

two vials were sent for this sample no validation action was taken as the alternate vial was available for sample analysis. According to the laboratory, sample BP-VPB133-GW-114 had two (2) of two (2) sample vials with big air bubbles in both vials, sample BP-VPB133-GW-150 had two (2) of two (2) sample vials with medium air bubbles, and sample BP-VPB133-GW-148 had one (1) of one (1) sample vial with small multiple air bubbles. Samples BP-VPB133-GW-114 and BP-VPB133-GW-150 VOC sample positive results were qualified estimated, (J), and the non-detected sample results were qualified rejected, (UR), per the Region 2 data validation guidelines. Sample BP-VPB133-GW-148 VOC results were not qualified for the sample vial small air bubble content identified in the email.

The continuing calibration verification (CCV) percent differences (%D) were greater than the 20% quality control limit for dichlorodifluoromethane, chloromethane, vinyl chloride, 1,1,2-trichlorotrifluoroethane, acetone, and methylene acetate for instrument MSVOAG on 01/10/12 @ 13:13.

Affected samples:

BP-VPB-TB-010412 BP-VPB133-GW-058 BP-VPB133-GW-148
BP-VPB133-GW-194

Action: The aforementioned sample positive and non-detected results for dichlorodifluoromethane, chloromethane, vinyl chloride, 1,1,2-trichlorotrifluoroethane, acetone, and methylene acetate were qualified estimated, (J) and (UJ), respectively.

The laboratory control sample (LCS) percent recoveries (%R) were greater than the quality control limit for chloromethane and 1,2-dibromo-3-chloropropane for batch VBG0110W2.

Affected samples:

BP-VPB-TB-010412 BP-VPB133-GW-058 BP-VPB133-GW-148
BP-VPB133-GW-194

Action: The positive results for chloromethane for samples BP-VPB133-GW-058 and BP-VPB133-GW-148 were qualified estimated, (J). The non-detected chloromethane and 1,2-dibromo-3-chloropropane sample results were not qualified.

The surrogate %R for toluene-d8 was less than the quality control limits for sample BP-VPB133-GW-058.

Action: Sample BP-VPB133-GW-058 positive and non-detected results were qualified estimated, (J) and (UJ), respectively.

Positive results below the limit of quantitation (LOQ) and above the method detection limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

The Matrix Spike (MS) and MS duplicate (MSD) %Rs were greater than the quality control limit for chloromethane, methyl tert-butyl ether, and 2-hexanone for a spiked sample from another SDG.

Affected samples: None

Action: No validation action was taken as the sample was not from this SDG.

Forty-nine (49) analytes were reported for VOCs.

Non-detected sample results were reported to the LOD.

Sample BP-VPB133-GW-148 had the analytes octanal and 1,2,3-trichloropropane identified as present in the tentatively identified compound page of the laboratory sample results. This was identified for report completeness and no validation action was necessary.

TO: D. BRAYACK
SDG: D1061


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EXECUTIVE SUMMARY

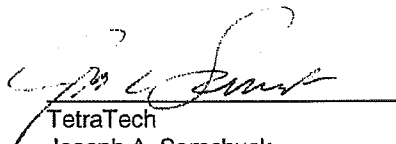
Laboratory Performance Issues: Sample VOC results were qualified for CCV %D, LCS %R, and surrogate %R quality control limit non-compliances.

Other Factors Affecting Data Quality: Sample BP-VPB133-GW-114 and BP-VPB133-GW-150 VOC positive results were qualified and non-detected VOC results rejected for significant air bubble content in the sample vials. Positive results below the LOQ and above the MDL were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the USEPA SW-846 Method 8260B, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B SOP HW-24 Revision #2 August 2008 and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



TetraTech
Joseph Kalinyak
Chemist/Data Validator



TetraTech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

- Appendix A - Qualified Analytical Results
- Appendix B - Results as Reported by the Laboratory
- Appendix C - Region II Data Validation Forms
- Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-058			BP-VPB133-GW-114			BP-VPB133-GW-148			BP-VPB133-GW-150				
		LAB_ID	D1061-01	D1061-03	D1061-04	D1061-05	SAMP_DATE	1/4/2012	1/5/2012	1/5/2012	QC_TYPE	NM	NM	UG/L	UG/L
FRACTION: OV	SAMP_DATE	1/4/2012	1/4/2012	1/4/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012	1/5/2012
MEDIA: WATER	QC_TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	DUP_OF														
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q
1,1,2,2-TETRACHLOROETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q
1,1,2-TRICHLOROETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 UJ	0.5 UJ	CR	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	C	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q
1,1-DICHLOROETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	1.3		0.5 UR	1.1 J	Q	0.5 UR	1.1 J	Q
1,1-DICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.63 J	PQ	0.5 UR	0.63 J	PQ
1,2,4-TRICHLOROBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMO-3-CHLOROPROPANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMOETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROPROPANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,3-DICHLOROBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,4-DICHLOROBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
2-BUTANONE	2.5 UJ	2.5 UJ	R	2.5 UR	2.5 UJ	Q	2.5 UR	4.9 J	P	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
2-HEXANONE	2.5 UJ	2.5 UJ	R	2.5 UR	2.5 UJ	Q	2.5 UR	2.5 UJ		2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
4-METHYL-2-PENTANONE	2.5 UJ	2.5 UJ	R	2.5 UR	2.5 UJ	Q	2.5 UR	2.5 UJ		2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
ACETONE	4.2 J	4.2 J	CR	5.5 J	27 J	Q	5.5 J	27 J	C	5.5 J	3.8 J	PQ	5.5 J	3.8 J	PQ
BENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMODICHLOROMETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOFORM	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOMETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON DISULFIDE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON TETRACHLORIDE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLORODIBROMOMETHANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROETHANE	1.7 J	1.7 J	R	1.7 J	1.7 J	R	1.7 J	1.7 J		1.7 J	1.7 J	R	1.7 J	1.7 J	R
CHLOROFORM	0.5 J	0.5 J	PR	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.42 J	PQ	0.5 UR	0.42 J	PQ
CHLOROMETHANE	2.1 J	2.1 J	CER	0.5 UR	0.5 UJ	Q	0.5 UR	4 J	CE	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,2-DICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CYCLOHEXANE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
DICHLORODIFLUOROMETHANE	0.5 UJ	0.5 UJ	CR	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	C	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ	Q
ETHYLBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
ISOPROPYLBENZENE	0.5 UJ	0.5 UJ	R	0.5 UR	0.5 UJ	Q	0.5 UR	0.5 UJ		0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-194			BP-VPB-TB-010412		
SDG: D1061	LAB_ID	D1061-06			D1061-02		
FRACTION: OV	SAMP_DATE	1/6/2012			1/4/2012		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	UJ	C	0.5	UJ	C	
1,1-DICHLOROETHANE	0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		0.5	U		
1,2-DIBROMOETHANE	0.5	U		0.5	U		
1,2-DICHLOROBENZENE	0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.5	U		0.5	U		
1,2-DICHLOROPROPANE	0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		
2-BUTANONE	2.5	U		2.5	U		
2-HEXANONE	2.5	U		2.5	U		
4-METHYL-2-PENTANONE	2.5	U		2.5	U		
ACETONE	2.5	UJ	C	2.5	UJ	C	
BENZENE	0.5	U		0.5	U		
BROMODICHLOROMETHANE	0.5	U		0.5	U		
BROMOFORM	0.5	U		0.5	U		
BROMOMETHANE	0.5	U		0.5	U		
CARBON DISULFIDE	0.5	U		0.5	U		
CARBON TETRACHLORIDE	0.5	U		0.5	U		
CHLOROBENZENE	0.5	U		0.5	U		
CHLORODIBROMOMETHANE	0.5	U		0.5	U		
CHLOROETHANE	0.5	U		0.5	U		
CHLOROFORM	0.5	U		0.5	U		
CHLOROMETHANE	0.5	UJ	C	0.5	UJ	C	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		
CYCLOHEXANE	0.5	U		0.5	U		
DICHLORODIFLUOROMETHANE	0.5	UJ	C	0.5	UJ	C	
ETHYLBENZENE	0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	U		0.5	U		

PROJ_NO: 00622 SDG: D1061 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-GW-058			BP-VPB133-GW-114			BP-VPB133-GW-148			BP-VPB133-GW-150		
	LAB_ID	D1061-01			D1061-03			D1061-04			D1061-05		
	SAMP_DATE	1/4/2012			1/4/2012			1/5/2012			1/5/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	1	UJ	R	1	UR	Q	1	U		1	UR	Q	
METHYL ACETATE	0.5	UJ	CR	0.5	UR	Q	0.5	UJ	C	0.5	UR	Q	
METHYL CYCLOHEXANE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
METHYL TERT-BUTYL ETHER	2.6	J	R	0.5	UR	Q	2.2			2.3	J	Q	
METHYLENE CHLORIDE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
O-XYLENE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
STYRENE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
TETRACHLOROETHENE	0.5	UJ	R	0.5	UR	Q	0.5	U		1.4	J	Q	
TOLUENE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
TRANS-1,2-DICHLOROETHENE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
TRICHLOROETHENE	0.5	UJ	R	0.5	UR	Q	0.79	J	P	1.4	J	Q	
TRICHLOROFLUOROMETHANE	0.5	UJ	R	0.5	UR	Q	0.5	U		0.5	UR	Q	
VINYL CHLORIDE	0.5	UJ	CR	0.5	UR	Q	0.5	UJ	C	0.5	UR	Q	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-194			BP-VPB-TB-010412		
SDG: D1061	LAB_ID	D1061-06			D1061-02		
FRACTION: OV	SAMP_DATE	1/6/2012			1/4/2012		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		1	U		
METHYL ACETATE	0.5	UJ	C	0.5	UJ	C	
METHYL CYCLOHEXANE	0.5	U		0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		
METHYLENE CHLORIDE	0.5	U		0.5	U		
O-XYLENE	0.5	U		0.5	U		
STYRENE	0.5	U		0.5	U		
TETRACHLOROETHENE	0.5	U		0.5	U		
TOLUENE	0.5	U		0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		
TRICHLOROETHENE	0.5	U		0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U		
VINYL CHLORIDE	0.5	UJ	C	0.5	UJ	C	



Tetra Tech

INTERNAL CORRESPONDENCE

TO: D. BRAYACK **DATE:** FEBRUARY 21, 2012
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1108
SAMPLES: 9/Aqueous/VOC

BP-VPB-TB-010912	BP-VPB133-GW-234	BP-VPB133-GW-254
BP-VPB133-GW-274	BP-VPB133-GW-294	BP-VPB133-GW-314
BP-VPB133-GW-334	BP-VPB133-GW-354	BP-VPB133-GW-374

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1108 consists of eight (8) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 9, 10 and 11, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * ● Data completeness
- * ● Holding times
- * ● GC/MS Tuning
- Initial/continuing calibrations
- * ● Laboratory Method Blank Results
- * ● Surrogate Recoveries
- Laboratory Control Sample Recoveries
- * ● Internal Standard Recoveries
- * ● Compound Quantitation
- * ● Compound Identification
- * ● Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) were greater than the 15% quality control limit for several target analytes on January 3, 2012 on instrument MSVOA R. The analytes were dichlorodifluoromethane, carbon disulfide, methylene chloride, cyclohexane, carbon tetrachloride, chloroform, 1,1,1-trichloroethane, bromodichloromethane, trans-1,3-dichloropropene, cis-1,3-dichloropropene, 2-hexanone, dibromochloromethane, styrene, bromoform, isopropyl benzene and 1,2-dibromo-3-chloropropane. The positive and nondetected results of the aforementioned analytes were qualified as estimated (J) and (UJ), respectively in the affected samples BP-VPB133-GW-234, BP-VPB133-GW-254, BP-VPB133-GW-274, BP-VPB133-GW-294, BP-VPB133-GW-314, BP-VPB133-GW-334, BP-VPB133-GW-354 and BP-VPB133-GW-374.

TO: D. Brayack
FROM: A. Cognetti
SDG: D1108
DATE: February 21, 2012
PAGE: 2

The continuing calibration percent differences (%Ds) for several target analytes were greater than the 20% quality control limit On January 13, 2012 @ 16:35 on instrument MSVOA R. The analytes were carbon tetrachloride, chloroform, trans- 1,3-dichloropropene, dibromochloromethane and bromoform. The nondetected bromoform results were qualified as estimated (UJ) in the affected samples BP-VPB133-GW-234, BP-VPB133-GW-254, BP-VPB133-GW-274, BP-VPB133-GW-294, BP-VPB133-GW-314, BP-VPB133-GW-334, BP-VPB133-GW-354 and BP-VPB133-GW-374.

The initial calibration %RSDs for several target analytes were greater than the 15% quality control limit on January 17, 2012 on instrument MSVOA G. The analytes were bromomethane, chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-pentanone, 2-hexanone and tetrachloroethene. The nondetected bromomethane, chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-pentanone, 2-hexanone and tetrachloroethene results were qualified as estimated (UJ) in the affected sample BP-VPB-TB-010912.

The laboratory control sample (LCS) percent recoveries (%Rs) of 2-butanone and cis-1,2-dichloroethene were greater than the upper quality control limit in batch BSR0113W1. The positive 2-butanone and cis-1,2-dichloroethene results were qualified as estimated (J) in the affected samples BP-VPB133-GW-234, BP-VPB133-GW-254, BP-VPB133-GW-274, BP-VPB133-GW-294, BP-VPB133-GW-314, BP-VPB133-GW-334, BP-VPB133-GW-354 and BP-VPB133-GW-374.

Additional Comments

The matrix spike/matrix spike duplicate (MS/MSD) %Rs for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene were outside quality control limits in a sample not included in this SDG. No action was taken on the for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene results. In addition, the %R of ethyl benzene was greater than the upper quality control limit. No action was taken.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.


EXECUTIVE SUMMARY

Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data. The LCS %Rs of 2-butanone and cis-1,2-dichloroethene were greater than the upper quality control limit.

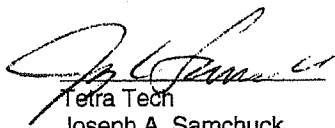
Other Factors Affecting Data Quality: None.

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The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622 SDG: D1108 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-GW-234			BP-VPB133-GW-254			BP-VPB133-GW-274			BP-VPB133-GW-294		
	LAB_ID	D1108-02			D1108-03			D1108-04			D1108-05		
	SAMP_DATE	1/9/2012			1/9/2012			1/10/2012			1/10/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
DUP_OF													
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHANE	3			0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.68	J	P	0.5	U		0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.46	J	P	0.5	U		0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.51	J	P	0.5	U		0.5	U		0.5	U		
1,2-DICHLOROPROPANE	2.2			0.5	U		0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
2-BUTANONE	2.7	J	EP	13	J	E	2.5	U		2.5	U		
2-HEXANONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
4-METHYL-2-PENTANONE	2.5	U		2.5	U		2.5	U		2.5	U		
ACETONE	5	J	P	9.1			4.7	J	P	6.8			
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
BROMODICHLOROMETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
BROMOFORM	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
BROMOMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CARBON DISULFIDE	0.5	UJ	C	1.8	J	C	0.5	UJ	C	2	J	C	
CARBON TETRACHLORIDE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLORODIBROMOMETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLOROFORM	3.1	J	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CIS-1,2-DICHLOROETHENE	1.8	J	E	0.5	U		0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CYCLOHEXANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
DICHLORODIFLUOROMETHANE	2.1	J	C	2	J	C	0.5	UJ	C	0.5	UJ	C	
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	

PROJ_NO: 00622 SDG: D1108 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-GW-314			BP-VPB133-GW-334			BP-VPB133-GW-354			BP-VPB133-GW-374		
	LAB_ID	D1108-06			D1108-07			D1108-08			D1108-09		
	SAMP_DATE	1/10/2012			1/11/2012			1/11/2012			1/11/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROPROPANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
2-BUTANONE	2.5	U		5.5	J	E	5.5	J	E	2.5	U		
2-HEXANONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
4-METHYL-2-PENTANONE	2.5	U		2.5	U		2.5	U		2.5	U		
ACETONE	6.2			7.3			10			8.6			
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
BROMODICHLOROMETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
BROMOFORM	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
BROMOMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CARBON DISULFIDE	0.5	UJ	C	2.4	J	C	1.6	J	C	0.5	UJ	C	
CARBON TETRACHLORIDE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLORODIBROMOMETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLOROFORM	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CYCLOHEXANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
DICHLORODIFLUOROMETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	

PROJ_NO: 00622 SDG: D1108 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-010912		
	LAB_ID	D1108-01		
	SAMP_DATE	1/9/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		
1,1-DICHLOROETHANE	0.5	U		
1,1-DICHLOROETHENE	0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		
1,2-DIBROMOETHANE	0.5	U		
1,2-DICHLOROBENZENE	0.5	U		
1,2-DICHLOROETHANE	0.5	U		
1,2-DICHLOROPROPANE	0.5	U		
1,3-DICHLOROBENZENE	0.5	U		
1,4-DICHLOROBENZENE	0.5	U		
2-BUTANONE	2.5	UJ	C	
2-HEXANONE	2.5	UJ	C	
4-METHYL-2-PENTANONE	2.5	UJ	C	
ACETONE	2.5	UJ	C	
BENZENE	0.5	U		
BROMODICHLOROMETHANE	0.5	U		
BROMOFORM	0.5	U		
BROMOMETHANE	0.5	UJ	C	
CARBON DISULFIDE	0.5	U		
CARBON TETRACHLORIDE	0.5	U		
CHLOROBENZENE	0.5	U		
CHLORODIBROMOMETHANE	0.5	U		
CHLOROETHANE	0.5	UJ	C	
CHLOROFORM	0.5	U		
CHLOROMETHANE	0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	U		
CYCLOHEXANE	0.5	u		
DICHLORODIFLUOROMETHANE	0.5	U		
ETHYLBENZENE	0.5	U		
ISOPROPYLBENZENE	0.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-234			BP-VPB133-GW-254			BP-VPB133-GW-274			BP-VPB133-GW-294		
SDG: D1108	LAB_ID	D1108-02			D1108-03			D1108-04			D1108-05		
FRACTION: OV	SAMP_DATE	1/9/2012			1/9/2012			1/10/2012			1/10/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		1	U		1	U		1	U		
METHYL ACETATE	0.5	U		0.5	U		0.5	U		0.5	U		
METHYL CYCLOHEXANE	0.5	U		0.5	U		0.5	U		0.5	U		
METHYL TERT-BUTYL ETHER	8.8			5.4			0.5	U		0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
O-XYLENE	0.5	U		0.5	U		0.5	U		0.5	U		
STYRENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
TETRACHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
TOLUENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U		0.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-314	BP-VPB133-GW-334	BP-VPB133-GW-354	BP-VPB133-GW-374							
SDG: D1108	LAB_ID	D1108-06	D: 108-07	D1108-08	D1108-09							
FRACTION: OV	SAMP_DATE	1/10/2012	1/11/2012	1/11/2012	1/11/2012							
MEDIA: WATER	QC_TYPE	NM	NM	NM	NM							
	UNITS	UG/L	UG/L	UG/L	UG/L							
	PCT_SOLIDS	0.0	0.0	0.0	0.0							
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1	U		1	U		1	U		1	U	
METHYL ACETATE	0.5	U		0.5	U		0.5	U		0.5	U	
METHYL CYCLOHEXANE	0.5	U		0.5	U		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
O-XYLENE	0.5	U		0.5	U		0.5	U		0.5	U	
STYRENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
TETRACHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
TOLUENE	0.5	U		0.5	U		0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U	
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U		0.5	U	

PROJ_NO: 00622 SDG: D1108 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-010912		
	LAB_ID	D1108-01		
	SAMP_DATE	1/9/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
DUP_OF				
PARAMETER	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		
METHYL ACETATE	0.5	UJ	C	
METHYL CYCLOHEXANE	0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	
O-XYLENE	0.5	U		
STYRENE	0.5	U		
TETRACHLOROETHENE	0.5	UJ	C	
TOLUENE	0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	U		
TRICHLOROETHENE	0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		
VINYL CHLORIDE	0.5	U		



Tetra Tech

INTERNAL CORRESPONDENCE

TO: D. BRAYACK **DATE:** FEBRUARY 21, 2012
FROM: A. COGNETTI **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1148
SAMPLES: 7/Aqueous/VOC
BP-VPB-TB-011212 BP-VPB133-GW-394 BP-VPB133-GW-414
BP-VPB133-GW-434 BP-VPB133-GW-454 BP-VPB133-GW-474
BP-VPB133-GW-494

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1148 consists of six (6) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 12 and 13, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * • Data completeness
- * • Holding times
- * • GC/MS Tuning
- Initial/continuing calibrations
- * • Laboratory Method Blank Results
- * • Surrogate Recoveries
- * • Laboratory Control Sample Recoveries
- * • Internal Standard Recoveries
- * • Compound Quantitation
- * • Compound Identification
- Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) for chloroethane and 1,2-dibromo-3-chloropropane were greater than the 15% quality control limit on January 19, 2012 on instrument MSVOA F. The nondetected chloroethane and 1,2-dibromo-3-chloropropane results were qualified as estimated (UJ) in the affected samples BP-VPB133-GW394 and BP-VPB133-GW-414.

The initial calibration %RSDs for several target analytes were greater than the 15% quality control limit on January 17, 2012 on instrument MSVOA G. The analytes were chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-pentanone, 2-hexanone and tetrachloroethene. The nondetected chloroethane, acetone, methyl acetate, methylene chloride, 2-butanone, 4-methyl-2-

TO: D. Brayack
FROM: A. Cognetti
SDG: D1148
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pentanone, 2-hexanone and tetrachloroethene results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-0112122, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494.

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for several target analytes on January 18, 2012 @ 5:41 on instrument MSVOAG. The analytes were acetone, methyl acetate and tetrachloroethane. The nondetected acetone, methyl acetate and tetrachloroethane results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-0112122, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494.

Due to sediment in samples BP-VPB133-GW-394 and BP-VPB133-GW-414, the laboratory had to analyze them as soil after decanting the top portion of liquid. No validation action was taken.

Additional Comments

The percent recovery (%R) of surrogate 1,2-dichloroethane-d4 was greater than the upper quality control limit in samples BP-VPB-TB-011212, BP-VPB133-GW-434, BP-VPB133-GW-454, BP-VPB133-GW-474 and BP-VPB133-GW-494. No action was taken on the nondetected results in the affected samples.

The matrix spike/matrix spike duplicate (MS/MSD) %Rs for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene were outside quality control limits in a sample not included in this SDG. No action was taken on the for cis-1,2-dichloroethene, methyl cyclohexane, trichloroethene, chlorobenzene and o-xylene results. In addition, the %R of ethyl benzene was greater than the upper quality control limit. No action was taken.

The MS/MSD %Rs of 1,1,2,2-tetrachloroethane was greater than the upper quality control limit in a sample not included in this SDG. No action was taken on the 1,1,2,2-tetrachloroethane results. In addition, the MSD %Rs of isopropylbenzene and 1,2,4-trichlorobenzene were outside quality control limits. No action was taken.

The laboratory control sample %R of methyl tert-butyl ether was greater than the upper quality control limit in batch BSG0117W3. No action was taken on the nondetected methyl tert-butyl ether results in the affected samples.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

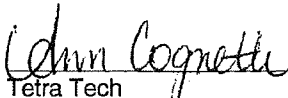
EXECUTIVE SUMMARY


Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data.

Other Factors Affecting Data Quality: Due to sediment in samples BP-VPB133-GW-394 and BP-VPB133-GW-414, the laboratory had to analyzed them as soil after decanting the top portion of liquid.

TO: D. Brayack
FROM: A. Cognetti
SDG: D1148
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The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Ann Cognetti
Chemist/Data Validator


Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-434			BP-VPB133-GW-454			BP-VPB133-GW-474			BP-VPB133-GW-494		
SDG: D1148	LAB_ID	D1148-04			D1148-05			D1148-06			D1148-07		
FRACTION: OV	SAMP_DATE	1/12/2012			1/13/2012			1/13/2012			1/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,2-DICHLOROPROPANE	0.5	U		0.5	U		0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
2-BUTANONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
2-HEXANONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
4-METHYL-2-PENTANONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
ACETONE	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	2.5	UJ	C	
BENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
BROMODICHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
BROMOFORM	0.5	U		0.5	U		0.5	U		0.5	U		
BROMOMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U		0.5	U		
CARBON TETRACHLORIDE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLOROBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLORODIBROMOMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CHLOROETHANE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
CHLOROFORM	0.5	U		0.5	U		0.5	U		0.5	U		
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U		
CYCLOHEXANE	0.5	U		0.5	U		0.5	U		0.5	U		
DICHLORODIFLUOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	U		0.5	U		0.5	U		0.5	U		

PROJ_NO: 00622 SDG: D1148 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-011212		
	LAB_ID	D1148-01		
	SAMP_DATE	1/12/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		
1,1-DICHLOROETHANE	0.5	U		
1,1-DICHLOROETHENE	0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		
1,2-DIBROMOETHANE	0.5	U		
1,2-DICHLOROBENZENE	0.5	U		
1,2-DICHLOROETHANE	0.5	U		
1,2-DICHLOROPROPANE	0.5	U		
1,3-DICHLOROBENZENE	0.5	U		
1,4-DICHLOROBENZENE	0.5	U		
2-BUTANONE	2.5	UJ	C	
2-HEXANONE	2.5	UJ	C	
4-METHYL-2-PENTANONE	2.5	UJ	C	
ACETONE	2.5	UJ	C	
BENZENE	0.5	U		
BROMODICHLOROMETHANE	0.5	U		
BROMOFORM	0.5	U		
BROMOMETHANE	0.5	U		
CARBON DISULFIDE	0.5	U		
CARBON TETRACHLORIDE	0.5	U		
CHLOROBENZENE	0.5	U		
CHLORODIBROMOMETHANE	0.5	U		
CHLOROETHANE	0.5	UJ	C	
CHLOROFORM	0.5	U		
CHLOROMETHANE	0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	U		
CYCLOHEXANE	0.5	U		
DICHLORODIFLUOROMETHANE	0.5	U		
ETHYLBENZENE	0.5	U		
ISOPROPYLBENZENE	0.5	U		

PROJ_NO: 00622 SDG: D1148 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-GW-434			BP-VPB133-GW-454			BP-VPB133-GW-474			BP-VPB133-GW-494		
	LAB_ID	D1148-04			D1148-05			D1148-06			D1148-07		
	SAMP_DATE	1/12/2012			1/13/2012			1/13/2012			1/13/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		1	U		1	U		1	U		
METHYL ACETATE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
METHYL CYCLOHEXANE	0.5	U		0.5	U		0.5	U		0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		0.5	U		0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
O-XYLENE	0.5	U		0.5	U		0.5	U		0.5	U		
STYRENE	0.5	U		0.5	U		0.5	U		0.5	U		
TETRACHLOROETHENE	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	0.5	UJ	C	
TOLUENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U		0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U		0.5	U		0.5	U		
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U		0.5	U		

PROJ_NO: 00622 SDG: D1148 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-011212		
	LAB_ID	D1148-01		
	SAMP_DATE	1/12/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
DUP_OF				
PARAMETER	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		
METHYL ACETATE	0.5	UJ	C	
METHYL CYCLOHEXANE	0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	
O-XYLENE	0.5	U		
STYRENE	0.5	U		
TETRACHLOROETHENE	0.5	UJ	C	
TOLUENE	0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	U		
TRICHLOROETHENE	0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		
VINYL CHLORIDE	0.5	U		

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5	U		2.5	U	
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.5	U	
1,1,2-TRICHLOROETHANE	2.5	U		2.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.5	U	
1,1-DICHLOROETHANE	2.5	U		2.5	U	
1,1-DICHLOROETHENE	2.5	U		2.5	U	
1,2,4-TRICHLOROBENZENE	2.5	U		2.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	2.5	UJ	C	2.5	UJ	C
1,2-DIBROMOETHANE	2.5	U		2.5	U	
1,2-DICHLOROBENZENE	2.5	U		2.5	U	
1,2-DICHLOROETHANE	2.5	U		2.5	U	
1,2-DICHLOROPROPANE	2.5	U		2.5	U	
1,3-DICHLOROBENZENE	2.5	U		2.5	U	
1,4-DICHLOROBENZENE	2.5	U		2.5	U	
2-BUTANONE	23	J	P	5.4	J	P
2-HEXANONE	12.5	U		12.5	U	
4-METHYL-2-PENTANONE	12.5	U		12.5	U	
ACETONE	72			22	J	P
BENZENE	2.5	U		2.5	U	
BROMODICHLOROMETHANE	2.5	U		2.5	U	
BROMOFORM	2.5	U		2.5	U	
BROMOMETHANE	2.5	U		2.5	U	
CARBON DISULFIDE	2.5	U		18		
CARBON TETRACHLORIDE	2.5	U		2.5	U	
CHLOROBEZENE	2.5	U		2.5	J	
CHLORODIBROMOMETHANE	2.5	U		2.5	J	
CHLOROETHANE	2.5	UJ	C	2.5	JJ	C
CHLOROFORM	2.5	U		2.5	J	
CHLOROMETHANE	2.5	U		2.5	J	
CIS-1,2-DICHLOROETHENE	2.5	U		2.5	J	
CIS-1,3-DICHLOROPROPENE	2.5	U		2.5	J	
CYCLOHEXANE	2.5	U		2.5	U	
DICHLORODIFLUOROMETHANE	2.5	U		2.5	J	
ETHYLBENZENE	2.5	U		2.5	J	
ISOPROPYLBENZENE	2.5	U		2.5	J	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-394		BP-VPB133-GW-414		
SDG: D1148	LAB_ID	D1148-08		D1148-09		
FRACTION: OV	SAMP_DATE	1/12/2012		1/12/2012		
MEDIA: SOIL	QC_TYPE	NM		NM		
	UNITS	UG/KG		UG/KG		
	PCT_SOLIDS	100.0		100.0		
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5	U		5	U	
METHYL ACETATE	2.5	U		2.5	U	
METHYL CYCLOHEXANE	2.5	U		2.5	U	
METHYL TERT-BUTYL ETHER	2.5	U		2.5	U	
METHYLENE CHLORIDE	2.5	U		2.5	U	
O-XYLENE	2.5	U		2.5	U	
STYRENE	2.5	U		2.5	U	
TETRACHLOROETHENE	2.5	U		2.5	U	
TOLUENE	2.5	U		2.5	U	
TRANS-1,2-DICHLOROETHENE	2.5	U		2.5	U	
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.5	U	
TRICHLOROETHENE	2.5	U		2.5	U	
TRICHLOROFLUOROMETHANE	2.5	U		2.5	U	
VINYL CHLORIDE	2.5	U		2.5	U	



Tetra Tech

INTERNAL CORRESPONDENCE

TO: D. BRAYACK DATE: FEBRUARY 21, 2012
FROM: A. COGNETTI COPIES: DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1208

SAMPLES: 9/Aqueous/VOC

BP-VPB-TB-011612	BP-VPB133-GW-514	BP-VPB133-GW-534
BP-VPB133-GW-554	BP-VPB133-GW-574	BP-VPB133-GW-594
BP-VPB133-GW-614	BP-VPB133-GW-634	BP-VPB133-GW-654

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1208 consists of eight (8) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 16, 17 and 18, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * • Data completeness
- * • Holding times
- * • GC/MS Tuning
- * • Initial/continuing calibrations
- * • Laboratory Method Blank Results
- * • Surrogate Recoveries
- * • Laboratory Control Sample Recoveries
- * • Internal Standard Recoveries
- * • Compound Quantitation
- * • Compound Identification
- * • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) for chloroethane and 1,2-dibromo-3-chloropropane were greater than the 15% quality control limit on January 19, 2012 on instrument MSVOA F. The nondetected chloroethane and 1,2-dibromo-3-chloropropane results were qualified as estimated (UJ) in the affected samples BP-VPB133-GW-614, BP-VPB133-GW-654, BP-VPB133-GW-574 and BP-VPB133-GW-594.

The initial calibration %RSDs were greater than the 15% quality control limit for several target analytes on January 17, 2012 on instrument MSVOA R. The analytes were methylene chloride, cis-1,3-dichloropropene, dibromochloromethane, tetrachloroethane, ethyl benzene, bromoform and isopropylbenzene, The

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FROM: A. Cognetti
SDG: D1208
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nondetected results of the aforementioned analytes were qualified as estimated (UJ) in the affected samples BP-VPB-TB-011612, BP-VPB133-GW-514, BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634.

The continuing calibration %Ds for trans-1,2-dichloroethene carbon tetrachloride and bromoform were greater than the 20% quality control limit on January 19, 2012 @ 13:24 on instrument MSVOA R. The nondetected trans-1,2-dichloroethene carbon tetrachloride and bromoform results were qualified as estimated (UJ) in the affected samples BP-VPB-TB-011612, BP-VPB133-GW-514, BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634.

Due to sediment in samples BP-VPB133-GW-574, BP-VPB133-GW-594, BP-VPB133-GW-614 and BP-VPB133-GW-654, the laboratory had to analyze them as soil after decanting the top portion of liquid. No action was taken.

It was noted by the laboratory that samples BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634 contained air bubbles. The positive results in these samples were qualified as estimated (J) and the nondetected results were rejected (UR).

Additional Comments

The matrix spike (MS) percent recovery (%R) for 1,2,4-trichlorobenzene was less than the lower quality control limit in a sample not included in this SDG. No action was taken on the for 1,2,4-trichlorobenzene results. In addition, the MSD %R of 1,1,2,2-tetrachloroethane was greater than the upper quality control limit. No action was taken.

The relative percent difference (RPD) for trans-1,2-dichloroethene was outside quality control limits in the MS/MSD of sample D1165-03 which is not included in this SDG. No action was taken.

Nondetected results are reported to the limit of detection (LOD).

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

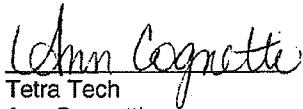
EXECUTIVE SUMMARY

Laboratory Performance Issues: The continuing calibration %Ds and % drifts for several analytes exceeded quality control limits. The %RSDs exceeded the quality control limit for several analytes resulting in the qualification of data.

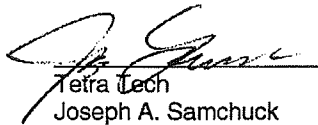
Other Factors Affecting Data Quality: Due to sediment in samples BP-VPB133-GW-574, BP-VPB133-GW-594, BP-VPB133-GW-614 and BP-VPB133-GW-654, the laboratory had to analyzed them as soil after decanting the top portion of liquid. Samples BP-VPB133-GW-534, BP-VPB133-GW-554 and BP-VPB133-GW-634 contained air bubbles

TO: D. Brayack
FROM: A. Cognetti
SDG: D1208
DATE: February 21, 2012
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The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Ann Cognetti
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C -- Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

PROJ_NO: 00622 SDG: D1208 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-011612		
	LAB_ID	D1208-02		
	SAMP_DATE	1/16/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		
1,1-DICHLOROETHANE	0.5	U		
1,1-DICHLOROETHENE	0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		
1,2-DIBROMOETHANE	0.5	U		
1,2-DICHLOROBENZENE	0.5	U		
1,2-DICHLOROETHANE	0.5	U		
1,2-DICHLOROPROPANE	0.5	U		
1,3-DICHLOROBENZENE	0.5	U		
1,4-DICHLOROBENZENE	0.5	U		
2-BUTANONE	2.5	U		
2-HEXANONE	2.5	U		
4-METHYL-2-PENTANONE	2.5	U		
ACETONE	2.5	U		
BENZENE	0.5	U		
BROMODICHLOROMETHANE	0.5	U		
BROMOFORM	0.5	UJ	C	
BROMOMETHANE	0.5	U		
CARBON DISULFIDE	0.5	U		
CARBON TETRACHLORIDE	0.5	UJ	C	
CHLOROBENZENE	0.5	U		
CHLORODIBROMOMETHANE	0.5	UJ	C	
CHLOROETHANE	0.5	U		
CHLOROFORM	0.5	U		
CHLOROMETHANE	0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	UJ	C	
CYCLOHEXANE	0.5	U		
DICHLORODIFLUOROMETHANE	0.5	U		
ETHYLBENZENE	0.5	UJ	C	
ISOPROPYLBENZENE	0.5	UJ	C	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-514			BP-VPB133-GW-534			BP-VPB133-GW-554			BP-VPB133-GW-634		
SDG: D1208	LAB_ID	D1208-01			D1208-03			D1208-04			D1208-08		
FRACTION: OV	SAMP_DATE	1/16/2012			1/16/2012			1/17/2012			1/18/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		1	UR	Q	1	UR	Q	1	UR	Q	
METHYL ACETATE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
METHYL CYCLOHEXANE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
METHYLENE CHLORIDE	0.5	UJ	C	0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
O-XYLENE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
STYRENE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TETRACHLOROETHENE	0.5	UJ	C	0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TOLUENE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TRANS-1,2-DICHLOROETHENE	0.5	UJ	C	0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TRICHLOROETHENE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
TRICHLOROFLUOROMETHANE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	
VINYL CHLORIDE	0.5	U		0.5	UR	Q	0.5	UR	Q	0.5	UR	Q	

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-574			BP-VPB133-GW-594			BP-VPB133-GW-614			BP-VPB133-GW-654		
SDG: D1208	LAB_ID	D1208-05			D1208-06			D1208-07			D1208-09		
FRACTION: OV	SAMP_DATE	1/17/2012			1/17/2012			1/18/2012			1/18/2012		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,1,2-TRICHLOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,1-DICHLOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,1-DICHLOROETHENE	2.5	U		2.55	U		2.45	U		2.5	U		
1,2,4-TRICHLOROBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	2.5	UJ	C	2.55	UJ	C	2.45	UJ	C	2.5	UJ	C	
1,2-DIBROMOETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,2-DICHLOROBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
1,2-DICHLOROETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,2-DICHLOROPROPANE	2.5	U		2.55	U		2.45	U		2.5	U		
1,3-DICHLOROBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
1,4-DICHLOROBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
2-BUTANONE	12.5	U		12.5	U		12.5	U		12.5	U		
2-HEXANONE	12.5	U		12.5	U		12.5	U		12.5	U		
4-METHYL-2-PENTANONE	12.5	U		12.5	U		12.5	U		12.5	U		
ACETONE	32			38			34			31			
BENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
BROMODICHLOROMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
BROMOFORM	2.5	U		2.55	U		2.45	U		2.5	U		
BROMOMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
CARBON DISULFIDE	2.5	U		2.55	U		2.45	U		2.5	U		
CARBON TETRACHLORIDE	2.5	U		2.55	U		2.45	U		2.5	U		
CHLOROBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
CHLORODIBROMOMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
CHLOROETHANE	2.5	UJ	C	2.55	UJ	C	2.45	UJ	C	2.5	UJ	C	
CHLOROFORM	2.5	U		2.55	U		2.45	U		2.5	U		
CHLOROMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
CIS-1,2-DICHLOROETHENE	2.5	U		2.55	U		2.45	U		2.5	U		
CIS-1,3-DICHLOROPROPENE	2.5	U		2.55	U		2.45	U		2.5	U		
CYCLOHEXANE	2.5	U		2.55	U		2.45	U		2.5	U		
DICHLORODIFLUOROMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
ETHYLBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		
ISOPROPYLBENZENE	2.5	U		2.55	U		2.45	U		2.5	U		

PROJ_NO: 00622 SDG: D1208 FRACTION: OV MEDIA: SEDIMENT	NSAMPLE	BP-VPB133-GW-574			BP-VPB133-GW-594			BP-VPB133-GW-614			BP-VPB133-GW-654		
	LAB_ID	D1208-05			D1208-06			D1208-07			D1208-09		
	SAMP_DATE	1/17/2012			1/17/2012			1/18/2012			1/18/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS												
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	4.95	U		5	U		4.9	U		5	U		
METHYL ACETATE	2.5	U		2.55	U		2.45	U		2.5	U		
METHYL CYCLOHEXANE	2.5	U		2.55	U		2.45	U		2.5	U		
METHYL TERT-BUTYL ETHER	2.5	U		2.55	U		2.45	U		2.5	U		
METHYLENE CHLORIDE	2.5	U		2.55	U		6.1			6			
O-XYLENE	2.5	U		2.55	U		2.45	U		2.5	U		
STYRENE	2.5	U		2.55	U		2.45	U		2.5	U		
TETRACHLOROETHENE	2.5	U		2.55	U		2.45	U		2.5	U		
TOLUENE	2.5	U		2.55	U		2.45	U		2.5	U		
TRANS-1,2-DICHLOROETHENE	2.5	U		2.55	U		2.45	U		2.5	U		
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.55	U		2.45	U		2.5	U		
TRICHLOROETHENE	2.5	U		2.55	U		2.45	U		2.5	U		
TRICHLOROFLUOROMETHANE	2.5	U		2.55	U		2.45	U		2.5	U		
VINYL CHLORIDE	2.5	U		2.55	U		2.45	U		2.5	U		

PROJ_NO: 00622	INSAMPLE		BP-VPB133-GW-514		BP-VPB133-GW-534		BP-VPB133-GW-554		BP-VPB133-GW-534			
	LAB_ID	D1208-01	D1208-03	D1208-04	D1208-08	SDG: D1208	SAMP_DATE	1/16/2012	1/18/2012	1/18/2012		
FRACTION: OV	QC_TYPE	NM	NM	NM	NM	FRACTION: OV	QC_TYPE	NM	NM	NM		
MEDIA: WATER	UNITS	UG/L	UG/L	UG/L	UG/L	MEDIA: WATER	UNITS	UG/L	UG/L	UG/L		
	PCT_SOLIDS	0.0	0.0	0.0	0.0		PCT_SOLIDS	0.0	0.0	0.0		
	DUP_OF						DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2-TRICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1-DICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,1-DICHLOROETHENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DIBROMOETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROPROPANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,2-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
1,4-DICHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
2-BUTANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
2-HEXANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
4-METHYL-2-PENTANONE	2.5 U	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q	2.5 UR	2.5 UR	Q
ACETONE	7.6	4.2 J	PQ	4.2 J	4.8 J	PQ	4.8 J	8.2 J	8.2 J	8.2 J	8.2 J	Q
BENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMODICHLOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOFORM	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
BROMOMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON DISULFIDE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CARBON TETRACHLORIDE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROBENZENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLORODIBROMOMETHANE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROFORM	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CHLOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CIS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
CYCLOHEXANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
DICHLORODIFLUOROMETHANE	0.5 U	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
ETHYLBENZENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q
ISOPROPYLBENZENE	0.5 UJ	0.5 UR	C	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q	0.5 UR	0.5 UR	Q

PROJ_NO: 00622 SDG: D1208 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB-TB-011612		
	LAB_ID	D1208-02		
	SAMP_DATE	1/16/2012		
	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		
METHYL ACETATE	0.5	U		
METHYL CYCLOHEXANE	0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	
O-XYLENE	0.5	U		
STYRENE	0.5	U		
TETRACHLOROETHENE	0.5	UJ	C	
TOLUENE	0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	UJ	C	
TRANS-1,3-DICHLOROPROPENE	0.5	U		
TRICHLOROETHENE	0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		
VINYL CHLORIDE	0.5	U		



TO: D. BRAYACK **DATE:** MARCH 20, 2012
FROM: TERRI L. SOLOMON **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1280
SAMPLES: 8/Aqueous/VOC
BP-VPB133-GW-754 BP-VPB-TB-011912
BP-VPB133-GW-694 BP-VPB133-GW-703
BP-VPB133-GW-714 BP-VPB133-GW-734
BP-VPB133-GW-744 BP-VPB133-GW-764

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1280 consists of seven (7) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 19, 20, 23 and 24, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * ● Data completeness
- * ● Holding times
- * ● GC/MS Tuning
- Initial/continuing calibrations
- * ● Laboratory Method Blank Results
- Surrogate Recoveries
- Laboratory Control Sample Recoveries
- Internal Standard Recoveries
- * ● Compound Quantitation
- * ● Compound Identification
- * ● Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were greater than the 15% quality control limit on 01/26/2012 on instrument MSVOA R. The nondetected results for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-754 and BP-VPB-TB-011912.

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The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for chloromethane and bromomethane on 01/26/2012 at 18:20 on instrument MSVOA R. The nondetected results for chloromethane and bromomethane were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-754 and BP-VPB-TB-011912.

The initial calibration %RSDs for bromomethane, styrene and bromoform were greater than the 15% quality control limit on 01/24/2012 on instrument MSVOA T. The nondetected results for bromomethane, styrene and bromoform were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764.

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for bromomethane, chloroethane and carbon disulfide on 01/26/2012 at 11:48 on instrument MSVOA T. The nondetected results for bromomethane, chloroethane and carbon disulfide were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764.

Sample BP-VPB133-GW-694 had a surrogate recovery less than the quality control limit for 4-bromofluorobenzene and internal standards recoveries below the quality control limits for pentafluorobenzene, chlorobenzene-d5 and 1,4-dichlorobenzene-d4. The sample was reanalyzed and had surrogate recoveries for 4-bromofluorobenzene and toluene-d8 less than the quality control limits and an internal standard recovery for 1,4-dichlorobenzene-d4 below the quality control limit. The reanalyses was chosen for validation purposes. The positive and nondetected results reported for sample BP-VPB133-GW-694 were qualified as estimated, "J" and "UJ", respectively, as a result of surrogate noncompliances. The nondetected results reported for sample BP-VPB133-GW-694 for the affected compounds were qualified as estimated, "UJ", as a result of internal standard noncompliances..

Samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 had surrogate recoveries less than the quality control limits for 4-bromofluorobenzene. The samples were reanalyzed and had surrogate recoveries for 4-bromofluorobenzene and/or toluene-d8 less than the quality control limits. The original analyses were chosen for validation purposes. The positive and nondetected results reported for samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 were qualified as estimated, "J" and "UJ", respectively.

Samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744, BP-VPB133-GW-764 had internal standard recoveries less than the quality control limits for 1,4-dichlorobenzene-d4. The samples were reanalyzed and had internal standard recoveries for 1,4-dichlorobenzene-d4 less than the quality control limits. The original analyses were chosen for validation purposes. The nondetected results reported for samples BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 for the affected compounds were qualified as estimated, "UJ".

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

Groundwater samples BP-VPB133-GW-694, BP-VPB133-GW-703, BP-VPB133-GW-714, BP-VPB133-GW-734, BP-VPB133-GW-744 and BP-VPB133-GW-764 were analyzed as soil samples due to the amount of sediment in the samples. The sample results were reported as ug/kg on a wet weight basis.

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The laboratory control sample duplicate (LCSD) percent recovery for chloromethane was greater than the upper quality control limit affecting samples BP-VPB133-GW-754 and BP-VPB-TB-011912. No validation actions were required as all sample results for chloromethane were nondetects.

The laboratory control sample (LCS) / laboratory control sample duplicate (LCSD) relative percent difference was outside the quality control limits for methyl acetate affecting samples BP-VPB133-GW-754 and BP-VPB-TB-011912. No validation actions were required as the LCS and LCSD percent recoveries for methyl acetate were within the quality control limits.

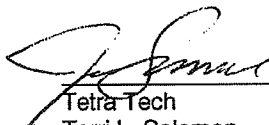
Nondetected results are reported to the limit of detection (LOD).

EXECUTIVE SUMMARY

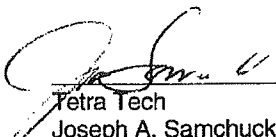
Laboratory Performance Issues: Several initial %RSDs and continuing calibration %Ds / % drifts for several compounds exceeded the quality control limits.

Other Factors Affecting Data Quality: Several surrogate and internal standards were below the quality control limits. Positive results below the RL and above the detection limit were qualified as estimated.

The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Terri L. Solomon
Chemist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622 SDG: D1280 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-GW-754			BP-VPB-TB-011912		
	LAB_ID	D1280-08			D1280-02		
	SAMP_DATE	1/24/2012			1/18/2012		
	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	100.0			100.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U		
1,1-DICHLOROETHANE	0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		0.5	U		
1,2-DIBROMOETHANE	0.5	U		0.5	U		
1,2-DICHLOROETHENE	0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.5	U		0.5	U		
1,2-DICHLOROPROPANE	0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		
2-BUTANONE	2.5	U		2.5	U		
2-HEXANONE	2.5	U		2.5	U		
4-METHYL-2-PENTANONE	2.5	U		2.5	U		
ACETONE	6.8			2.5	U		
BENZENE	0.5	U		0.5	U		
BROMODICHLOROMETHANE	0.5	U		0.5	U		
BROMOFORM	0.5	U		0.5	U		
BROMOMETHANE	0.5	UJ	C	0.5	UJ	C	
CARBON DISULFIDE	0.5	U		0.5	U		
CARBON TETRACHLORIDE	0.5	U		0.5	U		
CHLOROETHANE	0.5	U		0.5	U		
CHLORODIBROMOMETHANE	0.5	U		0.5	U		
CHLOROETHANE	0.5	U		0.5	U		
CHLOROFORM	0.5	U		0.5	U		
CHLOROMETHANE	0.5	UJ	C	0.5	UJ	C	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C	
CYCLOHEXANE	0.5	UJ	C	0.5	UJ	C	
DICHLORODIFLUOROMETHANE	0.5	U		0.5	U		
ETHYLBENZENE	0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	U		0.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-754		BP-VPB-TB-011912		
SDG: D1280	LAB_ID	D1280-08		D1280-02		
FRACTION: OV	SAMP_DATE	1/24/2012		1/19/2012		
MEDIA: WATER	QC_TYPE	NM		NM		
	UNITS	UG/L		UG/L		
	PCT_SOLIDS	100.0		100.0		
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1	U		1	U	
METHYL ACETATE	0.5	UJ	C	0.5	UJ	C
METHYL CYCLOHEXANE	0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U	
METHYLENE CHLORIDE	0.5	UJ	C	0.5	UJ	C
O-XYLENE	0.5	U		0.5	U	
STYRENE	0.5	U		0.5	U	
TETRACHLOROETHENE	0.5	U		0.5	U	
TOLUENE	0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C	0.5	UJ	C
TRICHLOROETHENE	0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U	
VINYL CHLORIDE	0.5	U		0.5	U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-694RE	BP-VPB133-GW-703	BP-VPB133-GW-714	BP-VPB133-GW-734							
SDG: D1280	LAB_ID	D1280-01RE	D1280-04	D1280-05	D1280-03							
FRACTION: OV	SAMP_DATE	1/20/2012	1/20/2012	1/23/2012	1/23/2012							
MEDIA: SEDIMENT	QC_TYPE	NM	NM	NM	NM							
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG							
	PCT_SOLIDS	0.0	0.0	0.0	0.0							
	DUP_OF											
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,1,2,2-TETRACHLOROETHANE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
1,1,2-TRICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,1-DICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,1-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,2,4-TRICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
1,2-DIBROMO-3-CHLOROPROPANE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
1,2-DIBROMOETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,2-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
1,2-DICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,2-DICHLOROPROPANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
1,3-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
1,4-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR
2-BUTANONE	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R
2-HEXANONE	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R
4-METHYL-2-PENTANONE	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R	12.5	UJ	R
ACETONE	29	J	R	35	J	R	19	J	PR	16	J	PR
BENZENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
BROMODICHLOROMETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
BROMOFORM	2.5	UJ	CR	2.5	UJ	CR	2.45	UJ	CR	2.45	UJ	CR
BROMOMETHANE	2.5	UJ	CR	2.5	UJ	CR	2.45	UJ	CR	2.45	UJ	CR
CARBON DISULFIDE	2.5	UJ	CR	2.5	UJ	CR	2.45	UJ	CR	2.45	UJ	CR
CARBON TETRACHLORIDE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CHLOROBENZENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CHLORODIBROMOMETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CHLOROETHANE	2.5	UJ	CR	2.5	UJ	CR	2.45	UJ	CR	2.45	UJ	CR
CHLOROFORM	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CHLOROMETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CIS-1,2-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CIS-1,3-DICHLOROPROPENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
CYCLOHEXANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
DICHLORODIFLUOROMETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
ETHYLBENZENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R
ISOPROPYLBENZENE	2.5	UJ	NR	2.5	UJ	NR	2.45	UJ	NR	2.45	UJ	NR

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-694RE			BP-VPB133-GW-703			BP-VPB133-GW-714			BP-VPB133-GW-734		
SDG: D1280	LAB_ID	D1280-01RE			D1280-04			D1280-05			D1280-03		
FRACTION: OV	SAMP_DATE	1/20/2012			1/20/2012			1/23/2012			1/23/2012		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	5	UJ	R	5	UJ	R	4.95	UJ	R	4.9	UJ	R	
METHYL ACETATE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
METHYL CYCLOHEXANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
METHYL TERT-BUTYL ETHER	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
METHYLENE CHLORIDE	2.7	J	PR	2.7	J	PR	2.7	J	PR	2.45	UJ	R	
O-XYLENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
STYRENE	2.5	UJ	CR	2.5	UJ	CR	2.45	UJ	CR	2.45	UJ	CR	
TETRACHLOROETHENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
TOLUENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
TRANS-1,2-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
TRANS-1,3-DICHLOROPROPENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
TRICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
TRICHLOROFLUOROMETHANE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	
VINYL CHLORIDE	2.5	UJ	R	2.5	UJ	R	2.45	UJ	R	2.45	UJ	R	

PROJ_NO: 00622 SDG: D1280 FRACTION: OV MEDIA: SEDIMENT	NSAMPLE	BP-VPB133-GW-744			BP-VPB133-GW-764		
	LAB_ID	D1280-06			D1280-07		
	SAMP_DATE	1/24/2012			1/24/2012		
	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	
1,1,2,2-TETRACHLOROETHANE	2.5	UJ	NR	2.5	UJ	NR	
1,1,2-TRICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	UJ	R	2.5	UJ	R	
1,1-DICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	
1,1-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	
1,2,4-TRICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	
1,2-DIBROMO-3-CHLOROPROPANE	2.5	UJ	NR	2.5	UJ	NR	
1,2-DIBROMOETHANE	2.5	UJ	R	2.5	UJ	R	
1,2-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	
1,2-DICHLOROETHANE	2.5	UJ	R	2.5	UJ	R	
1,2-DICHLOROPROPANE	2.5	UJ	R	2.5	UJ	R	
1,3-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	
1,4-DICHLOROBENZENE	2.5	UJ	NR	2.5	UJ	NR	
2-BUTANONE	12.5	UJ	R	12.5	UJ	R	
2-HEXANONE	12.5	UJ	R	12.5	UJ	R	
4-METHYL-2-PENTANONE	12.5	UJ	R	12.5	UJ	R	
ACETONE	24	J	PR	35	J	R	
BENZENE	2.5	UJ	R	2.5	UJ	R	
BROMODICHLOROMETHANE	2.5	UJ	R	2.5	UJ	R	
BROMOFORM	2.5	UJ	CR	2.5	UJ	CR	
BROMOMETHANE	2.5	UJ	CR	2.5	UJ	CR	
CARBON DISULFIDE	2.5	UJ	CR	2.5	UJ	CR	
CARBON TETRACHLORIDE	2.5	UJ	R	2.5	UJ	R	
CHLOROBENZENE	2.5	UJ	R	2.5	UJ	R	
CHLORODIBROMOMETHANE	2.5	UJ	R	2.5	UJ	R	
CHLOROETHANE	2.5	UJ	CR	2.5	UJ	CR	
CHLOROFORM	2.5	UJ	R	2.5	UJ	R	
CHLOROMETHANE	2.5	UJ	R	2.5	UJ	R	
CIS-1,2-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R	
CIS-1,3-DICHLOROPROPENE	2.5	UJ	R	2.5	UJ	R	
CYCLOHEXANE	2.5	UJ	R	2.5	UJ	R	
DICHLORODIFLUOROMETHANE	2.5	UJ	R	2.5	UJ	R	
ETHYLBENZENE	2.5	UJ	R	2.5	UJ	R	
ISOPROPYLBENZENE	2.5	UJ	NR	2.5	UJ	NR	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-744		BP-VPB133-GW-764		
SDG: D1280	LAB_ID	D1280-06		D1280-07		
FRACTION: OV	SAMP_DATE	1/24/2012		1/24/2012		
MEDIA: SEDIMENT	QC_TYPE	NM		NM		
	UNITS	UG/KG		UG/KG		
	PCT_SOLIDS	0.0		0.0		
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	4.95	UJ	R	5	UJ	R
METHYL ACETATE	2.5	UJ	R	2.5	UJ	R
METHYL CYCLOHEXANE	2.5	UJ	R	2.5	UJ	R
METHYL TERT-BUTYL ETHER	2.5	UJ	R	2.5	UJ	R
METHYLENE CHLORIDE	2.5	UJ	R	3.1	J	PR
O-XYLENE	2.5	UJ	R	2.5	UJ	R
STYRENE	2.5	UJ	CR	2.5	UJ	CR
TETRACHLOROETHENE	2.5	UJ	R	2.5	UJ	R
TOLUENE	2.5	UJ	R	2.5	UJ	R
TRANS-1,2-DICHLOROETHENE	2.5	UJ	R	2.5	UJ	R
TRANS-1,3-DICHLOROPROPENE	2.5	UJ	R	2.5	UJ	R
TRICHLOROETHENE	2.5	UJ	R	2.5	UJ	R
TRICHLOROFUOROMETHANE	2.5	UJ	R	2.5	UJ	R
VINYL CHLORIDE	2.5	UJ	R	2.5	UJ	R



Tetra Tech, Inc.

INTERNAL CORRESPONDENCE

TO: D. BRAYACK **DATE:** MARCH 21, 2011
FROM: MICHELLE L. ALLEN **COPIES:** DV FILE
SUBJECT: ORGANIC & INORGANIC DATA VALIDATION – VOC
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), BETHPAGE
CTO 066
SAMPLE DELIVERY GROUP (SDG) D1320

SAMPLES: 1/Solid/VOC

BP-VPB133-DM

8/Aqueous/VOC

BP-VPB-TB-012512	BP-VPB133-834	BP-VPB133-DW
BP-VPB133-GW-784	BP-VPB133-GW-794	BP-VPB133-GW-808
BP-VPB133-GW-814	BP-VPB133-GW-824	

Overview

The sample set for NWIRP Bethpage SDG D1320 consisted of one (1) drill mud sample, seven (7) aqueous environmental samples, and one (1) trip blank. All nine (9) samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOC). No field duplicate sample pair was associated with this sample data group (SDG).

The samples were collected by Tetra Tech, Inc. on January 25-27, 2012 and analyzed by Chemtech. All analyses were conducted in accordance with EPA Method SW-846 8260C analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

- * • Data completeness
- * • Hold times
- * • GC/MS System Tuning and Performance
- * • Initial/continuing calibrations
- * • Laboratory Method and Field Blank Results
- * • Surrogate Spike Recoveries
- * • Internal Standard Results
- Laboratory Control Sample/Laboratory Control Sample Duplicate Results
- Matrix Spike/Matrix Spike Duplicate Sample Results
- * • Compound Identification
- * • Compound Quantitation
- * • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

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SDG: D1320

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Volatiles (VOC)

Due to the nature of the matrices, the environmental groundwater samples, BP-VPB133-834, BP-VPB133-GW-784, BP-VPB133-GW-808, BP-VPB133-GW-814, and BP-VPB133-GW-824, were analyzed as soils. The sample results were reported in $\mu\text{g}/\text{Kg}$ based on the dry weight of the sample.

Positive results reported below the LOQ but above the Method Detection Limit (MDL) were qualified as estimated, (J).

Additional Comments

The aqueous Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD), BSR0103W1 and BSR0103W2G0216W1, had a Percent Recoveries (%Rs) for dichlorodifluoromethane chloride above the upper quality control limit. No action necessary because no positive results were reported for this compound in the affected samples.

The soil Matrix Spike Duplicate (MS/MSD) analysis yielded a %R for 1,2,4-trichlorobenzene below the lower quality control limit. No action was taken because the Matrix Spike (MS) %R was acceptable and the MS/MSD parent sample was not a sample from this SDG.

Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY


Laboratory Performance Issues: The aqueous LCS/LCSD had high %Rs for a target compound.

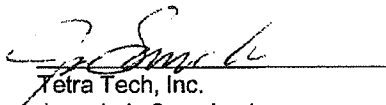
Other Factors Affecting Data Quality: A MSD %R was low. Positive results reported below the LOQ but above the MDL were qualified as estimated.

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SDG: D1320

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The data for these analyses were reviewed with reference to the SOP #HW-24 Revision #2, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B (August 2008), EPA Method SW-846 8260C analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).


Tetra Tech, Inc.
Michelle L. Allen
Chemist/Data Validator


Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-834			BP-VPB133-DM			BP-VPB133-GW-784			BP-VPB133-GW-808		
	LAE_ID	D1320-09			D1320-08			D1320-02			D1320-04		
	SAMP_DATE	1/27/2012			1/27/2012			1/25/2012			1/26/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,1,2-TRICHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,1-DICHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,1-DICHLOROETHENE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2,4-TRICHLOROBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2-DIBROMOETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2-DICHLOROBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2-DICHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,2-DICHLOROPROPANE	2.5	U		2.5	U		2.5	U		2.5	U		
1,3-DICHLOROBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
1,4-DICHLOROBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
2-BUTANONE	12.5	U		12.5	U		12.5	U		12.5	U		
2-HEXANONE	12.5	U		12.5	U		12.5	U		12.5	U		
4-METHYL-2-PENTANONE	12.5	U		12.5	U		12.5	U		12.5	U		
ACETONE	73			51			53			24	J	P	
BENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
BROMODICHLOROMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
BROMOFORM	2.5	U		2.5	U		2.5	U		2.5	U		
BROMOMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
CARBON DISULFIDE	2.5	U		2.5	U		2.5	U		2.5	U		
CARBON TETRACHLORIDE	2.5	U		2.5	U		2.5	U		2.5	U		
CHLOROBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
CHLORODIBROMOMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
CHLOROETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
CHLOROFORM	2.5	U		2.5	U		2.5	U		2.5	U		
CHLOROMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
CIS-1,2-DICHLOROETHENE	2.5	U		2.5	U		2.5	U		2.5	U		
CIS-1,3-DICHLOROPROPENE	2.5	U		2.5	U		2.5	U		2.5	U		
CYCLOHEXANE	2.5	U		2.5	U		2.5	U		2.5	U		
DICHLORODIFLUOROMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
ETHYLBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		
ISOPROPYLBENZENE	2.5	U		2.5	U		2.5	U		2.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-814			BP-VPB133-GW-824		
SDG: D1320	LAB_ID	D1320-05			D1320-06		
FRACTION: OV	SAMP_DATE	1/26/2012			1/27/2012		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.55	U		
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.55	U		
1,1,2-TRICHLOROETHANE	2.5	U		2.55	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.55	U		
1,1-DICHLOROETHANE	2.5	U		2.55	U		
1,1-DICHLOROETHENE	2.5	U		2.55	U		
1,2,4-TRICHLOROBENZENE	2.5	U		2.55	U		
1,2-DIBROMO-3-CHLOROPROPANE	2.5	U		2.55	U		
1,2-DIBROMOETHANE	2.5	U		2.55	U		
1,2-DICHLOROBENZENE	2.5	U		2.55	U		
1,2-DICHLOROETHANE	2.5	U		2.55	U		
1,2-DICHLOROPROPANE	2.5	U		2.55	U		
1,3-DICHLOROBENZENE	2.5	U		2.55	U		
1,4-DICHLOROBENZENE	2.5	U		2.55	U		
2-BUTANONE	12.5	U		12.5	U		
2-HEXANONE	12.5	U		12.5	U		
4-METHYL-2-PENTANONE	12.5	U		12.5	U		
ACETONE	27			28			
BENZENE	2.5	U		2.55	U		
BROMODICHLOROMETHANE	2.5	U		2.55	U		
BROMOFORM	2.5	U		2.55	U		
BROMOMETHANE	2.5	U		2.55	U		
CARBON DISULFIDE	2.5	U		2.55	U		
CARBON TETRACHLORIDE	2.5	U		2.55	U		
CHLOROBENZENE	2.5	U		2.55	U		
CHLORODIBROMOMETHANE	2.5	U		2.55	U		
CHLOROETHANE	2.5	U		2.55	U		
CHLOROFORM	2.5	U		2.55	U		
CHLOROMETHANE	2.5	U		2.55	U		
CIS-1,2-DICHLOROETHENE	2.5	U		2.55	U		
CIS-1,3-DICHLOROPROPENE	2.5	U		2.55	U		
CYCLOHEXANE	2.5	U		2.55	U		
DICHLORODIFLUOROMETHANE	2.5	U		2.55	U		
ETHYLBENZENE	2.5	U		2.55	U		
ISOPROPYLBENZENE	2.5	U		2.55	U		

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-834			BP-VPB133-DM			BP-VPB133-GW-784			BP-VPB133-GW-808		
	LAE_ID	D1320-09			D1320-08			D1320-02			D1320-04		
	SAMP_DATE	1/27/2012			1/27/2012			1/25/2012			1/26/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	5	U		5	U		5	U		4.95	U		
METHYL ACETATE	2.5	U		2.5	U		2.5	U		2.5	U		
METHYL CYCLOHEXANE	2.5	U		2.5	U		2.5	U		2.5	U		
METHYL TERT-BUTYL ETHER	2.5	U		2.5	U		2.5	U		2.5	U		
METHYLENE CHLORIDE	2.5	U		2.5	U		2.5	U		2.5	U		
O-XYLENE	2.5	U		2.5	U		2.5	U		2.5	U		
STYRENE	2.5	U		2.5	U		2.5	U		2.5	U		
TETRACHLOROETHENE	2.5	U		2.5	U		2.5	U		2.5	U		
TOLUENE	2.5	U		2.5	U		2.5	U		2.5	U		
TRANS-1,2-DICHLOROETHENE	2.5	U		2.5	U		2.5	U		2.5	U		
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.5	U		2.5	U		2.5	U		
TRICHLOROETHENE	2.5	U		2.5	U		2.5	U		2.5	U		
TRICHLOROFLUOROMETHANE	2.5	U		2.5	U		2.5	U		2.5	U		
VINYL CHLORIDE	2.5	U		2.5	U		2.5	U		2.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-814			BP-VPB133-GW-824		
SDG: D1320	LAB_ID	D1320-05			D1320-06		
FRACTION: OV	SAMP_DATE	1/26/2012			1/27/2012		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	5	U		5	U		
METHYL ACETATE	2.5	U		2.55	U		
METHYL CYCLOHEXANE	2.5	U		2.55	U		
METHYL TERT-BUTYL ETHER	2.5	U		2.55	U		
METHYLENE CHLORIDE	2.5	U		2.55	U		
O-XYLENE	2.5	U		2.55	U		
STYRENE	2.5	U		2.55	U		
TETRACHLOROETHENE	2.5	U		2.55	U		
TOLUENE	2.5	U		2.55	U		
TRANS-1,2-DICHLOROETHENE	2.5	U		2.55	U		
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.55	U		
TRICHLOROETHENE	2.5	U		2.55	U		
TRICHLOROFLUOROMETHANE	2.5	U		2.55	U		
VINYL CHLORIDE	2.5	U		2.55	U		

PROJ_NO: 00622 SDG: D1320 FRACTION: OV MEDIA: WATER	NSAMPLE	BP-VPB133-DW			BP-VPB133-GW-794			BP-VPB-TB-012512		
	LAB_ID	D1320-07			D1320-03			D1320-01		
	SAMP_DATE	1/27/2012			1/25/2012			1/25/2012		
	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U		0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		
1,1-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U		0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		0.5	U		0.5	U		
1,2-DIBROMOETHANE	0.5	U		0.5	U		0.5	U		
1,2-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		
1,2-DICHLOROETHANE	0.5	U		0.5	U		0.5	U		
1,2-DICHLOROPROPANE	0.5	U		0.5	U		0.5	U		
1,3-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		
1,4-DICHLOROBENZENE	0.5	U		0.5	U		0.5	U		
2-BUTANONE	2.5	U		3.9	J	P	2.5	U		
2-HEXANONE	2.5	U		2.5	U		2.5	U		
4-METHYL-2-PENTANONE	2.5	U		2.5	U		2.5	U		
ACETONE	1.6	J	P	15			2.5	U		
BENZENE	0.5	U		0.5	U		0.5	U		
BROMODICHLOROMETHANE	1.1			0.5	U		0.5	U		
BROMOFORM	0.5	U		0.5	U		0.5	U		
BROMOMETHANE	0.5	U		0.5	U		0.5	U		
CARBON DISULFIDE	0.5	U		0.5	U		0.5	U		
CARBON TETRACHLORIDE	0.5	U		0.5	U		0.5	U		
CHLOROENZENE	0.5	U		0.5	U		0.5	U		
CHLORODIBROMOMETHANE	1.7			0.5	U		0.5	U		
CHLOROETHANE	0.5	U		0.5	U		0.5	U		
CHLOROFORM	0.63	J	P	0.5	U		0.5	U		
CHLOROMETHANE	0.5	U		0.5	U		0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U		
CYCLOHEXANE	0.5	U		0.5	U		0.5	U		
DICHLORODIFLUOROMETHANE	0.5	U		0.5	U		0.5	U		
ETHYLBENZENE	0.5	U		0.5	U		0.5	U		
ISOPROPYLBENZENE	0.5	U		0.5	U		0.5	U		

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1	U		1	U		1	U	
METHYL ACETATE	0.5	U		0.5	U		0.5	U	
METHYL CYCLOHEXANE	0.5	U		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U		0.5	U	
METHYLENE CHLORIDE	0.5	U		0.5	U		0.5	U	
O-XYLENE	0.5	U		0.5	U		0.5	U	
STYRENE	0.5	U		0.5	U		0.5	U	
TETRACHLOROETHENE	0.5	U		0.5	U		0.5	U	
TOLUENE	0.5	U		0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U		0.5	U	
TRICHLOROETHENE	0.5	U		0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U		0.5	U	
VINYL CHLORIDE	0.5	U		0.5	U		0.5	U	



TO: D. BRAYACK **DATE:** MARCH 21, 2012
FROM: TERRI L. SOLOMON **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC
NWIRP BETHPAGE CTO WE 066
SAMPLE DELIVERY GROUP (SDG) – D1365
SAMPLES: 8/Aqueous/VOC
BP-VPB133-GW-844 BP-VPB133-GW-854
BP-VPB133-GW-864 BP-VPB133-GW-874
BP-VPB133-GW-884 BP-VPB133-GW-904
BP-VPB133-TB-013012-JF

Overview

The sample set for NWIRP Bethpage, CTO WE 066, SDG D1365 consists of six (6) environmental aqueous samples and a trip blank analyzed for volatile organic compounds (VOCs). There was no field duplicate contained in this SDG.

The samples were collected on January 30 and 31 and February 1, 2012 by Tetra Tech and analyzed by Chemtech. VOC analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocol. The data contained in this SDG were validated with regard to the following parameters:

- * ● Data completeness
- * ● Holding times
- * ● GC/MS Tuning
- Initial/continuing calibrations
- * ● Laboratory Method Blank Results
- * ● Surrogate Recoveries
- * ● Laboratory Control Sample Recoveries
- * ● Internal Standard Recoveries
- * ● Compound Quantitation
- * ● Compound Identification
- * ● Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, Region II data validation forms are presented in Appendix C, and documentation supporting these findings is presented in Appendix D.

VOC

The initial calibration relative standard deviations (%RSDs) for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were greater than the 15% quality control limit on 01/26/2012 on instrument MSVOA R. The nondetected results for bromomethane, methyl acetate, methylene chloride, cyclohexane, trans-1,3-dichloropropene and cis-1,3-dichloropropene were qualified as estimated "UJ" in the affected sample BP-VPB133-TB-013012-JF.

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The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for methyl acetate on 02/02/2012 at 18:11 on instrument MSVOA R. The nondetected result for methyl acetate was qualified as estimated "UJ" in the affected sample BP-VPB133-TB-013012-JF

The continuing calibration percent differences and/or percent drifts were greater than the 20% quality control limit for chloroethane and trichlorofluoromethane on 02/02/2012 at 12:12 on instrument MSVOA F. The nondetected results for chloroethane and trichlorofluoromethane were qualified as estimated "UJ" in the affected samples BP-VPB133-GW-844, BP-VPB133-GW-854, BP-VPB133-GW-864, BP-VPB133-GW-874, BP-VPB133-GW-884 and BP-VPB133-GW-904.

Positive results below the Reporting Limit (RL) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

Additional Comments

Groundwater samples BP-VPB133-GW-844, BP-VPB133-GW-854, BP-VPB133-GW-864, BP-VPB133-GW-874, BP-VPB133-GW-884 and BP-VPB133-GW-904 were analyzed as soil samples due to the amount of sediment in the samples. The sample results were reported as ug/kg on a wet weight basis.

Nondetected results are reported to the limit of detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several initial %RSDs and continuing calibration %Ds / % drifts for several compounds exceeded the quality control limits.

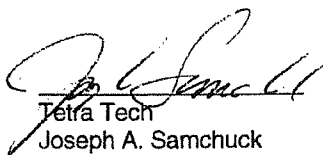
Other Factors Affecting Data Quality: Positive results below the RL and above the detection limit were qualified as estimated.

The data for these analyses were reviewed with reference to SOP # HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846/8260B, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009. The text of this report has been formulated to address only those problem areas affecting data quality.


Tetra Tech
Terri L. Solomon
Chemist/Data Validator

MEMO TO: D. BRAYACK - PAGE 3

DATE: MARCH 21, 2012



Tetra Tech

Joseph A. Samchuck

Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-TB-013012-JF		
SDG: D1365	LAB_ID	D1365-03		
FRACTION: OV	SAMP_DATE	1/30/2012		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	0.5	U		
1,1,2,2-TETRACHLOROETHANE	0.5	U		
1,1,2-TRICHLOROETHANE	0.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		
1,1-DICHLOROETHANE	0.5	U		
1,1-DICHLOROETHENE	0.5	U		
1,2,4-TRICHLOROBENZENE	0.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		
1,2-DIBROMOETHANE	0.5	U		
1,2-DICHLOROBENZENE	0.5	U		
1,2-DICHLOROETHANE	0.5	U		
1,2-DICHLOROPROPANE	0.5	U		
1,3-DICHLOROBENZENE	0.5	U		
1,4-DICHLOROBENZENE	0.5	U		
2-BUTANONE	2.5	U		
2-HEXANONE	2.5	U		
4-METHYL-2-PENTANONE	2.5	U		
ACETONE	2.5	U		
BENZENE	0.5	U		
BROMODICHLOROMETHANE	0.5	U		
BROMOFORM	0.5	U		
BROMOMETHANE	0.5	UJ	C	
CARBON DISULFIDE	0.5	U		
CARBON TETRACHLORIDE	0.5	U		
CHLOROBENZENE	0.5	U		
CHLORODIBROMOMETHANE	0.5	U		
CHLOROETHANE	0.5	U		
CHLOROFORM	0.5	U		
CHLOROMETHANE	0.5	U		
CIS-1,2-DICHLOROETHENE	0.5	U		
CIS-1,3-DICHLOROPROPENE	0.5	UJ	C	
CYCLOHEXANE	0.5	UJ	C	
DICHLORODIFLUOROMETHANE	0.5	U		
ETHYLBENZENE	0.5	U		
ISOPROPYLBENZENE	0.5	U		

PROJ_NO: 00622	NSAMPLE	BP-VPB133-TB-013012-JF		
SDG: D1365	LAB_ID	D1365-03		
FRACTION: OV	SAMP_DATE	1/30/2012		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
M+P-XYLENES	1	U		
METHYL ACETATE	0.5	UJ	C	
METHYL CYCLOHEXANE	0.5	U		
METHYL TERT-BUTYL ETHER	0.5	U		
METHYLENE CHLORIDE	0.5	UJ	C	
O-XYLENE	0.5	U		
STYRENE	0.5	U		
TETRACHLOROETHENE	0.5	U		
TOLUENE	0.5	U		
TRANS-1,2-DICHLOROETHENE	0.5	U		
TRANS-1,3-DICHLOROPROPENE	0.5	UJ	C	
TRICHLOROETHENE	0.5	U		
TRICHLOROFLUOROMETHANE	0.5	U		
VINYL CHLORIDE	0.5	U		

PROJ_NO: 00622 SDG: D1365 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-GW-844			BP-VPB133-GW-854			BP-VPB133-GW-864			BP-VPB133-GW-874		
	LAB_ID	D1365-01			D1365-02			D1365-04			D1365-05		
	SAMP_DATE	1/30/2012			1/30/2012			1/31/2012			1/31/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_CF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,1,2-TRICHLOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,1-DICHLOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,1-DICHLOROETHENE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2,4-TRICHLOROENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2-DIBROMO-3-CHLOROPROPANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2-DIBROMOETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2-DICHLOROENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2-DICHLOROETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,2-DICHLOROPROPANE	2.5	U		2.5	U		2.55	U		2.45	U		
1,3-DICHLOROENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
1,4-DICHLOROENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
2-BUTANONE	12.5	U		12.5	U		13	U		12.5	U		
2-HEXANONE	12.5	U		12.5	U		13	U		12.5	U		
4-METHYL-2-PENTANONE	12.5	U		12.5	U		13	U		12.5	U		
ACETONE	12.5	U		18	J	P	13	U		20	J	P	
BENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
BROMODICHLOROMETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
BROMOFORM	2.5	U		2.5	U		2.55	U		2.45	U		
BROMOMETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
CARBON DISULFIDE	2.5	U		2.5	U		2.55	U		2.45	U		
CARBON TETRACHLORIDE	2.5	U		2.5	U		2.55	U		2.45	U		
CHLOROENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
CHLORODIBROMOMETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
CHLOROETHANE	2.5	UJ	C	2.5	UJ	C	2.55	UJ	C	2.45	UJ	C	
CHLOROFORM	2.5	U		2.5	U		2.55	U		2.45	U		
CHLOROMETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
CIS-1,2-DICHLOROETHENE	2.5	U		2.5	U		2.55	U		2.45	U		
CIS-1,3-DICHLOROPROPENE	2.5	U		2.5	U		2.55	U		2.45	U		
CYCLOHEXANE	2.5	U		2.5	U		2.55	U		2.45	U		
DICHLORODIFLUOROMETHANE	2.5	U		2.5	U		2.55	U		2.45	U		
ETHYLBENZENE	2.5	U		2.5	U		2.55	U		2.45	U		
ISOPROPYLBENZENE	2.5	U		2.5	U		2.55	U		2.45	U		

PROJ_NO: 00622 SDG: D1365 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-GW-844			BP-VPB133-GW-854			BP-VPB133-GW-864			BP-VPB133-GW-874		
	LAB_ID	D1365-01			D1365-02			D1365-04			D1365-05		
	SAMP_DATE	1/30/2012			1/30/2012			1/31/2012			1/31/2012		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
M+P-XYLENES	5	U		4.95	U		5	U		4.9	U		
METHYL ACETATE	2.5	U		2.5	U		2.55	U		2.45	U		
METHYL CYCLOHEXANE	2.5	U		2.5	U		2.55	U		2.45	U		
METHYL TERT-BUTYL ETHER	2.5	U		2.5	U		2.55	U		2.45	U		
METHYLENE CHLORIDE	2.5	U		2.5	U		2.55	U		2.45	U		
O-XYLENE	2.5	U		2.5	U		2.55	U		2.45	U		
STYRENE	2.5	U		2.5	U		2.55	U		2.45	U		
TETRACHLOROETHENE	2.5	U		2.5	U		2.55	U		2.45	U		
TOLUENE	2.5	U		2.5	U		2.55	U		2.45	U		
TRANS-1,2-DICHLOROETHENE	2.5	U		2.5	U		2.55	U		2.45	U		
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.5	U		2.55	U		2.45	U		
TRICHLOROETHENE	2.5	U		2.5	U		2.55	U		2.45	U		
TRICHLOROFUOROMETHANE	2.5	UJ	C	2.5	UJ	C	2.55	UJ	C	2.45	UJ	C	
VINYL CHLORIDE	2.5	U		2.5	U		2.55	U		2.45	U		

PROJ_NO: 00622 SDG: D1365 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-GW-884			BP-VPB133-GW-904		
	LAB_ID	D1365-06			D1365-07		
	SAMP_DATE	1/31/2012			2/1/2012		
	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.5	U		
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.5	U		
1,1,2-TRICHLOROETHANE	2.5	U		2.5	U		
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.5	U		
1,1-DICHLOROETHANE	2.5	U		2.5	U		
1,1-DICHLOROETHENE	2.5	U		2.5	U		
1,2,4-TRICHLOROBENZENE	2.5	U		2.5	U		
1,2-DIBROMO-3-CHLOROPROPANE	2.5	U		2.5	U		
1,2-DIBROMOETHANE	2.5	U		2.5	U		
1,2-DICHLOROBENZENE	2.5	U		2.5	U		
1,2-DICHLOROETHANE	2.5	U		2.5	U		
1,2-DICHLOROPROPANE	2.5	U		2.5	U		
1,3-DICHLOROBENZENE	2.5	U		2.5	U		
1,4-DICHLOROBENZENE	2.5	U		2.5	U		
2-BUTANONE	12.5	U		12.5	U		
2-HEXANONE	12.5	U		12.5	U		
4-METHYL-2-PENTANONE	12.5	U		12.5	U		
ACETONE	20	J	P	33			
BENZENE	2.5	U		2.5	U		
BROMODICHLOROMETHANE	2.5	U		2.5	U		
BROMOFORM	2.5	U		2.5	U		
BROMOMETHANE	2.5	U		2.5	U		
CARBON DISULFIDE	2.5	U		2.5	U		
CARBON TETRACHLORIDE	2.5	U		2.5	U		
CHLOROBENZENE	2.5	U		2.5	U		
CHLORODIBROMOMETHANE	2.5	U		2.5	U		
CHLOROETHANE	2.5	UJ	C	2.5	UJ	C	
CHLOROFORM	2.5	U		2.5	U		
CHLOROMETHANE	2.5	U		2.5	U		
CIS-1,2-DICHLOROETHENE	2.5	U		2.5	U		
CIS-1,3-DICHLOROPROPENE	2.5	U		2.5	U		
CYCLOHEXANE	2.5	U		2.5	U		
DICHLORODIFLUOROMETHANE	2.5	U		2.5	U		
ETHYLBENZENE	2.5	U		2.5	U		
ISOPROPYLBENZENE	2.5	U		2.5	U		

PROJ_NO: 00622 SDG: D1365 FRACTION: OV MEDIA: SOIL	NSAMPLE	BP-VPB133-GW-884		BP-VPB133-GW-904		
	LAB_ID	D1365-06		D1365-07		
	SAMP_DATE	1/31/2012		2/1/2012		
	QC_TYPE	NM		NM		
	UNITS	UG/KG		UG/KG		
	PCT_SOLIDS	0.0		0.0		
DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5	U		5	U	
METHYL ACETATE	2.5	U		2.5	U	
METHYL CYCLOHEXANE	2.5	U		2.5	U	
METHYL TERT-BUTYL ETHER	2.5	U		2.5	U	
METHYLENE CHLORIDE	2.5	U		2.6	J	P
O-XYLENE	2.5	U		2.5	U	
STYRENE	2.5	U		2.5	U	
TETRACHLOROETHENE	2.5	U		2.5	U	
TOLUENE	2.5	U		2.5	U	
TRANS-1,2-DICHLOROETHENE	2.5	U		2.5	U	
TRANS-1,3-DICHLOROPROPENE	2.5	U		2.5	U	
TRICHLOROETHENE	2.5	U		2.5	U	
TRICHLOROFLUOROMETHANE	2.5	UJ	C	2.5	UJ	C
VINYL CHLORIDE	2.5	U		2.5	U	

TO: D. BRAYACK
SDG: D1436

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The continuing calibration performed on instrument MSVOAG on 02/08/12 @ 11:29 had Percent Differences (%Ds) for 2-butanone, bromoform, and bromomethane, and Percent Drifts (%Drifts) for chloroethane and methyl acetate above the 20% quality control criterion. Only non-detected results were reported for these compounds in the affected samples, BP-VPB133-GW-974 and BP-VPB133-TB-020212-JRF, and these non-detects were qualified as estimated, (UJ).

The Percent Recovery (%R) for the surrogate spike compound, 4-bromofluorobenzene, was below the lower quality control limit in sample BP-VPB133-GW-959. The sample was reanalyzed with similar results. The results from the initial analysis were used in the data validation. The non-detected results reported for the target compounds in this sample were qualified as estimated, (UJ).

Additional Comments

Non-detected results are reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance Issues: Some continuing calibration %Ds and %Drifts exceeded 20%. One sample had a low surrogate %R.

Other Factors Affecting Data Quality: None.

TO: D. BRAYACK
SDG: D1436

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The data for these analyses were reviewed with reference to the SOP #HW-24 Revision #2, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B (August 2008), EPA Method SW-846 8260C analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



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Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Region II Data Validation Forms
4. Appendix D - Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-939			BP-VPB133-GW-959		
SDG: D1436	LAB_ID	D1436-02			D1436-03		
FRACTION: OV	SAMP_DATE	2/2/2012			2/2/2012		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
1,1,1-TRICHLOROETHANE	2.5	U		2.5	UJ	R	
1,1,2,2-TETRACHLOROETHANE	2.5	U		2.5	UJ	R	
1,1,2-TRICHLOROETHANE	2.5	U		2.5	UJ	R	
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5	U		2.5	UJ	R	
1,1-DICHLOROETHANE	2.5	U		2.5	UJ	R	
1,1-DICHLOROETHENE	2.5	U		2.5	UJ	R	
1,2,4-TRICHLOROBENZENE	2.5	U		2.5	UJ	R	
1,2-DIBROMO-3-CHLOROPROPANE	2.5	U		2.5	UJ	R	
1,2-DIBROMOETHANE	2.5	U		2.5	UJ	R	
1,2-DICHLOROBENZENE	2.5	U		2.5	UJ	R	
1,2-DICHLOROETHANE	2.5	U		2.5	UJ	R	
1,2-DICHLOROPROPANE	2.5	U		2.5	UJ	R	
1,3-DICHLOROBENZENE	2.5	U		2.5	UJ	R	
1,4-DICHLOROBENZENE	2.5	U		2.5	UJ	R	
2-BUTANONE	12.5	U		12.5	UJ	R	
2-HEXANONE	12.5	U		12.5	UJ	R	
4-METHYL-2-PENTANONE	12.5	U		12.5	UJ	R	
ACETONE	12.5	U		12.5	UJ	R	
BENZENE	2.5	U		2.5	UJ	R	
BROMODICHLOROMETHANE	2.5	U		2.5	UJ	R	
BROMOFORM	2.5	U		2.5	UJ	R	
BROMOMETHANE	2.5	U		2.5	UJ	R	
CARBON DISULFIDE	2.5	U		2.5	UJ	R	
CARBON TETRACHLORIDE	2.5	U		2.5	UJ	R	
CHLOROBENZENE	2.5	U		2.5	UJ	R	
CHLORODIBROMOMETHANE	2.5	U		2.5	UJ	R	
CHLOROETHANE	2.5	U		2.5	UJ	R	
CHLOROFORM	2.5	U		2.5	UJ	R	
CHLOROMETHANE	2.5	U		2.5	UJ	R	
CIS-1,2-DICHLOROETHENE	2.5	U		2.5	UJ	R	
CIS-1,3-DICHLOROPROPENE	2.5	U		2.5	UJ	R	
CYCLOHEXANE	2.5	U		2.5	UJ	R	
DICHLORODIFLUOROMETHANE	2.5	U		2.5	UJ	R	
ETHYLBENZENE	2.5	U		2.5	UJ	R	
ISOPROPYLBENZENE	2.5	U		2.5	UJ	R	

PROJ_NO: 00622		SDG: D1436		FRACTION: OV		MEDIA: SOIL	
NSAMPLE	BP-VPB133-GW-939	LAB_ID	D1436-02	SAMP_DATE	2/2/2012	QC_TYPE	NM
PARAMETER	RESULT	VOL	QLCD	RESULT	VOL	QLCD	
M+P-XYLENES	5 U			5 U			
METHYL ACETATE	2.5 U			2.5 U			R
METHYL CYCLOHEXANE	2.5 U			2.5 U			R
METHYL TERT-BUTYL ETHER	2.5 U			2.5 U			R
METHYLENE CHLORIDE	2.5 U			2.5 U			R
O-XYLENE	2.5 U			2.5 U			R
STYRENE	2.5 U			2.5 U			R
TETRACHLOROETHENE	2.5 U			2.5 U			R
TOLUENE	2.5 U			2.5 U			R
TRANS-1,2-DICHLOROETHENE	2.5 U			2.5 U			R
TRANS-1,3-DICHLOROPROPENE	2.5 U			2.5 U			R
TRICHLOROETHENE	2.5 U			2.5 U			R
TRICHLOROFUOROMETHANE	2.5 U			2.5 U			R
VINYL CHLORIDE	2.5 U			2.5 U			R
DUP_OF							
PCT_SOLIDS	0.0			0.0			
UNITS	UG/KG			UG/KG			
SAMP_DATE	2/2/2012			2/2/2012			
QC_TYPE	NM			NM			
LAB_ID	D1436-02			D1436-03			
NSAMPLE	BP-VPB133-GW-939			BP-VPB133-GW-959			

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-974		BP-VPB133-TB-020212-JRF		
SDG: D1436	LAB_ID	D1436-04		D1436-01		
FRACTION: OV	SAMP_DATE	2/3/2012		2/2/2012		
MEDIA: WATER	QC_TYPE	NM		NM		
	UNITS	UG/L		UG/L		
	PCT_SOLIDS	0.0		0.0		
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5	U		0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.5	U		0.5	U	
1,1,2-TRICHLOROETHANE	0.5	U		0.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5	U		0.5	U	
1,1-DICHLOROETHANE	0.5	U		0.5	U	
1,1-DICHLOROETHENE	0.5	U		0.5	U	
1,2,4-TRICHLOROBENZENE	0.5	U		0.5	U	
1,2-DIBROMO-3-CHLOROPROPANE	0.5	U		0.5	U	
1,2-DIBROMOETHANE	0.5	U		0.5	U	
1,2-DICHLOROBENZENE	0.5	U		0.5	U	
1,2-DICHLOROETHANE	0.5	U		0.5	U	
1,2-DICHLOROPROPANE	0.5	U		0.5	U	
1,3-DICHLOROBENZENE	0.5	U		0.5	U	
1,4-DICHLOROBENZENE	0.5	U		0.5	U	
2-BUTANONE	2.5	UJ	C	2.5	UJ	C
2-HEXANONE	2.5	U		2.5	U	
4-METHYL-2-PENTANONE	2.5	U		2.5	U	
ACETONE	2.5	U		2.5	U	
BENZENE	0.5	U		0.5	U	
BROMODICHLOROMETHANE	0.5	U		0.5	U	
BROMOFORM	0.5	UJ	C	0.5	UJ	C
BROMOMETHANE	0.5	UJ	C	0.5	UJ	C
CARBON DISULFIDE	0.5	U		0.5	U	
CARBON TETRACHLORIDE	0.5	U		0.5	U	
CHLOROBENZENE	0.5	U		0.5	U	
CHLORODIBROMOMETHANE	0.5	U		0.5	U	
CHLOROETHANE	0.5	UJ	C	0.5	UJ	C
CHLOROFORM	0.5	U		0.5	U	
CHLOROMETHANE	0.5	U		0.5	U	
CIS-1,2-DICHLOROETHENE	0.5	U		0.5	U	
CIS-1,3-DICHLOROPROPENE	0.5	U		0.5	U	
CYCLOHEXANE	0.5	U		0.5	U	
DICHLORODIFLUOROMETHANE	0.5	U		0.5	U	
ETHYLBENZENE	0.5	U		0.5	U	
ISOPROPYLBENZENE	0.5	U		0.5	U	

PROJ_NO: 00622	NSAMPLE	BP-VPB133-GW-974		BP-VPB133-TB-020212-JRF		
SDG: D1436	LAB_ID	D1436-04		D1436-01		
FRACTION: OV	SAMP_DATE	2/3/2012		2/2/2012		
MEDIA: WATER	QC_TYPE	NM		NM		
	UNITS	UG/L		UG/L		
	PCT_SOLIDS	0.0		0.0		
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1	U		1	U	
METHYL ACETATE	0.5	UJ	C	0.5	UJ	C
METHYL CYCLOHEXANE	0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER	0.5	U		0.5	U	
METHYLENE CHLORIDE	0.5	U		0.5	U	
O-XYLENE	0.5	U		0.5	U	
STYRENE	0.5	U		0.5	U	
TETRACHLOROETHENE	0.5	U		0.5	U	
TOLUENE	0.5	U		0.5	U	
TRANS-1,2-DICHLOROETHENE	0.5	U		0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.5	U		0.5	U	
TRICHLOROETHENE	0.5	U		0.5	U	
TRICHLOROFLUOROMETHANE	0.5	U		0.5	U	
VINYL CHLORIDE	0.5	U		0.5	U	

