

**Summary Packet**  
**Vertical Profile Boring 130**  
**and BPOW 2-1, 2-2, and 2-3**

**NWIRP Bethpage**  
Bethpage, New York



**Naval Facilities Engineering Command**  
**Mid-Atlantic**

**Contract No. N62472-03-D-0057**  
**Contract Task Order 066**

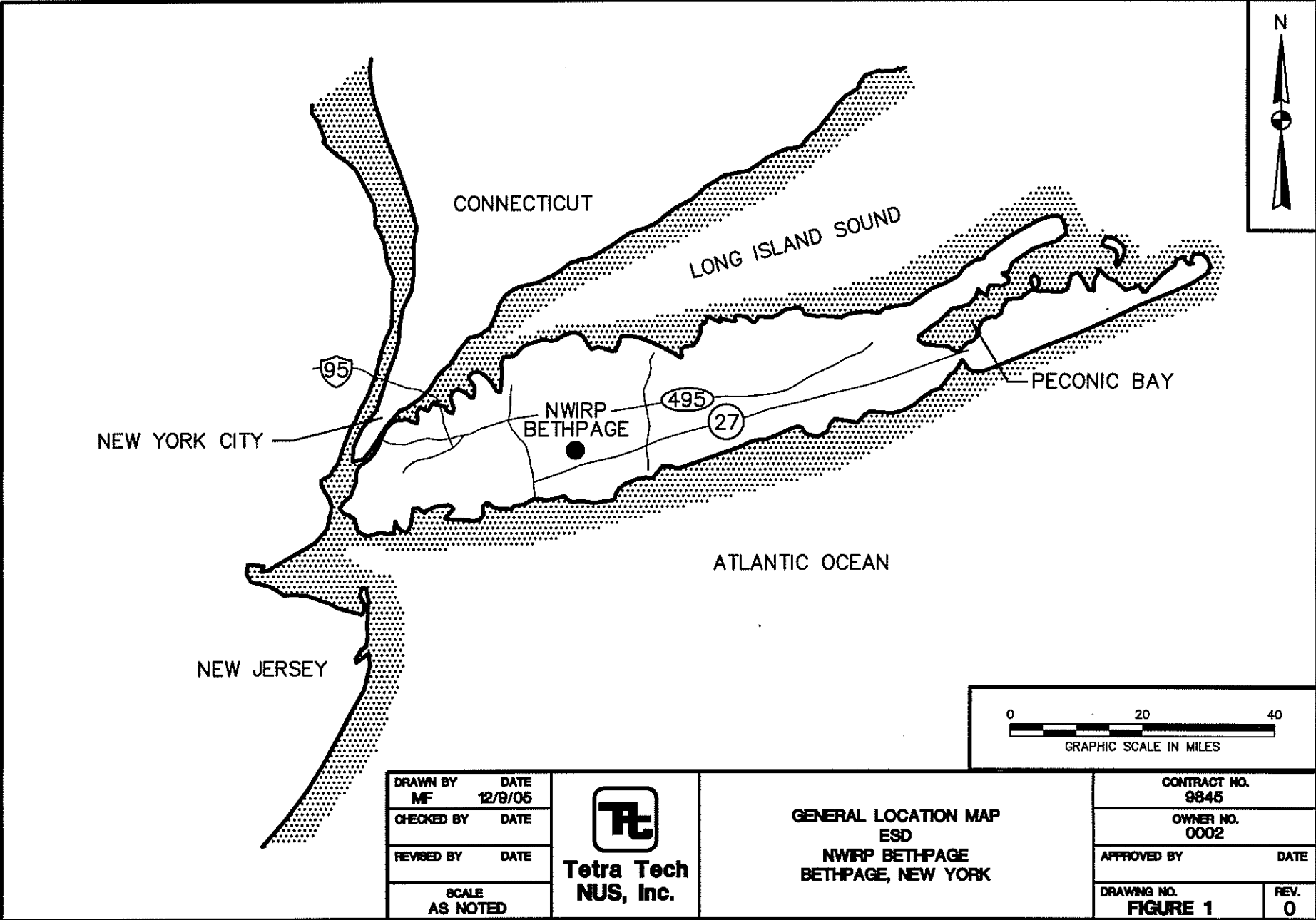
March 2012

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## **Section 1**

### **Figures**

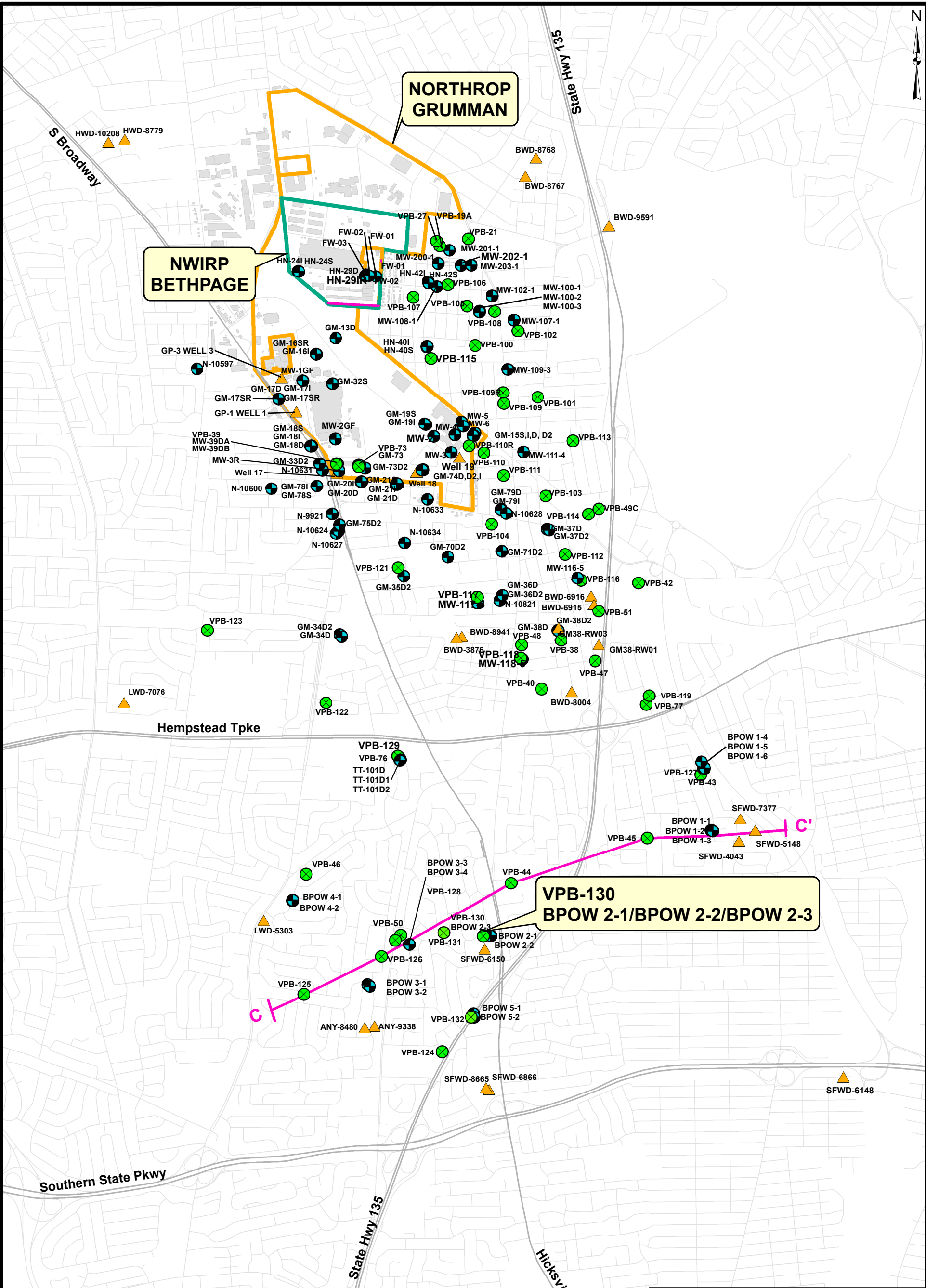


DRAWN BY	DATE
MF	12/9/06
CHECKED BY	DATE
REVISD BY	DATE
SCALE AS NOTED	



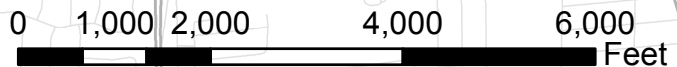
**GENERAL LOCATION MAP  
ESD  
NWIRP BETHPAGE  
BETHPAGE, NEW YORK**

CONTRACT NO. 9845	
OWNER NO. 0002	
APPROVED BY	DATE
DRAWING NO. <b>FIGURE 1</b>	REV. <b>0</b>



**Legend**

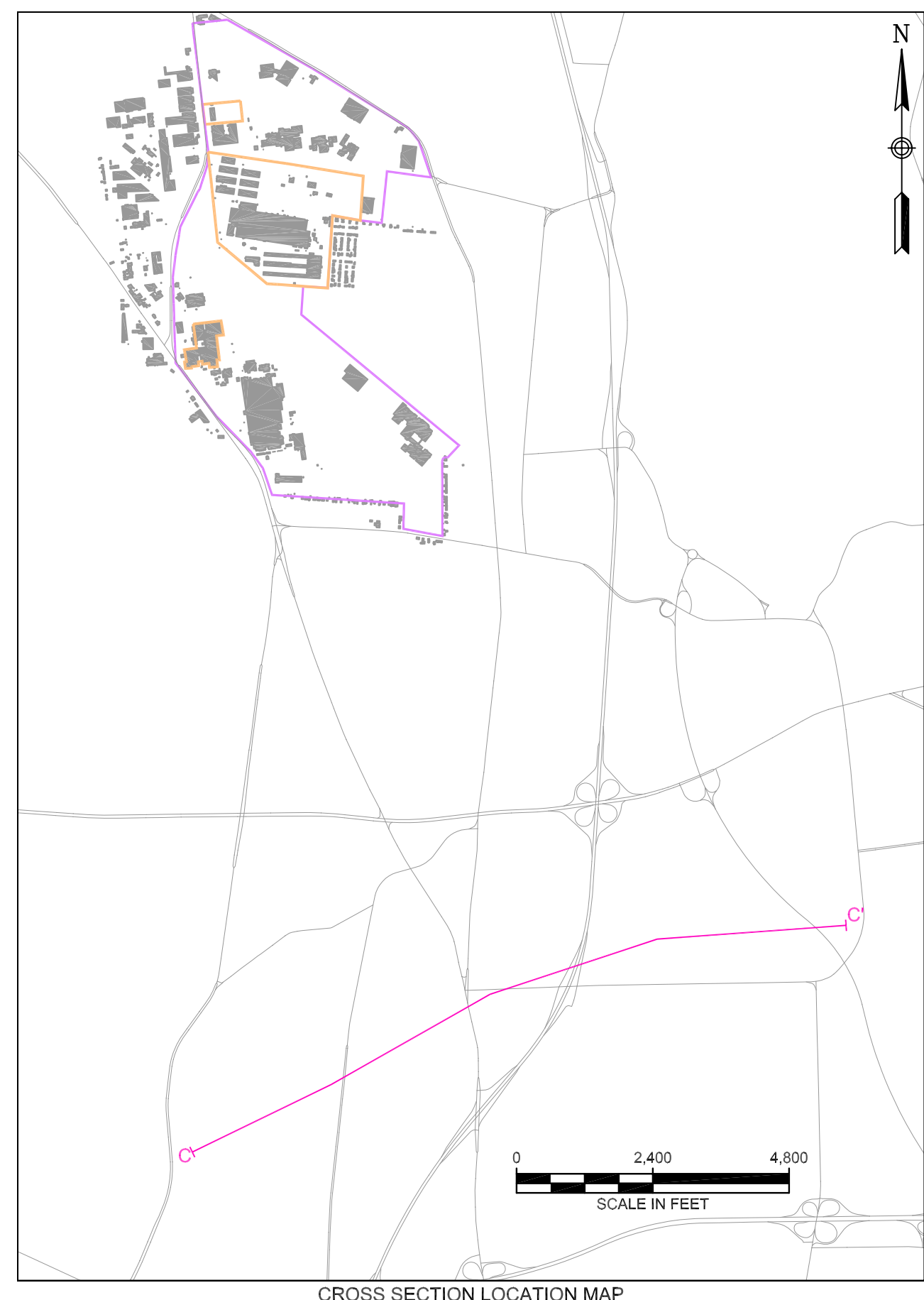
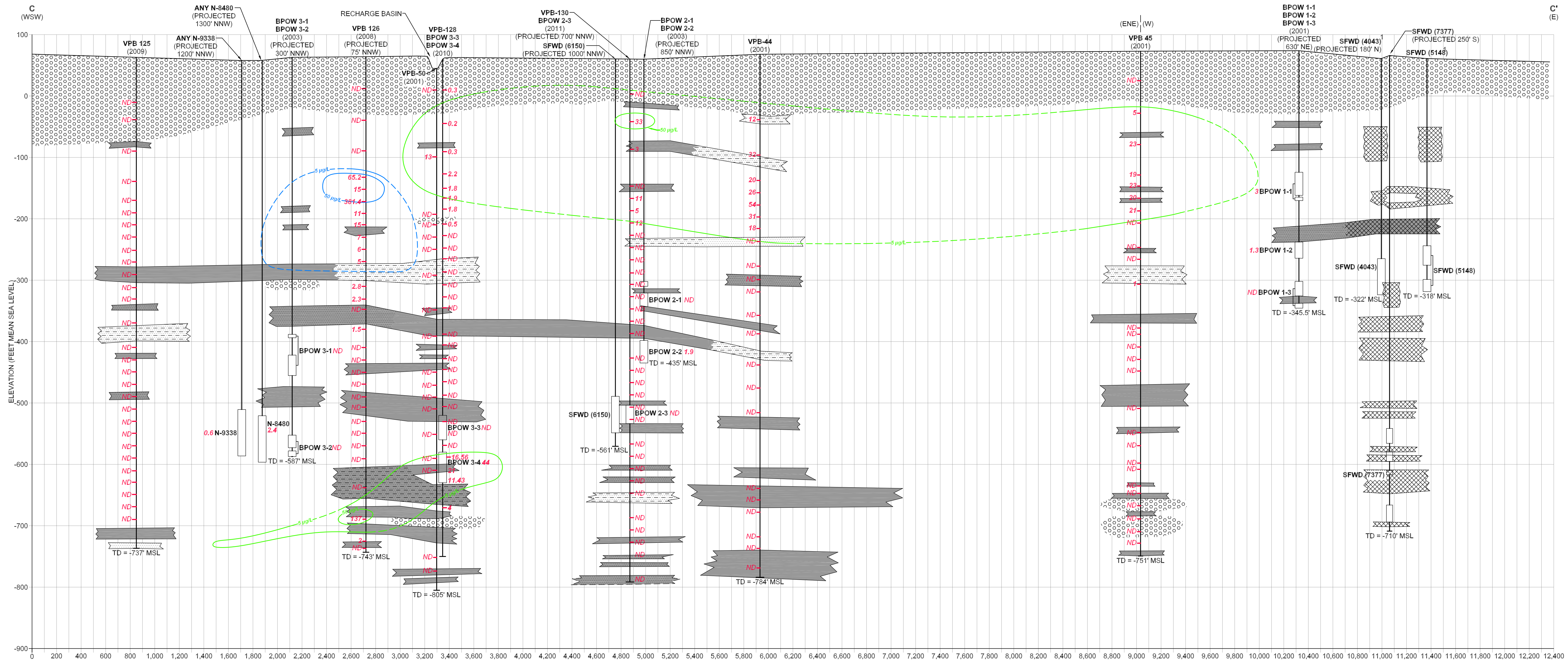
- Monitoring Well
- Water Supply Well
- Vertical Profile Boring



TETRA TECH

**VPB-130/BPOW 2-1/BPOW 2-2/BPOW 2-3  
CROSS SECTION AND LOCATION MAP  
BETHPAGE GROUNDWATER PLUME  
NEW YORK**

FILE	112G00622	SCALE	AS NOTED
FIGURE NO.	2	REV	DATE
			3/1/12

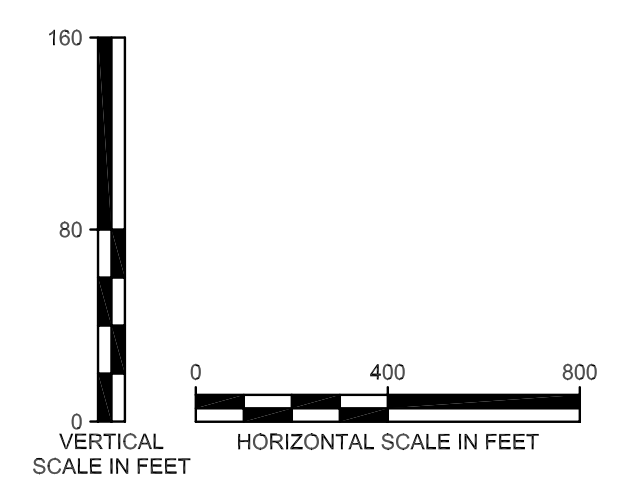


**LEGEND**

- SAND AND GRAVEL
- F-M SAND WITH VARYING AMOUNTS OF SILT, CLAY, AND C. SAND
- CONFINING UNITS**
  - INTERBEDDED CLAY AND SAND
  - SANDY CLAY
  - CLAY
  - CONFINING UNIT FROM ARCADIS CROSS-SECTION, NO SPECIFIC LITHOLOGY GIVEN
- ARCADIS CROSS SECTION (2004)
- TVOC DATA FROM ARCADIS

**BPOW 3-2**  
(2003)  
(PROJECTED 450' ESE)

MONITORING WELL ID  
INSTALLATION YEAR  
PROJECTION  
CONFINING UNIT (DASHED WHERE INFERRED)  
MONITORING WELL SCREEN  
VERTICAL PROFILE BORING TVOC RESULTS IN µg/L  
NOT DETECTED  
BENZENE DETECTED AT 440 µg/L  
TOTAL VOC PLUME CONTOUR LINE  
PCE PLUME CONTOUR LINE  
TOTAL DEPTH (MEAN) SEA LEVEL



**CROSS SECTION C - C'  
BETHPAGE GROUNDWATER PLUME  
BETHPAGE, NEW YORK**

FILE 112G01041052S	SCALE AS NOTED
FIGURE NUMBER FIGURE 3	REV DATE 0 03/02/12

**Section 2**

**VPB 130 Boring/Gamma Logs**



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/8/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	0				M DENSE	TAN BRN	SAND - SOME GRAVEL		SP/DAMP GW					0
	10						SAME		SUBROUND GRAVEL (2"φ)					
	20						SAME							0
	30						SAME							
	40						SAME		8" CAS TO 40'					0
	50								LESS GRAVEL					

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: DRIVE 8" STEEL CAS TO 40' - USING CASING DRIVER  
8" MUD ROTARY TO TD 850'

Drilling Area  
 Background (ppm): 0

Converted to Well: Yes  No  Well I.D. #: VPB-130





# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/13/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	50				DENSE	TAN GRAY	SILTY SAND - TR	SM	MOIST → WEL				0
S <sub>2</sub> -1 1205	56 57						GRAVEL & TR CLAY		TOOK BP-VPB-130 -GW-057				
	60						SAME						
	70						SAME						0
	80						SAME						
	90						SAME						0
	100												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area  
 Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/13/11 → 6/14/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	100																	
6/13 6/14	S-2 101 102 1510				DENSE GRAY		SILTY SAND-TR CLAY/GRAVEL	SM	WET TOOK BP-VPB130-GW -102									0
	110						SAME											
	120						SAME											0
	130						SAME. - WITH MORE CLAY TO ≈ 140		→ CUTTINGS									
	140						SAME											
	S-3 146 1020 147 150								TOOK BP-VPB130-GW- 147									0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area

Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/14/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	150				DENSE	TAN BRN	SILTY SAND-TR CLAY/GRAVEL	SM	WET				0
	160						SAME						
	170						SAME						0
	180						SAME						
	190						SAME						
	200												0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/15/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	200																	
					DENSE STAY		SILTY SAND/SANDY CLAY ZONE ~ 206 TO ~ 210		TOOK [BP-VPB130-GW-207]									0
S-4 e 1340	206 207																	
	210						SAME.											
	220						SILTY SAND SM LESS CLAY											0
6/14 6/15	S-5 1540	226 227							TOOK [BP-VPB130-GW-227]									
	230						SAME											
	240						SAME											
S-6 0940	246 247								TOOK [BP-VPB130-GW-247]									0
	250																	

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm): 0

Converted to Well: Yes \_\_\_\_\_ No x Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/15/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	250				DENSE	TAN BRN	SILTY SAND	SM	WET					0
	260						SAME							
S-7 C 1130	266 267								TOOK BP-VPB130-GW - 267					0
	270						SAME							
	280						SAME							
S-8 C 1315	286 287				DARK GRAY		SILTY F/M SAND	SM						
	290						SILTY/CLAYEY SAND		TOOK BP-VPB130-GW-287					0
	300													

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area  
 Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/15/11 → 6/16/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	300																	
					DENSE GRAY		SILTY F/M SAND	SM	WET									0
6/15 6/16	5-9 @ 1500	306 307								TOOK								
		310								BP-VPB130-GW -307								
										SAME TR								
										CLAY / SANDY CLAY	SM SC							
		320																
										SAME - LESS								
										CLAY								
	5-10 @ 1040	326 327																
		330								TOOK 13P								
										BP-VPB130-GW -327								
										SAME								
		340																
										SAME								
	5-11 @ 1240	346 347								TOOK								
		350								BP-VPB130-GW -347								

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/16/11 → 6/20/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (FT) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	350				DENSE	GRAY	SILTY F/M SAND	SM	WET					0
	360						SAME							
	366								TOOK					
	367								[BP-VPB-130- GW-367]					
	370						SAME.							0
	380						SAME							
	386								TOOK					
	387								[BP-VPB-130- GW-387]					
	390						SAME							0
	400													0

6/16  
 6/17  
 6/20

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/20/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	400																	
					DENSE	GRAY	SILTY F/M SAND	SM	WET									0
							TR CLAY											
S-14 e	406								TOOK									
1145	407								[BP-VPB130 - GW - 407]									
	410								SAME									
	420																	
					LT.		SILTY F/M SAND	SM	WET									
						GRAY			TR CLAY									0
S-15 e	426								TOOK									
1340	427								[BP-VPB130-GW - 427]									
	430								SAME									
	440								SAME - TR									
									TO SOME									
									CLAY									
S-16 e	446								TOOK									
1530	447								[BP-VPB130-GW - 447]									0
	450								TO 450±									

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area  
 Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130





# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/21/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	450				DENSE	GRAY	SILTY SAND / SANDY CLAY	SM / SC	WET					0
	460													
	466								TOOK SPOON					
S17 / SS1 @ 0845	466 467		0.6 / 1.0	A	DENSE	GRAY	SANDY CLAY / CLAYEY SAND TR DRIFT WOOD		HERE FOR LITHOLOGY MOIST → WET	0				
	470													0
	480						SAME - LESS CLAY IN CUTTINGS							
S-18 @ 1030	486 487						SAME		TOOK [BP-VPB130-GW - 487]					
	490													
	500													0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: ▲ SPOON SAMPLE ALSO FOR TOC (Chemtech)

Drilling Area Background (ppm): 0

Converted to Well: Yes          No x         Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: 6/21/11 →  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	500				DENSE	GRAY	SILTY F/M SAND	SM	WET				0
5-19 C	506								TOOK				
1240	507								[BP-VPB130-GW - 507]				
	510						SAME						
	520						SAME						
5-20 C	526								TOOK				0
1430	527								[BP-VPB130-GW - 527]				
	530						SAME						
	540						SAME						
							LT GRAY WHITE						
6/21 6/22	521 C	546							TOOK				
	1020	547							[BP-VPB130-GW - 547]				0
	550												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: **VPB-130**



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/22/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (FT) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ*
	550				DENSE	LT GRAY	SILTY F SAND	SM	WET				0
	560						SAME - SOME CLAY						
	566												
S-22 e 1215	567							↓		TOOK			
	570							570±		BP-VPB130-GW - 567			
								SAME		VIAL ONLY			0
	580							SAME					
S-23 e 1420	586									TOOK			
	587									BP-VPB130-GW - 587			
	590				STIFF	GRAY	SANDY CLAY						
					DENSE					PER DRILLING CONDITIONS			0
	600												

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm): 0

Converted to Well: Yes \_\_\_\_\_ No x Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/23/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole*	Driller BZ**	
	600				DENSE	LT GRAY	SANDY CLAY (F/M)	SM	WET					0
									↓ MOIST					
S24	606					GRAY			TOOK					
S52	607		3/1		STIFF		SANDY CLAY - W		[BP-VPB130 -	0				
	0920						V. THIN LAMINATIONS		SB-607					
	610								(TOC) TO LAB					
	620				DENSE	GRAY	SILTY SAND - TR		WET					
							CLAY							
S25	626								TOOK					
1145	627								[BP-VPB130-GW					
	630						SAME.		- 627					0
	640						SAME							
S26	646								TOOK					
1430	647								[BP-VPB130-GW					
	650								- 647					0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area

Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No **x** \_\_\_\_\_ Well I.D. #: **VPB-130**



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-130  
 DATE: 6/24/11 → 6/27/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (FT.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	650				DENSE GRAY		SILTY SAND-TR CLAY	SM	WET					0
	660						SAME							
	660													
	666													
6/24 6/27	667													
	670													0
	680													
	680													
	687													
	690													
	700													0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: VPB-130



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/27/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FT.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	700																	
					DENSE	GRAY	SILTY F/M SAND TR TO SOME CLAY											0
S29 1320	706 707								TOOK									
	710																	
							SAME TO SANDY CLAY											
	720						SAME											0
SS3	S30 1500	726 727			STIFF	GRAY	SANDY CLAY W/ LIGNITE TYPE LAMINATIONS - VERY THIN.	SC	MOIST NO HP HERE TO CLAYEY.									
	730																	
	740																	0
					DENSE	LT GRAY												
6/28	S31 1000	746 747					CLAYEY SAND - TR F GRAVEL		TOOK									
	750																	

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: **VPB-130**



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: **6/28/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	750				DENSE	LT GRAY TO WHITE	CLAYEY SAND - TR GRAVEL	SC SM	WET					0
	760						SAME							
532 e 1240	766 767								TOOK BP-VPB130-GW - 767					
	770								SAME					
	780								PCS OF CLAY ARE WHITE IN COLOR - MIXED W GRAVEL/SAND					0
	786								SANDY CLAY	SC				DRILL CUTTINGS
533 e 1445	786 787				DENSE	WHITE	SANDY CLAY - TR GRAVEL		TOOK BP-VPB130-GW - 787 ONLY 1 VIAL					
	790													0
	800													

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area  
 Background (ppm):

Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: **VPB-130**



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-130**  
 DATE: 6/29/11  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	800																	
					DENSE	LT GRAY	CLAYEY SAND	SC SM	WET									
S-34	806								[ TOOK BP-VPB130-GW - 807 ]									
1000	807																	
	810																	
	820																	
S-35	826				DENSE	LT GRAY	CLAYEY SAND/ SANDY CLAY	SC SM	WET/MOIST NO H.P. HERE.									
1130	827		8/1		/STIFF													
	830																	
	840																	
S-36	846								[ TOOK BP-VPB130-GW - 847 ]									
1330	847																	
	850			TD @ 850														

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

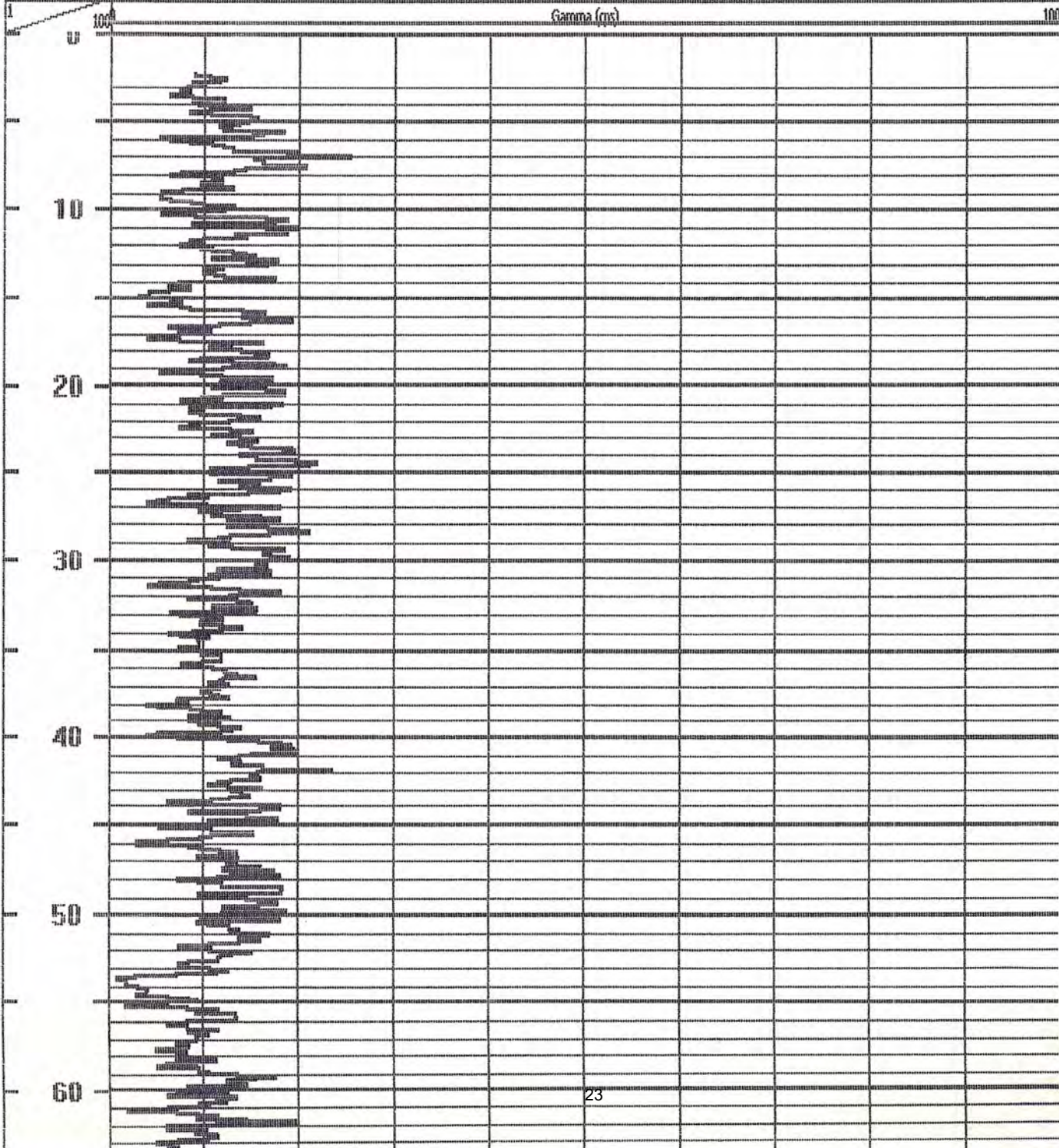
Drilling Area  
 Background (ppm):

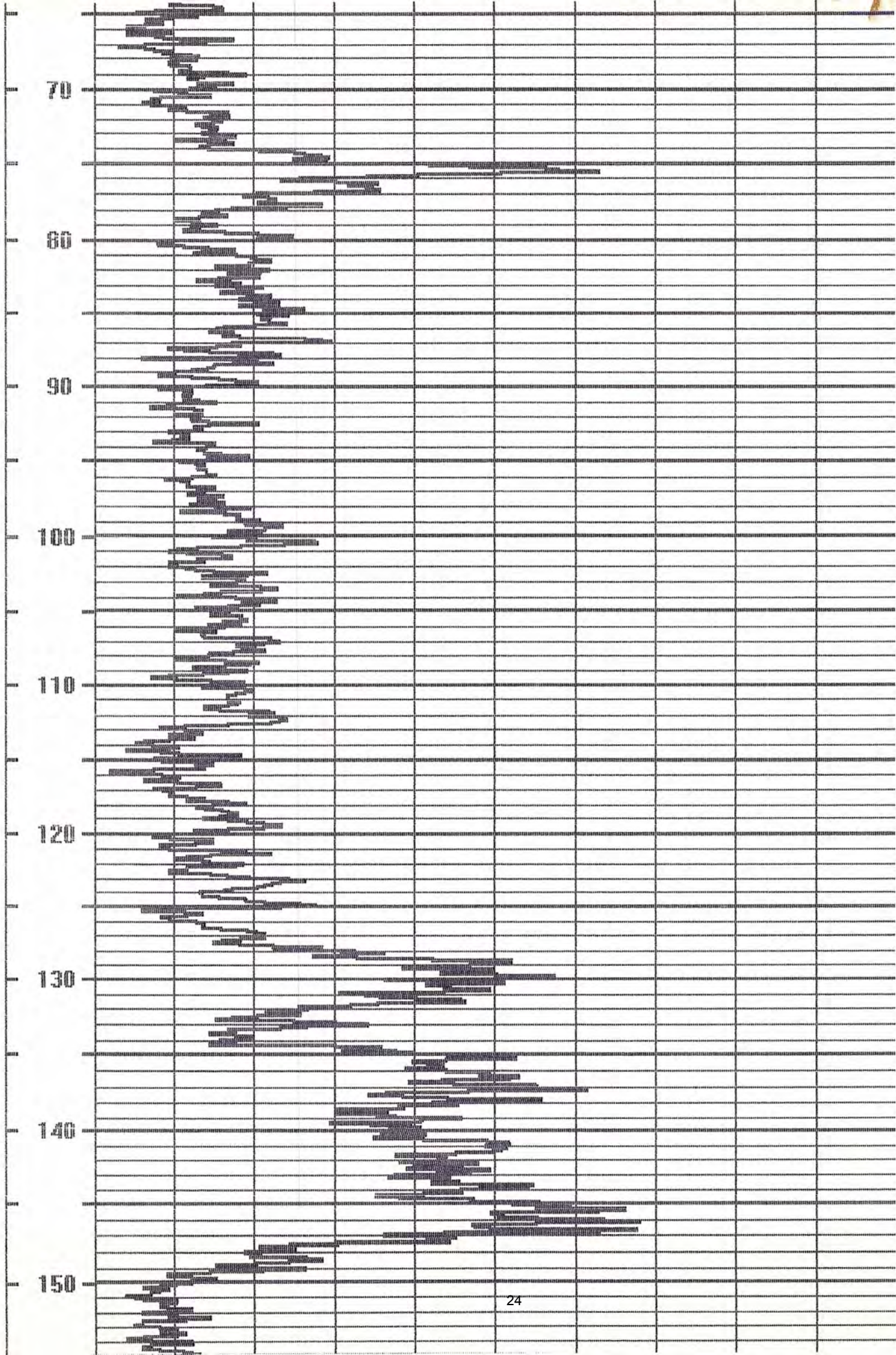
Converted to Well: Yes \_\_\_\_\_ No x \_\_\_\_\_ Well I.D. #: **VPB-130**



DOWN

COMPANY: DELTA WELL & PUMP CO INC		Casing
Location: GLORIA ROAD		
Well	VPB-130	Depth Driller Depth Logger
Date	06/29/2011	BH Fluid
File Name	717	Witness: STAN





160

170

180

190

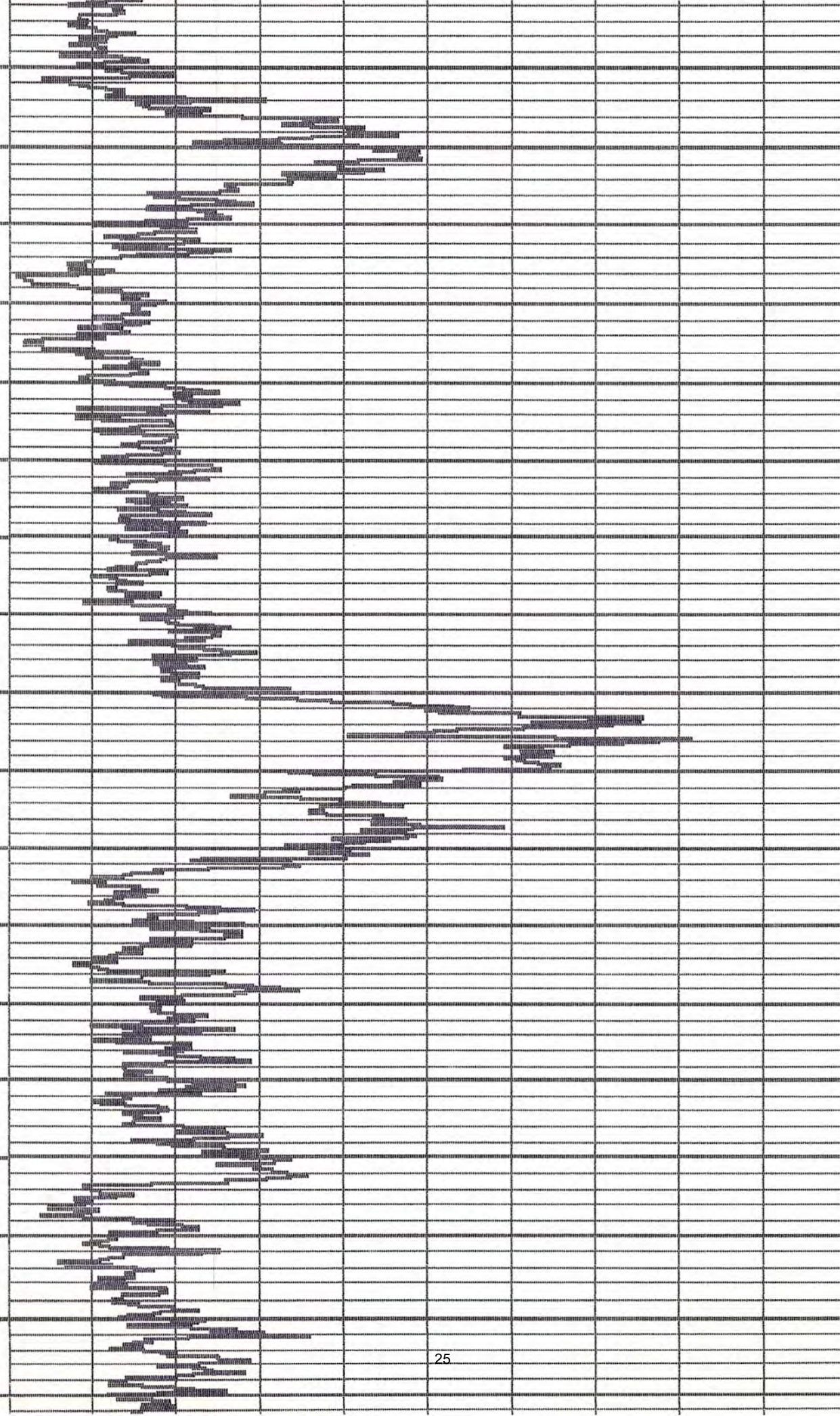
200

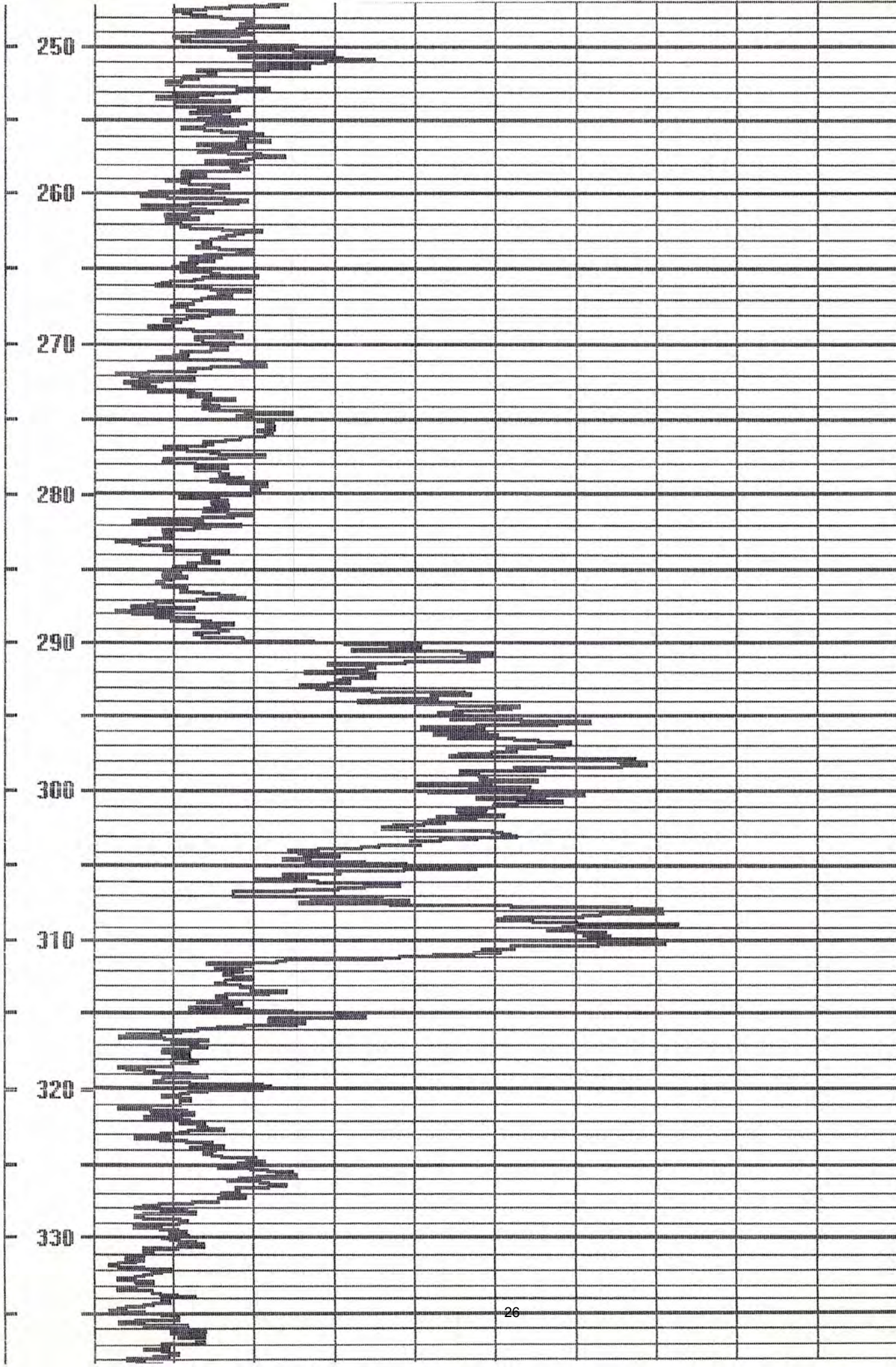
210

220

230

240





340

350

360

370

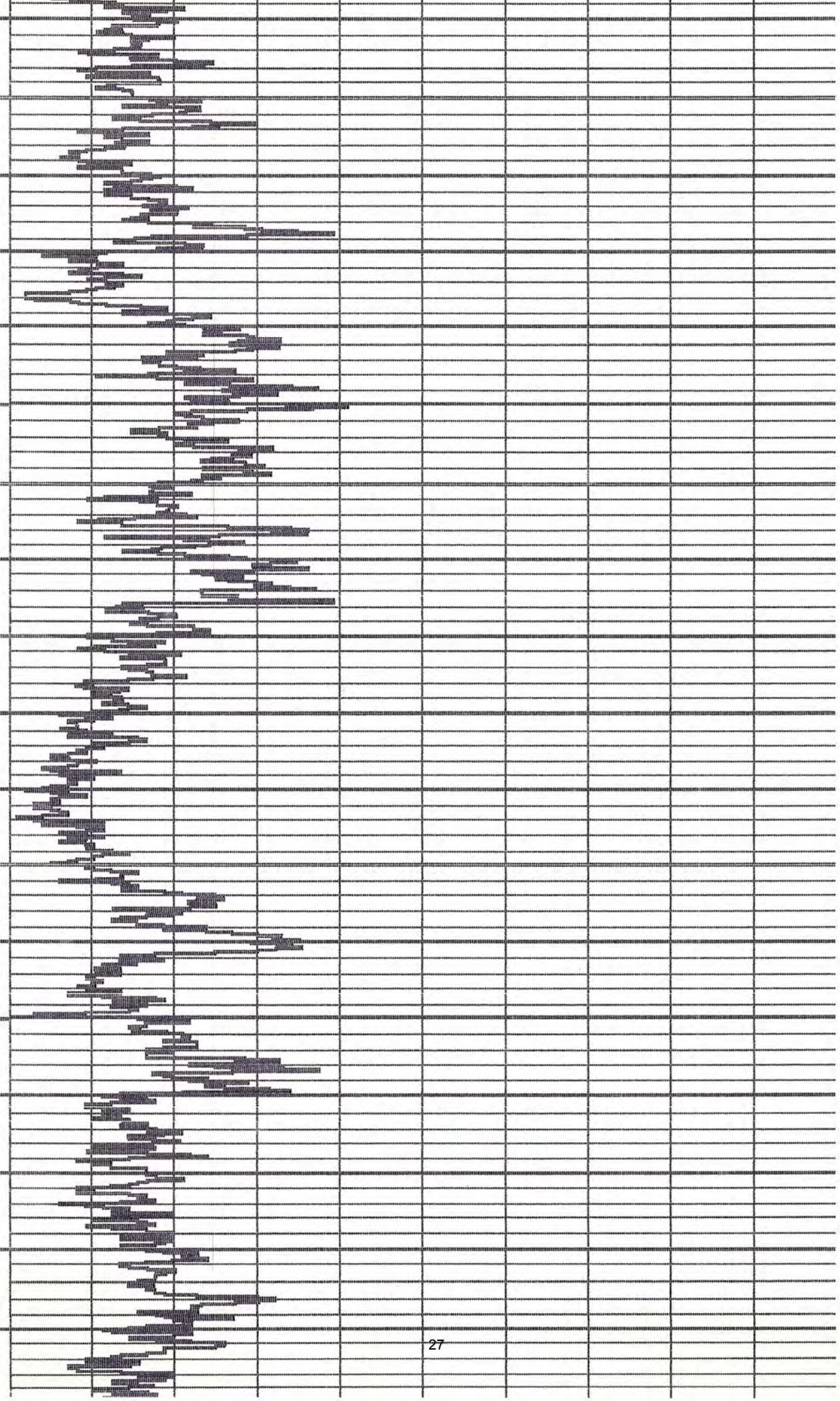
380

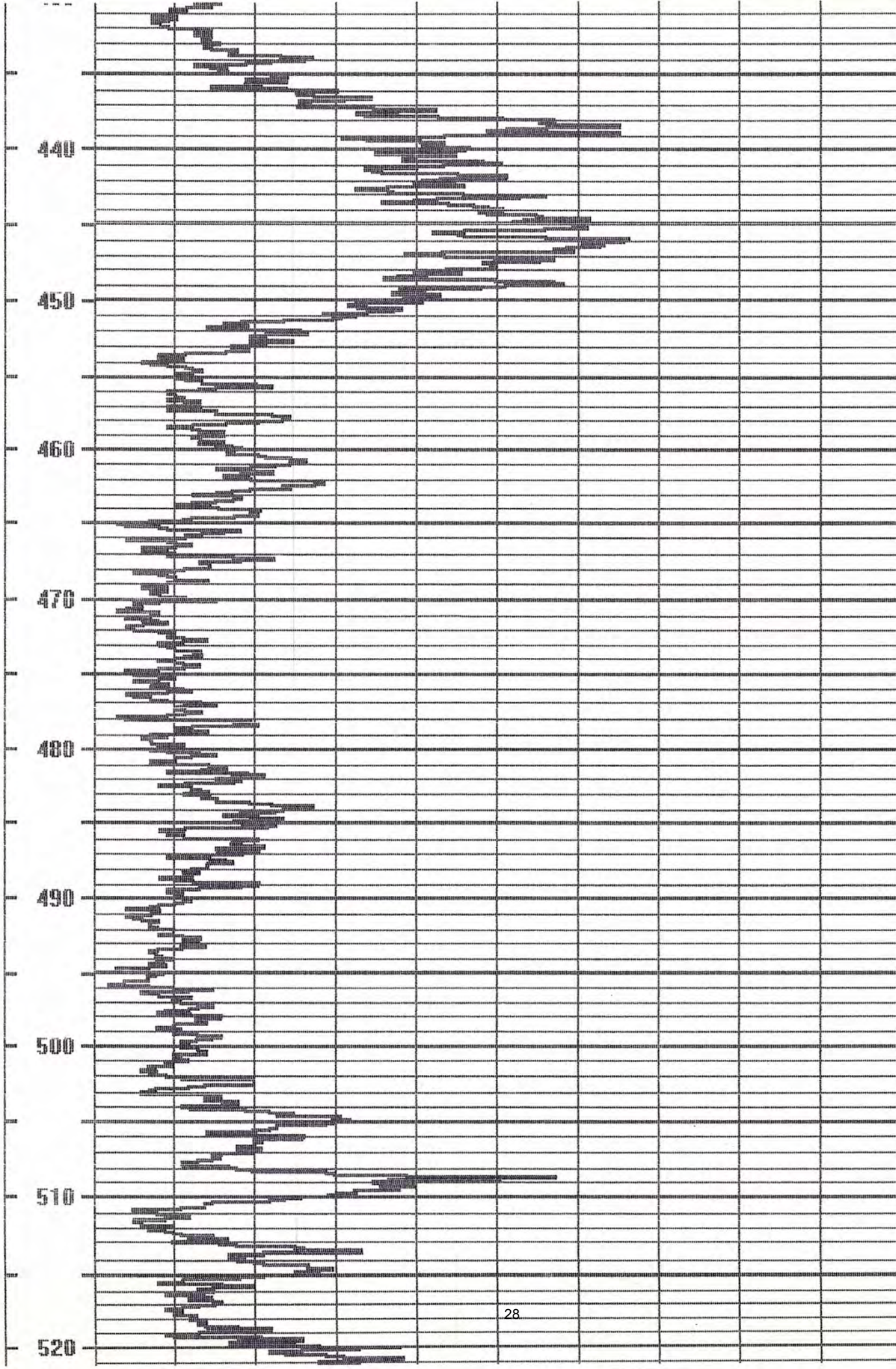
390

400

410

420





530

540

550

560

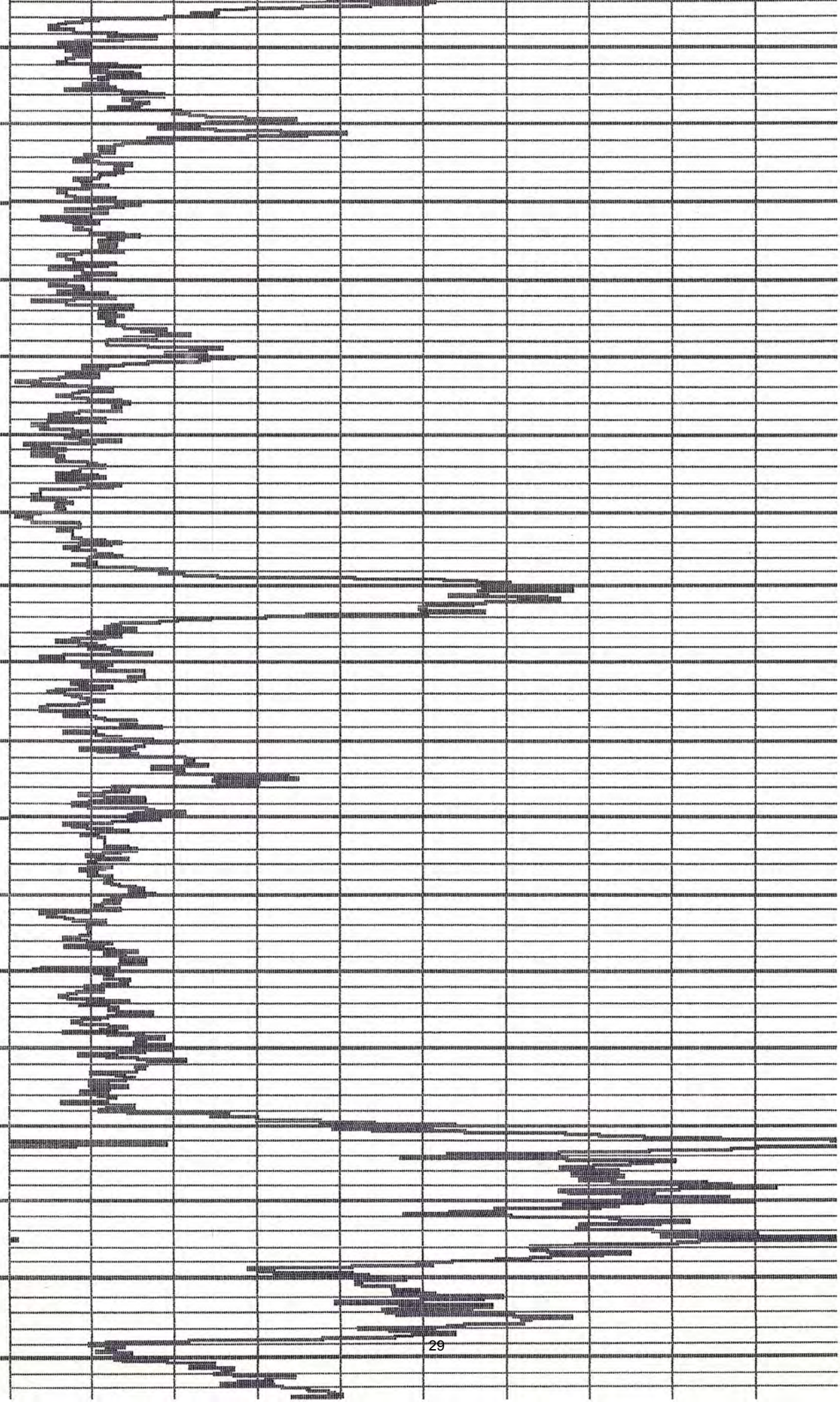
570

580

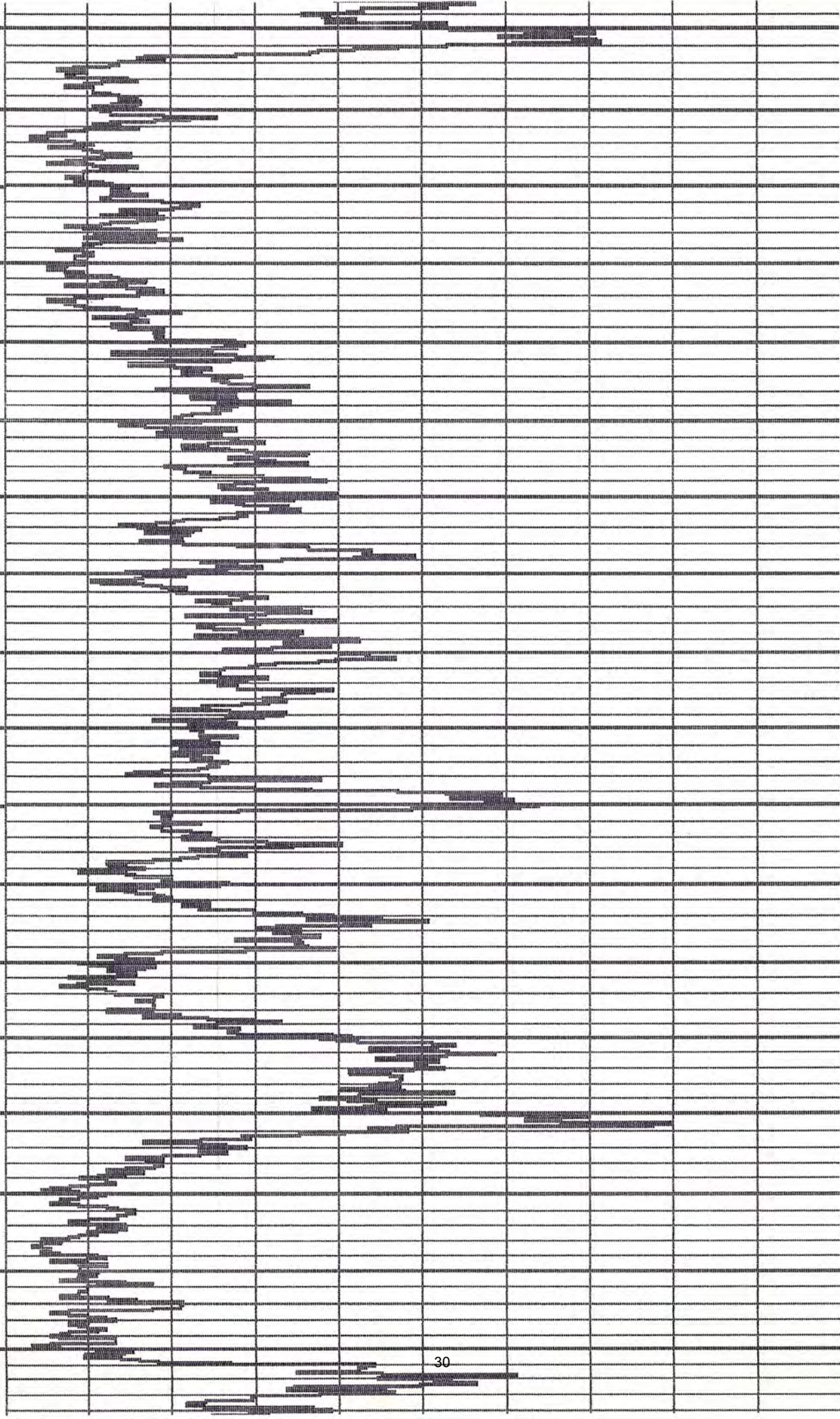
590

600

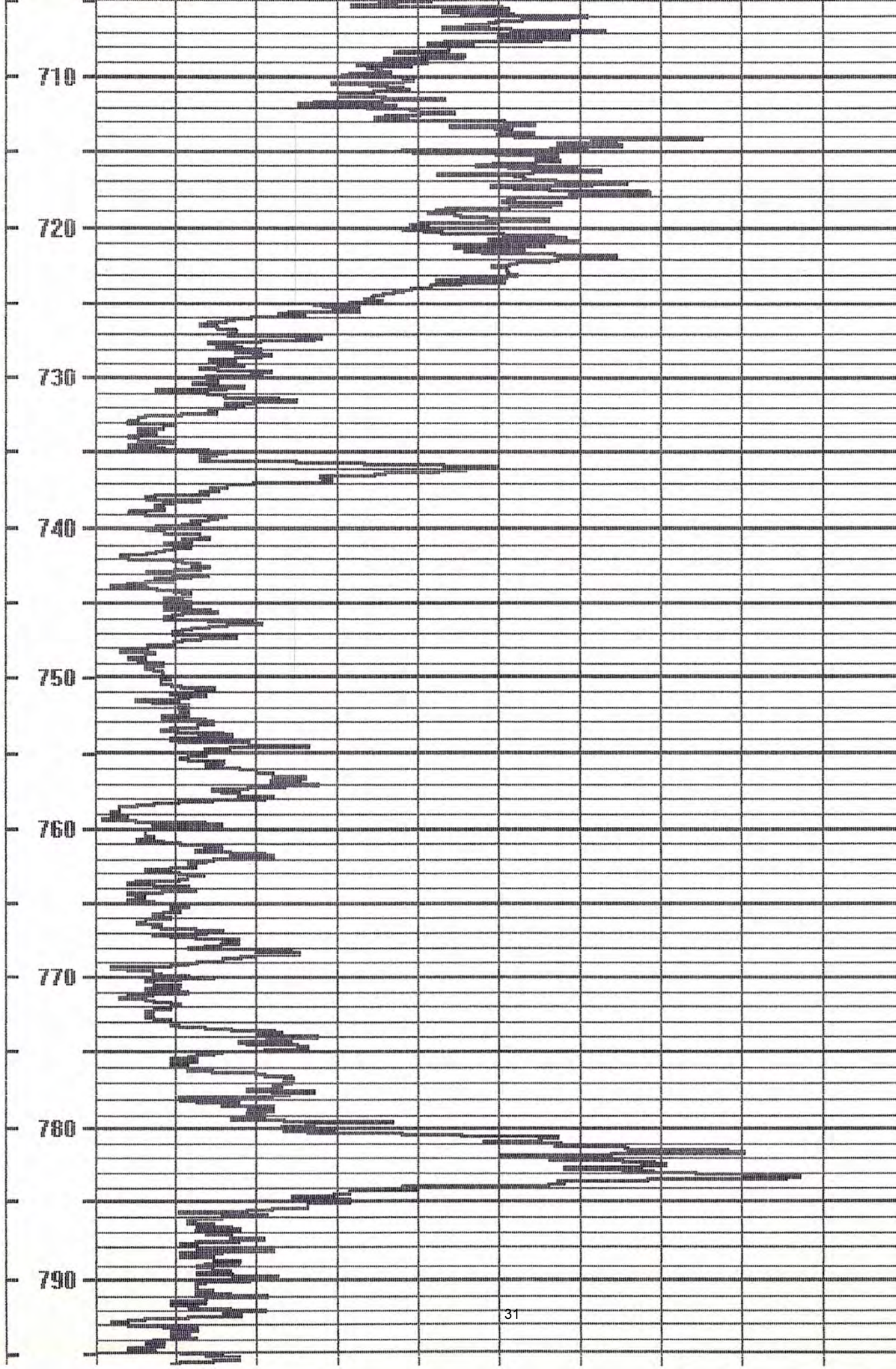
610

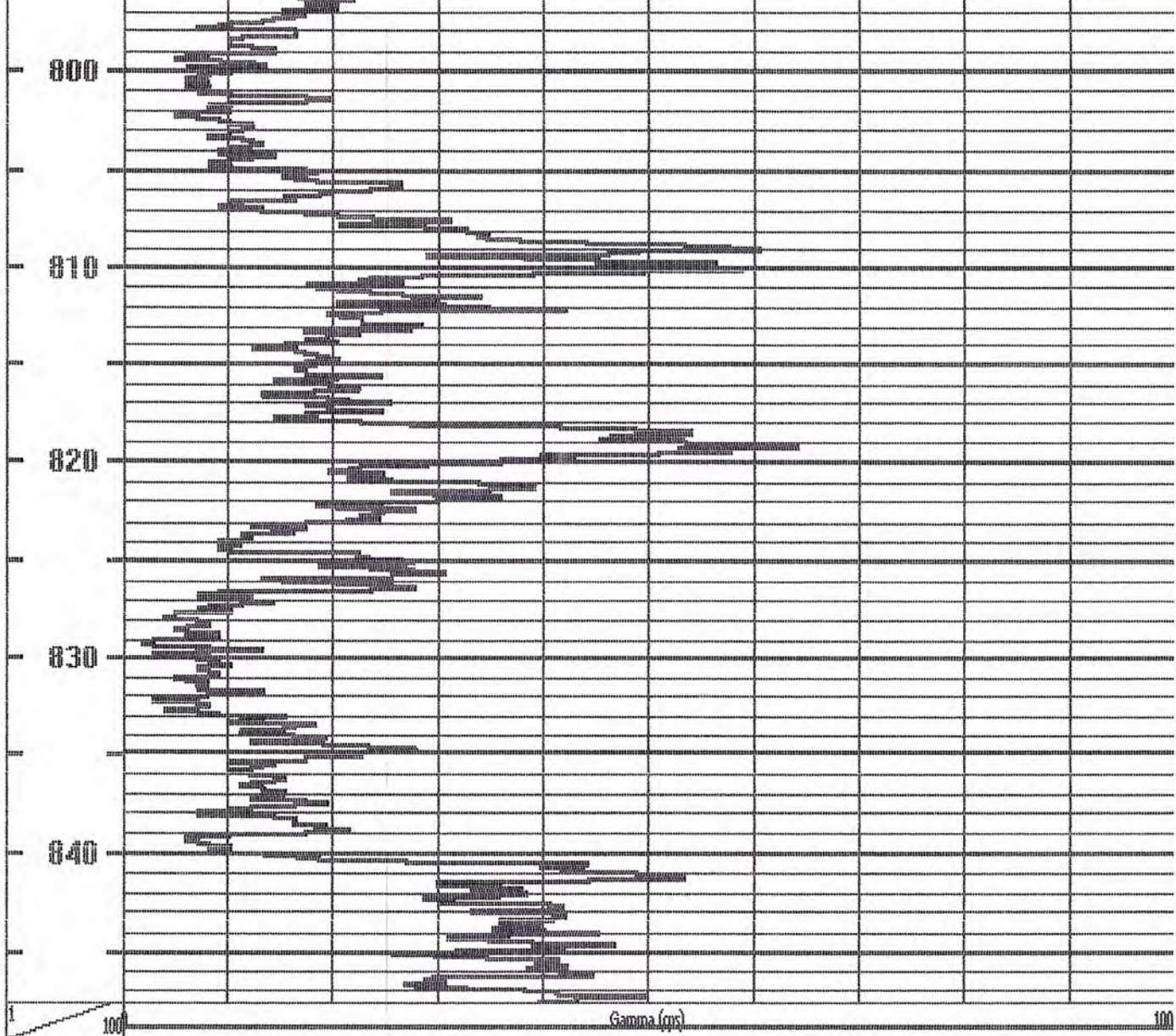


620  
630  
640  
650  
660  
670  
680  
690  
700







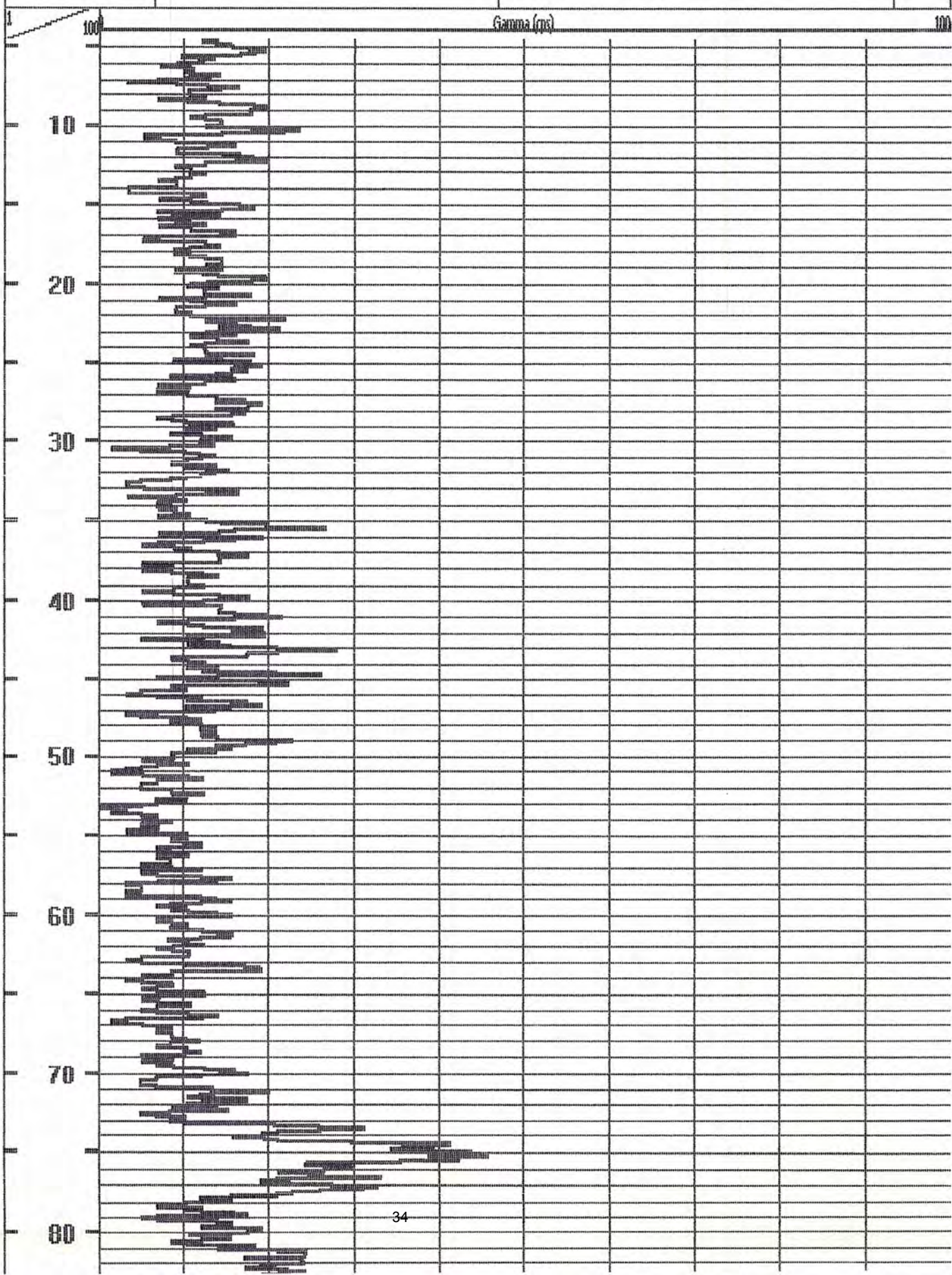


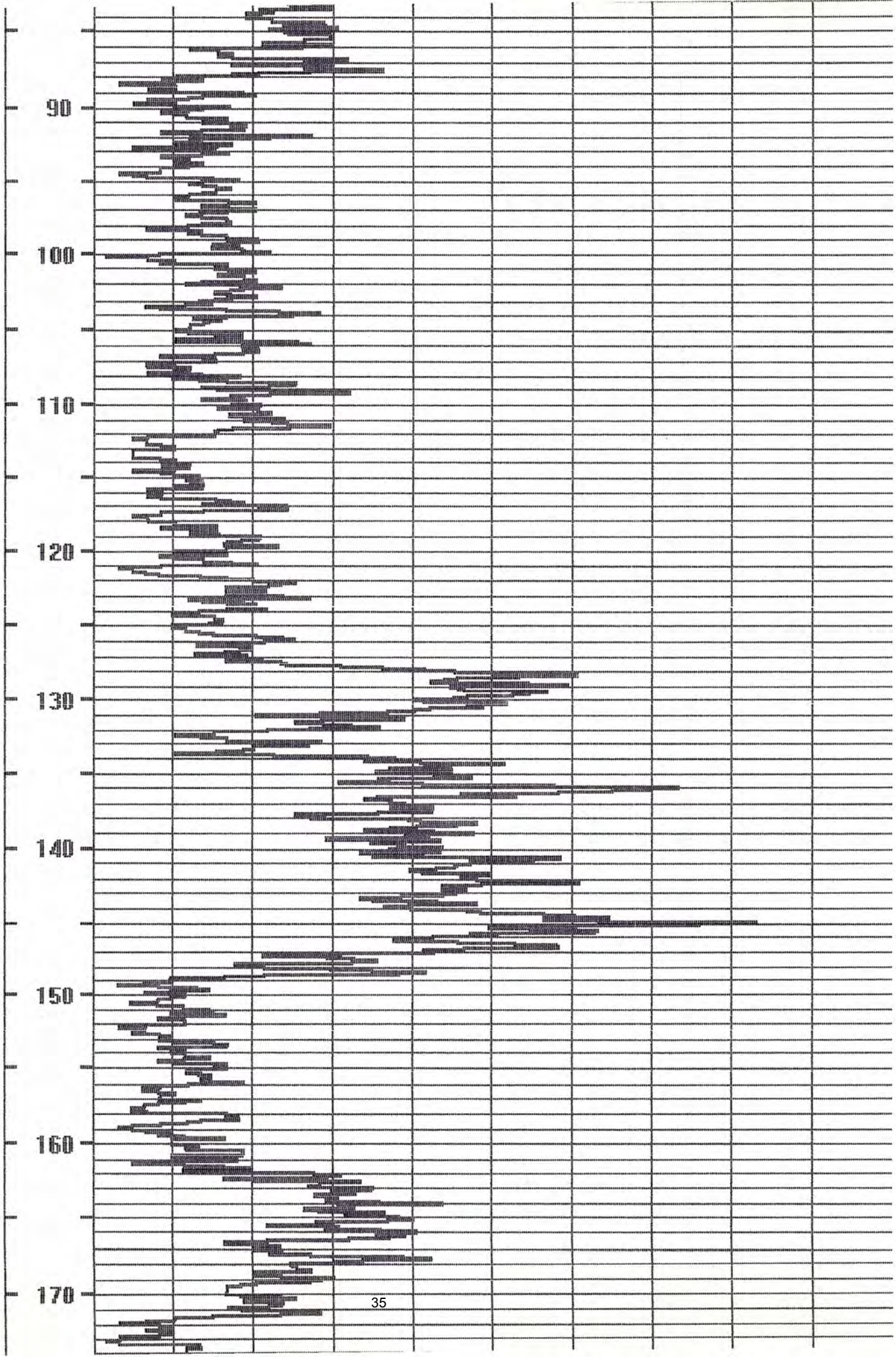
Date: Wednesday, June 29, 2011 Time: 06:27 File: C:\My Documents\717\VPB-130.rtl

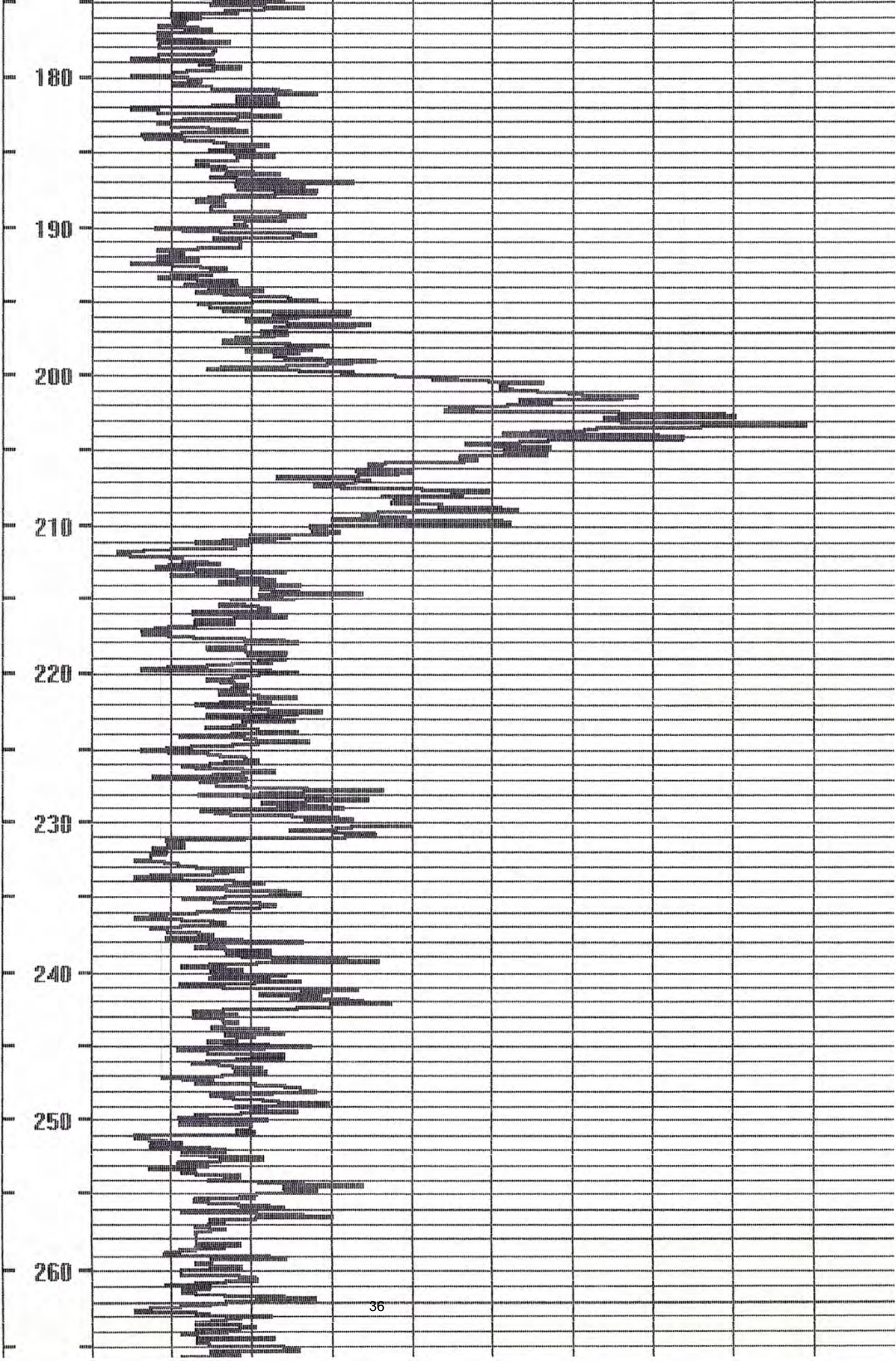
UP

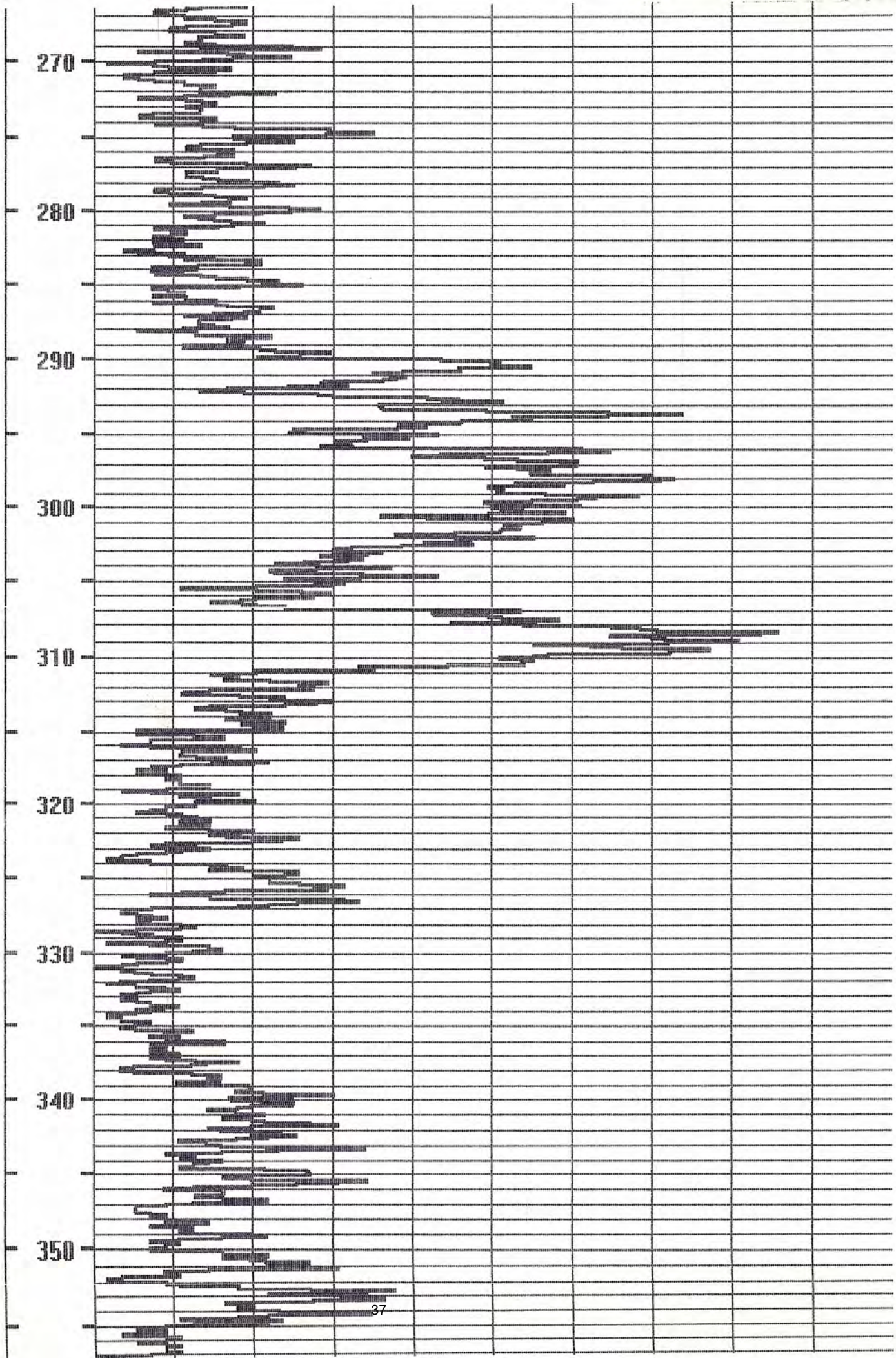
	COMPANY: DELTA WHEEL & PUMP CO INC	Casin
	Location: CLODIA ROAD	

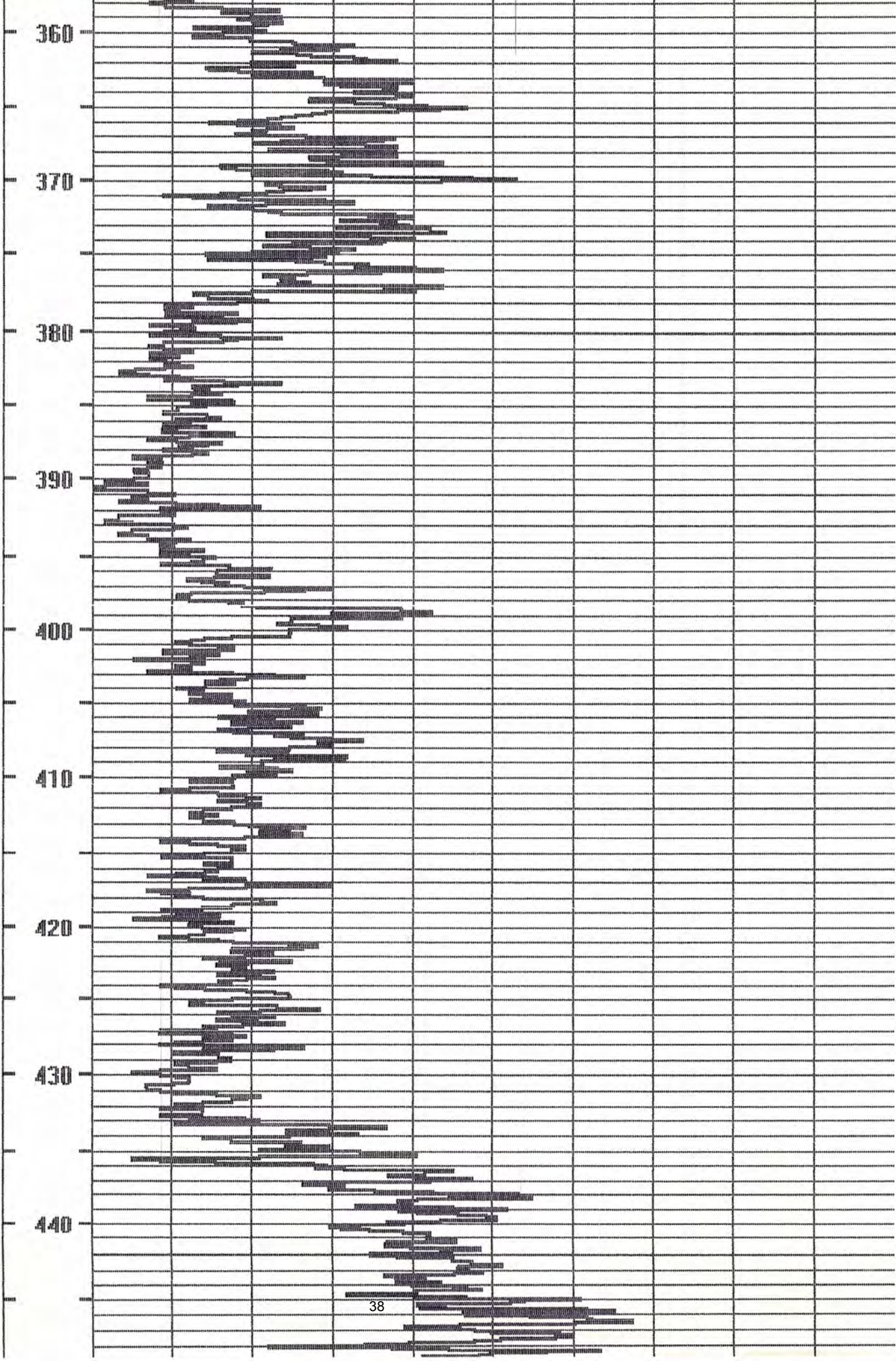
Well	VPB-130	UP	Depth Driller	
			Depth Logger	
Date	06/29/2011	BH Fluid	Logged by:	CMO
File Name	717		Witness:	STAN



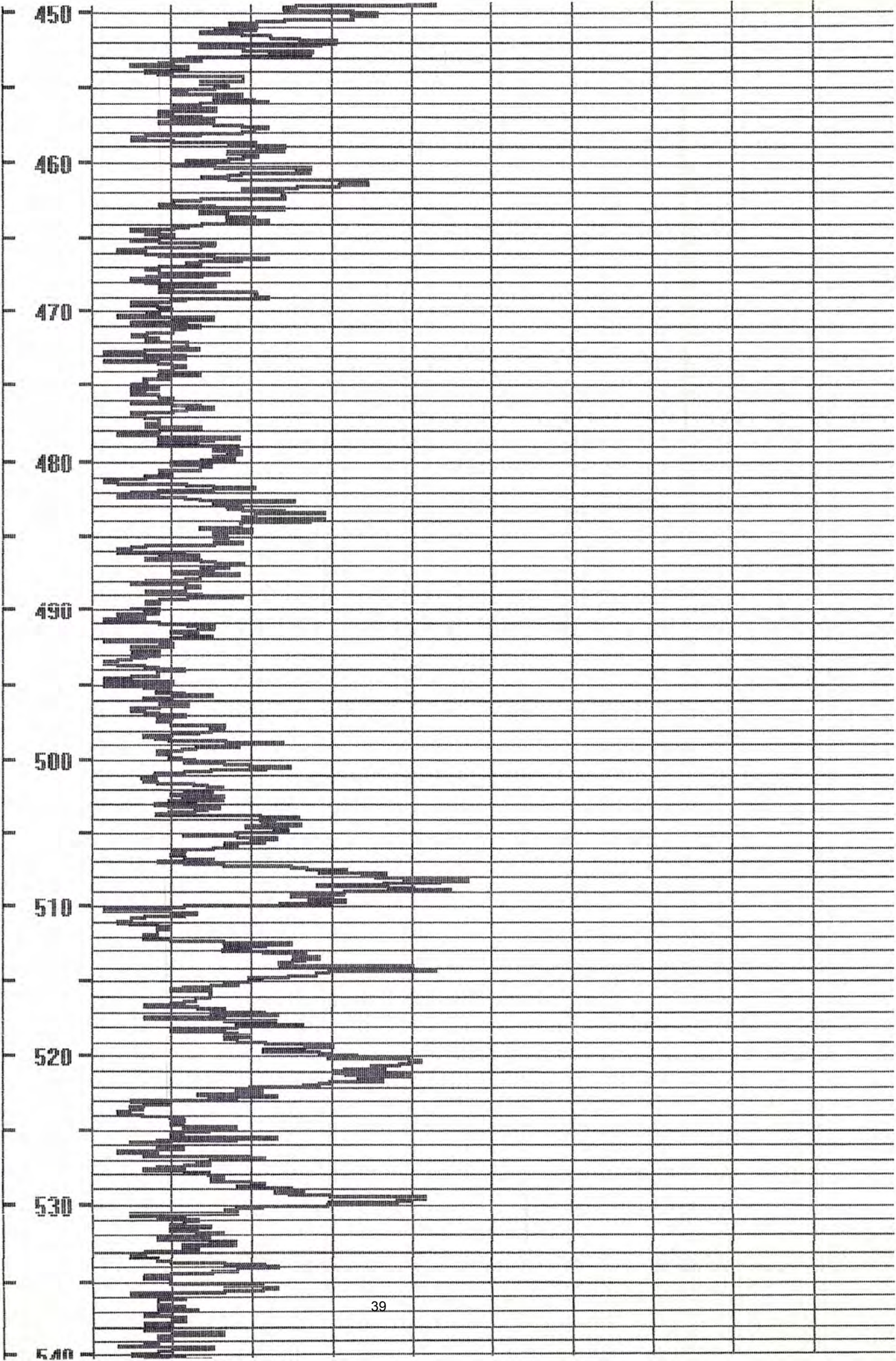


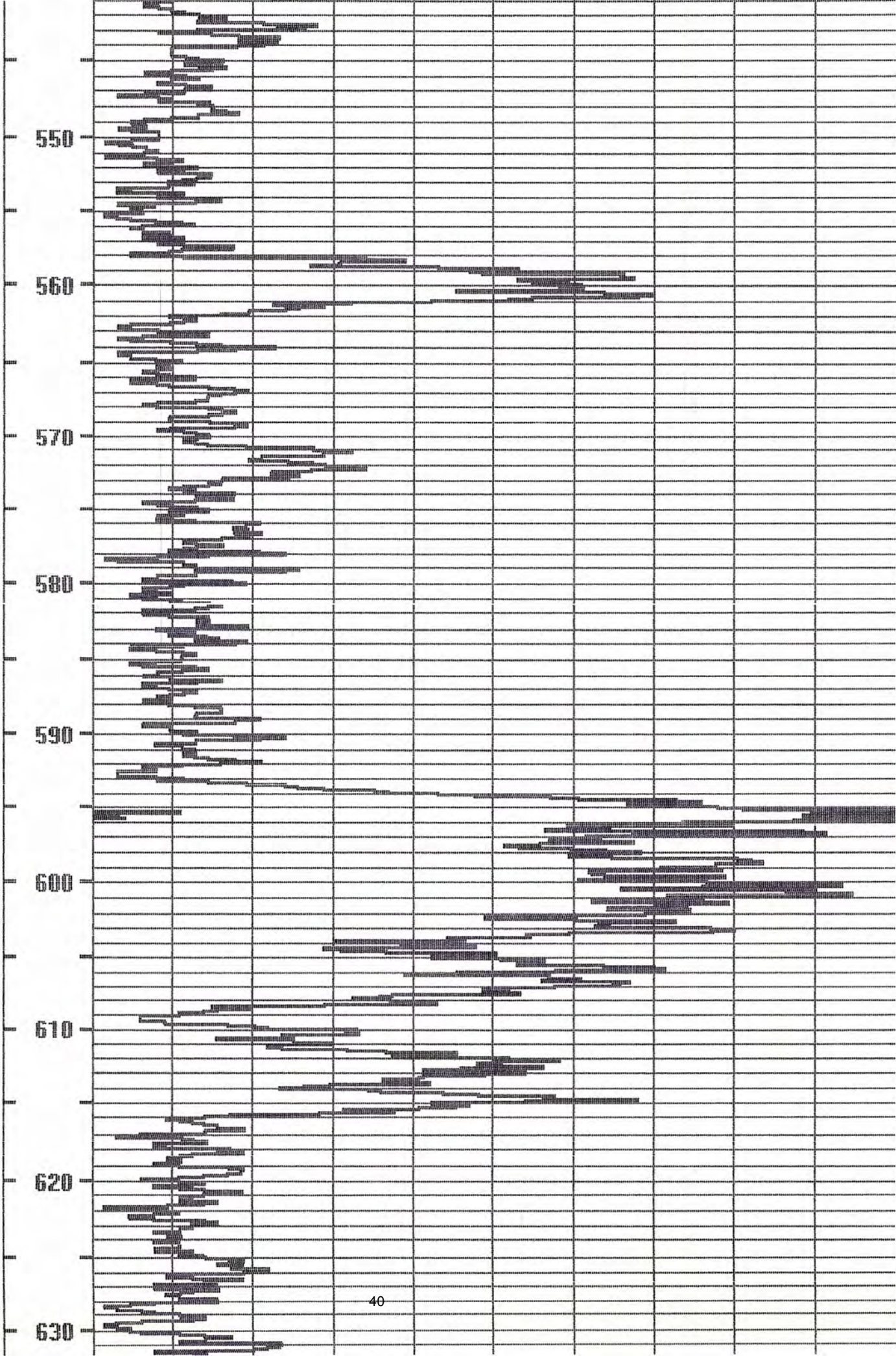


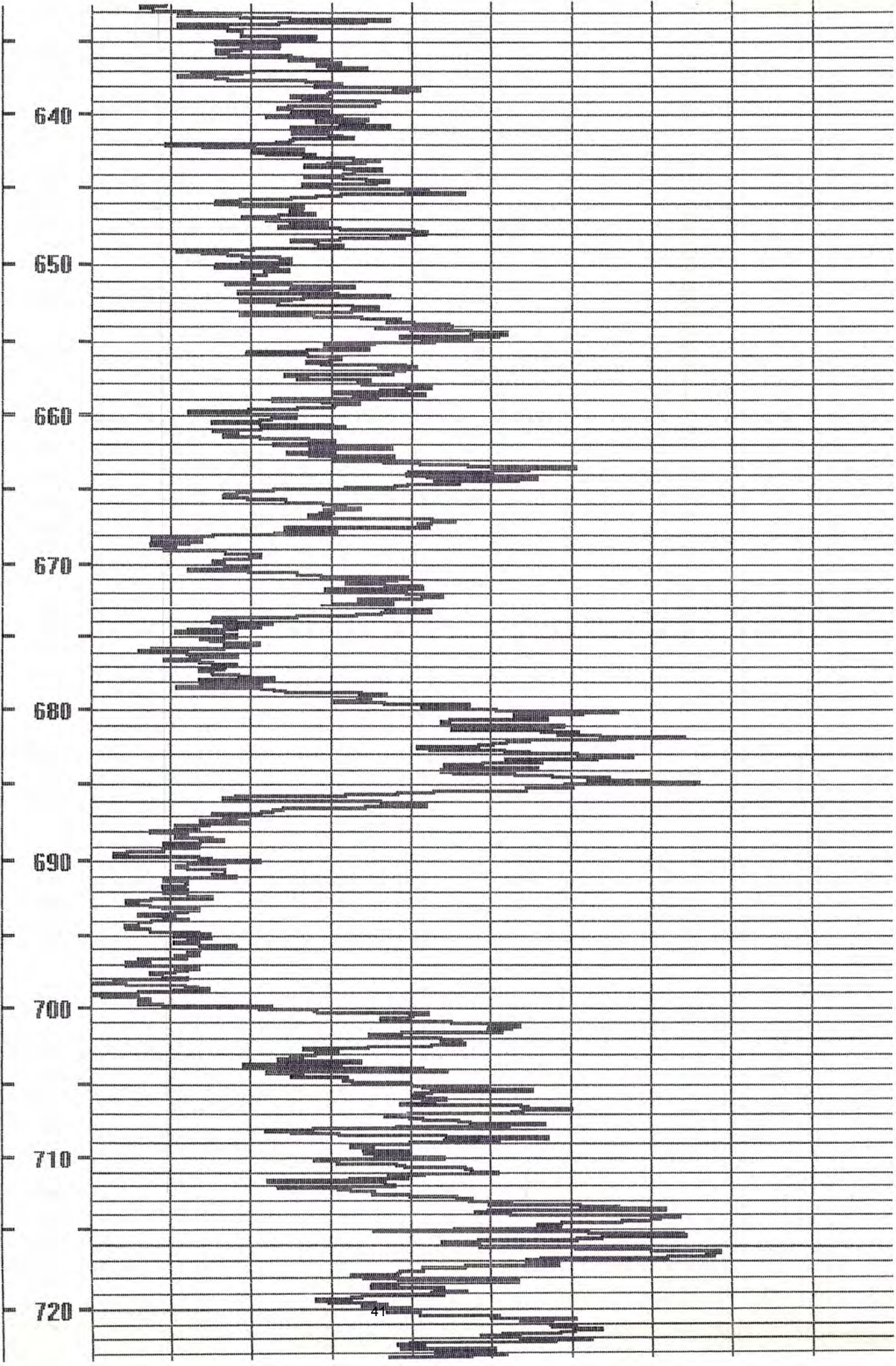


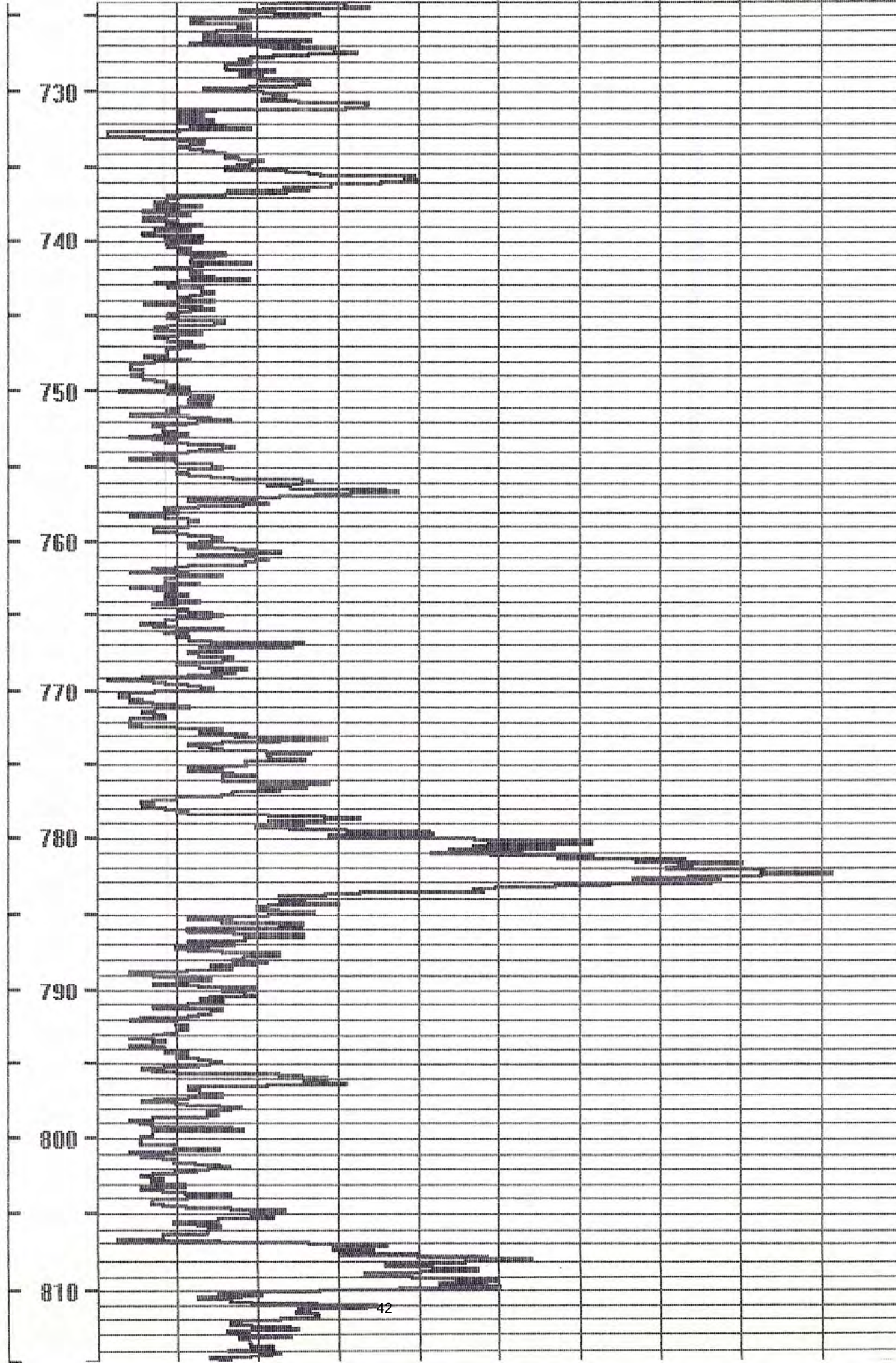


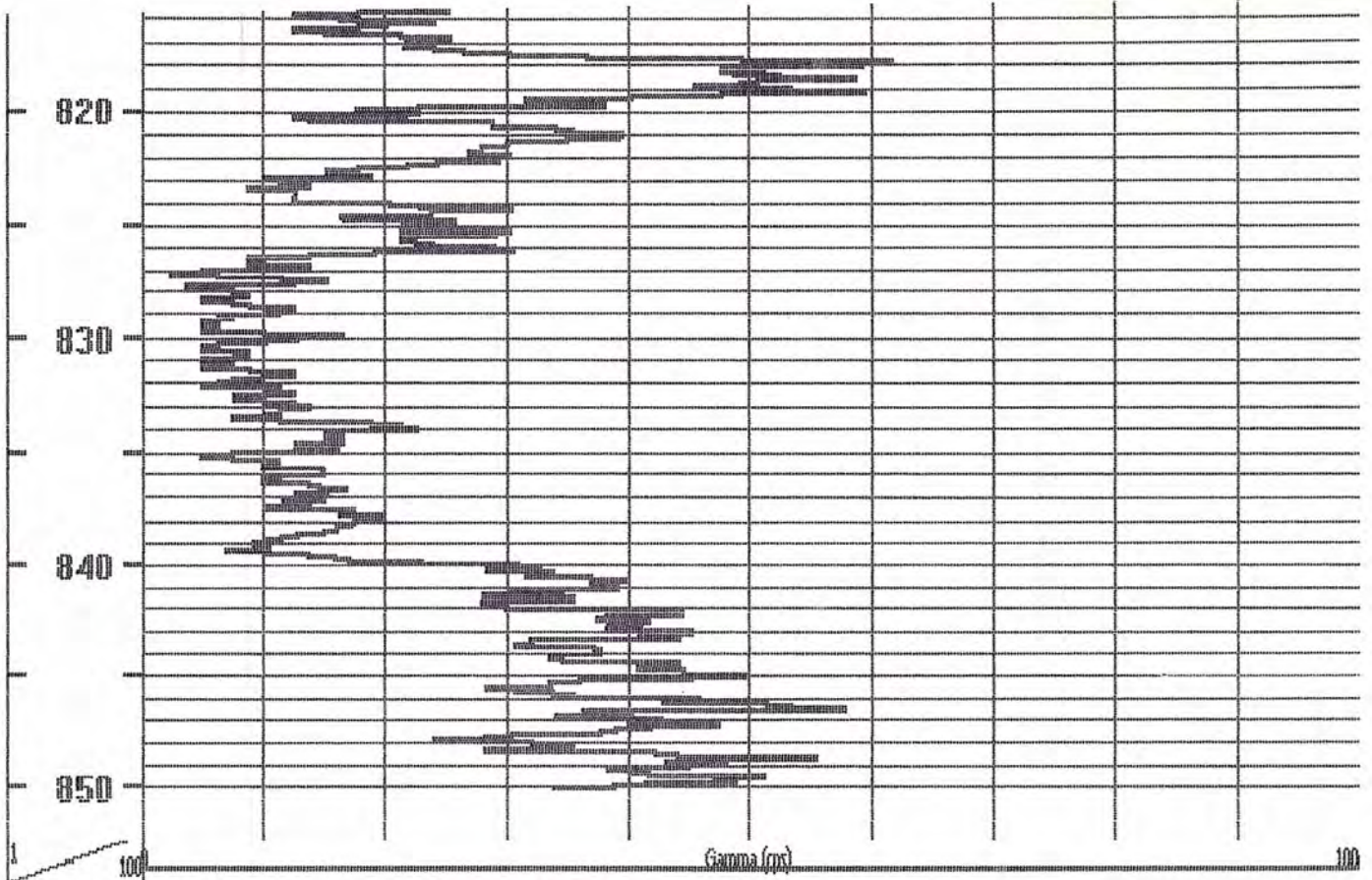












Date: Wednesday, June 29, 2011 Time: 07:22 File: C:\My Documents\17\WPB-130up.rd

**Section 3**

**VPB 130 Groundwater Sample Log Sheets**



# QA SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE Sample ID No.: BP-VPB-TB-061311  
 Project Number: 112G00622 Sampled By: SJC  
 Sample Location: \_\_\_\_\_ C.O.C. Number: 028450  
 QA Sample Type:  
 Trip Blank  Rinsate Blank  
 Source Water Blank  Other Blank \_\_\_\_\_

SAMPLING DATA:	WATER SOURCE:
Date: <u>6/13/11</u> Time: <u>1100</u> Method: <u>LAB</u>	<input checked="" type="checkbox"/> Laboratory Prepared <input type="checkbox"/> Tap <input type="checkbox"/> Purchased <input type="checkbox"/> Fire Hydrant <input type="checkbox"/> Other _____

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):	RINSATE INFORMATION (If Applicable):
Product Name: _____ Supplier: _____ Manufacturer: _____ Order Number: _____ Lot Number: _____ Expiration Date: _____	Media Type: _____ Equipment Used: _____ Equipment Type: <input type="checkbox"/> Dedicated <input type="checkbox"/> Reusable

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs	Cool 4°C /HCL	<u>240 ml GLASS VIALS</u>	<u>YES</u> / NO

**OBSERVATIONS / NOTES:**

Signature(s): SJ Conti



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-057**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/13/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1205</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LT GRAY</u>	<u>5.47</u>	<u>678</u>	<u>23.92</u>	<u>396</u>	<u>1.63</u>	<u>39</u>	<u>—</u>

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable:		Signature(s):  <i>SJ Conci</i>
MS/MSD	Duplicate ID No.:	





# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-102**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 13 / 11	LT GRAY	5.16	238	24.78	183	3.41	119	—

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	✓
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD Duplicate ID No.:

### Signature(s):

*SJConti*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: BP-VPB130-GW-147  
 Sample Location: VPB-130  
 Sampled By: SJC

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/14/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1020</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LT BRN</u>	<u>5.44</u>	<u>256</u>	<u>20.48</u>	<u>149</u>	<u>4.31</u>	<u>124</u>	<u>---</u>

### PURGE DATA:

Date: <u>NA</u>	<u>GRAY</u>							
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2</u> -40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): SJ Conti



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-207**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/14/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1340</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>DK GRAY</u>	—	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**DK GRAY - TURBID  
 SANDY CLAY OBSERVED  
 ON EXPOSED SCREEN.**

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s):



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-227**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 14 / 11	LT BRN	5.56	220	22.03	751	3.53	100	—

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	✓
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD Duplicate ID No.:

### Signature(s):

*SJC*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-247**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/15/11	LT BRN	5.39	182	19.17	239	4.09	117	—

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): *SJ Conti*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-267**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	<u>6/15/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	<u>1130</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method:	Hydropunch	<u>LT BRN</u>	<u>5.60</u>	<u>232</u>	<u>20.59</u>	<u>244</u>	<u>4.12</u>	<u>74</u>	<u>-</u>

### PURGE DATA:

Date:	NA								
Method:	NA								
Monitor Reading (ppm):									
Well Casing Diameter & Material Type:									
Total Well Depth (TD):									
Static Water Level (WL):									
One Casing Volume(gal/L):									
Start Purge (hrs):									
End Purge (hrs):									
Total Purge Time (min):									
Total Vol. Purged (gal/L):									

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable:		Signature(s): <i>SJLontic</i>
MS/MSD	Duplicate ID No.:	



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-287**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: **028450**  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <b>6/15/11</b>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <b>1315</b>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <b>Hydropunch</b>	<b>DK GRAY</b>	<b>5.74</b>	<b>210</b>	<b>22.66</b>		<b>2.80</b>	<b>47</b>	<b>-</b>

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
<b>VOCs</b>	<b>HCL/4 DEG C</b>	<b>2-40ml Glass Vials</b>	<input checked="" type="checkbox"/>
<b>TOC</b>	<b>4 DEG C</b>		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**DARK GRAY SAND COLLECTED ON HP SCREEN**

### Circle if Applicable:

<b>MS/MSD</b>	<b>Duplicate ID No.:</b>
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Signature(s):



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-307**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6 / 15 / 11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1500</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>5-6</u>	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

*GRAY SANDY CLAY ON SCREEN.*

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s):





Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-327**  
Sample Location: **VPB-130**  
Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/16/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1040</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LT GENI</u>	<u>5.47</u>	<u>.129</u>	<u>24.90</u>	<u>1300</u>	<u>3.70</u>	<u>107</u>	<u>—</u>

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
Check box if not enough volume.

Used pH paper instead of water quality meter  
Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): SJC



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-347**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 16 / 11	LT GRAY	5.48	179	24.23	1152	3.89	89	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	✓
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
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Signature(s): *SJ Contu*



# QA SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE Sample ID No.: BP-VPB-TB-061711  
 Project Number: 112G00622 Sampled By: SJC  
 Sample Location: \_\_\_\_\_ C.O.C. Number: 028454  
 QA Sample Type:  
 Trip Blank  Rinsate Blank  
 Source Water Blank  Other Blank \_\_\_\_\_

SAMPLING DATA:	WATER SOURCE:
Date: <u>6/17/11</u> Time: <u>0700</u> Method: <u>LAB</u>	<input checked="" type="checkbox"/> Laboratory Prepared <input type="checkbox"/> Tap <input type="checkbox"/> Purchased <input type="checkbox"/> Fire Hydrant <input type="checkbox"/> Other _____

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):	RINSATE INFORMATION (If Applicable):
Product Name: _____ Supplier: _____ Manufacturer: _____ Order Number: _____ Lot Number: _____ Expiration Date: _____	Media Type: _____ Equipment Used: _____ Equipment Type: <input type="checkbox"/> Dedicated <input type="checkbox"/> Reusable

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs	Cool 4°C /HCL	2-40 ml GLASS VIALS	YES / NO

**OBSERVATIONS / NOTES:**

Signature(s): SJC



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-367**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028450  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 16 / 11	VL. BRN	5.78	130	21.03	56.9	2.34	8	—

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

<b>Circle if Applicable:</b>		<b>Signature(s):</b>  <i>SJC Cortez</i>
MS/MSD	Duplicate ID No.:	



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-387**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028454  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/20/18	GRAY	6.19	724	22.45	>999	2.06	-53	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	✓
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s):



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW- 407**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028454  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/20/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1145</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>5-6</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2- 40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s):



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-427**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028454  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/20/11	LT. GRAY	6.29	602	23.98	>999	3.10	-135	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	✓
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable: \_\_\_\_\_ Signature(s): *SJC Conti*

MS/MSD	Duplicate ID No.:
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# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: BP-VPB130-GW- 447  
 Sample Location: VPB-130  
 Sampled By: SJC

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028454  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
<u>6/20/11</u>	<u>GRAY</u>	<u>5.8</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>1530</u>								
Method: <u>Hydropunch</u>								

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable: MS/MSD Duplicate ID No.: \_\_\_\_\_ Signature(s): SJC Conti





# QA SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE Sample ID No.: BP-VPB-TB-062111  
 Project Number: 112G00622 Sampled By: SJC  
 Sample Location: VPB-130 C.O.C. Number: 028455  
 QA Sample Type:  
 Trip Blank  Rinsate Blank  
 Source Water Blank  Other Blank \_\_\_\_\_

**SAMPLING DATA:**

Date: 6/21/11  
 Time: 0800  
 Method: LAB

**WATER SOURCE:**

Laboratory Prepared  Tap  
 Purchased  Fire Hydrant  
 Other \_\_\_\_\_

**PURCHASED WATER INFORMATION  
(If Applicable as Source or Rinsate Water):**

Product Name: \_\_\_\_\_  
 Supplier: \_\_\_\_\_  
 Manufacturer: \_\_\_\_\_  
 Order Number: \_\_\_\_\_  
 Lot Number: \_\_\_\_\_  
 Expiration Date: \_\_\_\_\_

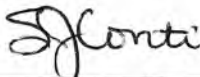
**RINSATE INFORMATION  
(If Applicable):**

Media Type: \_\_\_\_\_  
 Equipment Used: \_\_\_\_\_  
 Equipment Type:  
 Dedicated  
 Reusable

**SAMPLE COLLECTION INFORMATION:**

Analysis	Preservative	Container Requirements	Collected
VOCs	Cool 4°C /HCL	(2-40 ml GLASS VIALS	(YES / NO

**OBSERVATIONS / NOTES:**

Signature(s): 



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: <sup>SB</sup> **BP-VPB130-GW-467**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/21/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>0845</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	—	—	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	
TOC	4 DEG C	<u>1</u> 40Z	✓

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.  **DENSE GRAY SANDY CLAY/CLAYEY SAND - MOIST > WET**

Used pH paper instead of water quality meter  
 Check box if used pH paper.  **NO HP. HERE.**

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): *SJC*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: BP-VPB130-GW-487  
 Sample Location: VPB-130  
 Sampled By: SJC

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/21/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1030</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>6.45</u>	<u>615</u>	<u>26.74</u>	<u>&gt;999</u>	<u>3.34</u>	<u>-30</u>	<u>-</u>

### PURGE DATA:

Date: NA								
Method: NA								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	<u>SJC</u>



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW- 507**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 21 / 11	LT GRAY	5.68	123	26.80	1948	2.27	-70	

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s):

*SJC Conti*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW- 527**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028 455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/21/11	GRAY	5.78	-142	25.61	>999	2.83	-61	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*S. Conti*



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-547**  
Sample Location: **VPB-130**  
Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
Type of Sample:  
 Low Concentration  
 High Concentration

**SAMPLING DATA:**

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/22/11	LT GRAY	6.52	.314	22.56	>999	4.64	-98	-

**PURGE DATA:**

6.38 SJC

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION: Strike thru analysis not required**

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

**OBSERVATIONS / NOTES:**

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
Check box if not enough volume.

Used pH paper instead of water quality meter  
Check box if used pH paper.

**Circle if Applicable:**

MS/MSD

Duplicate ID No.: \_\_\_\_\_

**Signature(s):**

*SJC Conti*



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-567**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: **028455**  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <b>6/22/11</b>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <b>1215</b>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <b>Hydropunch</b>	<b>LT GRAY</b>	—	—	—	—	—	—	—

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<del>2</del> 40ml Glass Vials	✓
TOC	4 DEG C	1	

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  ONLY ENOUGH FOR 1 VIAL  
 Check box if not enough volume.

Used pH paper instead of water quality meter   
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): *SJC*



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-587**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/22/11	LT GRAY	6.18	207	22.86	> 999	1.37	8	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJ Conti*





Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-~~GW~~ 607**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/23/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>0920</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	—	—	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	
TOC	4 DEG C	1 - 8 OZ	<input checked="" type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

GRAY SANDY CLAY (SC)  
 MOIST LAMINATED  
 DENSE

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJ Conte*



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: BP-VPB130-GW-627  
 Sample Location: VPB-130  
 Sampled By: SJC

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
<u>6/23/11</u>	<u>GRAY</u>	<u>5.6</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
<u>1145</u>								
Method: <u>Hydropunch</u>								

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
<u>VOCS</u>	<u>HCL/4 DEG C</u>	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
<u>TOC</u>	<u>4 DEG C</u>		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

### Circle if Applicable:

<u>MS/MSD</u>	Duplicate ID No.:
---------------	-------------------

Signature(s): SJConte



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-647**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028455  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/23/11	GRAY	5→6	—	—	—	—	—	—
1430								
Method: Hydropunch								

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

*SJ Conti*



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: BP-VPB130-GW-667  
 Sample Location: VPB-130  
 Sampled By: SJC

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>6/24/11</u>	<u>GRAY</u>	<u>6.94</u>	<u>.509</u>	<u>20.94</u>	<u>876</u>	<u>1.30</u>	<u>-196</u>	

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2</u> 40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Circle if Applicable: MS/MSD Duplicate ID No.: \_\_\_\_\_ Signature(s): SJC



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-687**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/27/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1130</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>5-6</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-4</u> ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  Check box if not enough volume.

Used pH paper instead of water quality meter  Check box if used pH paper.

SANDY CLAY ON SCREEN (EXPOSED)  
SAMPLE GRAY - COULD BE MIXED W/ MUD

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	<u>SJC</u>



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: <sup>SW</sup> **BP-VPB130-GW-063711**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/27/11	CLEAR	8.43	122	24.67	2.78	6.56	335	-

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

SOURCE WATER FROM HYDRANT

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): *J. Conte*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: <sup>DM</sup> **BP-VPB130-GW-700**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/27/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1200</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>6.74</u>	<u>792</u>	<u>23.21</u>	<u>&gt; 999</u>	<u>2.47</u>	<u>-80</u>	<u>-</u>

### PURGE DATA:

Date: NA								
Method: NA								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**DRILLING MUD**  
**WHILE GOING TO**  
**~ 700'**

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJC*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: BP-VPB130-GW-707  
 Sample Location: VPB-130  
 Sampled By: SJC

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/27/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1320</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>GRAY</u>	<u>7.22</u>	<u>775</u>	<u>24.04</u>	<u>&gt;999</u>	<u>2.64</u>	<u>-156</u>	<u>-</u>

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

V. TURBID - DRIED MORE  
 LIKE SAND, THAN CLAY  
 BUT SAMPLE IS TURBID  
 MAY HAVE SOME DRILL  
 MUD

### Circle if Applicable:

<input type="checkbox"/> MS/MSD	Duplicate ID No.: _____
---------------------------------	-------------------------

### Signature(s):

*SJC*





# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-727**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028456  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/27/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>6:27:11</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	—	—	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	NO
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**NO SAMPLE ATTEMPTED**  
**TOOK SPLIT SPOON**  
**WAS SANDY CLAY**

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJC*



# QA SAMPLE LOG SHEET

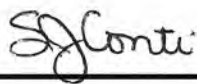
Project Site Name: BETHPAGE OU-2 OFFSITE Sample ID No.: BP-VPB-TB-062811  
 Project Number: 112G00622 Sampled By: SJC  
 Sample Location: VPB-130 C.O.C. Number: 028457  
 QA Sample Type:  
 Trip Blank  Rinsate Blank  
 Source Water Blank  Other Blank \_\_\_\_\_

SAMPLING DATA:	WATER SOURCE:
Date: <u>6/28/11</u> Time: <u>0800</u> Method: <u>LAB</u>	<input checked="" type="checkbox"/> Laboratory Prepared <input type="checkbox"/> Tap <input type="checkbox"/> Purchased <input type="checkbox"/> Fire Hydrant <input type="checkbox"/> Other _____

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):	RINSATE INFORMATION (If Applicable):
Product Name: _____ Supplier: _____ Manufacturer: _____ Order Number: _____ Lot Number: _____ Expiration Date: _____	Media Type: _____ Equipment Used: _____ Equipment Type: <input type="checkbox"/> Dedicated <input type="checkbox"/> Reusable

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs	Cool 4°C /HCL	(2-40 ml GLASS VIALS	(YES) NO

**OBSERVATIONS / NOTES:**

Signature(s):  




Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-747**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028457  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/28/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1000</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LT GRAY</u>	<u>6.65</u>	<u>553</u>	<u>22.63</u>	<u>755</u>	<u>3.09</u>	<u>-283</u>	<u>-</u>

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters   
 Check box if not enough volume.

Used pH paper instead of water quality meter   
 Check box if used pH paper.

Circle if Applicable:		Signature(s):  <i>SJC</i>
MS/MSD	Duplicate ID No.:	



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-767**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028457  
 Type of Sample:  
 Low Concentration  
 High Concentration

**SAMPLING DATA:**

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6 / 28 / 11	LT GRAY	5.95	230	24.11	>999	3.06	-149	-

**PURGE DATA:**

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION: Strike thru analysis not required**

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

**OBSERVATIONS / NOTES:**

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**Circle if Applicable:**

MS/MSD	Duplicate ID No.:
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**Signature(s):**

*SJC*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-787**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028457  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/28/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1440</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LT GRAY</u>	—	—	—	—	—	—	—

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<del>2</del> - 40ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C	<del>1</del>	<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

**ONLY 1 VIAL - SCREEN COATED WITH WHITE SANDY CLAY - SAMPLE COULD HAVE SOME DRIVING MUD**

Circle if Applicable:		Signature(s):  <i>SJ Conti</i>
MS/MSD	Duplicate ID No.:	



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW- 807**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028457  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
6/29/11	LT GRAY	6.20	.596	21.83	>999	2.40	-575	

### PURGE DATA:

Date:	NA							
Method:	NA							
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-4ml Glass Vials	<input checked="" type="checkbox"/>
TOC	4 DEG C		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters   
 Check box if not enough volume.

Used pH paper instead of water quality meter   
 Check box if used pH paper.

Circle if Applicable:		Signature(s): <i>SJ Conti</i>
MS/MSD	Duplicate ID No.:	



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW-827**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/29/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1130</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>NA</u>							→

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	NO
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters   
 Check box if not enough volume.

Used pH paper instead of water quality meter   
 Check box if used pH paper.

**TOOK SPOON 826-827 WAS DENSE/STIFF GLAYEY SAND/ SANDY CLAY. MOIST → WET SS # 4 w/ 1.0 REC. GOOD Sample.**

### Circle if Applicable:

<input type="checkbox"/> MS/MSD	<input type="checkbox"/> Duplicate ID No.:
---------------------------------	--

Signature(s): *SJC*



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: **BP-VPB130-GW- 247**  
 Sample Location: **VPB-130**  
 Sampled By: **SJC**

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: Vertical Profile Boring
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028457  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date: <u>6/29/11</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1330</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>LTGRAY</u>	<u>6</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

### PURGE DATA:

Date: <u>NA</u>								
Method: <u>NA</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	<u>2-40ml Glass Vials</u>	<input checked="" type="checkbox"/>
TOC	4 DEG C		

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

- Not enough volume for water quality parameters  
Check box if not enough volume.
- Used pH paper instead of water quality meter  
Check box if used pH paper.

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJC*



**Section 4**  
**VPB 130 Analytical Data Sheets**  
**(Chemtech and AirToxics)**

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-057	SDG No.:	C2731
Lab Sample ID:	C2731-06	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035710.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
------------	-----------	-------	-----------	-----	------------	-------

### TARGETS

75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	88 0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-057	SDG No.:	C2731
Lab Sample ID:	C2731-06	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035710.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	51.8		70 - 120	104%	SPK: 50
1868-53-7	Dibromofluoromethane	49.6		85 - 115	99%	SPK: 50
2037-26-5	Toluene-d8	44.1		85 - 120	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		75 - 120	89%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	628732	3.92			
540-36-3	1,4-Difluorobenzene	1141970	4.74			
3114-55-4	Chlorobenzene-d5	788878	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	336932	13.41			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-102	SDG No.:	C2731
Lab Sample ID:	C2731-07	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041662.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	2.5		0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	53		0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	7.5		0.36	1	ug/L
110-82-7	Cyclohexane	10		0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.76	J	0.35	1	ug/L
67-66-3	Chloroform	2.2		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	1.9		0.2	1	ug/L
71-43-2	Benzene	600	E	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	10		0.48	1	ug/L
79-01-6	Trichloroethene	7.8		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	90 0.5	U	0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-102	SDG No.:	C2731
Lab Sample ID:	C2731-07	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041662.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	1		0.41	1	ug/L
127-18-4	Tetrachloroethene	2.7		0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	1.8		0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	59.8		70 - 120	120%	SPK: 50
1868-53-7	Dibromofluoromethane	52		85 - 115	104%	SPK: 50
2037-26-5	Toluene-d8	58.9		85 - 120	118%	SPK: 50
460-00-4	4-Bromofluorobenzene	57.6		75 - 120	115%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	305203	4.08			
540-36-3	1,4-Difluorobenzene	525502	4.6			
3114-55-4	Chlorobenzene-d5	467490	7.95			
3855-82-1	1,4-Dichlorobenzene-d4	224273	10.43			

### TENTATIVE IDENTIFIED COMPOUNDS

000106-97-8	Butane	91	54	J	1.21	ug/L
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## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-102	SDG No.:	C2731
Lab Sample ID:	C2731-07	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041662.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
000078-78-4	Butane, 2-methyl-	36	J		1.39	ug/L
	unknown1.44	110	J		1.44	ug/L
000287-92-3	Cyclopentane	67	J		2.05	ug/L
000096-14-0	Pentane, 3-methyl-	17	J		2.2	ug/L
75-65-0	Tert butyl alcohol	140	J		2.51	ug/L
108-20-3	Diisopropyl ether	4.2	J		2.71	ug/L
000096-37-7	Cyclopentane, methyl-	21	J		2.84	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-102DL	SDG No.:	C2731
Lab Sample ID:	C2731-07DL	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035701.D	10		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	25	U	5.5	50	ug/L
74-87-3	Chloromethane	25	U	5.4	50	ug/L
75-01-4	Vinyl Chloride	25	U	3.4	50	ug/L
74-83-9	Bromomethane	25	U	6.2	50	ug/L
75-00-3	Chloroethane	25	U	6.6	50	ug/L
75-69-4	Trichlorofluoromethane	25	U	3.5	50	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	25	U	4.5	50	ug/L
75-35-4	1,1-Dichloroethene	25	U	4.7	50	ug/L
67-64-1	Acetone	125	U	28	250	ug/L
75-15-0	Carbon Disulfide	25	U	5.4	50	ug/L
1634-04-4	Methyl tert-butyl Ether	43	JD	3.5	50	ug/L
79-20-9	Methyl Acetate	25	U	8.3	50	ug/L
75-09-2	Methylene Chloride	25	U	4.1	50	ug/L
156-60-5	trans-1,2-Dichloroethene	25	U	4.1	50	ug/L
75-34-3	1,1-Dichloroethane	6.9	JD	3.6	50	ug/L
110-82-7	Cyclohexane	25	U	5.5	50	ug/L
78-93-3	2-Butanone	125	U	13	250	ug/L
56-23-5	Carbon Tetrachloride	25	U	6.2	50	ug/L
156-59-2	cis-1,2-Dichloroethene	25	U	3.5	50	ug/L
67-66-3	Chloroform	25	U	3.4	50	ug/L
71-55-6	1,1,1-Trichloroethane	25	U	4	50	ug/L
108-87-2	Methylcyclohexane	25	U	6.8	50	ug/L
71-43-2	Benzene	440	D	3.2	50	ug/L
107-06-2	1,2-Dichloroethane	7.4	JD	4.8	50	ug/L
79-01-6	Trichloroethene	8.1	JD	2.8	50	ug/L
78-87-5	1,2-Dichloropropane	25	U	4.6	50	ug/L
75-27-4	Bromodichloromethane	25	U	3.6	50	ug/L
108-10-1	4-Methyl-2-Pentanone	125	U	21	250	ug/L
108-88-3	Toluene	25	U	3.7	50	ug/L
10061-02-6	t-1,3-Dichloropropene	25	U	2.9	50	ug/L
10061-01-5	cis-1,3-Dichloropropene	93 25	U	3.1	50	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/13/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-102DL	SDG No.:	C2731
Lab Sample ID:	C2731-07DL	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035701.D	10		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	25	U	3.8	50	ug/L
591-78-6	2-Hexanone	125	U	19	250	ug/L
124-48-1	Dibromochloromethane	25	U	5.2	50	ug/L
106-93-4	1,2-Dibromoethane	25	U	4.1	50	ug/L
127-18-4	Tetrachloroethene	25	U	2.7	50	ug/L
108-90-7	Chlorobenzene	25	U	4.9	50	ug/L
100-41-4	Ethyl Benzene	25	U	5.3	50	ug/L
179601-23-1	m/p-Xylenes	50	U	9.5	100	ug/L
95-47-6	o-Xylene	25	U	4.3	50	ug/L
100-42-5	Styrene	25	U	3.6	50	ug/L
75-25-2	Bromoform	25	U	4.7	50	ug/L
98-82-8	Isopropylbenzene	25	U	4.5	50	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	25	U	3.1	50	ug/L
541-73-1	1,3-Dichlorobenzene	25	U	4.3	50	ug/L
106-46-7	1,4-Dichlorobenzene	25	U	3.2	50	ug/L
95-50-1	1,2-Dichlorobenzene	25	U	4.5	50	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	25	U	4.6	50	ug/L
120-82-1	1,2,4-Trichlorobenzene	25	U	6.2	50	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	47.6		66 - 150	95%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		76 - 130	97%	SPK: 50
2037-26-5	Toluene-d8	48.5		78 - 121	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		70 - 131	91%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	748240	3.92			
540-36-3	1,4-Difluorobenzene	1304220	4.74			
3114-55-4	Chlorobenzene-d5	929475	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	372548	13.41			



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-147	SDG No.:	C2731
Lab Sample ID:	C2731-08	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035711.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	2.9		0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	1.8		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.78	J	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	95 0.5	U	0.31	1	ug/L

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-147	SDG No.:	C2731
Lab Sample ID:	C2731-08	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035711.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	49.9		70 - 120	100%	SPK: 50
1868-53-7	Dibromofluoromethane	48.9		85 - 115	98%	SPK: 50
2037-26-5	Toluene-d8	44.1		85 - 120	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.7		75 - 120	87%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	659682	3.93			
540-36-3	1,4-Difluorobenzene	1172140	4.74			
3114-55-4	Chlorobenzene-d5	817117	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	326456	13.41			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VBB130-GW-207	SDG No.:	C2731
Lab Sample ID:	C2731-17	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	1 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027465.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	12.5	U	3.2	25	ug/Kg
74-87-3	Chloromethane	12.5	U	4.3	25	ug/Kg
75-01-4	Vinyl Chloride	12.5	U	6.2	25	ug/Kg
74-83-9	Bromomethane	12.5	U	12	25	ug/Kg
75-00-3	Chloroethane	12.5	U	7	25	ug/Kg
75-69-4	Trichlorofluoromethane	12.5	U	6.6	25	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	12.5	U	6.6	25	ug/Kg
75-35-4	1,1-Dichloroethene	12.5	U	7.4	25	ug/Kg
67-64-1	Acetone	60	U	15	120	ug/Kg
75-15-0	Carbon Disulfide	12.5	U	5.3	25	ug/Kg
1634-04-4	Methyl tert-butyl Ether	12.5	U	4.8	25	ug/Kg
79-20-9	Methyl Acetate	12.5	U	7.6	25	ug/Kg
75-09-2	Methylene Chloride	99		7.1	25	ug/Kg
156-60-5	trans-1,2-Dichloroethene	12.5	U	3.4	25	ug/Kg
75-34-3	1,1-Dichloroethane	12.5	U	4.7	25	ug/Kg
110-82-7	Cyclohexane	12.5	U	5	25	ug/Kg
78-93-3	2-Butanone	60	U	16	120	ug/Kg
56-23-5	Carbon Tetrachloride	12.5	U	5	25	ug/Kg
156-59-2	cis-1,2-Dichloroethene	12.5	U	4.4	25	ug/Kg
67-66-3	Chloroform	12.5	U	3.7	25	ug/Kg
71-55-6	1,1,1-Trichloroethane	12.5	U	4.4	25	ug/Kg
108-87-2	Methylcyclohexane	12.5	U	5.3	25	ug/Kg
71-43-2	Benzene	12.5	U	1.9	25	ug/Kg
107-06-2	1,2-Dichloroethane	12.5	U	3.2	25	ug/Kg
79-01-6	Trichloroethene	12.5	U	4.3	25	ug/Kg
78-87-5	1,2-Dichloropropane	12.5	U	1.3	25	ug/Kg
75-27-4	Bromodichloromethane	12.5	U	3.1	25	ug/Kg
108-10-1	4-Methyl-2-Pentanone	60	U	15	120	ug/Kg
108-88-3	Toluene	12.5	U	3.2	25	ug/Kg
10061-02-6	t-1,3-Dichloropropene	12.5	U	4	25	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	97 12.5	U	3.6	25	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VBB130-GW-207	SDG No.:	C2731
Lab Sample ID:	C2731-17	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	1 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027465.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	12.5	U	4.5	25	ug/Kg
591-78-6	2-Hexanone	60	U	20	120	ug/Kg
124-48-1	Dibromochloromethane	12.5	U	2.7	25	ug/Kg
106-93-4	1,2-Dibromoethane	12.5	U	3.2	25	ug/Kg
127-18-4	Tetrachloroethene	12.5	U	5	25	ug/Kg
108-90-7	Chlorobenzene	12.5	U	2.5	25	ug/Kg
100-41-4	Ethyl Benzene	12.5	U	3.1	25	ug/Kg
179601-23-1	m/p-Xylenes	25	U	3.6	50	ug/Kg
95-47-6	o-Xylene	12.5	U	3.4	25	ug/Kg
100-42-5	Styrene	12.5	U	2.2	25	ug/Kg
75-25-2	Bromoform	12.5	U	3.7	25	ug/Kg
98-82-8	Isopropylbenzene	12.5	U	2.4	25	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	12.5	U	2.3	25	ug/Kg
541-73-1	1,3-Dichlorobenzene	12.5	U	1.8	25	ug/Kg
106-46-7	1,4-Dichlorobenzene	12.5	U	2	25	ug/Kg
95-50-1	1,2-Dichlorobenzene	12.5	U	3.1	25	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	12.5	U	4.4	25	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	12.5	U	3.5	25	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	35.3		55 - 158	71%	SPK: 50
1868-53-7	Dibromofluoromethane	50.2		53 - 156	100%	SPK: 50
2037-26-5	Toluene-d8	45.8		85 - 115	92%	SPK: 50
460-00-4	4-Bromofluorobenzene	30.9	*	85 - 120	62%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	476254	3.19			
540-36-3	1,4-Difluorobenzene	575042	3.79			
3114-55-4	Chlorobenzene-d5	360885	7.13			
3855-82-1	1,4-Dichlorobenzene-d4	98532	9.02			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	98	130	J	1.78	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-227	SDG No.:	C2731
Lab Sample ID:	C2731-10	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041664.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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### TARGETS

75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.67	J	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	1.2		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	1.1		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	7.8		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	99 0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-227	SDG No.:	C2731
Lab Sample ID:	C2731-10	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041664.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	66.8	*	70 - 120	134%	SPK: 50
1868-53-7	Dibromofluoromethane	52.1		85 - 115	104%	SPK: 50
2037-26-5	Toluene-d8	57.6		85 - 120	115%	SPK: 50
460-00-4	4-Bromofluorobenzene	55		75 - 120	110%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	309547	4.08			
540-36-3	1,4-Difluorobenzene	580403	4.6			
3114-55-4	Chlorobenzene-d5	536662	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	250781	10.44			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-227RE	SDG No.:	C2731
Lab Sample ID:	C2731-10RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041700.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.97	J	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.57	J	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	2.9		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	101 0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/14/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-227RE	SDG No.:	C2731
Lab Sample ID:	C2731-10RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041700.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	62.3	*	70 - 120	125%	SPK: 50
1868-53-7	Dibromofluoromethane	53		85 - 115	106%	SPK: 50
2037-26-5	Toluene-d8	59.5		85 - 120	119%	SPK: 50
460-00-4	4-Bromofluorobenzene	60.7	*	75 - 120	121%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	460158	4.07			
540-36-3	1,4-Difluorobenzene	838424	4.59			
3114-55-4	Chlorobenzene-d5	806496	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	332010	10.44			



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-247	SDG No.:	C2731
Lab Sample ID:	C2731-11	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041663.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	2.1		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	1.4		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	4.4		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	103 0.5	U	0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-247	SDG No.:	C2731
Lab Sample ID:	C2731-11	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041663.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	58.1		70 - 120	116%	SPK: 50
1868-53-7	Dibromofluoromethane	52.7		85 - 115	105%	SPK: 50
2037-26-5	Toluene-d8	57.1		85 - 120	114%	SPK: 50
460-00-4	4-Bromofluorobenzene	53.2		75 - 120	106%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	293352	4.07			
540-36-3	1,4-Difluorobenzene	579350	4.6			
3114-55-4	Chlorobenzene-d5	535278	7.95			
3855-82-1	1,4-Dichlorobenzene-d4	237074	10.43			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
	unknown9.46	104	50	J	9.46	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-247RE	SDG No.:	C2731
Lab Sample ID:	C2731-11RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041701.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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### TARGETS

75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	1.8		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.88	J	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	2.8		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	105 0.5	U	0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-247RE	SDG No.:	C2731
Lab Sample ID:	C2731-11RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041701.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	67.4	*	70 - 120	135%	SPK: 50
1868-53-7	Dibromofluoromethane	51.7		85 - 115	103%	SPK: 50
2037-26-5	Toluene-d8	60		85 - 120	120%	SPK: 50
460-00-4	4-Bromofluorobenzene	62.2	*	75 - 120	125%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	320646	4.08			
540-36-3	1,4-Difluorobenzene	662966	4.6			
3114-55-4	Chlorobenzene-d5	625401	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	306175	10.43			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-267	SDG No.:	C2731
Lab Sample ID:	C2731-12	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041667.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	2.9		0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	8.3		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	1.9		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	5		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	107 0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-267	SDG No.:	C2731
Lab Sample ID:	C2731-12	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041667.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	69.2	*	70 - 120	138%	SPK: 50
1868-53-7	Dibromofluoromethane	55.6		85 - 115	111%	SPK: 50
2037-26-5	Toluene-d8	57.3		85 - 120	115%	SPK: 50
460-00-4	4-Bromofluorobenzene	58.1		75 - 120	116%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	266900	4.08			
540-36-3	1,4-Difluorobenzene	520198	4.6			
3114-55-4	Chlorobenzene-d5	482239	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	232138	10.43			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-267RE	SDG No.:	C2731
Lab Sample ID:	C2731-12RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041702.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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### TARGETS

75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	1.8		0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	5.8		0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	1.5		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	3		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	109 0.5	U	0.31	1	ug/L

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-267RE	SDG No.:	C2731
Lab Sample ID:	C2731-12RE	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041702.D	1		06/21/11	VH062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	66.8	*	70 - 120	134%	SPK: 50
1868-53-7	Dibromofluoromethane	51.2		85 - 115	102%	SPK: 50
2037-26-5	Toluene-d8	56.1		85 - 120	112%	SPK: 50
460-00-4	4-Bromofluorobenzene	58.8		75 - 120	118%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	417141	4.07			
540-36-3	1,4-Difluorobenzene	793988	4.6			
3114-55-4	Chlorobenzene-d5	732014	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	305305	10.43			



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-287	SDG No.:	C2731
Lab Sample ID:	C2731-13	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041657.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.55	J	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-287	SDG No.:	C2731
Lab Sample ID:	C2731-13	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041657.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	59.3		70 - 120	119%	SPK: 50
1868-53-7	Dibromofluoromethane	49		85 - 115	98%	SPK: 50
2037-26-5	Toluene-d8	55		85 - 120	110%	SPK: 50
460-00-4	4-Bromofluorobenzene	54.8		75 - 120	110%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	517199	4.08			
540-36-3	1,4-Difluorobenzene	984196	4.6			
3114-55-4	Chlorobenzene-d5	848220	7.94			
3855-82-1	1,4-Dichlorobenzene-d4	364109	10.43			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-307	SDG No.:	C2731
Lab Sample ID:	C2731-14	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035712.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	1.5	J	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/15/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-307	SDG No.:	C2731
Lab Sample ID:	C2731-14	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035712.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L

**SURROGATES**

17060-07-0	1,2-Dichloroethane-d4	52.1		70 - 120	104%	SPK: 50
1868-53-7	Dibromofluoromethane	51.4		85 - 115	103%	SPK: 50
2037-26-5	Toluene-d8	44.9		85 - 120	90%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.4		75 - 120	89%	SPK: 50

**INTERNAL STANDARDS**

363-72-4	Pentafluorobenzene	607733	3.92		
540-36-3	1,4-Difluorobenzene	1111480	4.74		
3114-55-4	Chlorobenzene-d5	761567	9.7		
3855-82-1	1,4-Dichlorobenzene-d4	304245	13.41		

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/16/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-327	SDG No.:	C2731
Lab Sample ID:	C2731-15	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035713.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/16/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-327	SDG No.:	C2731
Lab Sample ID:	C2731-15	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035713.D	1		06/21/11	VG062111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	51.1		70 - 120	102%	SPK: 50
1868-53-7	Dibromofluoromethane	51.9		85 - 115	104%	SPK: 50
2037-26-5	Toluene-d8	44.2		85 - 120	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.6		75 - 120	91%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	630444	3.93			
540-36-3	1,4-Difluorobenzene	1099600	4.74			
3114-55-4	Chlorobenzene-d5	787434	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	323189	13.41			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/16/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-347	SDG No.:	C2731
Lab Sample ID:	C2731-16	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041660.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	1		0.2	1	ug/L
74-87-3	Chloromethane	1		0.2	1	ug/L
75-01-4	Vinyl Chloride	1		0.34	1	ug/L
74-83-9	Bromomethane	1		0.2	1	ug/L
75-00-3	Chloroethane	1		0.2	1	ug/L
75-69-4	Trichlorofluoromethane	1		0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	1		0.45	1	ug/L
75-35-4	1,1-Dichloroethene	1		0.47	1	ug/L
67-64-1	Acetone	5		0.5	5	ug/L
75-15-0	Carbon Disulfide	1		0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	1		0.35	1	ug/L
79-20-9	Methyl Acetate	1		0.2	1	ug/L
75-09-2	Methylene Chloride	1		0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	1		0.41	1	ug/L
75-34-3	1,1-Dichloroethane	1		0.36	1	ug/L
110-82-7	Cyclohexane	1		0.2	1	ug/L
78-93-3	2-Butanone	5		1.3	5	ug/L
56-23-5	Carbon Tetrachloride	1		0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	1		0.35	1	ug/L
67-66-3	Chloroform	1		0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	1		0.4	1	ug/L
108-87-2	Methylcyclohexane	1		0.2	1	ug/L
71-43-2	Benzene	1		0.32	1	ug/L
107-06-2	1,2-Dichloroethane	1		0.48	1	ug/L
79-01-6	Trichloroethene	1		0.28	1	ug/L
78-87-5	1,2-Dichloropropane	1		0.46	1	ug/L
75-27-4	Bromodichloromethane	1		0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	5		2.1	5	ug/L
108-88-3	Toluene	1		0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	1		0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	117		0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/16/11
Project:	Bethpage CTO-066	Date Received:	06/17/11
Client Sample ID:	BP-VPB130-GW-347	SDG No.:	C2731
Lab Sample ID:	C2731-16	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH041660.D	1		06/20/11	VH062011

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	1		0.38	1	ug/L
591-78-6	2-Hexanone	5		1.9	5	ug/L
124-48-1	Dibromochloromethane	1		0.2	1	ug/L
106-93-4	1,2-Dibromoethane	1		0.41	1	ug/L
127-18-4	Tetrachloroethene	1		0.27	1	ug/L
108-90-7	Chlorobenzene	1		0.49	1	ug/L
100-41-4	Ethyl Benzene	1		0.2	1	ug/L
179601-23-1	m/p-Xylenes	2		0.95	2	ug/L
95-47-6	o-Xylene	1		0.43	1	ug/L
100-42-5	Styrene	1		0.36	1	ug/L
75-25-2	Bromoform	1		0.47	1	ug/L
98-82-8	Isopropylbenzene	1		0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1		0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	1		0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	1		0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	1		0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1		0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	1		0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	55.4		70 - 120	111%	SPK: 50
1868-53-7	Dibromofluoromethane	49.8		85 - 115	100%	SPK: 50
2037-26-5	Toluene-d8	57.3		85 - 120	115%	SPK: 50
460-00-4	4-Bromofluorobenzene	54.3		75 - 120	109%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	405812	4.08			
540-36-3	1,4-Difluorobenzene	753418	4.6			
3114-55-4	Chlorobenzene-d5	640761	7.95			
3855-82-1	1,4-Dichlorobenzene-d4	286852	10.44			



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/17/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-367	SDG No.:	C2771
Lab Sample ID:	C2771-02	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035753.D	1		06/22/11	VG062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/17/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-367	SDG No.:	C2771
Lab Sample ID:	C2771-02	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035753.D	1		06/22/11	VG062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	51.7		70 - 120	103%	SPK: 50
1868-53-7	Dibromofluoromethane	49		85 - 115	98%	SPK: 50
2037-26-5	Toluene-d8	42.9		85 - 120	86%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.9		75 - 120	90%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	590995	3.93			
540-36-3	1,4-Difluorobenzene	1071250	4.74			
3114-55-4	Chlorobenzene-d5	766493	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	308843	13.41			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-387	SDG No.:	C2771
Lab Sample ID:	C2771-03	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035794.D	1		06/23/11	VG062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-387	SDG No.:	C2771
Lab Sample ID:	C2771-03	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035794.D	1		06/23/11	VG062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	52.6		70 - 120	105%	SPK: 50
1868-53-7	Dibromofluoromethane	52.2		85 - 115	104%	SPK: 50
2037-26-5	Toluene-d8	42.7		85 - 120	85%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.2		75 - 120	90%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	582395	3.94			
540-36-3	1,4-Difluorobenzene	1063320	4.75			
3114-55-4	Chlorobenzene-d5	760724	9.71			
3855-82-1	1,4-Dichlorobenzene-d4	289535	13.41			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-407	SDG No.:	C2771
Lab Sample ID:	C2771-07	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.02      Units:    g	Final Vol:	5000            uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID :    0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027466.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	155	U	40	310	ug/Kg
74-87-3	Chloromethane	155	U	53	310	ug/Kg
75-01-4	Vinyl Chloride	155	U	75	310	ug/Kg
74-83-9	Bromomethane	155	U	150	310	ug/Kg
75-00-3	Chloroethane	155	U	86	310	ug/Kg
75-69-4	Trichlorofluoromethane	155	U	81	310	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	155	U	81	310	ug/Kg
75-35-4	1,1-Dichloroethene	155	U	90	310	ug/Kg
67-64-1	Acetone	750	U	190	1500	ug/Kg
75-15-0	Carbon Disulfide	155	U	65	310	ug/Kg
1634-04-4	Methyl tert-butyl Ether	155	U	59	310	ug/Kg
79-20-9	Methyl Acetate	155	U	93	310	ug/Kg
75-09-2	Methylene Chloride	1200		87	310	ug/Kg
156-60-5	trans-1,2-Dichloroethene	155	U	42	310	ug/Kg
75-34-3	1,1-Dichloroethane	155	U	58	310	ug/Kg
110-82-7	Cyclohexane	155	U	62	310	ug/Kg
78-93-3	2-Butanone	750	U	190	1500	ug/Kg
56-23-5	Carbon Tetrachloride	155	U	61	310	ug/Kg
156-59-2	cis-1,2-Dichloroethene	155	U	55	310	ug/Kg
67-66-3	Chloroform	155	U	45	310	ug/Kg
71-55-6	1,1,1-Trichloroethane	155	U	54	310	ug/Kg
108-87-2	Methylcyclohexane	155	U	65	310	ug/Kg
71-43-2	Benzene	155	U	23	310	ug/Kg
107-06-2	1,2-Dichloroethane	155	U	39	310	ug/Kg
79-01-6	Trichloroethene	155	U	53	310	ug/Kg
78-87-5	1,2-Dichloropropane	155	U	16	310	ug/Kg
75-27-4	Bromodichloromethane	155	U	38	310	ug/Kg
108-10-1	4-Methyl-2-Pentanone	750	U	180	1500	ug/Kg
108-88-3	Toluene	155	U	39	310	ug/Kg
10061-02-6	t-1,3-Dichloropropene	155	U	48	310	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	155	U	44	310	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-407	SDG No.:	C2771
Lab Sample ID:	C2771-07	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027466.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	155	U	55	310	ug/Kg
591-78-6	2-Hexanone	750	U	240	1500	ug/Kg
124-48-1	Dibromochloromethane	155	U	33	310	ug/Kg
106-93-4	1,2-Dibromoethane	155	U	39	310	ug/Kg
127-18-4	Tetrachloroethene	155	U	62	310	ug/Kg
108-90-7	Chlorobenzene	155	U	31	310	ug/Kg
100-41-4	Ethyl Benzene	155	U	38	310	ug/Kg
179601-23-1	m/p-Xylenes	305	U	44	610	ug/Kg
95-47-6	o-Xylene	155	U	42	310	ug/Kg
100-42-5	Styrene	155	U	28	310	ug/Kg
75-25-2	Bromoform	155	U	45	310	ug/Kg
98-82-8	Isopropylbenzene	155	U	29	310	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	155	U	28	310	ug/Kg
541-73-1	1,3-Dichlorobenzene	155	U	23	310	ug/Kg
106-46-7	1,4-Dichlorobenzene	155	U	25	310	ug/Kg
95-50-1	1,2-Dichlorobenzene	155	U	38	310	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	155	U	53	310	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	155	U	43	310	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	32.9		55 - 158	66%	SPK: 50
1868-53-7	Dibromofluoromethane	45.3		53 - 156	91%	SPK: 50
2037-26-5	Toluene-d8	46.2		85 - 115	92%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.7	*	85 - 120	81%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	501297	3.19			
540-36-3	1,4-Difluorobenzene	629297	3.8			
3114-55-4	Chlorobenzene-d5	435519	7.14			
3855-82-1	1,4-Dichlorobenzene-d4	181038	9.01			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	2000	J		1.77	ug/Kg
000124-18-5	Decane	380	J		8.33	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-407RE	SDG No.:	C2771
Lab Sample ID:	C2771-07RE	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	0.97      Units:    g	Final Vol:	5000            uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID :    0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027498.D	1		06/23/11	VF062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	160	U	42	320	ug/Kg
74-87-3	Chloromethane	160	U	55	320	ug/Kg
75-01-4	Vinyl Chloride	160	U	79	320	ug/Kg
74-83-9	Bromomethane	160	U	160	320	ug/Kg
75-00-3	Chloroethane	160	U	90	320	ug/Kg
75-69-4	Trichlorofluoromethane	160	U	85	320	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	160	U	86	320	ug/Kg
75-35-4	1,1-Dichloroethene	160	U	95	320	ug/Kg
67-64-1	Acetone	800	U	190	1600	ug/Kg
75-15-0	Carbon Disulfide	160	U	68	320	ug/Kg
1634-04-4	Methyl tert-butyl Ether	160	U	62	320	ug/Kg
79-20-9	Methyl Acetate	160	U	97	320	ug/Kg
75-09-2	Methylene Chloride	300	JB	91	320	ug/Kg
156-60-5	trans-1,2-Dichloroethene	160	U	44	320	ug/Kg
75-34-3	1,1-Dichloroethane	160	U	61	320	ug/Kg
110-82-7	Cyclohexane	160	U	65	320	ug/Kg
78-93-3	2-Butanone	800	U	200	1600	ug/Kg
56-23-5	Carbon Tetrachloride	160	U	64	320	ug/Kg
156-59-2	cis-1,2-Dichloroethene	160	U	57	320	ug/Kg
67-66-3	Chloroform	160	U	48	320	ug/Kg
71-55-6	1,1,1-Trichloroethane	160	U	57	320	ug/Kg
108-87-2	Methylcyclohexane	160	U	68	320	ug/Kg
71-43-2	Benzene	160	U	24	320	ug/Kg
107-06-2	1,2-Dichloroethane	160	U	41	320	ug/Kg
79-01-6	Trichloroethene	160	U	55	320	ug/Kg
78-87-5	1,2-Dichloropropane	160	U	17	320	ug/Kg
75-27-4	Bromodichloromethane	160	U	40	320	ug/Kg
108-10-1	4-Methyl-2-Pentanone	800	U	190	1600	ug/Kg
108-88-3	Toluene	160	U	41	320	ug/Kg
10061-02-6	t-1,3-Dichloropropene	160	U	51	320	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	160	U	46	320	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-407RE	SDG No.:	C2771
Lab Sample ID:	C2771-07RE	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	0.97      Units:    g	Final Vol:	5000            uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID :    0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027498.D	1		06/23/11	VF062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	160	U	58	320	ug/Kg
591-78-6	2-Hexanone	800	U	250	1600	ug/Kg
124-48-1	Dibromochloromethane	160	U	35	320	ug/Kg
106-93-4	1,2-Dibromoethane	160	U	41	320	ug/Kg
127-18-4	Tetrachloroethene	160	U	65	320	ug/Kg
108-90-7	Chlorobenzene	160	U	32	320	ug/Kg
100-41-4	Ethyl Benzene	160	U	40	320	ug/Kg
179601-23-1	m/p-Xylenes	320	U	46	640	ug/Kg
95-47-6	o-Xylene	160	U	44	320	ug/Kg
100-42-5	Styrene	160	U	29	320	ug/Kg
75-25-2	Bromoform	160	U	48	320	ug/Kg
98-82-8	Isopropylbenzene	160	U	31	320	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	160	U	30	320	ug/Kg
541-73-1	1,3-Dichlorobenzene	160	U	24	320	ug/Kg
106-46-7	1,4-Dichlorobenzene	160	U	26	320	ug/Kg
95-50-1	1,2-Dichlorobenzene	160	U	40	320	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	160	U	56	320	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	160	U	45	320	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	34.9		55 - 158	70%	SPK: 50
1868-53-7	Dibromofluoromethane	47.4		53 - 156	95%	SPK: 50
2037-26-5	Toluene-d8	43.8		85 - 115	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.7	*	85 - 120	81%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	727266	3.19			
540-36-3	1,4-Difluorobenzene	906072	3.79			
3114-55-4	Chlorobenzene-d5	642207	7.13			
3855-82-1	1,4-Dichlorobenzene-d4	271270	9.02			



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-427	SDG No.:	C2771
Lab Sample ID:	C2771-05	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035755.D	1		06/22/11	VG062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-427	SDG No.:	C2771
Lab Sample ID:	C2771-05	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035755.D	1		06/22/11	VG062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	52.7		70 - 120	105%	SPK: 50
1868-53-7	Dibromofluoromethane	50.8		85 - 115	102%	SPK: 50
2037-26-5	Toluene-d8	45.4		85 - 120	91%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.2		75 - 120	90%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	568968	3.94			
540-36-3	1,4-Difluorobenzene	1026430	4.75			
3114-55-4	Chlorobenzene-d5	771201	9.71			
3855-82-1	1,4-Dichlorobenzene-d4	300058	13.41			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-447	SDG No.:	C2771
Lab Sample ID:	C2771-08	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027467.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	155	U	40	310	ug/Kg
74-87-3	Chloromethane	155	U	53	310	ug/Kg
75-01-4	Vinyl Chloride	155	U	76	310	ug/Kg
74-83-9	Bromomethane	155	U	150	310	ug/Kg
75-00-3	Chloroethane	155	U	87	310	ug/Kg
75-69-4	Trichlorofluoromethane	155	U	82	310	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	155	U	82	310	ug/Kg
75-35-4	1,1-Dichloroethene	155	U	91	310	ug/Kg
67-64-1	Acetone	750	U	190	1500	ug/Kg
75-15-0	Carbon Disulfide	155	U	66	310	ug/Kg
1634-04-4	Methyl tert-butyl Ether	155	U	59	310	ug/Kg
79-20-9	Methyl Acetate	155	U	93	310	ug/Kg
75-09-2	Methylene Chloride	1100		88	310	ug/Kg
156-60-5	trans-1,2-Dichloroethene	155	U	43	310	ug/Kg
75-34-3	1,1-Dichloroethane	155	U	58	310	ug/Kg
110-82-7	Cyclohexane	155	U	62	310	ug/Kg
78-93-3	2-Butanone	750	U	190	1500	ug/Kg
56-23-5	Carbon Tetrachloride	155	U	61	310	ug/Kg
156-59-2	cis-1,2-Dichloroethene	155	U	55	310	ug/Kg
67-66-3	Chloroform	155	U	46	310	ug/Kg
71-55-6	1,1,1-Trichloroethane	155	U	54	310	ug/Kg
108-87-2	Methylcyclohexane	155	U	66	310	ug/Kg
71-43-2	Benzene	155	U	24	310	ug/Kg
107-06-2	1,2-Dichloroethane	155	U	40	310	ug/Kg
79-01-6	Trichloroethene	155	U	53	310	ug/Kg
78-87-5	1,2-Dichloropropane	155	U	16	310	ug/Kg
75-27-4	Bromodichloromethane	155	U	38	310	ug/Kg
108-10-1	4-Methyl-2-Pentanone	750	U	180	1500	ug/Kg
108-88-3	Toluene	155	U	40	310	ug/Kg
10061-02-6	t-1,3-Dichloropropene	155	U	49	310	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	155	U	45	310	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-447	SDG No.:	C2771
Lab Sample ID:	C2771-08	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027467.D	1		06/22/11	VF062211

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	155	U	56	310	ug/Kg
591-78-6	2-Hexanone	750	U	240	1500	ug/Kg
124-48-1	Dibromochloromethane	155	U	33	310	ug/Kg
106-93-4	1,2-Dibromoethane	155	U	40	310	ug/Kg
127-18-4	Tetrachloroethene	155	U	62	310	ug/Kg
108-90-7	Chlorobenzene	155	U	31	310	ug/Kg
100-41-4	Ethyl Benzene	155	U	38	310	ug/Kg
179601-23-1	m/p-Xylenes	310	U	45	620	ug/Kg
95-47-6	o-Xylene	155	U	42	310	ug/Kg
100-42-5	Styrene	155	U	28	310	ug/Kg
75-25-2	Bromoform	155	U	46	310	ug/Kg
98-82-8	Isopropylbenzene	155	U	30	310	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	155	U	28	310	ug/Kg
541-73-1	1,3-Dichlorobenzene	155	U	23	310	ug/Kg
106-46-7	1,4-Dichlorobenzene	155	U	25	310	ug/Kg
95-50-1	1,2-Dichlorobenzene	155	U	38	310	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	155	U	54	310	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	155	U	43	310	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	31.5		55 - 158	63%	SPK: 50
1868-53-7	Dibromofluoromethane	45.8		53 - 156	92%	SPK: 50
2037-26-5	Toluene-d8	44.1		85 - 115	88%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.9	*	85 - 120	82%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	508460	3.19			
540-36-3	1,4-Difluorobenzene	617278	3.79			
3114-55-4	Chlorobenzene-d5	459299	7.13			
3855-82-1	1,4-Dichlorobenzene-d4	202263	9.01			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	1000	J		1.78	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-447RE	SDG No.:	C2771
Lab Sample ID:	C2771-08RE	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.03      Units:    g	Final Vol:	5000            uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID :    0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027499.D	1		06/23/11	VF062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	150	U	39	300	ug/Kg
74-87-3	Chloromethane	150	U	52	300	ug/Kg
75-01-4	Vinyl Chloride	150	U	75	300	ug/Kg
74-83-9	Bromomethane	150	U	150	300	ug/Kg
75-00-3	Chloroethane	150	U	85	300	ug/Kg
75-69-4	Trichlorofluoromethane	150	U	80	300	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	150	U	81	300	ug/Kg
75-35-4	1,1-Dichloroethene	150	U	89	300	ug/Kg
67-64-1	Acetone	750	U	180	1500	ug/Kg
75-15-0	Carbon Disulfide	150	U	64	300	ug/Kg
1634-04-4	Methyl tert-butyl Ether	150	U	58	300	ug/Kg
79-20-9	Methyl Acetate	150	U	92	300	ug/Kg
75-09-2	Methylene Chloride	260	JB	86	300	ug/Kg
156-60-5	trans-1,2-Dichloroethene	150	U	42	300	ug/Kg
75-34-3	1,1-Dichloroethane	150	U	57	300	ug/Kg
110-82-7	Cyclohexane	150	U	61	300	ug/Kg
78-93-3	2-Butanone	750	U	190	1500	ug/Kg
56-23-5	Carbon Tetrachloride	150	U	60	300	ug/Kg
156-59-2	cis-1,2-Dichloroethene	150	U	54	300	ug/Kg
67-66-3	Chloroform	150	U	45	300	ug/Kg
71-55-6	1,1,1-Trichloroethane	150	U	53	300	ug/Kg
108-87-2	Methylcyclohexane	150	U	64	300	ug/Kg
71-43-2	Benzene	150	U	23	300	ug/Kg
107-06-2	1,2-Dichloroethane	150	U	39	300	ug/Kg
79-01-6	Trichloroethene	150	U	52	300	ug/Kg
78-87-5	1,2-Dichloropropane	150	U	16	300	ug/Kg
75-27-4	Bromodichloromethane	150	U	38	300	ug/Kg
108-10-1	4-Methyl-2-Pentanone	750	U	180	1500	ug/Kg
108-88-3	Toluene	150	U	39	300	ug/Kg
10061-02-6	t-1,3-Dichloropropene	150	U	48	300	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	150	U	44	300	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/20/11
Project:	Bethpage CTO-066	Date Received:	06/21/11
Client Sample ID:	BP-VPB130-GW-447RE	SDG No.:	C2771
Lab Sample ID:	C2771-08RE	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	92
Sample Wt/Vol:	1.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF027499.D	1		06/23/11	VF062311

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	150	U	55	300	ug/Kg
591-78-6	2-Hexanone	750	U	240	1500	ug/Kg
124-48-1	Dibromochloromethane	150	U	33	300	ug/Kg
106-93-4	1,2-Dibromoethane	150	U	39	300	ug/Kg
127-18-4	Tetrachloroethene	150	U	61	300	ug/Kg
108-90-7	Chlorobenzene	150	U	30	300	ug/Kg
100-41-4	Ethyl Benzene	150	U	38	300	ug/Kg
179601-23-1	m/p-Xylenes	305	U	44	610	ug/Kg
95-47-6	o-Xylene	150	U	41	300	ug/Kg
100-42-5	Styrene	150	U	27	300	ug/Kg
75-25-2	Bromoform	150	U	45	300	ug/Kg
98-82-8	Isopropylbenzene	150	U	29	300	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	150	U	28	300	ug/Kg
541-73-1	1,3-Dichlorobenzene	150	U	22	300	ug/Kg
106-46-7	1,4-Dichlorobenzene	150	U	25	300	ug/Kg
95-50-1	1,2-Dichlorobenzene	150	U	38	300	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	150	U	53	300	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	150	U	42	300	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	35.9		55 - 158	72%	SPK: 50
1868-53-7	Dibromofluoromethane	49.4		53 - 156	99%	SPK: 50
2037-26-5	Toluene-d8	43.4		85 - 115	87%	SPK: 50
460-00-4	4-Bromofluorobenzene	40	*	85 - 120	80%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	670138	3.19			
540-36-3	1,4-Difluorobenzene	830671	3.8			
3114-55-4	Chlorobenzene-d5	576399	7.13			
3855-82-1	1,4-Dichlorobenzene-d4	247099	9.02			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-487	SDG No.:	C2820
Lab Sample ID:	C2820-03	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046107.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	7	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	3.9	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-487	SDG No.:	C2820
Lab Sample ID:	C2820-03	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046107.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	38.5		55 - 158	77%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		53 - 156	94%	SPK: 50
2037-26-5	Toluene-d8	47.7		85 - 115	95%	SPK: 50
460-00-4	4-Bromofluorobenzene	33	*	85 - 120	66%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	280408	3.1			
540-36-3	1,4-Difluorobenzene	452349	3.48			
3114-55-4	Chlorobenzene-d5	370481	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	109816	8.52			



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-507	SDG No.:	C2820
Lab Sample ID:	C2820-04	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD033775.D	1		06/27/11	VD062711

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-507	SDG No.:	C2820
Lab Sample ID:	C2820-04	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD033775.D	1		06/27/11	VD062711

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	51.9		70 - 120	104%	SPK: 50
1868-53-7	Dibromofluoromethane	54.6		85 - 115	109%	SPK: 50
2037-26-5	Toluene-d8	45.4		85 - 120	91%	SPK: 50
460-00-4	4-Bromofluorobenzene	55.9		75 - 120	112%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	429718	4.16			
540-36-3	1,4-Difluorobenzene	593803	4.79			
3114-55-4	Chlorobenzene-d5	929046	7.78			
3855-82-1	1,4-Dichlorobenzene-d4	516290	9.72			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-527	SDG No.:	C2820
Lab Sample ID:	C2820-05	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046108.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.5	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	7.9	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	4.5	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/21/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-527	SDG No.:	C2820
Lab Sample ID:	C2820-05	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046108.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	38.8		55 - 158	78%	SPK: 50
1868-53-7	Dibromofluoromethane	47.8		53 - 156	96%	SPK: 50
2037-26-5	Toluene-d8	47.4		85 - 115	95%	SPK: 50
460-00-4	4-Bromofluorobenzene	33.1	*	85 - 120	66%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	280722	3.1			
540-36-3	1,4-Difluorobenzene	434736	3.48			
3114-55-4	Chlorobenzene-d5	350862	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	101030	8.52			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-547	SDG No.:	C2820
Lab Sample ID:	C2820-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046109.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.64	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.85	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	5	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.95	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	4.9	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.68	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.93	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.98	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.88	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.73	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.87	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.63	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.85	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.63	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.78	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.71	5	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-547	SDG No.:	C2820
Lab Sample ID:	C2820-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046109.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.89	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.63	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	4.95	U	0.71	9.9	ug/Kg
95-47-6	o-Xylene	2.5	U	0.67	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.73	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.86	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.69	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	39.4		55 - 158	79%	SPK: 50
1868-53-7	Dibromofluoromethane	49.2		53 - 156	98%	SPK: 50
2037-26-5	Toluene-d8	49.1		85 - 115	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.3	*	85 - 120	81%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	303438	3.11			
540-36-3	1,4-Difluorobenzene	473648	3.48			
3114-55-4	Chlorobenzene-d5	418274	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	160039	8.52			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-567	SDG No.:	C2820
Lab Sample ID:	C2820-07	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046110.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.5	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	8.2	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	4.8	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-567	SDG No.:	C2820
Lab Sample ID:	C2820-07	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046110.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	38.2		55 - 158	76%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		53 - 156	95%	SPK: 50
2037-26-5	Toluene-d8	48.6		85 - 115	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	35.1	*	85 - 120	70%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	285623	3.1			
540-36-3	1,4-Difluorobenzene	446033	3.49			
3114-55-4	Chlorobenzene-d5	369560	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	118231	8.51			



**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-587	SDG No.:	C2820
Lab Sample ID:	C2820-08	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046111.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	5		1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/22/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-587	SDG No.:	C2820
Lab Sample ID:	C2820-08	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046111.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	40.2		55 - 158	80%	SPK: 50
1868-53-7	Dibromofluoromethane	48.6		53 - 156	97%	SPK: 50
2037-26-5	Toluene-d8	49.2		85 - 115	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.2	*	85 - 120	76%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	275191	3.1			
540-36-3	1,4-Difluorobenzene	428739	3.48			
3114-55-4	Chlorobenzene-d5	363356	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	134260	8.51			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/23/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-627	SDG No.:	C2820
Lab Sample ID:	C2820-10	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046112.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	5.7	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	4.4	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/23/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-627	SDG No.:	C2820
Lab Sample ID:	C2820-10	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046112.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	39		55 - 158	78%	SPK: 50
1868-53-7	Dibromofluoromethane	49.2		53 - 156	98%	SPK: 50
2037-26-5	Toluene-d8	48.8		85 - 115	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	37	*	85 - 120	74%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	266208	3.11			
540-36-3	1,4-Difluorobenzene	406106	3.48			
3114-55-4	Chlorobenzene-d5	333079	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	113781	8.52			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/23/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-647	SDG No.:	C2820
Lab Sample ID:	C2820-11	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.96 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046113.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.66	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.87	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.5	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	8.3	J	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.97	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	3.8	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.7	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.95	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	1	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.9	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.75	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.89	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.65	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.87	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.65	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.8	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.73	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/23/11
Project:	Bethpage CTO-066	Date Received:	06/24/11
Client Sample ID:	BP-VPB130-GW-647	SDG No.:	C2820
Lab Sample ID:	C2820-11	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.96 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046113.D	1		06/28/11	VK062811

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.91	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	4	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.65	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.73	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.69	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.75	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.88	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.71	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	39.5		55 - 158	79%	SPK: 50
1868-53-7	Dibromofluoromethane	49.9		53 - 156	100%	SPK: 50
2037-26-5	Toluene-d8	47.6		85 - 115	95%	SPK: 50
460-00-4	4-Bromofluorobenzene	37	*	85 - 120	74%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	268649	3.1			
540-36-3	1,4-Difluorobenzene	414841	3.48			
3114-55-4	Chlorobenzene-d5	344049	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	115493	8.51			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/24/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-667	SDG No.:	c2845
Lab Sample ID:	C2845-02	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.02      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046201.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	2	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/24/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-667	SDG No.:	c2845
Lab Sample ID:	C2845-02	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046201.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	43.8		55 - 158	88%	SPK: 50
1868-53-7	Dibromofluoromethane	53.9		53 - 156	108%	SPK: 50
2037-26-5	Toluene-d8	54.7		85 - 115	109%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.7		85 - 120	85%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	268485	3.1			
540-36-3	1,4-Difluorobenzene	395386	3.48			
3114-55-4	Chlorobenzene-d5	340482	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	127314	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	8.6	J		1.9	ug/Kg



### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/27/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-687	SDG No.:	c2845
Lab Sample ID:	C2845-03	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.03      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046202.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.85	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.95	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	2.5	U	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.93	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.98	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.88	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.87	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.85	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/27/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-687	SDG No.:	c2845
Lab Sample ID:	C2845-03	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046202.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.89	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	4.95	U	0.72	9.9	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.86	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	44.5		55 - 158	89%	SPK: 50
1868-53-7	Dibromofluoromethane	53.5		53 - 156	107%	SPK: 50
2037-26-5	Toluene-d8	52.7		85 - 115	105%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.1	*	85 - 120	76%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	270656	3.09			
540-36-3	1,4-Difluorobenzene	408312	3.47			
3114-55-4	Chlorobenzene-d5	323937	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	103657	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
	unknown1.90	7.0	J		1.9	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/27/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-707	SDG No.:	c2845
Lab Sample ID:	C2845-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046204.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	2.5	U	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/27/11
Project:	Bethpage CTO-066	Date Received:	06/28/11
Client Sample ID:	BP-VPB130-GW-707	SDG No.:	c2845
Lab Sample ID:	C2845-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046204.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	45.2		55 - 158	90%	SPK: 50
1868-53-7	Dibromofluoromethane	54		53 - 156	108%	SPK: 50
2037-26-5	Toluene-d8	52.6		85 - 115	105%	SPK: 50
460-00-4	4-Bromofluorobenzene	40	*	85 - 120	80%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	263317	3.09			
540-36-3	1,4-Difluorobenzene	400412	3.47			
3114-55-4	Chlorobenzene-d5	337092	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	106562	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	6.0	J		1.91	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB-TB-062811	SDG No.:	C2873
Lab Sample ID:	C2873-01	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG036015.D	1		07/06/11	vg070611

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	4		0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB-TB-062811	SDG No.:	C2873
Lab Sample ID:	C2873-01	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG036015.D	1		07/06/11	vg070611

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	51.9		70 - 120	104%	SPK: 50
1868-53-7	Dibromofluoromethane	52.5		85 - 115	105%	SPK: 50
2037-26-5	Toluene-d8	51.4		85 - 120	103%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		75 - 120	97%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	714311	3.92			
540-36-3	1,4-Difluorobenzene	1140920	4.74			
3114-55-4	Chlorobenzene-d5	1023980	9.69			
3855-82-1	1,4-Dichlorobenzene-d4	421232	13.4			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-747	SDG No.:	C2873
Lab Sample ID:	C2873-02	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046205.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	3.4	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-747	SDG No.:	C2873
Lab Sample ID:	C2873-02	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046205.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	45.6		55 - 158	91%	SPK: 50
1868-53-7	Dibromofluoromethane	53.4		53 - 156	107%	SPK: 50
2037-26-5	Toluene-d8	52.8		85 - 115	106%	SPK: 50
460-00-4	4-Bromofluorobenzene	43		85 - 120	86%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	275689	3.1			
540-36-3	1,4-Difluorobenzene	419817	3.47			
3114-55-4	Chlorobenzene-d5	356147	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	126631	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	7.7	J		1.9	ug/Kg



## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-767	SDG No.:	C2873
Lab Sample ID:	C2873-03	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035985.D	1		07/01/11	vg070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	0.5	U	0.2	1	ug/L
74-87-3	Chloromethane	0.5	U	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.34	1	ug/L
74-83-9	Bromomethane	0.5	U	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.35	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.45	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.47	1	ug/L
67-64-1	Acetone	2.5	U	0.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	1	ug/L
75-09-2	Methylene Chloride	0.5	U	0.41	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.41	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.36	1	ug/L
110-82-7	Cyclohexane	0.5	U	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.35	1	ug/L
67-66-3	Chloroform	0.5	U	0.34	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.5	U	0.4	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.2	1	ug/L
71-43-2	Benzene	0.5	U	0.32	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.48	1	ug/L
79-01-6	Trichloroethene	0.5	U	0.28	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.46	1	ug/L
75-27-4	Bromodichloromethane	0.5	U	0.36	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.1	5	ug/L
108-88-3	Toluene	0.5	U	0.37	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.29	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.31	1	ug/L

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-767	SDG No.:	C2873
Lab Sample ID:	C2873-03	Matrix:	WATER
Analytical Method:	SW8260B	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VG035985.D	1		07/01/11	vg070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.5	U	0.38	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.41	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.27	1	ug/L
108-90-7	Chlorobenzene	0.5	U	0.49	1	ug/L
100-41-4	Ethyl Benzene	0.5	U	0.2	1	ug/L
179601-23-1	m/p-Xylenes	1	U	0.95	2	ug/L
95-47-6	o-Xylene	0.5	U	0.43	1	ug/L
100-42-5	Styrene	0.5	U	0.36	1	ug/L
75-25-2	Bromoform	0.5	U	0.47	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.45	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.31	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.43	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.32	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.5	U	0.45	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.5	U	0.46	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.2	1	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	46.6		70 - 120	93%	SPK: 50
1868-53-7	Dibromofluoromethane	50.8		85 - 115	102%	SPK: 50
2037-26-5	Toluene-d8	32.4	*	85 - 120	65%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.7		75 - 120	87%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	603307	3.91			
540-36-3	1,4-Difluorobenzene	1021890	4.74			
3114-55-4	Chlorobenzene-d5	718578	9.7			
3855-82-1	1,4-Dichlorobenzene-d4	281506	13.39			

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-787	SDG No.:	C2873
Lab Sample ID:	C2873-04	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046206.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.64	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.85	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.95	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	3.8	J	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.68	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.93	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.98	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.88	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.73	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.87	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.63	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.85	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.63	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.78	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.71	5	ug/Kg

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/28/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-787	SDG No.:	C2873
Lab Sample ID:	C2873-04	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046206.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.89	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.63	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	4.95	U	0.71	9.9	ug/Kg
95-47-6	o-Xylene	2.5	U	0.67	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.73	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.86	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.69	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	43.7		55 - 158	87%	SPK: 50
1868-53-7	Dibromofluoromethane	52.8		53 - 156	106%	SPK: 50
2037-26-5	Toluene-d8	54.5		85 - 115	109%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.9		85 - 120	86%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	275683	3.09			
540-36-3	1,4-Difluorobenzene	407562	3.47			
3114-55-4	Chlorobenzene-d5	333772	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	123489	8.51			

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/29/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-807	SDG No.:	C2873
Lab Sample ID:	C2873-05	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046207.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.64	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.85	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.4	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.95	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	2.5	U	1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.68	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.93	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.98	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.88	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.73	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.87	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.63	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.85	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.63	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.78	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.71	5	ug/Kg

**Report of Analysis**

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/29/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-807	SDG No.:	C2873
Lab Sample ID:	C2873-05	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046207.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.89	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.63	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	4.95	U	0.71	9.9	ug/Kg
95-47-6	o-Xylene	2.5	U	0.67	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.73	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.86	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.69	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	53.5		55 - 158	107%	SPK: 50
1868-53-7	Dibromofluoromethane	57.2		53 - 156	114%	SPK: 50
2037-26-5	Toluene-d8	55.1		85 - 115	110%	SPK: 50
460-00-4	4-Bromofluorobenzene	54.9		85 - 120	110%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	281748	3.1			
540-36-3	1,4-Difluorobenzene	438504	3.47			
3114-55-4	Chlorobenzene-d5	407081	6.15			
3855-82-1	1,4-Dichlorobenzene-d4	185499	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	8.5	J		1.9	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/29/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-847	SDG No.:	C2873
Lab Sample ID:	C2873-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99      Units: g	Final Vol:	5000      uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS      ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046208.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.65	5	ug/Kg
74-87-3	Chloromethane	2.5	U	0.86	5	ug/Kg
75-01-4	Vinyl Chloride	2.5	U	1.2	5	ug/Kg
74-83-9	Bromomethane	2.5	U	2.5	5	ug/Kg
75-00-3	Chloroethane	2.5	U	1.4	5	ug/Kg
75-69-4	Trichlorofluoromethane	2.5	U	1.3	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	1.3	5	ug/Kg
75-35-4	1,1-Dichloroethene	2.5	U	1.5	5	ug/Kg
67-64-1	Acetone	12.5	U	3	25	ug/Kg
75-15-0	Carbon Disulfide	2.5	U	1.1	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.5	U	0.96	5	ug/Kg
79-20-9	Methyl Acetate	2.5	U	1.5	5	ug/Kg
75-09-2	Methylene Chloride	6.9		1.4	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.69	5	ug/Kg
75-34-3	1,1-Dichloroethane	2.5	U	0.94	5	ug/Kg
110-82-7	Cyclohexane	2.5	U	1	5	ug/Kg
78-93-3	2-Butanone	12.5	U	3.1	25	ug/Kg
56-23-5	Carbon Tetrachloride	2.5	U	0.99	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.89	5	ug/Kg
67-66-3	Chloroform	2.5	U	0.74	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.5	U	0.88	5	ug/Kg
108-87-2	Methylcyclohexane	2.5	U	1.1	5	ug/Kg
71-43-2	Benzene	2.5	U	0.38	5	ug/Kg
107-06-2	1,2-Dichloroethane	2.5	U	0.64	5	ug/Kg
79-01-6	Trichloroethene	2.5	U	0.86	5	ug/Kg
78-87-5	1,2-Dichloropropane	2.5	U	0.26	5	ug/Kg
75-27-4	Bromodichloromethane	2.5	U	0.62	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	12.5	U	2.9	25	ug/Kg
108-88-3	Toluene	2.5	U	0.64	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.79	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.72	5	ug/Kg

### Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	06/29/11
Project:	Bethpage CTO-066	Date Received:	06/30/11
Client Sample ID:	BP-VPB130-GW-847	SDG No.:	C2873
Lab Sample ID:	C2873-06	Matrix:	SOIL
Analytical Method:	SW8260B	% Moisture:	0
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VK046208.D	1		07/01/11	VK070111

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.9	5	ug/Kg
591-78-6	2-Hexanone	12.5	U	3.9	25	ug/Kg
124-48-1	Dibromochloromethane	2.5	U	0.54	5	ug/Kg
106-93-4	1,2-Dibromoethane	2.5	U	0.64	5	ug/Kg
127-18-4	Tetrachloroethene	2.5	U	1	5	ug/Kg
108-90-7	Chlorobenzene	2.5	U	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	2.5	U	0.62	5	ug/Kg
179601-23-1	m/p-Xylenes	5	U	0.72	10	ug/Kg
95-47-6	o-Xylene	2.5	U	0.68	5	ug/Kg
100-42-5	Styrene	2.5	U	0.45	5	ug/Kg
75-25-2	Bromoform	2.5	U	0.74	5	ug/Kg
98-82-8	Isopropylbenzene	2.5	U	0.48	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.5	U	0.41	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.5	U	0.62	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	0.87	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.7	5	ug/Kg
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	45.9		55 - 158	92%	SPK: 50
1868-53-7	Dibromofluoromethane	52.4		53 - 156	105%	SPK: 50
2037-26-5	Toluene-d8	53.4		85 - 115	107%	SPK: 50
460-00-4	4-Bromofluorobenzene	41.4	*	85 - 120	83%	SPK: 50
<b>INTERNAL STANDARDS</b>						
363-72-4	Pentafluorobenzene	260248	3.1			
540-36-3	1,4-Difluorobenzene	389814	3.48			
3114-55-4	Chlorobenzene-d5	317826	6.14			
3855-82-1	1,4-Dichlorobenzene-d4	109603	8.51			
<b>TENTATIVE IDENTIFIED COMPOUNDS</b>						
000110-54-3	Hexane	7.2	J		1.9	ug/Kg



7/28/2011

Mr. David Brayack

Tetra Tech

Twin Oaks I, Suite 309

5700 Lake Wright Drive

Norfolk VA 23502

Project Name:

Project #: 112G00622

Workorder #: 1107258

Dear Mr. David Brayack

The following report includes the data for the above referenced project for sample(s) received on 7/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15/TIC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Ausha Scott

Project Manager

**WORK ORDER #: 1107258**

Work Order Summary

<b>CLIENT:</b>	Mr. David Brayack Tetra Tech Twin Oaks I, Suite 309 5700 Lake Wright Drive Norfolk, VA 23502	<b>BILL TO:</b>	Accounts Payable/Pittsburg Tetra Tech EC, Inc. Foster Plaza 7 661 Anderson Drive Pittsburgh, PA 15220-2745
<b>PHONE:</b>	(757) 461-3824	<b>P.O. #</b>	1045513 07-CTO66
<b>FAX:</b>	(757) 461-4148	<b>PROJECT #</b>	112G00622
<b>DATE RECEIVED:</b>	07/15/2011	<b>CONTACT:</b>	Ausha Scott
<b>DATE COMPLETED:</b>	07/28/2011		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	BP-VPB130-AIR-071311	Modified TO-15/TIC	6.5 "Hg	5 psi
01AA	BP-VPB130-AIR-071311 Lab Duplicate	Modified TO-15/TIC	6.5 "Hg	5 psi
02A	Lab Blank	Modified TO-15/TIC	NA	NA
03A	CCV	Modified TO-15/TIC	NA	NA
04A	LCS	Modified TO-15/TIC	NA	NA
04AA	LCSD	Modified TO-15/TIC	NA	NA

CERTIFIED BY: 

DATE: 07/28/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,  
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE  
Modified TO-15  
Tetra Tech  
Workorder# 1107258**

One 6 Liter Summa Canister (100% Certified) sample was received on July 15, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	+/- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+/- 30% Difference	<= 30% Difference with four allowed out up to <=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Freon 12 and 2,2,4-Trimethylpentane were manually integrated in the initial calibration.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: BP-VPB130-AIR-071311

Lab ID#: 1107258-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.086	0.068 J	0.54	0.43 J
Freon 12	0.086	0.43	0.42	2.1
Freon 11	0.086	0.20	0.48	1.1
Freon 113	0.086	0.068 J	0.66	0.52 J
Benzene	0.17	0.15 J	0.55	0.48 J
Toluene	0.17	0.82	0.64	3.1
Ethyl Benzene	0.17	0.066 J	0.74	0.29 J
m,p-Xylene	0.17	0.18	0.74	0.78
o-Xylene	0.17	0.066 J	0.74	0.29 J
Chloromethane	0.17	0.46	0.35	0.95
Hexane	0.17	0.39	0.60	1.4
2-Butanone (Methyl Ethyl Ketone)	0.86	0.35 J	2.5	1.0 J
4-Methyl-2-pentanone	0.17	0.20	0.70	0.80
1,3,5-Trimethylbenzene	0.17	0.020 J	0.84	0.10 J
1,2,4-Trimethylbenzene	0.17	0.066 J	0.84	0.33 J
2,2,4-Trimethylpentane	0.17	0.14 J	0.80	0.66 J
tert-Butyl alcohol	0.86	0.21 J	2.6	0.64 J
Methylene Chloride	0.86	0.15 J	3.0	0.52 J
Ethanol	0.86	15	1.6	29

**TENTATIVELY IDENTIFIED COMPOUNDS**

Compound	CAS Number	Match Quality	Amount (ppbv)
2-Propanone	67-64-1	3.0%	3.6 NJ

Client Sample ID: BP-VPB130-AIR-071311 Lab Duplicate

Lab ID#: 1107258-01AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Tetrachloride	0.086	0.061 J	0.54	0.39 J
Freon 12	0.086	0.42	0.42	2.1
Freon 11	0.086	0.18	0.48	1.0
Freon 113	0.086	0.055 J	0.66	0.42 J

**Summary of Detected Compounds**  
**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: BP-VPB130-AIR-071311 Lab Duplicate**

**Lab ID#: 1107258-01AA**

Benzene	0.17	0.13 J	0.55	0.42 J
Toluene	0.17	0.75	0.64	2.8
Ethyl Benzene	0.17	0.065 J	0.74	0.28 J
m,p-Xylene	0.17	0.18	0.74	0.80
o-Xylene	0.17	0.064 J	0.74	0.28 J
Chloromethane	0.17	0.42	0.35	0.87
Hexane	0.17	0.37	0.60	1.3
2-Butanone (Methyl Ethyl Ketone)	0.86	0.34 J	2.5	1.0 J
4-Methyl-2-pentanone	0.17	0.19	0.70	0.79
1,2,4-Trimethylbenzene	0.17	0.060 J	0.84	0.30 J
2,2,4-Trimethylpentane	0.17	0.14 J	0.80	0.64 J
tert-Butyl alcohol	0.86	0.20 J	2.6	0.60 J
Methylene Chloride	0.86	0.12 J	3.0	0.43 J
Ethanol	0.86	15	1.6	28

**TENTATIVELY IDENTIFIED COMPOUNDS**

<b>Compound</b>	<b>CAS Number</b>	<b>Match Quality</b>	<b>Amount (ppbv)</b>
2-Propanone	67-64-1	4.0%	3.4 NJ

Client Sample ID: BP-VPB130-AIR-071311

Lab ID#: 1107258-01A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071920</b>	<b>Date of Collection:</b> 7/13/11 7:00:00 AM
<b>Dil. Factor:</b>	<b>1.71</b>	<b>Date of Analysis:</b> 7/19/11 10:12 PM

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
1,1,1-Trichloroethane	0.086	Not Detected U	0.47	Not Detected U
Carbon Tetrachloride	0.086	0.068 J	0.54	0.43 J
Trichloroethene	0.086	Not Detected U	0.46	Not Detected U
Bromodichloromethane	0.086	Not Detected U	0.57	Not Detected U
1,1,2-Trichloroethane	0.086	Not Detected U	0.47	Not Detected U
Tetrachloroethene	0.086	Not Detected U	0.58	Not Detected U
Dibromochloromethane	0.086	Not Detected U	0.73	Not Detected U
1,2-Dibromoethane (EDB)	0.086	Not Detected U	0.66	Not Detected U
1,1,2,2-Tetrachloroethane	0.086	Not Detected U	0.59	Not Detected U
1,3-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
1,4-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
1,2-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
Freon 12	0.086	0.43	0.42	2.1
Freon 114	0.086	Not Detected U	0.60	Not Detected U
Freon 11	0.086	0.20	0.48	1.1
Freon 113	0.086	0.068 J	0.66	0.52 J
Bromoform	0.086	Not Detected U	0.88	Not Detected U
Vinyl Chloride	0.17	Not Detected U	0.44	Not Detected U
1,1-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
1,1-Dichloroethane	0.17	Not Detected U	0.69	Not Detected U
cis-1,2-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
Benzene	0.17	0.15 J	0.55	0.48 J
1,2-Dichloroethane	0.17	Not Detected U	0.69	Not Detected U
Toluene	0.17	0.82	0.64	3.1
Ethyl Benzene	0.17	0.066 J	0.74	0.29 J
m,p-Xylene	0.17	0.18	0.74	0.78
o-Xylene	0.17	0.066 J	0.74	0.29 J
trans-1,2-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
Methyl tert-butyl ether	0.17	Not Detected U	0.62	Not Detected U
Chloromethane	0.17	0.46	0.35	0.95
Bromomethane	0.17	Not Detected U	0.66	Not Detected U
Chloroethane	0.86	Not Detected U	2.2	Not Detected U
Hexane	0.17	0.39	0.60	1.4
2-Butanone (Methyl Ethyl Ketone)	0.86	0.35 J	2.5	1.0 J
Chloroform	0.17	Not Detected U	0.83	Not Detected U
Cyclohexane	0.17	Not Detected U	0.59	Not Detected U
1,2-Dichloropropane	0.17	Not Detected U	0.79	Not Detected U
1,4-Dioxane	0.17	Not Detected U	0.62	Not Detected U
cis-1,3-Dichloropropene	0.17	Not Detected U	0.78	Not Detected U
4-Methyl-2-pentanone	0.17	0.20	0.70	0.80
trans-1,3-Dichloropropene	0.17	Not Detected U	0.78	Not Detected U

Client Sample ID: BP-VPB130-AIR-071311

Lab ID#: 1107258-01A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071920</b>	<b>Date of Collection:</b> 7/13/11 7:00:00 AM
<b>Dil. Factor:</b>	<b>1.71</b>	<b>Date of Analysis:</b> 7/19/11 10:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chlorobenzene	0.17	Not Detected U	0.79	Not Detected U
Styrene	0.17	Not Detected U	0.73	Not Detected U
1,3,5-Trimethylbenzene	0.17	0.020 J	0.84	0.10 J
1,2,4-Trimethylbenzene	0.17	0.066 J	0.84	0.33 J
alpha-Chlorotoluene	0.17	Not Detected U	0.88	Not Detected U
2,2,4-Trimethylpentane	0.17	0.14 J	0.80	0.66 J
tert-Butyl alcohol	0.86	0.21 J	2.6	0.64 J
Methylene Chloride	0.86	0.15 J	3.0	0.52 J
Hexachlorobutadiene	0.86	Not Detected U	9.1	Not Detected U
Ethanol	0.86	15	1.6	29
1,2,4-Trichlorobenzene	0.86	Not Detected U	6.3	Not Detected U

U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

J = Estimated value.

**TENTATIVELY IDENTIFIED COMPOUNDS**

Compound	CAS Number	Match Quality	Amount ((ppbv))
2-Propanone	67-64-1	3.0%	3.6 NJ

NJ =The identification is based on presumptive evidence; estimated value.

**Container Type: 6 Liter Summa Canister (100% Certified)**

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	83-115
1,2-Dichloroethane-d4	101	68-134
Toluene-d8	100	89-109



Client Sample ID: BP-VPB130-AIR-071311 Lab Duplicate

Lab ID#: 1107258-01AA

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071921</b>	<b>Date of Collection:</b> 7/13/11 7:00:00 AM
<b>Dil. Factor:</b>	<b>1.71</b>	<b>Date of Analysis:</b> 7/19/11 10:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	0.086	Not Detected U	0.47	Not Detected U
Carbon Tetrachloride	0.086	0.061 J	0.54	0.39 J
Trichloroethene	0.086	Not Detected U	0.46	Not Detected U
Bromodichloromethane	0.086	Not Detected U	0.57	Not Detected U
1,1,2-Trichloroethane	0.086	Not Detected U	0.47	Not Detected U
Tetrachloroethene	0.086	Not Detected U	0.58	Not Detected U
Dibromochloromethane	0.086	Not Detected U	0.73	Not Detected U
1,2-Dibromoethane (EDB)	0.086	Not Detected U	0.66	Not Detected U
1,1,2,2-Tetrachloroethane	0.086	Not Detected U	0.59	Not Detected U
1,3-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
1,4-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
1,2-Dichlorobenzene	0.086	Not Detected U	0.51	Not Detected U
Freon 12	0.086	0.42	0.42	2.1
Freon 114	0.086	Not Detected U	0.60	Not Detected U
Freon 11	0.086	0.18	0.48	1.0
Freon 113	0.086	0.055 J	0.66	0.42 J
Bromoform	0.086	Not Detected U	0.88	Not Detected U
Vinyl Chloride	0.17	Not Detected U	0.44	Not Detected U
1,1-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
1,1-Dichloroethane	0.17	Not Detected U	0.69	Not Detected U
cis-1,2-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
Benzene	0.17	0.13 J	0.55	0.42 J
1,2-Dichloroethane	0.17	Not Detected U	0.69	Not Detected U
Toluene	0.17	0.75	0.64	2.8
Ethyl Benzene	0.17	0.065 J	0.74	0.28 J
m,p-Xylene	0.17	0.18	0.74	0.80
o-Xylene	0.17	0.064 J	0.74	0.28 J
trans-1,2-Dichloroethene	0.17	Not Detected U	0.68	Not Detected U
Methyl tert-butyl ether	0.17	Not Detected U	0.62	Not Detected U
Chloromethane	0.17	0.42	0.35	0.87
Bromomethane	0.17	Not Detected U	0.66	Not Detected U
Chloroethane	0.86	Not Detected U	2.2	Not Detected U
Hexane	0.17	0.37	0.60	1.3
2-Butanone (Methyl Ethyl Ketone)	0.86	0.34 J	2.5	1.0 J
Chloroform	0.17	Not Detected U	0.83	Not Detected U
Cyclohexane	0.17	Not Detected U	0.59	Not Detected U
1,2-Dichloropropane	0.17	Not Detected U	0.79	Not Detected U
1,4-Dioxane	0.17	Not Detected U	0.62	Not Detected U
cis-1,3-Dichloropropene	0.17	Not Detected U	0.78	Not Detected U
4-Methyl-2-pentanone	0.17	0.19	0.70	0.79
trans-1,3-Dichloropropene	0.17	Not Detected U	0.78	Not Detected U

Client Sample ID: BP-VPB130-AIR-071311 Lab Duplicate

Lab ID#: 1107258-01AA

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071921</b>	<b>Date of Collection:</b> 7/13/11 7:00:00 AM
<b>Dil. Factor:</b>	<b>1.71</b>	<b>Date of Analysis:</b> 7/19/11 10:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chlorobenzene	0.17	Not Detected U	0.79	Not Detected U
Styrene	0.17	Not Detected U	0.73	Not Detected U
1,3,5-Trimethylbenzene	0.17	Not Detected U	0.84	Not Detected U
1,2,4-Trimethylbenzene	0.17	0.060 J	0.84	0.30 J
alpha-Chlorotoluene	0.17	Not Detected U	0.88	Not Detected U
2,2,4-Trimethylpentane	0.17	0.14 J	0.80	0.64 J
tert-Butyl alcohol	0.86	0.20 J	2.6	0.60 J
Methylene Chloride	0.86	0.12 J	3.0	0.43 J
Hexachlorobutadiene	0.86	Not Detected U	9.1	Not Detected U
Ethanol	0.86	15	1.6	28
1,2,4-Trichlorobenzene	0.86	Not Detected U	6.3	Not Detected U

U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

J = Estimated value.

**TENTATIVELY IDENTIFIED COMPOUNDS**

Compound	CAS Number	Match Quality	Amount ((ppbv))
2-Propanone	67-64-1	4.0%	3.4 NJ

NJ =The identification is based on presumptive evidence; estimated value.

**Container Type: 6 Liter Summa Canister (100% Certified)**

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	83-115
1,2-Dichloroethane-d4	100	68-134
Toluene-d8	99	89-109

Client Sample ID: Lab Blank

Lab ID#: 1107258-02A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071906c</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 7/19/11 11:27 AM

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
1,1,1-Trichloroethane	0.050	Not Detected U	0.27	Not Detected U
Carbon Tetrachloride	0.050	Not Detected U	0.31	Not Detected U
Trichloroethene	0.050	Not Detected U	0.27	Not Detected U
Bromodichloromethane	0.050	Not Detected U	0.34	Not Detected U
1,1,2-Trichloroethane	0.050	Not Detected U	0.27	Not Detected U
Tetrachloroethene	0.050	Not Detected U	0.34	Not Detected U
Dibromochloromethane	0.050	Not Detected U	0.42	Not Detected U
1,2-Dibromoethane (EDB)	0.050	Not Detected U	0.38	Not Detected U
1,1,2,2-Tetrachloroethane	0.050	Not Detected U	0.34	Not Detected U
1,3-Dichlorobenzene	0.050	Not Detected U	0.30	Not Detected U
1,4-Dichlorobenzene	0.050	Not Detected U	0.30	Not Detected U
1,2-Dichlorobenzene	0.050	Not Detected U	0.30	Not Detected U
Freon 12	0.050	Not Detected U	0.25	Not Detected U
Freon 114	0.050	Not Detected U	0.35	Not Detected U
Freon 11	0.050	Not Detected U	0.28	Not Detected U
Freon 113	0.050	Not Detected U	0.38	Not Detected U
Bromoform	0.050	Not Detected U	0.52	Not Detected U
Vinyl Chloride	0.10	Not Detected U	0.26	Not Detected U
1,1-Dichloroethene	0.10	Not Detected U	0.40	Not Detected U
1,1-Dichloroethane	0.10	Not Detected U	0.40	Not Detected U
cis-1,2-Dichloroethene	0.10	Not Detected U	0.40	Not Detected U
Benzene	0.10	Not Detected U	0.32	Not Detected U
1,2-Dichloroethane	0.10	Not Detected U	0.40	Not Detected U
Toluene	0.10	Not Detected U	0.38	Not Detected U
Ethyl Benzene	0.10	Not Detected U	0.43	Not Detected U
m,p-Xylene	0.10	Not Detected U	0.43	Not Detected U
o-Xylene	0.10	Not Detected U	0.43	Not Detected U
trans-1,2-Dichloroethene	0.10	Not Detected U	0.40	Not Detected U
Methyl tert-butyl ether	0.10	Not Detected U	0.36	Not Detected U
Chloromethane	0.10	Not Detected U	0.21	Not Detected U
Bromomethane	0.10	Not Detected U	0.39	Not Detected U
Chloroethane	0.50	Not Detected U	1.3	Not Detected U
Hexane	0.10	Not Detected U	0.35	Not Detected U
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected U	1.5	Not Detected U
Chloroform	0.10	Not Detected U	0.49	Not Detected U
Cyclohexane	0.10	Not Detected U	0.34	Not Detected U
1,2-Dichloropropane	0.10	Not Detected U	0.46	Not Detected U
1,4-Dioxane	0.10	Not Detected U	0.36	Not Detected U
cis-1,3-Dichloropropene	0.10	Not Detected U	0.45	Not Detected U
4-Methyl-2-pentanone	0.10	Not Detected U	0.41	Not Detected U
trans-1,3-Dichloropropene	0.10	Not Detected U	0.45	Not Detected U

Client Sample ID: Lab Blank

Lab ID#: 1107258-02A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071906c</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 7/19/11 11:27 AM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Chlorobenzene	0.10	Not Detected U	0.46	Not Detected U
Styrene	0.10	Not Detected U	0.42	Not Detected U
1,3,5-Trimethylbenzene	0.10	Not Detected U	0.49	Not Detected U
1,2,4-Trimethylbenzene	0.10	Not Detected U	0.49	Not Detected U
alpha-Chlorotoluene	0.10	Not Detected U	0.52	Not Detected U
2,2,4-Trimethylpentane	0.10	Not Detected U	0.47	Not Detected U
tert-Butyl alcohol	0.50	Not Detected U	1.5	Not Detected U
Methylene Chloride	0.50	Not Detected U	1.7	Not Detected U
Hexachlorobutadiene	0.50	Not Detected U	5.3	Not Detected U
Ethanol	0.50	Not Detected U	0.94	Not Detected U
1,2,4-Trichlorobenzene	0.50	0.045 J	3.7	0.34 J

U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

J = Estimated value.

**TENTATIVELY IDENTIFIED COMPOUNDS**

<b>Compound</b>	<b>CAS Number</b>	<b>Match Quality</b>	<b>Amount ((ppbv))</b>
None Identified			

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
4-Bromofluorobenzene	98	83-115
1,2-Dichloroethane-d4	97	68-134
Toluene-d8	99	89-109

Client Sample ID: CCV

Lab ID#: 1107258-03A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071902a</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 7/19/11 08:30 AM</b>

<b>Compound</b>	<b>%Recovery</b>
1,1,1-Trichloroethane	82
Carbon Tetrachloride	84
Trichloroethene	86
Bromodichloromethane	88
1,1,2-Trichloroethane	86
Tetrachloroethene	86
Dibromochloromethane	92
1,2-Dibromoethane (EDB)	88
1,1,2,2-Tetrachloroethane	85
1,3-Dichlorobenzene	81
1,4-Dichlorobenzene	81
1,2-Dichlorobenzene	81
Freon 12	85
Freon 114	85
Freon 11	84
Freon 113	84
Bromoform	96
Vinyl Chloride	85
1,1-Dichloroethene	84
1,1-Dichloroethane	85
cis-1,2-Dichloroethene	84
Benzene	84
1,2-Dichloroethane	84
Toluene	85
Ethyl Benzene	86
m,p-Xylene	83
o-Xylene	82
trans-1,2-Dichloroethene	85
Methyl tert-butyl ether	84
Chloromethane	79
Bromomethane	88
Chloroethane	91
Hexane	82
2-Butanone (Methyl Ethyl Ketone)	89
Chloroform	83
Cyclohexane	84
1,2-Dichloropropane	85
1,4-Dioxane	86
cis-1,3-Dichloropropene	88
4-Methyl-2-pentanone	86
trans-1,3-Dichloropropene	90

Client Sample ID: CCV

Lab ID#: 1107258-03A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071902a</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 7/19/11 08:30 AM</b>

<b>Compound</b>	<b>%Recovery</b>
Chlorobenzene	85
Styrene	82
1,3,5-Trimethylbenzene	89
1,2,4-Trimethylbenzene	87
alpha-Chlorotoluene	92
2,2,4-Trimethylpentane	85
tert-Butyl alcohol	90
Methylene Chloride	85
Hexachlorobutadiene	94
Ethanol	91
1,2,4-Trichlorobenzene	94

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
4-Bromofluorobenzene	98	83-115
1,2-Dichloroethane-d4	96	68-134
Toluene-d8	99	89-109

Client Sample ID: LCS

Lab ID#: 1107258-04A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071903a</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 7/19/11 09:19 AM</b>

<b>Compound</b>	<b>%Recovery</b>
1,1,1-Trichloroethane	93
Carbon Tetrachloride	94
Trichloroethene	96
Bromodichloromethane	100
1,1,2-Trichloroethane	96
Tetrachloroethene	94
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	100
1,1,2,2-Tetrachloroethane	97
1,3-Dichlorobenzene	90
1,4-Dichlorobenzene	89
1,2-Dichlorobenzene	92
Freon 12	96
Freon 114	94
Freon 11	94
Freon 113	95
Bromoform	106
Vinyl Chloride	96
1,1-Dichloroethene	100
1,1-Dichloroethane	96
cis-1,2-Dichloroethene	95
Benzene	95
1,2-Dichloroethane	96
Toluene	94
Ethyl Benzene	95
m,p-Xylene	92
o-Xylene	90
trans-1,2-Dichloroethene	107
Methyl tert-butyl ether	99
Chloromethane	90
Bromomethane	95
Chloroethane	103
Hexane	91
2-Butanone (Methyl Ethyl Ketone)	102
Chloroform	96
Cyclohexane	95
1,2-Dichloropropane	96
1,4-Dioxane	94
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	96
trans-1,3-Dichloropropene	101

Client Sample ID: LCS

Lab ID#: 1107258-04A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	e071903a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/19/11 09:19 AM

Compound	%Recovery
Chlorobenzene	95
Styrene	92
1,3,5-Trimethylbenzene	97
1,2,4-Trimethylbenzene	96
alpha-Chlorotoluene	102
2,2,4-Trimethylpentane	93
tert-Butyl alcohol	64
Methylene Chloride	94
Hexachlorobutadiene	98
Ethanol	99
1,2,4-Trichlorobenzene	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	97	83-115
1,2-Dichloroethane-d4	96	68-134
Toluene-d8	99	89-109



Client Sample ID: LCSD

Lab ID#: 1107258-04AA

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>e071904a</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 7/19/11 09:56 AM</b>

<b>Compound</b>	<b>%Recovery</b>
1,1,1-Trichloroethane	93
Carbon Tetrachloride	93
Trichloroethene	96
Bromodichloromethane	100
1,1,2-Trichloroethane	96
Tetrachloroethene	94
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	100
1,1,2,2-Tetrachloroethane	97
1,3-Dichlorobenzene	86
1,4-Dichlorobenzene	84
1,2-Dichlorobenzene	87
Freon 12	95
Freon 114	93
Freon 11	93
Freon 113	94
Bromoform	107
Vinyl Chloride	94
1,1-Dichloroethene	100
1,1-Dichloroethane	96
cis-1,2-Dichloroethene	95
Benzene	95
1,2-Dichloroethane	95
Toluene	94
Ethyl Benzene	94
m,p-Xylene	89
o-Xylene	87
trans-1,2-Dichloroethene	107
Methyl tert-butyl ether	98
Chloromethane	89
Bromomethane	93
Chloroethane	100
Hexane	92
2-Butanone (Methyl Ethyl Ketone)	100
Chloroform	94
Cyclohexane	95
1,2-Dichloropropane	95
1,4-Dioxane	94
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	95
trans-1,3-Dichloropropene	101

Client Sample ID: LCSD

Lab ID#: 1107258-04AA

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	e071904a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/19/11 09:56 AM

Compound	%Recovery
Chlorobenzene	95
Styrene	89
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	94
alpha-Chlorotoluene	100
2,2,4-Trimethylpentane	93
tert-Butyl alcohol	63
Methylene Chloride	95
Hexachlorobutadiene	98
Ethanol	98
1,2,4-Trichlorobenzene	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
4-Bromofluorobenzene	96	83-115
1,2-Dichloroethane-d4	97	68-134
Toluene-d8	100	89-109

**Section 5**  
**VPB 130 Chain of Custody Records**

C2731



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº 728450**

PAGE 1 OF 1

PROJECT NO: <b>112G00622</b>		FACILITY: <b>BETHPAGE 0U2 GW</b>		PROJECT MANAGER <b>D. BRAYACK</b>		PHONE NUMBER <b>757 461 3824</b>		LABORATORY NAME AND CONTACT: <b>HUMMLER / CHEMTECH</b>				
SAMPLERS (SIGNATURE) <i>SJ Conte</i>				FIELD OPERATIONS LEADER <b>S CONTI</b>		PHONE NUMBER <b>412 551 2629</b>		ADDRESS <b>284 SHEFFIELD ST</b>				
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input checked="" type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				CARRIER/WAYBILL NUMBER <b>FED EX # 8735 5966 0233</b>		CITY, STATE <b>MOUNTAINSIDE, NJ 07092</b>						
						CONTAINER TYPE PLASTIC (P) or GLASS (G)		TYPE OF ANALYSIS VOCs (40ml) <b>70C HCL G</b>				
						PRESERVATIVE USED						
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	COMMENTS			
6/13	1100	BP-VPB-TB-061311	TB	1	1	QC	G	2	2			
6/13	1205	BP-VPB130-GW-057	VPB130	56	57	GW	G	2	2			
6/13	1510	BP-VPB130-GW-102	"	101	102	"	G	2	2			
6/14	1020	BP-VPB130-GW-147	"	146	147	"	G	2	2	VERY TURBID SAMPLE.		
6/14	1340	BP-VPB130-GW-207	"	206	207	"	G	2	2			
6/14	1540	BP-VPB130-GW-227	"	226	227	"	G	2	2			
6/15	0940	BP-VPB130-GW-247	"	246	247	"	G	2	2			
6/15	1130	BP-VPB130-GW-267	"	266	267	"	G	2	2	DK GRAY.		
6/15	1315	BP-VPB130-GW-287	"	286	287	"	G	2	2	GRAY		
6/15	1500	BP-VPB130-GW-307	"	306	307	"	G	2	2			
6/16	1040	BP-VPB130-GW-327	"	326	327	"	G	2	2			
6/16	1240	BP-VPB130-GW-347	"	346	347	"	G	2	2			
6/16	<del>1440</del>	<del>BP-VPB130-GW-367</del>	"	<del>366</del>	<del>367</del>	"				← NOT TODAY		
1. RELINQUISHED BY <i>SJ Conte</i>				DATE <b>6/16/11</b>	TIME <b>1700</b>	1. RECEIVED BY <b>FED EX</b>		DATE	TIME			
2. RELINQUISHED BY				DATE	TIME	2. RECEIVED BY		DATE	TIME			
3. RELINQUISHED BY <i>FedEx</i>				DATE <b>6-17-11</b>	TIME <b>930</b>	3. RECEIVED BY <i>[Signature]</i>		DATE <b>6-17-11</b>	TIME <b>930</b>			
COMMENTS												

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)

YELLOW (FIELD COPY)  
186

PINK (FILE COPY)

Temp 5°C FORM NO. TINUS-001

4/02R



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **N0** 128454

PAGE **1** OF **1**

C2771

PROJECT NO: <b>12G00622</b>		FACILITY: <b>BETHPAGE 002</b>		PROJECT MANAGER <b>D BRAYACK</b>		PHONE NUMBER <b>757 461 3824</b>		LABORATORY NAME AND CONTACT: <b>CHEMTECH/HUMMLER</b>				
SAMPLERS (SIGNATURE)  <b>Sj Conti</b>				FIELD OPERATIONS LEADER <b>S CONTI</b>		PHONE NUMBER <b>412 551 2629</b>		ADDRESS <b>284 SHEFFIELD ST</b>				
				CARRIER/WAYBILL NUMBER <b>FED EX 8735 5966 0244</b>				CITY, STATE <b>MOUNTAINSIDE, NJ 07092</b>				
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input checked="" type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								CONTAINER TYPE PLASTIC (P) or GLASS (G)		<b>40C HCL G</b>		
								PRESERVATIVE USED				
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	<b>TYPE OF ANALYSIS</b> <b>VOCs</b>			<b>COMMENTS</b>
<b>6/17</b>	<b>0700</b>	<b>BP-VPB-TB-061711</b>	<b>TB</b>	<b>-</b>	<b>-</b>	<b>QC</b>	<b>G</b>	<b>2</b>				
<b>6/17</b>	<b>0730</b>	<b>BP-VPB130-GW-367</b>	<b>VPB 130</b>	<b>366</b>	<b>367</b>	<b>GW</b>	<b>G</b>	<b>2</b>				
<b>6/20</b>	<b>1000</b>	<b>BP-VPB130-GW-387</b>	<b>"</b>	<b>386</b>	<b>387</b>	<b>GW</b>	<b>G</b>	<b>2</b>				
<b>6/20</b>	<b>1145</b>	<b>BP-VPB130-GW-407</b>	<b>"</b>	<b>406</b>	<b>407</b>	<b>GW</b>	<b>G</b>	<b>2</b>				
<b>6/20</b>	<b>1340</b>	<b>BP-VPB130-GW-427</b>	<b>"</b>	<b>426</b>	<b>427</b>	<b>GW</b>	<b>G</b>	<b>2</b>				
<b>6/20</b>	<b>1530</b>	<b>BP-VPB130-GW-447</b>	<b>"</b>	<b>446</b>	<b>447</b>	<b>GW</b>	<b>G</b>	<b>2</b>				
1. RELINQUISHED BY <b>Sj Conti</b>				DATE <b>6/20/11</b>	TIME <b>1600</b>	1. RECEIVED BY <b>FED EX</b>			DATE	TIME		
2. RELINQUISHED BY				DATE	TIME	2. RECEIVED BY			DATE	TIME		
3. RELINQUISHED BY <b>Fed Ex</b>				DATE <b>6/21/11</b>	TIME <b>9:25</b>	3. RECEIVED BY <b>Van Ruvro</b>			DATE <b>6/21/11</b>	TIME <b>9:25</b>		
COMMENTS											<b>Temp. 3°C</b>	



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº 028455**PAGE **1** OF **1**

C2820

PROJECT NO: <b>112G00622</b>		FACILITY: <b>BETHPAGE 0U2</b>		PROJECT MANAGER <b>D. BRAYACK</b>		PHONE NUMBER <b>757 461 3824</b>		LABORATORY NAME AND CONTACT: <b>CHEMTECH / HUMMLER</b>													
SAMPLERS (SIGNATURE) <b>SjConte</b>				FIELD OPERATIONS LEADER <b>S CONTI</b>		PHONE NUMBER <b>412 551 2629</b>		ADDRESS <b>284 SHEFFIELD ST</b>													
				CARRIER/WAYBILL NUMBER <b>FED EX 8735 5966 0277</b>				CITY, STATE <b>MOUNTAINSIDE, NJ 07092</b>													
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input checked="" type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		<div style="text-align: center;"> <p>4°C HCL G</p> <p>4°C G</p> <p>TYPE OF ANALYSIS</p> <p>VOCs (40ml)</p> <p>TOC (WALKLEY BLACK)</p> </div>													
DATE YEAR <b>2011</b>		TIME		SAMPLE ID		LOCATION ID						TOP DEPTH (FT)		BOTTOM DEPTH (FT)		MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD		GRAB (G) COMP (C)	
<b>6/21</b>		<b>0800</b>		<b>BP-VPB-TB-062111</b>		<b>TB</b>		<b>-</b>		<b>-</b>		<b>QC</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/21</b>		<b>0845</b>		<b>BP-VPB130-SB-467</b>		<b>VPB 130</b>		<b>466</b>		<b>467</b>		<b>SO</b>		<b>G</b>		<b>1</b>		<b>1</b>			
<b>6/21</b>		<b>1030</b>		<b>BP-VPB130-GW-487</b>		<b>"</b>		<b>486</b>		<b>487</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/21</b>		<b>1240</b>		<b>BP-VPB130-GW-507</b>		<b>"</b>		<b>506</b>		<b>507</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/21</b>		<b>1430</b>		<b>BP-VPB130-GW-527</b>		<b>"</b>		<b>526</b>		<b>527</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/22</b>		<b>1020</b>		<b>BP-VPB130-GW-547</b>		<b>"</b>		<b>546</b>		<b>547</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/22</b>		<b>1215</b>		<b>BP-VPB130-GW-567</b>		<b>"</b>		<b>566</b>		<b>567</b>		<b>GW</b>		<b>G</b>		<b>1</b>		<b>1</b>			
<b>6/22</b>		<b>1420</b>		<b>BP-VPB130-GW-587</b>		<b>"</b>		<b>586</b>		<b>587</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/23</b>		<b>0920</b>		<b>BP-VPB130-<del>SB</del>-607</b>		<b>"</b>		<b>606</b>		<b>607</b>		<b>SO</b>		<b>G</b>				<b>1</b>			
<b>6/23</b>		<b>1145</b>		<b>BP-VPB130-GW-627</b>		<b>"</b>		<b>626</b>		<b>627</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
<b>6/23</b>		<b>1430</b>		<b>BP-VPB130-GW-647</b>		<b>"</b>		<b>646</b>		<b>647</b>		<b>GW</b>		<b>G</b>		<b>2</b>		<b>2</b>			
1. RELINQUISHED BY <b>SjConte</b>				DATE <b>6/23/11</b>		TIME <b>1600</b>		1. RECEIVED BY <b>FED EX.</b>				DATE		TIME							
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME							
3. RELINQUISHED BY <b>DPB FedEx</b>				DATE <b>6/24/11</b>		TIME <b>925</b>		3. RECEIVED BY <b>[Signature]</b>				DATE <b>6/24/11</b>		TIME <b>9:25</b>							
COMMENTS <b>Temp: 3°C</b>																					

DISTRIBUTION:

WHITE (ACCOMPANIES SAMPLE)

YELLOW (FIELD COPY)

PINK (FILE COPY)

4/02R

FORM NO. TINUS-001

C2845



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **028456**

PAGE **1** OF **1**

PROJECT NO: <b>112G00622</b>		FACILITY: <b>BETHPAGE 0U2</b>		PROJECT MANAGER <b>D. BRAYACK</b>		PHONE NUMBER <b>957 461 3824</b>		LABORATORY NAME AND CONTACT: <b>CHEMTECH / HUMMLER</b>					
SAMPLERS (SIGNATURE) <i>Sg Conti</i>		FIELD OPERATIONS LEADER <b>S CONTI</b>		PHONE NUMBER <b>412 551 2629</b>		ADDRESS <b>284 SHEFFIELD ST</b>				CITY, STATE <b>MOUNTAINSIDE, NJ 07092</b>			
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input checked="" type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day		CARRIER/WAYBILL NUMBER <b>FED EX # 8735 5966 0288</b>		CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		<div style="text-align: center;"> <p>4°C ICL G</p> <p>TYPE OF ANALYSIS</p> <p>VOCs (40ml)</p> </div>					
DATE YEAR <b>2011</b>		LOCATION ID		TOP DEPTH (FT)		BOTTOM DEPTH (FT)						MATRIX (GW, SO, SW, SD, QC, ETC.)	
TIME		SAMPLE ID		72 HR FAX RESULTS		No. OF CONTAINERS		TYPE OF ANALYSIS		COMMENTS			
6/24		0800 BP-VPB-TB-062411		TB		-		QC		G 2 2		TB	
6/24		1010 BP-VPB130-GW-667		VPB 130		666 667		GW		G 2 2		TURBID	
6/27		1130 BP-VPB130-GW-687		"		686 687		GW		G 2 2		"	
6/27		1145 BP-VPB130-SW-062711		SOURCE WATER		-		SW		G 2 2		SOURCE WATER (HYDRAWT)	
6/27		1200 BP-VPB130-DM-700		VPB 130		700 NA		DM		G 2 2		← DRILL MUD ~ 700'	
6/27		1320 BP-VPB130-GW-707		"		706 707		GW		G 2 2		TURBID	

1. RELINQUISHED BY <i>Sg Conti</i>	DATE <b>6/27/11</b>	TIME <b>1600</b>	1. RECEIVED BY <b>FED EX</b>	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY <b>FED EX</b>	DATE <b>6-28-11</b>	TIME <b>9:35am</b>	3. RECEIVED BY <i>S. Conti</i>	DATE <b>6-28-11</b>	TIME <b>7:35am</b>

COMMENTS: *Cooler Temperature Upon Receipt 52 ICE IN COOLER. YES*

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

C 2873



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER N<sup>o</sup> 028457

PAGE 1 OF 1

PROJECT NO: 11AG00622		FACILITY: BETHPAGE 0U2		PROJECT MANAGER D BRAYACK		PHONE NUMBER 757 461 3824		LABORATORY NAME AND CONTACT: CHEMTECH / HUMMLER				
SAMPLERS (SIGNATURE) Sj Conti				FIELD OPERATIONS LEADER S Conti		PHONE NUMBER 412 551 2629		ADDRESS 284 SHEFFIELD ST.				
				CARRIERWAYBILL NUMBER FED EX 8735 5966 0726				CITY, STATE MOUNTAINSIDE, NJ 07092				
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input checked="" type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								CONTAINER TYPE PLASTIC (P) or GLASS (G)		TYPE OF ANALYSIS VOC's (40ml) / 7°C HCL G		
								PRESERVATIVE USED				
DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	COMMENTS			
6/28	0800	BP-VPB-TB-062811	TB	-	-	QC	G	2	Temp: 4°C			
6/28	1000	BP-VPB130-GW-747	VPB 130	746	747	GW	G	2				
6/28	1240	BP-VPB130-GW-767	"	766	767	GW	G	2				
6/28	1445	BP-VPB130-GW-787	"	786	787	GW	G	1				
6/29	1000	BP-VPB130-GW-807	"	806	807	GW	G	2				
6/29	1330	BP-VPB130-GW-847	"	846	847	GW	G	2				
1. RELINQUISHED BY Sj Conti				DATE 6/29/11	TIME 1600	1. RECEIVED BY FED EX			DATE	TIME		
2. RELINQUISHED BY				DATE	TIME	2. RECEIVED BY			DATE	TIME		
3. RELINQUISHED BY Fed Ex				DATE 6/30/11	TIME 9:40	3. RECEIVED BY Ken Ruvier			DATE 6/30/11	TIME 9:40		
COMMENTS												

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4/02R  
FORM NO. TTNUS-001





TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER **Nº** 1107258  
128461

PAGE 1 OF 1

PROJECT NO: 112600622		FACILITY: BETHPAGE 002		PROJECT MANAGER D. BRAYACK		PHONE NUMBER 757 461 3824		LABORATORY NAME AND CONTACT: AIR TOXIC LTD/ A. SCOTT									
SAMPLERS (SIGNATURE) Sj Conti		FIELD OPERATIONS LEADER S CONTI		CARRIER/WAYBILL NUMBER FED EX # 8735 5966 0704		PHONE NUMBER 412 551 2629		ADDRESS 180-B BLUE RAVINE RD									
						CITY, STATE FOLSOM, CA. 95630											
STANDARD TAT <input type="checkbox"/> RUSH TAT <input type="checkbox"/>		TOP DEPTH (FT)		BOTTOM DEPTH (FT)		MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD GRAB (G) COMP (C)		No. OF CONTAINERS		CONTAINER TYPE PLASTIC (P) or GLASS (G)					
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day												PRESERVATIVE USED					
DATE YEAR 2011		TIME		SAMPLE ID		LOCATION ID		TYPE OF ANALYSIS 8 HR SUMMA TO 15A - 1		INITIAL		FINAL		COMMENTS			
7/13		0700		BP-VPB130-AIR-071311		VPB 130		AIR G		1		-31		-7.5		CAN # 34501 LOC VBB-130 TAKEN DURING DRIVING AT BROW 2-3 AT DEPTHS 300 → 420 ±	
TO 7/14																	
												HRS		⊗			
												1.5		0700 → 0830		7/13	
												2		1300 → 1500		7/13	
												4.5		0800 → 1230		7/14	
												8.0		APPROX.			
												9 HRS		RAN TO 1330			
														Final Rdg e			
														-7.5		After 9 HRS	
1. RELINQUISHED BY		DATE		TIME		1. RECEIVED BY		DATE		TIME		DATE		TIME			
Sj Conti		7/14/11		1600		FED EX											
2. RELINQUISHED BY		DATE		TIME		2. RECEIVED BY		DATE		TIME		DATE		TIME			
						ATL		7.05.11		0830							
3. RELINQUISHED BY		DATE		TIME		3. RECEIVED BY		DATE		TIME		DATE		TIME			
COMMENTS <input checked="" type="checkbox"/> HAD TO MONITOR AIR DURING 2 DAYS (RIG BREAKDOWN) TOTAL WAS 8 HRS. 9 HRS.																	

DISTRIBUTION:

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YELLOW (FIELD COPY)

PINK (FILE COPY)

4/02R

FORM NO. TINUS-001

**Section 6**

**VPB 130 Validation Letter and Table**



**TO: D. BRAYACK** **DATE: SEPTEMBER 19, 2011**

**FROM: EDWARD SEDLMYER** **COPIES: DV FILE**

**SUBJECT: ORGANIC DATA VALIDATION – VOC  
NWIRP BETHPAGE CTO 066  
SDG C2731**

**SAMPLES:** 15 / Aqueous / VOC

BP-ANY-DUP-061611	BP-ANY-N08480	BP-ANY-N09338
BP-ANY-TB-061611	BP-VPB-TB-061311	BP-VPB130-GW-057
BP-VPB130-GW-102	BP-VPB130-GW-147	BP-VPB130-GW-227
BP-VPB130-GW-247	BP-VPB130-GW-267	BP-VPB130-GW-287
BP-VPB130-GW-307	BP-VPB130-GW-327	BP-VPB130-GW-347

1 / Soil / VOC (Groundwater sample analyzed as a soil due to suspended sediment in the matrix)

BP-VBB130-GW-207

#### Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C2731 consists of thirteen (13) aqueous environmental samples, two (2) trip blanks, and one (1) soil environmental sample. One field duplicate was associated with this SDG: BP-ANY-N08480 / BP-ANY-DUP-061611. The aqueous and soil samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on June 13, 14, 15, and 16, 2011 and analyzed by CHEMTECH. All analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \* • Data completeness
- \* • Holding times
- Initial/continuing calibrations
- \* • GC/MS Tuning
- Laboratory Method Blank Results
- Surrogate Recoveries
- Matrix Spike / Matrix Spike Duplicate Recoveries
- Laboratory Control Sample Recoveries
- Internal Standard Recoveries
- \* • Field Duplicate Results
- \* • 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.

Volatile Organic Compounds

The following contaminant was detected in a laboratory method blank at the following maximum concentration:

<u>Contaminant</u>	<u>Maximum Concentration (ug/kg)</u>	<u>Action Level (ug/kg)</u>
Methylene chloride <sup>(1)</sup>	4.6	46

1 – Contaminants present in method blank VBF0623S1.

An action level of 10X the maximum contaminant concentration of methylene chloride was established to evaluate the affected sample for laboratory method blank contamination. Sample aliquot, percent moisture, and dilution factors were taken into consideration during application of the blank action level. The positive methylene chloride result less than the action level was qualified as (U).

The groundwater sample BP-VBB130-GW-207 was very turbid and was analyzed and reported by the laboratory as a soil. The percent moisture for the sample was 82% and the results were corrected for percent moisture. The project manager was notified by the laboratory of the turbidity issue. No validation action was taken on the percent moisture less than 30%.

An initial calibration relative response factor (RRF) was less than the 0.05 quality control limit for acetone on instrument MSVOA\_D, on 06/15/11. The non-detected acetone results for samples BP-ANY-TB-061611, BP-VPB-TB-061311, BP-ANY-N08480, and BP-ANY-N09338 were rejected (UR).

Continuing calibration percent difference (%D) was greater than the 20% quality control limit for carbon tetrachloride, 1,2-dichloroethane, and chlorodibromomethane. The percent drift was greater than 20% quality control limit for trichlorofluoromethane on instrument MSVOA\_D, on 06/17/11 at 11:18. The nondetected results reported for carbon tetrachloride, 1,2-dichloroethane, chlorodibromomethane, and trichlorofluoromethane were qualified as estimated (UJ), in samples BP-ANY-TB-061611, BP-VPB-TB-061311, BP-ANY-N08480, and BP-ANY-N09338.

Continuing calibration percent difference (%D) was greater than the 20% quality control limit for chloromethane on instrument MSVOA\_F, on 06/22/11 at 10:27. No action was taken on this basis because the associated sample was the initial analysis for BP-VBB130-GW-207, which was not used for validation.

Continuing calibration percent difference (%D) was greater than the 20% quality control limit for chloromethane and a percent drift greater than the 20% quality control limit for methylene chloride, on instrument MSVOA\_F, on 06/23/11 at 10:37. The nondetected chloromethane result for the re-analysis of sample BP-VBB130-GW-207 was qualified as estimated (UJ). No action was taken on the methylene chloride result because it was previously qualified due to blank contamination.

Continuing calibration percent drift was greater than the 20% quality control limit for bromoform on instrument MSVOA\_G, on 06/21/11 at 09:32. The nondetected results reported for bromoform were qualified as estimated (UJ), in samples BP-VPB130-GW-057, BP-VPB130-GW-147, BP-VPB130-GW-307, and BP-VPB130-GW-327.

Continuing calibration percent difference (%D) was greater than the 20% quality control limit for chloromethane and methyl acetate and a percent drift greater than the 20% quality control limit for acetone, on instrument MSVOA\_H, on 06/20/11 at 12:49. The nondetected results reported for chloromethane, methyl acetate, and acetone were qualified as estimated (UJ), in samples BP-ANY-DUP-061611, BP-VPB130-GW-287, BP-VPB130-GW-347, BP-VPB130-GW-102, and BP-VPB130-GW-227.

Continuing calibration percent difference (%D) was greater than the 20% quality control limit for dichlorodifluoromethane, chloromethane, vinyl chloride, 1,1,2-trichlorotrifluoroethane, methyl acetate, methyl tert-butyl ether, 1,1-dichloroethane, 2-butanone, and 4-methyl-2-pentanone and a percent drift greater than the 20% quality control limit for acetone, on instrument MSVOA\_H, on 06/21/11 at 12:54. The positive 1,1-dichloroethane results for the re-analysis of samples BP-VPB130-GW-247 and BP-VPB130-GW-267 were qualified as estimated (J). The nondetected results reported for the aforementioned compounds were qualified as estimated (UJ), in the re-analysis for samples BP-VPB130-GW-247 and BP-VPB130-GW-267.

The surrogate 4-bromofluorobenzene had a percent recovery less than the lower quality control limit for sample BP-VBB130-GW-207 and a low 1,4-dichlorobenzene-d4 internal standard recovery. The sample was re-analyzed with similar results. The re-analysis sample was used for validation. The nondetected results for sample BP-VBB130-GW-207 were qualified as estimated (UJ).

The surrogate 1,2-dichloroethane-d4 had a percent recovery greater than the upper quality control limit for sample BP-VPB130-GW-227. The sample was re-analyzed with similar results. The original sample results were used for validation. The positive results for sample BP-VPB130-GW-227 were qualified as estimated (J).

The surrogate 1,2-dichloroethane-d4 had a percent recovery greater than the upper quality control limit for sample BP-VPB130-GW-267 and high recoveries for pentafluorobenzene and 1,4-difluorobenzene (internal standards). The sample was re-analyzed with a high surrogate 1,2-dichloroethane-d4 recovery and acceptable internal standard recoveries. The re-analyzed sample results were used for validation. The positive results for sample BP-VPB130-GW-267 were qualified as estimated (J) and (UJ), respectively.

The internal standard pentafluorobenzene had a recovery less than the 50% quality control limit for sample BP-VPB130-GW-247. The sample was re-analyzed with acceptable internal standard recoveries but high 1,2-dichloroethane-d4 and 4-bromofluorobenzene recoveries. The re-analyzed sample was used for validation. The positive results were qualified as estimated (J) due to high surrogate recoveries.

The internal standards 1,4-dichlorobenzene-d4 and chlorobenzene-d5 had recoveries less than the 50% quality control limit for sample BP-VPB130-GW-102. The sample was not re-analyzed undiluted. The positive and nondetected results quantitated using internal standards 1,4-dichlorobenzene-d4 and chlorobenzene-d5 were qualified as estimated (J) and (UJ), respectively.

In the laboratory control sample BSD0617W2, the percent recovery (%R) of chloroethane was greater than the upper quality control limit. No action was taken on the nondetected chloroethane results in the affected samples.

In the laboratory control sample BSF0623S1, the percent recoveries (%R) of chloromethane, vinyl chloride, and carbon tetrachloride were greater than the upper quality control limit. No action was taken on the nondetected chloromethane, vinyl chloride, and carbon tetrachloride results in the affected sample.

In the laboratory control sample BSH0620W1, the percent recovery (%R) of acetone was greater than the upper quality control limit. No action was taken on the nondetected acetone results in the affected samples.

In the laboratory control sample BSH0621W1, the percent recovery (%R) of chloromethane and acetone were greater than the upper quality control limit. No action was taken on the nondetected chloromethane and acetone results in the affected sample.

The matrix spike / matrix spike duplicate (MS/MSD) associated with this SDG had percent recoveries for methyl acetate greater than the upper quality control limit and a relative percent difference that exceeded the quality control limit for acetone. No action was taken on this basis because the sample was not a Tetra Tech sample.

#### Additional Comments

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

Sample BP-VPB130-GW-102 was analyzed at a 10 fold dilution due to a benzene concentration greater than the linear range of the instrument. All other results were reported from the undiluted analysis.

Methylene chloride was detected in both trip blanks associated with this SDG. No action was taken on the trip blank results.

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Methylene chloride contamination in one sample resulted in the qualification of results in two samples. Continuing calibration %D noncompliance resulted in the qualification of several results. Surrogate recovery noncompliance resulted in the qualification of data for several samples.

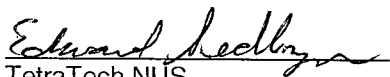
**Other Factors Affecting Data Quality:** Internal standard noncompliances resulted in the qualification of several results. Positive results below the limit of quantitation (LOQ) and above the detection limit (DL) were qualified as estimated, (J), due to uncertainty near the detection limit.

TO: D. BRAYACK  
SDG: C2731

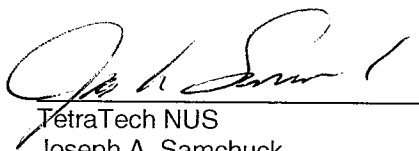
PAGE: 5

The data for these analyses were reviewed with reference to the USEPA Region II Standard Operating Procedures for Validating Volatile Organic Compounds by SW-846 Method 8260B HW-24 Revision #2 (August 2008) 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.



TetraTech NUS  
Edward Sedlmyer  
Chemist/Data Validator



TetraTech NUS  
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



**Data Validation Qualifier Codes:**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< CRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $> 25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BP-ANY-DUP-061611	BP-ANY-N08480	BP-ANY-N09338	BP-ANY-TB-061611				
SDG: C2731	LAB_ID	C2731-04	C2731-03	C2731-02	C2731-01				
FRACTION: OV	SAMP_DATE	6/16/2011	6/16/2011	6/16/2011	6/16/2011				
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	BP-ANY-N08480							
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		C	0.5 UJ		C	0.5 UJ		C
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			2.5 U			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	2.5 UJ		C	2.5 UR		C	2.5 UR		C
BENZENE	0.5 U			0.5 U			0.5 U		
BROMODICHLOROMETHANE	0.5 U			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 UJ		C	0.5 UJ		C
CHLOROBENZENE	0.5 U			0.5 U			0.5 U		
CHLORODIBROMOMETHANE	0.5 U			0.5 UJ		C	0.5 UJ		C
CHLOROETHANE	0.5 U			0.5 U			0.5 U		
CHLOROFORM	0.5 U			0.5 U			0.5 U		
CHLOROMETHANE	0.5 UJ		C	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		

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-057	BP-VPB130-GW-102	BP-VPB130-GW-102DL	BP-VPB130-GW-147				
SDG: C2731	LAB_ID	C2731-06	C2731-07	C2731-07DL	C2731-08				
FRACTION: OV	SAMP_DATE	6/13/2011	6/13/2011	6/13/2011	6/14/2011				
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
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
1,1-DICHLOROETHANE	0.5 U	0.5 U		7.5	1.8			1.8	
1,1-DICHLOROETHENE	0.5 U	0.5 U		2.5	0.5 U			0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,2-DIBROMOETHANE	0.5 U	0.5 U		1	0.5 U			0.5 U	
1,2-DICHLOROBENZENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,2-DICHLOROETHANE	0.5 U	0.5 U		10	0.5 U			0.5 U	
1,2-DICHLOROPROPANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
1,3-DICHLOROBENZENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
1,4-DICHLOROBENZENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
2-BUTANONE	2.5 U	2.5 U		2.5 U	2.5 U			2.5 U	
2-HEXANONE	2.5 U	2.5 U		2.5 U	2.5 U			2.5 U	
4-METHYL-2-PENTANONE	2.5 U	2.5 U	N	2.5 UJ	2.5 U	N		2.5 U	
ACETONE	2.5 U	2.5 U	C	2.5 UJ	2.5 U	C		2.5 U	
BENZENE	0.5 U	0.5 U		0.5 U	0.5 U		440	0.5 U	
BROMODICHLOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
BROMOFORM	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	N		0.5 UJ	C
BROMOMETHANE	0.5 U	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			0.5 U	
CARBON TETRACHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
CHLOROBENZENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
CHLORODIBROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
CHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
CHLOROFORM	0.5 U	0.5 U		2.2	0.78 J			0.78 J	P
CHLOROMETHANE	0.5 U	0.5 U		0.5 UJ	0.5 U	C		0.5 U	
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U	P	0.76 J	0.5 U	P		0.5 U	
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U	N	0.5 UJ	0.5 U	N		0.5 U	
CYCLOHEXANE	0.5 U	0.5 U		10	0.5 U			0.5 U	
DICHLORODIFLUOROMETHANE	0.5 U	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			0.5 U	
ISOPROPYLBENZENE	0.5 U	0.5 U	N	1.8 J	0.5 U	N		0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-227	BP-VPB130-GW-247RE	BP-VPB130-GW-267RE	BP-VPB130-GW-287				
SDG: C2731	LAB_ID	C2731-10	C2731-11RE	C2731-12RE	C2731-13				
FRACTION: OV	SAMP_DATE	6/14/2011	6/15/2011	6/15/2011	6/15/2011				
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
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	0.5 U		0.5 UJ	0.5 UJ	C	0.5 U	0.5 U	
1,1-DICHLOROETHANE	1.2 J	1.8 J	R	1.8 J	5.8 J	CR	0.5 U	0.5 U	
1,1-DICHLOROETHENE	0.67 J	0.5 U	PR	0.5 U	1.8 J	R	0.5 U	0.5 U	
1,2,4-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DIBROMOETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,3-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
1,4-DICHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
2-BUTANONE	2.5 U	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 U	2.5 U	
2-HEXANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
4-METHYL-2-PENTANONE	2.5 U	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 U	2.5 U	
ACETONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
BENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
BROMOFORM	0.5 U	0.5 U		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		0.5 U	0.5 U	
CARBON DISULFIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.55 J	0.5 U	P
CARBON TETRACHLORIDE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CHLORODIBROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROFORM	1.1 J	0.88 J	R	0.88 J	1.5 J	R	0.5 U	0.5 U	
CHLOROMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
DICHLORODIFLUOROMETHANE	0.5 U	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 U	0.5 U	
ETHYLBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-307	BP-VPB130-GW-327	BP-VPB130-GW-347	BP-VPB-TB-061311				
SDG: C2731	LAB_ID	C2731-14	C2731-15	C2731-16	C2731-05				
FRACTION: OV	SAMP_DATE	6/15/2011	6/16/2011	6/16/2011	6/13/2011				
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
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,1-DICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DIBROMOETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	C
1,3-DICHLOROBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
2-BUTANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
2-HEXANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
4-METHYL-2-PENTANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
ACETONE	1.5 J	2.5 U	P	2.5 U	2.5 U		2.5 U	2.5 U	C
BENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
BROMOFORM	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ		0.5 UJ	0.5 UJ	C
BROMOMETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CARBON TETRACHLORIDE	0.5 U	0.5 U		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		0.5 U	0.5 U	C
CHLORODIBROMOMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROFORM	0.5 U	0.5 U		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		0.5 U	0.5 U	C
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CYCLOHEXANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
ETHYLBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	

PROJ_NO: 00622		NSAMPLE	BP-ANY-DUP-061611	BP-ANY-N08480	BP-ANY-N09338	BP-ANY-TB-061611
SDG: C2731		LAB_ID	C2731-04	C2731-03	C2731-02	C2731-01
FRACTION: OV		SAMP_DATE	6/16/2011	6/16/2011	6/16/2011	6/16/2011
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	BP-ANY-N08480			
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 U	C	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 U	0.5 U		0.5 U	0.5 U	
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 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 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 UJ	0.5 UJ	C
VINYL CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U	

PROJ_NO: 00622	NSAMPLE		BP-VPB130-GW-057		BP-VPB130-GW-102		BP-VPB130-GW-102DL		BP-VPB130-GW-147		
	LAB_ID	SAMP_DATE	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
SDG: C2731	C2731-06	6/13/2011	1 U	1 UJ	N	1 UJ	1 U	N	C2731-08	1 U	
FRACTION: OV	6/13/2011	6/13/2011	0.5 U	0.5 UJ	C	0.5 UJ	0.5 U	C	6/14/2011	0.5 U	
MEDIA: WATER	NM	NM	0.5 U	1.9		1.9	0.5 U		NM	0.5 U	
	UG/L	UG/L	0.5 U	53		53	0.5 U		UG/L	2.9	
	0.0	0.0	0.5 U	0.5 U		0.5 U	0.5 U		0.0	0.5 U	
			0.5 U	0.5 UJ	N	0.5 UJ	0.5 U			0.5 U	
			0.5 U	0.5 UJ	N	0.5 UJ	0.5 U			0.5 U	
			0.5 U	0.5 UJ	N	0.5 UJ	0.5 U			0.5 U	
			0.5 U	2.7 J	N	2.7 J	0.5 U			0.5 U	
			0.5 U	0.5 UJ	N	0.5 UJ	0.5 U			0.5 U	
			0.5 U	0.5 U	N	0.5 U	0.5 U			0.5 U	
			0.5 U	0.5 U	N	0.5 U	0.5 U			0.5 U	
			0.5 U	0.5 UJ	N	0.5 UJ	0.5 U			0.5 U	
			0.5 U	7.8		7.8	0.5 U			0.5 U	
			0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
			0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	
			0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-227	BP-VPB130-GW-247RE	BP-VPB130-GW-267RE	BP-VPB130-GW-287				
SDG: C2731	LAB_ID	C2731-10	C2731-11RE	C2731-12RE	C2731-13				
FRACTION: OV	SAMP_DATE	6/14/2011	6/15/2011	6/15/2011	6/15/2011				
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
M+P-XYLENES	1 U	1 U		1 U	1 U		1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
METHYL CYCLOHEXANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
METHYL TERT-BUTYL ETHER	0.5 U	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
O-XYLENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
TRICHLOROETHENE	7.8 J	2.8 J	R	2.8 J	3 J	R	0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
VINYL CHLORIDE	0.5 U	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 U	0.5 U	



PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-307	BP-VPB130-GW-327	BP-VPB130-GW-347	BP-VPB-TB-061311				
SDG: C2731	LAB_ID	C2731-14	C2731-15	C2731-16	C2731-05				
FRACTION: OV	SAMP_DATE	6/15/2011	6/16/2011	6/16/2011	6/13/2011				
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
M+P-XYLENES		1 U		1 U			1 U		
METHYL ACETATE		0.5 U		0.5 U			0.5 UJ		C
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		7.7
STYRENE		0.5 U		0.5 U			0.5 U		0.5 U
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 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 UJ
VINYL CHLORIDE		0.5 U		0.5 U			0.5 U		0.5 U

PROJ_NO: 00622	NSAMPLE	BP-VBB130-GW-207RE	
SDG: C2731	LAB_ID	C2731-17RE	
FRACTION: OV	SAMP_DATE	6/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	18.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	70 UJ	R	R
1,1,2,2-TETRACHLOROETHANE	70 UJ	NR	NR
1,1,2-TRICHLOROETHANE	70 UJ	R	R
1,1,2-TRICHLOROTRIFLUOROETHANE	70 UJ	R	R
1,1-DICHLOROETHANE	70 UJ	R	R
1,1-DICHLOROETHENE	70 UJ	R	R
1,2,4-TRICHLOROBENZENE	70 UJ	NR	NR
1,2-DIBROMO-3-CHLOROPROPANE	70 UJ	R	R
1,2-DIBROMOETHANE	70 UJ	R	R
1,2-DICHLOROBENZENE	70 UJ	NR	NR
1,2-DICHLOROETHANE	70 UJ	R	R
1,2-DICHLOROPROPANE	70 UJ	R	R
1,3-DICHLOROBENZENE	70 UJ	NR	NR
1,4-DICHLOROBENZENE	70 UJ	NR	NR
2-BUTANONE	340 UJ	R	R
2-HEXANONE	340 UJ	R	R
4-METHYL-2-PENTANONE	340 UJ	R	R
ACETONE	340 UJ	R	R
BENZENE	70 UJ	R	R
BROMODICHLOROMETHANE	70 UJ	R	R
BROMOFORM	70 UJ	R	R
BROMOMETHANE	70 UJ	R	R
CARBON DISULFIDE	70 UJ	R	R
CARBON TETRACHLORIDE	70 UJ	R	R
CHLOROBENZENE	70 UJ	R	R
CHLORODIBROMOMETHANE	70 UJ	R	R
CHLOROETHANE	70 UJ	R	R
CHLOROFORM	70 UJ	R	R
CHLOROMETHANE	70 UJ	CR	CR
CIS-1,2-DICHLOROETHENE	70 UJ	R	R
CIS-1,3-DICHLOROPROPENE	70 UJ	R	R
CYCLOHEXANE	70 UJ	R	R
DICHLORODIFLUOROMETHANE	70 UJ	R	R
ETHYLBENZENE	70 UJ	R	R
ISOPROPYLBENZENE	70 UJ	R	R

PROJ_NO: 00622	NSAMPLE	BP-VBB130-GW-207RE	
SDG: C2731	LAB_ID	C2731-17RE	
FRACTION: OV	SAMP_DATE	6/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	18.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
M+P-XYLENES	135	UJ	R
METHYL ACETATE	70	UJ	R
METHYL CYCLOHEXANE	70	UJ	R
METHYL TERT-BUTYLETHER	70	UJ	R
METHYLENE CHLORIDE	180	U	A
O-XYLENE	70	UJ	R
STYRENE	70	UJ	R
TETRACHLOROETHENE	70	UJ	R
TOLUENE	70	UJ	R
TRANS-1,2-DICHLOROETHENE	70	UJ	R
TRANS-1,3-DICHLOROPROPENE	70	UJ	R
TRICHLOROETHENE	70	UJ	R
TRICHLOROFLUOROMETHANE	70	UJ	R
VINYL CHLORIDE	70	UJ	R

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**TO:** D. BRAYACK **DATE:** SEPTEMBER 19, 2011

**FROM:** EDWARD SEDLMYER **COPIES:** DV FILE

**SUBJECT:** ORGANIC DATA VALIDATION – VOC  
NWIRP BETHPAGE CTO 066  
SDG C2771

**SAMPLES:** 4 / Aqueous / VOC

BP-VPB-TB-061711 BP-VPB130-GW-367 BP-VPB130-GW-387  
BP-VPB130-GW-427

2 / Soil / VOC (Groundwaters analyzed as soil due to suspended sediment in the matrix)

BP-VPB130-GW-407 BP-VPB130-GW-447

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C2771 consists of three (3) aqueous environmental samples, one (1) trip blank, and two (2) soil environmental samples. The aqueous and soil samples were analyzed for volatile organic compounds (VOC).

The samples were collected by Tetra Tech on June 17 and 20, 2011 and analyzed by CHEMTECH. All analyses were conducted in accordance with EPA Method SW-846 8260B analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \* • Data completeness
- \* • Holding times
- Initial/continuing calibrations
- \* • GC/MS Tuning
- Laboratory Method Blank Results
- Surrogate Recoveries
- Matrix Spike / Matrix Spike Duplicate 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.

### Volatile Organic Compounds

The following contaminant was detected in a laboratory method blank at the following maximum concentration:

<u>Contaminant</u>	<u>Maximum Concentration (ug/kg)</u>	<u>Action Level (ug/kg)</u>
Methylene chloride <sup>(1)</sup>	4.6	46

1 – Contaminants present in method blank VBF0623S1.

An action level of 10X the maximum contaminant concentration of methylene chloride was established to evaluate the affected sample for laboratory method blank contamination. Sample aliquot, percent moisture, and dilution factors were taken into consideration during application of the blank action level. The positive methylene chloride results less than the action level were qualified as (U) for the re-analysis of samples BP-VPB130-GW-407 and BP-VPB130-GW-447.

The groundwater samples BP-VPB130-GW-407 and BP-VPB130-GW-447 were very turbid and were analyzed and reported by the laboratory as soils. The percent moisture for the samples was 92% for both samples and the results reported by the laboratory were corrected for percent moisture. The project manager was notified by the laboratory of the turbidity issue. No validation action was taken on the percent moisture less than 30%.

Continuing calibration percent difference was greater than the 20% quality control limit for chloromethane. No action was taken on the initial analysis of associated samples BP-VPB130-GW-407 and BP-VPB130-GW-447 because the re-analysis were used for validation.

Continuing calibration percent difference was greater than the 20% quality control limit for chloromethane and a percent drift greater than the 20% quality control limit for methylene chloride, on instrument MSVOA\_F, on 06/23/11 at 10:37. The nondetected chloromethane results for the re-analysis of samples BP-VPB130-GW-407 and BP-VPB130-GW-447 were qualified as estimated (UJ). No action was taken on the methylene chloride results because methylene chloride was previously qualified due to blank contamination.

Continuing calibration percent drift was greater than the 20% quality control limit for chloroethane and 2-butanone on instrument MSVOA\_G, on 06/22/11 at 14:44. The nondetected results reported for chloroethane and 2-butanone were qualified as estimated (UJ), in samples BP-VPB-TB-061711, BP-VPB130-GW-367, and BP-VPB130-GW-427.

Continuing calibration percent difference was greater than the 20% quality control limit for methyl acetate and percent drift greater than 20% quality control limit for chloroethane, acetone, and 2-butanone on instrument MSVOA\_G, on 06/23/11 at 16:26. The nondetected results reported for the aforementioned compounds were qualified as estimated (UJ), in sample BP-VPB130-GW-387.

The surrogate 4-bromofluorobenzene had a percent recovery less than than the lower quality control limit for samples BP-VPB130-GW-407 and BP-VPB130-GW-447. The samples were re-analyzed with similar results. The re-analysis samples were used for validation. The nondetected results for samples BP-VPB130-GW-407 and BP-VPB130-GW-447 were qualified as estimated (UJ).

In the laboratory control sample BSD0617W2, the percent recovery (%R) of chloroethane was greater than the upper quality control limit. No action was taken on the nondetected chloroethane results in the affected samples.

In the laboratory control sample BSF0623S1, the percent recoveries (%R) of chloromethane, vinyl chloride, and carbon tetrachloride were greater than the upper quality control limit. No action was taken on the nondetected chloromethane, vinyl chloride, and carbon tetrachloride results in the affected samples.

The matrix spike / matrix spike duplicate (MS/MSD) associated with the soil samples had percent recoveries for methyl acetate greater than the upper quality control limit and a relative percent difference that exceeded the quality control limit for acetone. No action was taken on this basis because the sample was not a Tetra Tech sample.

The matrix spike / matrix spike duplicate (MS/MSD) associated with the aqueous samples had a relative percent difference that exceeded the quality control limit for carbon disulfide. No action was taken on this basis because the sample was not a Tetra Tech sample.

#### Additional Comments

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

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Methylene chloride contamination in one sample resulted in the qualification of the result. Continuing calibration %D noncompliance resulted in the qualification of several results. Surrogate recovery noncompliance resulted in the qualification of data for two samples.

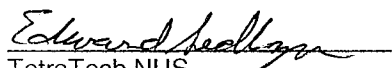
**Other Factors Affecting Data Quality:** Positive results below the limit of quantitation (LOQ) and above the detection limit (DL) were qualified as estimated, (J), due to uncertainty near the detection limit.

TO: D. BRAYACK  
SDG: C2771

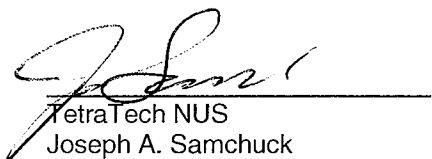
PAGE: 4

The data for these analyses were reviewed with reference to the USEPA Region II Standard Operating Procedures for Validating Volatile Organic Compounds by SW-846 Method 8260B HW-24 Revision #2 (August 2008) 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.



TetraTech NUS  
Edward Sedlmyer  
Chemist/Data Validator



TetraTech NUS  
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

### Data Validation Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< CRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $> 25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-367	BP-VPB130-GW-387	BP-VPB130-GW-427	BP-VPB-TB-061711				
SDG: C2771	LAB_ID	C2771-02	C2771-03	C2771-05	C2771-01				
FRACTION: OV	SAMP_DATE	6/17/2011	6/20/2011	6/20/2011	6/17/2011				
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
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,1-DICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DIBROMOETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,2-DICHLOROETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
1,3-DICHLOROBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
2-BUTANONE	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C	2.5 UJ	2.5 UJ	C
2-HEXANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
4-METHYL-2-PENTANONE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
ACETONE	2.5 U	2.5 U		2.5 UJ	2.5 UJ	C	2.5 U	2.5 U	
BENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
BROMOFORM	0.5 U	0.5 U		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		0.5 U	0.5 U	
CARBON DISULFIDE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CHLOROBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CHLOROETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
CHLOROFORM	0.5 U	0.5 U		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		0.5 U	0.5 U	
CIS-1,2-DICHLOROETHENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
CYCLOHEXANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
ETHYLBENZENE	0.5 U	0.5 U		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		0.5 U	0.5 U	

PROJ_NO: 00622	NSAMPLE		BP-VPB130-GW-367		BP-VPB130-GW-387		BP-VPB130-GW-427		BP-VPB-TB-061711			
	SDG: C2771	LAB_ID	C2771-02	C2771-03	C2771-05	C2771-01	C2771-05	C2771-01	C2771-01	C2771-01		
FRACTION: OV	SAMP_DATE	6/17/2011	6/20/2011	6/20/2011	6/20/2011	6/17/2011	6/20/2011	6/17/2011	6/17/2011	6/17/2011		
MEDIA: WATER	QC_TYPE	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		
	PCT_SOLIDS	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
M+P-XYLENES		1 U		1 U				1 U			1 U	
METHYL ACETATE		0.5 U		0.5 U		C		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 U		0.5 U				0.5 U			0.5 U	
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 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 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	

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,1,2,2-TETRACHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,1,2-TRICHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,1,2-TRICHLOROTRIFLUOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,1-DICHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,1-DICHLOROETHENE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2,4-TRICHLOROBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2-DIBROMO-3-CHLOROPROPANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2-DIBROMOETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2-DICHLOROBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2-DICHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,2-DICHLOROPROPANE	155 U			160 UJ	R		155 U			150 UJ	R	
1,3-DICHLOROBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
1,4-DICHLOROBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
2-BUTANONE	750 U			800 UJ	R		750 U			750 UJ	R	
2-HEXANONE	750 U			800 UJ	R		750 U			750 UJ	R	
4-METHYL-2-PENTANONE	750 U			800 UJ	R		750 U			750 UJ	R	
ACETONE	750 U			800 UJ	R		750 U			750 UJ	R	
BENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
BROMODICHLOROMETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
BROMOFORM	155 U			160 UJ	R		155 U			150 UJ	R	
BROMOMETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
CARBON DISULFIDE	155 U			160 UJ	R		155 U			150 UJ	R	
CARBON TETRACHLORIDE	155 U			160 UJ	R		155 U			150 UJ	R	
CHLOROBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
CHLORODIBROMOMETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
CHLOROETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
CHLOROFORM	155 U			160 UJ	R		155 U			150 UJ	R	
CHLOROMETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
CIS-1,2-DICHLOROETHENE	155 U			160 UJ	R		155 U			150 UJ	R	
CIS-1,3-DICHLOROPROPENE	155 U			160 UJ	R		155 U			150 UJ	R	
CYCLOHEXANE	155 U			160 UJ	R		155 U			150 UJ	R	
DICHLORODIFLUOROMETHANE	155 U			160 UJ	R		155 U			150 UJ	R	
ETHYLBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	
ISOPROPYLBENZENE	155 U			160 UJ	R		155 U			150 UJ	R	

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-407	BP-VPB130-GW-407RE	BP-VPB130-GW-447	BP-VPB130-GW-447RE				
SDG: C2771	LAB_ID	C2771-07	C2771-07RE	C2771-08	C2771-08RE				
FRACTION: OV	SAMP_DATE	6/20/2011	6/20/2011	6/20/2011	6/20/2011				
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG				
	PCT_SOLIDS	8.0	8.0	8.0	8.0				
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	305 U		R	310 U			305 UJ		R
METHYL ACETATE	155 U		R	155 U			150 UJ		R
METHYL CYCLOHEXANE	155 U		R	155 U			150 UJ		R
METHYL TERT-BUTYL ETHER	155 U		R	155 U			150 UJ		R
METHYLENE CHLORIDE	1200		A	1100			300 U		A
O-XYLENE	155 U		R	155 U			150 UJ		R
STYRENE	155 U		R	155 U			150 UJ		R
TETRACHLOROETHENE	155 U		R	155 U			150 UJ		R
TOLUENE	155 U		R	155 U			150 UJ		R
TRANS-1,2-DICHLOROETHENE	155 U		R	155 U			150 UJ		R
TRANS-1,3-DICHLOROPROPENE	155 U		R	155 U			150 UJ		R
TRICHLOROETHENE	155 U		R	155 U			150 UJ		R
TRICHLOROFLUOROMETHANE	155 U		R	155 U			150 UJ		R
VINYL CHLORIDE	155 U		R	155 U			150 UJ		R



**TO:** D. BRAYACK **DATE:** SEPTEMBER 20, 2011  
**FROM:** JOSEPH KALINYAK **COPIES:** DV FILE  
**SUBJECT:** ORGANIC DATA VALIDATION – VOC  
 INORGANIC DATA VALIDATION – TOC  
 NWIRP BETHPAGE CTO 066  
 SDG C2820

**SAMPLES:** 2 / Aqueous / VOC  
 BP-VPB-TB-062111                      BP-VPB130-GW-507  
 7 / Groundwater (analyzed as Soils due to sediment) / VOC  
 BP-VPB130-GW-487                      BP-VPB130-GW-527                      BP-VPB130-GW-547  
 BP-VPB130-GW-567                      BP-VPB130-GW-587                      BP-VPB130-GW-627  
 BP-VPB130-GW-647  
 2 / Soil / VOC  
 BP-VPB130-SB-467                      BP-VPB130-SB-607

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C2820 consisted of two (2) aqueous samples including one (1) aqueous QC trip blank sample, two (2) soil samples, and seven (7) groundwater samples that were analyzed as soil samples due to significant sediment content. The two (2) aqueous samples and seven (7) groundwater/sediment samples were analyzed for volatile organic compounds (VOC), and the two (2) soil samples were analyzed for total organic carbon (TOC) as listed above. No field duplicate samples were included with this Sample Delivery Group (SDG). The seven (7) groundwater samples were analyzed as soils by the laboratory the sample and results were reported in soil units of µg/kg uncorrected for moisture content.

The samples were collected by Tetra Tech on June 21, 22, and 23, 2011 and analyzed by ChemTech laboratory. All analyses were conducted in accordance with EPA Methods SW-846 8260B VOC method and 9060 TOC method analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \*     •     Data completeness
- \*     •     Hold times
- \*     •     GC/MS System Tuning and Performance
- Initial/continuing calibrations
- \*     •     Blank Results
- Laboratory Control Sample Recovery
- Matrix Spike/Matrix Spike Duplicate Recoveries
- Surrogate Spike Recoveries
- Internal Standard Recoveries
- \*     •     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.

### VOC

The initial calibration relative response factor (RRF) was less than the quality control limit of 0.05 for acetone for the instrument MSVOAD on 06/30/11. Additionally, the continuing calibration verification (CCV) for instrument MSVOAD on 06/27/11 @ 14:20 had an RRF less than the 0.05 quality control limit for acetone.

**Affecting samples:** BP-VPB-TB-062111 and BP-VPB130-GW-507

**Action:** The affected sample acetone results were non-detected and were qualified rejected, (UR).

The initial calibration percent relative standard deviation (RSD) was greater than the 20% quality control limit for dichlorodifluoromethane for instrument MSVOAD on 06/30/11.

**Affecting samples:** BP-VPB-TB-062111 and BP-VPB130-GW-507

**Action:** The non-detected results for dichlorodifluoromethane for samples BP-VPB-TB-062111 and BP-VPB130-GW-507 were qualified estimated, (UJ).

The CCV %Ds were greater than the 20% quality control limit for chloromethane, bromodichloromethane, chlorodibromomethane, and bromoform for instrument MSVOAD on 06/27/11 @ 14:20.

**Affecting samples:** BP-VPB-TB-062111 and BP-VPB130-GW-507

**Action:** The sample non-detected results for the aforementioned analytes were qualified estimated, (UJ).

The initial calibration RRF was less than the 0.05 quality control limit for acetone for instrument MSVOAK on 06/30/11 and for the CCV for instrument MSVOAK on 07/01/11 @ 12:22.

**Affecting samples:** The re-analysis of all soil samples; BP-VPB130-GW-487, BP-VPB130-GW-527, BP-VPB130-GW-547, BP-VPB130-GW-567, BP-VPB130-GW-587, BP-VPB130-GW-627, BP-VPB130-GW-647

**Action:** All sample re-analysis results for acetone were non-detected and were qualified rejected, (UR).

The laboratory control sample (LCS) percent recovery (%R) was greater than the quality control limit for isopropyl benzene for LCS BSK0628S1.

**Affecting samples:** BP-VPB130-GW-487, BP-VPB130-GW-527, BP-VPB130-GW-547, BP-VPB130-GW-567, BP-VPB130-GW-587, BP-VPB130-GW-627, BP-VPB130-GW-647

**Action:** No action as all aforementioned samples had non-detected results for isopropyl benzene.

All soil samples had surrogate (system monitoring compound) %Rs less than the quality control limit for 4-bromofluorobenzene. The samples were re-analyzed with some improved results. Re-analysis samples BP-VPB130-GW-547 and BP-VPB130-GW-647 had all surrogate %Rs within the quality control limits while the remainder of the soil sample re-analysis had surrogate %Rs for 4-bromofluorobenzene less than the quality control limit. In addition to the sample surrogate recovery issue, the soil samples had internal standard recoveries less than the quality control limit for 1,4-dichlorobenzene-d4 for samples BP-VPB130-GW-487, BP-VPB130-GW-527, BP-VPB130-GW-567, BP-VPB130-GW-627, and BP-VPB130-GW-647. The samples were re-analyzed with improved results. The samples BP-VPB130-GW-527 re-analysis and BP-VPB130-GW-627 re-analysis still had internal standard recoveries less than the quality control limit for



1,4-dichlorobenzene-d4 while the remainder of the samples had all internal standard recoveries within the quality control limits. As a result of these two issues and the improved recoveries for the surrogates and internal standards, the re-analysis results for the samples were reported.

The surrogate %Rs were less than the quality control limit for 4-bromofluorobenzene for the re-analysis of the soil samples as listed below.

**Affecting samples:** BP-VPB130-GW-487, BP-VPB130-GW-527, BP-VPB130-GW-567, BP-VPB130-GW-587, BP-VPB130-GW-627

**Action:** The positive and non-detected VOC results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively.

The internal standard recoveries were less than the quality control limit for 1,4-dichlorobenzend-d4 for the re-analysis of the soil samples as listed below.

**Affecting samples:** BP-VPB130-GW-527 and BP-VPB130-GW-567

**Action:** The non-detected VOC results for the aforementioned samples for the internal standard associated VOC analytes (isopropyl benzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, 1,1,2,2-tetrachloroethane, and 1,2,4-trichlorobenzene) were qualified estimated, (UJ).

The matrix spike (MS) %R was greater than the quality control limit for the analyte methyl acetate for a spiked sample. No validation action was taken as the %R for the MS duplicate (MSD) was within the quality control limits as was the RPD for the MS/MSD for the sample and the sample was not part of this SDG.

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

### TOC

The sample TOC results BP-VPB130-SB-467 and BP-VPB130-SB-607 exceeded the highest TOC calibration level for both soil samples. The samples were not re-analyzed at a dilution or with a smaller quantity. The TOC results for the samples were qualified estimated, (J), and were reported to greater than 3200 mg/kg. The sample results were not quantitated by the laboratory and could be significantly higher than 3200 mg/kg.

### Additional Comments

Sample VOC analyte results were reported to the LOD.

### EXECUTIVE SUMMARY

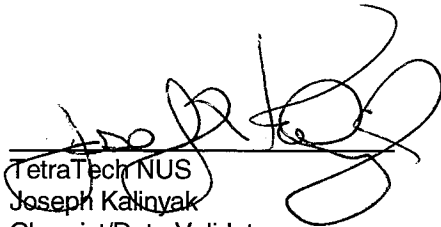
**Laboratory Performance Issues:** Non-detected acetone results for samples were rejected due to RRF quality control limit non-compliances. The non-detected dichlorodifluoromethane results for samples BP-VPB-TB-062111 and BP-VPB130-GW-507 were qualified due to an initial calibration RRF quality control limit non-compliance. VOC non-detected results were qualified for CCV analyte %D quality control limit non-compliances. VOC sample results were qualified for surrogate and internal standard %R quality control limit non-compliances. TOC sample results were qualified for exceeding the highest calibration level.

**Other Factors Affecting Data Quality:** Positive results below the Limit of Detection (LOD) and above the detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

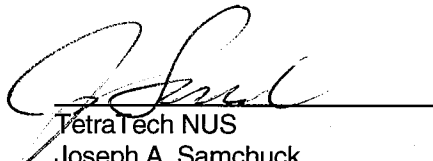
TO: D. BRAYACK  
SDG: C2820

PAGE: 4

The data for these analyses were reviewed with reference to the 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 Method 8260B (August 2008), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



TetraTech NUS  
Joseph Kalinyak  
Chemist/Data Validator



TetraTech NUS  
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)**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, HRFs, 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< GRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $> 25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-487RE	BP-VPB130-GW-527RE	BP-VPB130-GW-547RE	BP-VPB130-GW-567RE				
SDG: C2820	LAB_ID	C2820-03RE	C2820-05RE	C2820-06RE	C2820-07RE				
FRACTION: OV	SAMP_DATE	6/21/2011	6/21/2011	6/22/2011	6/22/2011				
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG				
	PCT_SOLIDS	100.0	100.0	100.0	100.0				
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2,2-TETRACHLOROETHANE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,1,2-TRICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2,4-TRICHLOROETHENE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DIBROMOETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
1,2-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROPROPANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,3-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,4-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR
2-BUTANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 UJ	R
2-HEXANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 UJ	R
4-METHYL-2-PENTANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 UJ	R
ACETONE	12.5 UR	C	12.5 UR	C	12.5 UR	C	12.5 UR	12.5 UR	C
BENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMODICHLOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMOFORM	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMOMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CARBON DISULFIDE	2.5 UJ	R	2.5 UJ	R	3.2 J	P	2.4 J	2.5 UJ	PR
CARBON TETRACHLORIDE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLORODIBROMOMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROFORM	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,2-DICHLOROETHENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,3-DICHLOROPROPENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CYCLOHEXANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
DICHLORODIFLUOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
ETHYLBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 UJ	R
ISOPROPYLBENZENE	2.5 UJ	R	2.5 UJ	NR	2.5 UJ	NR	2.5 UJ	2.5 UJ	NR

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-587RE	BP-VPB130-GW-627RE	BP-VPB130-GW-647RE					
SDG: C2820	LAB_ID	C2820-08RE	C2820-10RE	C2820-11RE					
FRACTION: OV	SAMP_DATE	6/22/2011	6/23/2011	6/23/2011					
MEDIA: SOIL	QC_TYPE	NM	NM	NM					
	UNITS	UG/KG	UG/KG	UG/KG					
	PCT_SOLIDS	100.0	100.0	100.0					
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,1,2,2-TETRACHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,1,2-TRICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,1-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,1-DICHLOROETHENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2,4-TRICHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2-DIBROMOETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2-DICHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2-DICHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,2-DICHLOROPROPANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,3-DICHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
1,4-DICHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
2-BUTANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 U	12.5 U
2-HEXANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 U	12.5 U
4-METHYL-2-PENTANONE	12.5 UJ	R	12.5 UJ	R	12.5 UJ	R	12.5 UJ	12.5 U	12.5 U
ACETONE	12.5 UR	C	12.5 UR	C	12.5 UR	C	12.5 UR	12.5 UR	C
BENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
BROMODICHLOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
BROMOFORM	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
BROMOMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CARBON DISULFIDE	4.5 J	PR	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CARBON TETRACHLORIDE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CHLOROBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CHLORODIBROMOMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CHLOROETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CHLOROFORM	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CHLOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CIS-1,2-DICHLOROETHENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CIS-1,3-DICHLOROPROPENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
CYCLOHEXANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
DICHLORODIFLUOROMETHANE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
ETHYLBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U
ISOPROPYLBENZENE	2.5 UJ	R	2.5 UJ	R	2.5 UJ	R	2.5 UJ	2.5 U	2.5 U

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-487RE	BP-VPB130-GW-527RE	BP-VPB130-GW-547RE	BP-VPB130-GW-567RE				
SDG: C2820	LAB_ID	C2820-03RE	C2820-05RE	C2820-06RE	C2820-07RE				
FRACTION: OV	SAMP_DATE	6/21/2011	6/21/2011	6/22/2011	6/22/2011				
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG				
	PCT_SOLIDS	100.0	100.0	100.0	100.0				
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	5 UJ	5 UJ	R	5 UJ	5 UJ	R	5 UJ	5 UJ	R
METHYL ACETATE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
METHYL CYCLOHEXANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
METHYL TERT-BUTYL ETHER	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
METHYLENE CHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
O-XYLENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
STYRENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TETRACHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TOLUENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TRANS-1,2-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TRANS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TRICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
TRICHLOROFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R
VINYL CHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R

PROJ_NO: 00622	NSAMPLE		BP-VPB130-GW-587RE		BP-VPB130-GW-627RE		BP-VPB130-GW-647RE	
	LAB_ID	C2820-08RE	C2820-10RE	C2820-11RE	RESULT	QLCD	RESULT	QLCD
SDG: C2820	SAMP_DATE	6/22/2011	6/23/2011	6/23/2011				
FRACTION: OV	QC_TYPE	NM	NM	NM				
MEDIA: SOIL	UNITS	UG/KG	UG/KG	UG/KG				
	PCT_SOLIDS	100.0	100.0	100.0				
	DUP_OF							
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	QLCD
M+P-XYLENES	5 UJ	5 UJ	R	5 UJ	5 UJ	R	4.95 U	
METHYL ACETATE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
METHYL CYCLOHEXANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
METHYL TERT-BUTYL ETHER	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
METHYLENE CHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
O-XYLENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
STYRENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TETRACHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TOLUENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TRANS-1,2-DICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TRANS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TRICHLOROETHENE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
TRICHLOROFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	
VINYL CHLORIDE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	R	2.5 U	



PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-507	BP-VPB-TB-062111			
SDG: C2820	LAB_ID	C2820-04	C2820-01			
FRACTION: OV	SAMP_DATE	6/21/2011	6/21/2011			
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
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 U	2.5 U		2.5 U	2.5 U	
2-HEXANONE	2.5 U	2.5 U		2.5 U	2.5 U	
4-METHYL-2-PENTANONE	2.5 U	2.5 U		2.5 U	2.5 U	
ACETONE	2.5 UR	2.5 UR	C	2.5 UR	2.5 UR	C
BENZENE	0.5 U	0.5 U		0.5 U	0.5 U	
BROMODICHLOROMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
BROMOFORM	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
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 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
CHLOROETHANE	0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROFORM	0.5 U	0.5 U		0.5 U	0.5 U	
CHLOROMETHANE	0.5 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
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 UJ	0.5 UJ	C	0.5 UJ	0.5 UJ	C
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	NSAMPLE	BP-VPB130-GW-507	BP-VPB-TB-062111
SDG: C2820	LAB_ID	C2820-04	C2820-01
FRACTION: OV	SAMP_DATE	6/21/2011	6/21/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	100.0	100.0
	DUP_OF		
PARAMETER	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

PROJ_NO: 00622	NSAMPLE	BP-VPB130-SB-467	BP-VPB130-SB-607
SDG: C2820	LAB_ID	C2820-02	C2820-09
FRACTION: MISC	SAMP_DATE	6/21/2011	6/23/2011
MEDIA: SOIL	QC_TYPE	NM	NM
	UNITS	MG/KG	MG/KG
	PCT_SOLIDS	79.6	78.7
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
TOTAL ORGANIC CARBON	3200 J	L	L
	RESULT	VQL	QLCD
	3200 J	L	L

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**TO: D. BRAYACK** **DATE: SEPTEMBER 20, 2011**  
**FROM: JOSEPH KALINYAK** **COPIES: DV FILE**  
**SUBJECT: ORGANIC DATA VALIDATION – VOC**  
**NWIRP BETHPAGE CTO 066**  
**SDG C2845**  
**SAMPLES: 2 / Aqueous / VOC**  
BP-VPB-TB-062411 BP-VPB130-SW-062711  
4 / Groundwater (analyzed as Soils due to sediment) / VOC  
BP-VPB130-DM-700 BP-VPB130-GW-667 BP-VPB130-GW-687  
BP-VPB130-GW-707

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C2845 consisted of two (2) aqueous samples including one (1) aqueous QC trip blank sample and four (4) groundwater samples that were analyzed as soil samples due to significant sediment content (sample BP-VPB130-DM-700 was considered drilling mud, therefore the “..-DM-..” designation). The two (2) aqueous samples and four (4) groundwater-sediment samples were analyzed for volatile organic compounds (VOC) as listed above. No field duplicate samples were included with this Sample Delivery Group (SDG). The four (4) groundwater samples analyzed as soils by the laboratory had results reported in soil units of µg/kg uncorrected for moisture content.

The samples were collected by Tetra Tech on June 24 and 27, 2011 and analyzed by ChemTech laboratory. All analyses were conducted in accordance with EPA Methods SW-846 8260B VOC method analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \* ● Data completeness
- \* ● Hold times
- \* ● GC/MS System Tuning and Performance
- Initial/continuing calibrations
- Blank Results
- \* ● Laboratory Control Sample Recovery
- Matrix Spike/Matrix Spike Duplicate Recoveries
- Surrogate Spike Recoveries
- Internal Standard Recoveries
- \* ● 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.

VOC

Methylene chloride was detected in the trip blank BP-VPB-TB-062411 affecting all samples at the following maximum concentration as indicated below:

<u>Compound</u>	<u>Maximum Conc. (µg/L)</u>	<u>Action Level (µg/L, µg/kg)</u>
Methylene chloride	3.3	33.0

An action level of 10X for the common laboratory contaminant methylene chloride was established to evaluate for laboratory contamination. Dilution factors and sample aliquots were taken into consideration during the application of all action levels. The sample BP-VPB130-GW-667 methylene chloride result was qualified non-detected for method blank contamination.

The continuing calibration verification (CCV) RRF was less than the 0.05 quality control limit for acetone for instrument MSVOAD on 06/29/11 @ 12:12.

**Affecting samples:** BP-VPB-TB-062411 and BP-VPB130-SW-062711

**Action:** All sample re-analysis results for acetone were non-detected and were qualified rejected, (UR).

The CCV %Ds were greater than the 20% quality control limit for chloromethane, trichlorofluoromethane, chlorodibromomethane, and bromoform for instrument MSVOAD on 06/29/11 @ 12:12.

**Affecting samples:** BP-VPB-TB-062411 and BP-VPB130-SW-062711

**Action:** The sample non-detected results for the aforementioned analytes were qualified estimated, (UJ).

The initial calibration percent relative standard deviation (RSD) was greater than the 20% quality control limit for dichlorodifluoromethane for instrument MSVOAK on 06/30/11.

**Affecting samples:** BP-VPB130-GW-667, BP-VPB130-GW-687, and BP-VPB130-GW-707

**Action:** The non-detected results for dichlorodifluoromethane for the samples listed were qualified estimated, (UJ). The sample BP-VPB130-DM-700 result was reported from the sample re-analysis and was not qualified.

The initial calibration RRF was less than the 0.05 quality control limit for acetone for instrument MSVOAK on 06/30/11 and for the CCV for instrument MSVOAK on 07/01/11 @ 12:22.

**Affecting samples:** BP-VPB130-GW-667, BP-VPB130-GW-687, and BP-VPB130-GW-707

**Action:** All sample analysis results for acetone were non-detected and were qualified rejected, (UR). The sample BP-VPB130-DM-700 result was reported from the sample re-analysis and was not qualified.

Soil samples had surrogate (system monitoring compound) %Rs less than the quality control limit for 4-bromofluorobenzene for samples BP-VPB130-GW-687, BP-VPB130-DM-700, and BP-VPB130-GW-707. The samples were re-analyzed with similar results, all three samples had low surrogate %Rs for 4-bromofluorobenzene. In addition to the sample surrogate recovery issue, the soil sample BP-VPB130-DM-700 had an internal standard recovery less than the quality control limit for 1,4-dichlorobenzene-d4. The sample BP-VPB130-DM-700 was re-analyzed with an improved internal standard recovery within the quality control limits. Due to the improved result for the internal standard recovery the re-analysis results for sample BP-VPB130-DM-700 were reported. As there was no improvement in the surrogate %R for samples BP-VPB130-GW-687 and BP-VPB130-GW-707, the initial analysis sample analyte results were reported for those samples.

TO: D. BRAYACK  
SDG: C2845

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The surrogate %Rs were less than the quality control limit for 4-bromofluorobenzene for the soil samples as listed below.

**Affecting samples:** BP-VPB130-GW-687, BP-VPB130-GW-707, and BP-VPB130-DM-700 re-analysis

**Action:** The positive and non-detected VOC results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively, except for acetone non-detected results which were previously rejected.

The matrix spike (MS) and MS duplicate (MSD) %Rs were greater than the quality control limit for the analyte methyl acetate for a spiked sample. In addition, the MS/MSD results relative percent difference (RPD) for acetone was greater than the quality control limit. No validation action was taken as the spiked sample was not part of this SDG.

#### Additional Comments

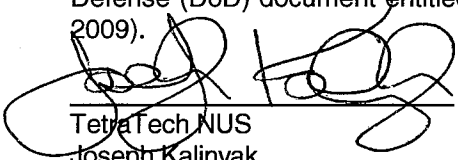
Sample VOC analyte results were reported to the LOD.

#### EXECUTIVE SUMMARY

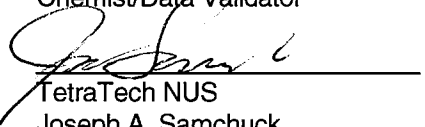
**Laboratory Performance Issues:** Sample BP-VPB130-GW-667 was qualified for methylene chloride trip blank contamination. Non-detected acetone results for samples were rejected due to RRF quality control limit non-compliances. The non-detected dichlorodifluoromethane results were qualified estimated due to an initial calibration RSD quality control limit non-compliance. VOC non-detected results were qualified for CCV %D quality control limit non-compliances. VOC sample results were qualified for surrogate %R quality control limit non-compliances.

**Other Factors Affecting Data Quality:** None.

The data for these analyses were reviewed with reference to the 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 Method 8260B (August 2008), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



TetraTech NUS  
Joseph Kalinyak  
Chemist/Data Validator



TetraTech NUS  
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)**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, HRFs, 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< GRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $> 25\%$  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 greater than sample activity

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 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 UR	C			2.5 UR	C
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 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 UJ	C			0.5 UJ	C
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 U				0.5 U	
ETHYLBENZENE	0.5 U				0.5 U	
ISOPROPYLBENZENE	0.5 U				0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-VPB130-SW-062711	BP-VPB-TB-062411
SDG: C2845	LAB_ID	C2845-04	C2845-01
FRACTION: OV	SAMP_DATE	6/27/2011	6/24/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		

PROJ_NO: 00622	NSAMPLE	BP-VPB130-SW-062711	BP-VPB-TB-062411
SDG: C2845	LAB_ID	C2845-04	C2845-01
FRACTION: OV	SAMP_DATE	6/27/2011	6/24/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		
PARAMETER	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	3.3
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 UJ	0.5 UJ	0.5 UJ C
VINYL CHLORIDE	0.5 U	0.5 U	0.5 U

PROJ_NO: 00622	NSAMPLE	BP-VPB130-DM-700RE	BP-VPB130-GW-667	BP-VPB130-GW-687	BP-VPB130-GW-707				
SDG: C2845	LAB_ID	C2845-05RE	C2845-02	C2845-03	C2845-06				
FRACTION: OV	SAMP_DATE	6/27/2011	6/24/2011	6/27/2011	6/27/2011				
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM				
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG				
	PCT_SOLIDS	100.0	100.0	100.0	100.0				
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2,2-TETRACHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2-TRICHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,1-DICHLOROETHENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2,4-TRICHLOROBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DIBROMOETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,2-DICHLOROPROPANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,3-DICHLOROBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
1,4-DICHLOROBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
2-BUTANONE	12.5 UJ	12.5 U	R	12.5 U	12.5 UJ	R	12.5 UJ	12.5 UJ	R
2-HEXANONE	12.5 UJ	12.5 U	R	12.5 U	12.5 UJ	R	12.5 UJ	12.5 UJ	R
4-METHYL-2-PENTANONE	12.5 UJ	12.5 U	R	12.5 U	12.5 UJ	R	12.5 UJ	12.5 UJ	R
ACETONE	12.5 UJ	12.5 UR	C	12.5 UR	12.5 UR	C	12.5 UR	12.5 UR	C
BENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMODICHLOROMETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMOFORM	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
BROMOMETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CARBON DISULFIDE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CARBON TETRACHLORIDE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLORODIBROMOMETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROFORM	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CHLOROMETHANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,2-DICHLOROETHENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CIS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
CYCLOHEXANE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
DICHLORODIFLUOROMETHANE	2.5 UJ	2.5 UJ	R	2.5 UJ	2.5 UJ	CR	2.5 UJ	2.5 UJ	CR
ETHYLBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R
ISOPROPYLBENZENE	2.5 UJ	2.5 U	R	2.5 U	2.5 UJ	R	2.5 UJ	2.5 UJ	R

PROJ_NO: 00622	NSAMPLE	BP-VPB130-DM-700RE	BP-VPB130-GW-667	BP-VPB130-GW-687	BP-VPB130-GW-707
SDG: C2845	LAB_ID	C2845-05RE	C2845-02	C2845-03	C2845-06
FRACTION: OV	SAMP_DATE	6/27/2011	6/24/2011	6/27/2011	6/27/2011
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	100.0	100.0	100.0	100.0
	DUP_OF				
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL
M+P-XYLENES	5 UJ	5 U	R	4.95 UJ	5 UJ
METHYL ACETATE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
METHYL CYCLOHEXANE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
METHYL TERT-BUTYL ETHER	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
METHYLENE CHLORIDE	2.5 U	2 U	B	2.5 UJ	2.5 UJ
O-XYLENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
STYRENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TETRACHLOROETHENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TOLUENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TRANS-1,2-DICHLOROETHENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TRANS-1,3-DICHLOROPROPENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TRICHLOROETHENE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
TRICHLOROFLUOROMETHANE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ
VINYL CHLORIDE	2.5 UJ	2.5 U	R	2.5 UJ	2.5 UJ

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**TO:** D. BRAYACK **DATE:** SEPTEMBER 20, 2011

**FROM:** JOSEPH KALINYAK **COPIES:** DV FILE

**SUBJECT:** ORGANIC DATA VALIDATION – VOC  
 NWIRP BETHPAGE CTO 066  
 SDG C2873

**SAMPLES:** 2 / Aqueous / VOC

BP-VPB-TB-062811            BP-VPB130-GW-767

4 / Groundwater (analyzed as Soils due to sediment) / VOC

BP-VPB130-GW-747            BP-VPB130-GW-787            BP-VPB130-GW-807  
 BP-VPB130-GW-847

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C2873 consisted of two (2) aqueous samples including one (1) aqueous QC trip blank sample and four (4) groundwater samples that were analyzed as soil samples due to significant sediment content. The two (2) aqueous samples and four (4) groundwater-sediment samples were analyzed for volatile organic compounds (VOC) as listed above. No field duplicate samples were included with this Sample Delivery Group (SDG). The four (4) groundwater samples analyzed as soils by the laboratory had results reported in soil units of µg/kg uncorrected for moisture content.

The samples were collected by Tetra Tech on June 28 and 29, 2011 and analyzed by ChemTech laboratory. All analyses were conducted in accordance with EPA Methods SW-846 8260B VOC method analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \*     •     Data completeness
- \*     •     Hold times
- \*     •     GC/MS System Tuning and Performance
- Initial/continuing calibrations
- Blank Results
- Laboratory Control Sample Recovery
- Matrix Spike/Matrix Spike Duplicate Recoveries
- Surrogate Spike Recoveries
- \*     •     Internal Standard Recoveries
- \*     •     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.

VOC

Methylene chloride was detected in the trip blank BP-VPB-TB-062811 affecting all samples at the following maximum concentration as indicated below:

<u>Compound</u>	<u>Maximum Conc. (µg/L)</u>	<u>Action Level (µg/L, µg/kg)</u>
Methylene chloride	4.0	40.0

An action level of 10X for the common laboratory contaminant methylene chloride was established to evaluate for laboratory contamination. Dilution factors and sample aliquots were taken into consideration during the application of all action levels. Samples were qualified non-detected, (U), for method blank contamination.

The initial calibration RRF was less than the 0.05 quality control limit for acetone for instrument MSVOAK on 06/30/11 and for the CCV for instrument MSVOAK on 07/01/11 @ 12:22.

**Affecting samples:** BP-VPB130-GW-747, BP-VPB130-GW-787, BP-VPB130-GW-807, and BP-VPB130-GW-847

**Action:** All sample analysis results for acetone were non-detected and were qualified rejected, (UR).

The initial calibration percent relative standard deviation (RSD) was greater than the 20% quality control limit for dichlorodifluoromethane for instrument MSVOAK on 06/30/11.

**Affecting samples:** BP-VPB130-GW-747, BP-VPB130-GW-787, BP-VPB130-GW-807, and BP-VPB130-GW-847

**Action:** The non-detected results for dichlorodifluoromethane for the samples listed were qualified estimated, (UJ).

The continuing calibration verification (CCV) %D was greater than the 20% quality control limit for methylene chloride for instrument MSVOAG on 07/01/11 @ 10:22.

**Affecting sample:** BP-VPB130-GW-767

**Action:** The sample non-detected result for methylene chloride was qualified estimated, (UJ).

The initial calibration RSD was greater than the 20% quality control limit for 1,2-dichloroethane for instrument MSVOAG on 07/05/11.

**Affecting samples:** BP-VPB-TB-062811

**Action:** The sample analysis result for 1,2-dichloroethane was non-detected and was qualified estimated, (UJ).

Sample BP-VPB130-GW-767 had a surrogate (system monitoring compound) %R less than the quality control limit for toluene-d8. The sample was re-analyzed with a similar result. As there was no improvement in the surrogate %R for the sample, the initial analysis sample analyte results were reported for sample BP-VPB130-SW-767.

The surrogate %R was less than the quality control limit for toluene-d8 for the sample as listed below.

**Affecting sample:** BP-VPB130-GW-767

**Action:** The sample had all non-detected VOC results which were qualified estimated, (UJ).

Sample BP-VPB130-GW-847 had a surrogate %R less than the quality control limit for 4-bromofluorobenzene. The sample was re-analyzed with a similar result. As there was no improvement in the surrogate %R for the sample, the initial analysis sample analyte results were reported for sample BP-VPB130-GW-847.



The surrogate %R was less than the quality control limit for 4-bromofluorobenzene for the soil sample as listed below.

**Affecting samples:** BP-VPB130-GW-847

**Action:** The non-detected VOC results for the sample were qualified estimated, (UJ), except for the acetone non-detected result which was previously rejected and the methylene chloride result which was qualified for trip blank contamination.

The matrix spike (MS) and MS duplicate (MSD) %Rs were greater than the quality control limit for the analyte methyl acetate for a spiked sample. In addition, the MS/MSD results relative percent difference (RPD) for acetone was greater than the quality control limit. No validation action was taken as the spiked sample was not part of this SDG.

The laboratory control sample (LCS) BSG0706W / LCS duplicate (LCSD) BSG0706W1 relative percent difference (RPD) was greater than the quality control limit for acetone. No validation action was taken as both the LCS and the LCSD had %Rs within the quality control limits.

EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Sample results were qualified for methylene chloride trip blank contamination. Non-detected acetone results for samples were rejected due to RRF quality control limit non-compliances. Non-detected dichlorodifluoromethane sample results were qualified estimated due to an initial calibration RSD quality control limit non-compliance. VOC non-detected results were qualified for CCV %D quality control limit non-compliances. VOC sample results were qualified for surrogate %R quality control limit non-compliances.

**Other Factors Affecting Data Quality:** None.

The data for these analyses were reviewed with reference to the 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 Method 8260B (August 2006), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).

  
Tetra Tech NUS  
Joseph Kalinyak  
Chemist/Data Validator

  
Tetra Tech NUS  
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)**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, HRFs, 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< CRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $> 25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-747			BP-VPB130-GW-787			BP-VPB130-GW-807			BP-VPB130-GW-847				
		LAB_ID	C2873-02	C2873-04	C2873-05	C2873-06	QC_TYPE	6/28/2011	6/28/2011	6/29/2011	QC_TYPE	6/29/2011	UG/KG	100.0	
		SAMP_DATE	NM	NM	NM	NM	UNITS	UG/KG	UG/KG	UG/KG	PCT_SOLIDS	100.0	DUP_OF		
FRACTION: OV															
MEDIA: SOIL															
PARAMETER	RESULT	VQL	QLCD	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		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,1,2,2-TETRACHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,1,2-TRICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,1,2-TRICHLOROTRIFLUOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,1-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,1-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2,4-TRICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2-DIBROMO-3-CHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2-DIBROMOETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2-DICHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,2-DICHLOROPROPANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,3-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
1,4-DICHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
2-BUTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	R
2-HEXANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	R
4-METHYL-2-PENTANONE	12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U		12.5 U	12.5 U	R
ACETONE	12.5 UR	12.5 UR	C	12.5 UR	12.5 UR	C	12.5 UR	12.5 UR	C	12.5 UR	12.5 UR	C	12.5 UR	12.5 UR	C
BENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
BROMODICHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
BROMOFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
BROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CARBON DISULFIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CARBON TETRACHLORIDE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CHLOROBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CHLORODIBROMOMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CHLOROETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CHLOROFORM	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CHLOROMETHANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CIS-1,2-DICHLOROETHENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CIS-1,3-DICHLOROPROPENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
CYCLOHEXANE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
DICHLORODIFLUOROMETHANE	2.5 U	2.5 U	C	2.5 U	2.5 U	C	2.5 U	2.5 U	C	2.5 U	2.5 U	C	2.5 U	2.5 U	CR
ETHYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R
ISOPROPYLBENZENE	2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	R

PROJ_NO: 00622 SDG: C2873 FRACTION: OV MEDIA: SOIL	BP-VPB130-GW-747		BP-VPB130-GW-787		BP-VPB130-GW-807		BP-VPB130-GW-847		
	NSAMPLE	LAB_ID	NSAMPLE	LAB_ID	NSAMPLE	LAB_ID	NSAMPLE	LAB_ID	
	C2873-02	C2873-04	C2873-05	C2873-06					
	6/28/2011	6/28/2011	6/29/2011	6/29/2011					
	NM	NM	NM	NM					
	UG/KG	UG/KG	UG/KG	UG/KG					
	100.0	100.0	100.0	100.0					
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES		5 U		4.95 U				5 UJ	R
METHYL ACETATE		2.5 U		2.5 U				2.5 UJ	R
METHYL CYCLOHEXANE		2.5 U		2.5 U				2.5 UJ	R
METHYL TERT-BUTYLETHER		2.5 U		2.5 U				2.5 UJ	R
METHYLENE CHLORIDE		3.4 U	B	3.8 U		B		6.9 U	B
O-XYLENE		2.5 U		2.5 U				2.5 UJ	R
STYRENE		2.5 U		2.5 U				2.5 UJ	R
TETRACHLOROETHENE		2.5 U		2.5 U				2.5 UJ	R
TOLUENE		2.5 U		2.5 U				2.5 UJ	R
TRANS-1,2-DICHLOROETHENE		2.5 U		2.5 U				2.5 UJ	R
TRANS-1,3-DICHLOROPROPENE		2.5 U		2.5 U				2.5 UJ	R
TRICHLOROETHENE		2.5 U		2.5 U				2.5 UJ	R
TRICHLOROFLUOROMETHANE		2.5 U		2.5 U				2.5 UJ	R
VINYL CHLORIDE		2.5 U		2.5 U				2.5 UJ	R

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-767	BP-VPB-TB-062811
SDG: C2873	LAB_ID	C2873-03	C2873-01
FRACTION: OV	SAMP_DATE	6/28/2011	6/28/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.5 UJ	R	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 UJ	R	0.5 U
1,1,2-TRICHLOROETHANE	0.5 UJ	R	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 UJ	R	0.5 U
1,1-DICHLOROETHANE	0.5 UJ	R	0.5 U
1,1-DICHLOROETHENE	0.5 UJ	R	0.5 U
1,2,4-TRICHLOROBENZENE	0.5 UJ	R	0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	0.5 UJ	R	0.5 U
1,2-DIBROMOETHANE	0.5 UJ	R	0.5 U
1,2-DICHLOROBENZENE	0.5 UJ	R	0.5 U
1,2-DICHLOROETHANE	0.5 UJ	R	0.5 UJ
1,2-DICHLOROPROPANE	0.5 UJ	R	0.5 U
1,3-DICHLOROBENZENE	0.5 UJ	R	0.5 U
1,4-DICHLOROBENZENE	0.5 UJ	R	0.5 U
2-BUTANONE	2.5 UJ	R	2.5 U
2-HEXANONE	2.5 UJ	R	2.5 U
4-METHYL-2-PENTANONE	2.5 UJ	R	2.5 U
ACETONE	2.5 UJ	R	2.5 U
BENZENE	0.5 UJ	R	0.5 U
BROMODICHLOROMETHANE	0.5 UJ	R	0.5 U
BROMOFORM	0.5 UJ	R	0.5 U
BROMOMETHANE	0.5 UJ	R	0.5 U
CARBON DISULFIDE	0.5 UJ	R	0.5 U
CARBON TETRACHLORIDE	0.5 UJ	R	0.5 U
CHLOROBENZENE	0.5 UJ	R	0.5 U
CHLORODIBROMOMETHANE	0.5 UJ	R	0.5 U
CHLOROETHANE	0.5 UJ	R	0.5 U
CHLOROFORM	0.5 UJ	R	0.5 U
CHLOROMETHANE	0.5 UJ	R	0.5 U
CIS-1,2-DICHLOROETHENE	0.5 UJ	R	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 UJ	R	0.5 U
CYCLOHEXANE	0.5 UJ	R	0.5 U
DICHLORODIFLUOROMETHANE	0.5 UJ	R	0.5 U
ETHYLBENZENE	0.5 UJ	R	0.5 U
ISOPROPYLBENZENE	0.5 UJ	R	0.5 U

PROJ_NO: 00622	NSAMPLE	BP-VPB130-GW-767	BP-VPB-TB-062811			
SDG: C2873	LAB_ID	C2873-03	C2873-01			
FRACTION: OV	SAMP_DATE	6/28/2011	6/28/2011			
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 UJ	1 UJ	R	1 U	1 U	
METHYL ACETATE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
METHYL CYCLOHEXANE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
METHYL TERT-BUTYLETHER	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 UJ	0.5 UJ	CR	4		
O-XYLENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
STYRENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TOLUENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TRANS-1,2-DICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TRICHLOROETHENE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	
VINYL CHLORIDE	0.5 UJ	0.5 UJ	R	0.5 U	0.5 U	



TO: D. BRAYACK DATE: SEPTEMBER 20, 2011

FROM: JOSEPH KALINYAK COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC  
 NWIRP BETHPAGE CTO 066  
 SDG 1107258

SAMPLES: 1 / Air / VOC

BP-VPB130-AIR-071311

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG 1107258 consisted of one (1) air sample. The one (1) air sample was analyzed for volatile organic compounds (VOC) as listed above. No field duplicate samples were included with this Sample Delivery Group (SDG).

The sample was collected by Tetra Tech on July 13, 2011 and analyzed by Air Toxics Ltd. laboratory. The analysis was conducted in accordance with EPA Method TO-15 using simultaneous Full Scan and Single Ion Monitoring (SIM) analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

- \* • Data completeness
- \* • Hold times
- \* • GCMS System Tuning and Performance
- Initial/continuing calibrations
- \* • Laboratory Control Sample Recoveries
- Laboratory Method Blank Results
- \* • Surrogate Spike Recoveries
- \* • Internal Standard Recoveries
- \* • 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.

VOC

The following compound was detected in the associated method blank #1107258-02A at the maximum concentration as indicated below affecting the sample:

<u>Compound</u>	<u>Maximum Conc. (µg/m<sup>3</sup>)</u>	<u>Action Level (µg/m<sup>3</sup>)</u>
1,2,4-Trichlorobenzene	0.34	1.70

An action level of 5X the maximum contaminant concentration was established to evaluate laboratory contamination for the aforementioned compound. Dilution factors and sample



aliquots were taken into consideration during the application of all action levels. The sample had a non-detected result for 1,2,4-trichlorobenzene and was not qualified.

The initial calibration percent relative standard deviation (%RSD) was greater than the 30% quality control limit for chloromethane for instrument MSD-E on 07/15/11 affecting the SDG sample. The positive chloromethane result was qualified estimated, (J).

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

#### Additional Comments

The laboratory reported the VOC air result concentrations in units of both ppbv and  $\mu\text{g}/\text{m}^3$  on the sample forms. The results in the database and the qualified analytical result concentrations are reported as  $\mu\text{g}/\text{m}^3$  only.

The laboratory performed a duplicate analysis for sample BP-VPB130-AIR-071311 with the relative percent differences (RPD) for the positive analytes less than the 20% quality control limit for all analytes with concentrations  $>5\text{X}$  the RL.

Sample VOC analyte results were reported to the RL.

The VOC laboratory sample data for Tentatively Identified Compounds (TIC) was included for informational purposes. The compound listed on the laboratory TIC data form was qualified as presumptively present and estimated, (NJ).

#### EXECUTIVE SUMMARY


**Laboratory Performance Issues:** The sample positive chloromethane result was qualified for an initial calibration %RSD quality control limit non-compliance.

**Other Factors Affecting Data Quality:** Positive results below the Reporting Limit (RL) and above the method detection limit were qualified as estimated, (J), due to uncertainty near the detection limit.

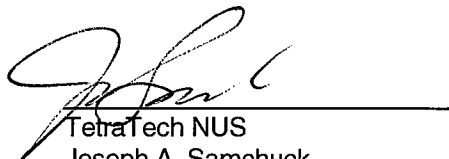
TO: D. BRAYACK  
SDG: 1107258

PAGE: 3

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



TetraTech NUS  
Joseph Kalinyak  
Chemist/Data Validator



TetraTech NUS  
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)**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $>25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BP-VPB130-AIR-071311	
SDG: 1107258	LAB_ID	1107258-01A	
FRACTION: TICOV	SAMP_DATE	7/13/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	PPBV	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
ACETONE		3.6 NJ	Z1

PROJ_NO: 00622	NSAMPLE	BP-VPB130-AIR-071311	
SDG: 1107258	LAB_ID	1107258-01A	
FRACTION: OV	SAMP_DATE	7/13/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/M3	
	PCT_SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	0.47	U	
1,1,2,2-TETRACHLOROETHANE	0.59	U	
1,1,2-TRICHLOROETHANE	0.47	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.52	J	P
1,1-DICHLOROETHANE	0.69	U	
1,1-DICHLOROETHENE	0.68	U	
1,2,4-TRICHLOROBENZENE	6.3	U	
1,2,4-TRIMETHYLBENZENE	0.33	J	P
1,2-DIBROMOETHANE	0.66	U	
1,2-DICHLOROBENZENE	0.51	U	
1,2-DICHLOROETHANE	0.69	U	
1,2-DICHLOROPROPANE	0.79	U	
1,2-DICHLOROTETRAFLUROETHANE	0.6	U	
1,3,5-TRIMETHYLBENZENE	0.1	J	P
1,3-DICHLOROBENZENE	0.51	U	
1,4-DICHLOROBENZENE	0.51	U	
1,4-DIOXANE	0.62	U	
2,2,4-TRIMETHYLPENTANE	0.66	J	P
2-BUTANONE	1	J	P
4-METHYL-2-PENTANONE	0.8		
BENZENE	0.48	J	P
BENZYL CHLORIDE	0.88	U	
BROMODICHLOROMETHANE	0.57	U	
BROMOFORM	0.88	U	
BROMOMETHANE	0.66	U	
CARBON TETRACHLORIDE	0.43	J	P
CHLOROBENZENE	0.79	U	
CHLORODIBROMOMETHANE	0.73	U	
CHLOROETHANE	2.2	U	
CHLOROFORM	0.83	U	
CHLOROMETHANE	0.95	J	C
CIS-1,2-DICHLOROETHENE	0.68	U	
CIS-1,3-DICHLOROPROPENE	0.78	U	
CYCLOHEXANE	0.59	U	
DICHLORODIFLUOROMETHANE	2.1		

PROJ_NO: 00622	NSAMPLE	BP-VPB130-AIR-071311	
SDG: 1107258	LAB_ID	1107258-01A	
FRACTION: OV	SAMP_DATE	7/13/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/M3	
	PCT_SOLIDS		
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
ETHANOL	29		
ETHYLBENZENE	0.29 J	P	
HEXACHLOROBUTADIENE	9.1 U		
HEXANE	1.4		
M+P-XYLENES	0.78		
METHYL TERT-BUTYL ETHER	0.62 U		
METHYLENE CHLORIDE	0.52 J	P	
O-XYLENE	0.29 J	P	
STYRENE	0.73 U		
TERTIARY-BUTYL ALCOHOL	0.64 J	P	
TETRACHLOROETHENE	0.58 U		
TOLUENE	3.1		
TRANS-1,2-DICHLOROETHENE	0.68 U		
TRANS-1,3-DICHLOROPROPENE	0.78 U		
TRICHLOROETHENE	0.46 U		
TRICHLOROFLUOROMETHANE	1.1		
VINYL CHLORIDE	0.44 U		

**Section 7**

**VPB 130 Detected Compounds Table**



**DETECTED COMPOUNDS FOR VERTICAL PROFILE BORING 130  
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT  
BETHPAGE, NEW YORK**

No.	Sample ID	Depth (feet bgs) <sup>1</sup>	Total VOCs (µg/L) <sup>2</sup>	Units	TCE	PCE	1,1 DCA	1,1 DCE	1,2 DCA	Chloro form	Cis-1,2- DCE	Benz.	Ace.	1,2 Dibromo ethane	tert BME	Carbon Disulfide	Isopropylbe nzene	Methylcyc lo hexane	Cyclohex ane	Methylene Chloride
1	BP-VPB130-GW-057	57	ND	µg/L																
2	BP-VPB130-GW-102	102	33	µg/L	7.8	2.7	7.5	2.5	10	2.2	0.76 J	440		1	53		1.8	1.9	10	
3	BP-VPB130-GW-147	147	3	µg/L			1.8			0.78 J					2.9					
4	BP-VPB130-GW-207	207	ND	µg/kg <sup>3</sup>																
5	BP-VPB130-GW-227	227	11	µg/L	7.8 J		1.2 J	0.67 J		1.1 J										
6	BP-VPB130-GW-247	247	5	µg/L	2.8 J		1.8 J			0.88 J										
7	BP-VPB130-GW-267	267	12	µg/L	3 J		5.8 J	1.8 J		1.5 J										
8	BP-VPB130-GW-287	287	ND	µg/L												0.55 J				
9	BP-VPB130-GW-307	307	ND	µg/L									1.5 J							
10	BP-VPB130-GW-327	327	ND	µg/L																
11	BP-VPB130-GW-347	347	ND	µg/L																
12	BP-VPB130-GW-367	367	ND	µg/L																
13	BP-VPB130-GW-387	387	ND	µg/L																
14	BP-VPB130-GW-407	407	ND	µg/kg <sup>3</sup>																1,200
15	BP-VPB130-GW-427	427	ND	µg/L																
16	BP-VPB130-GW-447	447	ND	µg/kg <sup>3</sup>																1,100
17	BP-VPB130-GW-487	487	ND	µg/kg <sup>4</sup>																
18	BP-VPB130-GW-507	507	ND	µg/L																
19	BP-VPB130-GW-527	527	ND	µg/kg <sup>4</sup>																
20	BP-VPB130-GW-547	547	ND	µg/kg <sup>4</sup>												3.2 J				
21	BP-VPB130-GW-567	567	ND	µg/kg <sup>4</sup>												2.4 J				
22	BP-VPB130-GW-587	587	ND	µg/kg <sup>4</sup>												4.5 J				
23	BP-VPB130-GW-627	627	ND	µg/kg <sup>4</sup>																
24	BP-VPB130-GW-647	647	ND	µg/kg <sup>4</sup>									5.7 J							
25	BP-VPB130-GW-667	667	ND	µg/kg <sup>4</sup>									8.3 J							
26	BP-VPB130-GW-687	687	ND	µg/kg <sup>4</sup>																
27	BP-VPB130-GW-707	707	ND	µg/kg <sup>4</sup>																
28	BP-VPB130-GW-747	747	ND	µg/kg <sup>4</sup>																
29	BP-VPB130-GW-767	767	ND	µg/L																
30	BP-VPB130-GW-787	787	ND	µg/kg <sup>4</sup>																
31	BP-VPB130-GW-807	807	ND	µg/kg <sup>4</sup>																
32	BP-VPB130-GW-847	847	ND	µg/kg <sup>4</sup>																

**Notes:**

bgs: Below ground surface  
µg/L: micrograms per liter  
µg/kg: micrograms per kilogram  
ND: Not detected

TCE: Trichloroethene  
PCE: Tetrachloroethene  
1,1 DCA: 1,1-Dichloroethane  
1,1 DCE: 1,1-Dichloroethene

1,1,1 TCA: 1,1,1 Trichloroethane  
Benz.: Benzene  
Ace.: Acetone  
MEK: Methyl Ethyl Ketone

tert BME: tert. ButylMethylEther  
J: Estimated Value

<sup>1</sup> Samples were taken on 20-foot centers starting at 200 ft bgs to the total depth of the borehole. Where a sample could not be obtained from the designated interval, an attempt was made at the next 10-foot interval or at the direction of the site geologist.

<sup>2</sup> TCE, PCE, 1,1-DCA, 1,1-DCE, 1,1,1-TCA, 1,2-DCA, Cis-1,2-DCE, and chloroform used to calculate Total VOCs. Total VOCs presented are rounded to the nearest whole number.

<sup>3</sup> Results are reported on a dry weight basis (92% moisture).

<sup>4</sup> Results are reported on a wet weight basis

## **Section 8**

### **BPOW 2-1 and 2-2 Summary (Issued January 2011)**

- BPOW 2-1 Repair Log/BPOW 2-2 Well Construction Logs
- BPOW 2-1 and 2-2 Well Development Log
- BPOW 2-1 and 2-2 Groundwater Sample Log Sheets
- BPOW 2-1 and 2-2 Chain of Custody Records
- BPOW 2-1 and 2-2 Validation Letter and Table

**BPOW 2-1 AND BPOW 2-2 OUTPOST MONITORING WELLS  
REPAIR AND SAMPLING SUMMARY  
NWIRP BETHPAGE, NEW YORK**

## **INTRODUCTION**

This document summarizes activities conducted to repair and sample Outpost Monitoring Wells BPOW 2-1 and BPOW 2-2 at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage (Figure 1). These activities include:

- Monitoring well repair (BPOW 2-1)
- Development of monitoring wells (BPOW 2-1, and BPOW2-2)
- Analytical results from October 2010 and December 2010 sampling events (BPOW 2-1, and BPOW 2-2)

## **BACKGROUND**

In April 2003, the Navy issued the OU 2 Record of Decision (ROD) that in part identified the installation of Outpost Monitoring Wells BPOW 2-1 and 2-2. These monitoring wells were installed to provide a 4-year time period between site-related volatile organic compounds (VOCs) being detected in the outpost monitoring wells and a potential impact at South Farmingdale Water District Plant No. 3. A potential impact would consist of the detection of any site-related VOCs being at 0.5 micrograms per liter ( $\mu\text{g/L}$ ) or greater. The wells were placed (horizontally and vertically) based on modeling efforts that identified flow pathways between the estimated location of site-related contamination at that time and the first detection of the contamination into the well field. The modeling used a target value of 0.5  $\mu\text{g/L}$  for individual VOCs in the public water supply, which is a factor of 10 less than the maximum contaminant level (MCL) of 5  $\mu\text{g/L}$  for most of the site-related VOCs.

In August and September 2003, the Navy installed and developed Outpost Monitoring Wells 2-1 and 2-2. In April 2004, the Navy installed dedicated pumps and packers in the wells. In May and June 2004, Northrop Grumman Corporation (NGC) collected the first groundwater samples from this area. The initial round of sampling for BPOW 2-1 was conducted in June 2004 and detected total volatile organic compound (TVOCs) at a concentration of 3.78  $\mu\text{g/L}$ , including trichloroethene (TCE) detected at 1.1  $\mu\text{g/L}$ . Two additional samples were collected from BPOW 2-1 in August 2004, and TVOCs totaled 6.8 and 5.4  $\mu\text{g/L}$ , including TCE detected at a concentration of 1.8  $\mu\text{g/L}$  in both samples. Benzene was also detected at a maximum concentration of 42  $\mu\text{g/L}$  in these samples.

The initial round of sampling for BPOW 2-2 was conducted in May 2004, TCE was detected at a concentration of 0.84 ug/L. No other VOCs were detected in this sample, or in the two subsequent samples collected in May and June 2004.

Between 2004 and mid-2007, NGC continued to sample these wells on a quarterly basis. TVOCs were consistently detected in BPOW 2-1 at concentrations ranging from 3.6 ug/L to 10.24 ug/L. TVOCs were not detected in samples collected from BPOW 2-2 in the 2004 quarterly samples subsequent to the May 2004 event, but were consistently detected in groundwater samples collected from 2005 to 2007, with TVOC detections in BPOW 2-2 ranging from 0.55 to 2.4 ug/L. The maximum individual VOC detected in BPOW 2-2 was TCE at 1.4 ug/L in July 2006.

In 2007, in response to benzene detected in BPOW 2-1, NYSDEC conducted an investigation of groundwater in the area. This investigation included the removal of dedicated sampling pump and packer assemblies in outpost monitoring wells BPOW 2-1 and BPOW 2-2. This evaluation continued through 2008 and concluded that the well casing for BPOW 2-1 was cracked and that the detections of VOCs in BPOW 2-1 were the result of shallow contaminated groundwater infiltrating the casing and flowing downward into the screen interval. Because this crack resulted in a conduit for migration of shallow groundwater contamination into a zone that may be intercepted by a water district well, in 2009 the Navy repaired the well by installing a 2-inch monitoring well within the 4-inch well and using a bentonite/cement grout sealed the annular space above the screen zone. Additional detail on the repair and subsequent actions are described below.

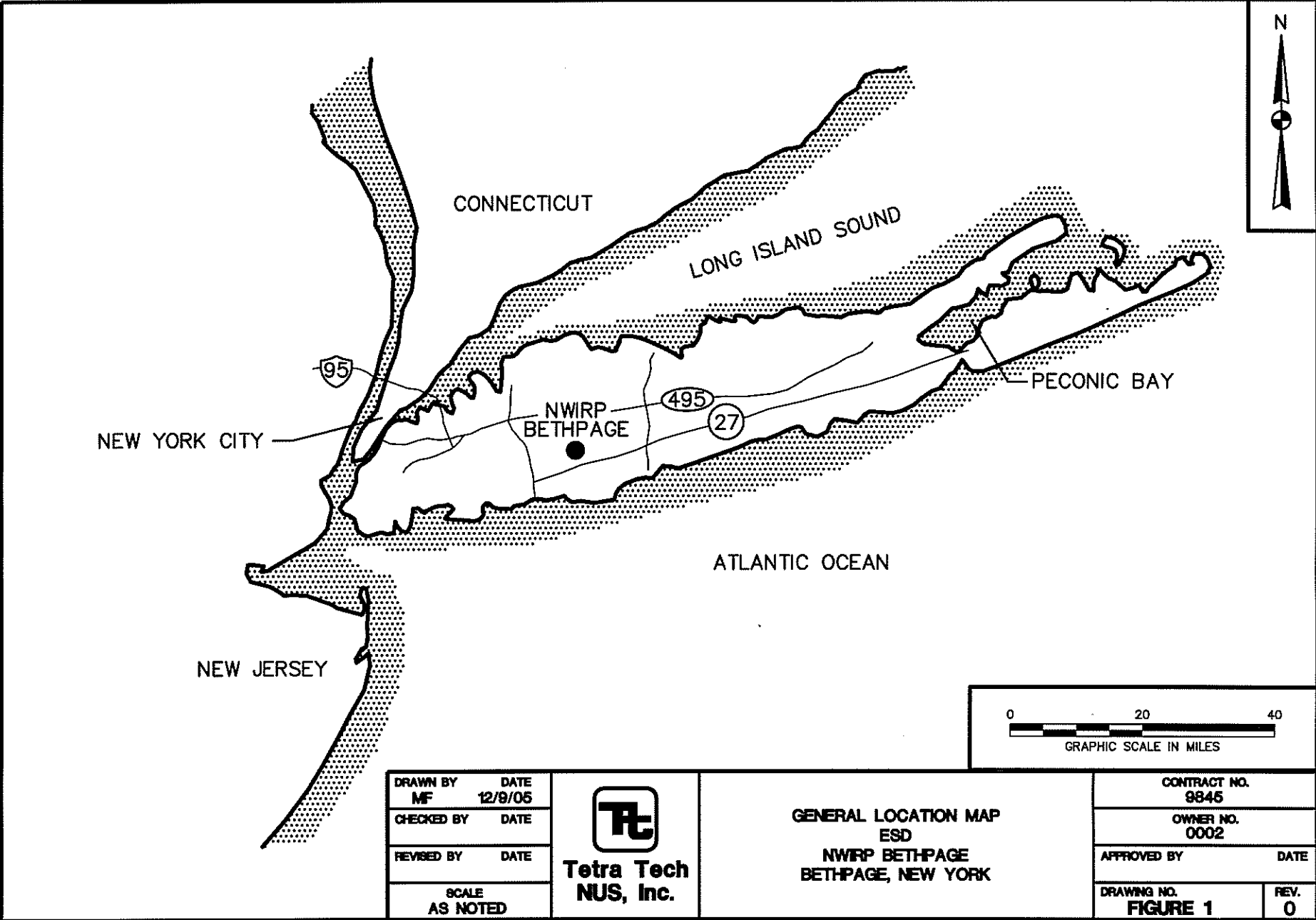
#### **OUTPOST MONITORING WELL BPOW 2-1**

- BPOW 2-1 was repaired in May 2009. The monitoring well repair construction log is provided in Attachment 1.
- BPOW 2-1 was re-developed on October 5, 2010. The monitoring well development log is provided in Attachment 2.
- New dedicated submersible pump was installed on December 7, 2010.
- Groundwater samples were collected from BPOW 2-1 on October 6, 2010 and December 8, 2010. The sample collected in October 2010 was collected at the end of development to provide an initial evaluation of groundwater quality and are considered to be screening level quality. The sample collected in December 2010 is representative of stabilized groundwater conditions and is considered a high level quality sample.
- Samples were analyzed for Target Compound List (TCL) VOCs. Sample logs sheets documenting the collection of these samples are provided in Attachment 3. Sample Chain of Custody forms are provided in Attachment 4.

- Site-related VOCs were not detected in groundwater samples collected BPOW 2-1 during the October and December 2010 sampling events.
- Data validation reports are provided in Attachment 5.

#### **OUTPOST MONITORING WELL BPOW 2-2**

- No repairs were conducted on BPOW 2-2.
- BPOW 2-2 was re-developed on December 7, 2010. The monitoring well development log is provided in Attachment 2.
- A decontaminated submersible pump was installed on December 7, 2010 as documented in Attachment 1.
- Groundwater samples were collected from BPOW 2-2 on October 7, 2010 and December 8, 2010. The samples were analyzed for TCL VOCs. Sample logs sheets documenting the collection of these samples are provided in Attachment 3. Sample Chain of Custody forms are provided in Attachment 4.
- The sample collected from October 2010 had a single positive VOC detection, chloroethane at 12 µg/L. Chloroethane was also detected in the trip blank sample associated with this sampling event at a concentration of 13 µg/L. Because chloroethane was not detected in associated laboratory method blank, data validation did not reject the detection. However, it is suspected that the detection of chloroethane in the October 2010 BPOW 2-2 sample was attributed to laboratory contamination.
- Chloroethane was not detected in the December 2010 sample. However, 1,1-Dichloroethane was detected in this sample at 0.74 µg/L. This detection was qualified as an estimated value. Laboratory data validation qualified this detection as uncertainty near detection limit.
- Data validation reports are provided in Attachment 5.

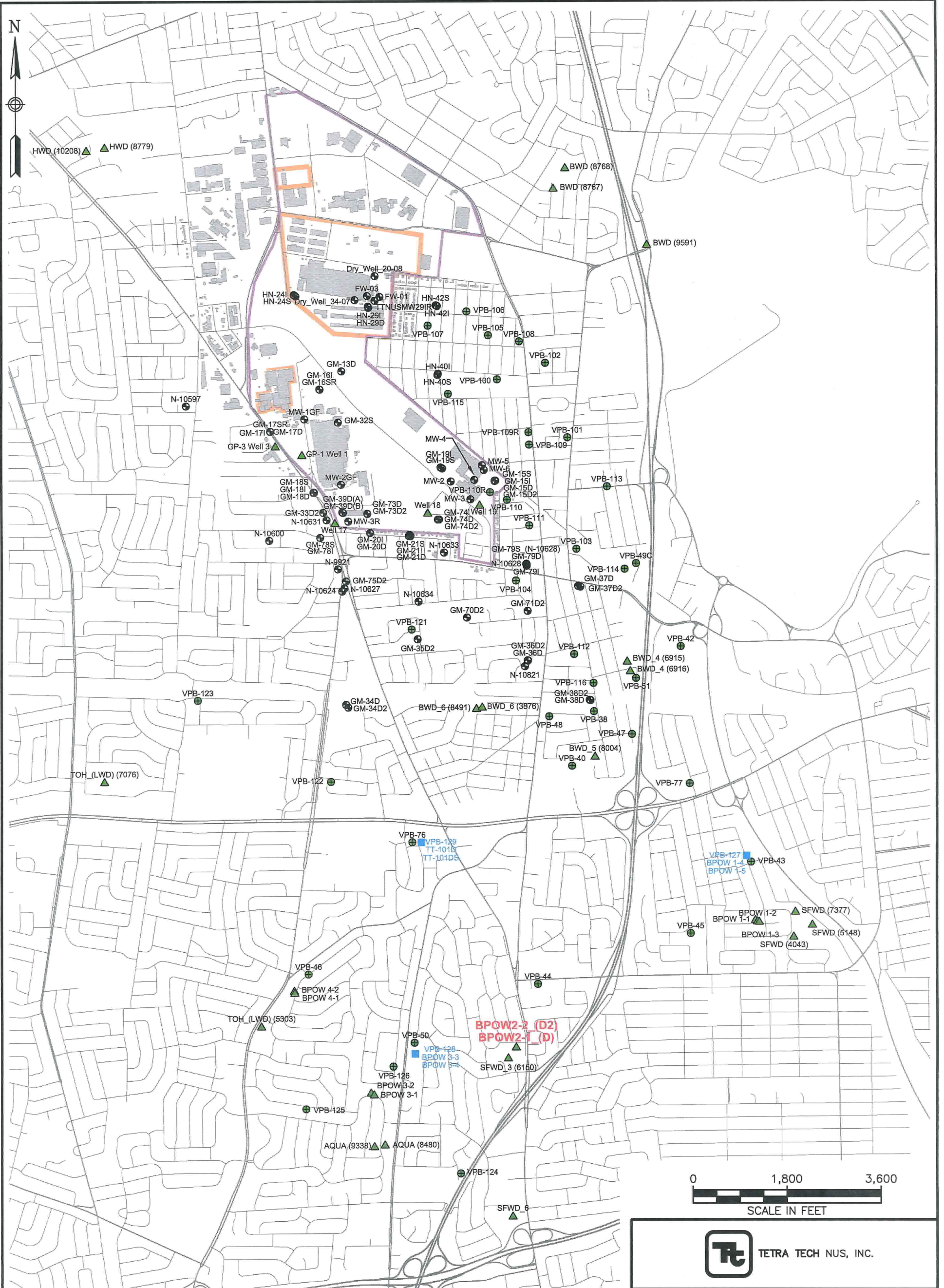


DRAWN BY <b>MF</b>	DATE <b>12/9/06</b>
CHECKED BY	DATE
REVISED BY	DATE
SCALE AS NOTED	



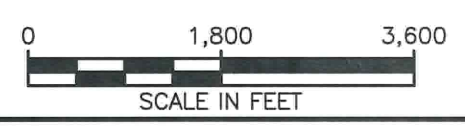
**GENERAL LOCATION MAP  
ESD  
NWIRP BETHPAGE  
BETHPAGE, NEW YORK**

CONTRACT NO. <b>9845</b>	
OWNER NO. <b>0002</b>	
APPROVED BY	DATE
DRAWING NO. <b>FIGURE 1</b>	REV. <b>0</b>



**LEGEND**

	GROUNDWATER SAMPLING LOCATION		HIGHWAY
	VERTICAL PROFILE BORING		MAJOR LOCAL ROAD
	WATER SUPPLY WELL		MINOR LOCAL ROAD
	PROPOSED VERTICAL PROFILE BORING AND OUTPOST MONITORING WELL LOCATION (2010/2011 INVESTIGATION)		1997 NORTHROP-GRUMMAN BETHPAGE BOUNDARY
	BUILDING		1997 NWIRP BETHPAGE BOUNDARY



**OPERABLE UNIT 2 (SITE 1)  
OUTPOST MONITORING WELLS BPOW 2-1  
AND BPOW 2-2 LOCATION MAP  
NAVAL WEAPONS INDUSTRIAL  
RESERVE PLANT  
BETHPAGE, NEW YORK**

FILE 112G01041GM04-1	SCALE AS NOTED
FIGURE NUMBER <b>FIGURE 2</b>	REV 0      DATE 01/27/11

**ATTACHMENT 1**  
**MONITORING WELL REPAIR/CONSTRUCTION**  
**CONSTRUCTION LOG**





**OVERBURDEN  
MONITORING WELL SHEET  
FLUSH - MOUNT**

Tetra Tech NUS, Inc.

*Repair by UTD*

PROJECT <u>NWIRP Bethpage</u>	LOCATION <u>Bethpage</u>	DRILLER <u>Unito</u>
PROJECT NO. <u>11260010220</u>	BORING <u>NA</u>	DRILLING METHOD <u>NA</u>
DATE BEGUN <u>5/14/2009</u>	DATE COMPLETED <u>5/14/2009</u>	DEVELOPMENT METHOD <u>Not Developed</u>
FIELD GEOLOGIST <u>STAN KOVITZ</u>		
GROUND ELEVATION _____	DATUM _____	

ACAD:FORM\_MNFM.dwg 07/26/99 INL

FLUSH MOUNT  
SURFACE CASING  
WITH LOCK

ELEVATION TOP OF RISER: \_\_\_\_\_

TYPE OF SURFACE SEAL: Concrete Pad

TYPE OF PROTECTIVE CASING: Steel-Flush Mount

I.D. OF PROTECTIVE CASING: 12" Diameter

DIAMETER OF HOLE: Original 8"

TYPE OF RISER PIPE: 2" schedule 40 PVC riser

RISER PIPE I.D.: 2.067"

TYPE OF BACKFILL/SEAL: Cement/Bentonite grout

ELEVATION/DEPTH TOP OF SEAL: 1330

TYPE OF SEAL: Bentonite slurry

ELEVATION/DEPTH TOP OF SAND: #0 Sand 340-346 / #1 Sand 346-356

ELEVATION/DEPTH TOP OF SCREEN: 1356

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH: 10 slot

TYPE OF SAND PACK: #1 filter sand

DIAMETER OF HOLE IN BEDROCK: NA

ELEVATION / DEPTH BOTTOM OF SCREEN: 1396

ELEVATION / DEPTH BOTTOM OF SAND: 1300

ELEVATION/DEPTH BOTTOM OF HOLE: 1400

BACKFILL MATERIAL BELOW SAND: NA

2-inch Grundfos Pump  
bottom of pump at 390 feet

*396'  
EJW  
1/31/11*

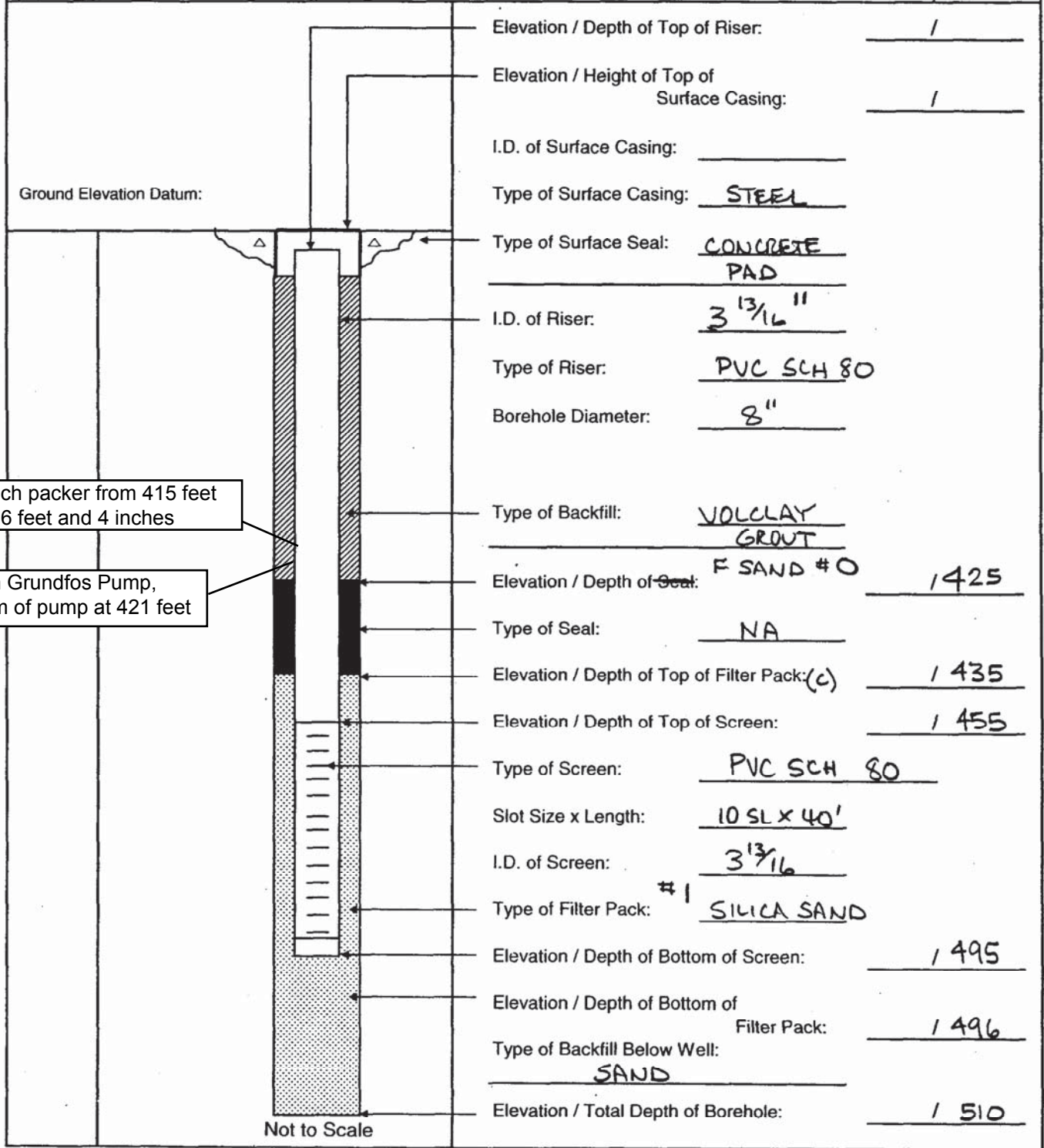
Pump installed on 12/8/2010.



MONITORING WELL SHEET

PERMIT No:

PROJECT: <u>NWIRP</u>	DRILLING Co.: <u>UNITECH</u>	BORING No.: <u>BPOW 2-2</u>
PROJECT No.: <u>N4037</u>	DRILLER: <u>EVANS</u>	DATE COMPLETED: <u>8/20/03</u>
SITE: <u>BPOW 2</u>	DRILLING METHOD: <u>MUD ROT</u>	NORTHING: _____
GEOLOGIST: <u>CONT1</u>	DEV. METHOD: _____	EASTING: _____



16-inch packer from 415 feet to 416 feet and 4 inches

3-inch Grundfos Pump, bottom of pump at 421 feet

Not to Scale

Elevation / Depth of Top of Riser: 1

Elevation / Height of Top of Surface Casing: 1

I.D. of Surface Casing: \_\_\_\_\_

Type of Surface Casing: STEEL

Type of Surface Seal: CONCRETE PAD

I.D. of Riser: 3 13/16"

Type of Riser: PVC SCH 80

Borehole Diameter: 8"

Type of Backfill: VOLCLAY GROUT

Elevation / Depth of Seal: F SAND #0 1425

Type of Seal: NA

Elevation / Depth of Top of Filter Pack:(c) 1435

Elevation / Depth of Top of Screen: 1455

Type of Screen: PVC SCH 80

Slot Size x Length: 10 SL X 40'

I.D. of Screen: 3 13/16"

Type of Filter Pack: #1 SILICA SAND

Elevation / Depth of Bottom of Screen: 1495

Elevation / Depth of Bottom of Filter Pack: 1496

Type of Backfill Below Well: SAND

Elevation / Total Depth of Borehole: 1510

Pump installed on 12/8/2010.

REV 2/12/04

**ATTACHMENT 2  
MONITORING WELL  
DEVELOPMENT LOG**

4"  
20.56 TPvc  
2-2



Tetra Tech NUS, Inc.

# MONITORING WELL DEVELOPMENT RECORD

Page 1 of 1

Well: BPOW-2-1 Depth to Bottom (ft.): ~396' <sup>BGS</sup> Responsible Personnel: Conti  
 Site: OU2 BETHPAGE Static Water Level Before (ft.): 21.35 Drilling Co.: Delta  
 Date Installed: 5/14/09 Static Water Level After (ft.): \_\_\_\_\_ Project Name: Bethpage OU-2 Offsite GW  
 Date Developed: 10-5-10 Screen Length (ft.): 40' Project Number 112G00622  
 Dev. Method: AIR LIFT/PUMP Specific Capacity: \_\_\_\_\_  
 Pump Type: GRUNDFOS 2" Φ Casing ID (in.): 2"

REPAIRED ON 5/14/09 PLACED 2" INSIDE 4" Φ

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below <del>FOO</del> )	Temperature (Degrees C)	pH	Specific Conductance (Units _____) ms/cm	Turbidity (NTU)	Remarks (odor, color, etc.)
1130	NA	—	BGS 21.35					NO ODOR.
1200	"	300		15.16	4.50	0.175	185	~10 GPM CLOUDY
1300	"							~30 GPM CLEAR
1315	"	750		15.45	4.36	0.077	4.1	CLEAR
1330	"	1000	21.35	15.50	4.34	0.071	4.0	CLEAR AVE ~16.7 GPM
		XXXX						
0825	NA	—	21.29					AIR LIFT.
0945	NA	START						START AIR LIFT
1000	"	500±	NA	14.87	4.27	0.151	1.0	CLEAR
1015	"	1000	"	14.36	4.40	0.089	3.0	" ~ 33 GPM
		GO EMPTY						
1100	"	START	NA	—	—	—	—	
1115	"	500	NA	14.68	4.59	0.078	1.8	CLEAR.
1130	"	1000	NA	14.32	4.51	0.075	2.1	"
		3000	TOTAL AIR LIFT					J Conte



# MONITORING WELL DEVELOPMENT RECORD

Well: BROW 2-2 Depth to Bottom (ft.): ~ 510' Responsible Personnel: Conti  
 Site: BETHPAGE OU-2 Static Water Level Before (ft.): 20.56 Drilling Co.: Delta  
 Date Installed: \_\_\_\_\_ Static Water Level After (ft.): \_\_\_\_\_ Project Name: Bethpage OU-2 Offsite GW  
 Date Developed: 10-7-10 Screen Length (ft.): \_\_\_\_\_ Project Number 112G00622  
 Dev. Method: AIR LIFT/PUMP Specific Capacity: \_\_\_\_\_  
 Pump Type: GRUNDFOS Casing ID (in.): 4" SCH 80

~ 80 GPM/AIR LIFT/HOSE @ 300'±

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____) mS/cm	Turbidity (NTU)	Remarks (odor, color, etc.)
1000	NA	—	20.56	—	—	—	—	—
1020	"	1600	NA	14.80	4.44	0.178	33.5	SL CLOUDY - NO ODOR
1040	"	3200	NA	15.31	4.61	0.107	7.1	CLEAR "
1100	"	4800	NA	16.02	4.61	0.103	0.0	"
1120		(6400)±	21.15	WL TPVC	4.61	0.101	1.0	"
CANNOT MEAS WL - DUE TO AIR LIFT HOOKUP AT WELL.								
4" φ WELL (NO REPAIR - JUST RE-DEVELOPMENT)								

**ATTACHMENT 3**  
**GROUNDWATER SAMPLE LOG**



# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

Sample ID No.: 1 BP-OW-2-1  
 Sample Location: BPCW 2-1  
 Sampled By: SJC

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: \_\_\_\_\_
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028424  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
10/6/10	CLEAR	4.62	071	15.98	1.0	2.49	319	—
1410								
Method: Pump								

### PURGE DATA:

	TIME							WATER LEV
Date: 10/6/10	1330	4.68	—	—	—	—	—	—
Method: Pump (2")	1340	4.60	077	16.94	5.8	5.44	307	21.78
Monitor Reading (ppm): 0	1350	4.65	072	16.02	0.3	2.77	315	21.90
Well Casing Diameter & Material	1400	4.62	072	16.04	1.2	2.54	318	22.05
Type: 2" φ PVC	1410	4.60	071	15.98	1.0	2.49	319	22.14
Total Well Depth (TD): 396								
Static Water Level (WL): 20.85								
One Casing Volume (gall): 61								
Start Purge (hrs): 1330								
End Purge (hrs): 1410								
Total Purge Time (min): 40								
Total Vol. Purged (gall): 280								

~7GPM

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2- 40ml Glass Vials	✓

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft

Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.

Not enough volume for water quality parameters  
 Check box if not enough volume.

Used pH paper instead of water quality meter  
 Check box if used pH paper.

Pump ~ 60' BGS  
 SAMPLING RATE  
 ~ 1GPM

### Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

### Signature(s):

*SJ Conti*



**GROUNDWATER SAMPLE LOG SHEET**

Project Site Name: BETHPAGE OU-2 OFFSITE GW  
 Project No.: 112G00622  
PRE-DESIGN FIELD INVES

Sample ID No.: 1 BP-OW-2-2  
 Sample Location: BPOW 2-2  
 Sampled By: SJC

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: \_\_\_\_\_
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: 028424  
 Type of Sample:  
 Low Concentration  
 High Concentration

**SAMPLING DATA:**

Date:	<u>10/7/10</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	<u>1500</u>	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
Method:	<u>PUMP (2")</u>	<u>CLEAR</u>							

**PURGE DATA:**

	TIME	WATER LEVEL							
Date:	<u>10/7/10</u>	<u>1300</u>	<u>INITIAL</u>	<u>PUMP</u>	<u>e</u>	<u>~7 GPM</u>	<u>-</u>	<u>-</u>	<u>~7 GPM</u>
Method:	<u>SUB PUMP</u>	<u>1310</u>	<u>4.55</u>	<u>.108</u>	<u>17.58</u>	<u>1.0</u>	<u>4.90</u>	<u>299</u>	<u>24.70</u>
Monitor Reading (ppm):	<u>0</u>	<u>1320</u>	<u>4.50</u>	<u>.129</u>	<u>16.49</u>	<u>2.7</u>	<u>3.72</u>	<u>285</u>	<u>24.75</u>
Well Casing Diameter & Material		<u>1330</u>	<u>4.61</u>	<u>.120</u>	<u>15.56</u>	<u>5.0</u>	<u>2.95</u>	<u>282</u>	<u>24.78</u>
Type: <u>4" SCH 80 PVC</u>		<u>1340</u>	<u>4.56</u>	<u>.111</u>	<u>15.29</u>	<u>1.9</u>	<u>1.98</u>	<u>290</u>	<u>24.80</u>
Total Well Depth (TD): <u>~510</u>		<u>1350</u>	<u>4.53</u>	<u>.101</u>	<u>15.07</u>	<u>3.2</u>	<u>7.21</u>	<u>296</u>	<u>24.81</u>
Static Water Level (WL): <u>20.56</u>		<u>24.10</u>	<u>21300</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
One Casing Volume (gal): <u>320</u>		<u>1400</u>	<u>4.50</u>	<u>.099</u>	<u>14.83</u>	<u>2.2</u>	<u>2.17</u>	<u>302</u>	<u>24.82</u>
Start Purge (hrs): <u>1300</u>		<u>1420</u>	<u>4.50</u>	<u>.102</u>	<u>14.74</u>	<u>1.0</u>	<u>2.19</u>	<u>303</u>	<u>25.13</u>
End Purge (hrs): <u>1500</u>		<u>1440</u>	<u>4.50</u>	<u>.101</u>	<u>15.15</u>	<u>0.0</u>	<u>219</u>	<u>298</u>	<u>25.15</u>
Total Purge Time (min): <u>120</u>		<u>1500</u>	<u>4.49</u>	<u>.106</u>	<u>14.93</u>	<u>1.0</u>	<u>2.15</u>	<u>316</u>	<u>25.18</u>
Total Vol. Purged (gal): <u>840</u>									

CLEAR  
 "  
 "  
 "  
 " (420 GAL)  
 " (7 GPM)

**SAMPLE COLLECTION INFORMATION:** Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2-40ml Glass Vials	✓
		TO: COMPUchem	

**OBSERVATIONS / NOTES:**

2" MW = 0.163 gal/ft  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted. SAY 490' H<sub>2</sub>O (e 20.56)  
 Not enough volume for water quality parameters  NA SAY 320 GAL/VOL  
 Check box if not enough volume.  
 Used pH paper instead of water quality meter  NA  
 Check box if used pH paper. WL AFTER DEV 24.10

Circle if Applicable:

<input type="checkbox"/> MS/MSD	Duplicate ID No.:
---------------------------------	-------------------

Signature(s):  
SJC Conti





# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Bethesda  
 Project No.: 112600622

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type:  
 QA Sample Type:

Sample ID No.: BPOW2-1-20101208  
 Sample Location: BPOW2-1  
 Sampled By: VAS  
 C.O.C. No.:  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
<u>12-8-10</u>	<u>clear</u>	<u>4.25</u>	<u>0.059</u>	<u>11.18</u>	<u>0.0</u>	<u>4.86</u>	<u>0.0</u>	<u>ORP</u>
Time: <u>1000</u>								
Method: <u>submersible pump</u>								

### PURGE DATA: (Gallons)

Date:	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other	Time
<u>12-8-10</u>	<u>1.0</u>	<u>4.87</u>	<u>0.121</u>	<u>10.67</u>	<u>31.8</u>	<u>5.39</u>	<u>0.0</u>	<u>260</u>	<u>0841</u>
Method: <u>Submersible pump</u>	<u>50.0</u>	<u>4.37</u>	<u>0.062</u>	<u>10.49</u>	<u>3.5</u>	<u>4.83</u>	<u>0.0</u>	<u>240</u>	<u>0900</u>
Monitor Reading (ppm): <u>0.0</u>	<u>100</u>	<u>4.32</u>	<u>0.058</u>	<u>10.45</u>	<u>0.0</u>	<u>4.87</u>	<u>0.0</u>	<u>251</u>	<u>0920</u>
Well Casing Diameter & Material Type: <u>2 inch PVC</u>	<u>150</u>	<u>4.28</u>	<u>0.059</u>	<u>10.89</u>	<u>0.0</u>	<u>4.81</u>	<u>0.0</u>	<u>265</u>	<u>0940</u>
Total Well Depth (TD): <u>400'</u>	<u>200</u>	<u>4.25</u>	<u>0.059</u>	<u>11.18</u>	<u>0.0</u>	<u>4.86</u>	<u>0.0</u>	<u>263</u>	<u>1000</u>
Static Water Level (WL): <u>20.62'</u>									
One Casing Volume (gall): <u>61.8</u>									
Start Purge (hrs): <u>0840</u>									
End Purge (hrs): <u>1000</u>									
Total Purge Time (min): <u>100</u>									
Total Vol. Purged (gall): <u>210</u>									

### SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOCS</u>	<u>HCl</u>	<u>3 X 40 ML Vials</u>	<u>9</u>

### OBSERVATIONS / NOTES:

- Pump flow rate ~ 2.5 gpm initially  
 - Pump set in well at ~ 390' BGS  
 - Sample split with ARCADIS  
 - No odors, stains, or elevated PID readings observed.

water level  
 0845 → 20.85'  
 0900 → 20.90'  
 0920 → 20.91'  
 0940 → 20.90'

Circle if Applicable: MS/MSD Yes Duplicate ID No.: \_\_\_\_\_ Signature(s): VAS



Project Site Name: NWIRP Bethpage  
 Project No.: \_\_\_\_\_

Sample ID No.: BPOW 2-2-2010 1208

Sample Location: BPOW 2-2

Sampled By: VAS

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: \_\_\_\_\_
- QA Sample Type: \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

- Low Concentration
- High Concentration

**SAMPLING DATA:**

Date:	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
<u>12-8-10</u>								
Time: <u>1230</u>								<u>ORP</u>
Method: <u>submersible pump</u>	<u>clear</u>	<u>4.15</u>	<u>8.106</u>	<u>11.20</u>	<u>0.0</u>	<u>4.59</u>	<u>0.0</u>	<u>268</u>

**PURGE DATA:** (Gallons)

Date:	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other	Time
<u>12-8-10</u>									
Method: <u>submersible pump</u>	<u>2.0</u>	<u>4.31</u>	<u>0.146</u>	<u>12.05</u>	<u>8.2</u>	<u>5.80</u>	<u>0.0</u>	<u>254</u>	<u>1106</u>
Monitor Reading (ppm): <u>0.0</u>	<u>60.0</u>	<u>4.20</u>	<u>0.109</u>	<u>11.38</u>	<u>6.0</u>	<u>6.21</u>	<u>0.0</u>	<u>270</u>	<u>1120</u>
Well Casing Diameter & Material	<u>125</u>	<u>4.19</u>	<u>0.107</u>	<u>11.31</u>	<u>0.0</u>	<u>5.73</u>	<u>0.0</u>	<u>271</u>	<u>1140</u>
Type: <u>4" PVC</u>	<u>190</u>	<u>4.17</u>	<u>0.106</u>	<u>11.29</u>	<u>0.0</u>	<u>5.13</u>	<u>0.0</u>	<u>273</u>	<u>1200</u>
Total Well Depth (TD): <u>~495'</u>	<u>260</u>	<u>4.16</u>	<u>0.106</u>	<u>11.22</u>	<u>0.0</u>	<u>4.88</u>	<u>0.0</u>	<u>271</u>	<u>1220</u>
Static Water Level (WL): <u>20.66'</u>	<u>295</u>	<u>4.15</u>	<u>0.106</u>	<u>11.20</u>	<u>0.0</u>	<u>4.59</u>	<u>0.0</u>	<u>268</u>	<u>1230</u>
One Casing Volume (gal): <u>309</u>									
Start Purge (hrs): <u>1105</u>									
End Purge (hrs): <u>1230</u>									
Total Purge Time (min): <u>95</u>									
Total Vol. Purged (gal/L): <u>300</u>									

**SAMPLE COLLECTION INFORMATION:**

Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>3 X 40 ML Vials</u>	<u>yes</u>

**OBSERVATIONS / NOTES:**

- pump set in well at ~421' BGS  
 - Pump flow rate ~ 3.09 pm  
 - Sample split with ARCADES  
 - No stains, odors, or elevated PID readings observed.

Water level  
 1120 → 27.15'  
 1140 → 27.13'  
 1200 → 27.14'  
 1220 → 27.13'  
 1230 → 27.14'

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:

*[Handwritten Signature]*

**ATTACHMENT 4**  
**SAMPLE CHAIN OF CUSTODY FORMS**



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER NO 928424

PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:									
12900622	BETHPAGE OU-2	BRAYACK	757 461 3824	COMPUCHEM / DONER									
SAMPLERS (SIGNATURE)	GW	FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS									
<i>Sj Contic</i>		CONTI	412 551 2629	CITY, STATE									
		CARRIERWAYBILL NUMBER											
		FED EX #	8735 5966 0829	CARY, NC.									
DATE	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, OC, ETC.)	COLLECTION METHOD	GRAB (G)	COMP (G)	No. OF CONTAINERS	CONTAINER TYPE	PRESERVATIVE USED	COMMENTS
10/6	0900	BP-OWTB-100610	TB	-	-	OC	G	2	2	2			1010052-01
10/6	1410	BP-OW-2-1	BPOW 2-1	-	-	GW	G	2	2	2			-02
10/7	1500	BP-OW-2-2	BPOW 2-1	-	-	GW	G	2	2	2			-03
TYPE OF ANALYSIS													
VOCs (uoml)													
APPL													

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
<i>Sj Contic</i>	10/7/10	1530	FED EX	10/7/10	
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
			<i>Jennifer Diner</i>	10/8/10	0922
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R FORM NO. TINUS-001



TETRA TECHNUS, INC.

CHAIN OF CUSTODY

NUMBER

27287

PAGE 1 OF 1

B4488

PROJECT NO: 112600622	FACILITY: NWIRP Bethpage	PROJECT MANAGER Dave Brack	PHONE NUMBER (757) 461-3824	LABORATORY NAME AND CONTACT: Chemtech
SAMPLERS (SIGNATURE) Vince Shuckora		FIELD OPERATIONS LEADER Vince Shuckora	PHONE NUMBER (610) 491-9688	ADDRESS 284 Sheffield Street
		CARRIERWAYBILL NUMBER FED EX # 8706 9629 3699		CITY, STATE Mountainside, NJ 07092
STANDARD TAT <input type="checkbox"/>		TOP DEPTH (FT)	CONTAINER TYPE PLASTIC (P) or GLASS (G)	
RUSH TAT <input type="checkbox"/>		BOTTOM DEPTH (FT)	PRESERVATIVE USED	
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input checked="" type="checkbox"/> 7 day <input type="checkbox"/> 14 day				
DATE 2/28/08	TIME 0700	SAMPLE ID BP-TB01-20101208	NO. OF CONTAINERS 3	THEOFANIS VOCs HCl COMMENTS Trip Blank De MS /MSD
DATE 2/28/08	TIME 1000	SAMPLE ID BP02-1-20101208	NO. OF CONTAINERS 9	
DATE 2/28/08	TIME 1230	SAMPLE ID BP02-2-20101208	NO. OF CONTAINERS 3	
DATE 2/28/08	TIME 1425	SAMPLE ID BP01-3-20101208	NO. OF CONTAINERS 3	
DATE 2/28/08	TIME 1800	SAMPLE ID BP0-DUP01-20101208	NO. OF CONTAINERS 3	
1. RELINQUISHED BY <i>Caloff</i>	DATE 12-9-10	TIME 1600	1. RECEIVED BY	DATE
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE
3. RELINQUISHED BY Fed Ex	DATE 12/10/10	TIME 9:30	3. RECEIVED BY <i>Van Lina</i>	DATE 12/10/10
COMMENTS				TIME 9:30 Temp: 4°C

**ATTACHMENT 5  
DATA VALIDATION  
PACKAGES**



TO: D. BRAYACK                      DATE: NOVEMBER 30, 2010

FROM: L. GANSER                      COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC  
NWIRP BETHPAGE CTO 066  
SAMPLE DELIVERY GROUP (SDG) 1010052

SAMPLES: 3/Aqueous/VOC

BP-OW-2-1    BP-OW-2-2    BP-OWTB-100610

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG 1010052 consists of two (2) environmental aqueous samples and one (1) trip blank. The samples were analyzed for volatile organic compounds (VOCs). No field duplicates were included within this SDG.

The samples were collected on October 6 and 7, 2010 and analyzed by CompuChem, a division of Liberty Analytical Corporation. VOC analyses were conducted in accordance with EPA Method SW-846 8260B. The data contained in this SDG were validated with regard to the following parameters:

- \*      •      Data completeness
- \*      •      Holding times
- \*      •      GC/MS Tune
- Initial/continuing calibrations
- Laboratory Method Blank Results
- \*      •      Surrogate Recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate 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.

Volatile Organic Compounds

Initial and continuing calibration relative response factor (RRF) was <0.05 for acetone. Positive results for acetone were qualified as estimated, "J".

Continuing calibration percent difference was greater than >20% quality control limit (but <90%) for bromomethane and 4-methyl-2-pentanone on 10/12/10 at 16:16 on instrument 5972hp59. Nondetected results for the aforementioned compounds were qualified as estimated, "UJ".

Contaminants were detected in laboratory method blank VBLKIN at the following maximum concentrations.

<u>Contaminant</u>	<u>Maximum Concentration (ug/L)</u>	<u>Action Level (ug/L)</u>
1,2,4-Trichlorobenzene	1.3	6.5
Naphthalene	3.8	19
Toluene	0.62	3.1

An action level of 5X the maximum contaminant concentration was established to evaluate the samples for laboratory method blank contamination. Sample aliquot and dilution factors were taken into consideration during application of the blank action level. Positive results less than the action level were qualified as nondetected, "U", due to blank contamination. The trip blank was not qualified for laboratory blank contamination.

Percent recovery for one surrogate (1,2-dichloroethane-d4) was greater than quality control limits for sample BP-OW-2-1. Positive results in sample BP-OW-2-1 were qualified as estimated, "J".

#### Additional Comments

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

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

Laboratory control sample duplicate percent recovery was greater than quality control limit for chloromethane. No action was taken as all results for chloromethane were nondetects.

No matrix spike/matrix spike duplicate samples were requested.

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** 1,2,4-Trichlorobenzene, naphthalene, and toluene were detected in a laboratory method blank. Initial and continuing calibration RRF was <0.05 for acetone. The continuing calibration percent difference was greater than the quality control limit for several analytes. Surrogate recovery was greater than quality control limits affecting one sample.

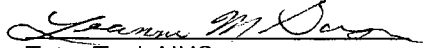
**Other Factors Affecting Data Quality:** None.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Organic Data Validation (10/99), USEPA Region II Standard Operating Procedures for Validating Volatile Organic Compounds by SW-846 Method 8260B HW-24 Revision 2 (August 2008) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006).



**NOVEMBER 30, 2010**  
**PAGE 3**

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech NUS  
Leanne Ganser  
Data Validator



TetraTech NUS  
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

**Data Validation Qualifier Codes:**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % 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 = GFAA PDS-GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $< CRQL$  for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $>25\%$  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 greater than sample activity

PARAMETER	BP-OW-2-1		BP-OW-2-2		BP-OWTB-100610	
	RESULT	QLCD	RESULT	QLCD	RESULT	QLCD
1,1,1-TRICHLOROETHANE	0.5 U		0.5 U		0.5 U	
1,1,2,2-TETRACHLOROETHANE	2 U		2 U		2 U	
1,1,2-TRICHLOROETHANE	2 U		2 U		2 U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2 U		2 U		2 U	
1,1-DICHLOROETHANE	0.5 U		0.5 U		0.5 U	
1,1-DICHLOROETHENE	2 U		2 U		2 U	
1,1-DICHLOROPROPENE	0.5 U		0.5 U		0.5 U	
1,2,4-TRICHLOROBENZENE	0.5 U		0.5 U		1.4 J	P
1,2-DIBROMO-3-CHLOROPROPANE	2 U		2 U		2 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	2 U		2 U		2 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	5 U		5 U		6.8 J	P
2-HEXANONE	1.3 U		1.3 U		1.3 U	
4-METHYL-2-PENTANONE	1.3 UJ	C	1.3 UJ	C	1.3 UJ	C
ACETONE	7.1 J	CPR	9.3 J	CP	46 J	C
BENZENE	0.5 U		0.5 U		0.5 U	
BROMODICHLOROMETHANE	0.5 U		0.5 U		0.5 U	
BROMOFORM	2 U		2 U		2 U	
BROMOMETHANE	2 UJ	C	2 UJ	C	2 UJ	C
CARBON DISULFIDE	0.5 U		0.5 U		0.5 U	
CARBON TETRACHLORIDE	0.5 U		0.5 U		0.5 U	
CHLOROBENZENE	0.5 U		0.5 U		0.5 U	
CHLORODIBROMOMETHANE	0.5 U		0.5 U		0.5 U	
CHLOROETHANE	2 U		12		13	
CHLOROFORM	0.5 U		0.5 U		0.5 U	
CHLOROMETHANE	0.5 U		0.5 U		0.5 U	
CIS-1,2-DICHLOROETHENE	2 U		2 U		2 U	
CIS-1,3-DICHLOROPROPENE	2 U		2 U		2 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	

PROJ_NO: 00622	NSAMPLE	BP-OW-2-1	BP-OW-2-2	BP-OWTB-100610					
SDG: 1010052	LAB_ID	1010052-02	1010052-03	1010052-01					
FRACTION: OV	SAMP_DATE	10/6/2010	10/7/2010	10/6/2010					
MEDIA: WATER	QC_TYPE	NM	NM	TB					
	UNITS	UG/L	UG/L	UG/L					
	PCT_SOLIDS	0.0	0.0	0.0					
	DUP_OF								
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
M+P-XYLENES	1 U	1 U		1 U	1 U		1 U	1 U	
METHYL ACETATE	2 U	2 U		2 U	2 U		2 U	2 U	
METHYL CYCLOHEXANE	0.5 U	0.5 U		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		0.5 U	0.5 U	
METHYLENE CHLORIDE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
NAPHTHALENE	2 U	2 U		2 U	2 U		4.6 J	4.6 J	P
O-XYLENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
TETRACHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TOLUENE	0.79 U	0.79 U	A	0.73 U	0.73 U	A	1.2 J	1.2 J	P
TOTAL 1,2-DICHLOROETHENE	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U	0.5 U	
TOTAL XYLENES	0.5 U	0.5 U		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		0.5 U	0.5 U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U		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		0.5 U	0.5 U	
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U		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		0.5 U	0.5 U	



TO: D. BRAYACK DATE: JANUARY 14, 2011

FROM: MICHELLE L. ALLEN COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC, SVOC, PEST, and PCB  
 NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), BETHPAGE  
 CTO 066  
 SAMPLE DELIVERY GROUP (SDG) B4488

SAMPLES: 5/Aqueous/VOC

BP-TB01-20101208 BPOW-DUP01-20101208 BPOW1-3-20101208  
 BPOW2-1-20101208 BPOW2-2-20101208

1/IDW/VOC/SVOC/PEST/PCB

BP-FRACIDW-20101209

**Overview**

The sample sets for NWIRP Bethpage, SDG B4488 consisted of four (4) aqueous environmental samples, one (1) aqueous waste sample, and one (1) aqueous trip blank. All six (6) aqueous samples were analyzed for volatile organic compounds (VOC). The one (1) aqueous waste sample was analyzed for semi-volatile organic compounds (SVOC), pesticides (PEST), and polychlorinated biphenyls (PCB). One field duplicate sample pair was associated with this sample data group (SDG); BPOW-DUP01-20101208/BPOW1-3-20101208.

The samples were collected by Tetra Tech on December 8 and 9, 2010 and analyzed by Chemtech. All analyses were conducted in accordance with EPA Methods SW-846 8260B, 8270C, 8081, 8082 and EPA Method 624 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 Blank Results
- Surrogate Spike Recoveries
- Internal Standard Recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries
- Matrix Spike/Matrix Spike Duplicate Results
- \* • Field Duplicate Precision 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.

### **Volatile (VOC)**

The Percent Differences (%Ds) for 2-hexanone and bromoform exceeded the 20% quality control limit for the continuing calibration performed on instrument MSVOAD on 12/15/10 @ 11:33. Sample BPOW-DUP01-20101208 was affected. Only non-detected results were reported for these compounds in the affected sample and these non-detects were qualified as estimated, (UJ).

The continuing calibration %Ds for acetone and methyl acetate were greater than 20% quality control criteria on instrument MSVOAG on 12/13/10 @ 10:41 affecting samples TB01-20101208, BPOW1-3-20101208, BPOW2-1-20101208, and BPOW2-2-20101208. The non-detected results reported for these compounds were qualified as estimated, (UJ).

The Relative Percent Difference (RPD) for acetone, methyl acetate, 2-butanone, 1,1,2,2-tetrachloroethene, and 1,2-dibromo-3-chloropropane exceeded the 20% quality control limit in the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of sample BPOW2-1-20101208. No action was taken for the non-detected results reported for these compounds in the environmental sample since the Percent Recoveries (%Rs) were acceptable in the MS and MSD samples.

The Laboratory Control Sample (LCS), BSG1213W1, had %Rs for acetone and methyl acetate above the upper quality control limits. No action was taken in the affected samples since no positive results were reported for these compounds.

The LCS/Laboratory Control Sample Duplicate (LCS/D) analyses, samples BSG1209W3/BSG1209W4, had RPDs for dichlorofluoromethane, chloromethane, vinyl chloride, bromomethane, chloroethane, trichlorofluoromethane, 1,1-dichloroethene, acetone, carbon disulfide, methyl acetate, and 2-butanone that exceeded 20%. In addition, the %R for acetone was greater than the upper quality control limit. No action was taken in the affected waste water sample since only non-detects were reported for the noncompliant compounds.

The positive result for 1,1-dichloroethane in sample BPOW2-2-20101208 reported below the Limit of Quantitation (LOQ) but above the Method Detection Limit (MDL) was qualified as estimated, (J). Non-detected results are reported to the Limit of Detection (LOD).

### **Semi-Volatile Organic Compounds (SVOC)**

The internal standard, perylene-d12, was below the lower quality control limit in sample BP-FRACIDW-20101209. The sample was reanalyzed yielding similar results. The initial analysis of this sample was used in the data validation. The non-detected results reported the compounds associated with this internal standard were qualified as estimated, (UJ).

### **Pesticides (PEST)**

No problems were noted.

### **Polychlorinated Biphenyls (PCB)**

The surrogate spike compound, decachlorobiphenyl, had %Rs below the lower quality control limit in sample BP-FRACIDW-20101209 and its reanalysis. The initial analysis was used in the validation of the data. The non-detected results reported for the PCBs in this fraction were qualified as estimated, (UJ).

**Additional Comments**

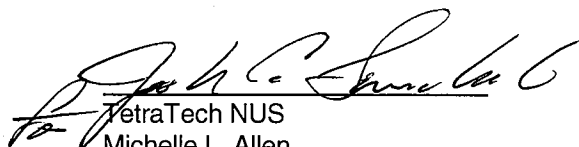
The VOC analysis of the waste sample, BP-FRACIDW-20101209, was analyzed via EPA Method 624 and evaluated accordingly.

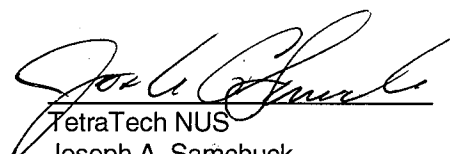
**EXECUTIVE SUMMARY**

**Laboratory Performance Issues:** Some compounds were estimated due to continuing calibration %Ds greater than their respective quality control limit. The VOC LCS/LSD had %Rs and RPDs outside the quality control limits. Noncompliant surrogate %Rs resulted in the qualification the waste sample in the PCB fraction. One internal standard was below the lower quality control limit in the SVOC analysis of the waste sample. Affected compounds were estimated.

**Other Factors Affecting Data Quality:** The MS/MSD sample had noncompliant %Rs and RPDs. Non-detected results were not qualified. A positive result reported below the LOQ but above the MDL was qualified as estimated, (J). Non-detected results are reported to the LOD.

The data for these analyses were reviewed with reference to the following: SOP #HW-24 Revision #2, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SOP #HW-22 Revision #4, August 2008, USEPA Region II Hazardous Waste Support Branch Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SOP #HW-44 Revision #1, October 2006, USEPA Region II Hazardous Waste Support Branch Validating Pesticides by Gas Chromatography, SOP #HW-45 Revision #1, October 2006, USEPA Region II Hazardous Waste Support Branch Validating Polychlorinated Biphenyls by Gas Chromatography by SW-846 Methods 8260B, 8270C, 8081, and 8082, EPA Method 624, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006).

  
TetraTech NUS  
Michelle L. Allen  
Chemist/Data Validator

  
TetraTech NUS  
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

**Data Validation Qualifier Codes:**

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (e.g. % 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 = GFAA PDS - GFAA MSA's  $r < 0.995$  / ICP PDS Recovery Noncompliance
- 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 (e.g. base-line drifting)
- P = Uncertainty near detection limit ( $< 2 \times$  IDL for inorganics and  $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors  $>25\%$  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 greater than sample activity

PROJ_NO: 00622	NSAMPLE	BPOW1-3-20101208	BPOW2-1-20101208	BPOW2-2-20101208	BPOW-DUJ01-20101208				
SDG: B4488	LAB_ID	B4488-06	B4488-02	B4488-05	B4488-07				
FRACTION: OV	SAMP_DATE	12/8/2010	12/8/2010	12/8/2010	12/8/2010				
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				BP0W1-3-20101208				
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			0.74 J	P	
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			2.5 U			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	2.5 UJ	C		2.5 UJ	C		2.5 U		
BENZENE	0.5 U			0.5 U			0.5 U		
BROMODICHLOROMETHANE	0.5 U			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 UJ		
CARBON DISULFIDE	0.5 U			0.5 U			0.5 U		
CARBON TETRACHLORIDE	0.5 U			0.5 U			0.5 U		
CHLOROBENZENE	0.5 U			0.5 U			0.5 U		
CHLORODIBROMOMETHANE	0.5 U			0.5 U			0.5 U		
CHLOROETHANE	0.5 U			0.5 U			0.5 U		
CHLOROFORM	0.5 U			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		
M+P-XYLENES	1 U			1 U			1 U		

PROJ_NO: 00622	NSAMPLE	BP-TB01-20101208	
SDG: B4488	LAB_ID	B4488-01	
FRACTION: OV	SAMP_DATE	12/8/2010	
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	U	
1,1,2,2-TETRACHLOROETHANE	0.5 U	U	
1,1,2-TRICHLOROETHANE	0.5 U	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.5 U	U	
1,1-DICHLOROETHANE	0.5 U	U	
1,1-DICHLOROETHENE	0.5 U	U	
1,2,4-TRICHLOROBENZENE	0.5 U	U	
1,2-DIBROMO-3-CHLOROPROPANE	0.5 U	U	
1,2-DIBROMOETHANE	0.5 U	U	
1,2-DICHLOROBENZENE	0.5 U	U	
1,2-DICHLOROETHANE	0.5 U	U	
1,2-DICHLOROPROPANE	0.5 U	U	
1,3-DICHLOROBENZENE	0.5 U	U	
1,4-DICHLOROBENZENE	0.5 U	U	
2-BUTANONE	2.5 U	U	
2-HEXANONE	2.5 U	U	
4-METHYL-2-PENTANONE	2.5 U	U	
ACETONE	2.5 UJ	UJ	C
BENZENE	0.5 U	U	
BROMODICHLOROMETHANE	0.5 U	U	
BROMOFORM	0.5 U	U	
BROMOMETHANE	0.5 U	U	
CARBON DISULFIDE	0.5 U	U	
CARBON TETRACHLORIDE	0.5 U	U	
CHLOROBENZENE	0.5 U	U	
CHLORODIBROMOMETHANE	0.5 U	U	
CHLOROETHANE	0.5 U	U	
CHLOROFORM	0.5 U	U	
CHLOROMETHANE	0.5 U	U	
CIS-1,2-DICHLOROETHENE	0.5 U	U	
CIS-1,3-DICHLOROPROPENE	0.5 U	U	
CYCLOHEXANE	0.5 U	U	
DICHLORODIFLUOROMETHANE	0.5 U	U	
ETHYLBENZENE	0.5 U	U	
ISOPROPYLBENZENE	0.5 U	U	
M+P-XYLENES	1 U	U	

PROJ_NO: 00622 SDG: B4488 FRACTION: OV MEDIA: WATER	NSAMPLE		BP0W1-3-20101208		BP0W2-1-20101208		BP0W2-2-20101208		BP0W1-3-20101208									
	LAB_ID	SAMP_DATE	QC_TYPE	UNITS	PCT_SOLIDS	DUP_OF	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
	B4488-06	12/8/2010	NM	UG/L	0.0		0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C	0.5 UJ	C
	B4488-02	12/8/2010	NM	UG/L	0.0		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
	B4488-05	12/8/2010	NM	UG/L	0.0		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
	B4488-07	12/8/2010	NM	UG/L	0.0		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	
							0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	

PROJ_NO: 00622	NSAMPLE	BP-TB01-20101208	
SDG: B4488	LAB_ID	B4488-01	
FRACTION: OV	SAMP_DATE	12/8/2010	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
METHYL ACETATE	0.5 U	U	C
METHYL CYCLOHEXANE	0.5 U	U	
METHYL TERT-BUTYL ETHER	0.5 U	U	
METHYLENE CHLORIDE	0.5 U	U	
O-XYLENE	0.5 U	U	
STYRENE	0.5 U	U	
TETRACHLOROETHENE	0.5 U	U	
TOLUENE	0.5 U	U	
TRANS-1,2-DICHLOROETHENE	0.5 U	U	
TRANS-1,3-DICHLOROPROPENE	0.5 U	U	
TRICHLOROETHENE	0.5 U	U	
TRICHLOROFLUOROMETHANE	0.5 U	U	
VINYL CHLORIDE	0.5 U	U	

## **Section 9**

### **BPOW 2-3**

- **BPOW 2-3 Boring Log**
- **BPOW 2-3 Well Construction Log**
- **BPOW 2-3 Well Development Record**
- **BPOW 2-3 GW Sample Log**
- **BPOW 2-3 Chain of Custody Record**
- **BPOW 2-3 Analytical Data Sheet**
- **BPOW 2-3 Validation Letter and Table**



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **BPOW 2-3**  
 DATE: **7/7/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	0				DENSE	YELLOW BRN	SAND-SOME GRAVEL	GW	DAMP					0
								SW	↓					
									MOIST					
	20								FOR DETAILS SEE GAMMA AND BORING LOG - VPB-130					
	40								SET/DROVE 8" Ø STEEL CAS TO 40' ON 7/7/11					0
	60							SW	WET					
	80								SAND					0
	100													

7/7  
7/11

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: DRIVE 8" STEEL SUR CAS TO 40'  
8" MUD ROTARY TO TD OF 610'.

Drilling Area  
Background (ppm): 0

Converted to Well: Yes X No      Well I.D. #: BPOW 2-3





# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **BPOW 2-3**  
 DATE: 7/11/11  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)							
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**				
	100					YELL											
					DENSE	BRN	F/C SAND	SM	WET								0
								SW									
	120																
	140																
7/11																	0
	160																
7/12																	
	180																
																	0
	200																

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes X No \_\_\_\_\_ Well I.D. #: **BPOW 2-3**



# BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW  
 PROJECT NUMBER: 112G00622-PHASE II  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: MUD ROTARY

BORING No.: BPOW 2-3  
 DATE: 7/12/11  
 GEOLOGIST: Conti  
 DRILLER: B. Welischar

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	200				DENSE	DRN GRAY	SILTY F/M SAND	SM	WET				0
	220						SAME						
	240						SAME						0
	260						SAME						
	280						SAME						0
	300												

7/12

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm): 0

Converted to Well: Yes X No \_\_\_\_\_ Well I.D. #: BPOW 2-3



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **BPOW 2-3**  
 DATE: 7/13/11  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

7/13

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
	300				DENSE GRAY		SILTY F/M SAND	SM	WET				0
							TR CLAY						
	320						SAME						
	340						SAME						
	360						SAME						0
	380						SAME						0
	400												0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes  No  Well I.D. #: **BPOW 2-3**



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **BPOW 2-3**  
 DATE: **7/14/11**  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)								
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**					
	400																	
					DENSE	GRAY	SILTY F/M SAND	SM	WET									0
							TR "DRIFT WOOD"											
							(LIGNITE)											
							TR CLAY											
	420									WOOD CHIPS								
							SAME			CONTINUE								
										TO ~ 500'								
	440																	0
	460																	
	480																	0
	500																	

7/14 ↓

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area Background (ppm):

Converted to Well: Yes X No \_\_\_\_\_ Well I.D. #: **BPOW 2-3**



# BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**  
 PROJECT NUMBER: **112G00622-PHASE II**  
 DRILLING COMPANY: **DELTA WELL & PUMP**  
 DRILLING RIG: **MUD ROTARY**

BORING No.: **BPOW 2-3**  
 DATE: 7/14/11 → 7/15/11  
 GEOLOGIST: **Conti**  
 DRILLER: **B. Welischar**

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**	
	500				DENSE	GRAY	SILTY F/M SAND TR CLAY	SM	WET					0
	520						SAME							
	540						SAME							
	560						SAME							
	580						SAME			594 → 599	SUMP			
	600						-MORE CLAY ~		600'					

\* When rock coring, enter rock brokenness. 610 TD

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: TD @ 610      SEE WELL CONSTRUCTION FOR DETAILS

Drilling Area Background (ppm):

Converted to Well: Yes  No  Well I.D. #: **BPOW 2-3**



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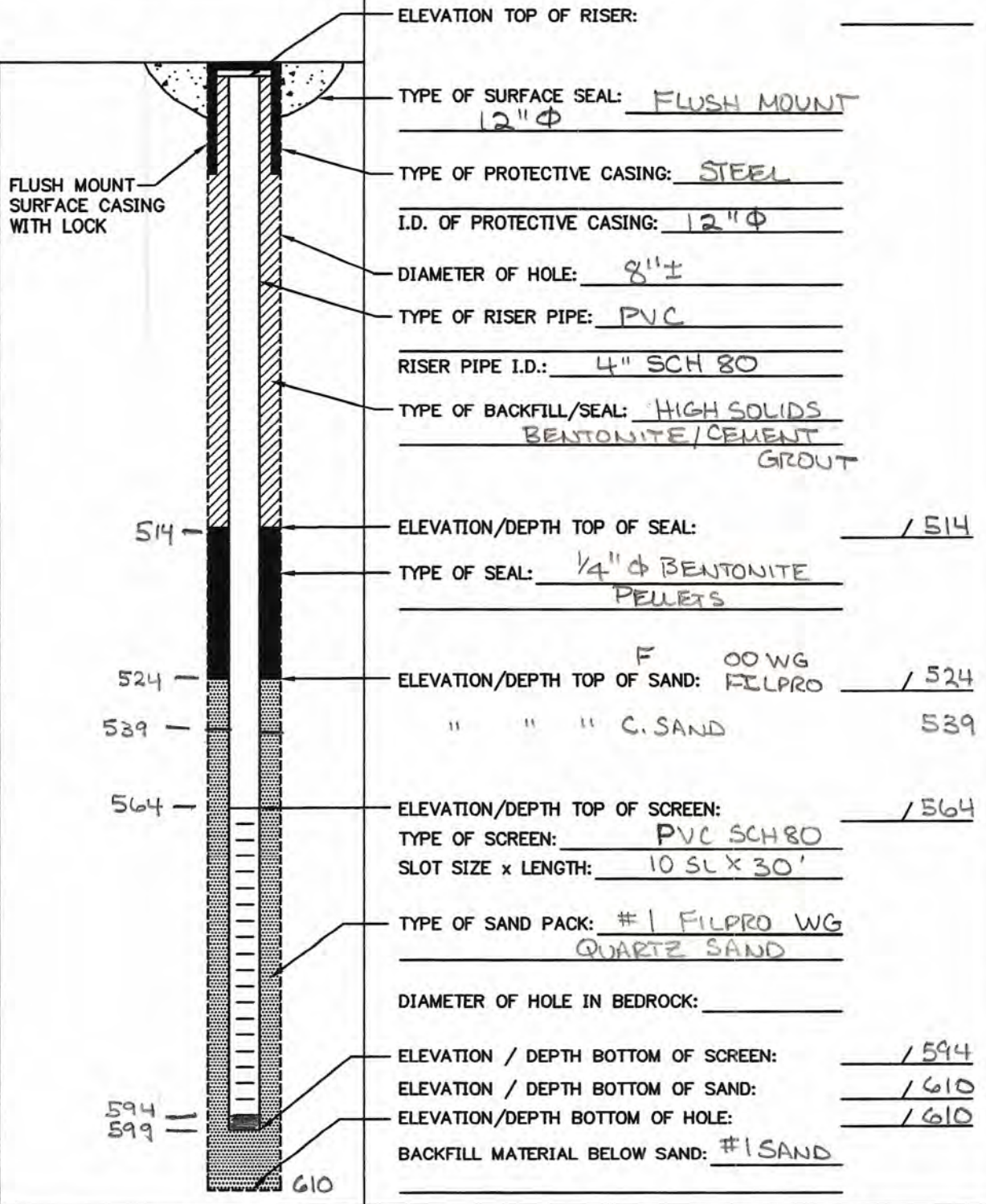
# OVERBURDEN MONITORING WELL SHEET FLUSH - MOUNT

WELL NO.: BPOW 2-3

(VPB-130)

PROJECT <u>BETHPAGE OU 2</u>	LOCATION <u>BETHPAGE NY</u>	DRILLER <u>B. WEUSCHAR</u>
PROJECT NO. <u>112G00622</u>	BORING <u>VPB-130</u>	DRILLING METHOD <u>MUD ROTARY</u>
DATE BEGUN <u>7/18/11</u>	DATE COMPLETED <u>7/19/11</u>	DEVELOPMENT METHOD <u>AIR/PUMP</u>
FIELD GEOLOGIST <u>CONTI</u>	DATUM _____	
GROUND ELEVATION _____		

ACAD: FORM\_MWF.M.dwg 07/26/99 .INL



ELEVATION TOP OF RISER: \_\_\_\_\_

TYPE OF SURFACE SEAL: FLUSH MOUNT  
12" Φ

TYPE OF PROTECTIVE CASING: STEEL

I.D. OF PROTECTIVE CASING: 12" Φ

DIAMETER OF HOLE: 8" ±

TYPE OF RISER PIPE: PVC

RISER PIPE I.D.: 4" SCH 80

TYPE OF BACKFILL/SEAL: HIGH SOLIDS BENTONITE/CEMENT GROUT

514 — ELEVATION/DEPTH TOP OF SEAL: 514

TYPE OF SEAL: 1/4" Φ BENTONITE PELLETS

524 — ELEVATION/DEPTH TOP OF SAND: F 00 WG FILPRO / 524

539 — " " " C. SAND 539

564 — ELEVATION/DEPTH TOP OF SCREEN: 564

TYPE OF SCREEN: PVC SCH 80  
SLOT SIZE x LENGTH: 10 SL x 30'

TYPE OF SAND PACK: #1 FILPRO WG QUARTZ SAND

DIAMETER OF HOLE IN BEDROCK: \_\_\_\_\_

ELEVATION / DEPTH BOTTOM OF SCREEN: 594

ELEVATION / DEPTH BOTTOM OF SAND: 610

594 — ELEVATION/DEPTH BOTTOM OF HOLE: 610

599 — BACKFILL MATERIAL BELOW SAND: #1 SAND

\_\_\_\_\_



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# AIR

## MONITORING WELL DEVELOPMENT RECORD

Page 1 of     

Well: BPOW 2-3 Depth to Bottom (ft.): 599 Responsible Personnel: J. Birkett  
 Site: Offsite GW 00-2 Static Water Level Before (ft.):      Drilling Co.: Delta  
 Date Installed:      Static Water Level After (ft.):      Project Name: NWIRP Bethpage Offsite GW  
 Date Developed: 8-1-11 Screen Length (ft.): 564-594' bgs Project Number: 112G00622  
 Dev. Method: Air lift Specific Capacity:       
 Pump Type: Air lift Casing ID (in.): 4" PVC  
tanker truck ~ 8,000 gal

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units <u>µS/cm</u> )	Turbidity (NTU)	Remarks (odor, color, etc.)
0955	Start	up compressor for	development	1		PE tubing	down 200'	
1000	20 gpm		—				brown + muddy	let clean up for ~ 30 min
1025	" "		—	19.11	3.87	0.154	255	tan
1055	~ 25 gpm	(1/3) 8,000 gal tank	—	17.15	4.77	0.068	415	tan
1125	" "	(1/2) tank	—	16.59	4.99	0.075	146	tan
1150	~ 40 gpm*	(3/3) tank	—	16.94	4.84	0.062	66.5	slight tan color *pumping was
1230		(3/4) tank	—	19.52	4.52	0.065	1532	Pumping stopped when got sample close to 40 gpm based on cal
1250	~ 40 gpm	8,000 gal	28.87	20.48	4.51	0.064	209	tan
	Shut off pumping since tank full							
0805	Pre-dev		25.60					
0835			—	—	—	—	—	Dial in compressor to pump
0855	~ 30-40 gpm	--	2	25.01	4.14	0.054	1547	around 30 gpm
0925	" "	~ 1/4 tank		17.04	4.21	0.092	262	gray tan (silty)
0955	" "	~ 3/8 tank		15.57	5.03	0.060	119	slight tan color
1025	" "	~ 1/2 tank		20.30	5.07	0.055	80.3	air lift pumps in spurts (20 sec apart)
1055		~ 3/5 tank		16.32	5.09	0.058	68.4	slight tan tint
1025		~ 4/5 tank		15.94	5.13	0.057	47.5	" "
1155				16.83	4.87	0.058	47.2	" "

1225

Total of 8,000 gal with air lift  
16,000 gal21.23 15 5.00  
17.20 309

0.065 50.0



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## MONITORING WELL DEVELOPMENT RECORD

Page 1 of 2

Pump

Well: BPOW 2-3 Depth to Bottom (ft.): 599 Responsible Personnel: Conti / RENCUSON  
 Site: BETHPAGE OFFSITE GW OU-2 Static Water Level Before (ft.): 25.81 Drilling Co.: Delta  
 Date Installed: 8-3-2011 Static Water Level After (ft.): \_\_\_\_\_ Project Name: Bethpage OU-2 Offsite GW  
 Date Developed: 8-3-2011 Screen Length (ft.): 564-594 Project Number: 112G00622  
 Dev. Method: Submersible Specific Capacity: \_\_\_\_\_  
 Pump Type: Grundfos Casing ID (in.): 3.75" or .33'

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units $\frac{mS}{cm}$ )	Turbidity (NTU)	Remarks (odor, color, etc.)
			$\Sigma = 25.81$ 07:55					
09:45	-	132597.0 / 0.00	26.64 Feet below TOC	19.85	4.64	0.063	33.51	NOTE INITIAL STATIC Pumping level
10:15	-	132988.8 / 397.8	26.69	16.73	4.53	0.059	10.30	573.19' SW - .65' = 372.57 gal / well.
10:45	-	133401.1 / 810	26.65	15.76	4.79	0.060	1.03	Q = 13.26 GPM
11:15	-	133814 / 1223.0	26.63	15.78	4.82	0.060	0.50	Q = 13.74 GPM
11:45	-	134227.1 / 1636.1	26.63	15.52	5.00	0.059	1.5	Q = 13.77 GPM
12:15	-	134640.2 / 2049.3	26.55	15.47	4.75	0.059	0.75	Q = 13.64 GPM
12:45	-	135054.4 / 2461.6	26.52	16.10	4.74	0.059	0.81	Q = 13.79 GPM
13:15	-	135468.6 / 2875.0	26.50	15.83	4.64	0.056	0.80	Q = 13.8
13:45	-	135882.7 / 3288.7	23.91	15.94	4.70	0.059	0.79	Q = 13.87
14:15	-	136303.3 / 3702.5	23.25	16.05	4.75	0.059	0.77	Q = 13.96
08:17	-	136315.9 / -	22.64	18.58	4.27	0.076	1.07	Set Pump @ 440' 2. second Devol
08:47	-	136738.6 / 442.7	26.27	18.9	4.75	0.064	1.74	Q = 14.8
09:17	-	137207.3 / 851.3	26.36	15.60	4.49	0.063	1.51	Q = 14.97
09:47	-	137456.0 / 1265.1	26.40	15.57	4.38	0.064	0.89	Q = 14.93 9:50 well recov
10:17	-	138108.4 / 1725	23.38	14.90	4.30	0.063	0.78	Q = 15.8 Drawdown
10:47	-	138562.7 / 2246.8	22.98	14.75	4.30	0.062	0.75	Q = 15.14
11:17	-	139017.0 / 2701.7	22.85	15.58	4.21	0.061	0.70	Q = 15.14
11:47	-	139472.8 / -	22.71	15.40	4.20	0.061	0.66	

8/03



# Pump



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## MONITORING WELL DEVELOPMENT RECORD

Well: BP OW 2-3 Depth to Bottom (ft.): 599 Responsible Personnel: Conti / FERRELL  
 Site: BETHPAGE OFFSITE LW OW-2 Static Water Level Before (ft.): 25.21 Drilling Co.: Delta  
 Date Installed: 8-3 Static Water Level After (ft.): \_\_\_\_\_ Project Name: Bethpage OU-2 Offsite GW  
 Date Developed: 8-3/8-4 Screen Length (ft.): 564 - 594 Project Number: 112G00622  
 Dev. Method: Submersible Specific Capacity: \_\_\_\_\_  
 Pump Type: Grundfos Casing ID (in.): 3 7/8" or 0.32'

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units $\mu S/cm$ )	Turbidity (NTU)	Remarks (odor, color, etc.)
12:00	-	139496.0	21.74'	15.40	4.20	0.061	1.61	Rest base of pump to 120' and
12:36	-	140127.8 632.8	23.18'	15.80	4.54	0.061	0.82	restart pump Q=21.93
13:06	-	140762.9 635.1	23.14'	15.45	4.50	0.060	0.76	Q=21.15
13:36	-	141398.0 635.1	23.12'	14.90	4.41	0.060	0.77	Q=21.18
14:06	-	142034.1 636.1	23.06'	14.93	4.42	0.061	0.74	Q=21.10
								Volume Pumped 8/07 3712.35
								Volume Pumped 8/04 2536.1
								TOTAL Volume Pumped 6248.35



Tetra Tech NUS, Inc.

# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: **BETHPAGE OU-2 OFFSITE GW**  
 Project No.: **112G00622**  
**PRE-DESIGN FIELD INVES**

BP-002-BPOW 2-3  
 Sample ID No.: ~~BP-VPB129-GW~~  
 Sample Location: **VPB-129 BPOW-2-3**  
 Sampled By: **SJC**

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: Vertical Profile Boring  
 QA Sample Type: \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_  
 Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	mV	NA
12 / 13 / 11	°	°	°	°	°	°	°	TIME
Method: Hydropunch								

### PURGE DATA:

Date: <del>NA</del> 12/13/11	CLEAR	-	-	-	-	-	-	1330
Method: <del>NA</del> PUMP	"	5.28	.086	14.20	1	2.65	166	1340
Monitor Reading (ppm): 0	"	5.13	.070	13.52	0	3.92	191	1350
Well Casing Diameter & Material Type: 4" $\phi$ SCH 80	"	5.04	.068	13.16	0	3.47	205	1400
	"	5.00	.069	12.70	0	2.91	215	1410
Total Well Depth (TD): 594 -	BOTM SCREEN							
Static Water Level (WL): 20.40								
One Casing Volume (gal/L): <del>20</del> SAY 20								
Start Purge (hrs): 1330								
End Purge (hrs): 1410								
Total Purge Time (min): 40								
Total Vol. Purged (gal/L): 240								

60 GAL.  
120 GAL  
190 GAL  
240 GAL

### SAMPLE COLLECTION INFORMATION: Strike thru analysis not required

Analysis	Preservative	Container Requirements	Collected
VOCs	HCL/4 DEG C	2.40ml Glass Vials *	<input checked="" type="checkbox"/>
TOC	4 DEG C		
		SLOW PUMP DOWN - THEN TAKE SAMPLE.	

### OBSERVATIONS / NOTES:

2" MW = 0.163 gal/ft - ~ 6 GPM TO START  
 Sample taken at discreet intervals using a hydropunch sampler unless otherwise noted.  
 Not enough volume for water quality parameters  Sampled after testing and installing Pump.  
 Check box if not enough volume.  
 Used pH paper instead of water quality meter   
 Check box if used pH paper.  
 SAY USE ~ 100' FOR CAS VOL. USED 94' AS 1 CAS VOLUME. BOTM OF PACKER TO BOTTOM OF SCREEN.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): *SJC*



PROJECT NO: <b>112G006 22</b>	FACILITY: <b>BETHPAGE CU2</b>	PROJECT MANAGER <b>D BRAYACK</b>	PHONE NUMBER <b>757 461 3824</b>	LABORATORY NAME AND CONTACT: <b>CHEMTECH/HUMMLER</b>
SAMPLERS (SIGNATURE) <b>SJ Conti</b>		FIELD OPERATIONS LEADER <b>S CONTI</b>	PHONE NUMBER <b>412 551 2629</b>	ADDRESS <b>284 SHEFFIELD ST</b>
CARRIER/WAYBILL NUMBER <b>FED EX 8735-5966-0575</b>			CITY, STATE <b>MOUNTAINSIDE, NJ 07092</b>	

STANDARD TAT  RUSH TAT   
 24 hr.  48 hr.  72 hr.  7 day  14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS	COMMENTS
12/13	1300	BP-TB-121311	TB	-	-	QC	G	2	2			
12/13	1410	BP-BPOW2-3-121311	BPOW 2-3	-	-	GW	G	2	2			SAMPLED AFTER INSTALLING AND TESTING THE PUMP.
12/14	1000	CU2-IDW-BX11-121411	BOX 11	-	-	SO	G	3			1 2	BRN SILTY SAND ← CALL ERNIE WU
12/14	1015	CU2-IDW-BX12-121411	BOX 12	-	-	SO	G	1			1	BRN SILTY SAND ← CALL ERNIE WU
<p><b>* PLEASE CALL ERNIE WU FOR ALL SOILS ANALYSIS. MAY NEED TCLP - BUT CALL FIRST</b></p>												

1. RELINQUISHED BY <b>SS Conti</b>	DATE <b>12/14/11</b>	TIME <b>1000</b>	1. RECEIVED BY <b>FED EX</b>	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY <b>Fed Ex</b>	DATE <b>12/15/11</b>	TIME <b>9:15</b>	3. RECEIVED BY <b>Ernie Wu</b>	DATE <b>12/15/11</b>	TIME <b>9:15</b>

COMMENTS: **GW ANALYSIS IS OK** 313

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	12/13/11
Project:	Bethpage CTO-066	Date Received:	12/15/11
Client Sample ID:	BP-BPOW2-3-121311	SDG No.:	e5000
Lab Sample ID:	C5000-04	Matrix:	WATER
Analytical Method:	E624	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VR002624.D	1		12/19/11	VR121911

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
<b>TARGETS</b>						
75-71-8	Dichlorodifluoromethane	2.5	U	0.29	5	ug/L
74-87-3	Chloromethane	2.5	U	0.33	5	ug/L
75-01-4	Vinyl Chloride	2.5	U	0.35	5	ug/L
74-83-9	Bromomethane	2.5	U	0.36	5	ug/L
75-00-3	Chloroethane	2.5	U	0.21	5	ug/L
75-69-4	Trichlorofluoromethane	2.5	U	0.39	5	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	2.5	U	0.41	5	ug/L
75-35-4	1,1-Dichloroethene	2.5	U	0.39	5	ug/L
67-64-1	Acetone	12.5	U	1.6	25	ug/L
75-15-0	Carbon Disulfide	2.5	U	0.35	5	ug/L
1634-04-4	Methyl tert-Butyl Ether	2.5	U	0.41	5	ug/L
79-20-9	Methyl Acetate	2.5	U	0.41	5	ug/L
75-09-2	Methylene Chloride	2.5	U	0.67	5	ug/L
156-60-5	trans-1,2-Dichloroethene	2.5	U	0.39	5	ug/L
75-34-3	1,1-Dichloroethane	2.5	U	0.24	5	ug/L
110-82-7	Cyclohexane	2.5	U	0.28	5	ug/L
78-93-3	2-Butanone	12.5	U	1.6	25	ug/L
56-23-5	Carbon Tetrachloride	2.5	U	0.57	5	ug/L
156-59-2	cis-1,2-Dichloroethene	2.5	U	0.53	5	ug/L
67-66-3	Chloroform	2.5	U	0.19	5	ug/L
71-55-6	1,1,1-Trichloroethane	2.5	U	0.3	5	ug/L
108-87-2	Methylcyclohexane	2.5	U	0.36	5	ug/L
71-43-2	Benzene	2.5	U	0.26	5	ug/L
107-06-2	1,2-Dichloroethane	2.5	U	0.18	5	ug/L
79-01-6	Trichloroethene	2.5	U	0.36	5	ug/L
78-87-5	1,2-Dichloropropane	2.5	U	0.21	5	ug/L
75-27-4	Bromodichloromethane	2.5	U	0.47	5	ug/L
108-10-1	4-Methyl-2-Pentanone	12.5	U	1.1	25	ug/L
108-88-3	Toluene	2.5	U	0.17	5	ug/L
10061-02-6	t-1,3-Dichloropropene	2.5	U	0.4	5	ug/L
10061-01-5	cis-1,3-Dichloropropene	2.5	U	0.42	5	ug/L

## Report of Analysis

Client:	Tetra Tech NUS, Inc.	Date Collected:	12/13/11
Project:	Bethpage CTO-066	Date Received:	12/15/11
Client Sample ID:	BP-BPOW2-3-121311	SDG No.:	e5000
Lab Sample ID:	C5000-04	Matrix:	WATER
Analytical Method:	E624	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VR002624.D	1		12/19/11	VR121911

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	2.5	U	0.57	5	ug/L
591-78-6	2-Hexanone	12.5	U	1.3	25	ug/L
124-48-1	Dibromochloromethane	2.5	U	0.53	5	ug/L
106-93-4	1,2-Dibromoethane	2.5	U	0.32	5	ug/L
127-18-4	Tetrachloroethene	2.5	U	0.86	5	ug/L
108-90-7	Chlorobenzene	2.5	U	0.26	5	ug/L
100-41-4	Ethyl Benzene	2.5	U	0.26	5	ug/L
179601-23-1	m/p-Xylenes	5	U	0.35	10	ug/L
95-47-6	o-Xylene	2.5	U	0.22	5	ug/L
100-42-5	Styrene	2.5	U	0.23	5	ug/L
75-25-2	Bromoform	2.5	U	1	5	ug/L
98-82-8	Isopropylbenzene	2.5	U	0.11	5	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	0.46	5	ug/L
541-73-1	1,3-Dichlorobenzene	2.5	U	0.37	5	ug/L
106-46-7	1,4-Dichlorobenzene	2.5	U	0.22	5	ug/L
95-50-1	1,2-Dichlorobenzene	2.5	U	0.19	5	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U	1.9	5	ug/L
120-82-1	1,2,4-Trichlorobenzene	2.5	U	0.38	5	ug/L
<b>SURROGATES</b>						
17060-07-0	1,2-Dichloroethane-d4	28.4		50 - 169	95%	SPK: 30
2037-26-5	Toluene-d8	30.2		66 - 137	101%	SPK: 30
460-00-4	4-Bromofluorobenzene	29.2		56 - 143	97%	SPK: 30
<b>INTERNAL STANDARDS</b>						
74-97-5	Bromochloromethane	161608	7.71			
540-36-3	1,4-Difluorobenzene	1078970	9.06			
3114-55-4	Chlorobenzene-d5	971322	11.8			

LOD = Limit of Detection  
E = Value Exceeds Calibration Range

\* = Values outside of QC limits  
D = Dilution



TO: D. BRAYACK DATE: MARCH 2, 2012

FROM: JOSEPH KALINYAK COPIES: DV FILE

SUBJECT: ORGANIC DATA VALIDATION – VOC, SVOC, PEST, PCB, HERB, TCLPS, TCLPP  
 INORGANIC DATA VALIDATION – METALS, MISC, TCLPM  
 NWIRP BETHPAGE, CTO 066  
 SDG C5000

SAMPLES: 2 / Aqueous / VOC  
 BP-BPOW2-3-121311 BP-TB-121311

2 / Soil / VOC  
 OU2-IDW-BX11-121411 OU2-IDW-BX12-121411

1 / Soil / SVOC / PEST / PCB / HERB / Metals / MISC  
 OU2-IDW-BX11-121411

1 / TCLPS / TCLPP / TCLPM  
 OU2-IDW-BX11-121411

Overview

The sample set for NWIRP Bethpage, CTO 066, SDG C5000 consisted of two (2) aqueous samples, two (2) soil samples, and one (1) aqueous TCLP (toxicity characteristic leaching procedure) sample. The two (2) aqueous samples and two (2) of the soil samples were analyzed for a select list of volatile organic compounds (VOC) as listed above. One (1) soil sample was analyzed for semi-volatile organic compounds (SVOC), pesticides (PEST), polychlorinated biphenyls (PCB), select chlorinated herbicides (HERB), metals, and miscellaneous parameters. The soil sample was also analyzed for TCLP SVOCs (TCLPS), TCLP pesticides (TCLPP), and TCLP metals (TCLPM).

The samples were collected by Tetra Tech on December 13 and 14, 2011 and analyzed by ChemTech. All analyses were conducted in accordance with EPA Methods SW-846 8260B and EPA Method 624 for VOCs, 8270C for SVOCs, 8081A for PEST, 8082 for PCB, 6010B for metals, 7471A for mercury, EPA Method 9012A for reactive cyanide, EPA Method 9012B for cyanide, EPA Method 9034 for reactive sulfide, EPA Method 9045C for pH and EPA Method 1030 for ignitability, method analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- \* • Data completeness
- Hold times
- \* • GC/MS System Tuning and Performance
- Initial/continuing Calibrations
- Blank Results
- Laboratory Control Sample Recovery
- Matrix Spike Recoveries
- \* • Surrogate Spike Recoveries
- \* • Internal Standard Recoveries

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SDG: C5000

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- \* • ICP Interference Results
- ICP Serial Dilution Results
- \* • Compound Identification
- \* • Analyte 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.

### VOC

The VOC EPA method 8260B matrix spike (MS) and MS duplicate (MSD) percent recoveries (%Rs) were less than the quality control limit for 1,2,4-trichlorobenzene for a spiked sample from another SDG. Additionally, the MS/MSD relative percent difference (RPD) was greater than the quality control limit for methyl acetated, and the MS %R was greater than the quality control limit for 1,1,2,2-tetrachloroethane for the spiked sample.

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

The VOC EPA method 624 laboratory control sample (LCS)/LCS duplicate (LCSD) RPDs were greater than the laboratory quality control limit for 1,2-dibromo-3-chloropropane, bromoform, and tetrachloroethene. Additionally, the LCSD %R was less than the laboratory quality control limit for methyl cyclohexane.

**Affected samples:** BP-BPOW2-3-121311 and BP-TB-121311

**Action:** No VOC analyte validation action was taken for the RPD LCS/LCSD quality control limit criteria alone. The affected sample non-detected methyl cyclohexane results were qualified estimated, (UJ).

Acetone and 2-butanone were detected in the trip blank BP-TB-121311. No blank contamination action was necessary as all samples had non-detected acetone and 2-butanone results.

### SVOC

No issues were identified.

### TCLPS

The continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for pentachlorophenol for instrument BNA\_F on 12/20/11 @ 03:25.

**Affected sample:** None, only an MS and MSD were affected

**Action:** No validation action was necessary as no samples were affected.

### PEST

The PEST continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for as listed below.

Analytes	12/27/11 @ 14:54	
	ZB-MR1 %D	ZB-MR2 %D
Alpha-BHC	24.0	-----

**Affected Sample:** OU2-IDW-BX11-121411

**Action:** The non-detected alpha-BHC result was not qualified as the alternate analytical column was quality control limit compliant.

The PEST CCV %D was greater than the 20% quality control limit for as listed below.

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SDG: C5000

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Analytes	01/04/12 @ 10:53		01/04/12 @ 14:04	
	ZB-MR1 %D	ZB-MR2 %D	ZB-MR1 %D	ZB-MR2 %D
Alpha-BHC	-----	28.0	-----	-----
Gamma-BHC	-----	-----	-----	24.0

**Affected Sample:** No sample was affected  
**Action:** No validation action was required.

The PEST MS %Rs for 4,4'-DDE and 4,4'-DDD and MS/MSD RPDs for delta-BHC and 4,4'-DDD were greater than the quality control limit for a spiked sample from another SDG.

**Action:** No validation action was taken as the spiked MS and MSD samples were not from this SDG.

#### TCLPP

No issues were identified.

#### PCB

No issues were identified.

#### Herbicides

The CCV %D was greater than the 15% quality control limit for 2,4,5-TP(Silvex) for column ZB-35-HT INFERNO for instrument ECD\_E on 12/28/11 @ 14:12.

**Affected sample:** OU2-IDW-BX11-121411

**Action:** No validation action was taken as the alternate column was quality control limit compliant and the sample analyte result was non-detected.

The MS/MSD RPDs for 2,4-D and 2,4,5-TP(Silvex) were greater than the quality control limit. No validation action was taken on the RPD quality control limit non-compliances alone.

#### Metals

The following contaminants were detected in the laboratory continuing calibration blanks at the following maximum concentrations:

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Action Level</u>	<u>CCB</u>
Selenium	4.8 ug/L	2.4 mg/kg	CCB02
Silver	1.9 ug/L	0.95 mg/kg	CCB03

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. The sample OU2-IDW-BX11-121411 selenium result was qualified for blank contamination.

The sample OU2-IDW-BX11-121411 cyanide analysis exceeded collection to analysis hold time (16 days to analysis). The positive cyanide result for the sample was qualified estimated, (J).

The sample serial dilution analysis for chromium %D for sample OU2-IDW-BX11-121411 exceeded the 10% quality control limit. The positive chromium result for the sample was qualified estimated, (J).

The MS and MSD %Rs were greater than the quality control limit for the mercury analysis. The spiked sample was not a sample from this SDG and no validation action was necessary.



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SDG: C5000

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TCLPM

No issues were identified.

Miscellaneous

Ignitability was not reported to a specific temperature on the sample form I. The data reviewer checked the raw data for the temperature and reported that value in the database.

Additional Comments


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.

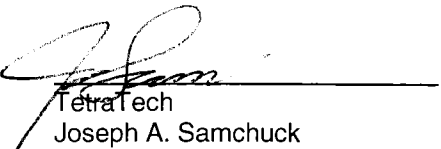
EXECUTIVE SUMMARY

**Laboratory Performance Issues:** VOC sample methyl cyclohexane results were qualified for an LCSD %R quality control limit non-compliance. The sample metal selenium result was qualified for blank contamination. The sample cyanide result was qualified for a sample collection to analysis hold time quality control limit non-compliance. The sample chromium result was qualified for a serial dilution analysis quality control limit non-compliance.

**Other Factors Affecting Data Quality:** 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.

The data for these analyses were reviewed with reference to the SOP HW-24 Revision #2 - August 2008 Validating Volatile Organic Compounds by SW-846 Method 8260B, SOP HW-22 Revision 4 – August 2008 Validating Semivolatile Organic Compounds by SW-846 Method 8270, SOP HW-44 Revision 1 - Oct 2006 Data Validation SOP of Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, SOP HW-45 Revision 1 - Oct 2006 Data Validation SOP of Organic Analysis of PCBs by Gas Chromatography SW-846 Method 8082A, SOP HW-02 Rev.13 – September 2006 Evaluation of Metals Data for the CLP Program; and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).

  
Tetra Tech  
Joseph Kalinyak  
Chemist/Data Validator

  
Tetra Tech  
Joseph A. Samchuck  
Data Validation Quality Assurance Officer

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SDG: C5000

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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

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 U				3.4 J	P
2-HEXANONE	2.5 U				2.5 U	
4-METHYL-2-PENTANONE	2.5 U				2.5 U	
ACETONE	2.5 U				15	
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 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-BPOW2-3-121311	BP-TB-121311
SDG: C5000	LAB_ID	C5000-04	C5000-03
FRACTION: OV	SAMP_DATE	12/13/2011	12/13/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		

PROJ_NO: 00622	NSAMPLE	BP-BPOW2-3-121311	BP-TB-121311
SDG: C5000	LAB_ID	C5000-04	C5000-03
FRACTION: OV	SAMP_DATE	12/13/2011	12/13/2011
MEDIA: WATER	QC_TYPE	NM	NM
	UNITS	UG/L	UG/L
	PCT_SOLIDS	0.0	0.0
	DUP_OF		
PARAMETER	RESULT	VOL	QLCD
M+P-XYLENES	1 U	1 U	
METHYL ACETATE	0.5 U	0.5 U	
METHYL CYCLOHEXANE	0.5 UJ	0.5 UJ	E
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	

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	OU2-IDW-BX12-121411			
SDG: C5000	LAB_ID	C5000-01	C5000-02			
FRACTION: OV	SAMP_DATE	12/14/2011	12/14/2011			
MEDIA: SOIL	QC_TYPE	NM	NM			
	UNITS	UG/KG	UG/KG			
	PCT_SOLIDS	82.0	90.0			
	DUP_OF					
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3 U			2.8 U	
1,1,2,2-TETRACHLOROETHANE		3 U			2.8 U	
1,1,2-TRICHLOROETHANE		3 U			2.8 U	
1,1,2-TRICHLOROTRIFLUOROETHANE		3 U			2.8 U	
1,1-DICHLOROETHANE		3 U			2.8 U	
1,1-DICHLOROETHENE		3 U			2.8 U	
1,2,4-TRICHLOROBENZENE		3 U			2.8 U	
1,2,4-TRIMETHYLBENZENE		3 U				
1,2-DIBROMO-3-CHLOROPROPANE		3 U			2.8 U	
1,2-DIBROMOETHANE		3 U			2.8 U	
1,2-DICHLOROBENZENE		3 U			2.8 U	
1,2-DICHLOROETHANE		3 U			2.8 U	
1,2-DICHLOROPROPANE		3 U			2.8 U	
1,3,5-TRIMETHYLBENZENE		3 U				
1,3-DICHLOROBENZENE		3 U			2.8 U	
1,4-DICHLOROBENZENE		3 U			2.8 U	
2-BUTANONE		15 U			14 U	
2-HEXANONE		15 U			14 U	
4-METHYL-2-PENTANONE		15 U			14 U	
ACETONE		15 U			14 U	
BENZENE		3 U			2.8 U	
BROMODICHLOROMETHANE		3 U			2.8 U	
BROMOFORM		3 U			2.8 U	
BROMOMETHANE		3 U			2.8 U	
CARBON DISULFIDE		3 U			2.8 U	
CARBON TETRACHLORIDE		3 U			2.8 U	
CHLOROBENZENE		3 U			2.8 U	
CHLORODIBROMOMETHANE		3 U			2.8 U	
CHLOROETHANE		3 U			2.8 U	
CHLOROFORM		3 U			2.8 U	
CHLOROMETHANE		3 U			2.8 U	
CIS-1,2-DICHLOROETHENE		3 U			2.8 U	
CIS-1,3-DICHLOROPROPENE		3 U			2.8 U	
CYCLOHEXANE		3 U			2.8 U	
DICHLORODIFLUOROMETHANE		3 U			2.8 U	

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	OU2-IDW-BX12-121411
SDG: C5000	LAB_ID	C5000-01	C5000-02
FRACTION: OV	SAMP_DATE	12/14/2011	12/14/2011
MEDIA: SOIL	QC_TYPE	NM	NM
	UNITS	UG/KG	UG/KG
	PCT_SOLIDS	82.0	90.0
	DUP_OF		
PARAMETER	RESULT	VOL	QLCD
ETHYLBENZENE	3 U		2.8 U
ISOPROPYLBENZENE	3 U		2.8 U
M+P-XYLENES	6 U		5.5 U
METHYL ACETATE	3 U		2.8 U
METHYL CYCLOHEXANE	3 U		2.8 U
METHYL TERT-BUTYL ETHER	3 U		2.8 U
METHYLENE CHLORIDE	4.3 J	P	2.8 U
N-BUTYLBENZENE	3 U		
N-PROPYLBENZENE	3 U		
O-XYLENE	3 U		2.8 U
SEC-BUTYLBENZENE	3 U		
STYRENE	3 U		2.8 U
TERT-BUTYLBENZENE	3 U		
TETRACHLOROETHENE	3 U		2.8 U
TOLUENE	3 U		2.8 U
TRANS-1,2-DICHLOROETHENE	3 U		2.8 U
TRANS-1,3-DICHLOROPROPENE	3 U		2.8 U
TRICHLOROETHENE	3 U		2.8 U
TRICHLOROFLUOROMETHANE	3 U		2.8 U
VINYL CHLORIDE	3 U		2.8 U



PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-05	
FRACTION: OS	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	90.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
1,4-DIOXANE	185 U		
2-METHYLPHENOL	185 U		
3&4-METHYLPHENOL	185 U		
ACENAPHTHENE	185 U		
ACENAPHTHYLENE	185 U		
ANTHRACENE	185 U		
BENZO(A)ANTHRACENE	185 U		
BENZO(A)PYRENE	185 U		
BENZO(B)FLUORANTHENE	185 U		
BENZO(G,H,I)PERYLENE	185 U		
BENZO(K)FLUORANTHENE	185 U		
CHRYSENE	185 U		
DIBENZO(A,H)ANTHRACENE	185 U		
DIBENZOFURAN	185 U		
FLUORANTHENE	185 U		
FLUORENE	185 U		
HEXACHLOROBENZENE	185 U		
INDENO(1,2,3-CD)PYRENE	185 U		
NAPHTHALENE	185 U		
PENTACHLOROPHENOL	185 U		
PHENANTHRENE	185 U		
PHENOL	185 U		
PYRENE	185 U		

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-05	
FRACTION: PEST	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	90.4	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
4,4'-DDD	0.95	U	
4,4'-DDE	0.95	U	
4,4'-DDT	0.95	U	
ALDRIN	0.95	U	
ALPHA-BHC	0.95	U	
ALPHA-CHLORDANE	0.95	U	
BETA-BHC	0.95	U	
DELTA-BHC	0.95	U	
DIELDRIN	0.95	U	
ENDOSULFAN I	0.95	U	
ENDOSULFAN II	0.95	U	
ENDOSULFAN SULFATE	0.95	U	
ENDRIN	0.95	U	
GAMMA-BHC (LINDANE)	0.95	U	
HEPTACHLOR	0.95	U	

<b>PROJ_NO: 00622</b> <b>SDG: C5000</b> <b>FRACTION: PCB</b> <b>MEDIA: SOIL</b>	NSAMPLE	OU2-IDW-BX11-121411	
	LAB_ID	C5000-01	
	SAMP_DATE	12/14/2011	
	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	82.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
AROCWOR-1016	10.5	U	
AROCWOR-1221	10.5	U	
AROCWOR-1232	10.5	U	
AROCWOR-1242	10.5	U	
AROCWOR-1248	10.5	U	
AROCWOR-1254	10.5	U	
AROCWOR-1260	10.5	U	

PROJ_NO: 00622	NSAMPLE	OJ2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-05	
FRACTION: HERB	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/KG	
	PCT_SOLIDS	90.4	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
2,4,5-TP (SILVEX)		37 U	
2,4-D		37 U	

<b>PROJ_NO: 00622</b> <b>SDG: C5000</b> <b>FRACTION: M</b> <b>MEDIA: SOIL</b>	NSAMPLE	OU2-IDW-BX11-121411			
	LAB_ID	C5000-05			
	SAMP_DATE	12/14/2011			
	QC_TYPE	NM			
	UNITS	MG/KG			
	PCT_SOLIDS	90.4			
	DUP_OF				
PARAMETER	RESULT	VQL	QLCD		
ARSENIC	2.01				
BARIUM	6.06				
BERYLLIUM	0.165 U				
CADMIUM	0.165 U				
CHROMIUM	9.7 J	I			
COPPER	3.29				
LEAD	2.58				
MANGANESE	10				
MERCURY	0.005 U				
NICKEL	9.08				
SELENIUM	1.26 U	A			
SILVER	0.275 U				
ZINC	8.11				

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411							
SDG: C5000	LAB_ID	C5000-01							
FRACTION: MISC	SAMP_DATE	12/14/2011							
MEDIA: SOIL	QC_TYPE	NM							
	UNITS	C							
	PCT_SOLIDS	100.0							
	DUP_OF								
		MG/KG							
		82.4							
		90.4							
		100.0							
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
CYANIDE									
IGNITABILITY	150 >				0.044 J	HP			
PH									
REACTIVE CYANIDE				0.025 U					
REACTIVE SULFIDE								5 U	

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-01	
FRACTION: MISC	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	S.U.	
	PCT_SOLIDS	82.4	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
CYANIDE			
IGNITABILITY			
PH	8.26		
REACTIVE CYANIDE			
REACTIVE SULFIDE			

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411		
SDG: C5000	LAB_ID	C5000-01		
FRACTION: TCLPS	SAMP_DATE	12/14/2011		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER	RESULT	VQL	QLCD	
1,4-DICHLOROBENZENE	50 U			
2,4,5-TRICHLOROPHENOL	50 U			
2,4,6-TRICHLOROPHENOL	50 U			
2,4-DINITROTOLUENE	50 U			
2-METHYLPHENOL	50 U			
3&4-METHYLPHENOL	50 U			
HEXACHLOROBENZENE	50 U			
HEXACHLOROBUTADIENE	50 U			
HEXACHLOROETHANE	50 U			
NITROBENZENE	50 U			
PENTACHLOROPHENOL	50 U			
PYRIDINE	50 U			



PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-01	
FRACTION: TCLPP	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
CHLORDANE	2.5	U	
ENDRIN	0.25	U	
GAMMA-BHC (LINDANE)	0.25	U	
HEPTACHLOR	0.25	U	
HEPTACHLOR EPOXIDE	0.25	U	
METHOXYCHLOR	0.25	U	
TOXAPHENE	2.5	U	

PROJ_NO: 00622	NSAMPLE	OU2-IDW-BX11-121411	
SDG: C5000	LAB_ID	C5000-01	
FRACTION: TCLPM	SAMP_DATE	12/14/2011	
MEDIA: SOIL	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
ARSENIC	50	U	
BARIUM	259	J	P
CADMIUM	15	U	
CHROMIUM	25	U	
LEAD	30	U	
MERCURY	1	U	
SELENIUM	50	U	
SILVER	25	U	

**Section 10**

**Survey**

**(to be issued when complete)**