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January 18, 2011
PBW Project No. 1358

Mr. Mark Arthur
MC-127
Environmental Cleanup Section I, Team 3, Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Correction Action Monitoring Report: 2010 Second Semi-Annual Event
Houston Wood Preserving Works, Houston, Texas
TCEQ SWR No. 31547; Hazardous Solid Waste Permit No. 50343

Dear Mr. Arthur:

Pastor, Behling & Wheeler, LLC (PBW), on behalf of Union Pacific Railroad Company (UPRR), is pleased to provide two copies of the Corrective Action Monitoring Report: 2010 Second Semi-Annual Event for your review. The report was prepared in accordance with Section VII.C.2 of Compliance Plan No. CP-50343, which was issued in conjunction with Post-Closure Care Permit No. HW-50343, both dated June 10, 2005.

If you have any questions or need additional information, please feel free to call me at (512) 671-3434 or Mr. Geoffrey Reeder of UPRR at (281) 350-7197.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric C. Matzner, P.G.
Senior Hydrogeologist

cc: Waste Program Manager, TCEQ Region 12, Houston
Mr. Geoffrey Reeder, P.G., UPRR – Spring, TX

CORRECTIVE ACTION MONITORING REPORT
2010 SECOND SEMIANNUAL EVENT

FORMER HOUSTON WOOD PRESERVING WORKS
4910 LIBERTY ROAD
HOUSTON, TEXAS

January 18, 2011

Prepared for:

Mr. Geoffrey Reeder, P.G.
UNION PACIFIC RAILROAD COMPANY

24125 Aldine Westfield Road
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PBW Project No. 1358

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

RM Grimaila — Signature

1/18/11 — Date

R.M. GRIMALLA — Name

VP-Safety Environment Security — Title

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1.0 EXECUTIVE SUMMARY

This semi-annual report presents a summary and evaluation of the Corrective Action Groundwater Monitoring for July through December 2010 for the Closed Surface Impoundment (Solid Waste Management Unit (SWMU) No. 1) at the former Wood Preserving Works facility (the Site) located in Houston, Texas. The groundwater monitoring activities for this period were performed by Pastor, Behling & Wheeler, LLC (PBW) on behalf of Union Pacific Railroad (UPRR) in July 2010.

The two uppermost groundwater bearing units, the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ), were monitored during this period. Groundwater elevation data collected during the July 2010 sampling event show groundwater flow in the A-TZ predominantly to the west, but with some flow radially to the northwest and southwest on the north and south sides of SWMU No. 1, respectively. The hydraulic gradient in the A-TZ was estimated to be approximately 0.029 ft/ft (to the west). Groundwater flow during the previous event (first semi-annual monitoring event) was radial with flow to the northwest in the western portion of SWMU No. 1 and to the southeast in the eastern portion of SWMU No. 1.

Groundwater elevation data collected in the B-TZ show groundwater flow to the west with a hydraulic gradient of 0.033 ft/ft. This groundwater flow was similar to the 2010 first semi-annual monitoring event.

Analytical results from the July 2010 sampling event were compared to Texas Commission on Environmental Quality Texas Risk Reduction Program Protective Concentration Limits, as designated in Section IV.D of the Compliance Plan, dated June 10, 2005. Constituent concentrations were below their respective PCLs for the tenth consecutive semi-annual monitoring event. Monitoring wells in both the A-TZ and B-TZ are considered to be compliant for this monitoring period.

2.0 INTRODUCTION

This semi-annual report presents a summary and evaluation of groundwater monitoring data collected during the 2010 second semi-annual monitoring period (July through December) at the Union Pacific Railroad (UPRR) former Houston Wood Preserving Works facility (the Site) located at 4910 Liberty Road in Houston, Texas (Figure 1). Semi-annual groundwater monitoring is required for the Site as a condition of the Texas Commission on Environmental Quality (TCEQ) Hazardous Waste Permit No. 50343 and associated Compliance Plan (CP) No. 50343, both renewed and issued on June 10, 2005. Groundwater monitoring at the Site is performed to monitor groundwater quality beneath the Closed Surface Impoundment Unit No. 001 (Solid Waste Management Unit (SWMU) No. 1).

On behalf of UPRR, Pastor, Behling & Wheeler, LLC. (PBW) conducted groundwater monitoring activities at the Site on July 13-14, 2010. Groundwater monitoring activities included sampling and gauging the background and point of compliance (POC) wells and piezometers associated with SWMU No. 1. The sampling event, analytical data, and data evaluation provided in this report fulfill the semi-annual corrective action reporting requirements for the second half of 2010 as described in the CP, Section VII.C.2. This section requires the following reporting elements:

Semi-Annual Corrective Action Report Requirements	**Report Section, Table(s) and/or Figure(s)**
A narrative summary of the evaluations made in accordance with CP Sections V, VI, and VII for the preceding six-month period. These periods shall be January 1 through June 30 and July 1 through December 31 (VII.C.2.a.)	3.0
Summary of Methods utilized for management of recovered/purged water (VII.C.2.b.)	3.2
An updated table and map of the monitoring and corrective action system wells (VII.C.2.c.)	Section 3.1.1 and Figure 2
The results of the chemical analyses, submitted in a tabulated format in a form acceptable to the Executive Director, which clearly indicates each parameter that exceeds the Groundwater Protection Standard (GWPS). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the Executive Director (VII.C.2.d.)	Tables 1 & 2 Appendix C
Tabulation of the water level elevations (relative to mean sea level), depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous semiannual report (VII.C.2.e.)	Table 4
Potentiometric surface maps showing the elevation of the water table at the time of sampling and direction of groundwater flow gradients (VII.C.2.f.)	Figures 3 & 4
A notation of the presence or absence of non-aqueous phase liquids (NAPLs), both light and dense phases, in each well during each sampling event since the last event covered in the previous semiannual report and tabulation of depth and thickness of NAPLs, if detected (VII.C.2.g.)	Table 4

Semi-Annual Corrective Action Report Requirements (cont'd)	Report Section, Table(s) and/or Figure(s)
Quarterly tabulations of quantities of recovered groundwater and NAPLs, and graphs of monthly recorded flow rates versus time for the recovery wells during each period. A narrative summary describing and evaluating the NAPL recovery program shall also be included (VII.C.2.h.)	Not Applicable
Tabulation of the total contaminant mass recovered from each recovery system for each reporting period, if such a system is installed (VII.C.2.i.)	Not Applicable
Tabulation of the data evaluation results pursuant to Section VI.D and status of each well listed on CP Table V with regard to compliance with the corrective action objectives and compliance with the GWPSs (VII.C.2.j.)	Table 5
Maps of the contaminated area depicting concentrations of constituents listed in Table IV and any newly detected Table III constituents as isopleths contours or discrete concentrations if isopleths contours cannot be inferred (VII.C.2.k.)	Not Applicable
Maps indicating the extent and thickness of the LNAPLs and DNAPLs, if detected (VII.C.2.l.)	Not Detected
An updated schedule summary as required by Section X (VII.C.2.m.)	Appendix D
Summary of any changes made to the monitoring/corrective action program and a summary of recovery well inspections, repairs, and any operational difficulties (VII.C.2.n.)	None
A table of the modifications and amendments made to this Compliance Plan with their corresponding approval dates by the executive director or the Commission and a brief description of each action (VII.C.2.o.)	None
Corrective Measures Implementation (CMI) Report to be submitted in accordance with Section VIII.F, if necessary (VII.C.2.p.)	Not Applicable
Tabulation of well casing elevations in accordance with Attachment B No. 16 (VII.C.2.q.)	Table 4
Recommendation for any changes (VII.C.2.r.)	None
Certification and well installation diagram for any new well installation or replacement and certification for any well plugging and abandonment (VII.C.2.s.)	Not Applicable
A summary of any activity within an area subject to institutional control (VII.C.2.t.)	None
Any other items requested by the Executive Director (VII.C.2.u.)	None

As of December 2010, a recovery system had not been installed and is not necessary at this facility. Therefore, Provisions 8, 9, and 10 that relate to recovery wells or recovery system, are not applicable for this reporting period.

Responses to each of the semi-annual report provisions required by CP Section VII.C.2 are provided in Section 3.0. Conclusions and recommendations are provided in Section 4.0.

3.0 2010 SECOND SEMI-ANNUAL GROUNDWATER MONITORING EVENT

A discussion of each of the semi-annual report provisions required by CP Section VII.C.2 is presented below by reference number to the list of provisions in Section 2.0.

3.1 Narrative Summary of Second Semi-Annual Monitoring Activities

The CP requires an evaluation of the Corrective Action Program (Section V) and Groundwater Monitoring Program summarizing the overall effectiveness of the Corrective Action Program (Section VI). This narrative summary includes provisions for response and reporting requirements as detailed in the CP Section VII, as discussed below.

3.11 Corrective Action Program

Groundwater samples were collected from the Background and POC wells (as detailed in CP Table V, which is provided in Appendix A) to assess potentially affected groundwater quality in the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ). These water-bearing zones are defined as:

- A-TZ refers to the first sand unit encountered at approximately 13 feet below ground surface (bgs) and averages 7 feet in thickness; and
- B-TZ refers to the second sand unit encountered at approximately 30 feet bgs and averages 9 feet in thickness.

The definitions of the A-TZ and B-TZ are consistent with the Uppermost Transmissive Zone (UTZ) and Second Transmissive Zone (STZ), respectively, as defined in CP Provision I.A.

The following monitoring wells were sampled during this event (Figure 2):

- A-TZ POC wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- A-TZ Background well: MW-08;
- B-TZ POC wells: MW-10B, MW-11B, and P-10; and
- B-TZ background well: P-12.

3.1.2 Groundwater Monitoring

PBW performed quarterly inspections of SWMU No. 1 in July and October 2010 and conducted semi-annual groundwater sampling activities on July 13-14, 2010. Groundwater sampling was performed using procedures outlined in a U.S. Environmental Protection Agency (EPA) document titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA/540/S-95/504) published in April 1996 and approved in the CP application. Groundwater samples were analyzed for the Detected Hazardous and Solid Waste Constituents listed in the CP, Table III (Appendix A).

Monitoring wells are equipped with dedicated polytetrafluoroethylene (PTFE) tubing for groundwater sampling. A peristaltic pump was used to purge and collect the groundwater samples. An approximate one-foot section of disposable silicon tubing was placed around the pump head and attached to the PTFE tubing for proper operation of the pump. Groundwater was pumped from the screened interval of each well at a flow rate of less than 0.5 L/min using a flow-through cell. Field parameters including temperature, pH, specific conductivity, dissolved oxygen, and turbidity were measured during purging and sampling activities. When field parameters had stabilized to the EPA-specified criteria, a sample was then collected for analysis. The samples were also collected at a flow rate of less than 0.5 L/min. Recorded field parameters are summarized in Appendix B.

For each well, sample bottles were filled directly from the pumping apparatus described above, and were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4°C. The sample coolers were delivered to ALS Laboratory, in Houston, Texas for analysis. Chain-of-Custody (COC) forms were completed and kept with their respective samples. Copies of the analytical data and COCs are included in Appendix C. Groundwater samples were then analyzed for the Detected Hazardous and Solid Waste Constituents listed in the CP, Table III (Appendix A).

3.2 Purge Water Management

Approximately 4 gallons of purge water was generated during the July 2010 low-flow groundwater sampling event. The purge water was containerized in a Department of Transportation (DOT) certified, 55-gallon steel drum and temporarily stored on site in a fenced and locked container storage area (NOR 006). Since the groundwater sampled and analyzed during this event did not contain hazardous constituents above the applicable health-based levels (i.e. PCLs discussed in Section 3.10), the purge water generated was not considered hazardous in accordance with the EPA "contained-in determination"

detailed in the 1986 EPA memorandum "RCRA Regulatory Status of Contaminated Groundwater". However, wastes generated during the 2010 second semi-annual monitoring event were picked up from the Site by USA Environment, LP and transported to the U.S. Ecology Texas, LP facility, located in Robstown, Texas for disposal on August 6, 2010 under EPA waste code F034 and TCEQ Notice of Registration (NOR) waste codes 0909101H (purge water) and 091530301H (PPE debris). Waste manifests are provided in Appendix D.

3.3 Monitoring and Corrective Action System Wells

A summary of the current monitoring and corrective action groundwater wells is discussed in Section 3.1.1. Configuration of the current monitoring and corrective action well network is presented on Figure 2.

3.4 Analytical Results

The 2010 second semi-annual groundwater analytical results from the A-TZ and B-TZ are summarized in Tables 1 and 2, respectively and the laboratory analytical report is provided in Appendix C. The analytical results were compared to the Detected Hazardous and Solid Waste Constituent limits, which are taken from the current TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Protective Concentration Levels (PCLs). TRRP PCLs serve as the Groundwater Protection Standard (GWPS), as detailed in Section IV.D and Table III of the CP. If any concentrations exceeded the concentration limits of this report, the concentration is bolded within the table.

Quality assurance/quality control (QA/QC) samples (field blank, matrix spike and matrix spike duplicate results) are summarized in Table 3.

3.5 Well Measurements

During the sampling event, the following information was recorded at each monitoring well:

Before Sampling

- The presence of light NAPLs was evaluated; and
- Depth to groundwater below the top of casing was measured to the nearest 0.01 foot.

After Sampling

- The presence of dense non-aqueous phase liquids (DNAPLs) were evaluated using visual observations and an oil-water interface probe; and
- Total well depths of the wells were measured.

Table 4 provides a summary of these measurements. None of the compliance wells had measurable amounts or any indication of LNAPL or DNAPL.

3.6 Potentiometric Surface Maps

Groundwater elevation data recorded during the 2010 first semi-annual monitoring event were used to create potentiometric surface maps of the A-TZ and B-TZ, presented on Figures 3 and 4, respectively.

Groundwater elevation data collected during the July 2010 sampling event show groundwater flow in the A-TZ predominantly to the west, but with some flow radially to the northwest and southwest on the north and south sides of SWMU No. 1, respectively. The hydraulic gradient in the A-TZ was estimated to be approximately 0.029 ft/ft (to the west). Groundwater flow during the previous event (first semi-annual monitoring event) was radial with flow to the northwest in the western portion of SWMU No. 1 and to the southeast in the eastern portion of SWMU No. 1.

Groundwater elevation data collected in the B-TZ show groundwater flow to the west with a hydraulic gradient of 0.033 ft/ft. This groundwater flow was similar to the 2010 first semi-annual monitoring event.

3.7 Non-Aqueous Phase Liquids

Measurable amounts of LNAPL and/or DNAPL were not observed in any of the compliance wells.

3.8 Recovered Groundwater and NAPL

To date, a recovery system has not been installed nor is necessary at the SWMU No. 1; therefore, this provision is not applicable.

3.9 Contaminant Mass Recovered

With the groundwater analytical data for the POC wells in compliance and no groundwater recovery system installed, or necessary, this provision is not applicable for the Site.

3.10 Analytical Data Evaluation

Section VI.D of the CP describes two methods which may be used to determine the compliance status of a given well:

1) Analytical results may be either directly compared with PCLs (CP Table III; included in Appendix A), or
2) Analytical results can be statistically compared PCLs using the Confidence Interval Procedure for the mean concentration based on normal, log-normal, or non-parametric distribution, which the 95% confidence coefficient of the t-distribution will be used in construction of the confidence interval.

Direct comparison to PCLs was used to evaluate the analytical data. Tables 1 (A-TZ) and 2 (B-TZ) show the results of a direct comparison of data for this sampling event to the respective PCLs. Wells and piezometers are in compliance if each of the constituents listed in the CP Table III was reported at a concentration less than or equal to the PCL. Based on the analytical results from the July 2010 monitoring event, the compliance wells completed in both transmissive zones are compliant with GWPSs; therefore the monitoring wells are considered to be compliant for this monitoring period. Compliance status for each of the monitoring wells is provided in Table 5.

Monitoring wells in A-TZ and B-TZ have not exceeded the established CP PCLs since July 2005, at which time dibenzofuran exceeded its respective PCL of 0.098 mg/L in MW-01A (0.11 mg/L). Including the 2010 second semi-annual analytical data, the SMWU No. 1 monitoring wells have been compliant for ten consecutive semi-annual monitoring events (5 years). Concentration versus time graphs for COCs in the A-TZ (2-methylnaphthalene (Figure E-1), dibenzofuran (Figure E-2), and naphthalene (Figure E-3)) and the B-TZ (dibenzofuran (Figure E-4) and naphthalene (Figure E-5)) are provided in Appendix E. The graphs demonstrate that COC concentrations in the A-TZ and B-TZ POC wells have shown a steady decrease over time, and are currently compliant with the TCEQ Remedy Standard A requirements for groundwater protection.

A QA/QC review and Data Usability Summary (DUS) were prepared for the July 2010 analytical data by Conestoga-Rovers & Associates (CRA) (Appendix C). The laboratory qualified analytes with concentrations above the sample detection limits (SDLs) but below the method quantitation limits (MQLs) are estimated on the analytical tables (Tables 1 and 2). None of the data required further qualification by CRA based on the established QC criteria. Based on the QA/QC data review, the analytical data are usable for the intended use.

3.11 Reported Concentration Maps

Reported concentrations of each constituent analyzed for the 2010 second semi-annual monitoring event are presented on Figures 5 and 6 for the A-TZ and B-TZ compliance wells, respectively. In the event a constituent exceeded their respective PCL, the value would be highlighted on the figures. There were no exceedances of PCLs for any of the required constituents.

3.12 Extent of NAPL

Measurable amounts of LNAPL or DNAPL were not detected in any of the compliance wells.

3.13 Updated Compliance Schedule

Section X of the CP requires that the Permittee submit a schedule summarizing the activities required by the Compliance Plan issued on June 10, 2005, which was originally submitted to the TCEQ on August 4, 2004. An updated compliance schedule is included as Appendix F of this report.

3.14 Summary of Changes Made to Corrective Action Program

No changes have been made to the corrective action program.

3.15 Modifications and Amendments to Compliance Plan

A compliance plan renewal application was submitted to TCEQ on December 23, 2003 consistent with the renewal requirements for the RCRA permit at the site. The RCRA permit and CP were issued June 10, 2005. There have been no modifications or amendments to the Compliance Plan since the last permit issued.

3.16 Corrective Measures Implementation (CMI) Report

A Response Action Plan (RAP) has not been submitted; therefore, this provision does not apply.

3.17 Well Casing Elevations

In accordance with the facility Groundwater Sampling and Analysis Plan (GWSAP) dated May 13, 2004 (Revision 1), which requires SWMU No. 1 monitoring well elevations to be resurveyed every five years, the six A-TZ and four B-TZ monitoring well elevations were resurveyed by Doyle & Wachtstetter, Inc. (D&W) on December 2, 2010. A summary report of surveyed well elevations is provided in Appendix G. Updated top-of-casing (TOC) elevations referenced to feet above Mean Sea Level (MSL) for each compliance monitoring well are summarized in Table 4.

3.18 Recommendation for Changes

There are no recommendations for changes to the monitoring program or to the Corrective Action Program.

3.19 Well Installation and/or Abandonment

No monitoring wells were installed or abandoned as part of the monitoring program or the Corrective Action Program during the reporting period.

3.20 Activity Within Area Subject to Institutional Control

No areas are under institutional control; therefore, this provision does not apply.

3.21 Other Requested Items

No other items have been requested by the executive director.

TABLES

Table 1
Summary of Analytical Results for the A-Transmissive Zone (A-TZ)
Semiannual Monitoring Report: 2010 Second Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)																				
		MW-01A			DUP-01			MW-02			MW-07			MW-08			MW-10A			MW-11A		
		7/14/2010	LQ	VQ	7/14/2010	LQ	VQ		LQ	VQ	7/14/2010	LQ	VQ	7/14/2010	LQ	VQ	7/13/2010	LQ	VQ	7/13/2010	LQ	VQ
Acenaphthene	1.5	0.068			0.075			0.018			<0.0009	U		<0.0009	U		<0.0009	U		0.0028	J	
Acenaphthylene	1.5	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Anthracene	7.3	0.0017	J		0.0022	J		<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U	
bis(2-ethylhexyl)phthalate	0.006	<0.0033	U		<0.0033	U		<0.0033	U		0.0049	J		<0.0033	U		<0.0033	U		<0.0033	U	
Dibenzofuran	0.098	0.0044	J		0.0067			<0.0007	U		<0.0007	U		<0.0007	U		<0.0007	U		<0.0007	U	
Fluoranthene	0.98	0.004	J		0.0049	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Fluorene	0.98	0.04			0.047			0.011			<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U	
2-Methylnaphthalene	0.098	<0.0009	U		0.0026	J		<0.0009	U		<0.0009	U		<0.0009	U		<0.0009	U		<0.0009	U	
Naphthalene	0.49	<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U		<0.0006	U	
Phenanthrene	0.73	0.0011	J		0.0025	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Pyrene	0.73	0.0021	J		0.0026	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	

Notes:
PCL = Protective Concentration Level
The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL
DUP-01= Duplicate sample collected at MW-01A

LQ - Lab Qualifier
J = Estimated value between the SDL and the MQL
U = Value not detected greater than the MQL

VQ - Validation Qualifier

Table 2
Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
Semiannual Monitoring Report: 2010 SecondSemiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)														
		MW-10B			MW-11B			P-10			DUP-02			P-12		
		7/13/2010	LQ	VQ	7/13/2010	LQ	VQ	7/14/2010	LQ	VQ	7/14/2010	LQ	VQ	7/14/2010	LQ	VQ
Acenaphthene	1.5	0.069			0.11			<0.0009	U		<0.0009	U		<0.0009	U	
Acenaphthylene	1.5	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Anthracene	7.3	0.0038	J		0.0055			<0.0006	U		<0.0006	U		<0.0006	U	
bis(2-ethylhexyl)phthalate	0.006	<0.0033	U		<0.0033	U		<0.0033	U		<0.0033	U		<0.0033	U	
Dibenzofuran	0.098	0.025			0.048			<0.0007	U		<0.0007	U		<0.0007	U	
Di-n-butyl phthalate	2.4	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Fluoranthene	0.98	0.0026	J		0.0046	J		<0.0005	U		<0.0005	U		<0.0005	U	
Fluorene	0.98	0.041			0.056			<0.0006	U		<0.0006	U		<0.0006	U	
Naphthalene	0.49	0.056			0.0068			<0.0006	U		<0.0006	U		<0.0006	U	
Phenol	7.3	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Pyrene	0.73	0.001	J		0.0022	J		<0.0005	U		<0.0005	U		<0.0005	U	

Notes:
PCL = Protective Concentration Level
The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL
DUP-02 = Duplicate sample collected at P-10

LQ - Lab Qualifier
J = Estimated value between the SDL and the MDQ
U = Value not detected greater than the MQL

VQ - Validation Qualifier

Table 3
Summary of Analytical Results for Quality Assurance/Quality Control Samples
Semiannual Monitoring Report: 2010 Second Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Sample IDs (Concentrations mg/L)					
		FB-01		P-12(MS)[1]		P-12(MSD)[1]	
		Field Blank		Matrix Spike		Matrix Spike Duplicate	
		7/14/2010		7/14/2010		7/14/2010	
Acenaphthene	1.5	<0.0009	U	31.96		35.16	
Acenaphthylene	1.5	<0.0005	U	31.97		35.46	
Anthracene	7.3	<0.0006	U	39.36		38.23	
bis(2-ethylhexyl)phthalate	0.006	<0.0033	U	42.93		39.66	
Dibenzofuran	0.098	<0.0007	U	33.84		36.80	
Di-n-butyl phthalate	2.4	<0.0005	U	40.60		37.98	
Fluoranthene	0.98	<0.0005	U	42.31		38.62	
Fluorene	0.98	<0.0006	U	38.44		39.19	
2-Methylnaphthalene	0.098	<0.0009	U	31.24		36.40	
Naphthalene	0.49	<0.0006	U	28.55		33.21	
Phenanthrene	0.73	<0.0005	U	37.79		37.09	
Phenol	7.3	<0.0005	U	56.21		65.65	
Pyrene	0.73	<0.0005	U	41.84		40.36	

Notes:
PCL = Protective Concentration Level
(1) = P-12(MS) and P-12(MSD) are matrix spike and matrix spike duplicate samples collected at P-12, respectively.
U = Value not detected greater than the MQL

Table 4

Water Level Measurements
Semiannual Monitoring Report: 2010 Second Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Well ID	Top of Casing Elevation (TOC) (ft MSL)*	Date Measured	Water Depth (ft. BTOC)	Depth to NAPL (ft. BTOC)	Total Well Depth as Completed (ft. BTOC)	Total Well Depth (ft. BTOC)	Potentiometric Elevation (ft. MSL)
A-TZ Monitoring Locations							
MW-01A	47.88	7/14/2010	3.87	ND	20.2	19.90	44.01
MW-02	48.00	7/14/2010	4.37	ND	20.3	20.15	43.63
MW-07	48.92	7/14/2010	4.72	ND	NA	24.80	44.20
MW-08	49.33	7/14/2010	4.96	ND	26.8	25.15	44.37
MW-10A	49.82	7/13/2010	5.23	ND	25.9	25.60	44.59
MW-11A	50.07	7/13/2010	5.51	ND	24.4	24.10	44.56
B-TZ Monitoring Locations							
MW-10B	49.95	7/13/2010	5.33	ND	48.8	46.50	44.62
MW-11B	50.23	7/13/2010	5.67	ND	46.8	46.75	44.56
P-10	47.73	7/14/2010	2.06	ND	40.0	42.80	45.67
P-12	48.80	7/14/2010	3.93	ND	40.0	42.90	44.87

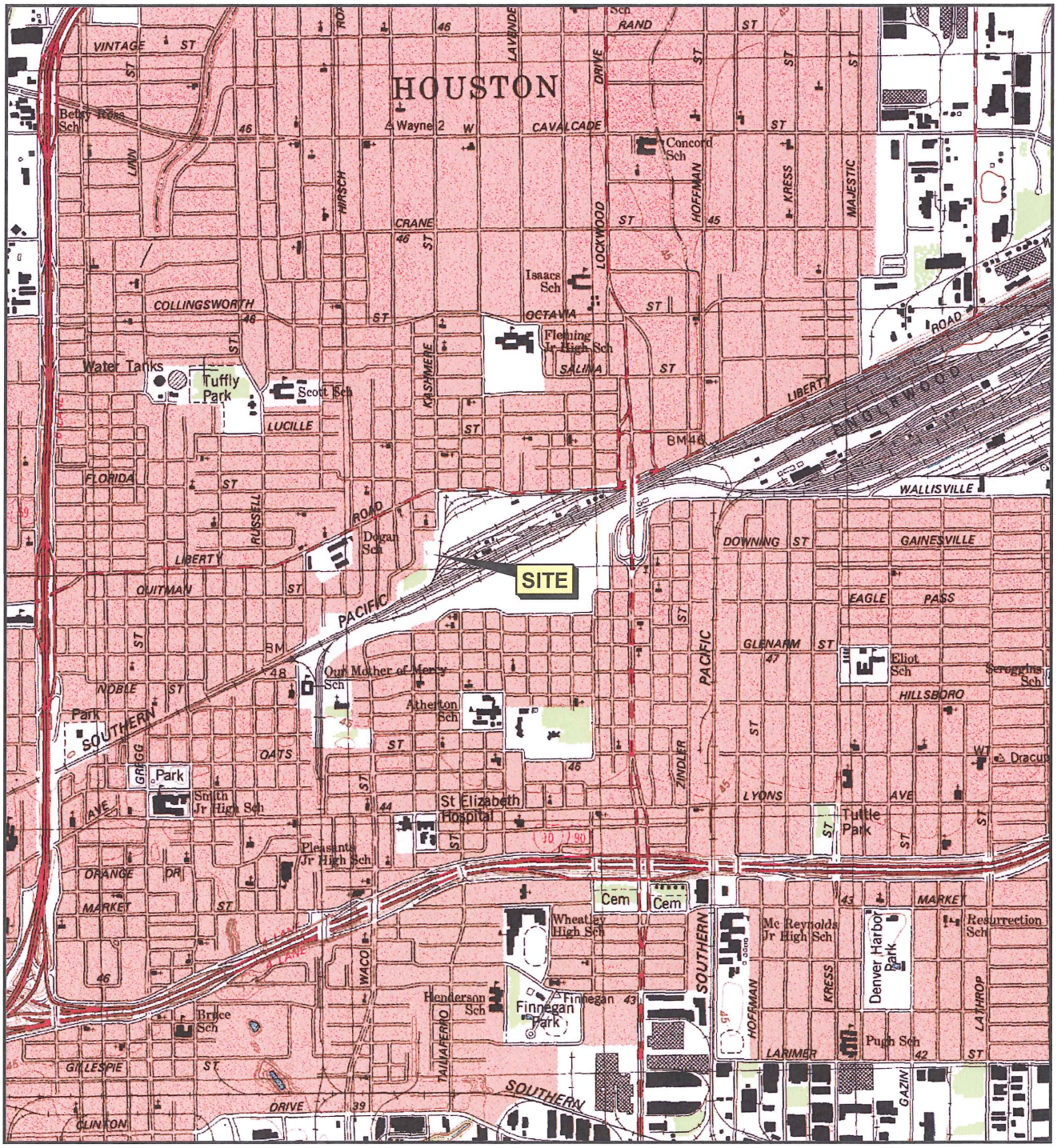
Notes
BTOC = feet below the top of the well casing
ft. MSL = feet above Mean Sea Level
ND = Not Detected
*TOC elevations based on December 2010 survey (see Section 3.17)

Table 5
Compliance Status of Wells and Piezometers
Semiannual Monitoring Report: 2010 Second Semiannual Event

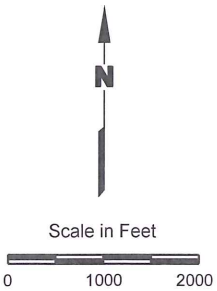
Houston Wood Preserving Works
Houston, Texas

Zone	Monitoring Well Location	Well Designation	Compliance Status
A-TZ Monitoring Location	MW-01A	Point of Compliance	Compliant
	MW-02	Point of Compliance	Compliant
	MW-07	Point of Compliance	Compliant
	MW-08	Background Well	Compliant
	MW-10A	Point of Compliance	Compliant
	MW-11A	Point of Compliance	Compliant
B-TZ Monitoring Location	MW-10B	Point of Compliance	Compliant
	MW-11B	Point of Compliance	Compliant
	P-10	Point of Compliance	Compliant
	P-12	Background Well	Compliant

FIGURES



QUADRANGLE LOCATION



Source:
U.S.G.S. 7.5 minute quadrangle, Settegast, Texas, 1982.

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Figure 1

SITE LOCATION MAP

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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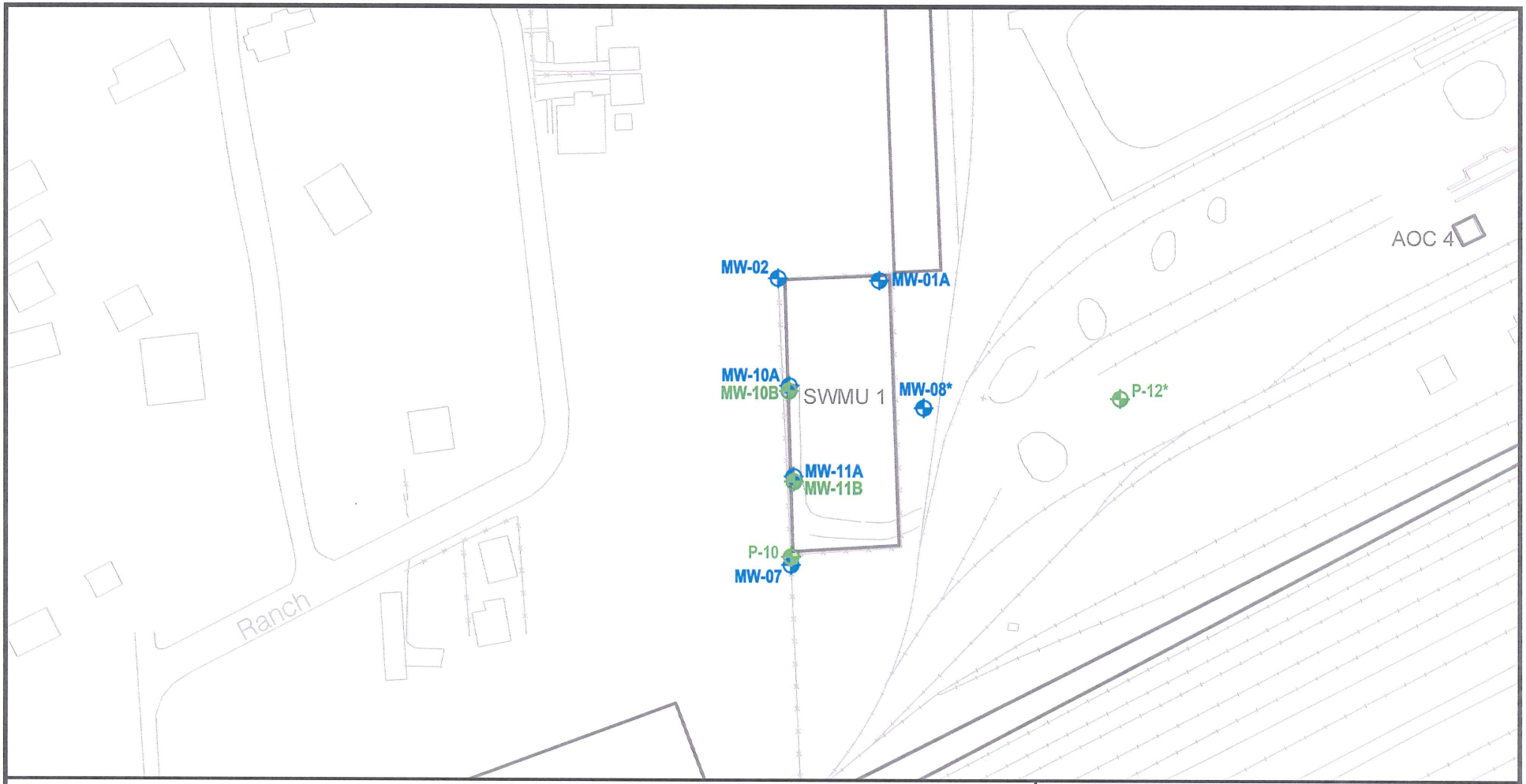

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-TZ Monitoring Well Location

Note:
* Background well.

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1/18/14

N

Approx. Scale in Feet

0 60 120

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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HOUSTON WOOD PRESERVING WORKS

Figure 2

CORRECTIVE ACTION MONITORING WELL NETWORK TCEQ PERMIT UNIT NO. 1

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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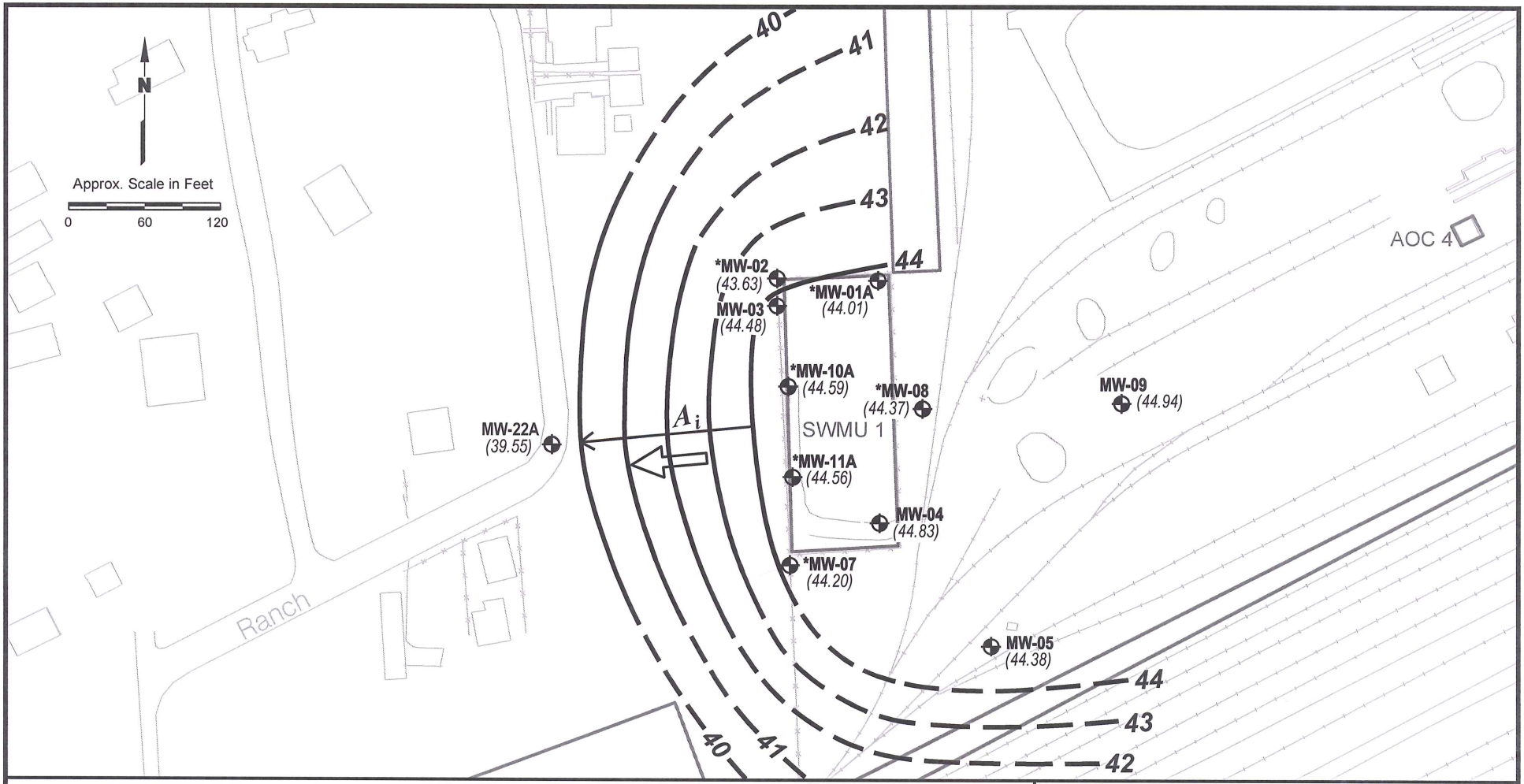

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location (* - Compliance Well)
- (39.55) Groundwater Elevation (Ft, MSL) Potentiometric Contour)
- 43 Groundwater Elevation Contour (Ft, MSL) C.I.= 1 Ft (dashed where inferred)
- General Groundwater Flow Direction

ESTIMATED GRADIENT

$A_i \rightarrow A_i = \frac{1ft}{34ft} = 0.029\ ft/ft$

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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Figure 3

A-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JULY 12-14, 2010

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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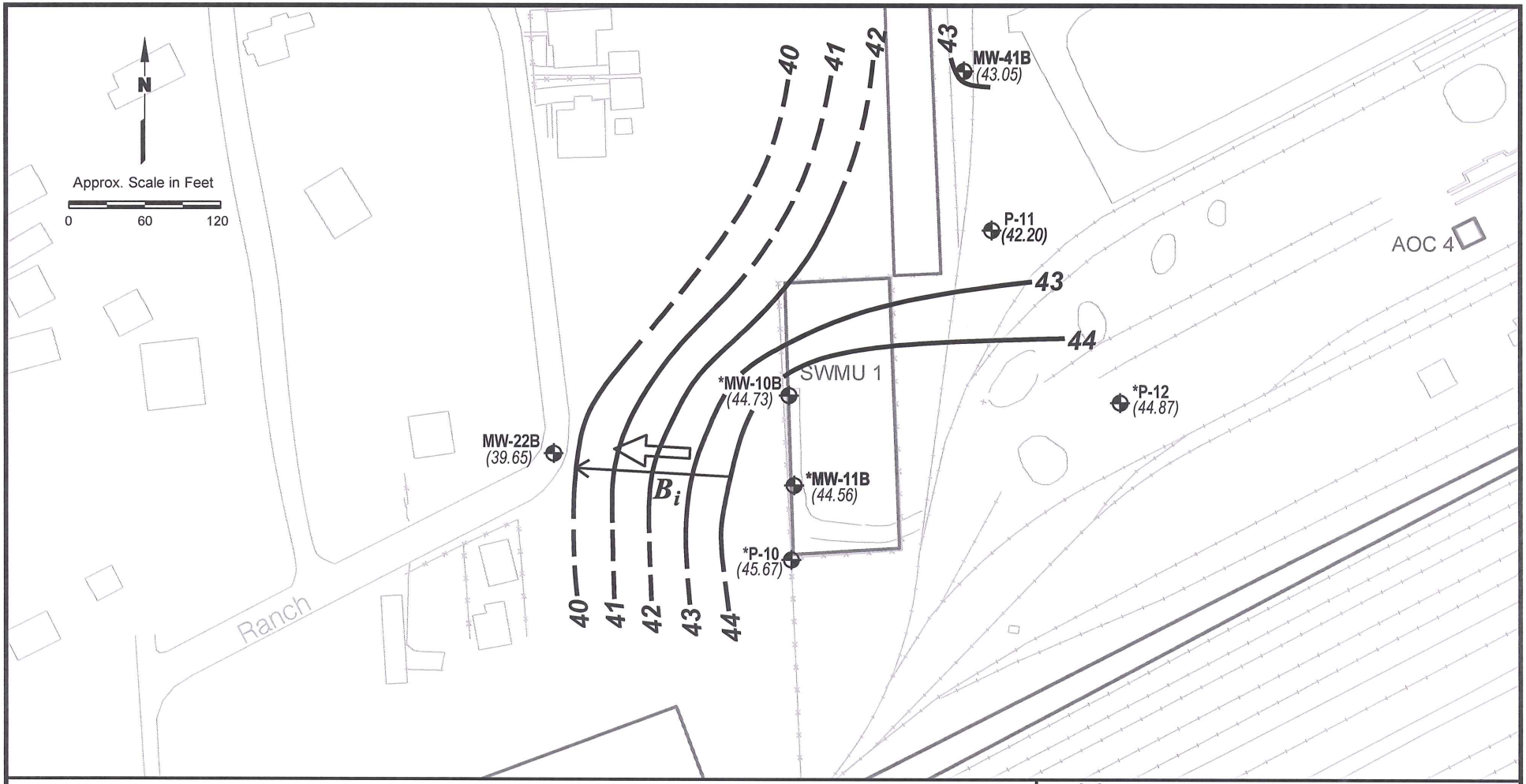

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- B-TZ Monitoring Well Location (* - Compliance Well)
- (39.65) Groundwater Elevation (Ft, MSL)
- 43 Groundwater Elevation Contour (Ft, MSL) C.I.= 1 Ft (dashed where inferred)
- General Groundwater Flow Direction

ESTIMATED GRADIENT

$B_i \rightarrow B_i = \frac{1ft}{30.7ft} = 0.033\ ft/ft$

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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Figure 4

B-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JULY 12-14, 2010

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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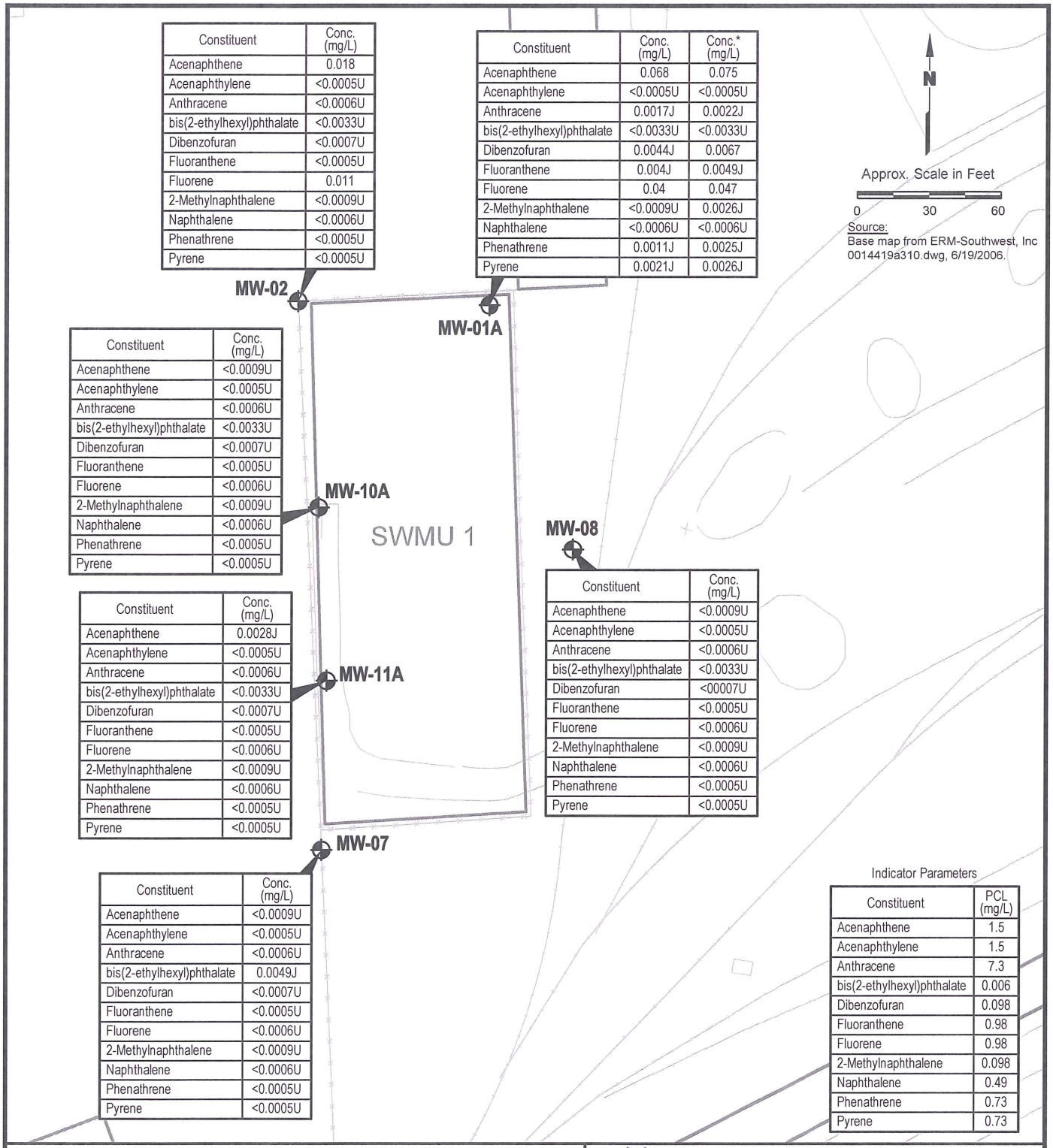

Constituent	Conc. (mg/L)
Acenaphthene	0.018
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	<0.0007U
Fluoranthene	<0.0005U
Fluorene	0.011
2-Methylnaphthalene	<0.0009U
Naphthalene	<0.0006U
Phenathrene	<0.0005U
Pyrene	<0.0005U

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	0.068	0.075
Acenaphthylene	<0.0005U	<0.0005U
Anthracene	0.0017J	0.0022J
bis(2-ethylhexyl)phthalate	<0.0033U	<0.0033U
Dibenzofuran	0.0044J	0.0067
Fluoranthene	0.004J	0.0049J
Fluorene	0.04	0.047
2-Methylnaphthalene	<0.0009U	0.0026J
Naphthalene	<0.0006U	<0.0006U
Phenathrene	0.0011J	0.0025J
Pyrene	0.0021J	0.0026J

Constituent	Conc. (mg/L)
Acenaphthene	<0.0009U
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	<0.0007U
Fluoranthene	<0.0005U
Fluorene	<0.0006U
2-Methylnaphthalene	<0.0009U
Naphthalene	<0.0006U
Phenathrene	<0.0005U
Pyrene	<0.0005U

Constituent	Conc. (mg/L)
Acenaphthene	0.0028J
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	<0.0007U
Fluoranthene	<0.0005U
Fluorene	<0.0006U
2-Methylnaphthalene	<0.0009U
Naphthalene	<0.0006U
Phenathrene	<0.0005U
Pyrene	<0.0005U

Constituent	Conc. (mg/L)
Acenaphthene	<0.0009U
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	<00007U
Fluoranthene	<0.0005U
Fluorene	<0.0006U
2-Methylnaphthalene	<0.0009U
Naphthalene	<0.0006U
Phenathrene	<0.0005U
Pyrene	<0.0005U

Constituent	Conc. (mg/L)
Acenaphthene	<0.0009U
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	0.0049J
Dibenzofuran	<0.0007U
Fluoranthene	<0.0005U
Fluorene	<0.0006U
2-Methylnaphthalene	<0.0009U
Naphthalene	<0.0006U
Phenathrene	<0.0005U
Pyrene	<0.0005U

Indicator Parameters

Constituent	PCL (mg/L)
Acenaphthene	1.5
Acenaphthylene	1.5
Anthracene	7.3
bis(2-ethylhexyl)phthalate	0.006
Dibenzofuran	0.098
Fluoranthene	0.98
Fluorene	0.98
2-Methylnaphthalene	0.098
Naphthalene	0.49
Phenathrene	0.73
Pyrene	0.73

EXPLANATION

- Fence
- Railroad
- A-TZ Monitoring Well Location

Notes:
1. * Duplicates sample taken at MW-1A.
2. Sample collected on July 13-14, 2010.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

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Figure 5

A-TZ REPORTED CONCENTRATIONS 2010 2nd SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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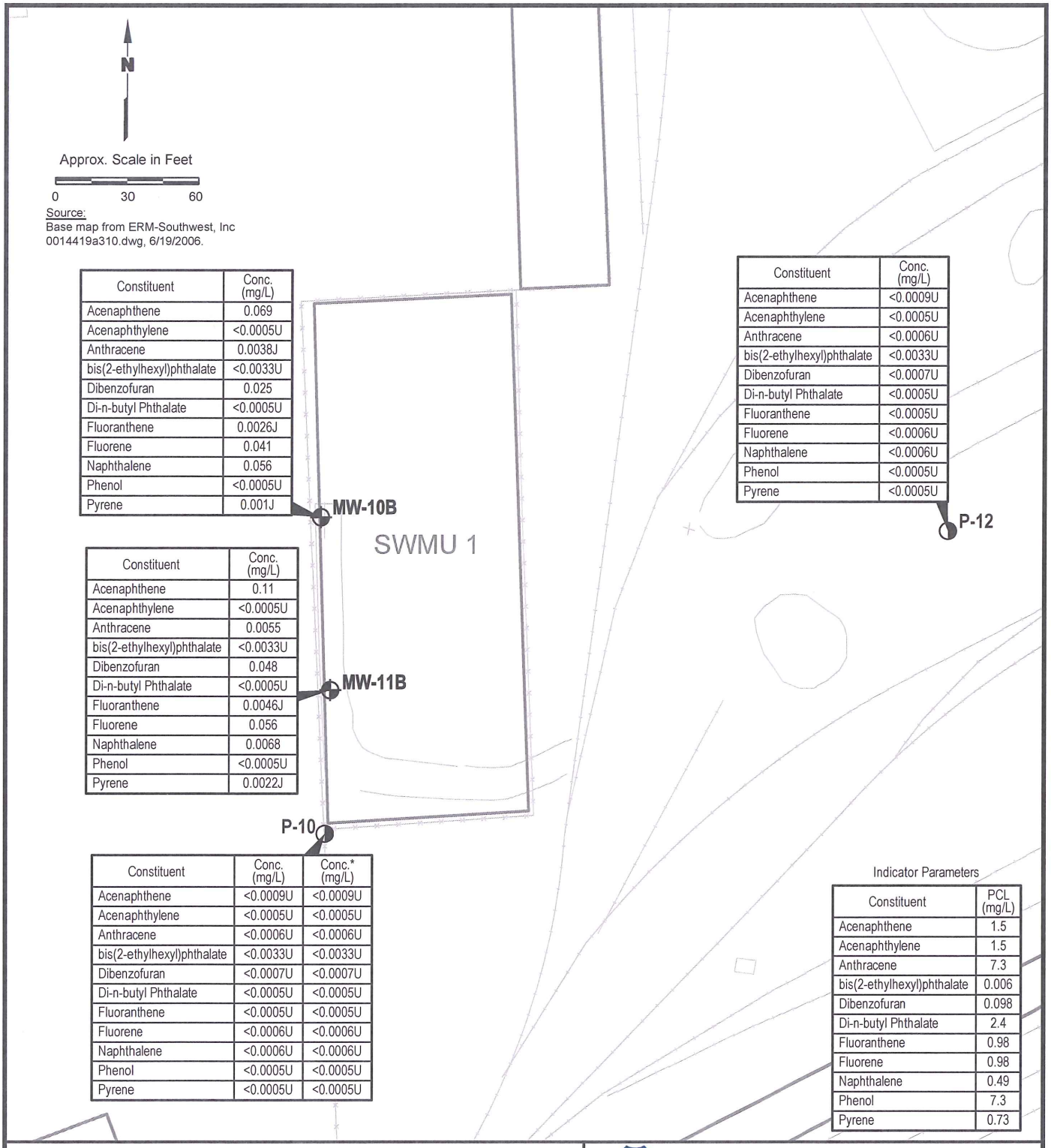

Constituent	Conc. (mg/L)
Acenaphthene	0.069
Acenaphthylene	<0.0005U
Anthracene	0.0038J
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	0.025
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	0.0026J
Fluorene	0.041
Naphthalene	0.056
Phenol	<0.0005U
Pyrene	0.001J

Constituent	Conc. (mg/L)
Acenaphthene	0.11
Acenaphthylene	<0.0005U
Anthracene	0.0055
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	0.048
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	0.0046J
Fluorene	0.056
Naphthalene	0.0068
Phenol	<0.0005U
Pyrene	0.0022J

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	<0.0009U	<0.0009U
Acenaphthylene	<0.0005U	<0.0005U
Anthracene	<0.0006U	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U	<0.0033U
Dibenzofuran	<0.0007U	<0.0007U
Di-n-butyl Phthalate	<0.0005U	<0.0005U
Fluoranthene	<0.0005U	<0.0005U
Fluorene	<0.0006U	<0.0006U
Naphthalene	<0.0006U	<0.0006U
Phenol	<0.0005U	<0.0005U
Pyrene	<0.0005U	<0.0005U

Constituent	Conc. (mg/L)
Acenaphthene	<0.0009U
Acenaphthylene	<0.0005U
Anthracene	<0.0006U
bis(2-ethylhexyl)phthalate	<0.0033U
Dibenzofuran	<0.0007U
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0006U
Naphthalene	<0.0006U
Phenol	<0.0005U
Pyrene	<0.0005U

Indicator Parameters

Constituent	PCL (mg/L)
Acenaphthene	1.5
Acenaphthylene	1.5
Anthracene	7.3
bis(2-ethylhexyl)phthalate	0.006
Dibenzofuran	0.098
Di-n-butyl Phthalate	2.4
Fluoranthene	0.98
Fluorene	0.98
Naphthalene	0.49
Phenol	7.3
Pyrene	0.73

EXPLANATION

- Fence
- Railroad
- B-TZ Monitoring Well Location
- Piezometer Location

Notes:
1. * Duplicates sample taken at P-10.
2. Sample collected on July 13-14, 2010.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

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Figure 6

B-TZ REPORTED CONCENTRATIONS 2010 2nd SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JAN., 2011	CHECKED: ECM	

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APPENDIX A
COMPLIANCE PLAN TABLES

TABLE III - CORRECTIVE ACTION PROGRAM
Table of Detected Hazardous and Solid Waste Constituents and Concentration Limits for the Ground-Water Protection Standard

Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)

A-Transmissive Zone		B-Transmissive Zone	
COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)	COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)
Acenaphthene	1.5[PCL]	Acenaphthene	1.5[PCL]
Acenaphthylene	1.5[PCL]	Acenaphthylene	1.5[PCL]
Anthracene	7.3[PCL]	Anthracene	7.3[PCL]
Dibenzofuran	0.098[PCL]	Dibenzofuran	0.098[PCL]
Bis(2-ethylhexyl)phthalate	0.006[PCL]	Bis(2-ethylhexyl)phthalate	0.006[PCL]
Fluoranthene	0.98[PCL]	Fluoranthene	0.98[PCL]
Fluorene	0.98[PCL]	Fluorene	0.98[PCL]
2-Methylnaphthalene	0.098[PCL]	Di-n-butyl phthalate	2.4[PCL]
Naphthalene	0.49[PCL]	Naphthalene	0.49[PCL]
Phenanthrene	0.73[PCL]	Phenol	7.3[PCL]
Pyrene	0.73[PCL]	Pyrene	0.73[PCL]

PCL Alternate Concentration Limit pursuant to 30 TAC §335.160(b) based upon the Protective Concentration Level determined under 30 TAC Chapter 350 for Residential Land Use. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

APPENDIX B
FIELD PARAMETERS

Table B-1
Groundwater Sampling Field Parameters
Semiannual Monitoring Report: 2010 Second Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Field Parameter	Monitoring Well IDs									
	A-Transmissive Zone						B-Transmissive Zone			
	MW-01A	MW-02	MW-07	MW-08	MW-10A	MW-11A	MW-10B	MW-11B	P-10	P-12
	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/14/2010	7/14/2010
Time Sampled (hrs CST)	14:15	12:50	9:30	10:50	15:45	13:50	16:45	15:00	8:40	7:40
Temperature (°C)	24.2	24.3	24.3	24.2	24.20	24.60	24.3	23.8	24.2	24.3
pH (Standard Units)	6.85	6.97	6.86	6.89	6.97	6.85	6.81	6.87	6.93	6.74
Specific Conductivity (µS)	1,380	1,340	1,270	1,230	1,040	1,680	1,230	1,350	1,180	1,370
Dissolved Oxygen (mg/L)	0.81	1.04	0.62	0.67	0.69	0.52	0.78	0.40	0.91	0.77
Turbidity (NTU)	6.90	4.90	8.30	7.60	5.57	5.71	5.52	8.90	7.70	6.20

APPENDIX C
LABORATORY ANALYTICAL REPORTS and DATA USABILITY SUMMARIES

ALS Environmental

22-Jul-2010

Eric Matzner
Pastor, Behling & Wheeler, LLC
2201 Double Creek Drive
Suite 4004
Round Rock, TX 78664

Tel: (512) 671-3434
Fax: (512) 671-3446

Re: HWPW SWMU 1 Work Order: **1007444**

Dear Eric,

ALS Laboratory Group received 9 samples on 14-Jul-2010 05:20 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Laboratory Group and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

R. Kevin Given

Electronically approved by: Tiffany Van

R. Kevin Given
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: TX: T104704231-10-3

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: 1007444

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation:

R2 Sample identification cross-reference

R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;?

R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [NA] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

R. Kevin Given

R. Kevin Given
Project Manager

ALS Laboratory Group

Date: 22-Jul-10

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: **1007444**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1007444-01	WG-1620-P12-20100714	Water		7/14/2010 07:40	7/14/2010 17:20	☐
1007444-02	WG-1620-P10-20100714	Water		7/14/2010 08:40	7/14/2010 17:20	☐
1007444-03	WG-1620-SMVX1-20100714	Water		7/14/2010 08:40	7/14/2010 17:20	☐
1007444-04	WG-1620-MW07-20100714	Water		7/14/2010 09:30	7/14/2010 17:20	☐
1007444-05	WG-1620-MW08-20100714	Water		7/14/2010 10:50	7/14/2010 17:20	☐
1007444-06	WG-1620-MW02-20100714	Water		7/14/2010 12:50	7/14/2010 17:20	☐
1007444-07	WG-1620-MW01A-20100714	Water		7/14/2010 14:15	7/14/2010 17:20	☐
1007444-08	WG-1620-SMVX2-20100714	Water		7/14/2010 14:15	7/14/2010 17:20	☐
1007444-09	WG-1620-SMVFB-20100714	Water		7/14/2010 14:30	7/14/2010 17:20	☐

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 07/22/2010					
Project Name: HWPW SWMU 1			Laboratory Job Number: 1007444					
Reviewer Name: R. Kevin Given			Prep Batch Number(s): 44614					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
R2	OI	**Sample and quality control (QC) identification**						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
R3	OI	**Test reports**						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?			X			
		Were % moisture (or solids) reported for all soil and sediment samples?			X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
R4	O	**Surrogate recovery data**						
		Were surrogates added prior to extraction?	X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1	
R5	OI	**Test reports/summary forms for blank samples**						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
R6	OI	**Laboratory control samples (LCS):**						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X					
		Was the LCSD RPD within QC limits?			X			
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**						
		Were the project/method specified analytes included in the MS and MSD?	X					
		Were MS/MSD analyzed at the appropriate frequency?	X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X					
		Were MS/MSD RPDs within laboratory QC limits?	X					
R8	OI	**Analytical duplicate data**						
		Were appropriate analytical duplicates analyzed for each matrix?			X			
		Were analytical duplicates analyzed at the appropriate frequency?			X			
		Were RPDs or relative standard deviations within the laboratory QC limits?			X			
R9	OI	**Method quantitation limits (MQLs):**						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
R10	OI	**Other problems/anomalies**						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 07/22/2010					
Project Name: HWPW SWMU 1			Laboratory Job Number: 1007444					
Reviewer Name: R. Kevin Given			Prep Batch Number(s): 44614					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X			
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?			X			
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X			
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data		
Laboratory Name: ALS Laboratory Group		LRC Date: 07/22/2010
Project Name: HWPW SWMU 1		Laboratory Job Number: 1007444
Reviewer Name: R. Kevin Given		Prep Batch Number(s): 44614
ER#[5]	**Description**	
1	Semivolatile Organics surrogate recoveries were outside the control limits for Samples WG-1620-P10-20100714 and WG-1620-SMVX1-20100714. Results confirmed as matrix interference by reanalysis.	

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P12-20100714
Collection Date: 7/14/2010 07:40 AM

Work Order: 1007444
Lab ID: 1007444-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 17:59
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 17:59
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 17:59
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 17:59
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 17:59
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/20/2010 17:59
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 17:59
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 17:59
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 17:59
Phenol	U		0.50	5.0	µg/L	1	7/20/2010 17:59
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 17:59
Surr: 2,4,6-Tribromophenol	*63.1*			*42-124*	*%REC*	1	7/20/2010 17:59
Surr: 2-Fluorobiphenyl	*49.3*			*48-120*	*%REC*	1	7/20/2010 17:59
Surr: 2-Fluorophenol	*40.0*			*20-120*	*%REC*	1	7/20/2010 17:59
Surr: 4-Terphenyl-d14	*71.3*			*51-135*	*%REC*	1	7/20/2010 17:59
Surr: Nitrobenzene-d5	*46.9*			*41-120*	*%REC*	1	7/20/2010 17:59
Surr: Phenol-d6	*43.5*			*20-120*	*%REC*	1	7/20/2010 17:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P10-20100714
Collection Date: 7/14/2010 08:40 AM

Work Order: 1007444
Lab ID: 1007444-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 19:48
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 19:48
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 19:48
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 19:48
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 19:48
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/20/2010 19:48
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 19:48
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 19:48
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 19:48
Phenol	U		0.50	5.0	µg/L	1	7/20/2010 19:48
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 19:48
Surr: 2,4,6-Tribromophenol	*67.9*			*42-124*	*%REC*	1	7/20/2010 19:48
Surr: 2-Fluorobiphenyl	*40.2*	S		*48-120*	*%REC*	1	7/20/2010 19:48
Surr: 2-Fluorophenol	*36.8*			*20-120*	*%REC*	1	7/20/2010 19:48
Surr: 4-Terphenyl-d14	*74.2*			*51-135*	*%REC*	1	7/20/2010 19:48
Surr: Nitrobenzene-d5	*41.4*			*41-120*	*%REC*	1	7/20/2010 19:48
Surr: Phenol-d6	*41.3*			*20-120*	*%REC*	1	7/20/2010 19:48

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-SMVX1-20100714
Collection Date: 7/14/2010 08:40 AM

Work Order: 1007444
Lab ID: 1007444-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 20:09
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 20:09
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 20:09
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 20:09
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 20:09
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/20/2010 20:09
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 20:09
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 20:09
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 20:09
Phenol	U		0.50	5.0	µg/L	1	7/20/2010 20:09
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 20:09
Surr: 2,4,6-Tribromophenol	*64.0*			*42-124*	*%REC*	1	7/20/2010 20:09
Surr: 2-Fluorobiphenyl	*44.8*	S		*48-120*	*%REC*	1	7/20/2010 20:09
Surr: 2-Fluorophenol	*38.8*			*20-120*	*%REC*	1	7/20/2010 20:09
Surr: 4-Terphenyl-d14	*73.8*			*51-135*	*%REC*	1	7/20/2010 20:09
Surr: Nitrobenzene-d5	*44.1*			*41-120*	*%REC*	1	7/20/2010 20:09
Surr: Phenol-d6	*40.7*			*20-120*	*%REC*	1	7/20/2010 20:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW07-20100714
Collection Date: 7/14/2010 09:30 AM

Work Order: 1007444
Lab ID: 1007444-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/20/2010 20:31
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 20:31
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 20:31
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 20:31
Bis(2-ethylhexyl)phthalate	**4.9**	J	**3.3**	**5.0**	**µg/L**	1	7/20/2010 20:31
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 20:31
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 20:31
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 20:31
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 20:31
Phenanthrene	U		0.50	5.0	µg/L	1	7/20/2010 20:31
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 20:31
Surr: 2,4,6-Tribromophenol	*77.6*			*42-124*	*%REC*	1	7/20/2010 20:31
Surr: 2-Fluorobiphenyl	*65.4*			*48-120*	*%REC*	1	7/20/2010 20:31
Surr: 2-Fluorophenol	*59.2*			*20-120*	*%REC*	1	7/20/2010 20:31
Surr: 4-Terphenyl-d14	*71.4*			*51-135*	*%REC*	1	7/20/2010 20:31
Surr: Nitrobenzene-d5	*68.1*			*41-120*	*%REC*	1	7/20/2010 20:31
Surr: Phenol-d6	*59.4*			*20-120*	*%REC*	1	7/20/2010 20:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW08-20100714
Collection Date: 7/14/2010 10:50 AM

Work Order: 1007444
Lab ID: 1007444-05
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/20/2010 20:53
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 20:53
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 20:53
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 20:53
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 20:53
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 20:53
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 20:53
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 20:53
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 20:53
Phenanthrene	U		0.50	5.0	µg/L	1	7/20/2010 20:53
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 20:53
Surr: 2,4,6-Tribromophenol	*74.2*			*42-124*	*%REC*	1	7/20/2010 20:53
Surr: 2-Fluorobiphenyl	*59.9*			*48-120*	*%REC*	1	7/20/2010 20:53
Surr: 2-Fluorophenol	*56.1*			*20-120*	*%REC*	1	7/20/2010 20:53
Surr: 4-Terphenyl-d14	*72.2*			*51-135*	*%REC*	1	7/20/2010 20:53
Surr: Nitrobenzene-d5	*65.5*			*41-120*	*%REC*	1	7/20/2010 20:53
Surr: Phenol-d6	*61.3*			*20-120*	*%REC*	1	7/20/2010 20:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW02-20100714
Collection Date: 7/14/2010 12:50 PM

Work Order: 1007444
Lab ID: 1007444-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/20/2010 21:14
Acenaphthene	**18**		**0.90**	**5.0**	**µg/L**	1	7/20/2010 21:14
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 21:14
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 21:14
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 21:14
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 21:14
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 21:14
Fluorene	**11**		**0.60**	**5.0**	**µg/L**	1	7/20/2010 21:14
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 21:14
Phenanthrene	U		0.50	5.0	µg/L	1	7/20/2010 21:14
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 21:14
Surr: 2,4,6-Tribromophenol	*70.4*			*42-124*	*%REC*	1	7/20/2010 21:14
Surr: 2-Fluorobiphenyl	*58.2*			*48-120*	*%REC*	1	7/20/2010 21:14
Surr: 2-Fluorophenol	*55.5*			*20-120*	*%REC*	1	7/20/2010 21:14
Surr: 4-Terphenyl-d14	*71.4*			*51-135*	*%REC*	1	7/20/2010 21:14
Surr: Nitrobenzene-d5	*63.6*			*41-120*	*%REC*	1	7/20/2010 21:14
Surr: Phenol-d6	*60.5*			*20-120*	*%REC*	1	7/20/2010 21:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW01A-20100714
Collection Date: 7/14/2010 02:15 PM

Work Order: 1007444
Lab ID: 1007444-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/20/2010 21:36
Acenaphthene	**68**		**0.90**	**5.0**	**µg/L**	1	7/20/2010 21:36
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 21:36
Anthracene	**1.7**	J	**0.60**	**5.0**	**µg/L**	1	7/20/2010 21:36
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 21:36
Dibenzofuran	**4.4**	J	**0.70**	**5.0**	**µg/L**	1	7/20/2010 21:36
Fluoranthene	**4.0**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:36
Fluorene	**40**		**0.60**	**5.0**	**µg/L**	1	7/20/2010 21:36
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 21:36
Phenanthrene	**1.1**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:36
Pyrene	**2.1**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:36
Surr: 2,4,6-Tribromophenol	*69.8*			*42-124*	*%REC*	1	7/20/2010 21:36
Surr: 2-Fluorobiphenyl	*60.4*			*48-120*	*%REC*	1	7/20/2010 21:36
Surr: 2-Fluorophenol	*56.9*			*20-120*	*%REC*	1	7/20/2010 21:36
Surr: 4-Terphenyl-d14	*69.1*			*51-135*	*%REC*	1	7/20/2010 21:36
Surr: Nitrobenzene-d5	*65.7*			*41-120*	*%REC*	1	7/20/2010 21:36
Surr: Phenol-d6	*62.6*			*20-120*	*%REC*	1	7/20/2010 21:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-SMVX2-20100714
Collection Date: 7/14/2010 02:15 PM

Work Order: 1007444
Lab ID: 1007444-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	**2.6**	J	**0.90**	**5.0**	**µg/L**	1	7/20/2010 21:58
Acenaphthene	**75**		**0.90**	**5.0**	**µg/L**	1	7/20/2010 21:58
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 21:58
Anthracene	**2.2**	J	**0.60**	**5.0**	**µg/L**	1	7/20/2010 21:58
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 21:58
Dibenzofuran	**6.7**		**0.70**	**5.0**	**µg/L**	1	7/20/2010 21:58
Fluoranthene	**4.9**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:58
Fluorene	**47**		**0.60**	**5.0**	**µg/L**	1	7/20/2010 21:58
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 21:58
Phenanthrene	**2.5**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:58
Pyrene	**2.6**	J	**0.50**	**5.0**	**µg/L**	1	7/20/2010 21:58
Surr: 2,4,6-Tribromophenol	*71.5*			*42-124*	*%REC*	1	7/20/2010 21:58
Surr: 2-Fluorobiphenyl	*60.5*			*48-120*	*%REC*	1	7/20/2010 21:58
Surr: 2-Fluorophenol	*58.5*			*20-120*	*%REC*	1	7/20/2010 21:58
Surr: 4-Terphenyl-d14	*69.4*			*51-135*	*%REC*	1	7/20/2010 21:58
Surr: Nitrobenzene-d5	*65.8*			*41-120*	*%REC*	1	7/20/2010 21:58
Surr: Phenol-d6	*64.6*			*20-120*	*%REC*	1	7/20/2010 21:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *22-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-SMVFB-20100714
Collection Date: 7/14/2010 02:30 PM

Work Order: 1007444
Lab ID: 1007444-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/19/10		Analyst: **ACN**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/20/2010 22:20
Acenaphthene	U		0.90	5.0	µg/L	1	7/20/2010 22:20
Acenaphthylene	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Anthracene	U		0.60	5.0	µg/L	1	7/20/2010 22:20
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/20/2010 22:20
Dibenzofuran	U		0.70	5.0	µg/L	1	7/20/2010 22:20
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Fluoranthene	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Fluorene	U		0.60	5.0	µg/L	1	7/20/2010 22:20
Naphthalene	U		0.60	5.0	µg/L	1	7/20/2010 22:20
Phenanthrene	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Phenol	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Pyrene	U		0.50	5.0	µg/L	1	7/20/2010 22:20
Surr: 2,4,6-Tribromophenol	*70.1*			*42-124*	*%REC*	1	7/20/2010 22:20
Surr: 2-Fluorobiphenyl	*60.3*			*48-120*	*%REC*	1	7/20/2010 22:20
Surr: 2-Fluorophenol	*55.1*			*20-120*	*%REC*	1	7/20/2010 22:20
Surr: 4-Terphenyl-d14	*69.2*			*51-135*	*%REC*	1	7/20/2010 22:20
Surr: Nitrobenzene-d5	*65.5*			*41-120*	*%REC*	1	7/20/2010 22:20
Surr: Phenol-d6	*60.7*			*20-120*	*%REC*	1	7/20/2010 22:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 23-Jul-10

WorkOrder: 1007444
InstrumentID: SV-3
Test Code: 8270_TCL_W
Test Number: SW8270
Test Name: Semivolatiles

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** µg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	3.8	0.9	5
A	Acenaphthene	83-32-9	4.1	0.9	5
A	Acenaphthylene	208-96-8	4	0.5	5
A	Anthracene	120-12-7	3.8	0.6	5
A	Bis(2-ethylhexyl)phthalate	117-81-7	4	3.3	5
A	Dibenzofuran	132-64-9	4.2	0.7	5
A	Di-n-butyl phthalate	84-74-2	4.1	0.5	5
A	Fluoranthene	206-44-0	4.1	0.5	5
A	Fluorene	86-73-7	4.2	0.6	5
A	Naphthalene	91-20-3	4.1	0.6	5
A	Phenanthrene	85-01-8	4.1	0.5	5
A	Phenol	108-95-2	3.6	0.5	5
A	Pyrene	129-00-0	4.2	0.5	5
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0	5
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	5
S	Surr: 2-Fluorophenol	367-12-4	0	0	5
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0	5
S	Surr: Nitrobenzene-d5	4165-60-0	0	0	5
S	Surr: Phenol-d6	13127-88-3	0	0	5

ALS Laboratory Group

Date: 22-Jul-10

Client: Pastor, Behling & Wheeler, LLC

Work Order: 1007444

Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44614** Instrument ID **SV-3** Method: **SW8270**

MBLK Sample ID: **SBLKW3-100719-44614** Units: **µg/L** Analysis Date: **7/20/2010 12:45 PM**

Client ID: Run ID: **SV-3_100720B** SeqNo: **2034782** Prep Date: **7/19/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	U	5.0								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Anthracene	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Dibenzofuran	U	5.0								
Di-n-butyl phthalate	U	5.0								
Fluoranthene	U	5.0								
Fluorene	U	5.0								
Naphthalene	U	5.0								
Phenanthrene	U	5.0								
Phenol	U	5.0								
Pyrene	U	5.0								
Surr: 2,4,6-Tribromophenol	*65.51*	5.0	*100*	0	*65.5*	*42-124*		0		
Surr: 2-Fluorobiphenyl	*57.73*	5.0	*100*	0	*57.7*	*48-120*		0		
Surr: 2-Fluorophenol	*51.18*	5.0	*100*	0	*51.2*	*20-120*		0		
Surr: 4-Terphenyl-d14	*67.71*	5.0	*100*	0	*67.7*	*51-135*		0		
Surr: Nitrobenzene-d5	*66.31*	5.0	*100*	0	*66.3*	*41-120*		0		
Surr: Phenol-d6	*55.92*	5.0	*100*	0	*55.9*	*20-120*		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1007444
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44614** Instrument ID **SV-3** Method: **SW8270**

LCS Sample ID: **SLCSW3-100719-44614** Units: **µg/L** Analysis Date: **7/20/2010 01:07 PM**

Client ID: Run ID: **SV-3_100720B** SeqNo: **2034783** Prep Date: **7/19/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	40.95	5.0	50	0	81.9	55-120	0			
Acenaphthene	39.34	5.0	50	0	78.7	55-120	0			
Acenaphthylene	39.33	5.0	50	0	78.7	55-120	0			
Anthracene	40.75	5.0	50	0	81.5	55-120	0			
Bis(2-ethylhexyl)phthalate	41.93	5.0	50	0	83.9	50-125	0			
Dibenzofuran	40	5.0	50	0	80	55-120	0			
Di-n-butyl phthalate	41.14	5.0	50	0	82.3	55-120	0			
Fluoranthene	41.23	5.0	50	0	82.5	55-120	0			
Fluorene	41.35	5.0	50	0	82.7	55-120	0			
Naphthalene	39.22	5.0	50	0	78.4	55-120	0			
Phenanthrene	40.46	5.0	50	0	80.9	55-120	0			
Phenol	66.25	5.0	100	0	66.3	50-120	0			
Pyrene	42.2	5.0	50	0	84.4	55-120	0			
Surr: 2,4,6-Tribromophenol	*78.77*	5.0	*100*	0	*78.8*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*76.76*	5.0	*100*	0	*76.8*	*48-120*	0			
Surr: 2-Fluorophenol	*66.86*	5.0	*100*	0	*66.9*	*20-120*	0			
Surr: 4-Terphenyl-d14	*75.93*	5.0	*100*	0	*75.9*	*51-135*	0			
Surr: Nitrobenzene-d5	*74.06*	5.0	*100*	0	*74.1*	*41-120*	0			
Surr: Phenol-d6	*62.45*	5.0	*100*	0	*62.5*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1007444
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44614** Instrument ID **SV-3** Method: **SW8270**

MS Sample ID: **1007444-01AMS** Units: **µg/L** Analysis Date: **7/20/2010 07:04 PM**

Client ID: **WG-1620-P12-20100714** Run ID: **SV-3_100720B** SeqNo: **2034784** Prep Date: **7/19/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	31.24	5.0	50	0	62.5	55-120	0			
Acenaphthene	31.96	5.0	50	0	63.9	55-120	0			
Acenaphthylene	31.97	5.0	50	0	63.9	55-120	0			
Anthracene	39.36	5.0	50	0	78.7	55-120	0			
Bis(2-ethylhexyl)phthalate	42.93	5.0	50	0	85.9	50-125	0			
Dibenzofuran	33.84	5.0	50	0	67.7	55-120	0			
Di-n-butyl phthalate	40.6	5.0	50	0	81.2	55-120	0			
Fluoranthene	42.31	5.0	50	0	84.6	55-120	0			
Fluorene	38.44	5.0	50	0	76.9	55-120	0			
Naphthalene	28.55	5.0	50	0	57.1	55-120	0			
Phenanthrene	37.79	5.0	50	0	75.6	55-120	0			
Phenol	56.21	5.0	100	0	56.2	50-120	0			
Pyrene	41.84	5.0	50	0	83.7	55-120	0			
Surr: 2,4,6-Tribromophenol	*77.24*	5.0	*100*	0	*77.2*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*54.75*	5.0	*100*	0	*54.8*	*48-120*	0			
Surr: 2-Fluorophenol	*46.84*	5.0	*100*	0	*46.8*	*20-120*	0			
Surr: 4-Terphenyl-d14	*73.56*	5.0	*100*	0	*73.6*	*51-135*	0			
Surr: Nitrobenzene-d5	*51.05*	5.0	*100*	0	*51.1*	*41-120*	0			
Surr: Phenol-d6	*51.45*	5.0	*100*	0	*51.4*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1007444
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44614** Instrument ID **SV-3** Method: **SW8270**

MSD Sample ID: **1007444-01AMSD** Units: **µg/L** Analysis Date: **7/20/2010 07:26 PM**

Client ID: **WG-1620-P12-20100714** Run ID: **SV-3_100720B** SeqNo: **2034785** Prep Date: **7/19/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	36.4	5.0	50	0	72.8	55-120	31.24	15.2	20	
Acenaphthene	35.16	5.0	50	0	70.3	55-120	31.96	9.54	20	
Acenaphthylene	35.46	5.0	50	0	70.9	55-120	31.97	10.4	20	
Anthracene	38.23	5.0	50	0	76.5	55-120	39.36	2.9	20	
Bis(2-ethylhexyl)phthalate	39.66	5.0	50	0	79.3	50-125	42.93	7.93	20	
Dibenzofuran	36.8	5.0	50	0	73.6	55-120	33.84	8.38	20	
Di-n-butyl phthalate	37.98	5.0	50	0	76	55-120	40.6	6.66	20	
Fluoranthene	38.62	5.0	50	0	77.2	55-120	42.31	9.13	20	
Fluorene	39.19	5.0	50	0	78.4	55-120	38.44	1.94	20	
Naphthalene	33.21	5.0	50	0	66.4	55-120	28.55	15.1	20	
Phenanthrene	37.09	5.0	50	0	74.2	55-120	37.79	1.85	20	
Phenol	65.65	5.0	100	0	65.7	50-120	56.21	15.5	20	
Pyrene	40.36	5.0	50	0	80.7	55-120	41.84	3.6	20	
Surr: 2,4,6-Tribromophenol	*72.67*	5.0	*100*	0	*72.7*	*42-124*	77.24	*6.1*	*20*	
Surr: 2-Fluorobiphenyl	*63.14*	5.0	*100*	0	*63.1*	*48-120*	54.75	*14.2*	*20*	
Surr: 2-Fluorophenol	*57.64*	5.0	*100*	0	*57.6*	*20-120*	46.84	*20.7*	*20*	*R*
Surr: 4-Terphenyl-d14	*72.08*	5.0	*100*	0	*72.1*	*51-135*	73.56	*2.04*	*20*	
Surr: Nitrobenzene-d5	*61.13*	5.0	*100*	0	*61.1*	*41-120*	51.05	*18*	*20*	
Surr: Phenol-d6	*62.1*	5.0	*100*	0	*62.1*	*20-120*	51.45	*18.8*	*20*	

The following samples were analyzed in this batch:

1007444-01A	1007444-02A	1007444-03A
1007444-04A	1007444-05A	1007444-06A
1007444-07A	1007444-08A	1007444-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

Date: 22-Jul-10

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
WorkOrder: 1007444

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
µg/L	Micrograms per Liter

ALS Laboratory Group
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Houston, Texas 77099
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Chain of Custody Form

Page 1 of 2

ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1009444

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	HWPW SWMU 1	A	LOW SVOC (8270) Select
Work Order		Project Number	1620	B	ATZ SPECIFIC COC LIST
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	BTZ SPECIFIC COC LIST
Send Report To	Eric Matzner	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750	E	
				F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 681790750	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-P12-20100714	7-14-10	0740	GW		2	X		X								
2	WG-1620-P12MS-20100714	7-14-10	0740	GW		2	X		X								
3	WG-1620-P12MSD-20100714	7-14-10	0740	GW		2	X		X								
4	WG-1620-P10-20100714	7-14-10	0840	GW		2	X		X								
5	WG-1620-SMVX1-20100714	7-14-10	0840	GW		2	X		X								
6	WG-1620-MW07-20100714	7-14-10	0930	GW		2	X	X									
7	WG-1620-MW08-20100714	7-14-10	1050	GW		2	X	X									
8	WG-1620-MW02-20100714	7-14-10	1250	GW		2	X	X									
9	WG-1620-MW01A-20100714	7-14-10	1415	GW		2	X	X									
10	WG-1620-SMVX2-20100714	7-14-10	1415	GW		2	X	X									

Sampler(s) Please Print & Sign: JOHN DRAYTON

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☐ Std 10 Work Days ☐ 5 Work Days ☐ 2 Work Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 7/14/10	Time: 17:20	Received by:	Notes: 10 Day TAT.	
Relinquished by:	Date:	Time:	Received by (Laboratory): 7/14/10 17:20	Cooler ID	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		

QC Package: (Check One Box Below)
☐ Level II Std QC ☑ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

☒ ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
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Chain of Custody Form

☐ ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1007444

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	HWPW SWMU 1	A	LOW SVOC (8270) Select
Work Order		Project Number	1620	B	ATZ SPECIFIC COC LIST
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	BTZ SPECIFIC COC LIST
Send Report To	Eric Matzner	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750	E	
				F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 681790750	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-SMVFB-20100714	7-14-10	1430	GW			X	X	X								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: JOHN BRAUTIGAM

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☐ 5 Day ☐ 10 Wk Days ☐ 15 Wk Days ☐ Other ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 7-14-10	Time: 17:2	Received by:	Notes: 10 Day TAT.
Relinquished by:	Date:	Time:	Received by (Laboratory): 7/14/10 17:26	Cooler ID: / Cooler Temp.:
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)
☐ Level II Std QC ☑ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Laboratory Group

Sample Receipt Checklist

Client Name: **PBW** Date/Time Received: **14-Jul-10 17:20**

Work Order: **1007444** Received by: **RNG**

Checklist completed by Robert D. Harris (eSignature) 14-Jul-10 (Date) Reviewed by: R. Kevin Given (eSignature) 16-Jul-10 (Date)

Matrices: waters
Carrier name: Client

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.6c,1.9c	002	
Cooler(s)/Kit(s):	1869,0425		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

28-Jul-2010

Eric Matzner
Pastor, Behling & Wheeler, LLC
2201 Double Creek Drive
Suite 4004
Round Rock, TX 78664

Tel: (512) 671-3434
Fax: (512) 671-3446

Re: HWPW SWMU 1 Work Order: **1007402**

Dear Eric,

ALS Laboratory Group received 4 samples on 13-Jul-2010 06:28 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Laboratory Group and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 17.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

R. Kevin Given

Electronically approved by: Chris Bryson

R. Kevin Given
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: TX: T104704231-10-3

ALS Laboratory Group

Date: *28-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: 1007402

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation:

R2 Sample identification cross-reference

R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;?

R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [NA] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

R. Kevin Given

R. Kevin Given
Project Manager

ALS Laboratory Group

Date: 28-Jul-10

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: **1007402**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1007402-01	WG-1620-MW11A-20100713	Water		7/13/2010 13:50	7/13/2010 18:28	☐
1007402-02	WG-1620-MW11B-20100713	Water		7/13/2010 15:00	7/13/2010 18:28	☐
1007402-03	WG-1620-MW10A-20100713	Water		7/13/2010 15:45	7/13/2010 18:28	☐
1007402-04	WG-1620-MW10B-20100713	Water		7/13/2010 16:45	7/13/2010 18:28	☐

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 07/20/2010					
Project Name: HWPW SWMU 1			Laboratory Job Number: 1007402					
Reviewer Name: R. Kevin Given			Prep Batch Number(s): 44530					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
R2	OI	**Sample and quality control (QC) identification**						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
R3	OI	**Test reports**						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?			X			
		Were % moisture (or solids) reported for all soil and sediment samples?			X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
R4	O	**Surrogate recovery data**						
		Were surrogates added prior to extraction?	X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X					
R5	OI	**Test reports/summary forms for blank samples**						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
R6	OI	**Laboratory control samples (LCS):**						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X					
		Was the LCSD RPD within QC limits?	X					
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**						
		Were the project/method specified analytes included in the MS and MSD?			X			
		Were MS/MSD analyzed at the appropriate frequency?			X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X			
		Were MS/MSD RPDs within laboratory QC limits?			X			
R8	OI	**Analytical duplicate data**						
		Were appropriate analytical duplicates analyzed for each matrix?			X			
		Were analytical duplicates analyzed at the appropriate frequency?			X			
		Were RPDs or relative standard deviations within the laboratory QC limits?			X			
R9	OI	**Method quantitation limits (MQLs):**						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
R10	OI	**Other problems/anomalies**						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 07/20/2010					
Project Name: HWPW SWMU 1			Laboratory Job Number: 1007402					
Reviewer Name: R. Kevin Given			Prep Batch Number(s): 44530					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X			
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?			X			
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X			
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data		
Laboratory Name: ALS Laboratory Group		LRC Date: 07/20/2010
Project Name: HWPW SWMU 1		Laboratory Job Number: 1007402
Reviewer Name: R. Kevin Given		Prep Batch Number(s): 44530
ER#[5]	**Description**	
	No Exceptions.	

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

ALS Laboratory Group

Date: *28-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11A-20100713
Collection Date: 7/13/2010 01:50 PM

Work Order: 1007402
Lab ID: 1007402-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/15/10		Analyst: **KMB**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/19/2010 15:16
Acenaphthene	**2.8**	J	**0.90**	**5.0**	**µg/L**	1	7/19/2010 15:16
Acenaphthylene	U		0.50	5.0	µg/L	1	7/19/2010 15:16
Anthracene	U		0.60	5.0	µg/L	1	7/19/2010 15:16
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/19/2010 15:16
Dibenzofuran	U		0.70	5.0	µg/L	1	7/19/2010 15:16
Fluoranthene	U		0.50	5.0	µg/L	1	7/19/2010 15:16
Fluorene	U		0.60	5.0	µg/L	1	7/19/2010 15:16
Naphthalene	U		0.60	5.0	µg/L	1	7/19/2010 15:16
Phenanthrene	U		0.50	5.0	µg/L	1	7/19/2010 15:16
Pyrene	U		0.50	5.0	µg/L	1	7/19/2010 15:16
Surr: 2,4,6-Tribromophenol	*84.8*			*42-124*	*%REC*	1	7/19/2010 15:16
Surr: 2-Fluorobiphenyl	*63.2*			*48-120*	*%REC*	1	7/19/2010 15:16
Surr: 2-Fluorophenol	*52.1*			*20-120*	*%REC*	1	7/19/2010 15:16
Surr: 4-Terphenyl-d14	*75.8*			*51-135*	*%REC*	1	7/19/2010 15:16
Surr: Nitrobenzene-d5	*63.7*			*41-120*	*%REC*	1	7/19/2010 15:16
Surr: Phenol-d6	*64.5*			*20-120*	*%REC*	1	7/19/2010 15:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *28-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11B-20100713
Collection Date: 7/13/2010 03:00 PM

Work Order: 1007402
Lab ID: 1007402-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/15/10		Analyst: **KMB**
Acenaphthene	**110**		**0.90**	**5.0**	**µg/L**	1	7/17/2010 01:13
Acenaphthylene	U		0.50	5.0	µg/L	1	7/17/2010 01:13
Anthracene	**5.5**		**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:13
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/17/2010 01:13
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/17/2010 01:13
Dibenzofuran	**48**		**0.70**	**5.0**	**µg/L**	1	7/17/2010 01:13
Fluoranthene	**4.6**	J	**0.50**	**5.0**	**µg/L**	1	7/17/2010 01:13
Fluorene	**56**		**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:13
Naphthalene	**6.8**		**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:13
Phenol	U		0.50	5.0	µg/L	1	7/17/2010 01:13
Pyrene	**2.2**	J	**0.50**	**5.0**	**µg/L**	1	7/17/2010 01:13
Surr: 2,4,6-Tribromophenol	*62.2*			*42-124*	*%REC*	1	7/17/2010 01:13
Surr: 2-Fluorobiphenyl	*58.6*			*48-120*	*%REC*	1	7/17/2010 01:13
Surr: 2-Fluorophenol	*42.6*			*20-120*	*%REC*	1	7/17/2010 01:13
Surr: 4-Terphenyl-d14	*71.9*			*51-135*	*%REC*	1	7/17/2010 01:13
Surr: Nitrobenzene-d5	*55.5*			*41-120*	*%REC*	1	7/17/2010 01:13
Surr: Phenol-d6	*49.8*			*20-120*	*%REC*	1	7/17/2010 01:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *28-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10A-20100713
Collection Date: 7/13/2010 03:45 PM

Work Order: 1007402
Lab ID: 1007402-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/15/10		Analyst: **KMB**
2-Methylnaphthalene	U		0.90	5.0	µg/L	1	7/17/2010 01:35
Acenaphthene	U		0.90	5.0	µg/L	1	7/17/2010 01:35
Acenaphthylene	U		0.50	5.0	µg/L	1	7/17/2010 01:35
Anthracene	U		0.60	5.0	µg/L	1	7/17/2010 01:35
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/17/2010 01:35
Dibenzofuran	U		0.70	5.0	µg/L	1	7/17/2010 01:35
Fluoranthene	U		0.50	5.0	µg/L	1	7/17/2010 01:35
Fluorene	U		0.60	5.0	µg/L	1	7/17/2010 01:35
Naphthalene	U		0.60	5.0	µg/L	1	7/17/2010 01:35
Phenanthrene	U		0.50	5.0	µg/L	1	7/17/2010 01:35
Pyrene	U		0.50	5.0	µg/L	1	7/17/2010 01:35
Surr: 2,4,6-Tribromophenol	*68.7*			*42-124*	*%REC*	1	7/17/2010 01:35
Surr: 2-Fluorobiphenyl	*54.3*			*48-120*	*%REC*	1	7/17/2010 01:35
Surr: 2-Fluorophenol	*40.5*			*20-120*	*%REC*	1	7/17/2010 01:35
Surr: 4-Terphenyl-d14	*79.2*			*51-135*	*%REC*	1	7/17/2010 01:35
Surr: Nitrobenzene-d5	*52.2*			*41-120*	*%REC*	1	7/17/2010 01:35
Surr: Phenol-d6	*48.1*			*20-120*	*%REC*	1	7/17/2010 01:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: *28-Jul-10*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10B-20100713
Collection Date: 7/13/2010 04:45 PM

Work Order: 1007402
Lab ID: 1007402-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES		Method: **SW8270**			Prep: SW3510 / 7/15/10		Analyst: **KMB**
Acenaphthene	**69**		**0.90**	**5.0**	**µg/L**	1	7/17/2010 01:58
Acenaphthylene	U		0.50	5.0	µg/L	1	7/17/2010 01:58
Anthracene	**3.8**	J	**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:58
Bis(2-ethylhexyl)phthalate	U		3.3	5.0	µg/L	1	7/17/2010 01:58
Di-n-butyl phthalate	U		0.50	5.0	µg/L	1	7/17/2010 01:58
Dibenzofuran	**25**		**0.70**	**5.0**	**µg/L**	1	7/17/2010 01:58
Fluoranthene	**2.6**	J	**0.50**	**5.0**	**µg/L**	1	7/17/2010 01:58
Fluorene	**41**		**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:58
Naphthalene	**56**		**0.60**	**5.0**	**µg/L**	1	7/17/2010 01:58
Phenol	U		0.50	5.0	µg/L	1	7/17/2010 01:58
Pyrene	**1.0**	J	**0.50**	**5.0**	**µg/L**	1	7/17/2010 01:58
Surr: 2,4,6-Tribromophenol	*68.7*			*42-124*	*%REC*	1	7/17/2010 01:58
Surr: 2-Fluorobiphenyl	*65.0*			*48-120*	*%REC*	1	7/17/2010 01:58
Surr: 2-Fluorophenol	*52.0*			*20-120*	*%REC*	1	7/17/2010 01:58
Surr: 4-Terphenyl-d14	*77.6*			*51-135*	*%REC*	1	7/17/2010 01:58
Surr: Nitrobenzene-d5	*65.9*			*41-120*	*%REC*	1	7/17/2010 01:58
Surr: Phenol-d6	*63.3*			*20-120*	*%REC*	1	7/17/2010 01:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Laboratory Group

Date: 28-Jul-10

WorkOrder: 1007402
InstrumentID: SV-5
Test Code: 8270_TCL_W
Test Number: SW8270
Test Name: Semivolatiles

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** µg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	4.2	0.9	5
A	Acenaphthene	83-32-9	4.1	0.9	5
A	Acenaphthylene	208-96-8	4	0.5	5
A	Anthracene	120-12-7	4.2	0.6	5
A	Bis(2-ethylhexyl)phthalate	117-81-7	4.4	3.3	5
A	Di-n-butyl phthalate	84-74-2	4.3	0.5	5
A	Dibenzofuran	132-64-9	4.3	0.7	5
A	Fluoranthene	206-44-0	4.2	0.5	5
A	Fluorene	86-73-7	4.2	0.6	5
A	Naphthalene	91-20-3	4	0.6	5
A	Phenanthrene	85-01-8	4.1	0.5	5
A	Phenol	108-95-2	3.8	0.5	5
A	Pyrene	129-00-0	4.3	0.5	5
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0	5
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	5
S	Surr: 2-Fluorophenol	367-12-4	0	0	5
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0	5
S	Surr: Nitrobenzene-d5	4165-60-0	0	0	5
S	Surr: Phenol-d6	13127-88-3	0	0	5

ALS Laboratory Group

Date: 28-Jul-10

Client: Pastor, Behling & Wheeler, LLC

Work Order: 1007402

Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44530** Instrument ID **SV-5** Method: **SW8270**

MBLK Sample ID: **SBLKW3-100715-44530** Units: **µg/L** Analysis Date: **7/16/2010 05:40 PM**

Client ID: Run ID: **SV-5_100716B** SeqNo: **2032219** Prep Date: **7/15/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	U	5.0								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Anthracene	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Di-n-butyl phthalate	U	5.0								
Dibenzofuran	U	5.0								
Fluoranthene	U	5.0								
Fluorene	U	5.0								
Naphthalene	U	5.0								
Phenanthrene	U	5.0								
Phenol	U	5.0								
Pyrene	U	5.0								
Surr: 2,4,6-Tribromophenol	*79.44*	5.0	*100*	0	*79.4*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*78.05*	5.0	*100*	0	*78*	*48-120*	0			
Surr: 2-Fluorophenol	*66.49*	5.0	*100*	0	*66.5*	*20-120*	0			
Surr: 4-Terphenyl-d14	*84.41*	5.0	*100*	0	*84.4*	*51-135*	0			
Surr: Nitrobenzene-d5	*83.71*	5.0	*100*	0	*83.7*	*41-120*	0			
Surr: Phenol-d6	*75.36*	5.0	*100*	0	*75.4*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1007402
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44530** Instrument ID **SV-5** Method: **SW8270**

LCS Sample ID: **SLCSW3-100715-44530** Units: **µg/L** Analysis Date: **7/16/2010 06:26 PM**
Client ID: Run ID: **SV-5_100716B** SeqNo: **2032220** Prep Date: **7/15/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	51.22	5.0	50	0	102	55-120	0			
Acenaphthene	50.03	5.0	50	0	100	55-120	0			
Acenaphthylene	50.34	5.0	50	0	101	55-120	0			
Anthracene	51.15	5.0	50	0	102	55-120	0			
Bis(2-ethylhexyl)phthalate	50.71	5.0	50	0	101	50-125	0			
Di-n-butyl phthalate	52	5.0	50	0	104	55-120	0			
Dibenzofuran	50.73	5.0	50	0	101	55-120	0			
Fluoranthene	50.34	5.0	50	0	101	55-120	0			
Fluorene	51.31	5.0	50	0	103	55-120	0			
Naphthalene	48.74	5.0	50	0	97.5	55-120	0			
Phenanthrene	51.06	5.0	50	0	102	55-120	0			
Phenol	94.16	5.0	100	0	94.2	50-120	0			
Pyrene	49.06	5.0	50	0	98.1	55-120	0			
Surr: 2,4,6-Tribromophenol	*79.5*	5.0	*100*	0	*79.5*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*89.34*	5.0	*100*	0	*89.3*	*48-120*	0			
Surr: 2-Fluorophenol	*84.13*	5.0	*100*	0	*84.1*	*20-120*	0			
Surr: 4-Terphenyl-d14	*82.77*	5.0	*100*	0	*82.8*	*51-135*	0			
Surr: Nitrobenzene-d5	*91.05*	5.0	*100*	0	*91*	*41-120*	0			
Surr: Phenol-d6	*87.36*	5.0	*100*	0	*87.4*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1007402
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **44530** Instrument ID **SV-5** Method: **SW8270**

LCSD Sample ID: **SLCSDW3-100715-44530** Units: **µg/L** Analysis Date: **7/16/2010 06:49 PM**
Client ID: Run ID: **SV-5_100716B** SeqNo: **2032221** Prep Date: **7/15/2010** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	51.82	5.0	50	0	104	55-120	51.22	1.15	20	
Acenaphthene	49.79	5.0	50	0	99.6	55-120	50.03	0.466	20	
Acenaphthylene	49.09	5.0	50	0	98.2	55-120	50.34	2.51	20	
Anthracene	50.6	5.0	50	0	101	55-120	51.15	1.08	20	
Bis(2-ethylhexyl)phthalate	56.73	5.0	50	0	113	50-125	50.71	11.2	20	
Di-n-butyl phthalate	53.33	5.0	50	0	107	55-120	52	2.52	20	
Dibenzofuran	49.74	5.0	50	0	99.5	55-120	50.73	1.96	20	
Fluoranthene	48.82	5.0	50	0	97.6	55-120	50.34	3.06	20	
Fluorene	51.35	5.0	50	0	103	55-120	51.31	0.0789	20	
Naphthalene	48.21	5.0	50	0	96.4	55-120	48.74	1.09	20	
Phenanthrene	49.56	5.0	50	0	99.1	55-120	51.06	2.97	20	
Phenol	101.1	5.0	100	0	101	50-120	94.16	7.16	20	
Pyrene	52.43	5.0	50	0	105	55-120	49.06	6.65	20	
Surr: 2,4,6-Tribromophenol	*83.93*	5.0	*100*	0	*83.9*	*42-124*	79.5	*5.42*	*20*	
Surr: 2-Fluorobiphenyl	*87.16*	5.0	*100*	0	*87.2*	*48-120*	89.34	*2.48*	*20*	
Surr: 2-Fluorophenol	*87.46*	5.0	*100*	0	*87.5*	*20-120*	84.13	*3.89*	*20*	
Surr: 4-Terphenyl-d14	*93.95*	5.0	*100*	0	*94*	*51-135*	82.77	*12.7*	*20*	
Surr: Nitrobenzene-d5	*87.49*	5.0	*100*	0	*87.5*	*41-120*	91.05	*3.99*	*20*	
Surr: Phenol-d6	*93.76*	5.0	*100*	0	*93.8*	*20-120*	87.36	*7.07*	*20*	

The following samples were analyzed in this batch: 1007402-01A 1007402-02A 1007402-03A 1007402-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

Date: 28-Jul-10

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
WorkOrder: 1007402

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
µg/L	Micrograms per Liter

ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 1

ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1001410

Customer Information

Purchase Order	
Work Order	
Company Name	Pastor, Behling & Wheeler, LLC
Send Report To	Eric Matzner
Address	2201 Double Creek Drive Suite 4004
City/State/Zip	Round Rock, TX 78664
Phone	(512) 671-3434
Fax	(512) 671-3446
e-Mail Address	

Project Information

Project Name	HWPW SWMU 1
Project Number	1620
Bill To Company	Union Pacific Railroad
Invoice Attn	
Address	1400 Douglas Street Stop 0750
City/State/Zip	Omaha, NE 681790750
Phone	
Fax	
e-Mail Address	

Parameter/Method Request for Analysis

A	LOW SVOC (8270) Select
B	ATZ SPECIFIC COC LIST
C	BTZ SPECIFIC COC LIST
D	
E	
F	
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW11A-20100713	7-13-10	1350	GW	-	2		X									
2	WG-1620-MW11B-20100713	7-13-10	1500	GW	-	2			X								
3	WG-1620-MW10A-20100713	7-13-10	1545	GW	-	2		X									
4	WG-1620-MW10B-20100713	7-13-10	1645	GW	-	2			X								
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: JOHN BRAYTON

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☑ Std 10 W.K. Days | 5 W.K. Days | 2 W.K. Days | 1 W.K. Day | Other | 72 Hours | 48 Hours | 24 Hours

Results Due Date:

Relinquished by:	Date: 7-13-10	Time: 18:25	Received by:	Notes: 10 Day TAT.
Relinquished by:	Date:	Time:	Received by (Laboratory): 7/13/10 18:25	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
- ☐ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☑ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4°C 9-5035

Note:
1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Laboratory Group

Sample Receipt Checklist

Client Name: **PBW** Date/Time Received: **13-Jul-10 18:28**

Work Order: **1007402** Received by: **RNG**

Checklist completed by Richard Sanchez (eSignature) 14-Jul-10 (Date) Reviewed by: R. Kevin Given (eSignature) 15-Jul-10 (Date)

Matrices: water
Carrier name: Client

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.3c	002	
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

CONESTOGA-ROVERS
& ASSOCIATES

E-Mail Date: September 2, 2010
E-Mail To: Eric Matzner\ Pastor, Behling & Wheeler, LLC
c.c.: Patricia Lynch

DATA USABILITY SUMMARY
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
SEMI-ANNUAL COMPLIANCE MONITORING
SWMU NO 1
HOUSTON, TEXAS
JULY 2010

PREPARED BY:
CONESTOGA-ROVERS & ASSOCIATES
6320 Rothway, Suite 100
Houston, Texas 77040
Telephone: 713-734-3090 Fax: 713-734-3391
Contact: Patricia L. Lynch [jih]
Date: September 2, 2010
www.CRAworld.com

Data Usability Summary

Reviewer:	Patricia L. Lynch – Conestoga-Rovers & Associates, Inc.
Contract Laboratory:	ALS Laboratory Group—Houston, Texas
Project/Area of Interest:	UPRR Houston Wood Preserving Works – Houston, Texas
Description of Data Packages Reviewed:	Groundwater sample results for SWMU No. 1 in data package 1007402 & 1007444
Sample Collection Date(s):	July 13 & 14, 2010
Intended Use of Data:	To monitor the COCs in groundwater at the site and to evaluate whether migration of COCs could result in risk to human or ecological health.

1.0 Scope of Data Usability Summary

Data were reviewed and validated in accordance with Title 30 of the Texas Administrative Code Section 350.54 (30 TAC 350.54) as described in *Review and Reporting of COC*

Concentration Data, (RG-366/TRRP-13) and the results of the review/validation are discussed in this Data Usability Summary (DUS). The review included examination of the reported data, the laboratory review checklist (LRC), and field/laboratory quality assurance/quality control (QA/QC) samples collected at the Site. Tables summarizing data qualifications discussed in this DUS can be found in Appendix A.

Ten (10) groundwater samples plus two field duplicates and one field blank were analyzed for semi-volatile organic compounds (SVOCs) by SW-846 Method 8270C[1].

A sampling and analysis summary is presented in Table 1. This summary includes a cross-reference of field sample identification numbers and laboratory sample numbers. Each sample was assigned a unique field identification number. The lists of SVOC target compounds are presented in Table 2.

[1] "Test Methods for Evaluating Solid Waste Physical/Chemical Methods", SW-846, 3rd Edition, September 1986 (with subsequent revisions).

2.0 Laboratory Qualifications

Analytical services were provided by ALS Laboratory Group (ALS) located in Houston, Texas. The laboratory's quality assurance program is consistent with the quality standards outlined in the National Environmental Laboratory Accreditation Program (NELAP). The laboratory was accredited under Texas Certification Number T104704231-10-3 at the time the analyses were performed.

3.0 Project Objectives

3.1 Levels of Required Performance (LORP)

Prior to sampling, the LORP for each COC was established for the investigation. A standard available analytical method was selected and minimal detection limits that are at or below the Texas Risk Reduction Tier 1 Residential Protective Concentration Levels (PCLs), $^{GW}GW_{ING}$ for groundwater were sought.

3.2 Sampling/Analytical QA/QC Objectives

Pastor, Behling & Wheeler, LLC designed the QA/QC program to identify contamination resulting from sample collection, sample transport and the analytical process.

- Method blanks of a similar matrix to that of the associated samples are prepared by the laboratory and analyzed to determine if laboratory contaminants are affecting the analytical results. Method blanks are prepared and analyzed with each batch.
- A field blank was collected and analyzed to determine if the chemicals of concern would be detected based on the ambient field conditions. The field blank was kept in the same environment in which the other field samples were collected.

Similarly, the QA/QC program was designed to evaluate the quality of the resulting data with respect to bias and precision. First, a laboratory control sample (LCS) was prepared and analyzed with each batch. The recovery ranges established by the laboratory are adopted as the acceptance criteria for the project. Second, a matrix spike/matrix spike duplicate (MS/MSD) was prepared and analyzed with each batch. The recovery ranges and RPDs established by the laboratory are adopted as the acceptance criteria for the project. Third, field duplicates were collected and submitted for analysis. The RPD acceptance criterion for the water field duplicates is 30 percent. This RPD criterion is only used when sample concentrations are above the estimated regions of detection.

4.0 Data Review/Validation Results

4.1 Analytical Results

The laboratory qualified analytes with concentrations above the Sample Detection Limits (SDLs) but below the Method Quantitation Limits (MQL) as estimated on the analytical tables per the TRRP-13 document. None of the data required further qualification based on the established QC criteria.

4.2 LORP

All SDLs and unadjusted MQLs met the LORP for this investigation.

4.3 Preservation and Holding Times

Samples were properly preserved in the field and cooled to 4°C (±2°C). Samples were shipped with chains of custody, and the paperwork was filled out properly. All samples were shipped on ice. All samples were prepared and analyzed within the applicable holding times.

4.4 Sample Containers

Sample containers were certified pre-cleaned glass provided by the laboratory. These containers meet or exceed analyte specifications established in the USEPA *Specifications and Guidance for Contaminant-free Sample Containers.*

4.5 Calibrations

According to the LRCs, initial calibration and continuing calibration data met the criteria for the selected methods.

4.6 Blanks

Method Blanks: As this was not discrete samples handled in the field, the method blanks are not listed on the sample identification cross-reference table found in Table 1. Results are reported in the data packages on a laboratory batch basis. All of the laboratory blank results were reported as ND (not detected).

Field Blank: A field blank was collected and analyzed for semi-volatiles and is listed on the sample summary table. All target SVOC compounds were non-detect in the field blank.

4.7 Internal Standard and Surrogate Recoveries

Recoveries of internal standards and surrogates for SVOCs are addressed in the LRCs of the laboratory data packages. All surrogate recoveries and internal standard areas and retention times were within the acceptance limits except for the surrogate 2-fluorobiphenyl in the samples listed below:

- WG-1620-P10-20100714
- WG-1620-SMVX1-20100714.

Data qualification was not required since all other surrogate recoveries were acceptable.

4.8 Laboratory Control Samples (LCS)

LCS data for all COCs were reported for each batch, and the LCS spike recoveries for all COCs were within the project objectives.

4.9 Matrix Spikes

Sample WG-1620-P12-20100714 was selected for matrix spike/matrix spike duplicate analyses for SVOCs, and the results are reported in the data packages. All recoveries and RPDs were within the laboratory established control limits.

4.10 Field Duplicate

Field duplicates of the samples listed below were collected and analyzed.

- WG-1620-SMVX1-20100714 is a duplicate of WG-1620-P10-20100714;
- WG-1620-SMVX2-20100714 is a duplicate of WG-1620-MW01-20100714.

All results for samples WG-1620-SMVX1-20100714 and WG-1620-P10-20100714 were non detect. All results for samples WG-1620-SMVX2-20100714 and WG-1620-MW01-20100714 showed good precision above the estimated regions of detection (see Table 3). Some results were non-detect, and the RPDs could not be calculated. Only detected results are found on Table 3.

4.11 Field Procedures

Pastor, Behling & Wheeler, LLC collected groundwater samples in accordance with their Standard Operating Procedures (SOP) for sample collection.

4.12 Summary

The analytical data in this report are usable to assess the impact of COCs in groundwater at the site without qualification.

APPENDIX A

TABLES

TABLE 1

SAMPLE AND ANALYSIS SUMMARY
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
SWMU No. 1
HOUSTON, TEXAS
JULY 2010

Sample I.D.	*Location I.D.*	*Matrix*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*Analysis/Parameters* [1 parameter]	*Comment*
WG-1620-MW11A-20100713	MW-11A	Water	7/13/2010	13:50	SVOCs	
WG-1620-MW11B-20100713	MW-11B	Water	7/13/2010	15:00	SVOCs	
WG-1620-MW10A-20100713	MW-10A	Water	7/13/2010	15:45	SVOCs	
WG-1620-MW10B-20100713	MW-10B	Water	7/13/2010	16:45	SVOCs	
WG-1620-P12-20100714	P-12	Water	7/14/2010	7:40	SVOCs	
WG-1620-P10-20100714	P-10	Water	7/14/2010	8:40	SVOCs	
WG-1620-SMVX1-20100714	P-10	Water	7/14/2010	8:40	SVOCs	Field Duplicate of WG-1620-P10-20100714
WG-1620-MW07-20100714	MW-07	Water	7/14/2010	9:30	SVOCs	
WG-1620-MW08-20100714	MW-08	Water	7/14/2010	10:50	SVOCs	
WG-1620-MW02-20100714	MW-02	Water	7/14/2010	12:50	SVOCs	
WG-1620-MW01A-20100714	MW-01A	Water	7/14/2010	14:15	SVOCs	
WG-1620-SMVX2-20100714	MW-01A	Water	7/14/2010	14:15	SVOCs	Field Duplicate of WG-1620-MW01A-20100714
WG-1620-SMVFB-20100714	Field Blank	Water	7/14/2010	14:30	SVOCs	

SVOCs Semi-Volatile Organic Compounds

TABLE 2
TARGET COMPOUND SUMMARY
SEMI-ANNUAL COMPLIANCE MONITORING
SWMU NO. 1
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JULY 2010

SVOCs (ATZ)	SVOCs (BTZ)
Acenaphthene	Acenaphthene
Acenaphthylene	Acenaphthylene
Anthracene	Anthracene
bis(2-ethylhexyl)phthalate	bis(2-ethylhexyl)phthalate
Dibenzofuran	Dibenzofuran
Fluoranthene	Fluoranthene
Fluorene	Fluorene
Naphthalene	Naphthalene
Phenanthrene	Pyrene
Pyrene	Phenol
2-Methylnaphthalene	Di-n-butyl phthalate

TABLE 3
FIELD DUPLICATE SUMMARY
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
SWMU NO. 1
JULY 2010

Sample Location:	*MW01A*					
	Orig		*Duplicate*		*RPD*	*Units*
Semi-Volatile Organics						
Dibenzofuran	4.4	J	6.7		52.2	ug/L
Fluoranthene	4.0	j	4.9	J	22.5	ug/L
Acenaphthene	68		75		10.3	ug/L
Fluorene	40		47		17.5	ug/L
Phenanthrene	1.1	J	2.5	J	127.0	ug/L
2-Methylnaphthalene	ND		2.6		NC	ug/L
Pyrene	2.1	J	2.6	J	23.80	ug/L
Anthracene	1.7	J	2.2	J	29.40	ug/L

Notes:

J - Estimated concentration
NC - Unable to calculate

APPENDIX D
WASTE MANIFEST

WO 6643 1.427# 2.185# 3.411#

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	TXD000820266		1 866-780-3116	007464358 JJK

GENERATOR

5. Generator's Name and Mailing Address
UNION PACIFIC RAILROAD
PO BOX 87687
HOUSTON, TX, 77287 713-425-6900
Generator's Phone:

Generator's Site Address (if different than mailing address)
4910 LIBERTY RD
HOUSTON, TX 77026

6. Transporter 1 Company Name: USA Environmental Services — U.S. EPA ID Number: TXR0000 54437

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
US ECOLOGY TEXAS LP
3.5 MILES S. ON PETRONILA RD
ROBSTOWN, TEXAS 78380 800-242-3209
Facility's Phone: — U.S. EPA ID Number:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. RCRA, HAZARDOUS WASTE SOLID NOS (PPE/ DEBRIS/SOIL) 9,NA 3077,PGIII	1	DM	100	P	F034 0915301H
	2. RCRA, HAZARDOUS WASTE SOLID NOS (PPE/ DEBRIS/SOIL) 9,NA 3077,PGIII	1	DM	175	P	F034 0915301H
	3. RCRA, HAZARDOUS WASTE LIQUID NOS (PURGE WATER) 9,NA3082,PGIII	1	DM	275	P	F034 0909101H
	4.					

14. Special Handling Instructions and Additional Information
PROFILE#
1- 090056558-1 3- 090056384-0
2- 090056383-0 USA JOB# 2469-TD-H156

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEOFFREY REEDER — Signature: Geoffrey Reeder — Month 8 Day 16 Year 10

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: L. DE-MONE HATCH — Signature: L. De-Mone Hatch — Month 8 Day 16 Year 10
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H132	H132	

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: J. Garcia — Signature — Month 8 Day 9 Year 10

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

APPENDIX E
POC CONCENTRATIONS VS. TIME GRAPHS

Figure E-1
2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

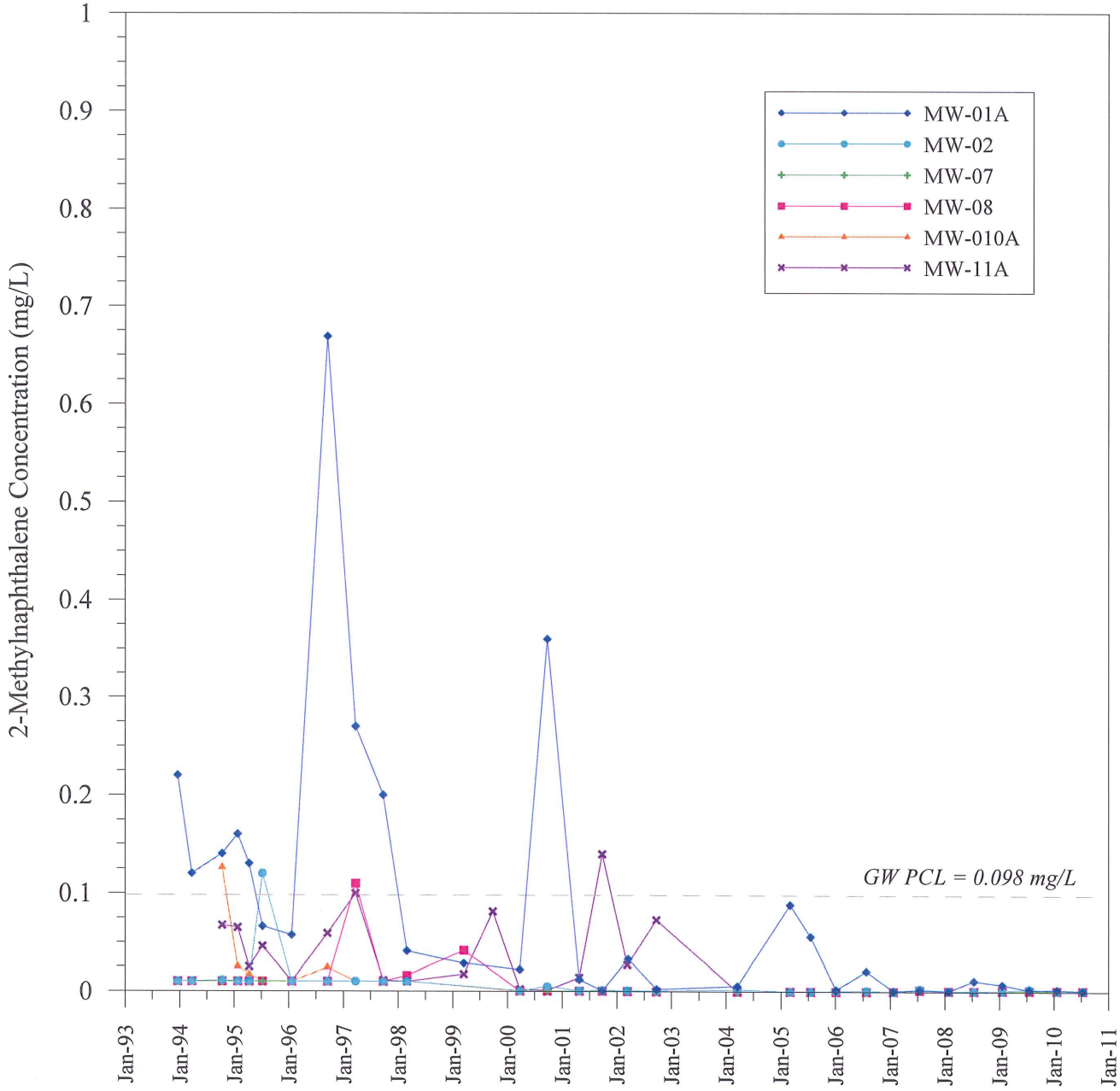


Figure E-2
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

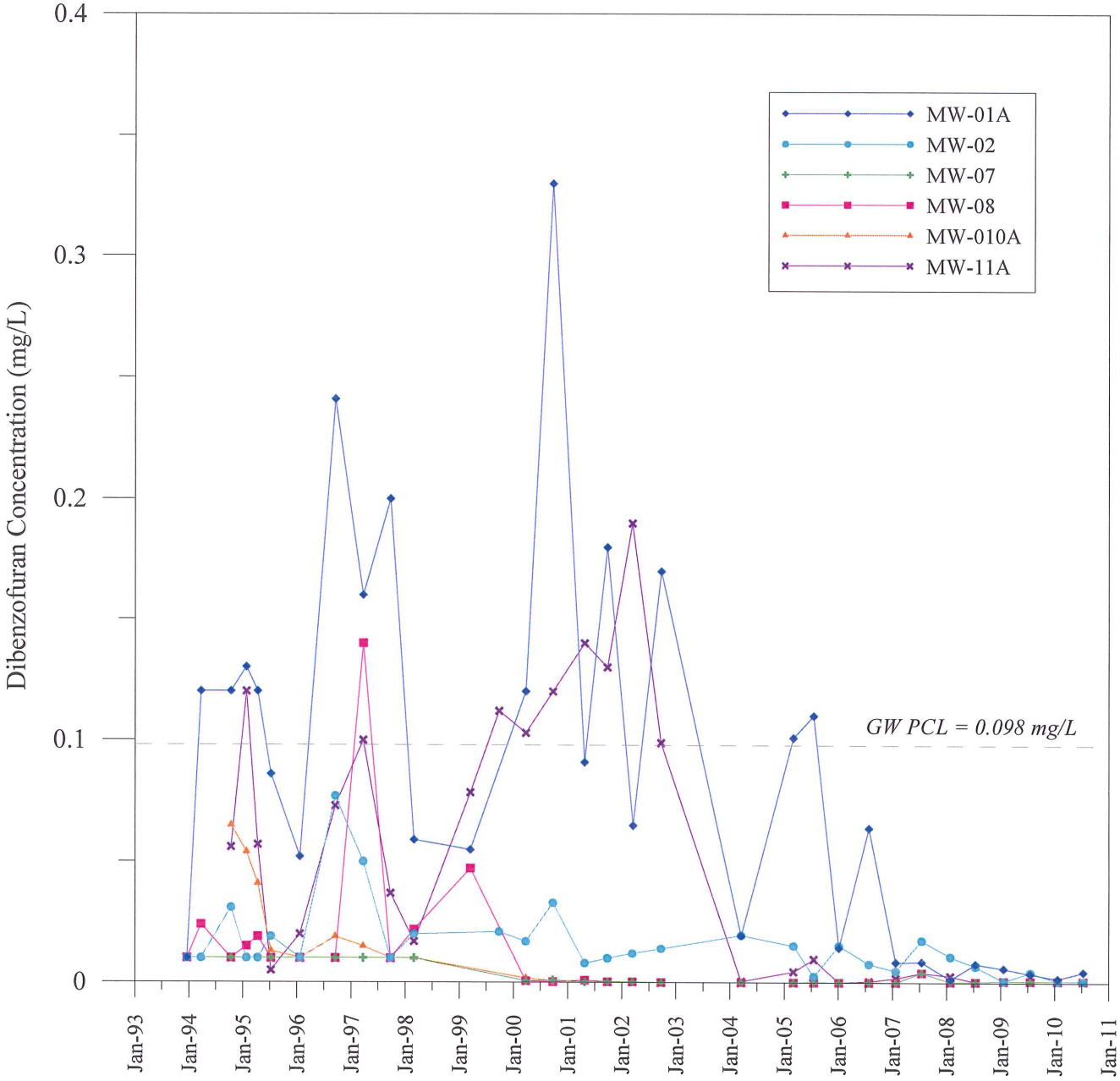


Figure E-3
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

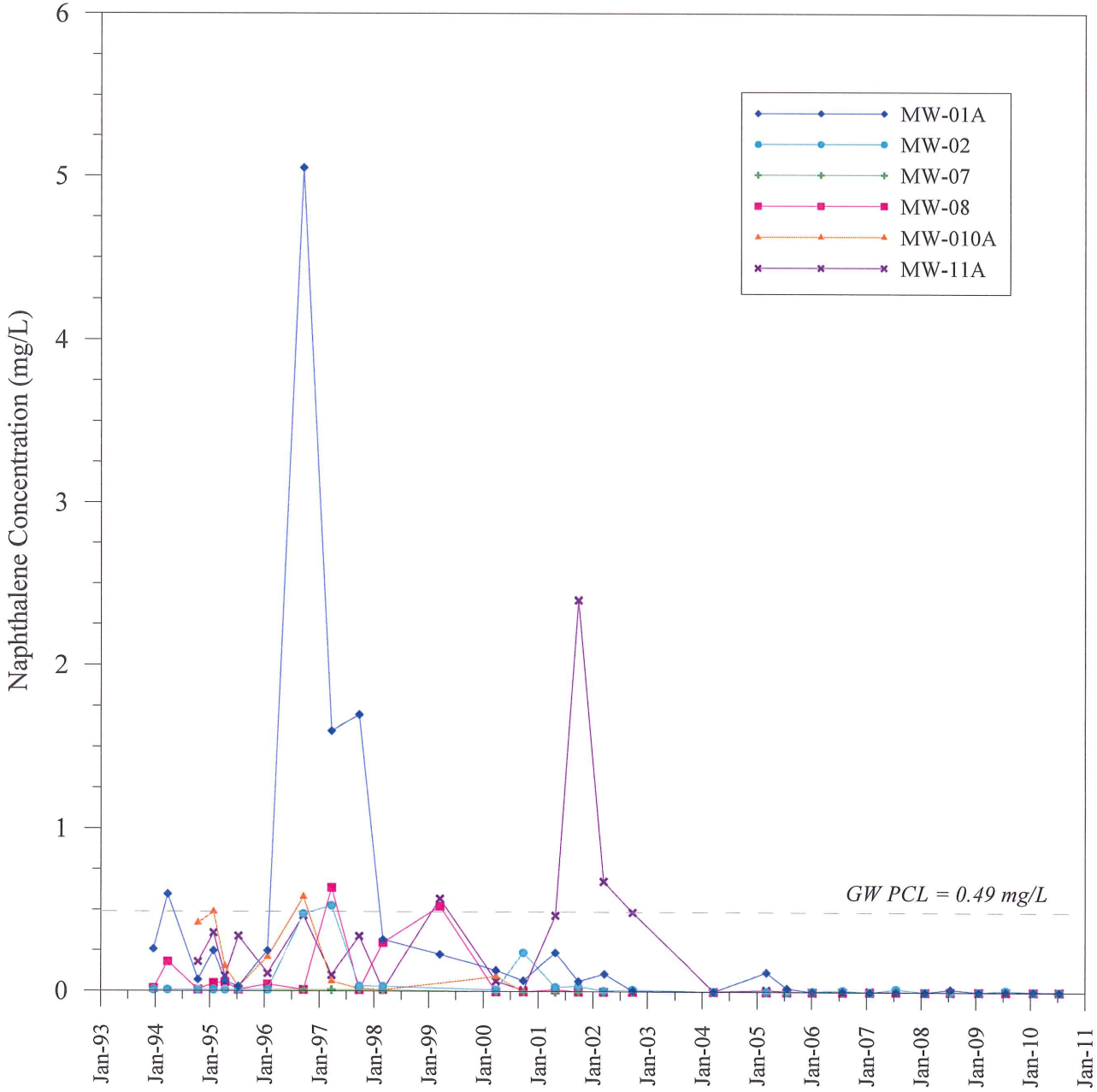


Figure E-4
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

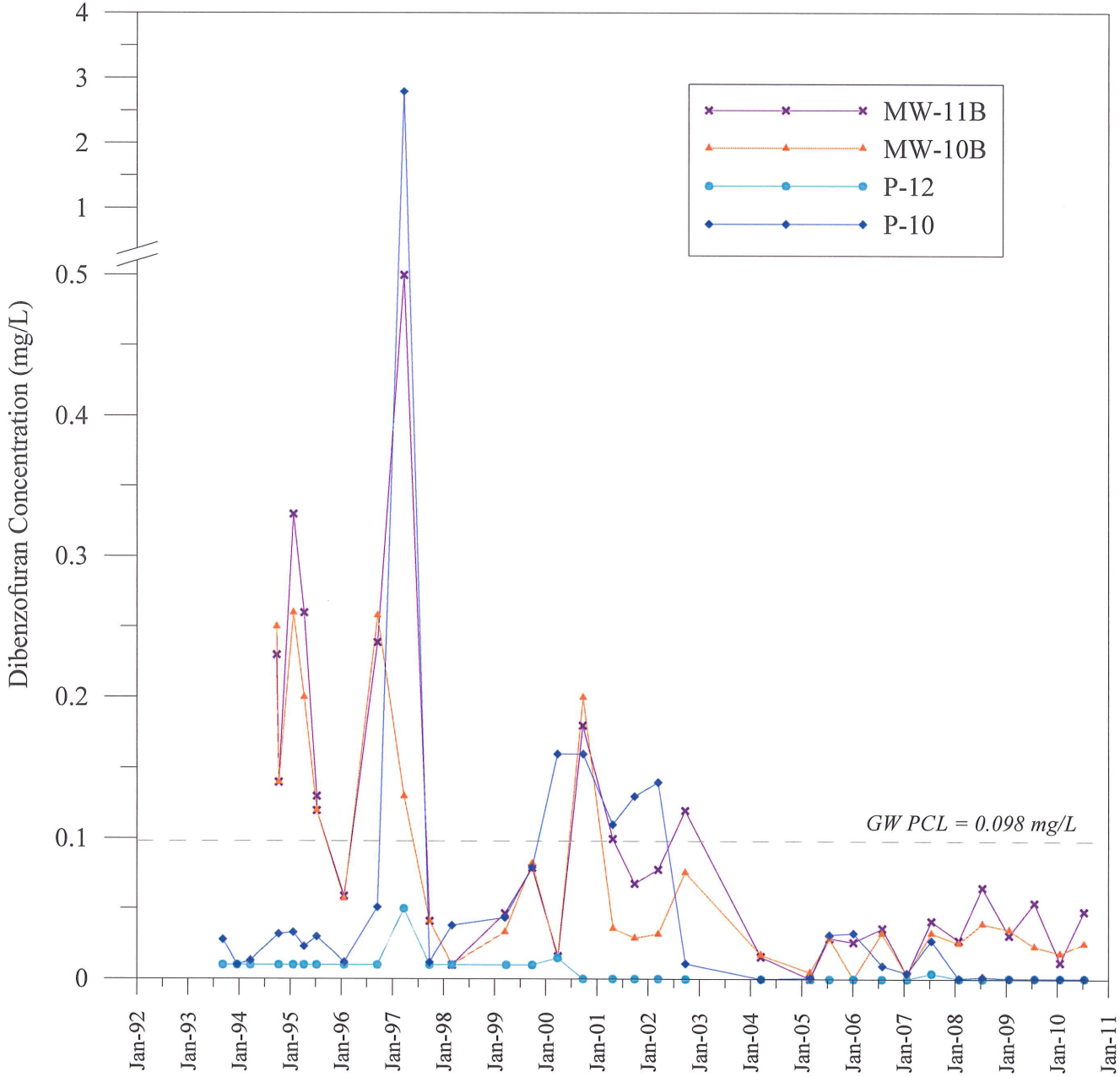
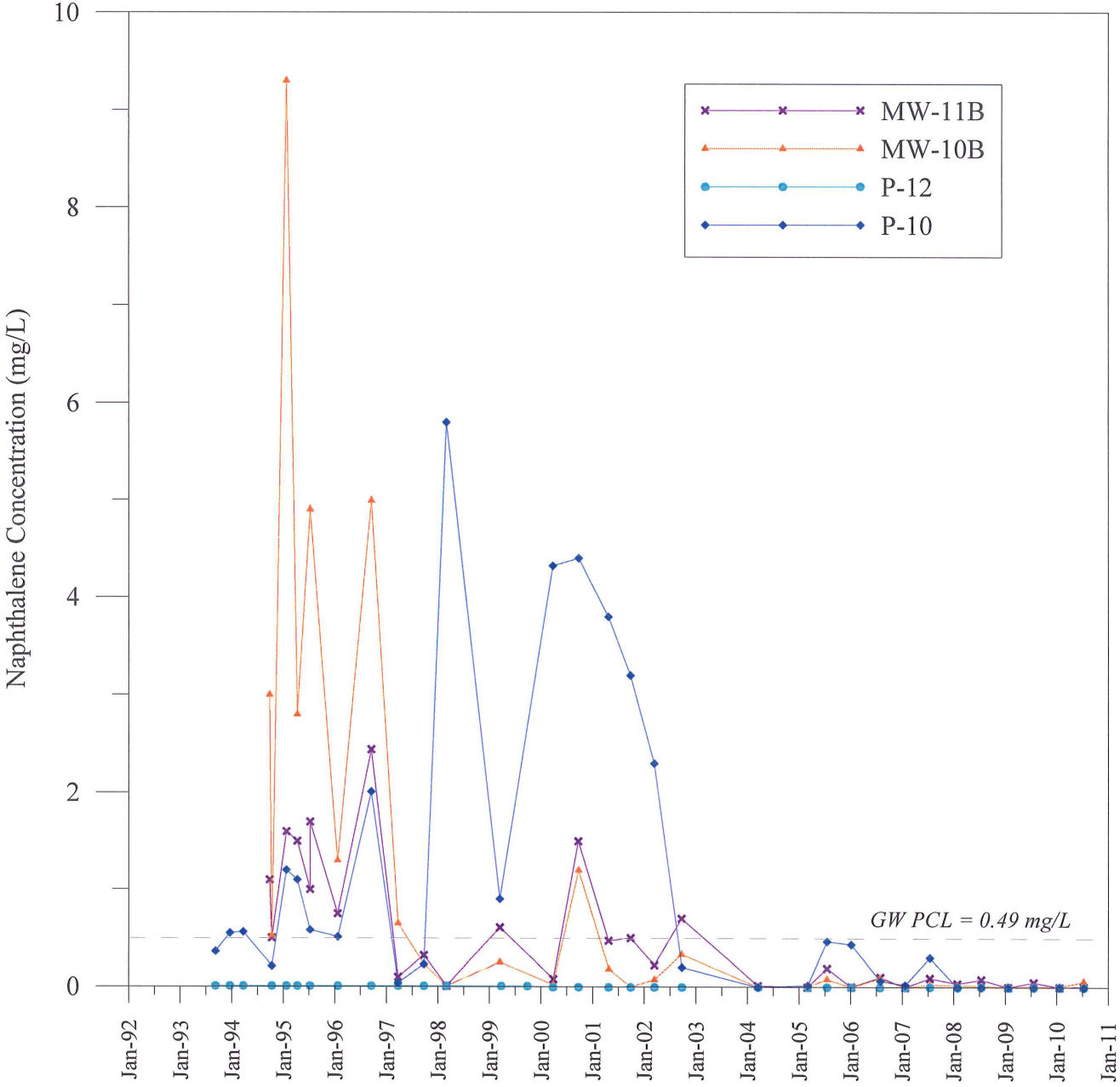
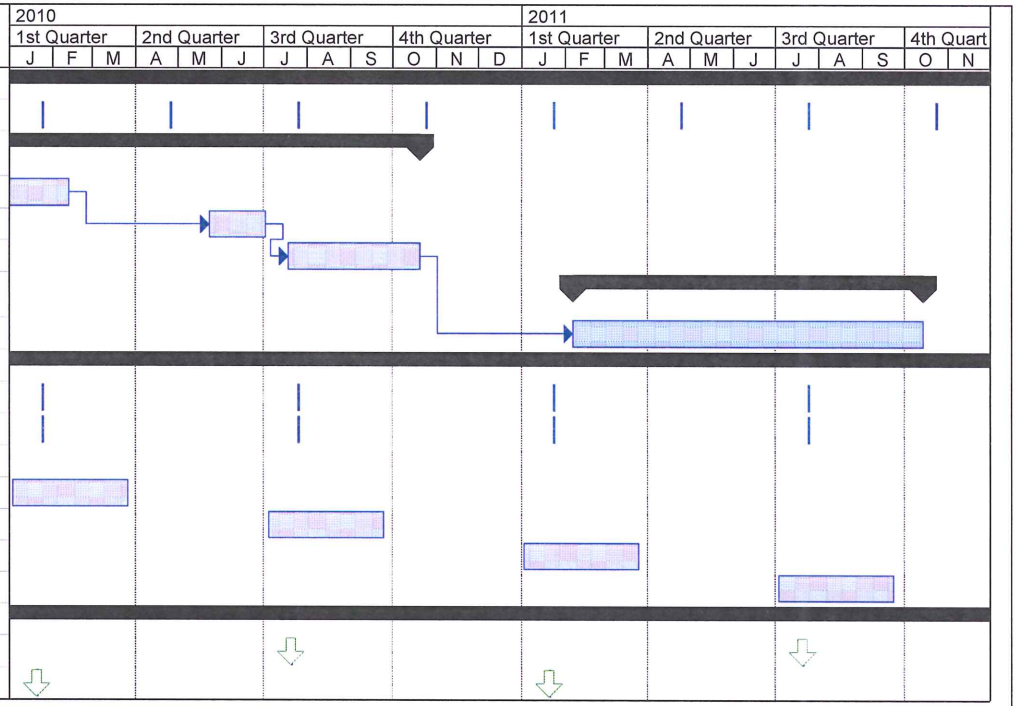


Figure E-5
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



APPENDIX F
UPDATED COMPLIANCE SCHEDULE

ID	Task Name/Permit or CP Section No.
1	**Facility Management**
2	General Inspection Requirements (quaterly) [Permit Section III.D; Table III.D]
26	**Addendum to the Affected Property Assessment Report (APAR) [Permit Section IX.A; CP Section VIII.D]**
27	Respond to TCEQ Comments on the APAR Addendum
28	Addition Delineation Field Investigation (Groundwater/Soil)
29	Prepare and Submit Final APAR Addendum
30	**Corrective Measures Implementation (CMI)/Response Action Plan (RAP) [CP Section VIII.F]**
31	Prepare and Submit Response Action Plan (RAP)
32	**Ground-Water Monitoring Program [Permit Section VI.A.; CP Section VI.]**
33	Water Level Measurements (Semiannually) [CP Section VI.C.4.a]1
46	Monitoring Well Inspections (Semiannually) [CP Section VI.C.4.a]1
69	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
70	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
71	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
72	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
73	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
74	**Response and Reporting [Permit Section II.B.7; CP Section VII.)**
75	First Semi-Annual GW Monitoring Report - July 21 [CP Section VII.C.2]
82	Second Semi-Annual GW Monitoring Report - January 21 [CP Section VII.C.2]



Compliance Schedule
UPRR Houston Wood Preserving Works Site
Houston, Texas

Task	Rolled Up Task	External Tasks	
Progress	Rolled Up Milestone	Project Summary	
Milestone	Rolled Up Progress	External Milestone	
Summary	Split	Deadline	

APPENDIX G
SURVEYED WELL ELEVATIONS

Doyle & Wachtstetter, Inc.
Surveying and Mapping • GPS/GIS
131 Commerce Street, Clute TX • (979)-265-3622

CLIENT: Pastor, Behling & Wheeler, LLC
LOCATION: Union Pacific Railroad Wood Preserving Works Facility at 4910 Liberty Road, Houston
D&W JOB #: 1975-10-07
DATE OF SURVEY: December 2, 2010

Monitor Well Locations at the Union Pacific Railroad Wood Preserving Works Facility at 4910 Liberty Road, Houston

NOTES:

1. Coordinates are relative to the Texas State Plane Coordinates System, NAD 27, South Central Zone, Lambert projection, and are based on City of Houston Control Monument 5558-0414 at called coordinate X = 3168368.22 and Y = 728881.39, as shown on the Thompson Surveying Company Project Drawing No.: ERM: #42209, DWG:981203MW.DWG.
2. Elevations are relative to City of Houston Vertical Datum and are based on the top of City of Houston Control Monument 5558-0414 at called elevation = 47.77 feet as shown on the Thompson Surveying Company Project Drawing No.: ERM: #42209, DWG:981203MW.DWG.
3. Coordinates and elevations are expressed in U.S. Survey feet.
4. D & W point numbers in this document correspond to points in field book " Union Pacific Mon.Wells Harris County, Volume 1, on file in the office of Doyle & Wachtstetter, Inc.
5. For additional information or assistance please contact Darrel Heidrich at 979-265-3622 (x118).

TEXAS STATE PLANE (NAD27) COORDINATE SUMMARY

D&W Pt. I.D.	STATE PLANE COORD.(NAD27)		C.O.Houston	
Monitor Well Name I.D.	EASTING	NORTHING	ELEV.	DESCRIPTION OF SURVEY POINT
MW-01A MW	3165936.53	728006.02	47.88	Top of Casing
MW-01A CONC	3165936.50	728004.71	46.76	Top of Concrete
MW-01A NG	3165936.59	728002.96	46.29	Natural Ground
MW-02 MW	3165856.29	728007.75	48.00	Top of Casing
MW-02 CONC	3165856.94	728006.90	46.47	Top of Concrete
MW-02 NG	3165858.65	728005.12	45.98	Natural Ground
MW-07 MW	3165866.22	727780.04	48.92	Top of Casing
MW-07 CONC	3165866.55	727780.74	46.45	Top of Concrete
MW-07 NG	3165866.93	727782.47	46.11	Natural Ground
MW-08 MW	3165970.88	727904.28	49.33	Top of Casing
MW-08 CONC	3165970.54	727905.23	47.00	Top of Concrete
MW-08 NG	3165970.79	727907.44	46.82	Natural Ground
MW-10A MW	3165864.96	727922.35	49.82	Top of Casing
MW-10A CONC	3165865.61	727922.20	47.29	Top of Concrete
MW-10A NG	3165867.35	727922.22	46.81	Natural Ground
MW-10B MW	3165864.63	727917.35	49.95	Top of Casing
MW-10B CONC	3165865.39	727917.36	47.69	Top of Concrete
MW-10B NG	3165867.21	727917.20	47.12	Natural Ground
MW-11A MW	3165868.31	727850.38	50.07	Top of Casing
MW-11A CONC	3165868.32	727851.46	47.87	Top of Concrete
MW-11A NG	3165868.75	727852.69	47.49	Natural Ground
MW-11B MW	3165868.48	727846.20	50.23	Top of Casing
MW-11B CONC	3165868.32	727847.19	47.86	Top of Concrete
MW-11B NG	3165870.92	727846.00	47.55	Natural Ground
P-10 MW	3165865.30	727786.63	47.73	Top of Casing
P-10 CONC	3165866.28	727785.86	46.50	Top of Concrete
P-10 NG	3165867.68	727784.50	46.14	Natural Ground
P-12 MW	3166125.93	727912.71	48.80	Top of Casing
P-12 CONC	3166125.72	727913.12	47.50	Top of Concrete
P-12 NG	3166125.30	727914.78	47.31	Natural Ground

APPENDIX H
LABORATORY DATA QA/QC REPORT CHECKLIST

FORMER HOUSTON WOOD PRESERVING WORKS
LABORATORY DATA QA/QC REPORT CHECKLIST
ANALYTICAL REPORT 1007402
JULY 2010

Facility Name: Former Houston Wood Preserving Works SWMU 1	**Permit/ISW Reg No.: 50343**	**For TCEQ Use Only**
Laboratory Name: ALS Environmental	**EPA I.D. No.:**	**Project Mgr:**
Reviewer Name: Jennifer Bush	**TCEQ Project Manager/Data Reviewer:**	
Date: December 29, 2010	**Date:**	

Description	Status	More in Case Narrative (Check Box)	Technically Complete
1. Were laboratory analyses performed by a laboratory accredited by TCEQ, whose accreditation included the matrix (ces), methods, and parameters associated with the data? If not was an explanation given in the Case-Narrative (e.g., laboratory exemption, accreditation for method /parameter not available from TCEQ)?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
2. Was a Case Narrative from laboratory (QC data description summary) submitted with the data set?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
3. Are the sample collection, preparation and analyses methods listed in the permit, preparation and analysis methods listed in the permit or other documents specifying criteria the ones used on the final report?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
4. Were there any modifications to the sample collection, preparation and/or analytical methodology (ies)? If so was the description included on the Case-Narrative?	Yes☐ No☒ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐
5. Were all samples prepared and analyzed within required holding times?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
6. Were samples properly preserved according to method and QAPP requirements?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐

Description	Status	More in Case Narrative (Check Box)	Technically Complete
7. Have the method detection limits (MDL) and/or practical quantitation limit (PQL) been defined in the final report? Note: NELAC uses terms limit of detection (LOD) and Limit of Quantitation respectively.	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
8. Do parameters listed on final report match regulatory parameters of concern (POC) specified in permit and/or Waste Analysis Plan or other required document? Note: POC may also be referred to chemicals of concern (COCs)	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
9. Are the POC's included within the analytical method's target analyte list?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
10. Were the appropriate type(s) of blanks analyzed?	Yes☒ No☐ NA☐	☐	
11. Did any blank samples contain POC concentrations >5x or 10x of MDL? If so, please explain potential bias?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐
12. Were method blanks taken through the entire preparation and analytical process?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
13. Did the calibration curve and continuing calibration verification meet regulatory (e.g. NELAC Standards) method specifications (No. of standards, acceptance criteria, etc.)?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
14. Do the initial calibration standards include a concentration below the regulatory limit/decision level? If not please explain? If an MDL and PQL are each used on a report then the relationship between the two must be defined for each method.	Yes☒ No☐ NA☐ Yes☐ No☐ NA☐	☐	Yes☐ No☐ NA☐
15. Were manual peak integrations performed? If so pre and post chromatograms and method change histories may be requested?	Yes☐ No☒ NA☐ Yes☐ No☐ NA☐	☐	Yes☐ No☐ NA☐
16. Were all results bracketed by a lower and upper range calibration standard?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
17. Was any result reported outside of the range of the calibration standards?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐
18. Were all matrix spike (MS) and MS duplicate (MSD) recoveries within the data decision making goals of QC data in the RCRA/UIC QAPP and/or within the laboratories control charts? If not were data flagged with explanation in case narrative?	Yes☐ No☐ NA☒ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐
19. Were all of the MS and MSD relative percent differences (RPDs) within the data decision making goals of QC data in the RCRA/UIC QAPP? If not were data flagged with explanation in case narrative?	Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐
20. Were all laboratory control sample (LCS) recoveries at least within the MS and MSD ranges of recoveries and within laboratories control charts? If not were data flagged with explanation in Case Narrative?	Yes☒ No☐ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐

Description	Status	More in Case Narrative (Check Box)	Technically Complete
21. Were all POCs (COCs) in the LCS?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
22. Were the MS and MSD from samples collected for this work order or other samples in the analytical batch as defined by the NELAC Standards? *This information is used to identify factors contributing to matrix interferences. It should not be assumed, unless it is understood by the laboratory, that samples relating to this report were the ones selected to be fortified with the POCs.*	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
23. Were any of the samples diluted? If so were appropriate calculations made to the MDL and/or PQL of the final report?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐

LABORATORY DATA REPORT QA/QC CHECKLIST
LABORATORY CASE-NARRATIVE
(To accompany laboratory checklist)

Facility Name:	**Permit/ISW Reg No.:**
Laboratory Name:	**EPA I.D. No.:**

Method No.	Non-conformance Description	Method Modification Description
	NA	

FORMER HOUSTON WOOD PRESERVING WORKS
LABORATORY DATA QA/QC REPORT CHECKLIST
ANALYTICAL REPORT 1007444
JULY 2010

Facility Name: Former Houston Wood Preserving Works SWMU 1	**Permit/ISW Reg No.: 50343**	**For TCEQ Use Only**
Laboratory Name: ALS Environmental	**EPA I.D. No.:**	**Project Mgr:**
Reviewer Name: Jennifer Bush	**TCEQ Project Manager/Data Reviewer:**	
Date: December 29, 2010	**Date:**	

Description	Status	More in Case Narrative (Check Box)	Technically Complete
1. Were laboratory analyses performed by a laboratory accredited by TCEQ, whose accreditation included the matrix (ces), methods, and parameters associated with the data? If not was an explanation given in the Case-Narrative (e.g., laboratory exemption, accreditation for method /parameter not available from TCEQ)?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
2. Was a Case Narrative from laboratory (QC data description summary) submitted with the data set?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
3. Are the sample collection, preparation and analyses methods listed in the permit, preparation and analysis methods listed in the permit or other documents specifying criteria the ones used on the final report?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
4. Were there any modifications to the sample collection, preparation and/or analytical methodology (ies)? If so was the description included on the Case-Narrative?	Yes☐ No☒ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐
5. Were all samples prepared and analyzed within required holding times?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
6. Were samples properly preserved according to method and QAPP requirements?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐

Description	Status	More in Case Narrative (Check Box)	Technically Complete
7. Have the method detection limits (MDL) and/or practical quantitation limit (PQL) been defined in the final report? Note: NELAC uses terms limit of detection (LOD) and Limit of Quantitation respectively.	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
8. Do parameters listed on final report match regulatory parameters of concern (POC) specified in permit and/or Waste Analysis Plan or other required document? Note: POC may also be referred to chemicals of concern (COCs)	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
9. Are the POC's included within the analytical method's target analyte list?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
10. Were the appropriate type(s) of blanks analyzed?	Yes☒ No☐ NA☐	☐	
11. Did any blank samples contain POC concentrations >5x or 10x of MDL? If so, please explain potential bias?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐
12. Were method blanks taken through the entire preparation and analytical process?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
13. Did the calibration curve and continuing calibration verification meet regulatory (e.g. NELAC Standards) method specifications (No. of standards, acceptance criteria, etc.)?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
14. Do the initial calibration standards include a concentration below the regulatory limit/decision level? If not please explain? If an MDL and PQL are each used on a report then the relationship between the two must be defined for each method.	Yes☒ No☐ NA☐ Yes☐ No☐ NA☐	☐	Yes☐ No☐ NA☐
15. Were manual peak integrations performed? If so pre and post chromatograms and method change histories may be requested?	Yes☒ No☐ NA☐ Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
16. Were all results bracketed by a lower and upper range calibration standard?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
17. Was any result reported outside of the range of the calibration standards?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐
18. Were all matrix spike (MS) and MS duplicate (MSD) recoveries within the data decision making goals of QC data in the RCRA/UIC QAPP and/or within the laboratories control charts? If not were data flagged with explanation in case narrative?	Yes☒ No☐ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐
19. Were all of the MS and MSD relative percent differences (RPDs) within the data decision making goals of QC data in the RCRA/UIC QAPP? If not were data flagged with explanation in case narrative?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
20. Were all laboratory control sample (LCS) recoveries at least within the MS and MSD ranges of recoveries and within laboratories control charts? If not were data flagged with explanation in Case Narrative?	Yes☒ No☐ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐

Description	Status	More in Case Narrative (Check Box)	Technically Complete
21. Were all POCs (COCs) in the LCS?	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
22. Were the MS and MSD from samples collected for this work order or other samples in the analytical batch as defined by the NELAC Standards? *This information is used to identify factors contributing to matrix interferences. It should not be assumed, unless it is understood by the laboratory, that samples relating to this report were the ones selected to be fortified with the POCs.*	Yes☒ No☐ NA☐	☐	Yes☐ No☐ NA☐
23. Were any of the samples diluted? If so were appropriate calculations made to the MDL and/or PQL of the final report?	Yes☐ No☒ NA☐	☐	Yes☐ No☐ NA☐

LABORATORY DATA REPORT QA/QC CHECKLIST
LABORATORY CASE-NARRATIVE
(To accompany laboratory checklist)

	Facility Name:	**Permit/ISW Reg No.:**
	Laboratory Name:	**EPA I.D. No.:**

Method No.	Non-conformance Description	Method Modification Description
SW8270	SVOC surrogate recoveries were outside the control limits for samples WG-1620-P10-20100714 and WG-1620-SMVX1-20100714. Results confirmed matrix interference by reanalysis.	