravel, fine to coarse sand, little subangular fine gravel, few silt
782								
784						GW-GM		Gray (7.5 YR 5/1) poorly graded GRAVEL with Sand, fine subrounded gravel, some fine to coarse sand, few silt
786								
788								
790		0.1				SM		Gray (7.5 YR 5/1) SILTY SAND, angular medium Sand, little silt
792						SM		Gray (7.5 YR 5/1) SILTY SAND
794						SM		

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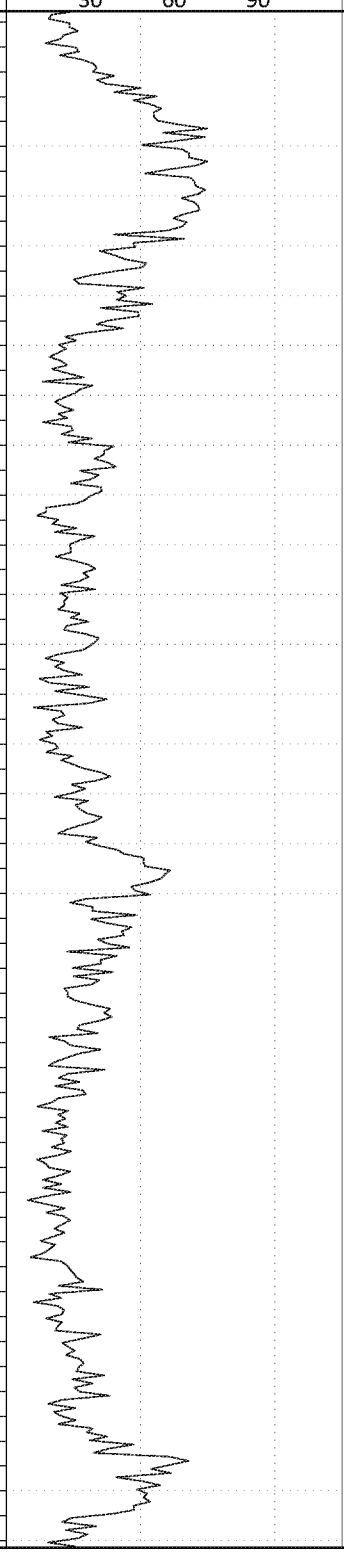

DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
796–798				Magothy	SM	Gray SILTY SAND with Gravel, coarse sand, little fine gravel, silt or clay *(continued)*
798–800		< 0.50	< 0.50		GC	CLAYEY GRAVEL with Sand, fine subrounded gravel, some fine to coarse sand, clay
800–804					SC	Gray (7.5 YR 6/1) CLAYEY SAND, medium to coarse Sand, trace fine gravel, little to some clay, silt
804–810					GC	Gray (7.5 YR 6/1) CLAYEY GRAVEL, fine Gravel, little silt, clay
810–818					SM	Light gray (10 YR 7/1) SILTY SAND and Gravel, fine to coarse sand, little subangular fine gravel, pyrite, little silt
818–820		< 1.0	< 1.0		SP	Gray (7.5 YR 6/1) poorly graded SAND, angular medium Sand, trace coarse sand
820–824					SM	Gray (7.5 YR 6/1) SILTY SAND, medium to coarse Sand, trace small gravel, little silt
824–830					SC	Light gray (7.5 YR 7/1) CLAYEY SAND, medium to coarse Sand, little clay
830–834					SM	Light gray (7.5 YR 7/1) SILTY SAND, angular medium to coarse Sand, some silt
834–842		< 0.50	< 0.50		SM	Light gray (7.5 YR 7/1) SILTY SAND
842–844					SP-SM	Light gray (7.5 YR 7/1) angular medium to coarse SAND, few to little Silt
844–850					SM	Light gray (7.5 YR 7/1) SILTY SAND, medium to coarse Sand, little silt
850–856					ML	Light gray (7.5 YR 7/1) SANDY SILT, fine to coarse Sand, little white silt

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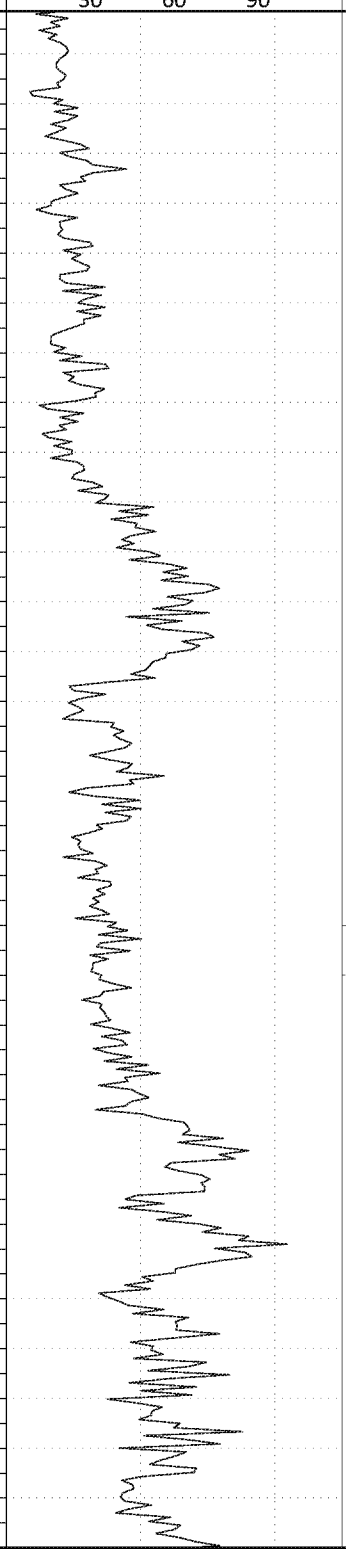
Boring Log



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
858				Magothy	ML	
860		< 0.50	< 0.50		SC	Gray (7.5 YR 5/1) CLAYEY SAND, angular fine to coarse Sand, some white silt
862						
864					SP-SM	Gray (7.5 YR 5/1) poorly graded angular medium SAND, few Silt, clay
866						
868						
870					SM	Gray (7.5 YR 5/1) SILTY SAND, angular medium Sand, trace coarse sand, few silt or clay
872						
874					ML/CL	Gray (7.5 YR 5/1) SANDY CLAY, Silt
876						
878						
880		< 2.0	< 2.0		ML/CL	Gray (7.5 YR 5/1) SANDY CLAY, angular medium Sand, little fine sand, little coarse sand, clay
882						
884					SC	Gray (7.5 YR 5/1) CLAYEY SAND, angular medium Sand, little coarse sand, little fine sand, little white clay, silt
886						
888						
890		< 0.50	< 0.50		SM	Light gray (Gley 1 7/1) SILTY SAND, fine Sand
892						
894	0				SM/CH	Light gray (Gley 1 7/1) SILTY SAND, fine Sand, some silt, interbedded laminated gray clay
896						
898						
900		< 1.0	< 1.0		SM/CH	Gray (Gley 6/1) SILTY SAND, fine to medium Sand, silty sand microlaminated with lignite
902						
904					SM/CH	Gray (Gley 6/1) SILTY SAND, fine to medium Sand, silty sand microlaminated with lignite
906						
908						
910					ML	Gray (Gley 6/1) SANDY SILT, some angular fine to medium Sand, trace coarse sand, silt
912						
914					ML/CH	Gray (5 Y 6/1) SANDY SILT, fine to coarse Sand, silt interbedded with gray clay
916						
918						

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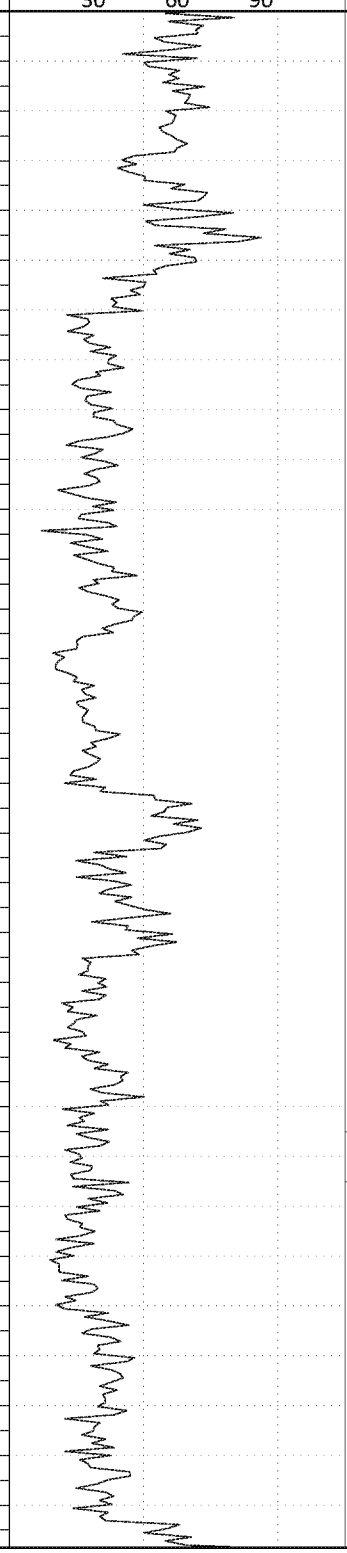
Boring Log



DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
918						
920				Magothy	ML/CH	Gray (5 Y 6/1) SANDY SILT, fine to coarse Sand, silt interbedded with gray clay, trace gravel
922						
924					ML/CH	Gray (5 Y 6/1) SANDY SILT, fine to coarse Sand, silt interbedded with gray clay, trace gravel
926						
928						
930					ML/CH	Gray (5 Y 6/1) SANDY SILT, medium Sand, some silt interbedded with laminated clay
932						
934					SM	Gray (10 YR 5/1) SILTY SAND, fine to medium Sand, some silt, trace coarse sand
936						
938						
940		< 5.0	< 5.0		SM	Gray (Gley 1 6/1) SILTY SAND, angular fine to medium Sand, trace coarse sand, little silt
942						
944		< 5.0	< 5.0		SM	Gray (Gley 1 5/1) SILTY SAND, angular medium to coarse Sand, little silt
946						
948						
950						
952						
954						
956						
958						
960		< 0.50	< 0.50		SM	Gray (7.5 YR 5/1) SILTY SAND, fine Sand
962						
964	0				CH/SM	Gray (Gley 1 6/1) SILTY SAND, fine Sand, micaceous, top 0.5" gray clay
966						
968						
970					SM	Gray (Gley 1 6/1) SILTY SAND, angular fine to coarse Sand, trace fine gravel, little silt
972						
974					SM	Gray (Gley 1 5/1) SILTY SAND, angular fine to coarse Sand, little silt, lignite
976						
978						
					SM/CH	Gray (Gley 1, 6/1) SILTY SAND microlaminated with Lignite, clay

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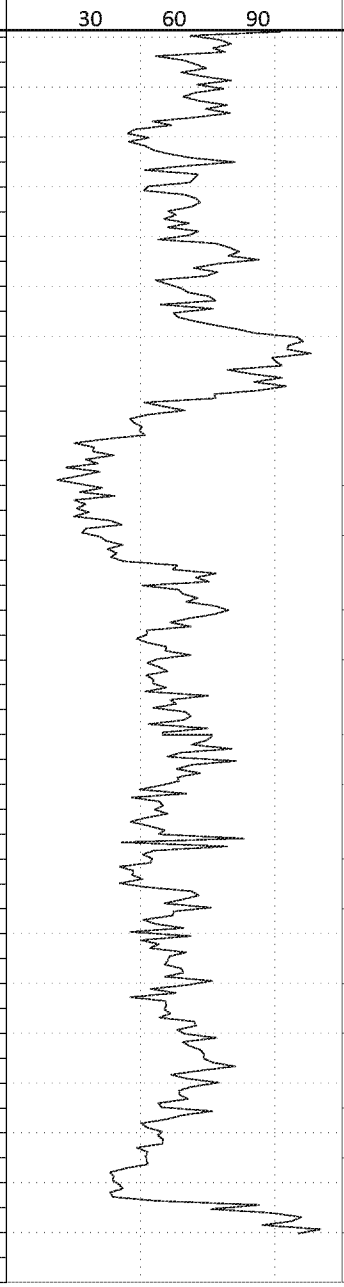


DEPTH (ft)	PID (ppm)	TCE (ug/L)	PCE (ug/L)	Formation	USCS	MATERIAL DESCRIPTION
980				Magothy	SM/CH	Gray (Gley 1, 6/1) SILTY SAND microlaminated with Lignite, clay *(continued)*
982						
984					SM/CH	Gray (Gley 1, 6/1) SILTY SAND microlaminated with Lignite, clay
986						
988						
990					SM/CH	Gray (Gley 1, 6/1) SILTY SAND microlaminated with Lignite, clay
992						
994					SM	Gray (Gley 1 6/1) SILTY SAND, fine Sand, micaceous, little silt
996						
998					CH	Gray fat CLAY, laminated
1000	0				SM	Gray (Gley 1 6/1) SILTY SAND, fine Sand, micaceous, little silt. Forms sharp contact with overlying clay
1002						
1004	0			Raritan	CH	Gray (Gley 1 5/1) fat CLAY, laminated
1006						
1008						
1010	0				CH	Gray (Gley 1 5/1) fat CLAY, laminated
1012						
1014	0				PT	Black (10 YR 2/1) LIGNITE and Clay, friable
1016						
1018						
1020	0				CH	Very dark gray (10 YR 3/1) CLAY, microlaminated
1022						
1024	0				CH	Gray (7.5 YR 5/1) CLAY, laminated
1026						
1028						
1030	0				CH	Light gray (7.5 YR 7/1) with red mottling CLAY, laminated

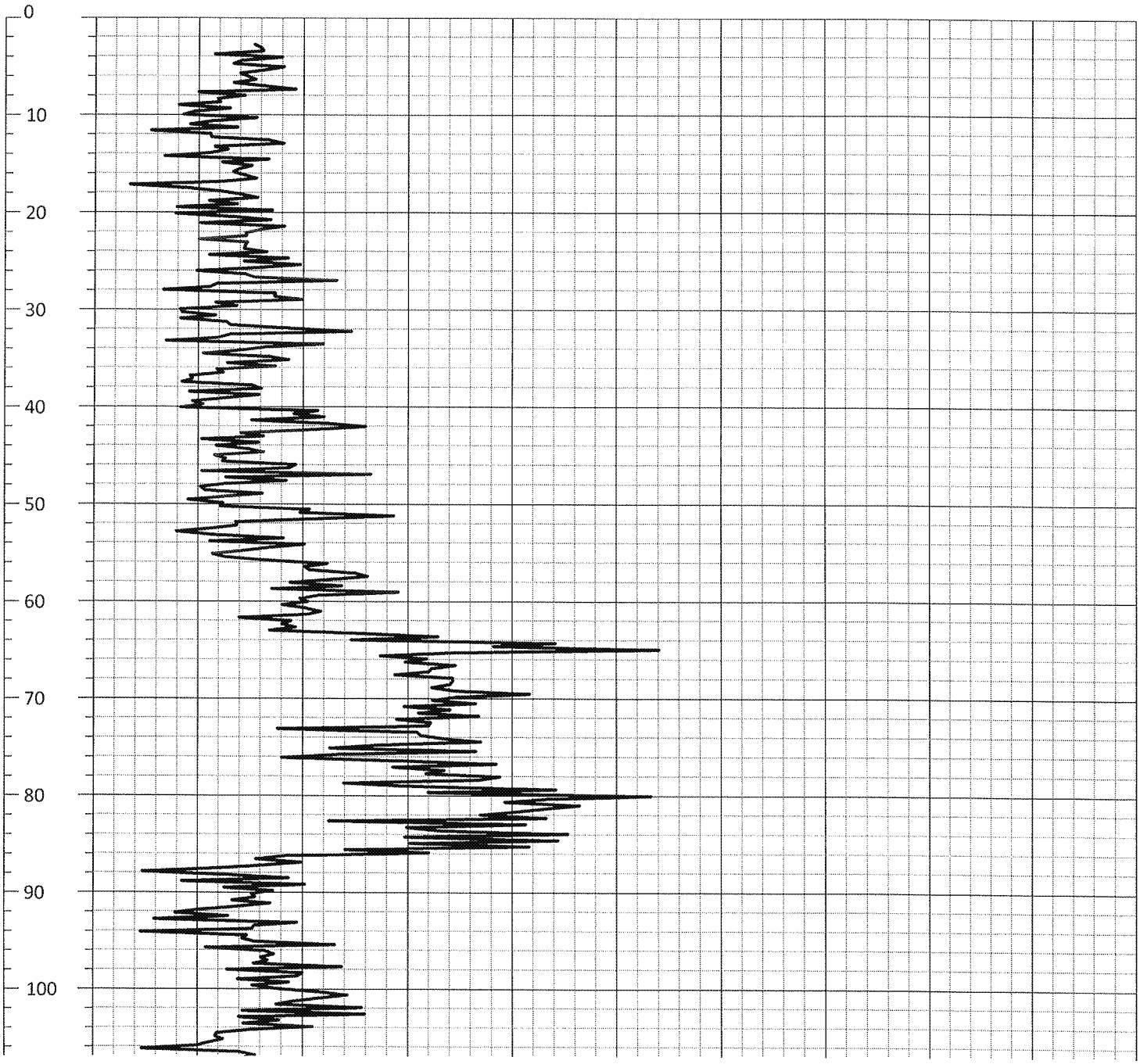
End of boring at 1030.0 ft. bgs.

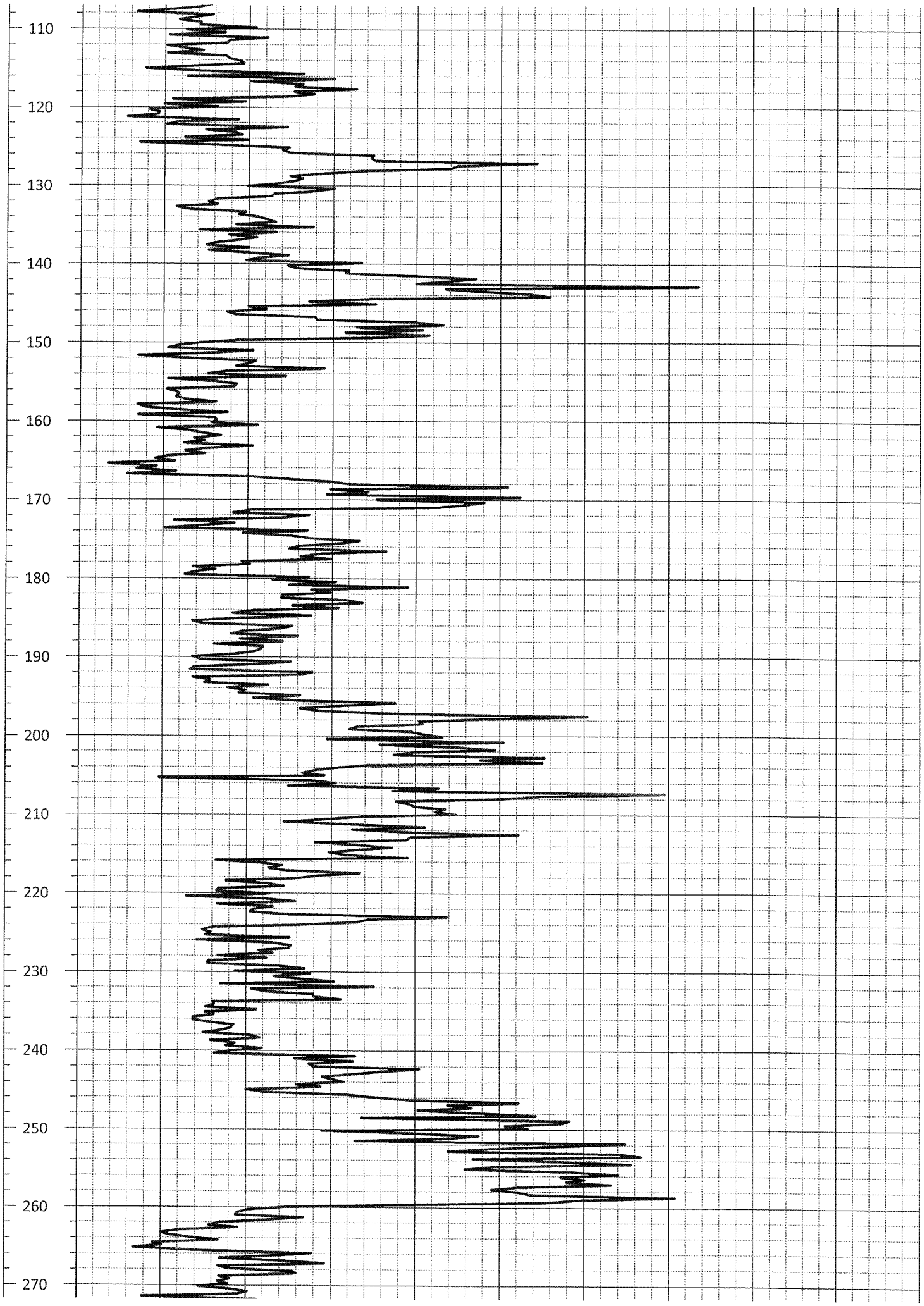
DOWN HOLE RUN

COMPANY:	DELTA WELL & PUMP CO., INC.
LOCATION:	NWIRP CROCUS DR.

Well: VPB-147		Depth Driller:
		Depth Logger:
Date: 07/08/2014	Time:	Logged by: CMO
File Name: 739		Witness: VAL

Depth (ft.) 0.0 GAMMA (cps) 100.0

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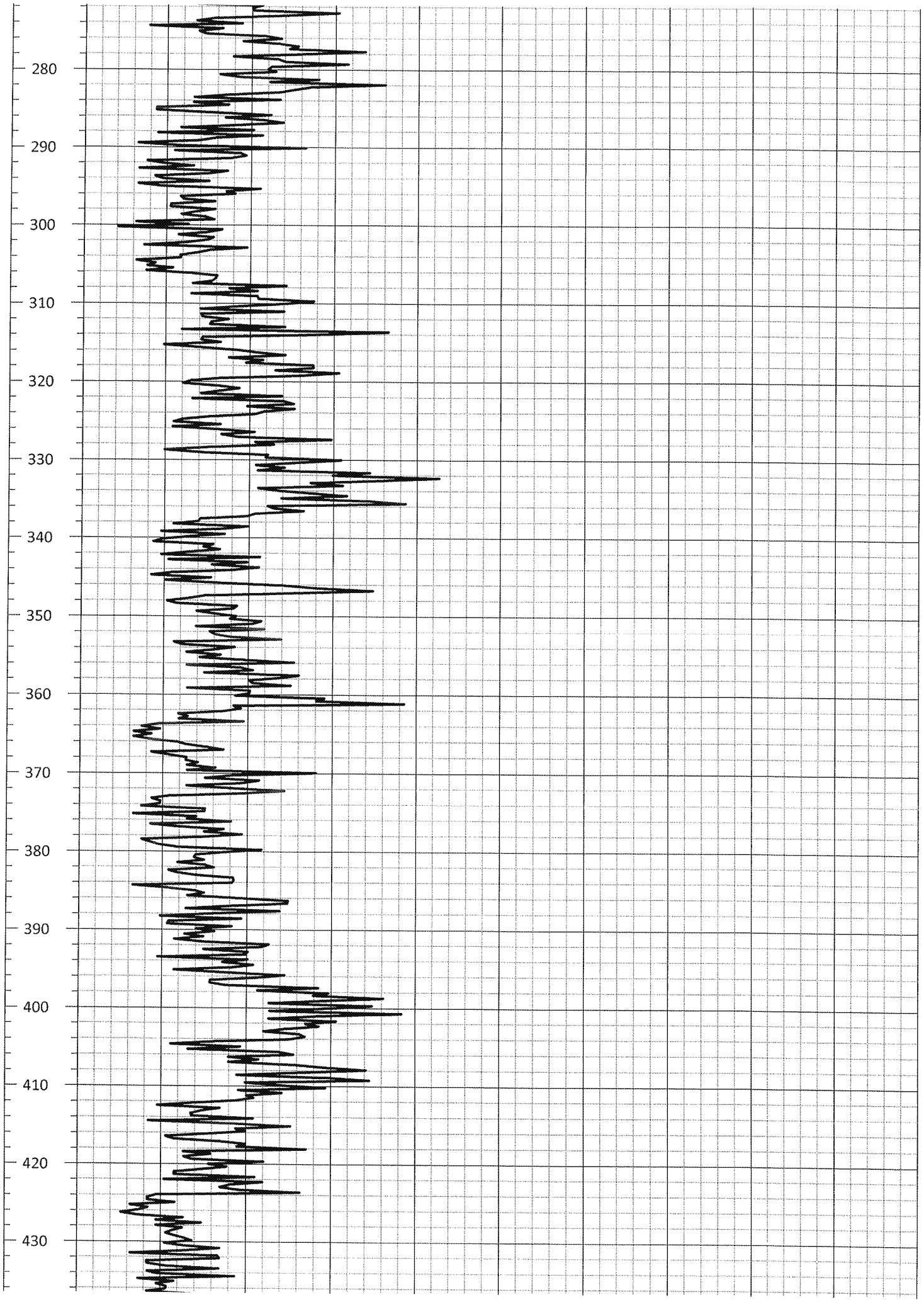
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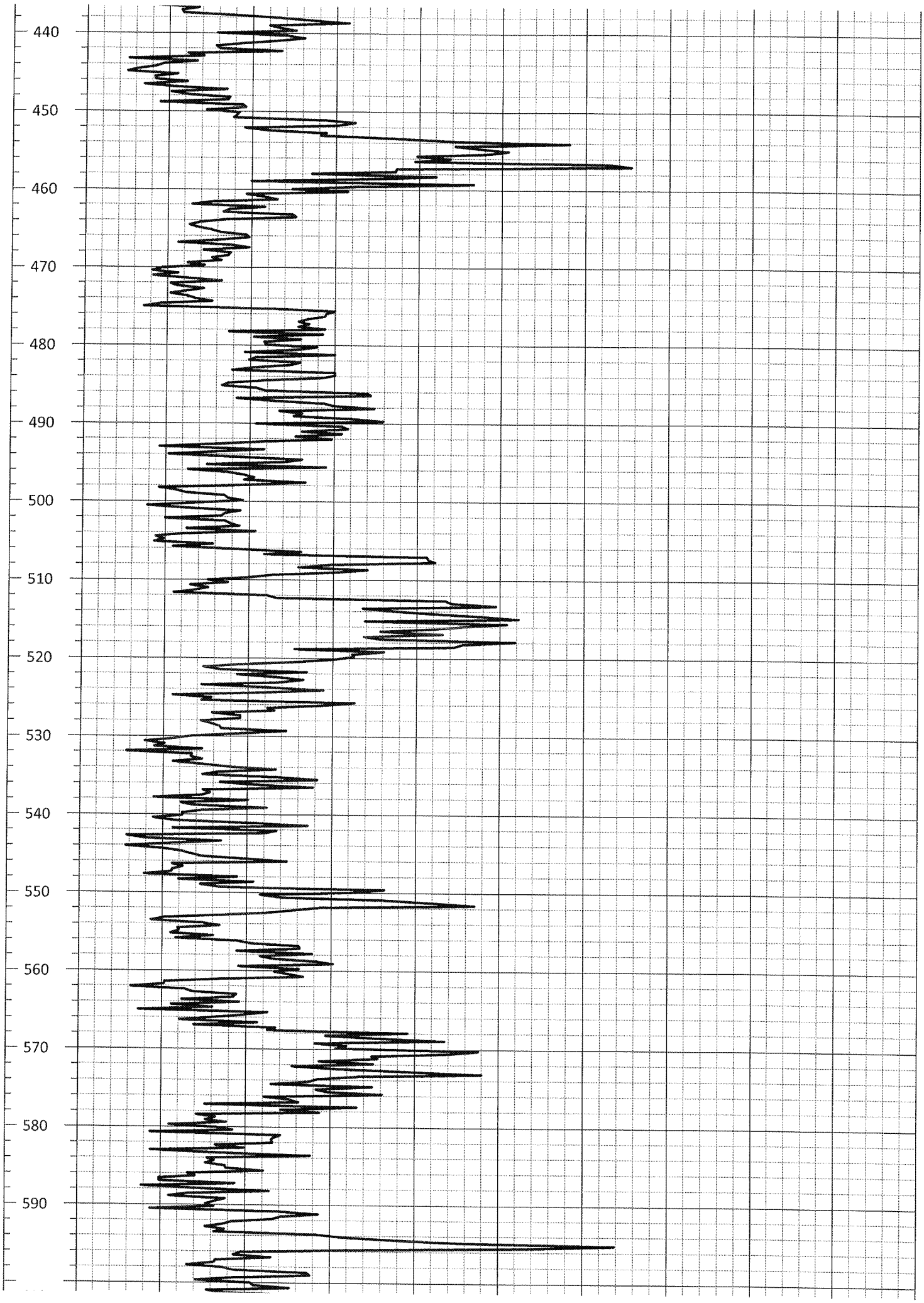
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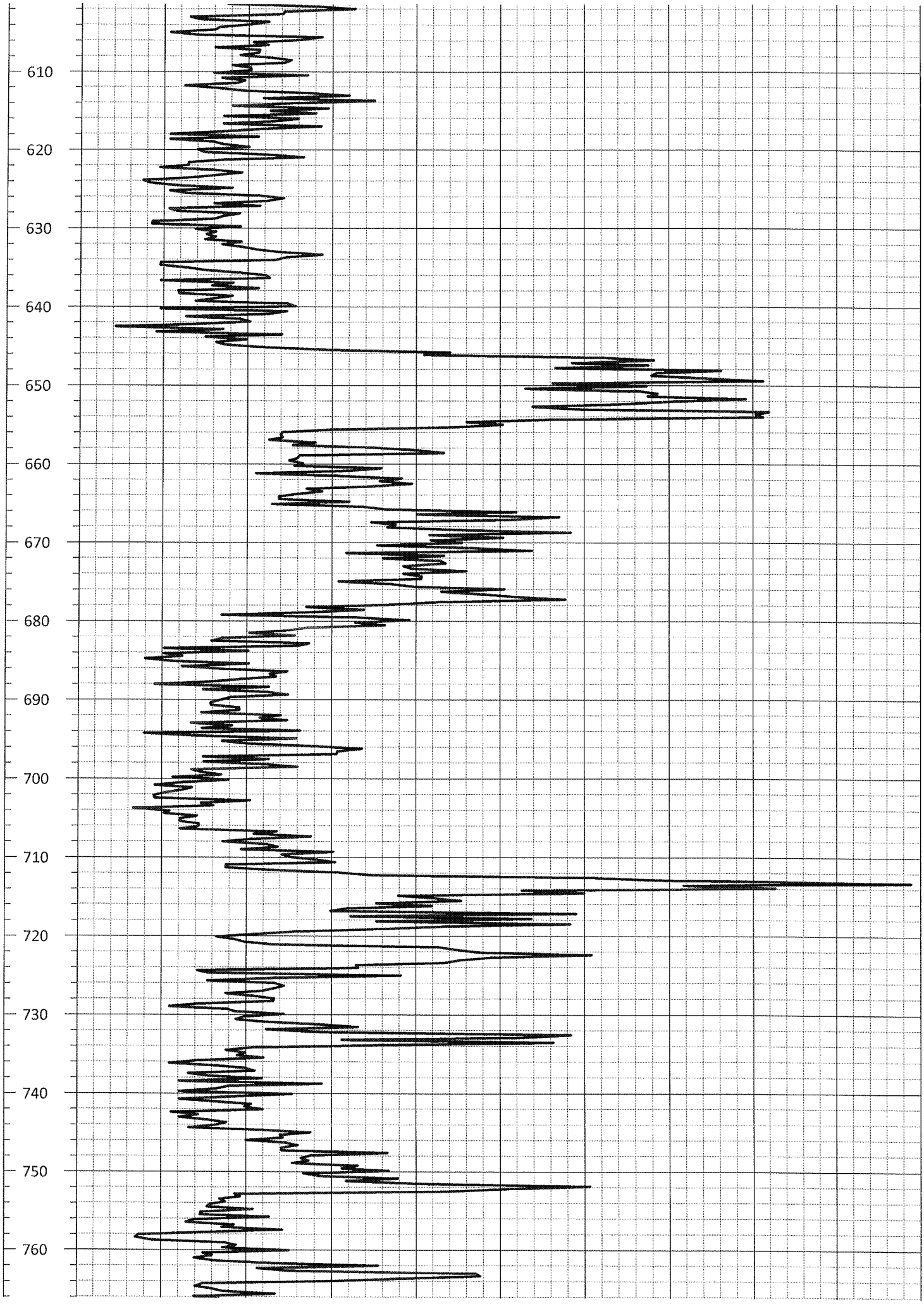
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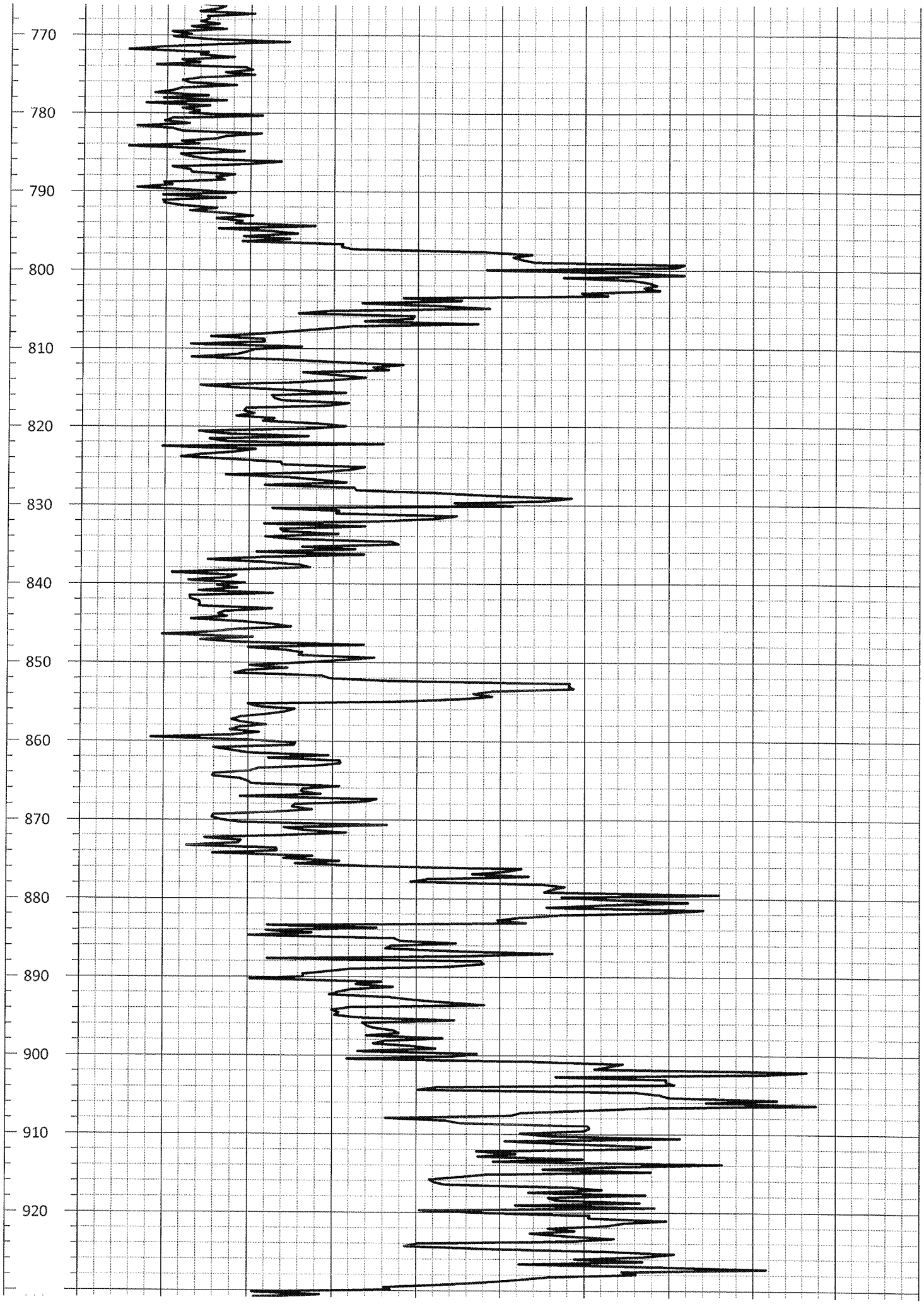
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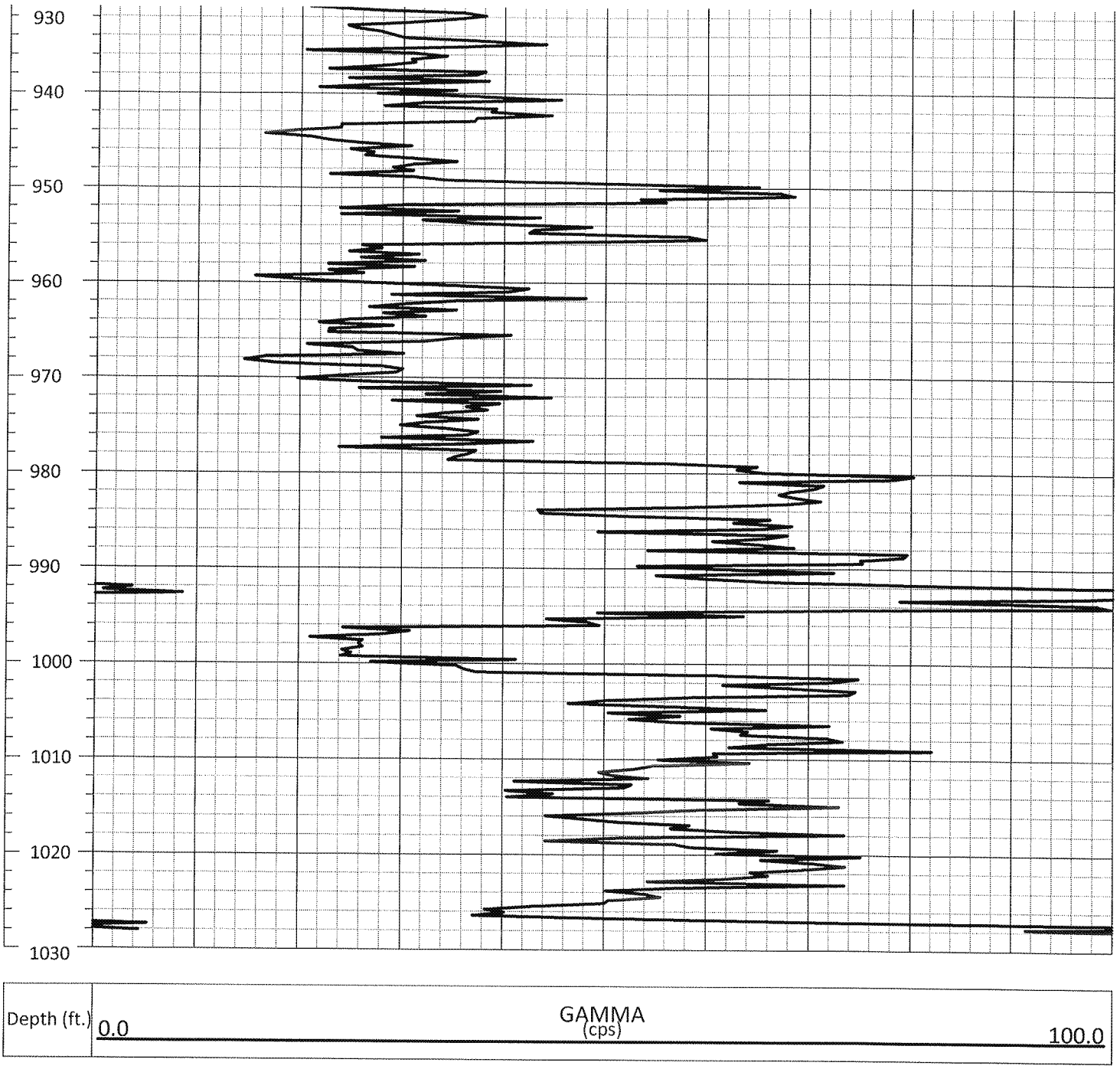
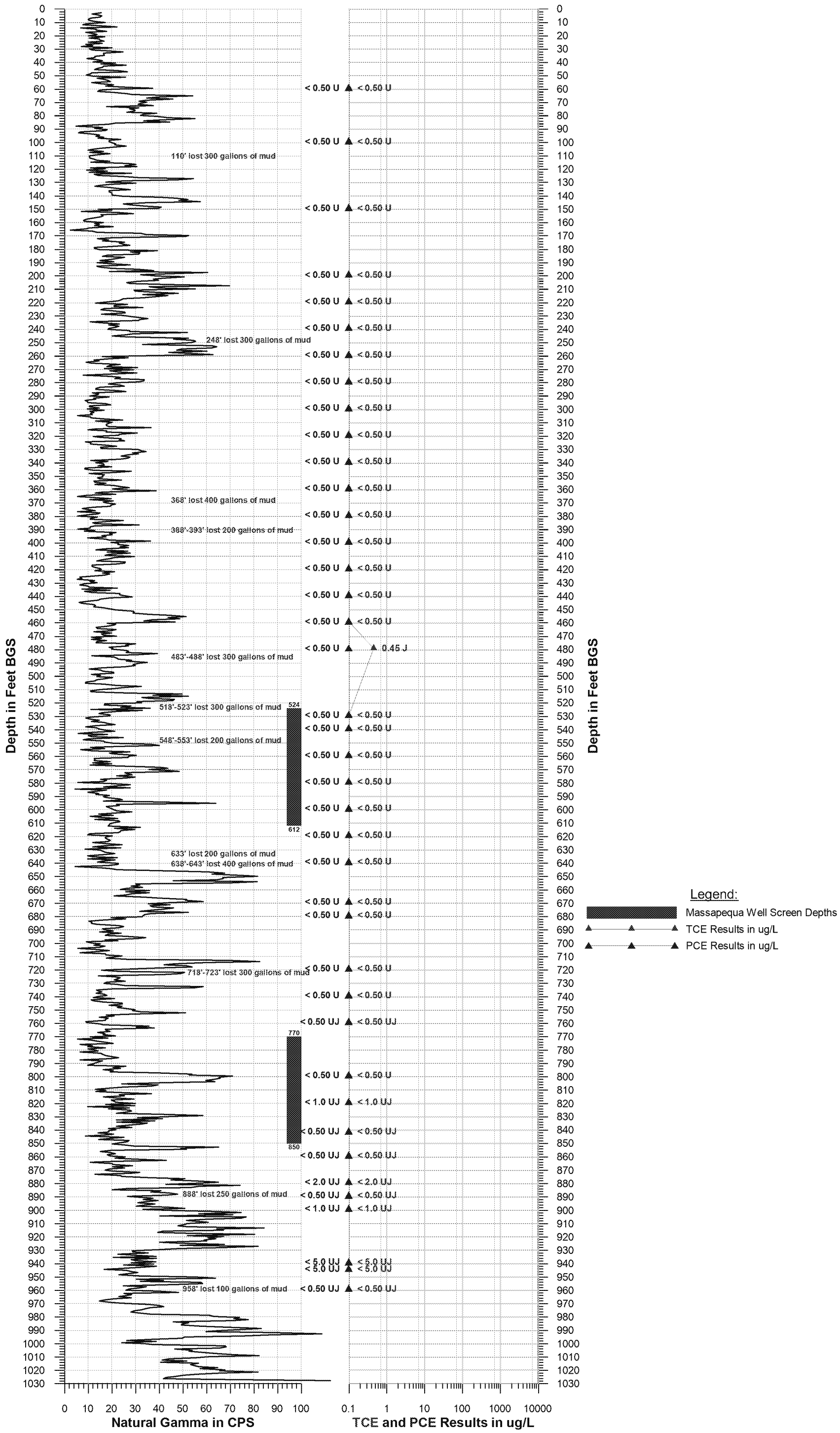

930
940
950
960
970
980
990
1000
1010
1020
1030
Depth (ft.)
0.0
GAMMA
(cps)
100.0

Section 2

VPB 147 Gamma and PCE/TCE Plot

Vertical Profile Boring VPB-147
Downward Run - July 8, 2014
Validated Analytical Data



Section 3

VPB 147 Groundwater Sample Log Sheets

Hydropunch Sample

Client: Navy
Project No: 60266526
Site Location: intersection of Crocus Drive and Sheep Pasture Road North Massapequa

Date: June 5 - June 10, 2014
VPB: 147
Collector(s): Hal Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
6/5/14	12:45	18.96	7.04	465	5.86	65.8	466	58	60	pale brown
6/5/14	15:00	19.61	6.74	414	3.39	86.0	422.8	98	100	pale gray
6/6/14	11:00	20.27	7.32	625	0.02	12.4	1000+	148	150	initially clear sample then dark brown as pumping
6/6/14	14:45	not enough recovery for YSI						198	200	
6/9/14	10:00	16	5.75	239	8.87	85.8	239	218	220	clear
6/9/14	12:00	17	6.00	146	7.56	82.0	136.3	238	240	clear
6/9/14	14:15	18.85	7.51	148	4.47	44.6	297.4	258	260	
6/9/14	16:00	15.27	6.90	220	6.90	55.40	73.75	278	280	clear
6/10/14	11:30	20.88	6.79	274	3.74	79.9	100.8	298	300	clear
6/10/14	14:30	21.54	7.21	310	8.64	43.2	183.6	318	320	
6/10/14	17:00	21.77	7.56	379	5.76	44.0	221.5	338	340	

Hydropunch Sample

Client: Navy
Project No: 60266526
Site Location: Crocus Dryer & Sheep Pasture Lane

Date: June 11 – June 18, 2014
VPB: 147
Collector(s): V. Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
6/11/14	10:15	19.41	6.13	229	8.27	43	211.6	358	360	clear
6/11/14	13:15	17.0	6.14	251	6.84	32.6	77.9	378	380	
6/12/14	16:30	22.5	6.12	155	5.85	47.1	116.5	398	400	
6/12/14	14:30	21.34	6.26	178	4.38	33.1	32.05	418	420	Pale gray
6/12/14	16:00	23.43	6.36	56	5.01	24.7	161.3	438	440	Pale gray
6/13/14	12:30	24.3	6.65	39	7.35	53.5	754.7	458	460	
6/13/14	14:45	23.58	6.68	107	5.00	18.0	469.9	478	480	
6/16/14	11:30	no recovery						498	500	
6/16/14	15:00	no recovery						518	520	~~Gray Silty~~ VT
6/17/14	10:15	not enough recovery						528	530	Brownish Gray
6/17/14	13:00	22.84	7.02	228	0.57	35.7	109.2	538	540	Gray
6/17/14	15:00	17.16	6.87	95	2.87	64.6	200.4	558	560	Gray
6/18/14	10:15	not enough recovery for YSI						578	580	

Hydropunch Sample

Client: Navy
Project No: 60266526
Site Location: intersection of Crocus Drive and Sheep Pasture Lane, North Massapequa

Date: June 18 - June 24, 2014
VPB: 147
Collector(s): V. Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
6/18/14	13:00	23.9	6.53	76	6.4	104	680.7	598	600	
6/18/14	16:00	24.71	6.08	101	4.42	119.4	1000+	618	620	Gray silt
6/19/14	11:00	not enough recovery for YSI						638	640	
6/19/14	no recovery							658	660	
6/19/14	16:00	20.73	7.24	65	4.25			668	670	
6/20/14	10:30	23.56	7.10	102	5.53	6.1	924	678	680	pale gray
6/20/14	13:45	no recovery						698	700	
6/23/14	11:15	29.8	6.22	164	4.2	74.3	812.2	718	720	
6/23/14	14:00	24.35	5.97	111	4.7	50.6	960.3	738	740	
6/24/14	11:30	23.67	6.70	147	2.37	20.4	1000+	758	760	pale gray milky color
6/24/14	13:45	no recovery						778	780	
6/24/14	16:00	no recovery						783	785	
6/25/14	12:00	not enough recovery for YSI						798	800	

Hydropunch Sample

Client: Navy
Project No: 60026926
Site Location: Crocus Drive & Sheep Pasture Lane

Date: June 25 – July 2, 2014
VPB: 147
Collector(s): V. Thayer

Sample Date	Time	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Starting depth(ft)	Ending depth(ft)	Color
6/25/14	14:40	not enough sample for YSI						818	820	Silty Gray
6/26/14	11:00	24.48	7.07	288	1.51	83.5	860	840	842	Gray
6/26/14	16:00	26.17	6.61	784	0.75	9.3	1000+	858	860	Dark gray
6/27/14	10:30	21.10	7.06	775	4.62	105.1	1000+	878	880	Dark gray
6/27/14	13:45	26.88	7.08	792	0.54	1.9	1000+	888	890	Dark gray
6/30/14	12:15	not enough sample for YSI						898	900	
6/30/14	15:30	no recovery						918	920	
7/01/14	11:30	22.26	7.58	766	1.83	18.4	1000+	938	940	GRAY
7/01/14	14:15	not enough sample for YSI						943	945	
7/01/14	17:00	not enough sample for YSI						958	960	Gray "MUD"
7/02/14	12:00	not enough groundwater recovered						978	980	black muck
7/02/14	14:45	no groundwater recovered						988	990	

Section 4

VPB 147 Analytical Data Validation

- Analytical Data Sheets
- Chain of Custody Records
- Validation Letter and Table

RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH3955
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/23/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH3955_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 5, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-060514-58-60	Ground water
VPB147-GW-060514-98-100	Ground water
VPB147-TRIP BLANK-060514	Trip Blank

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

REVIEW ELEMENTS

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

✓ Data completeness (chain-of-custody (COC))/sample integrity
✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification
✓ Laboratory blanks/trip blanks/equipment blanks
✗ Surrogate spike recoveries
NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS) results
NA Field duplicates
✓ Internal standards

✓ 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

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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 are 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.

Surrogate Spike Recoveries

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

Nonconformances are summarized in Attachment A in Table A-3. Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

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

LCS Results

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

Field Duplicate Results

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

Internal Standard Results

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

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-TRIP BLANK-060514	WQ	ACETONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-060514	WQ	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060514	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060514	WQ	CHLOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060514	WQ	METHYL TERT-BUTYL ETHER		0.50	UG_L	UJ	c
VPB147-TRIP BLANK-060514	WQ	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
27-May-2014 10:16	chloroethane	17.2	<15%
Associated samples: VPB147-TRIP BLANK-060514			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG144345-4	chloromethane	21.3	<20%
	bromomethane	43.6	<20%
	chloroethane	33.7	<20%
	trichlorofluoromethane	30.2	<20%
	acetone	37.0	<20%
	Methyl tert-butyl ether	23.3	<20%
Associated sample: VPB147-TRIP BLANK-060514			

Table A-3 - Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
VPB147-TRIP BLANK-060514	1,2-DICHLOROETHANE-D4	126	70	120

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-1
Client ID: 147-TB-060514
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8821.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 09-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144345

Analysis Date: 09-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	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~~ UJ	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~~ UJ	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~~ UJ	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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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-1
Client ID: 147-TB-060514
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8821.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 09-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144345

Analysis Date: 09-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene	*	74.7	%					
Toluene-d8		96.6	%					
1,2-Dichloroethane-d4	*	126.	%					
Dibromofluoromethane		102.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-2RA
Client ID: 147-060514-58-60
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8912.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 13-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144658

Analysis Date: 13-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	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		12	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	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	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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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-2RA
Client ID: 147-060514-58-60
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8912.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 13-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144658

Analysis Date: 13-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		102.	%					
Toluene-d8		112.	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-3RA
Client ID: 147-060514-98-100
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8913.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 13-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144658

Analysis Date: 13-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	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	J	2.3	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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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH3955-3RA
Client ID: 147-060514-98-100
Project: Navy Clean WE15-03-06 NW
SDG: SH3955
Lab File ID: D8913.D

Sample Date: 05-JUN-14
Received Date: 06-JUN-14
Extract Date: 13-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144658

Analysis Date: 13-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 19-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		106.	%					
Toluene-d8		115.	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		109.	%					

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RESOLUTION CONSULTANTS

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Chelmsford, MA 01824

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH4055
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/24/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH4055_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 6, 2014 and June 9, 2014.

Sample ID	Matrix/Sample Type
VPB147-GWD-060914	Field Duplicate of VPB147-GW-060914-218-220
VPB147-GW-060614-148-150	Ground water
VPB147-GW-060614-198-200	Ground water
VPB147-GW-060914-218-220	Ground water
VPB147-GW-060914-238-240	Ground water
VPB147-GW-060914-258-260	Ground water
VPB147-GW-060914-278-280	Ground water
VPB147-TRIP BLANK-060914	Trip Blank

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

REVIEW ELEMENTS

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

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

✓ Laboratory blanks/trip blanks/equipment blanks
✓ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS) results
✓ Field duplicates
✓ Internal standards
✓ 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

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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.

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.

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

LCS Results

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

All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate 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.

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
VPB147-GW-060614-148-150	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060614-148-150	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060614-148-150	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060614-148-150	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060614-198-200	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060614-198-200	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060614-198-200	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060614-198-200	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-218-220	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060914-218-220	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-218-220	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-218-220	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-238-240	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060914-238-240	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-238-240	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-238-240	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-258-260	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060914-258-260	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-258-260	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-258-260	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-278-280	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-060914-278-280	WG	BROMOMETHANE		1.0	UG_L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-060914-278-280	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-060914-278-280	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GWD-060914	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GWD-060914	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GWD-060914	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GWD-060914	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060914	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-060914	WQ	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060914	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-060914	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
09-June-2014 11:06	chloroethane	36.2	<15%
Associated samples: all samples in SDG SH4055			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG144490-4	dichlorodifluoromethane	31.3	<20%
	bromomethane	-23.9	<20%
	chloroethane	-26.3	<20%
	4-methyl-2-pentanone	25.8	<20%
Associated samples: all samples in SDG SH4055			

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 ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vivandou
Phone #: ( )
Fax #: ( )
Address: 998 C Old Country Rd
City: Plainview
State: NY
Zip Code: 11803
Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: 5H4055 /
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB147-GW-060614-148-150	6/6/14 / 11:00	GW	3	X										
✓	VPB147-GW-MS/MSD-060614 148-150	6/6/14 / 11:00	GW	6	X										
✓	VPB147-GW-060614-198-200	6/6/14 / 2:45	GW	1	X										
✓	VPB147-TripBlanks-060914	5/2/14 / 11:00	W	3	X										
✓	VPB147-GW-060914-278-280	6/9/14 / 4:00	GW	4	X										
✓	VPB147-GW-060914-258-260	6/9/14 / ~~12:00~~ 14:15	GW	4	X										
✓	VPB147-GW-060914-238-240	6/9/14 / 12:00	GW	4	X										
✓	VPB147-GW-060914-218-220	6/9/14 / 10:00	GW	4	X										
✓	VPB147-GWD060914	6/9/14 / 10	GW	3	X										
	Temperature Blank	/		1											
		/													
		/													

COMMENTS: VPB147-GW-060614-198-200 - bubbles formed after sampling

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/9/14 7	6-10-14 09:00			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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

KAS-COC1

0000010
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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-1
Client ID: 147-060614-148-150
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7582.D

Sample Date: 06-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~UMM~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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	~~UM~~ U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	J	0.35	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		13	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	~~UMM~~ U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	~~UM~~ 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. 1/29/15

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-1
Client ID: 147-060614-148-150
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7582.D

Sample Date: 06-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	~~UMM~~ 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	~~UMM~~ 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	~~UMM~~ 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		94.2	%					
Toluene-d8		97.0	%					
1,2-Dichloroethane-d4		109.	%					
Dibromofluoromethane		97.9	%					

1/29/15

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-2
Client ID: 147-060614-198-200
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7583.D

Sample Date: 06-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	J	0.29	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		6.9	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/12/14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-2
Client ID: 147-060614-198-200
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7583.D

Sample Date: 06-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		88.2	%					
Toluene-d8		91.8	%					
1,2-Dichloroethane-d4		103.	%					
Dibromofluoromethane		94.1	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-7
Client ID: 147-060914-218-220
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7587.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/12/14

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-7
Client ID: 147-060914-218-220
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7587.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.1	%					
Toluene-d8		92.3	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		96.4	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-6
Client ID: 147-060914-238-240
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7586.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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	J	3.3	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-6
Client ID: 147-060914-238-240
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7586.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.8	%					
Toluene-d8		94.1	%					
1,2-Dichloroethane-d4		105.	%					
Dibromofluoromethane		96.0	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-5
Client ID: 147-060914-258-260
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7585.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-5
Client ID: 147-060914-258-260
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7585.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.0	%					
Toluene-d8		93.3	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		94.6	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-4
Client ID: 147-060914-278-280
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7584.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-4
Client ID: 147-060914-278-280
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7584.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.3	%					
Toluene-d8		96.6	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		98.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-8
Client ID: VPB147-GWD-060914
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7588.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-8
Client ID: VPB147-GWD-060914
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7588.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.4	%					
Toluene-d8		93.6	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		95.4	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-3
Client ID: VPB147-TB-060914
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7579.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	~~U~~ UJ	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4055-3
Client ID: VPB147-TB-060914
Project: Navy Clean WE15-03-06 NW
SDG: SH4055
Lab File ID: C7579.D

Sample Date: 09-JUN-14
Received Date: 10-JUN-14
Extract Date: 11-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144490

Analysis Date: 11-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.0	%					
Toluene-d8		93.6	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		93.1	%					

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH4157
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and EPA SW-846 Method 9060 for TOC (Carbonaceous analyzer, IR or FID)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by: Dawn Brule/RESCON	Completed on: 09/29/2014
Reviewed by: Paula DiMattei/RESCON	File Name: SH4157_8260B_9060

SUMMARY

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

Sample ID	Matrix/Sample Type
VPB147-EB-061114	Equipment blank
VPB147-SOIL-D-061014	Field Duplicate of VPB147-SOIL-061014-283-285
VPB147-GW-061014-298-300	Ground water
VPB147-GW-061014-318-320	Ground water
VPB147-GW-061014-338-340	Ground water
VPB147-GW-061114-358-360	Ground water
VPB147-GW-061114-378-380	Ground water
VPB147-SOIL-061014-283-285	Soil
VPB147-TB-061114	Trip Blank

The samples were analyzed in accordance with *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846* (USEPA, 1996), specifically:

- Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry*
- Method 9060A, *Total Organic Carbon*

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. 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 parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (COC))/sample integrity
✓ Holding times and sample preservation
✓ GC/MS performance checks
✗ Initial calibration/continuing calibration verification
✗ Laboratory blanks/trip blanks/equipment blanks
✓ Surrogate spike recoveries
✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓ Laboratory control sample (LCS) results
✗ Field duplicates
✓ Internal standards
✓ 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 or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

RESOLUTION CONSULTANTS

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Chelmsford, MA 01824

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GC/MS Performance Checks

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

The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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).

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

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

Nonconformances are summarized in Attachment A in Tables A-3 . Sample results were qualified as follows:

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

LOQ - Limit of Quantitation. Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

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

All QC acceptance criteria were met.

MS/MSD Results

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

All QC acceptance criteria were met.

LCS Results

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

All QC acceptance criteria were met.

Field Duplicate Results

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

Nonconformances are summarized in Attachment A in Table A-4.

Data qualification to the analytes associated with the specific field duplicate RPDs was as follows:

Actions: professional judgment was used

Criteria	RPD	Action	
		Detected	Nondetected
Sample and duplicate are nondetect results	Not calculable (NC)	No qualification	No qualification
Sample and duplicate results ≥5x LOQ	>30 (soil)	J	Not Applicable
Sample and duplicate results <5x LOQ	>60 (soil)	J	Not Applicable
If sample or duplicate result is >5x LOQ and the other is not detected	NC	J	UJ
If sample or duplicate result is <5x LOQ and the other is not detected	NC	No qualification	No qualification

Qualified sample results are shown in Table 1.

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
VPB147-EB-061114	WQ	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-EB-061114	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-EB-061114	WQ	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-EB-061114	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-EB-061114	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-298-300	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-298-300	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-298-300	WG	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-GW-061014-298-300	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-298-300	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-318-320	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-318-320	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-318-320	WG	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-GW-061014-318-320	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-318-320	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-338-340	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-338-340	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061014-338-340	WG	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-GW-061014-338-340	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061014-338-340	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061114-358-360	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061114-358-360	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-061114-358-360	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061114-358-360	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061114-378-380	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061114-378-380	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061114-378-380	WG	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-GW-061114-378-380	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061114-378-380	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-SOIL-061014-283-285	SO	TOTAL ORGANIC CARBON	1500	490	UG_G	J	fd
VPB147-SOIL-D-061014	SO	TOTAL ORGANIC CARBON	3600	500	UG_G	J	fd
VPB147-TB-061114	WQ	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-TB-061114	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-TB-061114	WQ	CARBON DISULFIDE		1.0	UG_L	U	bl
VPB147-TB-061114	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TB-061114	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
09-June-2014 11:06	chloroethane	36	<15%
Associated samples: VPB147-EB-061114, VPB147-GW-061014-298-300, VPB147-GW-061014-318-320, VPB147-GW-061014-338-340, VPB147-GW-061114-378-380, VPB147-TB-061114			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% R	Limits
WG144656-4	dichlorodifluoromethane	45	<20%
	chloroethane	-26	<20%
	4-methyl-2-pentanone	30	<20%
	2-hexanone	21	<20%
Associated samples: VPB147-EB-061114, VPB147-GW-061014-298-300, VPB147-GW-061014-318-320 VPB147-GW-061014-338-340, VPB147-GW-061114-378-380, VPB147-TB-061114			

Table A-3 - Lab Blanks

Blank ID	Compound	Result	QL	Units	Associated Samples
WG144656-2	CARBON DISULFIDE	0.33	0.50	UG_L	VPB147-EB-061114 VPB147-GW-061014-298-300 VPB147-GW-061014-318-320 VPB147-GW-061014-338-340 VPB147-GW-061114-378-380 VPB147-TB-061114

Table A-4 - Field Duplicates

Sample ID	Duplicate ID	Analyte	Sample Result	Qual	Duplicate Result	Qual	LOQ	Units	RPD
VPB147-SOIL-061014-283-285	VPB147-SOIL-D-061014	TOC	1500		3600		490	ug/g	82.4

Attachment B

Qualifier Codes and Explanations

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

Attachment C

Reason Codes and Explanations

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

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

CHAIN of CUSTODY

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Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vinnedow
Phone #: ( )
Fax #: ( )
Address: 998 C Old Country Rd
City: Plainview
State: NY
Zip Code: 11803
Purchase Order #:
Proj. Name / No.:
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer / Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER/#: SH4157
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 (Filt. ☐Y ☐N)	TOC (Filt. ☐Y ☐N)	TOC MS/MSD (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB147-Triplblank-061114	5/21/14 / 10:00	W	3	X									
	Temp blank	/	W	1										
✓	VPB147-GW-061014-298-300	06 10 2014 / 11:30	GW	4	X									
	VPB147-GW-061014-318-320	06 10 2014 / 11:30	GW	3	X									
✓	VPB147-GW-061014-338-340	0610 2014 / 5:00 pm	GW	4	X									
*	VPB147-Soil-061014-283-285	0610 2014 / 8:45 am	Soil	1	VT	X	X							
✓	VPB147-Soil/D-061014-VT	0610 2014 / 8:45	Soil	1		X								
✓	VPB147-GW-061114-358-360	0611 2014 / 10:15	GW	3	X									
✓	VPB147-GW-061114-378-380	06/11 2014 / 13:15	GW	4	X									
**	VPB147-GW-Equipment Rinsate Blank-061114	06/11 2014 / 14:20	W	3	X									

COMMENTS
* Please use 8oz jar for TOC sample & MS/MSD
** Equipment Rinsate Blank using hydropunch & distilled water (LAB)

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	06/11/14 7	6-12-14 0900			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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ORIGINAL

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-9
Client ID: VPB147-EB-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7630.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

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

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12/12/14

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-9
Client ID: VPB147-EB-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7630.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.0	%					
Toluene-d8		95.4	%					
1,2-Dichloroethane-d4		103.	%					
Dibromofluoromethane		92.3	%					

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-2
Client ID: 147-061014-298-300
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7632.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

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

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-2
Client ID: 147-061014-298-300
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7632.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		93.5	%					
Toluene-d8		95.8	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		95.1	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-3
Client ID: 147-061014-318-320
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7633.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.29~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	4.5	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-3
Client ID: 147-061014-318-320
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7633.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.0	%					
Toluene-d8		96.3	%					
1,2-Dichloroethane-d4		108.	%					
Dibromofluoromethane		97.4	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-4
Client ID: 147-061014-338-340
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7634.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.39~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		12	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-4
Client ID: 147-061014-338-340
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7634.D

Sample Date: 10-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		98.7	%					
Toluene-d8		99.5	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		101.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-7
Client ID: 147-061114-358-360
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7635.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		5.2	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-7
Client ID: 147-061114-358-360
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7635.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.3	%					
Toluene-d8		95.3	%					
1,2-Dichloroethane-d4		106.	%					
Dibromofluoromethane		95.1	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-8
Client ID: 147-061114-378-380
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7636.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.31~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		6.4	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-8
Client ID: 147-061114-378-380
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7636.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.1	%					
Toluene-d8		96.8	%					
1,2-Dichloroethane-d4		107.	%					
Dibromofluoromethane		96.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-1
Client ID: VPB147-TB-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7629.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

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

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4157-1
Client ID: VPB147-TB-061114
Project: Navy Clean WE15-03-06 NW
SDG: SH4157
Lab File ID: C7629.D

Sample Date: 11-JUN-14
Received Date: 12-JUN-14
Extract Date: 13-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG144656

Analysis Date: 13-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 14-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.4	%					
Toluene-d8		95.4	%					
1,2-Dichloroethane-d4		104.	%					
Dibromofluoromethane		93.2	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH4157-5
Report Date: 01-JUL-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH4157

Sample Description	Matrix	Date Sampled	Date Received
147-061014-283-285	SL	10-JUN-14	12-JUN-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
TOC In Soil	1500 J ug/gdrywt	490	100	N/A	SW846 9060A Mod.	WG145000	17-JUN-14 13:38:35	N/A	N/A	
Total Solids	81. %	1		N/A	SM2540G	WG144717	16-JUN-14 09:29:58	SM2540G	14-JUN-14	

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH4157-6
Report Date: 01-JUL-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH4157

Sample Description	Matrix	Date Sampled	Date Received
147-SOIL-D-061014	SL	10-JUN-14	12-JUN-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
TOC In Soil	3600 J ug/gdrywt	500	100	N/A	SW846 9060A Mod.	WG145000	17-JUN-14 14:17:12	N/A	N/A	
Total Solids	80. %	1		N/A	SM2540G	WG144717	16-JUN-14 09:30:09	SM2540G	14-JUN-14	

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH4221	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and Standard Method 5310 for Total Organic Carbon by High-Temperature Combustion	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 09/25/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4221_5310B and 8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 12, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-EB-061214	Equipment blank
VPB147-GWD-061214	Field Duplicate of VPB147-GW-061214-398-400
VPB147-GW-061214-398-400	Groundwater
VPB147-GW-061214-418-420	Groundwater
VPB147-GW-061214-438-440	Groundwater
VPB147-TRIP BLANK-061214	Trip Blank

The samples were analyzed in accordance with:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996).

Standard Methods for the Examination of Water and Wastewater, Method SM5310B, Total Organic Carbon by High-Temperature Combustion

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

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

✓	Data completeness (chain-of-custody [COC])/sample integrity
✓	Holding times and sample preservation
✓	GC/MS performance checks
✗	Initial calibration/continuing calibration verification
✗	Laboratory blanks/equipment blanks/trip blanks
✓	Surrogate spike recoveries
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS) results
✓	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 or negated 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.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank 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 data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

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

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

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.

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).

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

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

Nonconformances are summarized in Attachment A in Table A-3.

TOC sample results were qualified as follows:

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB (Positive)	≥DL but ≤ LOQ	Nondetect	No action
		≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use professional judgment (see below [1])
	>LOQ	≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ but < ICB/CCB Result	Qualify at level of Blank Result with a "U" or Qualify result as unusable
		>ICB/CCB but <10x the ICB/CCB result	Qualify as estimated (J)
		≥10x ICB/CCB	No action is taken based on professional judgment
PB / EB/ FB (Positive)	> LOQ	≥DL but ≤ LOQ	Qualify as nondetect (U) at the LOQ
		>LOQ but < 10x Blank Result	Qualify results as unusable
		≥10x Blank Result	No action
	≥DL but ≤LOQ	Nondetect	No action
		≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use professional judgment (see below [1])

[1] Establish an action level (AL) at 5x the blank contamination. If sample result is <AL, qualify the reported result with a U.

LOQ - Limit of Quantitation.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

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

MS/MSD Results

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

LCS Results

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

Field Duplicate Results

Field duplicate RPDs were reviewed for conformance with the QC criterion of ≤60% for aqueous matrices. This criterion applies if both results were less 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
VPB147-EB-061214	WQ	TOTAL ORGANIC CARBON		1.0*	MG/L	U	bl
VPB147-GW-061214-398-400	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB147-GW-061214-398-400	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-398-400	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-398-400	WG	ACETONE	7.8	2.5	UG/L	J	c
VPB147-GW-061214-418-420	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB147-GW-061214-418-420	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-418-420	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-438-440	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB147-GW-061214-438-440	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-438-440	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GW-061214-438-440	WG	ACETONE	7.3	2.5	UG/L	J	c
VPB147-GWD-061214	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB147-GWD-061214	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GWD-061214	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GWD-061214	WG	ACETONE	11	2.5	UG/L	J	c
VPB147-TRIP BLANK-061214	WQ	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	c
VPB147-TRIP BLANK-061214	WQ	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-TRIP BLANK-061214	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c

*LOQ

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV ID	Compound	% R	Limits
WG144515-7	acetone	125	80-120%
Associated samples: all samples in SDG SH4221			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG144718-4	4-methyl-2-pentanone	21	≤20%
	2-hexanone	28	≤20%
	1,2-dibromo-3-chloropropane	22	≤20%
Associated samples: all samples in SDG SH4221			

Table A-3 - Lab Blanks

Blank ID	Compound	Result	LOD	Units	Associated Samples
WG145514-1	TOTAL ORGANIC CARBON	0.21	0.50	MG/L	VPB147-EB-061214

Attachment B

Qualifier Codes and Explanations

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

Attachment C

Reason Codes and Explanations

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

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

CHAIN of CUSTODY

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Page 1 of 1

Client: Resolution Consultants
Contact: Eleanor Vivaudou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
Chestnut Ridge NY
Zip Code:
Purchase Order #:
Proj. Name / No.: BBhpage
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer ValThayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH4221
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8240	TOC H2SO4	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB147-GW-061214 438-440	6/12/14 / 4:00	GW	4	X											
✓	VPB147-GW-061214 418-420	6/12/14 / 12:30	GW	4	X											
✓	VPB147-EB-061214	6/12/14 / 10:15	W	3		X										
	VPB147-GW-061214 398-400	6/12/14 / 9:45	GW	4	X											
	VPB147-GWD 061214	/ 9:45	GW	3	X											
	Temperature Blank	/	W	1												
	VPB147-Trip blank 061214	6/12/2014 / 10:00	W	3	X											

OMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	06/12/14 7:00	[signature]			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-4
Client ID: 147-061214-398-400
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8942.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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	J	7.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/12/14

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-4
Client ID: 147-061214-398-400
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8942.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		101.	%					
Toluene-d8		111.	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		108.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-2
Client ID: 147-061214-418-420
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8941.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-2
Client ID: 147-061214-418-420
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8941.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		103.	%					
Toluene-d8		113.	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		108.	%					

R 12/12/14

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-1
Client ID: 147-061214-438-440
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8940.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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	J	7.3	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-1
Client ID: 147-061214-438-440
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8940.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		104.	%					
Toluene-d8		112.	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-5
Client ID: VPB147-GWD-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8943.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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	J	11	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-5
Client ID: VPB147-GWD-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8943.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		103.	%					
Toluene-d8		110.	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		108.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-6
Client ID: VPB147-TB-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8933.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4221-6
Client ID: VPB147-TB-061214
Project: Navy Clean WE15-03-06 NW
SDG: SH4221
Lab File ID: D8933.D

Sample Date: 12-JUN-14
Received Date: 13-JUN-14
Extract Date: 14-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG144718

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

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~U~~ UJ	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		99.5	%					
Toluene-d8		110.	%					
1,2-Dichloroethane-d4		110.	%					
Dibromofluoromethane		104.	%					

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Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH4221-3
Report Date: 01-JUL-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH4221

Sample Description	Matrix	Date Sampled	Date Received
VPB147-EB-061214	AQ	12-JUN-14	13-JUN-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Organic Carbon	~~10.23~~ mg/L	1.0	0.10	.5	SM5310B	WG145514	26-JUN-14 19:13:05	N/A	N/A	

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH4349	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and Standard Method 5310 for Total Organic Carbon by High-Temperature Combustion	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 09/30/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4349_5310B and 8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 13 and 16, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-FB-061614	Field blank
VPB147-GW-061314-458-460	Groundwater
VPB147-GW-061314-478-480	Groundwater
VPB147-TRIP BLANKS-061614	Trip Blank

The samples were analyzed in accordance with:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846,* Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996).
- *Standard Methods for the Examination of Water and Wastewater, Method SM5310B, Total Organic Carbon by High-Temperature Combustion*

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. 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) 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 or negated 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.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank 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 data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

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

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

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

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

Qualified sample results are shown in Table 1.

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, field, 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.

Nonconformances are summarized in Attachment A in Table A-3.

Sample results were qualified as follows:

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

LOQ - Limit of Quantitation.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

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

MS/MSD Results

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

Several 8260B compounds exceeded the QC limits for %R in the MSD and/or the MS/MSD RPD for sample VPB147-GW-061314-458-460. The sample results were nondetect for these compounds and were accepted without qualification.

LCS Results

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

Nonconformances are summarized in Attachment A in Table A-4.

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
VPB147-FB-061614	WQ	TOTAL ORGANIC CARBON		1.0*	MG/L	U	bl
VPB147-FB-061614	WQ	2-BUTANONE		2.5	UG/L	UJ	c
VPB147-FB-061614	WQ	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-FB-061614	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-FB-061614	WQ	BROMODICHLOROMETHANE	0.70	0.50	UG/L	J	l
VPB147-FB-061614	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB147-FB-061614	WQ	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB147-GW-061314-458-460	WG	2-BUTANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-458-460	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-458-460	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-458-460	WG	CARBON DISULFIDE		1.0*	UG/L	U	bl
VPB147-GW-061314-458-460	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB147-GW-061314-458-460	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB147-GW-061314-478-480	WG	2-BUTANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-478-480	WG	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-478-480	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c
VPB147-GW-061314-478-480	WG	CARBON DISULFIDE		1.0*	UG/L	U	bl
VPB147-GW-061314-478-480	WG	CHLOROETHANE		1.0	UG/L	UJ	c
VPB147-GW-061314-478-480	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c
VPB147-TRIP BLANKS-061614	WQ	2-BUTANONE		2.5	UG/L	UJ	c
VPB147-TRIP BLANKS-061614	WQ	2-HEXANONE		2.5	UG/L	UJ	c
VPB147-TRIP BLANKS-061614	WQ	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-TRIP BLANKS-061614	WQ	CHLOROETHANE		1.0	UG/L	UJ	c
VPB147-TRIP BLANKS-061614	WQ	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	c

*LOQ value

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% RSD	Limits
09-June-2014	chloroethane	36	≤15%
Associated samples: all samples in SDG SH4349			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG145023-4	dichlorodifluoromethane	55	≤20%
	2-butanone	29	≤20%
	4-methyl-2-pentanone	37	≤20%
	2-hexanone	21	≤20%
Associated samples: all samples in SDG SH4349			

Table A-3 - Lab Blanks

Blank ID	Compound	Result	LOD	Units	Associated Samples
WG145514-1	TOTAL ORGANIC CARBON	0.21	0.50	MG/L	VPB147-FB-061614
WG145023-2	CARBON DISULFIDE	0.32	0.50	UG/L	VPB147-GW-061314-458-460, VPB147-GW-061314-478-480

Table A-4 - Lab Control Samples

LCS ID	Compound	LCS % Recovery	Lower Limit	Upper Limit	Associated Samples
WG145023-1	XYLENES, TOTAL	117	89	116	SDG SH4349
WG145023-1	BROMODICHLOROMETHANE	126	75	120	SDG SH4349
WG145023-1	DICHLORODIFLUOROMETHANE	166	30	155	SDG SH4349
WG145023-1	O-XYLENE	121	80	120	SDG SH4349

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

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vivadou
Phone #: ( )
Fax #: ( )

Address: 100 Red Schoolhouse Road
City: Chestnut Ridge
State: NY
Zip Code:

Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:

Bill (if different than above):
Address:

Sampler (Print / Sign): Valerie Thayer, Valerie Thayer
Copies To: V. Thayer

LAB USE ONLY
WORK ORDER #: SH4349
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 HCL (Filt. ☐Y ☐N)	TOC sodsulfuric acid (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
	VPB147-GW-061314-478-480	6/13/14 / 15:00	GW	4	X									
✓	VPB147-GW-061314-458-460	6/13/14 / 12:15	GW	4	X									
✓	VPB147-GW-MS/MSD-061314-458-460	6/13/14 / 12:15	GW	5	X									
	Temp blank	/	W	1										
	VPB147-TripBlanks-061614	5/21/14 / 11:00	W	3	X									
	VPB147-FB-061614	6/16/14 / 14:40	W	3	X									
	VPB147-FB-061614	6/16/14 / 14:30	W	3		X								

COMMENTS
FB = field blank

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/16/14 7	[signature] 6-18-14 / 0900			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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

ORIGINAL 2

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-4
Client ID: VPB147-FB-061614
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7752.D

Sample Date: 16-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	J	0.36	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	~~UL~~ J	0.70	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	J	0.85	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/12/14

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-4
Client ID: VPB147-FB-061614
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7752.D

Sample Date: 16-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	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	~~UL~~ 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	~~UL~~ U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.0	%					
Toluene-d8		95.3	%					
1,2-Dichloroethane-d4		116.	%					
Dibromofluoromethane		101.	%					

12/12/14

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http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-2
Client ID: 147-061314-458-460
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7760.D

Sample Date: 13-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.20~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	4.9	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	UL	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-2
Client ID: 147-061314-458-460
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7760.D

Sample Date: 13-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	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	~~UL~~ 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	~~UL~~ 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		92.9	%					
Toluene-d8		94.7	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		98.3	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-1
Client ID: 147-061314-478-480
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7759.D

Sample Date: 13-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~UL~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.38~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	4.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	J	0.45	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	UL	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-1
Client ID: 147-061314-478-480
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7759.D

Sample Date: 13-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	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	~~UL~~ 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	~~UL~~ 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		96.0	%					
Toluene-d8		96.9	%					
1,2-Dichloroethane-d4		116.	%					
Dibromofluoromethane		103.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-3
Client ID: VPB147-TB-061614
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7751.D

Sample Date: 16-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

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

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4349-3
Client ID: VPB147-TB-061614
Project: Navy Clean WE15-03-06 NW
SDG: SH4349
Lab File ID: C7751.D

Sample Date: 16-JUN-14
Received Date: 18-JUN-14
Extract Date: 19-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145023

Analysis Date: 19-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 20-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	UL	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	~~UL~~ 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	~~UL~~ 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		94.3	%					
Toluene-d8		95.6	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		98.0	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH4349-4
Report Date: 01-JUL-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH4349

Sample Description	Matrix	Date Sampled	Date Received
VPB147-FB-061614	AQ	16-JUN-14	18-JUN-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Organic Carbon	~~10.28~~ mg/L 1.0 U	1.0	0.10	.5	SM5310B	WG145514	26-JUN-14 20:14:04	N/A	N/A	

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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:	SH4407
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/24/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH4407_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 17, 2014, June 18, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-061714-528-530	Ground water
VPB147-GW-061714-538-540	Ground water
VPB147-GW-061714-558-560	Ground water
VPB147-GW-061814-578-580	Ground water
VPB147-GW-061814-598-600	Ground water
VPB147-GW-061814-618-620	Ground water
VPB147-TRIP BLANK-061814	Trip Blank

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

REVIEW ELEMENTS

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

- ✓ Data completeness (chain-of-custody (COC))/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✗ Laboratory blanks/trip blanks/equipment blanks
- ✓ Surrogate spike recoveries

NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS) results
NA	Field duplicates
✓	Internal standards
✓	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 or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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.

Nonconformances are summarized in Attachment A in Table A-3.

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

LOQ - Limit of Quantitation.

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

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

All QC acceptance criteria were met.

MS/MSD Results

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

LCS Results

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

All QC acceptance criteria were met.

Field Duplicate Results

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

Internal Standard Results

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

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-GW-061714-528-530	WG	2-BUTANONE	5.0	2.5	UG_L	J	c
VPB147-GW-061714-528-530	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-528-530	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-528-530	WG	CARBON DISULFIDE		1.0	UG_L	U	bt
VPB147-GW-061714-528-530	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061714-528-530	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061714-538-540	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-538-540	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-538-540	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-538-540	WG	CARBON DISULFIDE		1.0	UG_L	U	bt
VPB147-GW-061714-538-540	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061714-538-540	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061714-558-560	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-558-560	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-558-560	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061714-558-560	WG	CARBON DISULFIDE		1.0	UG_L	U	bt
VPB147-GW-061714-558-560	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061714-558-560	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-578-580	WG	2-BUTANONE	1.9	2.5	UG_L	J	c
VPB147-GW-061814-578-580	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-578-580	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-578-580	WG	CARBON DISULFIDE		1.0	UG_L	U	bt

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-061814-578-580	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-578-580	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-598-600	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-598-600	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-598-600	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-598-600	WG	CARBON DISULFIDE		1.0	UG_L	U	bt
VPB147-GW-061814-598-600	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-598-600	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-618-620	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-618-620	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-618-620	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061814-618-620	WG	CARBON DISULFIDE		1.0	UG_L	U	bt
VPB147-GW-061814-618-620	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061814-618-620	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-061814	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-061814	WQ	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-061814	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-061814	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-061814	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
09-June-2014 11:06	chloroethane	36	<15%
Associated samples: all samples in SDG SH4407			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG144656-4	dichlorodifluoromethane	61	<20%
	2-butanone	24	<20%
	4-methyl-2-pentanone	40	<20%
	2-hexanone	21	<20%
Associated samples: all samples in SDG SH4407			

Table A-3 - Field Blanks

Blank ID	Compound	Result	LOD	Units	Associated Samples
VPB147-TRIP BLANK-061814	CARBON DISULFIDE	0.25	0.50	UG_L	All samples in SDG SH4407

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
bt	Trip 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: Resolution Consultants
Contact: Eleanor Vivaudou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: 60266526 Bethpage
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Val Thayer

LAB USE ONLY
WORK ORDER #: 1 SH4407
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 HCl	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB147-GW-061714-528-530	06/17 2014 / 10:15	GW	1	X										
	VPB147-GW-061714-538-540	06/17 2014 / 13:00	GW	4	X										
✓	VPB147-GW-061814-598-600	6/18/14 / 13:00	GW	4	X										
	VPB147-GW-061814-578-580	6/18 2014 / 10:15	GW	3	X										
	VPB147-GW-061714-558-560	6/17 2014 / 15:00	GW	4	X										
✓	VPB147-GW-061814-618-620	6/18 2014 / ~~13:30~~ 15:30	GW	6	X										
	Temp blank	" /		1	X										
	VPB147-Triplanks-061814	~~6/18~~ 5/2/14 / 11:00	W	3	X										

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/18/2014 7—	6-19-14 0900			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-1
Client ID: 147-061714-528-530
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7781.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	J	0.56	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.32~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		29	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	J	5.0	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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R 12/08/14

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-1
Client ID: 147-061714-528-530
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7781.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		100.	%					
Toluene-d8		98.1	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-2
Client ID: 147-061714-538-540
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7782.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.66~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		6.3	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-2
Client ID: 147-061714-538-540
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7782.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.2	%					
Toluene-d8		93.4	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-5
Client ID: 147-061714-558-560
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7785.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.30~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		19	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-5
Client ID: 147-061714-558-560
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7785.D

Sample Date: 17-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		99.6	%					
Toluene-d8		97.4	%					
1,2-Dichloroethane-d4		115.	%					
Dibromofluoromethane		99.8	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-4
Client ID: 147-061814-578-580
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7784.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	J	0.43	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.65~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		14	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	~~J~~ J	1.9	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-4
Client ID: 147-061814-578-580
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7784.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.4	%					
Toluene-d8		96.0	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		101.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-3
Client ID: 147-061814-598-600
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7783.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.36~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone	J	3.7	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-3
Client ID: 147-061814-598-600
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7783.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		94.5	%					
Toluene-d8		95.0	%					
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		97.4	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-6
Client ID: 147-061814-618-620
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7786.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~J~~ U	~~0.34~~ 1.0	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		7.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-6
Client ID: 147-061814-618-620
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7786.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		96.9	%					
Toluene-d8		97.3	%					
1,2-Dichloroethane-d4		116.	%					
Dibromofluoromethane		100.	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-7
Client ID: VPB147-TB-061814
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7775.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

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

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12/18/14

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4407-7
Client ID: VPB147-TB-061814
Project: Navy Clean WE15-03-06 NW
SDG: SH4407
Lab File ID: C7775.D

Sample Date: 18-JUN-14
Received Date: 19-JUN-14
Extract Date: 20-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145087

Analysis Date: 20-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 21-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.4	%					
Toluene-d8		96.9	%					
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		98.9	%					

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RESOLUTION CONSULTANTS

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH4476
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/25/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH4476_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 19, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-061914-638-640	Ground water
VPB147-GW-061914-668-670	Ground water
VPB147-TRIP BLANKS-061914	Trip Blank

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

REVIEW ELEMENTS

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

- ✓ Data completeness (chain-of-custody (COC))/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/trip blanks/equipment blanks
- ✓ Surrogate spike recoveries
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicates
- ✓ Internal standards

✓ 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

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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.

Surrogate Spike Recoveries

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

All QC acceptance criteria were met.

MS/MSD Results

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

LCS Results

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

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

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
VPB147-GW-061914-638-640	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-638-640	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-638-640	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-638-640	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061914-638-640	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061914-638-640	WG	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-061914-668-670	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANKS-061914	WQ	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
09-June-2014 11:06	chloroethane	36	<15%
Associated samples: all samples within SDG SH4476			

Table A-2 – Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG145161-4	dichlorodifluoromethane	65	<20%
	Trichlorofluoromethane	21	<20%
	2-butanone	32	<20%
	4-methyl-2-pentanone	56	<20%
	2-hexanone	35	<20%
Associated samples: VPB147-TRIP BLANK-061914,VPB147-GW-061914-638-640			
WG145199-4	dichlorodifluoromethane	36	<20%
	bromomethane	-35	<20%
	chloroethane	-21	<20%
	2-butanone	32	<20%
	4-methyl-2-pentanone	41	<20%
	2-hexanone	26	<20%
Associated sample: VPB147-GW-061914-668-670			

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: Resolution Consultants
Contact: Eleanor Vivandou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: Bethpage, 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: V Thayer

LAB USE ONLY
WORK ORDER #: 544476
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	VPB147-Trip blanks-061914	5/21/14 / 11:00	GW (H)	3	X									
	VPB147-GW-061914-668-670	6/19/2014 / 4:30 pm	GW	4	X									
	VPB147-GW-061914-638-640	6/19/2014 / 11:00	GW	6	X									
	Temp blank	/	W	1										

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/19/14 7-	[signature] 6-20-14 0920			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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ORIGINAL

KAS-COC1

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-3
Client ID: 147-061914-638-640
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7816.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 21-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145161

Analysis Date: 21-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	~~U~~ UJ	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		8.8	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/18/14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-3
Client ID: 147-061914-638-640
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7816.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 21-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145161

Analysis Date: 21-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		100.	%					
Toluene-d8		99.3	%					
1,2-Dichloroethane-d4	*	120.	%					
Dibromofluoromethane		106.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-2RA
Client ID: 147-061914-668-670
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7827.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 22-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145199

Analysis Date: 22-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

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

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-2RA
Client ID: 147-061914-668-670
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7827.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 22-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145199

Analysis Date: 22-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	~~UL~~ U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		99.5	%					
Toluene-d8		98.4	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		101.	%					

12/12/14

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-1
Client ID: VPB147-TB-061914
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7801.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 21-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145161

Analysis Date: 21-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

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

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4476-1
Client ID: VPB147-TB-061914
Project: Navy Clean WE15-03-06 NW
SDG: SH4476
Lab File ID: C7801.D

Sample Date: 19-JUN-14
Received Date: 20-JUN-14
Extract Date: 21-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145161

Analysis Date: 21-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 23-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		95.7	%					
Toluene-d8		95.8	%					
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		99.4	%					

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RESOLUTION CONSULTANTS

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Chelmsford, MA 01824

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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH4576
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/25/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH4576_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 20, 2014, June 23, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-062014-678-680	Ground water
VPB147-GW-062314-718-720	Ground water
VPB147-GW-062314-738-740	Ground water
VPB147-TRIP BLANK-062314	Trip Blank

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

REVIEW ELEMENTS

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

- ✓ Data completeness (chain-of-custody (COC))/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/trip blanks/equipment blanks
- ✓ Surrogate spike recoveries
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicates

✓ Internal standards
✓ 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

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

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

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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.

Surrogate Spike Recoveries

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

All QC acceptance criteria were met.

MS/MSD Results

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

LCS Results

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

All QC acceptance criteria were met.

Field Duplicate Results

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

Internal Standard Results

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

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-GW-062014-678-680	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	CYCLOHEXANE		0.50	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-062014-678-680	WG	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	CYCLOHEXANE		0.50	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-718-720	WG	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	CYCLOHEXANE		0.50	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-GW-062314-738-740	WG	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	2-BUTANONE		2.5	UG_L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-TRIP BLANK-062314	WQ	2-HEXANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	CHLOROETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	CYCLOHEXANE		0.50	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-062314	WQ	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% R	Limits
09-June-2014 11:06	chloroethane	36	<15%
Associated samples: all samples in SDG SH4576			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% R	Limits
WG145394-4	dichlorodifluoromethane	38	<20%
	trichlorofluoromethane	33	<20%
	2-butanone	40	<20%
	cyclohexane	21	<20%
	4-methyl-2-pentanone	46	<20%
	2-hexanone	28	<20%
Associated samples: all samples in SDG SH4576			

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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Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vivandou
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:
Bill (if different than above)
Address:
Sampler (Print / Sign): Valerie Thayer, Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY WORK ORDER #: 5H4576
KATAHDIN PROJECT NUMBER

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 (Filt. ☐Y ☐N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	Temp	/	W	1										
	VPB147-GW-062014-678-680	6/20/ 10:30	GW	2	X									
	VPB147-Trip Blank-062314	05/2/2014/ 11:00	W	3	X									
	VPB147-GW-062314-718-720	06/23/2014/ 11:15	GW	4	X									
	VPB147-GW-062314-738-740	6/23/2014/ 14:00	GW	4	X									

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/23/14 7	6-24-14 0930			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-1
Client ID: 147-062014-678-680
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7908.D

Sample Date: 20-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	~~U~~ UJ	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		7.2	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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12/8/14

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-1
Client ID: 147-062014-678-680
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7908.D

Sample Date: 20-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		88.9	%					
Toluene-d8		90.7	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		99.7	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-3
Client ID: 147-062314-718-720
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7909.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	~~U~~ UJ	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		15	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-3
Client ID: 147-062314-718-720
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7909.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		90.5	%					
Toluene-d8		90.4	%					
1,2-Dichloroethane-d4		116.	%					
Dibromofluoromethane		98.9	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-4
Client ID: 147-062314-738-740
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7910.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	~~U~~ UJ	1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	~~U~~ UJ	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		8.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	~~U~~ UJ	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
2-Hexanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-4
Client ID: 147-062314-738-740
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7910.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		91.4	%					
Toluene-d8		92.4	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		102.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-2
Client ID: 147-TB-062314
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7906.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

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

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4576-2
Client ID: 147-TB-062314
Project: Navy Clean WE15-03-06 NW
SDG: SH4576
Lab File ID: C7906.D

Sample Date: 23-JUN-14
Received Date: 24-JUN-14
Extract Date: 25-JUN-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG145394

Analysis Date: 25-JUN-14
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 26-JUN-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
M+P-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
1,2-Dichloroethylene (Total)	U	1.0	ug/L	1	2	2.0	0.21	1.0
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromo-3-Chloropropane	U	0.75	ug/L	1	1	1.0	0.50	0.75
P-Bromofluorobenzene		88.4	%					
Toluene-d8		91.3	%					
1,2-Dichloroethane-d4		119.	%					
Dibromofluoromethane		99.7	%					

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RESOLUTION CONSULTANTS

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250 Apollo Drive
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Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage	
Laboratory:	Katahdin Analytical	
Service Request:	SH4749	
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS) and Standard Method 5310 for Total Organic Carbon by High-Temperature Combustion	
Validation Level:	3	
AECOM Project Number:	60266526.SA.DV	
Prepared by:	Dawn Brule/RESCON	Completed on: 10/02/2014
Reviewed by:	Lori Herberich/RESCON	File Name: SH4749_5310B and 8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 24 - 26, 2014 and May 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-EB-062514	Equipment blank (TOC)
VPB147-EB-062514	Equipment blank (VOC)
VPB147-GW-062414-758-760	Groundwater
VPB147-GW-062514-798-800	Groundwater
VPB147-GW-062514-818-820	Groundwater
VPB147-GW-062614-840-842	Groundwater
VPB147-GW-062614-858-860	Groundwater
VPB147-TRIPBLANKS-062614	Trip Blank

The samples were analyzed in accordance with:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846,* Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996).
- *Standard Methods for the Examination of Water and Wastewater, Method SM5310B, Total Organic Carbon by High-Temperature Combustion*

Data validation activities were conducted with reference to these methods, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010) where applicable. 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) results
✓	Laboratory control sample (LCS) results
NA	Field duplicate results
✓	Internal standard results
✓	Sample results/reporting issues

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

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated or negated 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.

Selected samples were mostly soil and had very little standing water.

- For samples VPB147-GW-062614-840-842, VPB147-GW-062414-758-760, and VPB147-GW-062614-858-860, the laboratory decanted the liquid from one vial each prior to analysis.
- For sample VPB147-GW-062514-818-820 the laboratory decanted the water from two individual vials into one vial as a composite. The sample was analyzed at a dilution because of insufficient volume.

Positive and nondetect results for these sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure. Qualified sample results are shown in Table 1.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank 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 data were reviewed to ensure that the 4-bromofluorobenzene (BFB) tuning was performed at the correct frequency and that the method acceptance criteria were met. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

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

- the initial calibration (ICAL) percent relative standard deviation (%RSD), correlation coefficient (r)/coefficient of determination (r^2), and/or response factor method acceptance criteria were met;
- the initial calibration verification (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, A-2, and A-3.

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

ICAL Linearity Nonconformances:

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

ICV Recovery Nonconformances:

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

Notes: Based on NFG 2008 VOC guidance, professional judgment is used to reject (R) 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.

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).

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

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

Nonconformances are summarized in Attachment A in Tables A-4 and A-5.

Sample results were qualified as follows:

For common lab contaminants (methylene chloride, acetone, 2-butanone):

Blank type	Blank result	Sample result	Action for samples
Method, Storage, Field, Trip, or Instrument*	Detects	Not detected	No qualification
	≤ 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and ≤ 4x LOQ	Report the sample result with a U**
		≥ 4x LOQ	No qualifications
	> 2x LOQ	< 2x LOQ	Report sample LOQ value with a U
		≥ 2x LOQ and < blank contamination	Report the sample result with a U
		≥ 2x LOQ and ≥ blank contamination	If the result is ≤2x blank result, report the sample result U.** If the result is > 2x blank result, no qualification is required.**
* Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 g/L.			
**Based on professional judgment			

For TOC analysis:

Blank Type	Blank Result	Sample Result	Action for Samples
ICB/CCB (Positive)	≥DL but ≤ LOQ	Nondetect	No action
		≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ

Blank Type	Blank Result	Sample Result	Action for Samples
		> LOQ	Use professional judgment (see below [1])
	>LOQ	≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ but < ICB/CCB Result	Qualify at level of Blank Result with a "U" or Qualify result as unusable
		>ICB/CCB but <10x the ICB/CCB result	Qualify as estimated (J)
		≥10x ICB/CCB	No action is taken based on professional judgment
PB / EB/ FB (Positive)	> LOQ	≥DL but ≤ LOQ	Qualify as nondetect (U) at the LOQ
		>LOQ but < 10x Blank Result	Qualify results as unusable
		≥10x Blank Result	No action
	≥DL but ≤LOQ	Nondetect	No action
		≥DL but ≤LOQ	Qualify as nondetect (U) at the LOQ
		> LOQ	Use professional judgment (see below [1])

[1] Establish an action level (AL) at 5x the blank contamination. If sample result is <AL, qualify the reported result with a U.
LOQ - Limit of Quantitation

Qualified sample results are shown in Table 1.

Surrogate Spike Recoveries

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

MS Results

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

LCS Results

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

Field Duplicate Results

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

Internal Standard Results

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

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-EB-062514	WQ	TOTAL ORGANIC CARBON		1.0*	MG/L	U	bl
VPB147-EB-062514-2	WQ	1,1-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB147-EB-062514-2	WQ	BROMOMETHANE		1.0	UG/L	UJ	c
VPB147-GW-062414-758-760	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	ACETONE	24	2.5	UG/L	J	mc,c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062414-758-760	WG	BENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CARBON DISULFIDE	0.58	0.50	UG/L	J	mc
VPB147-GW-062414-758-760	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc,c
VPB147-GW-062414-758-760	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062414-758-760	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	STYRENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB147-GW-062414-758-760	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB147-GW-062514-798-800	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB147-GW-062514-798-800	WG	BROMOMETHANE		1.0	UG/L	UJ	c
VPB147-GW-062514-818-820	WG	1,1,1-TRICHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,1,2,2-TETRACHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,1,2-TRICHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,1-DICHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,1-DICHLOROETHENE		1.0	UG/L	UJ	mc,c
VPB147-GW-062514-818-820	WG	1,2,4-TRICHLOROBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,2-DIBROMO-3-CHLOROPROPANE		1.5	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,2-DIBROMOETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,2-DICHLOROBENZENE		1.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062514-818-820	WG	1,2-DICHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,2-DICHLOROETHENE, TOTAL		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,2-DICHLOROPROPANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,3-DICHLOROBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	1,4-DICHLOROBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	2-BUTANONE		5.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	2-HEXANONE		5.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	4-METHYL-2-PENTANONE		5.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	ACETONE		34**	UG/L	UJ	mc,be
VPB147-GW-062514-818-820	WG	BENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	BROMODICHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	BROMOFORM		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	BROMOMETHANE		2.0	UG/L	UJ	mc,c
VPB147-GW-062514-818-820	WG	CARBON DISULFIDE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CARBON TETRACHLORIDE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CHLOROBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CHLOROETHANE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CHLOROFORM		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CHLOROMETHANE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CIS-1,2-DICHLOROETHENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CIS-1,3-DICHLOROPROPENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	CYCLOHEXANE		1.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062514-818-820	WG	DIBROMOCHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	DICHLORODIFLUOROMETHANE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	ETHYLBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	ISOPROPYLBENZENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	M- AND P-XYLENE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	METHYL ACETATE		1.5	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	METHYL CYCLOHEXANE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	METHYL TERT-BUTYL ETHER		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	METHYLENE CHLORIDE		5.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	O-XYLENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	STYRENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TETRACHLOROETHENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TOLUENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TRANS-1,2-DICHLOROETHENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TRANS-1,3-DICHLOROPROPENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TRICHLOROETHENE		1.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	TRICHLOROFLUOROMETHANE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	VINYL CHLORIDE		2.0	UG/L	UJ	mc
VPB147-GW-062514-818-820	WG	XYLENES, TOTAL		3.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062614-840-842	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc,c
VPB147-GW-062614-840-842	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	ACETONE		5.0*	UG/L	UJ	mc,be
VPB147-GW-062614-840-842	WG	BENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	BROMOMETHANE		1.0	UG/L	UJ	mc,c
VPB147-GW-062614-840-842	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062614-840-842	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	STYRENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062614-840-842	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB147-GW-062614-840-842	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	2-BUTANONE		2.5	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062614-858-860	WG	ACETONE		12**	UG/L	UJ	mc,be
VPB147-GW-062614-858-860	WG	BENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CHLOROETHANE		1.0	UG/L	UJ	mc,c
VPB147-GW-062614-858-860	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062614-858-860	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	STYRENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB147-GW-062614-858-860	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB147-TRIPBLANKS-062614	WQ	1,1-DICHLOROETHENE		0.50	UG/L	UJ	c
VPB147-TRIPBLANKS-062614	WQ	BROMOMETHANE		1.0	UG/L	UJ	c

*LOQ
**sample value

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration

Calibration Date/Time	Compound	% RSD	Limits
01-July-2014 09:21	chloroethane	16	≤15%
Associated sample: VPB147-GW-062614-858-860			

Table A-2 - Initial Calibration Verification Standard

ICV ID	Compound	% R	Limits
WG144515-7	acetone	125	80-120%
Associated samples: VPB147-EB-062514,VPB147-TRIP BLANKS-062614,VPB147-GW-062614-840-842,VPB147-GW-062514-798-800,VPB147-GW-062514-818-820,VPB147-GW-062414-758-760			

Table A-3 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG145586-4	bromomethane	-24	≤20%
	1,1-dichloroethene	-21	≤20%
Associated samples: VPB147-EB-062514,VPB147-TRIP BLANKS-062614,VPB147-GW-062614-840-842,VPB147-GW-062514-798-800,VPB147-GW-062514-818-820			
WG145700-4	methyl tert-butyl ether	-21	≤20%
Associated sample: VPB147-GW-062414-758-760			

Table A-4 - Lab Blanks

Blank ID	Compound	Result	QL	Units	Associated Samples
WG146111-1	TOTAL ORGANIC CARBON	0.26	0.50	MG/L	VPB147-EB-062514

Table A-5 - Field Blanks

Blank ID	Compound	Result	QL	Units	Associated Samples
VPB147-EB-062514-2	ACETONE	3.5	2.5	UG/L	VPB147-GW-062614-840-842, VPB147-GW-062514-798-800, VPB147-GW-062514-818-820, VPB147-GW-062414-758-760, VPB147-GW-062614-858-860

Attachment B

Qualifier Codes and Explanations

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

Attachment C

Reason Codes and Explanations

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

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

CHAIN of CUSTODY

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Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vidundar
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.:
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: SH4749
KATAHDIN PROJECT NUMBER:
REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt. ☐Y ☐N TOC	Filt. ☐Y ☐N VOCs 8260	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
✓	VPB147-EB-062514	6/25/14 / 11:00	W	3	X									
	VPB147-EB-062514	6/25/14 / 9:30	W	4		X								
✓	VPB147-Tripblanks-062614	6/~~26~~ 02/14 / 10:00	W	3		X								
✓	VPB147-GW-062614-840-842	6/26/14 / 11:00	GW	~~3~~ 4	(14)	X								
✓	VPB147-GW-062514-798-800	6/25 / 12:00	GW	4		X								
	VPB147-GW-062414-758-760	6/24 / 11:30	GW	7		X								
✓ *	VPB147-GW-062514-818-820	6/25/14 / 2:15 pm	GW	3		X								
	Temp blank	/	W	1										
	VPB147-GW-062614-858-860	6/26 / 16:00	GW	4		X								

COMMENTS
EB = Equipment Rinsate blank
* mostly silt

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/26/14 7	[signature] 6-27-14 09:15			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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ORIGINAL 00000012

-COC1

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-2
Client ID: VPB147-EB-062514
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9214.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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~~ UJ	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~~ UJ	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	J	3.5	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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12/18/14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-2
Client ID: VPB147-EB-062514
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9214.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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		95.3	%					
Toluene-d8		112.	%					
1,2-Dichloroethane-d4	*	120.	%					
Dibromofluoromethane	*	116.	%					

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-6RA
Client ID: 147-062414-758-760
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9236.D

Sample Date: 24-JUN-14
Received Date: 27-JUN-14
Extract Date: 30-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145700

Analysis Date: 30-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U		1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U		1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U		1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U		1.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U		1.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U		0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide		J	0.58	ug/L	1	1	1.0	0.25	0.50
Freon-113	U	UJ	0.50	ug/L	1	1	1.0	0.31	0.50
Methylene Chloride	U	UJ	2.5	ug/L	1	5	5.0	1.1	2.5
Acetone		J	24	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	UJ	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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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-6RA
Client ID: 147-062414-758-760
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9236.D

Sample Date: 24-JUN-14
Received Date: 27-JUN-14
Extract Date: 30-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145700

Analysis Date: 30-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	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		96.4	%					
Toluene-d8		109.	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		100.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-5
Client ID: 147-062514-798-800
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9220.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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~~ UJ	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~~ UJ	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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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-5
Client ID: 147-062514-798-800
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9220.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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		91.8	%					
Toluene-d8		108.	%					
1,2-Dichloroethane-d4	*	122.	%					
Dibromofluoromethane		114.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-7DL
Client ID: 147-062514-818-820
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9216.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	2.0	ug/L	2	2	4.0	0.48	2.0
Chloromethane	U	2.0	ug/L	2	2	4.0	0.72	2.0
Vinyl Chloride	U	2.0	ug/L	2	2	4.0	0.50	2.0
Bromomethane	U	2.0	ug/L	2	2	4.0	0.98	2.0
Chloroethane	U	2.0	ug/L	2	2	4.0	1.1	2.0
Trichlorofluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
1,1-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.70	1.0
Carbon Disulfide	U	1.0	ug/L	2	1	2.0	0.50	1.0
Freon-113	U	1.0	ug/L	2	1	2.0	0.62	1.0
Methylene Chloride	U	5.0	ug/L	2	5	10.	2.3	5.0
Acetone		34	ug/L	2	5	10.	4.4	5.0
trans-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.50	1.0
Methyl tert-butyl Ether	U	1.0	ug/L	2	1	2.0	0.72	1.0
1,1-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
cis-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.42	1.0
Chloroform	U	1.0	ug/L	2	1	2.0	0.64	1.0
1,1,1-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
2-Butanone	U	5.0	ug/L	2	5	10.	2.6	5.0
Cyclohexane	U	1.0	ug/L	2	1	2.0	0.62	1.0
Carbon Tetrachloride	U	1.0	ug/L	2	1	2.0	0.44	1.0
Benzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
1,2-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene	U	1.0	ug/L	2	1	2.0	0.56	1.0
1,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
Bromodichloromethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
cis-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.38	1.0
Toluene	U	1.0	ug/L	2	1	2.0	0.54	1.0
4-Methyl-2-Pentanone	U	5.0	ug/L	2	5	10.	2.6	5.0
trans-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,1,2-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
Tetrachloroethene	U	1.0	ug/L	2	1	2.0	0.80	1.0
Dibromochloromethane	U	1.0	ug/L	2	1	2.0	0.60	1.0
2-Hexanone	U	5.0	ug/L	2	5	10.	3.4	5.0
Chlorobenzene	U	1.0	ug/L	2	1	2.0	0.44	1.0
Ethylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-7DL
Client ID: 147-062514-818-820
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9216.D

Sample Date: 25-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	UJ	3.0	ug/L	2	3	6.0	0.50	3.0
Styrene	U		1.0	ug/L	2	1	2.0	0.46	1.0
Bromoform	U		1.0	ug/L	2	1	2.0	0.46	1.0
Isopropylbenzene	U		1.0	ug/L	2	1	2.0	0.46	1.0
1,1,2,2-Tetrachloroethane	U		1.0	ug/L	2	1	2.0	0.76	1.0
1,3-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.52	1.0
1,4-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.48	1.0
1,2-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.30	1.0
1,2,4-Trichlorobenzene	U		1.0	ug/L	2	1	2.0	0.74	1.0
Methyl Acetate	U		1.5	ug/L	2	1	2.0	1.1	1.5
Methylcyclohexane	U		1.0	ug/L	2	1	2.0	0.60	1.0
o-Xylene	U		1.0	ug/L	2	1	2.0	0.50	1.0
M+P-Xylenes	U		2.0	ug/L	2	2	4.0	1.2	2.0
1,2-Dichloroethylene (Total)	U		2.0	ug/L	2	2	4.0	0.42	2.0
1,2-Dibromoethane	U		1.0	ug/L	2	1	2.0	0.44	1.0
1,2-Dibromo-3-Chloropropane	U		1.5	ug/L	2	1	2.0	1.0	1.5
P-Bromofluorobenzene			92.0	%					
Toluene-d8			108.	%					
1,2-Dichloroethane-d4			117.	%					
Dibromofluoromethane			110.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-4
Client ID: 147-062614-840-842
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9219.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	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		~~7.3~~ 5.0	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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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-4
Client ID: 147-062614-840-842
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9219.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	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		95.0	%					
Toluene-d8		112.	%					
1,2-Dichloroethane-d4		118.	%					
Dibromofluoromethane		110.	%					

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-9
Client ID: 147-062614-858-860
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9266.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 01-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145769

Analysis Date: 01-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U		1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U		1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U		1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U		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	L		12	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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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-9
Client ID: 147-062614-858-860
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9266.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 01-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145769

Analysis Date: 01-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 02-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	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		84.9	%					
Toluene-d8		111.	%					
1,2-Dichloroethane-d4		117.	%					
Dibromofluoromethane		105.	%					

Richelle

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-3
Client ID: VPB174-TB-062614
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9215.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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~~ UJ	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~~ UJ	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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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4749-3
Client ID: VPB174-TB-062614
Project: Navy Clean WE15-03-06 NW
SDG: SH4749
Lab File ID: D9215.D

Sample Date: 26-JUN-14
Received Date: 27-JUN-14
Extract Date: 28-JUN-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145586

Analysis Date: 28-JUN-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-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		89.6	%					
Toluene-d8		106.	%					
1,2-Dichloroethane-d4		114.	%					
Dibromofluoromethane		107.	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Rick Purdy
AECOM
701 Edgewater Drive
Wakefield,MA 01880

Lab Sample ID: SH4749-1
Report Date: 11-JUL-14
Client PO: 16518
Project: Navy Clean WE15-03-0
SDG: SH4749

Sample Description	Matrix	Date Sampled	Date Received
VPB147-EB-062514	AQ	25-JUN-14	27-JUN-14

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Organic Carbon	~~0.22~~ mg/L	1.0	0.10	.5	SM5310B	WG146111	30-JUN-14 19:10:03	N/A	N/A	

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	Test America, South Burlington, Vermont
Service Request:	200-22957
Analyses/Method:	EPA Method TO-15, VOCs Collected in Canisters - GC/MS
Validation Level:	3
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 10/06/2014
Reviewed by:	Lori Heberich/RESCON — File Name: 200-22957_TO-15

SUMMARY

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

Sample ID	Matrix/Sample Type
VPB147-AIR-062414	Ambient air

Data validation activities were conducted with reference to *Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)* (USEPA, Method TO-15) and the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008). 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
- NA Matrix duplicate (MD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicates
- ✓ Internal standards
- ✓ 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. There were no data points qualified or rejected on the basis of this data review.

RESULTS

Data Completeness

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

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

Holding Times/Sample Preservation

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

GC/MS Performance Checks

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

Initial Calibration/Continuing Calibration Verification

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

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

The QC acceptance criteria were met.

Laboratory Blanks

Laboratory method blanks were evaluated as to whether there were contaminants detected above the detection limit (DL). Blank results were reviewed for conformance with the QC acceptance criteria. Data validation qualifications for individual samples are based on the maximum

contaminant concentration detected in all associated blanks. The QC acceptance criteria were met and qualification of the sample results was not required.

MD Results

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

LCS Results

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

Field Duplicate Results

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

Internal Standard Results

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

Sample Results/Reporting Issues

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

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

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

QUALIFICATION ACTIONS

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

ATTACHMENTS

Attachment A: Qualifier Codes and Explanations

Attachment A

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.

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Eleanor Vivaudou	Samples Collected By: Valerie Thayer	of ___ COCs
Company: Resolution Consultants	Phone: 845-425-4980		
Address: 999 S. Oyster Bay Rd	Email: Eleanor.vivaudou@aecom.com		
City/State/Zip Bethpage NY			
Phone: 2076506572	Site Contact: Valerie Thayer		
FAX:	TA Contact:		
Project Name: Bethpage	Analysis Turnaround Time		
Site: VPB147	Standard (Specify)		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum In Field, "Hg (Start)	Canister Vacuum In Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
VPB147-AIR-062414	6/24/14	9:00 am	4:20 pm	-31	-10	2811	55 vt #C8597	X											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

200-22957 COC

Special Instructions/QC Requirements & Comments: Summo canister placed downwind of drill rig

Samples Shipped by: Valerie Thayer	Date/Time: June 24/2014 7:00	Samples Received by: TABUR 6/25/14 1030
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

Client: Katahdin Analytical Services

Job Number: 200-22957-1
Sdg Number: 200-22957

Client Sample ID: **VPB147-AIR-062414**

Lab Sample ID: 200-22957-1
Client Matrix: Air

Date Sampled: 06/24/2014 1620
Date Received: 06/25/2014 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-74232	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	8298_011.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	06/26/2014 2100			Final Weight/Volume:	200 mL
Prep Date:	06/26/2014 2100			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	DL	LOQ
1,1,1-Trichloroethane	0.080	U	0.20	0.20
1,1,2,2-Tetrachloroethane	0.030	U	0.20	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.030	U	0.20	0.20
1,1,2-Trichloroethane	0.030	U	0.20	0.20
1,1-Dichloroethane	0.080	U	0.20	0.20
1,1-Dichloroethene	0.080	U	0.20	0.20
1,2,4-Trichlorobenzene	0.080	U	0.50	0.50
1,2-Dibromoethane (EDB)	0.080	U	0.20	0.20
1,2-Dichlorobenzene	0.030	U	0.20	0.20
1,2-Dichloroethane	0.030	U	0.20	0.20
1,2-Dichloropropane	0.080	U	0.20	0.20
Acetone	2.5	U	5.0	5.0
1,3-Dichlorobenzene	0.030	U	0.20	0.20
1,4-Dichlorobenzene	0.030	U	0.20	0.20
2-Butanone (MEK)	0.69		0.50	0.50
2-Hexanone	0.20	U	0.50	0.50
4-Methyl-2-pentanone	0.080	U	0.50	0.50
Benzene	0.030	U	0.20	0.20
Bromoform	0.030	U	0.20	0.20
Bromomethane	0.080	U	0.20	0.20
Carbon disulfide	0.20	U	0.50	0.50
Carbon tetrachloride	0.080	U	0.20	0.20
Chlorobenzene	0.030	U	0.20	0.20
Dibromochloromethane	0.030	U	0.20	0.20
Chloroethane	0.080	U	0.50	0.50
Chloroform	0.080	U	0.20	0.20
Chloromethane	0.55		0.50	0.50
cis-1,2-Dichloroethene	0.080	U	0.20	0.20
cis-1,3-Dichloropropene	0.080	U	0.20	0.20
Cyclohexane	0.080	U M	0.20	0.20
Bromodichloromethane	0.030	U	0.20	0.20
Dichlorodifluoromethane	0.54		0.50	0.50
Ethylbenzene	0.030	U	0.20	0.20
Isopropylbenzene	0.030	U	0.20	0.20
Methyl tert-butyl ether	0.080	U	0.20	0.20
Methylene Chloride	0.20	U M	0.50	0.50
m,p-Xylene	0.080	U	0.50	0.50
Xylene, o-	0.030	U	0.20	0.20
Styrene	0.030	U	0.20	0.20
Tetrachloroethene	0.030	U	0.20	0.20
Toluene	0.030	U	0.20	0.20
trans-1,2-Dichloroethene	0.080	U	0.20	0.20
trans-1,3-Dichloropropene	0.080	U	0.20	0.20
Trichloroethene	0.080	U	0.20	0.20
Trichlorofluoromethane	0.24		0.20	0.20
Vinyl chloride	0.080	U	0.20	0.20

12/18/14

Client: Katahdin Analytical Services

Job Number: 200-22957-1
Sdg Number: 200-22957

Client Sample ID: **VPB147-AIR-062414**

Lab Sample ID: 200-22957-1
Client Matrix: Air

Date Sampled: 06/24/2014 1620
Date Received: 06/25/2014 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-74232	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	8298_011.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	06/26/2014 2100			Final Weight/Volume:	200 mL
Prep Date:	06/26/2014 2100			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	DL	LOQ
Xylene (total)	0.080	U	0.20	0.20

Analyte	Result (ug/m3)	Qualifier	DL	LOQ
1,1,1-Trichloroethane	0.44	U	1.1	1.1
1,1,2,2-Tetrachloroethane	0.21	U	1.4	1.4
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.5	1.5
1,1,2-Trichloroethane	0.16	U	1.1	1.1
1,1-Dichloroethane	0.32	U	0.81	0.81
1,1-Dichloroethene	0.32	U	0.79	0.79
1,2,4-Trichlorobenzene	0.59	U	3.7	3.7
1,2-Dibromoethane (EDB)	0.61	U	1.5	1.5
1,2-Dichlorobenzene	0.18	U	1.2	1.2
1,2-Dichloroethane	0.12	U	0.81	0.81
1,2-Dichloropropane	0.37	U	0.92	0.92
Acetone	5.9	U	12	12
1,3-Dichlorobenzene	0.18	U	1.2	1.2
1,4-Dichlorobenzene	0.18	U	1.2	1.2
2-Butanone (MEK)	2.0		1.5	1.5
2-Hexanone	0.82	U	2.0	2.0
4-Methyl-2-pentanone	0.33	U	2.0	2.0
Benzene	0.096	U	0.64	0.64
Bromoform	0.31	U	2.1	2.1
Bromomethane	0.31	U	0.78	0.78
Carbon disulfide	0.62	U	1.6	1.6
Carbon tetrachloride	0.50	U	1.3	1.3
Chlorobenzene	0.14	U	0.92	0.92
Dibromochloromethane	0.26	U	1.7	1.7
Chloroethane	0.21	U	1.3	1.3
Chloroform	0.39	U	0.98	0.98
Chloromethane	1.1		1.0	1.0
cis-1,2-Dichloroethene	0.32	U	0.79	0.79
cis-1,3-Dichloropropene	0.36	U	0.91	0.91
Cyclohexane	0.28	U M	0.69	0.69
Bromodichloromethane	0.20	U	1.3	1.3
Dichlorodifluoromethane	2.7		2.5	2.5
Ethylbenzene	0.13	U	0.87	0.87
Isopropylbenzene	0.15	U	0.98	0.98
Methyl tert-butyl ether	0.29	U	0.72	0.72
Methylene Chloride	0.69	U M	1.7	1.7
m,p-Xylene	0.35	U	2.2	2.2
Xylene, o-	0.13	U	0.87	0.87
Styrene	0.13	U	0.85	0.85
Tetrachloroethene	0.20	U	1.4	1.4
Toluene	0.11	U	0.75	0.75
trans-1,2-Dichloroethene	0.32	U	0.79	0.79
trans-1,3-Dichloropropene	0.36	U	0.91	0.91

Client: Katahdin Analytical Services

Job Number: 200-22957-1
Sdg Number: 200-22957

Client Sample ID: **VPB147-AIR-062414**

Lab Sample ID: 200-22957-1
Client Matrix: Air

Date Sampled: 06/24/2014 1620
Date Received: 06/25/2014 1030

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-74232	Instrument ID:	CHW.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	8298_011.d
Dilution:	1.0			Initial Weight/Volume:	200 mL
Analysis Date:	06/26/2014 2100			Final Weight/Volume:	200 mL
Prep Date:	06/26/2014 2100			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	DL	LOQ
Trichloroethene	0.43	U	1.1	1.1
Trichlorofluoromethane	1.3		1.1	1.1
Vinyl chloride	0.20	U	0.51	0.51
Xylene (total)	0.35	U	0.87	0.87

RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	KATAHDIN ANALYTICAL
Service Request:	SH4830
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	Limited
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 09/26/2014
Reviewed by:	Paula DiMattei/RESCON — File Name: SH4830_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on June 27, 2014 and June 30, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-062714-878-880	Ground water
VPB147-GW-062714-888-890	Ground water
VPB147-GW-063014-898-900	Ground water
VPB147-TRIP BLANK-063014	Trip Blank

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

REVIEW ELEMENTS

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

- ✗ Data completeness (chain-of-custody (COC))/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/trip blanks/equipment blanks
- ✗ Surrogate spike recoveries
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicates

✓ Internal standards
✓ 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

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.

Selected samples were mostly soil and had very little standing water.

- For sample VPB147-GW-063014-898-900, the laboratory decanted the liquid from one vial prior to analysis.
- For samples VPB147-GW-062714-888-890 and VPB147-GW-062714-878-880, the laboratory decanted the water from individual vials into one vial as a composite per sample.
- Due to limited volume, samples VPB147-GW-063014-898-900 and VPB147-GW-062714-878-880 were analyzed at dilutions and their detections limits are elevated accordingly.

Positive and non-detect results for these sample were qualified as estimated (J and UJ) respectively, due to possible loss of sample integrity during the decanting procedure.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID.

Holding Times/Sample Preservation

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

The QC acceptance criteria were met.

GC/MS Performance Checks

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

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

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:

CCV Linearity Nonconformances:

Nonconformance	Actions	
	Detected Results	Nondetected Results
%D > 20%	J	UJ
%Drift	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.

Surrogate Spike Recoveries

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

Nonconformances are summarized in Attachment A in Table A-2.

Data qualification on the basis of surrogate recovery nonconformances was as follows:

	Action	
Criteria	**Detected Compounds**	**Nondetected Compounds**
%R > Upper Limit (UL)	J	No qualification
20% ≤%R < Lower Limit (LL)	J	UJ
%R < 20%	J	R

Qualified sample results are shown in Table 1.

MS/MSD Results

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

LCS Results

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

All QC acceptance criteria were met.

Field Duplicate Results

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

Internal Standard Results

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

All QC acceptance criteria were met.

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-GW-062714-878-880	WG	1,1,1-TRICHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,1,2,2-TETRACHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,1,2-TRICHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,1-DICHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,1-DICHLOROETHENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2,4-TRICHLOROBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DIBROMO-3-CHLOROPROPANE		3.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DIBROMOETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DICHLOROBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DICHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DICHLOROETHENE, TOTAL		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,2-DICHLOROPROPANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,3-DICHLOROBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	1,4-DICHLOROBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	2-BUTANONE		10	UG_L	UJ	mc,c
VPB147-GW-062714-878-880	WG	2-HEXANONE		10	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	4-METHYL-2-PENTANONE		10	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	ACETONE	24	10.	UG_L	J	mc,s
VPB147-GW-062714-878-880	WG	BENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	BROMODICHLOROMETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	BROMOFORM		2.0	UG_L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062714-878-880	WG	BROMOMETHANE		4.0	UG_L	UJ	mc,c
VPB147-GW-062714-878-880	WG	CARBON DISULFIDE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CARBON TETRACHLORIDE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CHLOROBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CHLOROETHANE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CHLOROFORM		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CHLOROMETHANE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CIS-1,2-DICHLOROETHENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CIS-1,3-DICHLOROPROPENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	CYCLOHEXANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	DIBROMOCHLOROMETHANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	DICHLORODIFLUOROMETHANE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	ETHYLBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	ISOPROPYLBENZENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	M- AND P-XYLENE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	METHYL ACETATE		3.0	UG_L	UJ	mc,c
VPB147-GW-062714-878-880	WG	METHYL CYCLOHEXANE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	METHYL TERT-BUTYL ETHER		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	METHYLENE CHLORIDE	16	10	UG_L	J	mc,s
VPB147-GW-062714-878-880	WG	O-XYLENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	STYRENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	TETRACHLOROETHENE		2.0	UG_L	UJ	mc
VPB147-GW-	WG	TOLUENE		2.0	UG_L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
062714-878-880							
VPB147-GW-062714-878-880	WG	TRANS-1,2-DICHLOROETHENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	TRANS-1,3-DICHLOROPROPENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	TRICHLOROETHENE		2.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	TRICHLOROFLUOROMETHANE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	VINYL CHLORIDE		4.0	UG_L	UJ	mc
VPB147-GW-062714-878-880	WG	XYLENES, TOTAL		6.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1,1-TRICHLOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1,2-TRICHLOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1-DICHLOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,1-DICHLOROETHENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2,4-TRICHLOROBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DIBROMOETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DICHLOROBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DICHLOROETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,2-DICHLOROPROPANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,3-DICHLOROBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	1,4-DICHLOROBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	2-BUTANONE	13	2.5	UG_L	J	mc,c,s

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-062714-888-890	WG	2-HEXANONE		2.5	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	4-METHYL-2-PENTANONE		2.5	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	ACETONE	85	2.5	UG_L	J	mc,s
VPB147-GW-062714-888-890	WG	BENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	BROMODICHLOROMETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	BROMOFORM		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	BROMOMETHANE		1.0	UG_L	UJ	mc,c
VPB147-GW-062714-888-890	WG	CARBON DISULFIDE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CARBON TETRACHLORIDE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CHLOROBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CHLOROFORM		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CHLOROMETHANE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CIS-1,2-DICHLOROETHENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	CYCLOHEXANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	DIBROMOCHLOROMETHANE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	DICHLORODIFLUOROMETHANE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	ETHYLBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	ISOPROPYLBENZENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	M- AND P-XYLENE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	METHYL ACETATE		0.75	UG_L	UJ	mc,c
VPB147-GW-	WG	METHYL CYCLOHEXANE		0.50	UG_L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
062714-888-890							
VPB147-GW-062714-888-890	WG	METHYL TERT-BUTYL ETHER		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	METHYLENE CHLORIDE		2.5	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	O-XYLENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	STYRENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TETRACHLOROETHENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TOLUENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TRICHLOROETHENE		0.50	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	TRICHLOROFLUOROMETHANE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	VINYL CHLORIDE		1.0	UG_L	UJ	mc
VPB147-GW-062714-888-890	WG	XYLENES, TOTAL		1.5	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1,1-TRICHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1,2,2-TETRACHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1,2-TRICHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1-DICHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,1-DICHLOROETHENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2,4-TRICHLOROBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2-DIBROMO-3-CHLOROPROPANE		1.5	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2-DIBROMOETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2-DICHLOROBENZENE		1.0	UG_L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-063014-898-900	WG	1,2-DICHLOROETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2-DICHLOROETHENE, TOTAL		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,2-DICHLOROPROPANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,3-DICHLOROBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	1,4-DICHLOROBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	2-BUTANONE		5.0	UG_L	UJ	mc,c
VPB147-GW-063014-898-900	WG	2-HEXANONE		5.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	4-METHYL-2-PENTANONE		5.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	ACETONE	56	5.0	UG_L	J	mc,s
VPB147-GW-063014-898-900	WG	BENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	BROMODICHLOROMETHANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	BROMOFORM		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	BROMOMETHANE		2.0	UG_L	UJ	mc,c
VPB147-GW-063014-898-900	WG	CARBON DISULFIDE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CARBON TETRACHLORIDE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CHLOROBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CHLOROETHANE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CHLOROFORM		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CHLOROMETHANE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CIS-1,2-DICHLOROETHENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CIS-1,3-DICHLOROPROPENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	CYCLOHEXANE		1.0	UG_L	UJ	mc
VPB147-GW-	WG	DIBROMOCHLOROMETHANE		1.0	UG_L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
063014-898-900							
VPB147-GW-063014-898-900	WG	DICHLORODIFLUOROMETHANE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	ETHYLBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	ISOPROPYLBENZENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	M- AND P-XYLENE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	METHYL ACETATE		1.5	UG_L	UJ	mc,c
VPB147-GW-063014-898-900	WG	METHYL CYCLOHEXANE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	METHYL TERT-BUTYL ETHER		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	METHYLENE CHLORIDE	3.8	5.0	UG_L	J	mc,s
VPB147-GW-063014-898-900	WG	O-XYLENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	STYRENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TETRACHLOROETHENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TOLUENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TRANS-1,2-DICHLOROETHENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TRANS-1,3-DICHLOROPROPENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TRICHLOROETHENE		1.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	TRICHLOROFLUOROMETHANE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	VINYL CHLORIDE		2.0	UG_L	UJ	mc
VPB147-GW-063014-898-900	WG	XYLENES, TOTAL		3.0	UG_L	UJ	mc
VPB147-TRIP BLANK-063014	WQ	2-BUTANONE		2.5	UG_L	UJ	c
VPB147-TRIP BLANK-063014	WQ	BROMOMETHANE		1.0	UG_L	UJ	c
VPB147-TRIP BLANK-063014	WQ	METHYL ACETATE		0.75	UG_L	UJ	c

Attachment A

Non Conformance Summary Tables

Table A-1 -Continuing Calibration Verification Standard

CCV ID	Compound	% R	Limits
WG145865-4	BROMOMETHANE	21	<20%
	2-BUTANONE	25	<20%
	METHYL ACETATE	22	<20%
Associated samples: all samples in SDG SH4830			

Table A-2 - Surrogates

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
VPB147-GW-062714-878-880	1,2-DICHLOROETHANE-D4	136	70	120
VPB147-GW-062714-878-880	DIBROMOFLUOROMETHANE	116	85	115
VPB147-GW-062714-888-890	1,2-DICHLOROETHANE-D4	131	70	120
VPB147-GW-063014-898-900	1,2-DICHLOROETHANE-D4	131	70	120
VPB147-TRIP BLANK-063014	1,2-DICHLOROETHANE-D4	138	70	120

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

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Page ____ of ____

Client: Resolution Consultants
Contact: Eleanor Vandall
Phone #: ( )
Fax #: ( )
Address:
City:
State:
Zip Code:
Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Valerie Thayer
Copies To: Val Thayer

LAB USE ONLY
WORK ORDER #: 5H 4830
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8260 (Filt. ☐Y ☐N)	Total metals (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
	VPB147-GW-063014-0848-5100	6/30/14 / 12:15	GW	1	X									
	IDWGW-063014-white frac Tank	6/30/14 / 14:30	W	1		X								
	VPB147-GW-062714-888-890 (VT)	6/27/14 / 13:45	GW	4	X									
	Temp Blank	/	W	1										
	VPB147-GW-062714-878-880 (VT)	6/27/14 / 10:30	GW	6	X									
	VPB147-Triplblank-063014	5/2/14 / 10:00	W	3	X									

COMMENTS: IDWGW - sample from frac tank - white

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	6/30/14 7	[illegible] 7-1-14	0940		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-4DL
Client ID: 147-062714-878-880
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9288.D

Sample Date: 27-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	4.0	ug/L	4	2	8.0	0.96	4.0
Chloromethane	U	4.0	ug/L	4	2	8.0	1.4	4.0
Vinyl Chloride	U	4.0	ug/L	4	2	8.0	1.0	4.0
Bromomethane	U	4.0	ug/L	4	2	8.0	2.0	4.0
Chloroethane	U	4.0	ug/L	4	2	8.0	2.2	4.0
Trichlorofluoromethane	U	4.0	ug/L	4	2	8.0	0.96	4.0
1,1-Dichloroethene	U	2.0	ug/L	4	1	4.0	1.4	2.0
Carbon Disulfide	U	2.0	ug/L	4	1	4.0	1.0	2.0
Freon-113	U	2.0	ug/L	4	1	4.0	1.2	2.0
Methylene Chloride	J	16	ug/L	4	5	20.	4.5	10.
Acetone	J	24	ug/L	4	5	20.	8.8	10.
trans-1,2-Dichloroethene	U UJ	2.0	ug/L	4	1	4.0	1.0	2.0
Methyl tert-butyl Ether	U	2.0	ug/L	4	1	4.0	1.4	2.0
1,1-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.84	2.0
cis-1,2-Dichloroethene	U	2.0	ug/L	4	1	4.0	0.84	2.0
Chloroform	U	2.0	ug/L	4	1	4.0	1.3	2.0
1,1,1-Trichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
2-Butanone	U	10	ug/L	4	5	20.	5.2	10.
Cyclohexane	U	2.0	ug/L	4	1	4.0	1.2	2.0
Carbon Tetrachloride	U	2.0	ug/L	4	1	4.0	0.88	2.0
Benzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,2-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
Trichloroethene	U	2.0	ug/L	4	1	4.0	1.1	2.0
1,2-Dichloropropane	U	2.0	ug/L	4	1	4.0	1.0	2.0
Bromodichloromethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
cis-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.76	2.0
Toluene	U	2.0	ug/L	4	1	4.0	1.1	2.0
4-Methyl-2-Pentanone	U	10	ug/L	4	5	20.	5.3	10.
trans-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,1,2-Trichloroethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
Tetrachloroethene	U	2.0	ug/L	4	1	4.0	1.6	2.0
Dibromochloromethane	U	2.0	ug/L	4	1	4.0	1.2	2.0
2-Hexanone	U	10	ug/L	4	5	20.	6.8	10.
Chlorobenzene	U	2.0	ug/L	4	1	4.0	0.88	2.0
Ethylbenzene	U	2.0	ug/L	4	1	4.0	0.84	2.0

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12/16/14

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-4DL
Client ID: 147-062714-878-880
Project: Navy Clean WE15-03-06 NW
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Sample Date: 27-JUN-14
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Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U J	6.0	ug/L	4	3	12.	1.0	6.0
Styrene	U	2.0	ug/L	4	1	4.0	0.92	2.0
Bromoform	U	2.0	ug/L	4	1	4.0	0.92	2.0
Isopropylbenzene	U	2.0	ug/L	4	1	4.0	0.92	2.0
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	4	1	4.0	1.5	2.0
1,3-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,4-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.96	2.0
1,2-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.60	2.0
1,2,4-Trichlorobenzene	U	2.0	ug/L	4	1	4.0	1.5	2.0
Methyl Acetate	U	3.0	ug/L	4	1	4.0	2.1	3.0
Methylcyclohexane	U	2.0	ug/L	4	1	4.0	1.2	2.0
o-Xylene	U	2.0	ug/L	4	1	4.0	1.0	2.0
M+P-Xylenes	U	4.0	ug/L	4	2	8.0	2.4	4.0
1,2-Dichloroethylene (Total)	U	4.0	ug/L	4	2	8.0	0.84	4.0
1,2-Dibromoethane	U	2.0	ug/L	4	1	4.0	0.88	2.0
1,2-Dibromo-3-Chloropropane	U	3.0	ug/L	4	1	4.0	2.0	3.0
P-Bromofluorobenzene		84.6	%					
Toluene-d8		114.	%					
1,2-Dichloroethane-d4	*	136.	%					
Dibromofluoromethane	*	116.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-3
Client ID: 147-062714-888-890
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9285.D

Sample Date: 27-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U		1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U		1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U		1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U		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		J	85	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	UJ	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		J	13	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	UJ	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: SH4830-3
Client ID: 147-062714-888-890
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9285.D

Sample Date: 27-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	~~U~~ UJ	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		78.0	%					
Toluene-d8	*	85.0	%					
1,2-Dichloroethane-d4	*	131.	%					
Dibromofluoromethane		101.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-1DL
Client ID: 147-063014-898-900
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9286.D

Sample Date: 30-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	2.0	ug/L	2	2	4.0	0.48	2.0
Chloromethane	U	2.0	ug/L	2	2	4.0	0.72	2.0
Vinyl Chloride	U	2.0	ug/L	2	2	4.0	0.50	2.0
Bromomethane	U	2.0	ug/L	2	2	4.0	0.98	2.0
Chloroethane	U	2.0	ug/L	2	2	4.0	1.1	2.0
Trichlorofluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
1,1-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.70	1.0
Carbon Disulfide	U	1.0	ug/L	2	1	2.0	0.50	1.0
Freon-113	U	1.0	ug/L	2	1	2.0	0.62	1.0
Methylene Chloride	J	3.8	ug/L	2	5	10.	2.3	5.0
Acetone	J	56	ug/L	2	5	10.	4.4	5.0
trans-1,2-Dichloroethene	U UJ	1.0	ug/L	2	1	2.0	0.50	1.0
Methyl tert-butyl Ether	U	1.0	ug/L	2	1	2.0	0.72	1.0
1,1-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
cis-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.42	1.0
Chloroform	U	1.0	ug/L	2	1	2.0	0.64	1.0
1,1,1-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
2-Butanone	U	5.0	ug/L	2	5	10.	2.6	5.0
Cyclohexane	U	1.0	ug/L	2	1	2.0	0.62	1.0
Carbon Tetrachloride	U	1.0	ug/L	2	1	2.0	0.44	1.0
Benzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
1,2-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene	U	1.0	ug/L	2	1	2.0	0.56	1.0
1,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
Bromodichloromethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
cis-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.38	1.0
Toluene	U	1.0	ug/L	2	1	2.0	0.54	1.0
4-Methyl-2-Pentanone	U	5.0	ug/L	2	5	10.	2.6	5.0
trans-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,1,2-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
Tetrachloroethene	U	1.0	ug/L	2	1	2.0	0.80	1.0
Dibromochloromethane	U	1.0	ug/L	2	1	2.0	0.60	1.0
2-Hexanone	U	5.0	ug/L	2	5	10.	3.4	5.0
Chlorobenzene	U	1.0	ug/L	2	1	2.0	0.44	1.0
Ethylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-1DL
Client ID: 147-063014-898-900
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9286.D

Sample Date: 30-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: `03-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	UJ	3.0	ug/L	2	3	6.0	0.50	3.0
Styrene	U		1.0	ug/L	2	1	2.0	0.46	1.0
Bromoform	U		1.0	ug/L	2	1	2.0	0.46	1.0
Isopropylbenzene	U		1.0	ug/L	2	1	2.0	0.46	1.0
1,1,2,2-Tetrachloroethane	U		1.0	ug/L	2	1	2.0	0.76	1.0
1,3-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.52	1.0
1,4-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.48	1.0
1,2-Dichlorobenzene	U		1.0	ug/L	2	1	2.0	0.30	1.0
1,2,4-Trichlorobenzene	U		1.0	ug/L	2	1	2.0	0.74	1.0
Methyl Acetate	U		1.5	ug/L	2	1	2.0	1.1	1.5
Methylcyclohexane	U		1.0	ug/L	2	1	2.0	0.60	1.0
o-Xylene	U		1.0	ug/L	2	1	2.0	0.50	1.0
M+P-Xylenes	U		2.0	ug/L	2	2	4.0	1.2	2.0
1,2-Dichloroethylene (Total)	U		2.0	ug/L	2	2	4.0	0.42	2.0
1,2-Dibromoethane	U		1.0	ug/L	2	1	2.0	0.44	1.0
1,2-Dibromo-3-Chloropropane	U		1.5	ug/L	2	1	2.0	1.0	1.5
P-Bromofluorobenzene			85.9	%					
Toluene-d8			115.	%					
1,2-Dichloroethane-d4	*		131.	%					
Dibromofluoromethane			114.	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4830-5
Client ID: VPB147-TB-063014
Project: Navy Clean WE15-03-06 NW
SDG: SH4830
Lab File ID: D9283.D

Sample Date: 30-JUN-14
Received Date: 01-JUL-14
Extract Date: 02-JUL-14
Extracted By: DJP
Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-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~~ UJ	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	2.5	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Butanone	~~U~~ UJ	2.5	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	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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Lab File ID: D9283.D

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Extraction Method: SW846 5030
Lab Prep Batch: WG145865

Analysis Date: 02-JUL-14
Analyst: DJP
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 03-JUL-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~~ UJ	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		86.0	%					
Toluene-d8		117.	%					
1,2-Dichloroethane-d4	*	138.	%					
Dibromofluoromethane		114.	%					

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RESOLUTION CONSULTANTS

Resolution Consultants
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

Data Validation Report

Project:	Regional Groundwater Investigation - NWIRP Bethpage
Laboratory:	Katahdin Analytical
Service Request:	SH4962
Analyses/Method:	EPA SW-846 Method 8260B for VOCs (GC/MS)
Validation Level:	3
AECOM Project Number:	60266526.SA.DV
Prepared by:	Dawn Brule/RESCON — Completed on: 12/8/2014
Reviewed by:	Lori Herberich/RESCON — File Name: SH4962_8260B

SUMMARY

The samples listed below were collected by Resolution Consultants from the Regional Groundwater Investigation - NWIRP Bethpage site on July 1 and 2, 2014.

Sample ID	Matrix/Sample Type
VPB147-GW-070114-938-940	Groundwater
VPB147-GW-070114-943-945	Groundwater
VPB147-GW-070114-958-960	Groundwater
VPB147-TRIPBLANKS-070214	Trip Blank

Data validation activities were conducted with reference to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-46, specifically SW-846 Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (USEPA, 1996), *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (June 2008), and Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

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

- ✗ Data completeness (chain-of-custody [COC])/sample integrity
- ✓ Holding times and sample preservation
- ✓ GC/MS performance checks
- ✗ Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/equipment blanks/trip blanks
- ✓ Surrogate spike recoveries
- NA Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- NA Field duplicate results

✓ Internal standard results
✓ Sample results/reporting issues

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

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

RESULTS

Data Completeness (COC)/Sample Integrity

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

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

Selected samples were mostly soil and had very little standing water.

- For samples VPB147-GW-070114-958-960, VPB147-GW-070114-943-945, and VPB147-GW-070114-938-940, the laboratory decanted the water from individual vials into one vial as one composite per sample.
- Due to limited volume, samples VPB147-GW-070114-943-945 and VPB147-GW-070114-938-940 were analyzed at dilutions and their detections limits are elevated accordingly.

Positive and nondetect results for these sample were qualified as estimated (J and UJ, respectively), due to possible loss of sample integrity during the decanting procedure.

Due to limitations in the reporting system, the laboratory omitted the "VPB-" prefix and the "GW" from the sample ID, and truncated the ID for the Trip Blank in the report. The submitted EDD file reflects the full sample ID. Qualified sample results are shown in Table 1.

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.

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:

ICAL Linearity Nonconformances:

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

CCV Linearity Nonconformances:

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

Qualified sample results are shown in Table 1.

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 Results

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

Field Duplicate Results

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

Internal Standard Results

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

Sample Results/Reporting Issues

Compounds that were not detected in the sample are reported as 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
VPB147-GW-070114-938-940	WG	1,1,1-TRICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,1,2,2-TETRACHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,1,2-TRICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,1-DICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,1-DICHLOROETHENE		5.0	UG/L	UJ	mc,c
VPB147-GW-070114-938-940	WG	1,2,4-TRICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DIBROMO-3-CHLOROPROPANE		7.5	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DIBROMOETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DICHLOROETHENE, TOTAL		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,2-DICHLOROPROPANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,3-DICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	1,4-DICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	2-BUTANONE		25	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	2-HEXANONE		25	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	4-METHYL-2-PENTANONE		25	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	ACETONE		25	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	BENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	BROMODICHLOROMETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	BROMOFORM		5.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-938-940	WG	BROMOMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CARBON DISULFIDE		5.0	UG/L	UJ	mc,c
VPB147-GW-070114-938-940	WG	CARBON TETRACHLORIDE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CHLOROETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CHLOROFORM		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CHLOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CIS-1,2-DICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CIS-1,3-DICHLOROPROPENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	CYCLOHEXANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	DIBROMOCHLOROMETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	DICHLORODIFLUOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	ETHYLBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	ISOPROPYLBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	M- AND P-XYLENE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	METHYL ACETATE		7.5	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	METHYL CYCLOHEXANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	METHYL TERT-BUTYL ETHER		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	METHYLENE CHLORIDE		25	UG/L	UJ	mc,c
VPB147-GW-070114-938-940	WG	O-XYLENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	STYRENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	TETRACHLOROETHENE		5.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-938-940	WG	TOLUENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	TRANS-1,2-DICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	TRANS-1,3-DICHLOROPROPENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	TRICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	TRICHLOROFLUOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	VINYL CHLORIDE		10	UG/L	UJ	mc
VPB147-GW-070114-938-940	WG	XYLENES, TOTAL		15	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1,1-TRICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1,2,2-TETRACHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1,2-TRICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1-DICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,1-DICHLOROETHENE		5.0	UG/L	UJ	mc,c
VPB147-GW-070114-943-945	WG	1,2,4-TRICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DIBROMO-3-CHLOROPROPANE		7.5	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DIBROMOETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DICHLOROETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DICHLOROETHENE, TOTAL		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,2-DICHLOROPROPANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,3-DICHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	1,4-DICHLOROBENZENE		5.0	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-943-945	WG	2-BUTANONE		25	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	2-HEXANONE		25	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	4-METHYL-2-PENTANONE		25	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	ACETONE	38	25	UG/L	J	mc,c
VPB147-GW-070114-943-945	WG	BENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	BROMODICHLOROMETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	BROMOFORM		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	BROMOMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CARBON DISULFIDE		5.0	UG/L	UJ	mc,c
VPB147-GW-070114-943-945	WG	CARBON TETRACHLORIDE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CHLOROBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CHLOROETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CHLOROFORM		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CHLOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CIS-1,2-DICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CIS-1,3-DICHLOROPROPENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	CYCLOHEXANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	DIBROMOCHLOROMETHANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	DICHLORODIFLUOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	ETHYLBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	ISOPROPYLBENZENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	M- AND P-XYLENE		10	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-943-945	WG	METHYL ACETATE		7.5	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	METHYL CYCLOHEXANE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	METHYL TERT-BUTYL ETHER		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	METHYLENE CHLORIDE		25	UG/L	UJ	mc,c
VPB147-GW-070114-943-945	WG	O-XYLENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	STYRENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TETRACHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TOLUENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TRANS-1,2-DICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TRANS-1,3-DICHLOROPROPENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TRICHLOROETHENE		5.0	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	TRICHLOROFLUOROMETHANE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	VINYL CHLORIDE		10	UG/L	UJ	mc
VPB147-GW-070114-943-945	WG	XYLENES, TOTAL		15	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1,1-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1,2,2-TETRACHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1,2-TRICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,1-DICHLOROETHENE		0.50	UG/L	UJ	mc,c
VPB147-GW-070114-958-960	WG	1,2,4-TRICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,2-DIBROMO-3-CHLOROPROPANE		0.75	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-958-960	WG	1,2-DIBROMOETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,2-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,2-DICHLOROETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,2-DICHLOROETHENE, TOTAL		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,2-DICHLOROPROPANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,3-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	1,4-DICHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	2-BUTANONE	5.2	2.5	UG/L	J	mc,c
VPB147-GW-070114-958-960	WG	2-HEXANONE		2.5	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	4-METHYL-2-PENTANONE		2.5	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	ACETONE	24	2.5	UG/L	J	mc,c
VPB147-GW-070114-958-960	WG	BENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	BROMODICHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	BROMOFORM		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	BROMOMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CARBON DISULFIDE		0.50	UG/L	UJ	mc,c
VPB147-GW-070114-958-960	WG	CARBON TETRACHLORIDE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CHLOROBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CHLOROETHANE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CHLOROFORM		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CHLOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CIS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-GW-070114-958-960	WG	CIS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	DIBROMOCHLOROMETHANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	DICHLORODIFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	ETHYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	ISOPROPYLBENZENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	M- AND P-XYLENE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	METHYL ACETATE		0.75	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	METHYL CYCLOHEXANE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	METHYL TERT-BUTYL ETHER		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	METHYLENE CHLORIDE		2.5	UG/L	UJ	mc,c
VPB147-GW-070114-958-960	WG	O-XYLENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	STYRENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TETRACHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TOLUENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TRANS-1,2-DICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TRANS-1,3-DICHLOROPROPENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TRICHLOROETHENE		0.50	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	TRICHLOROFLUOROMETHANE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	VINYL CHLORIDE		1.0	UG/L	UJ	mc
VPB147-GW-070114-958-960	WG	XYLENES, TOTAL		1.5	UG/L	UJ	mc
VPB147-TRIPBLANKS-070214	WQ	1,1-DICHLOROETHENE		0.50	UG/L	UJ	c

Sample ID	Matrix	Compound	Result	LOD	Units	Validation Qualifiers	Validation Reason
VPB147-TRIPBLANKS-070214	WQ	CARBON DISULFIDE		0.50	UG/L	UJ	c
VPB147-TRIPBLANKS-070214	WQ	METHYLENE CHLORIDE		2.5	UG/L	UJ	c

Attachment A

Nonconformance Summary Tables

Table A-1 - Initial Calibration Verification Standard

ICV ID	Compound	% R	Limits
WG146050-7	CARBON DISULFIDE	141	80-120%
	ACETONE	163	80-120%
	2-BUTANONE	122	80-120%
Associated samples: all samples in SDG SH4962			

Table A-2 -Continuing Calibration Verification Standard

CCV ID	Compound	% D	Limits
WG146127-4	1,1-DICHLOROETHENE	22	≤20%
	CARBON DISULFIDE	27	≤20%
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	39	≤20%
	METHYLENE CHLORIDE	24	≤20%
	METHYLCYCLOHEXANE	27	≤20%
Associated samples: all samples in SDG SH4962			

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

Client: Resolution Consultants
Contact: Eleanor Vivandi
Phone #: ( )
Fax #: ( )
Address: 100 Red Schoolhouse Rd
City: Chestnut Ridge
State: NY
Zip Code:
Purchase Order #:
Proj. Name / No.: Bethpage 60266526
Katahdin Quote #:
Bill (if different than above):
Address:
Sampler (Print / Sign): Valerie Thayer Val Thayer
Copies To: Valerie Thayer

LAB USE ONLY
WORK ORDER #: 5H4962
KATAHDIN PROJECT NUMBER:

REMARKS:

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

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	VOCs 8240	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
	temp blank	/	W	1											
	VPB147-tripblanks-070114	5/21/14 / 10:00	W	3	X										
	VPB147-GW-070114-(M) 958-960	7/1/14 / 16:45	GW	2	X										
	VPB147-GW-070114-943-945	7/1/14 / 14:00	GW	2	X										
	VPB147-GW-070114-938-940	7/1/14 / 11:30	GW	5	X										
		/													
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		/													
		/													

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Valerie Thayer	7/2/14 7	[signature]			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-4DL
Client ID: 147-070114-938-940
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8040.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U UJ	10	ug/L	10	2	20.	2.4	10.
Chloromethane	U	10	ug/L	10	2	20.	3.6	10.
Vinyl Chloride	U	10	ug/L	10	2	20.	2.5	10.
Bromomethane	U	10	ug/L	10	2	20.	4.9	10.
Chloroethane	U	10	ug/L	10	2	20.	5.5	10.
Trichlorofluoromethane	U	10	ug/L	10	2	20.	2.4	10.
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Freon-113	U	5.0	ug/L	10	1	10.	3.1	5.0
Methylene Chloride	U	25	ug/L	10	5	50.	11.	25.
Acetone	U	25	ug/L	10	5	50.	22.	25.
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.1	5.0
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Butanone	U	25	ug/L	10	5	50.	13.	25.
Cyclohexane	U	5.0	ug/L	10	1	10.	3.1	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U	5.0	ug/L	10	1	10.	2.8	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
4-Methyl-2-Pentanone	U	25	ug/L	10	5	50.	13.	25.
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Tetrachloroethene	U	5.0	ug/L	10	1	10.	4.0	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
2-Hexanone	U	25	ug/L	10	5	50.	17.	25.
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-4DL
Client ID: 147-070114-938-940
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8040.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	UJ	15	ug/L	10	3	30.	2.5	15.
Styrene	U		5.0	ug/L	10	1	10.	2.3	5.0
Bromoform	U		5.0	ug/L	10	1	10.	2.3	5.0
Isopropylbenzene	U		5.0	ug/L	10	1	10.	2.3	5.0
1,1,2,2-Tetrachloroethane	U		5.0	ug/L	10	1	10.	3.8	5.0
1,3-Dichlorobenzene	U		5.0	ug/L	10	1	10.	2.6	5.0
1,4-Dichlorobenzene	U		5.0	ug/L	10	1	10.	2.4	5.0
1,2-Dichlorobenzene	U		5.0	ug/L	10	1	10.	1.5	5.0
1,2,4-Trichlorobenzene	U		5.0	ug/L	10	1	10.	3.7	5.0
Methyl Acetate	U		7.5	ug/L	10	1	10.	5.3	7.5
Methylcyclohexane	U		5.0	ug/L	10	1	10.	3.0	5.0
o-Xylene	U		5.0	ug/L	10	1	10.	2.5	5.0
M+P-Xylenes	U		10	ug/L	10	2	20.	5.9	10.
1,2-Dichloroethylene (Total)	U		10	ug/L	10	2	20.	2.1	10.
1,2-Dibromoethane	U		5.0	ug/L	10	1	10.	2.2	5.0
1,2-Dibromo-3-Chloropropane	U		7.5	ug/L	10	1	10.	5.0	7.5
P-Bromofluorobenzene			94.1	%					
Toluene-d8			103.	%					
1,2-Dichloroethane-d4			104.	%					
Dibromofluoromethane			98.2	%					

12/18/14

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-3DL
Client ID: 147-070114-943-945
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8039.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	UJ	10	ug/L	10	2	20.	2.4	10.
Chloromethane	U		10	ug/L	10	2	20.	3.6	10.
Vinyl Chloride	U		10	ug/L	10	2	20.	2.5	10.
Bromomethane	U		10	ug/L	10	2	20.	4.9	10.
Chloroethane	U		10	ug/L	10	2	20.	5.5	10.
Trichlorofluoromethane	U		10	ug/L	10	2	20.	2.4	10.
1,1-Dichloroethene	U		5.0	ug/L	10	1	10.	3.5	5.0
Carbon Disulfide	U		5.0	ug/L	10	1	10.	2.5	5.0
Freon-113	U		5.0	ug/L	10	1	10.	3.1	5.0
Methylene Chloride	U		25	ug/L	10	5	50.	11.	25.
Acetone		J	38	ug/L	10	5	50.	22.	25.
trans-1,2-Dichloroethene	U	UJ	5.0	ug/L	10	1	10.	2.5	5.0
Methyl tert-butyl Ether	U		5.0	ug/L	10	1	10.	3.6	5.0
1,1-Dichloroethane	U		5.0	ug/L	10	1	10.	2.1	5.0
cis-1,2-Dichloroethene	U		5.0	ug/L	10	1	10.	2.1	5.0
Chloroform	U		5.0	ug/L	10	1	10.	3.2	5.0
1,1,1-Trichloroethane	U		5.0	ug/L	10	1	10.	2.0	5.0
2-Butanone	U		25	ug/L	10	5	50.	13.	25.
Cyclohexane	U		5.0	ug/L	10	1	10.	3.1	5.0
Carbon Tetrachloride	U		5.0	ug/L	10	1	10.	2.2	5.0
Benzene	U		5.0	ug/L	10	1	10.	2.6	5.0
1,2-Dichloroethane	U		5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U		5.0	ug/L	10	1	10.	2.8	5.0
1,2-Dichloropropane	U		5.0	ug/L	10	1	10.	2.5	5.0
Bromodichloromethane	U		5.0	ug/L	10	1	10.	3.3	5.0
cis-1,3-Dichloropropene	U		5.0	ug/L	10	1	10.	1.9	5.0
Toluene	U		5.0	ug/L	10	1	10.	2.7	5.0
4-Methyl-2-Pentanone	U		25	ug/L	10	5	50.	13.	25.
trans-1,3-Dichloropropene	U		5.0	ug/L	10	1	10.	2.0	5.0
1,1,2-Trichloroethane	U		5.0	ug/L	10	1	10.	3.3	5.0
Tetrachloroethene	U		5.0	ug/L	10	1	10.	4.0	5.0
Dibromochloromethane	U		5.0	ug/L	10	1	10.	3.0	5.0
2-Hexanone	U		25	ug/L	10	5	50.	17.	25.
Chlorobenzene	U		5.0	ug/L	10	1	10.	2.2	5.0
Ethylbenzene	U		5.0	ug/L	10	1	10.	2.1	5.0

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ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-3DL
Client ID: 147-070114-943-945
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8039.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U UJ	15	ug/L	10	3	30.	2.5	15.
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
Methyl Acetate	U	7.5	ug/L	10	1	10.	5.3	7.5
Methylcyclohexane	U	5.0	ug/L	10	1	10.	3.0	5.0
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
M+P-Xylenes	U	10	ug/L	10	2	20.	5.9	10.
1,2-Dichloroethylene (Total)	U	10	ug/L	10	2	20.	2.1	10.
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
1,2-Dibromo-3-Chloropropane	U	7.5	ug/L	10	1	10.	5.0	7.5
P-Bromofluorobenzene		93.2	%					
Toluene-d8		101.	%					
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		96.8	%					

12/19/14

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-2
Client ID: 147-070114-958-960
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8038.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	UJ	1.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U		1.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U		1.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U		1.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U		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		J	24	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	UJ	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		J	5.2	ug/L	1	5	5.0	1.3	2.5
Cyclohexane	U	UJ	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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Richelly

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-2
Client ID: 147-070114-958-960
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8038.D

Sample Date: 01-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-14

Compound	Qualifier		Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Xylenes (total)	U	UJ	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			88.7	%					
Toluene-d8			96.0	%					
1,2-Dichloroethane-d4			100.	%					
Dibromofluoromethane			94.5	%					

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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-1
Client ID: 147-TB-070214
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8037.D

Sample Date: 02-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-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~~ UJ	0.50	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	~~U~~ UJ	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~~ UJ	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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Report of Analytical Results

Client: ENSAFE
Lab ID: SH4962-1
Client ID: 147-TB-070214
Project: Navy Clean WE15-03-06 NW
SDG: SH4962
Lab File ID: C8037.D

Sample Date: 02-JUL-14
Received Date: 05-JUL-14
Extract Date: 08-JUL-14
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG146127

Analysis Date: 08-JUL-14
Analyst: REC
Analysis Method: SW846 8260C
Matrix: AQ
% Solids: NA
Report Date: 09-JUL-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		89.9	%					
Toluene-d8		102.	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		94.6	%					

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Section 5

VPB 147 Analytical Data Table

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/5/2014	6/5/2014	6/6/2014	6/6/2014
Sample ID		VPB147-GW-060514-58-60	VPB147-GW-060514-98-100	VPB147-GW-060614-148-150	VPB147-GW-060614-198-200
Sample Interval		58 - 60 ft	98 - 100 ft	148 - 150 ft	198 - 200 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
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 UJ	< 2.5 UJ
ACETONE	50	**12**	**2.3**	**13**	**6.9**
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 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	**0.35 J**	**0.29 J**
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 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	**0.69 J**	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/9/2014	6/9/2014	6/9/2014	6/9/2014
Sample ID		VPB147-GW-060914-218-220	VPB147-GWD-060914	VPB147-GW-060914-238-240	VPB147-GW-060914-258-260
Sample Interval		218 - 220 ft	218 - 220 ft	238 - 240 ft	258 - 260 ft
Sample type code		N	FD	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
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 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	**3.3 J**	< 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 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
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	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/9/2014	6/10/2014	6/10/2014	6/10/2014
Sample ID		VPB147-GW-060914-278-280	VPB147-GW-061014-298-300	VPB147-GW-061014-318-320	VPB147-GW-061014-338-340
Sample Interval		278 - 280 ft	298 - 300 ft	318 - 320 ft	338 - 340 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 2.5 U	**4.5 J**	**12**
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 UJ	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 1.0 U	< 1.0 U	< 1.0 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	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/11/2014	6/11/2014	6/12/2014	6/12/2014
Sample ID		VPB147-GW-061114-358-360	VPB147-GW-061114-378-380	VPB147-GW-061214-398-400	VPB147-GWD-061214
Sample Interval		358 - 360 ft	378 - 380 ft	398 - 400 ft	398 - 400 ft
Sample type code		N	N	N	FD
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 UJ***	***< 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	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**5.2**	**6.4**	**7.8 J**	**11 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 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	< 1.0 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 U	< 1.0 U
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 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	< 0.50 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	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/12/2014	6/12/2014	6/13/2014	6/13/2014
Sample ID		VPB147-GW-061214-418-420	VPB147-GW-061214-438-440	VPB147-GW-061314-458-460	VPB147-GW-061314-478-480
Sample Interval		418 - 420 ft	438 - 440 ft	458 - 460 ft	478 - 480 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 UJ***	***< 0.75 UJ***	***< 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	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	**7.3 J**	**4.9 J**	**4.2 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 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	< 1.0 U	< 1.0 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 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	**0.45 J**
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)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/17/2014	6/17/2014	6/17/2014	6/18/2014
Sample ID		VPB147-GW-061714-528-530	VPB147-GW-061714-538-540	VPB147-GW-061714-558-560	VPB147-GW-061814-578-580
Sample Interval		528 - 530 ft	538 - 540 ft	558 - 560 ft	578 - 580 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	**5.0 J**	< 2.5 UJ	< 2.5 UJ	**1.9 J**
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**29**	**6.3**	**19**	**14**
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	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 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	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	**0.56 J**	< 1.0 U	< 1.0 U	**0.43 J**
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/18/2014	6/18/2014	6/19/2014	6/19/2014
Sample ID		VPB147-GW-061814-598-600	VPB147-GW-061814-618-620	VPB147-GW-061914-638-640	VPB147-GW-061914-668-670
Sample Interval		598 - 600 ft	618 - 620 ft	638 - 640 ft	668 - 670 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 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	< 0.50 U	< 0.50 U
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***	***< 0.75 U***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**3.7 J**	**7.2**	**8.8**	< 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 UJ
CARBON DISULFIDE	60	< 1.0 U	< 1.0 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	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 UJ	< 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)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/20/2014	6/23/2014	6/23/2014	6/24/2014
Sample ID		VPB147-GW-062014-678-680	VPB147-GW-062314-718-720	VPB147-GW-062314-738-740	VPB147-GW-062414-758-760
Sample Interval		678 - 680 ft	718 - 720 ft	738 - 740 ft	758 - 760 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
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 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
2-BUTANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	**7.2**	**15**	**8.0**	**24 J**
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	**0.58 J**
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 UJ
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 0.50 U***	***< 0.50 U***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 UJ

Location	NYSDEC Groundwater Guidance or Standard Value (Note 1)	VPB147	VPB147	VPB147	VPB147
Sample Date		6/25/2014	6/25/2014	6/26/2014	6/26/2014
Sample ID		VPB147-GW-062514-798-800	VPB147-GW-062514-818-820	VPB147-GW-062614-840-842	VPB147-GW-062614-858-860
Sample Interval		798 - 800 ft	818 - 820 ft	840 - 842 ft	858 - 860 ft
Sample type code		N	N	N	N
VOC 8260B (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 0.50 UJ	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 0.75 U***	***< 1.5 UJ***	***< 0.75 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROBENZENE	3	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
1,2-DICHLOROPROPANE	1	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
2-BUTANONE	50	< 2.5 U	< 5.0 UJ	< 2.5 UJ	< 2.5 UJ
2-HEXANONE	50	< 2.5 U	< 5.0 UJ	< 2.5 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 5.0 UJ	< 2.5 UJ	< 2.5 UJ
ACETONE	50	< 2.5 U	< 34 UJ	< 5.0 UJ	< 12 UJ
BENZENE	1	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
BROMOFORM	50	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
BROMOMETHANE	5	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
CARBON TETRACHLORIDE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROBENZENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROETHANE	5	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
CHLOROMETHANE	5	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 1.0 UJ***	***< 0.50 UJ***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
ISOPROPYLBENZENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
M- AND P-XYLENE	NL	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
METHYL ACETATE	NL	< 0.75 U	< 1.5 UJ	< 0.75 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
METHYLENE CHLORIDE	5	< 2.5 U	< 5.0 UJ	< 2.5 UJ	< 2.5 UJ
O-XYLENE	NL	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
STYRENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
TETRACHLOROETHENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
TOLUENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 0.50 U***	***< 1.0 UJ***	***< 0.50 UJ***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 0.50 U	< 1.0 UJ	< 0.50 UJ	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
VINYL CHLORIDE	2	< 1.0 U	< 2.0 UJ	< 1.0 UJ	< 1.0 UJ
XYLENES, TOTAL	5	< 1.5 U	< 3.0 UJ	< 1.5 UJ	< 1.5 UJ

Location		VPB147	VPB147
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	6/27/2014	6/27/2014
Sample ID		VPB147-GW-062714-878-880	VPB147-GW-062714-888-890
Sample Interval		878 - 880 ft	888 - 890 ft
Sample type code		N	N
VOC 8260B (ug/L)			
1,1,1-TRICHLOROETHANE	5	< 2.0 UJ	< 0.50 UJ
1,1,2,2-TETRACHLOROETHANE	5	< 2.0 UJ	< 0.50 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 2.0 UJ	< 0.50 UJ
1,1,2-TRICHLOROETHANE	1	***< 2.0 UJ***	< 0.50 UJ
1,1-DICHLOROETHANE	5	< 2.0 UJ	< 0.50 UJ
1,1-DICHLOROETHENE	5	< 2.0 UJ	< 0.50 UJ
1,2,4-TRICHLOROBENZENE	5	< 2.0 UJ	< 0.50 UJ
1,2-DIBROMO-3-CHLOROPROPANE	0.04	***< 3.0 UJ***	***< 0.75 UJ***
1,2-DIBROMOETHANE	NL	< 2.0 UJ	< 0.50 UJ
1,2-DICHLOROBENZENE	3	< 2.0 UJ	< 0.50 UJ
1,2-DICHLOROETHANE	5	< 2.0 UJ	< 0.50 UJ
1,2-DICHLOROETHENE, TOTAL	5	< 4.0 UJ	< 1.0 UJ
1,2-DICHLOROPROPANE	1	***< 2.0 UJ***	< 0.50 UJ
1,3-DICHLOROBENZENE	3	< 2.0 UJ	< 0.50 UJ
1,4-DICHLOROBENZENE	3	< 2.0 UJ	< 0.50 UJ
2-BUTANONE	50	< 10 UJ	**13 J**
2-HEXANONE	50	< 10 UJ	< 2.5 UJ
4-METHYL-2-PENTANONE	NL	< 10 UJ	< 2.5 UJ
ACETONE	50	**24 J**	**85 J**
BENZENE	1	***< 2.0 UJ***	< 0.50 UJ
BROMODICHLOROMETHANE	50	< 2.0 UJ	< 0.50 UJ
BROMOFORM	50	< 2.0 UJ	< 0.50 UJ
BROMOMETHANE	5	< 4.0 UJ	< 1.0 UJ
CARBON DISULFIDE	60	< 2.0 UJ	< 0.50 UJ
CARBON TETRACHLORIDE	5	< 2.0 UJ	< 0.50 UJ
CHLOROBENZENE	5	< 2.0 UJ	< 0.50 UJ
CHLOROETHANE	5	< 4.0 UJ	< 1.0 UJ
CHLOROFORM	7	< 2.0 UJ	< 0.50 UJ
CHLOROMETHANE	5	< 4.0 UJ	< 1.0 UJ
CIS-1,2-DICHLOROETHENE	5	< 2.0 UJ	< 0.50 UJ
CIS-1,3-DICHLOROPROPENE	0.4	***< 2.0 UJ***	***< 0.50 UJ***
CYCLOHEXANE	NL	< 2.0 UJ	< 0.50 UJ
DIBROMOCHLOROMETHANE	5	< 2.0 UJ	< 0.50 UJ
DICHLORODIFLUOROMETHANE	5	< 4.0 UJ	< 1.0 UJ
ETHYLBENZENE	5	< 2.0 UJ	< 0.50 UJ
ISOPROPYLBENZENE	5	< 2.0 UJ	< 0.50 UJ
M- AND P-XYLENE	NL	< 4.0 UJ	< 1.0 UJ
METHYL ACETATE	NL	< 3.0 UJ	< 0.75 UJ
METHYL CYCLOHEXANE	NL	< 2.0 UJ	< 0.50 UJ
METHYL TERT-BUTYL ETHER	10	< 2.0 UJ	< 0.50 UJ
METHYLENE CHLORIDE	5	**16 J**	< 2.5 UJ
O-XYLENE	NL	< 2.0 UJ	< 0.50 UJ
STYRENE	5	< 2.0 UJ	< 0.50 UJ
TETRACHLOROETHENE	5	< 2.0 UJ	< 0.50 UJ
TOLUENE	5	< 2.0 UJ	< 0.50 UJ
TRANS-1,2-DICHLOROETHENE	5	< 2.0 UJ	< 0.50 UJ
TRANS-1,3-DICHLOROPROPENE	0.4	***< 2.0 UJ***	***< 0.50 UJ***
TRICHLOROETHENE	5	< 2.0 UJ	< 0.50 UJ
TRICHLOROFLUOROMETHANE	5	< 4.0 UJ	< 1.0 UJ
VINYL CHLORIDE	2	***< 4.0 UJ***	< 1.0 UJ
XYLENES, TOTAL	5	***< 6.0 UJ***	< 1.5 UJ

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*** =Detection limit 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.

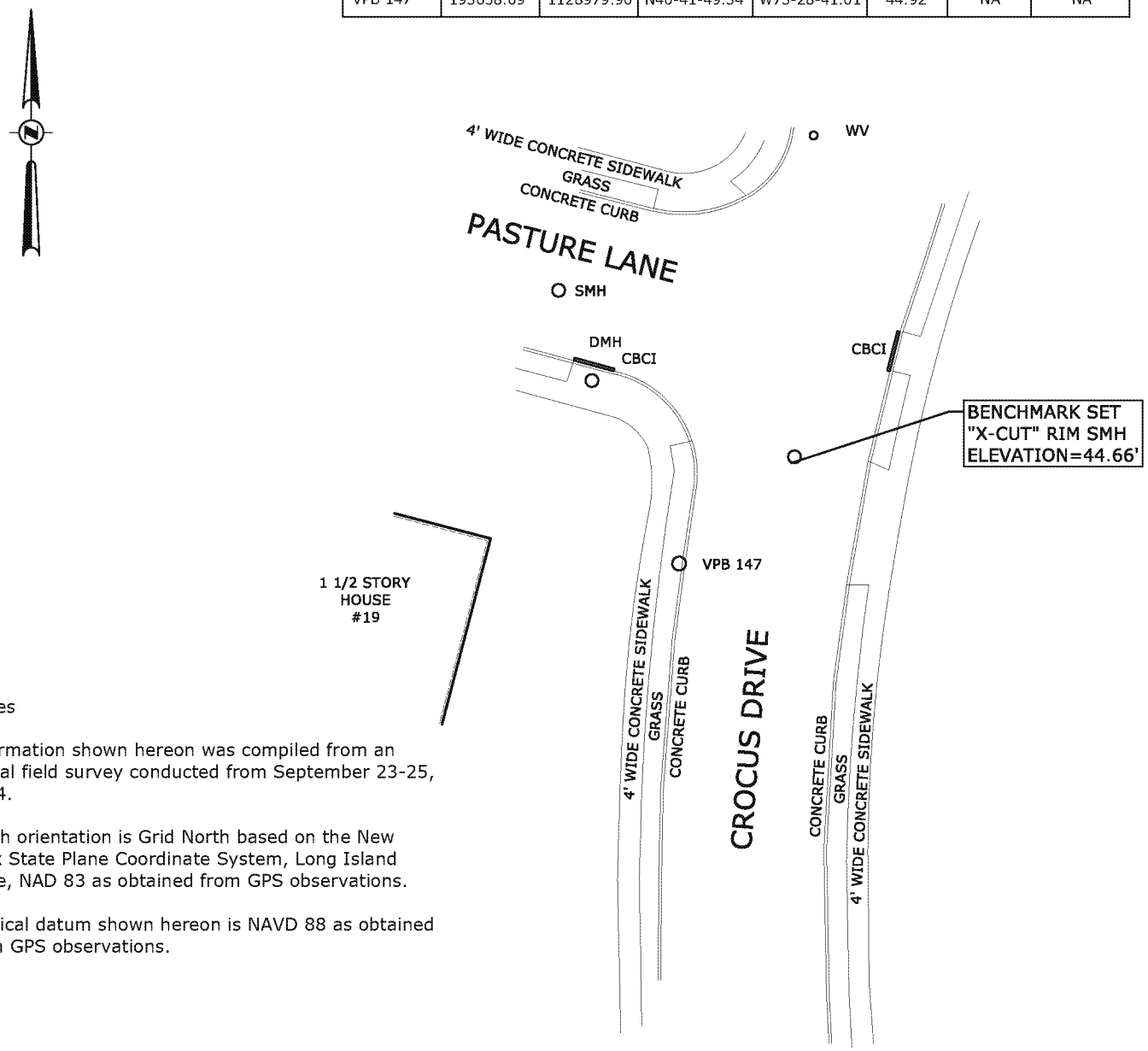
Section 6

Survey

NONE :XREFS

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

Description	Northing	Easting	Latitude	Longitude	Ground	Rim	PVC
VPB 147	193658.09	1128979.90	N40-41-49.34	W73-28-41.01	44.92	NA	NA



Map Notes

1. Information shown hereon was compiled from an actual field survey conducted from September 23-25, 2014.
2. North orientation is Grid North based on the New York State Plane Coordinate System, Long Island Zone, NAD 83 as obtained from GPS observations.
3. Vertical datum shown hereon is NAVD 88 as obtained from GPS observations.

Legend

═══	CBCI	Catch Basin Curb Inlet
○	DMH	Drainage Manhole
○	SMH	Sanitary Manhole
○	VPB	Vertical Profile Boring
○	WV	Water Valve

BAR SCALE

30 0 15 30 60

1 inch = 30 ft.

DWG NO. 14-501

Date	RECORD OF WORK	Appr.

Drafter: LMK | Checker: JFC

Appr. by: JFC | Proj. No. 14.4121

VERTICAL PROFILE BORING 147 SURVEY LOCATION
19 CROCUS DRIVE

TOWN OF MASSAPEQUA | NASSAU COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SCALE: 1"=30' | DATE: SEPT. 24, 2014

CAD DWG. FILE NAME: K:\Projects\144121\Survey\Drawings and Maps\VPB 147.dwg