

Texas Commission on Environmental Quality

Remediation Division Correspondence Identification Form

SITE & PROGRAM AREA IDENTIFICATION			
SITE LOCATION		REMEDATION DIVISION PROGRAM AND FACILITY IDENTIFICATION	
Site Name: Union Pacific Railroad Houston Wood Preserving Works		Is This Site Being Managed Under A State Lead Contract? ☐ Yes ☒ No	
Address 1: 4910 Liberty Road		Program Area: IHW Corrective Action	
Address 2:		Mail Code: MC-127 (IHW)	
Houston State: Texas		Is This A New Site To This Program Area? ☐ Yes ☒ No	
Zip Code: 77026	County: Harris	Additional Information: SWR No. 31547	
TCEQ Region: Houston - 12		Additional Information: Permit/ Compliance Plan No. 50343	

DOCUMENT(S) IDENTIFICATION	
PHASE OF REMEDIATION	DOCUMENT NAME
1. Miscellaneous	2024 1st Semi-Annual Monitoring Report - SWMU 1
2. Please select a phase of remediation	
3. Please select a phase of remediation	
4. Please select a phase of remediation	
5. Please select a phase of remediation	

CONTACT INFORMATION			
☒ I attest that all work has been done in accordance with TCEQ rules		☒ I certify that I am aware misrepresentation of any claim is a violation.	
RESPONSIBLE PARTY/APPLICANT/CUSTOMER INFORMATION (IF APPLICABLE)			
Union Pacific Railroad			
ENVIRONMENTAL CONSULTANT/REPORT PREPARER/AGENT			
WSP USA Inc.			
SIGNATURES			

DATABASE CODES			
Document No.	TCEQ Database Term	Document No.	TCEQ Database Term
1.		4.	
2.		5.	
3.			



REPORT

Correction Action Monitoring Report

2024 First Semi-Annual Event

Former Houston Wood Preserving Works

4910 Liberty Road

Houston, Texas

Submitted to:



Submitted by:

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July 21, 2024

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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.

MLG
Signature

7/15/2024
Date

Mark Lutz
Name

AVP Fuel & Environmental
Title

1.0 EXECUTIVE SUMMARY

This semi-annual report presents a summary and evaluation of the Corrective Action Groundwater Monitoring for January through June 2024 for the Closed Surface Impoundment (Solid Waste Management Unit (SWMU) 1) at the former Wood Preserving Works facility (the Site) located in Houston, Texas. The groundwater monitoring activities for this period were performed by WSP USA Inc. (WSP), on behalf of Union Pacific Railroad (UPRR), in January 2024.

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 January 2024 sampling event show A-TZ groundwater generally flows towards SWMU 1 from the southeast to the northwest with a hydraulic gradient of approximately 0.013 ft/ft. Groundwater elevation data west of SWMU 1 indicates flow from the southwest to the northeast towards SWMU 1. Groundwater flow during the previous event (2023 second semi-annual monitoring event) in the A-TZ was observed to have a hydraulic gradient of approximately 0.03 ft/ft with a general flow direction outward from SWMU 1 to the northwest.

Groundwater elevation data collected in the B-TZ during the January 2024 sampling event indicate groundwater flows towards SWMU 1 is from the east with a hydraulic gradient of approximately 0.015 ft/ft. Groundwater elevation data west of SWMU 1 indicates flow from the west to the east towards SWMU 1. Groundwater flow during the previous event (2023 second semi-annual monitoring event) was observed to have a hydraulic gradient of approximately 0.005 ft/ft with a general flow direction to the west-northwest across SWMU 1.

Analytical results from the semi-annual sampling event were compared to Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) Protective Concentration Limits (PCLs) or Groundwater Protection Standards (GWPs), as designated in Section IV.D of the Compliance Plan, dated June 10, 2005. Constituent concentrations were below their respective PCLs during the 2024 first semi-annual monitoring period. All POC monitoring wells in 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 2024 first semi-annual monitoring period (January through June) 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) 1).

On behalf of UPRR, WSP USA Inc. (WSP) conducted groundwater monitoring activities at SWMU 1 on January 2 and 3, 2024 (water level measurements and groundwater sampling). Groundwater monitoring activities included sampling and gauging the background and point of compliance (POC) wells and piezometers associated with SWMU 1. The sampling event, analytical data, and data evaluation provided in this report fulfill the semi-annual corrective action reporting requirements for the first half of 2024 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

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 June 2024, a recovery system had not been installed and is not necessary for the regulated unit. 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.

3.0 2024 FIRST 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 First 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.

3.1.1 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

WSP performed quarterly inspections of SWMU 1 in January and April 2024 and conducted the first semi-annual groundwater sampling activities on January 2 and 3, 2024. 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 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 Environmental in Houston, Texas for laboratory analysis. Chain-of-Custody 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 five gallons of purge water were generated during the January 2024 low-flow groundwater sampling event. The purge water was containerized in a Department of Transportation (DOT) certified, 55-gallon steel drum, combined with purge water from site-wide sampling activities, and temporarily stored on site in a fenced and locked container storage area (NOR 007). Wastes generated during the SWMU 1 sampling event in 2024 were transported from the Site by OMI to the US Ecology Robstown facility, located in Robstown, Texas in February 2024. The waste manifest is 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 2024 first 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 concentrations exceeded the concentration limits of this report, the concentration is bolded within the table.

Quality assurance/quality control (QA/QC) samples (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) was 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 2024 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.

Based on groundwater elevation data collected in the A-TZ during the January 2024 gauging event, groundwater flows across SWMU 1 from the southeast with a hydraulic gradient of approximately 0.013 ft/ft. Groundwater elevation data west of SWMU 1 indicates flow from the southwest to the northeast towards SWMU 1. Groundwater flow during the previous event (2023 second semi-annual monitoring event) in the A-TZ was observed to have a hydraulic gradient of approximately 0.03 ft/ft with a general flow direction outward from SWMU 1 to the northwest.

Groundwater elevation data collected in the B-TZ show groundwater flow across SWMU 1 from the east with a hydraulic gradient of approximately 0.015 ft/ft. Groundwater elevation data west of SWMU 1 indicates flow from the west to the east towards SWMU 1. Groundwater flow during the previous event (2023 second semi-annual monitoring event) was observed to have hydraulic gradient of approximately 0.005 ft/ft with a general flow direction to the west-northwest across SWMU 1.

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 1; therefore, this provision is not applicable.

3.9 Contaminant Mass Recovered

With 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:

- Analytical results may be either directly compared with PCLs (CP Table III; included in Appendix A), or
- Analytical results can be statistically compared with 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 monitoring event, the compliance wells completed in both transmissive zones are compliant with GWPSs. Compliance status for each of the monitoring wells is provided in Table 5.

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 with sporadic detections.

A QA/QC review and Data Usability Summary (DUS) were prepared for the January 2024 analytical data by GHD Services Inc. (Appendix C). The laboratory qualified analytes with concentrations above the sample detection limits (SDLs) but below the method quantitation limits (MQLs) as estimated on analytical tables (Tables 1 and 2).

3.11 Reported Concentration Maps

Reported concentrations of each constituent analyzed for the 2024 first semi-annual monitoring event are presented on Figures 5 and 6 for the A-TZ and B-TZ compliance wells, respectively. Constituent concentrations in the POC and background wells were below PCLs. POC wells have been in compliance with the concentration limits during the last 9 semi-annual sampling events (4.5 years).

3.12 Extent of NAPL

No measurable amounts of LNAPL or DNAPL were 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. However, a RCRA Part A and Part B Permit Renewal Application with a Major Modification to the Compliance Plan was submitted on December 10, 2014, with revisions dated December 7, 2015, July 29, 2016, June 24, 2017, July 9, 2019, August 31, 2020, October 26, 2020, and January 15, 2021. The TCEQ completed the technical review of the Permit Renewal Application and prepared a preliminary decision and final draft permit. The application is currently in the public comment review period. A Class 1 Permit Modification to update the facility contact information was submitted on February 28, 2018 and approved by the TCEQ in a letter dated March 20, 2018.

3.16 Corrective Measures Implementation (CMI) Report

A Response Action Plan (RAP) was submitted with the Compliance Plan to the TCEQ on December 10, 2014 with revisions dated December 7, 2015, July 29, 2016, June 24, 2017, July 9, 2019, August 31, 2020, October 26, 2020 and January 15, 2021.

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 1 monitoring well elevations to be resurveyed every five years, the six A-TZ and four B-

TZ monitoring well elevations were surveyed in December 2020. The top of casing elevations in Table 4 are based on the December 2020 survey.

3.18 Recommendation for Changes

As detailed in a response letter to TCEQ dated August 5, 2020, SWMU 1 will remain in the Corrective Action Program and continue to be evaluated in accordance with Section IV.F.3 of the CP. Once the compliance monitoring objectives are met, UPRR will propose to switch to the compliance monitoring program following issuance of the renewed permit.

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: 2024 First Semi-Annual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)																				
		MW-01A			FD-01 (MW-01A)			MW-02			MW-07			MW-08			MW-10A			MW-11A		
		1/2/2024	LQ	VQ	1/2/2024	LQ	VQ	1/2/2024	LQ	VQ	1/3/2024	LQ	VQ	1/3/2024	LQ	VQ	1/2/2024	LQ	VQ	1/2/2024	LQ	VQ
Acenaphthene	1.5	0.024			0.023			0.015			0.000027	U	U	0.000027	U	U	0.00018			0.000027	U	U
Acenaphthylene	1.5	0.000015	U	U	0.00028		J	0.000015	U	U	0.000015	U	U	0.000015	U	U	0.000015	U	U	0.000015	U	U
Anthracene	7.3	0.00063			0.00073			0.00023			0.0002			0.000014	U	U	0.000014	U	U	0.000014	U	U
bis(2-ethylhexyl)phthalate	0.006	0.000037	U	U	0.000037	U	U	0.000037	U	U	0.000037	U	U	0.000037	U	U	0.000054	J	J	0.000037	U	U
Dibenzofuran	0.098	0.0084			0.0067			0.00068			0.00002	U	U	0.00002	U	U	0.00002	U	U	0.00002	U	U
Fluoranthene	0.98	0.0008		J	0.0012		J	0.00039			0.00001	U	U	0.000038	J	J	0.00001	U	U	0.00001	U	U
Fluorene	0.98	0.0099			0.0097			0.0095			0.00003	U	U	0.00003	U	U	0.00003	U	U	0.00003	U	U
2-Methylnaphthalene	0.098	0.00039		J	0.00021		J	0.0001			0.000019	U	U	0.000019	U	U	0.000019	U	U	0.000019	U	U
Naphthalene	0.49	0.00002	U	U	0.00002	U	U	0.0001			0.00002	U	U	0.00002	U	U	0.00002	U	U	0.00002	U	U
Phenanthrene	0.73	0.00069			0.00075			0.00022			0.000021	U	U	0.000021	U	U	0.000021	U	U	0.000021	U	U
Pyrene	0.73	0.00044		J	0.00067		J	0.0002			0.000019	U	U	0.00006	J	J	0.000019	U	U	0.000019	U	U

Notes:

PCL = Protective Concentration Level

The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL

FD-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

J = Estimated concentration

U = Non-detect due to low concentrations detected in the associated field blank

Table 2
Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
Semiannual Monitoring Report: 2024 First Semi-Annual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)														
		MW-10B			MW-11B			P-10			FD-02 (P-10)			P-12		
		1/2/2024	LQ	VQ	1/2/2024	LQ	VQ	1/3/2024	LQ	VQ	1/3/2024	LQ	VQ	1/2/2024	LQ	VQ
Acenaphthene	1.5	0.013			0.05			0.000027	U	UJ	0.00014		J	0.000027	U	U
Acenaphthylene	1.5	0.00011			0.00052			0.000015	U	U	0.000015	U	U	0.000015	U	U
Anthracene	7.3	0.00036			0.0027			0.000014	U	U	0.000014	U	U	0.000014	U	U
bis(2-ethylhexyl)phthalate	0.006	0.000037	U	U	0.000037	U	U	0.000037	U	UJ	0.00012	J	J	0.000037	U	U
Dibenzofuran	0.098	0.0014			0.0056			0.00002	U	U	0.00002	U	U	0.00002	U	U
Di-n-butyl phthalate	2.4	0.00002	U	U	0.00002	U	U	0.00002	U	U	0.00002	U	U	0.00002	U	U
Fluoranthene	0.98	0.00072			0.0054			0.00001	U	U	0.00001	U	U	0.00001	U	U
Fluorene	0.98	0.0056			0.02			0.00003	U	UJ	0.00011		J	0.00003	U	U
Naphthalene	0.49	0.00014			0.00002	U	U	0.00002	U	U	0.00002	U	U	0.00002	U	U
Phenol	7.3	0.000035	U	U	0.000035	U	U	0.000035	U	U	0.000035	U	U	0.000035	U	U
Pyrene	0.73	0.00053			0.0032			0.000019	U	U	0.000019	U	U	0.000019	U	U

Notes:

PCL = Protective Concentration Level

The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL

FD-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

J = Estimated concentration

U = Non-detect due to low concentrations detected in the associated field blank

Table 3
Summary of Analytical Results for Quality Assurance/Quality Control Samples
Semiannual Monitoring Report: 2024 First Semi-Annual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	P-12(MS) ⁽¹⁾		P-12(MSD) ⁽¹⁾	
	Matrix Spike		Matrix Spike Duplicate	
	1/2/2024		1/2/2024	
Acenaphthene	3.522		3.893	
Acenaphthylene	3.432		3.699	
Anthracene	4.227		4.47	
bis(2-ethylhexyl)phthalate	4.605		4.445	
Dibenzofuran	3.742		4.081	
Fluoranthene	4.301		4.471	
Fluorene	3.866		3.849	
2-Methylnaphthalene	3.912		4.475	
Naphthalene	3.954		3.895	
Phenanthrene	4.14		4.472	
Pyrene	5.021		5.009	

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.

N = Relative percent difference of the MS and MSD exceeds the control limits.

Table 4
Water Level Measurements
Semiannual Monitoring Report: 2024 First Semi-Annual 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	47.85	1/2/2024	5.17	ND	20.2	19.85	42.68
MW-02	47.93	1/2/2024	5.77	ND	20.3	24.05	42.16
MW-07	48.87	1/2/2024	5.11	ND	25.9	22.25	43.76
MW-08	49.30	1/2/2024	5.51	ND	26.8	25.05	43.79
MW-10A	49.91	1/2/2024	7.13	ND	25.9	20.15	42.78
MW-11A	50.21	1/2/2024	7.34	ND	24.4	24.05	42.87
B-TZ Monitoring Locations							
MW-10B	49.85	1/2/2024	7.28	ND	48.8	46.45	42.57
MW-11B	50.09	1/2/2024	7.53	ND	46.8	46.65	42.56
P-10	47.91	1/2/2024	4.27	ND	40.0	42.85	43.64
P-12	48.65	1/2/2024	4.92	ND	40.0	42.80	43.73

Notes

BTOC = feet below the top of the well casing

ft. MSL = feet above Mean Sea Level

ND = Not Detected

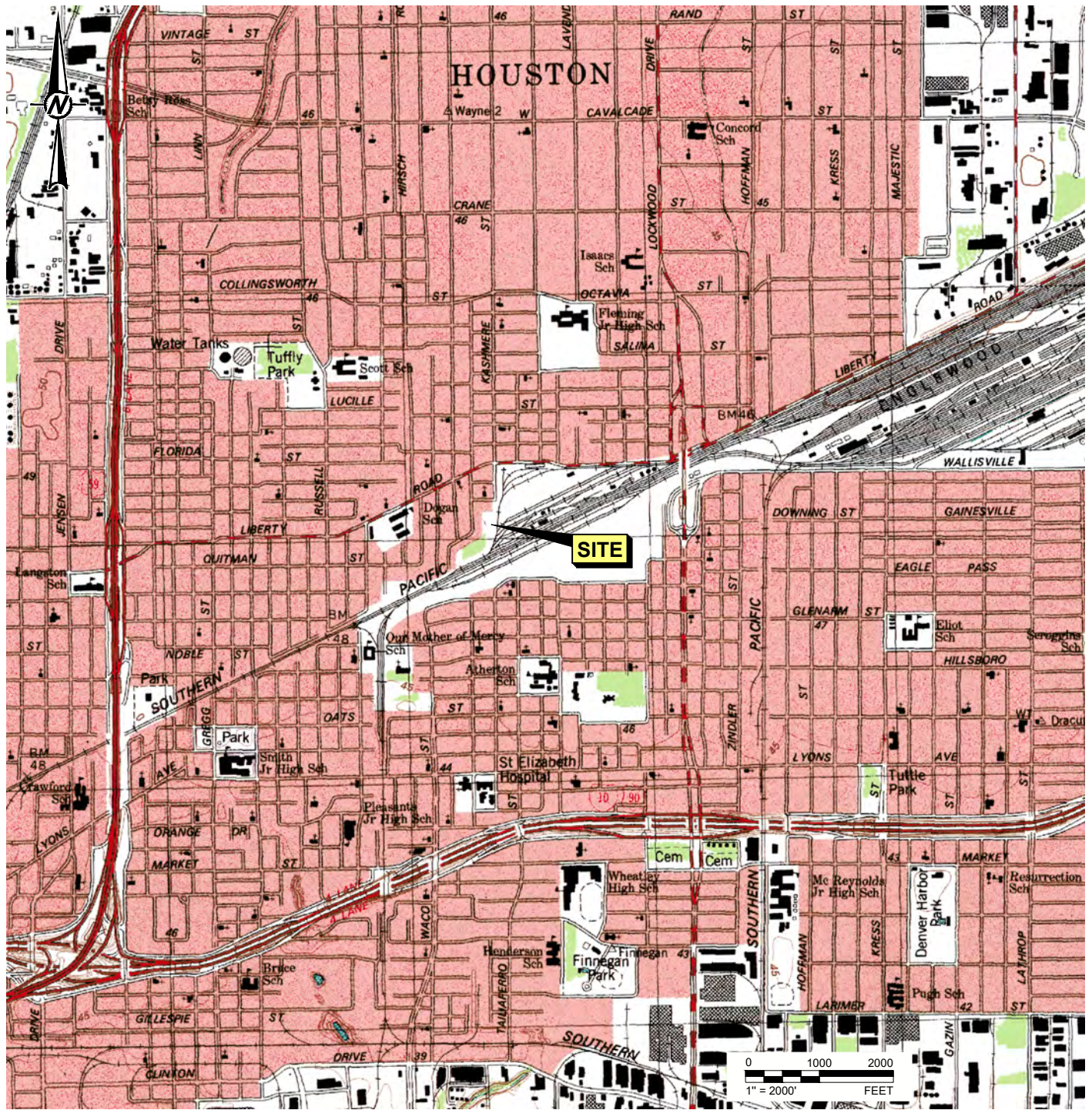
*TOC elevations based on December 2020 survey (see Section 3.17)

Table 5
Compliance Status of Wells and Piezometers
Semiannual Monitoring Report: 2024 First Semi-Annual 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



REFERENCE(S)
BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE, SETTEGAST, TEXAS, 1982

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

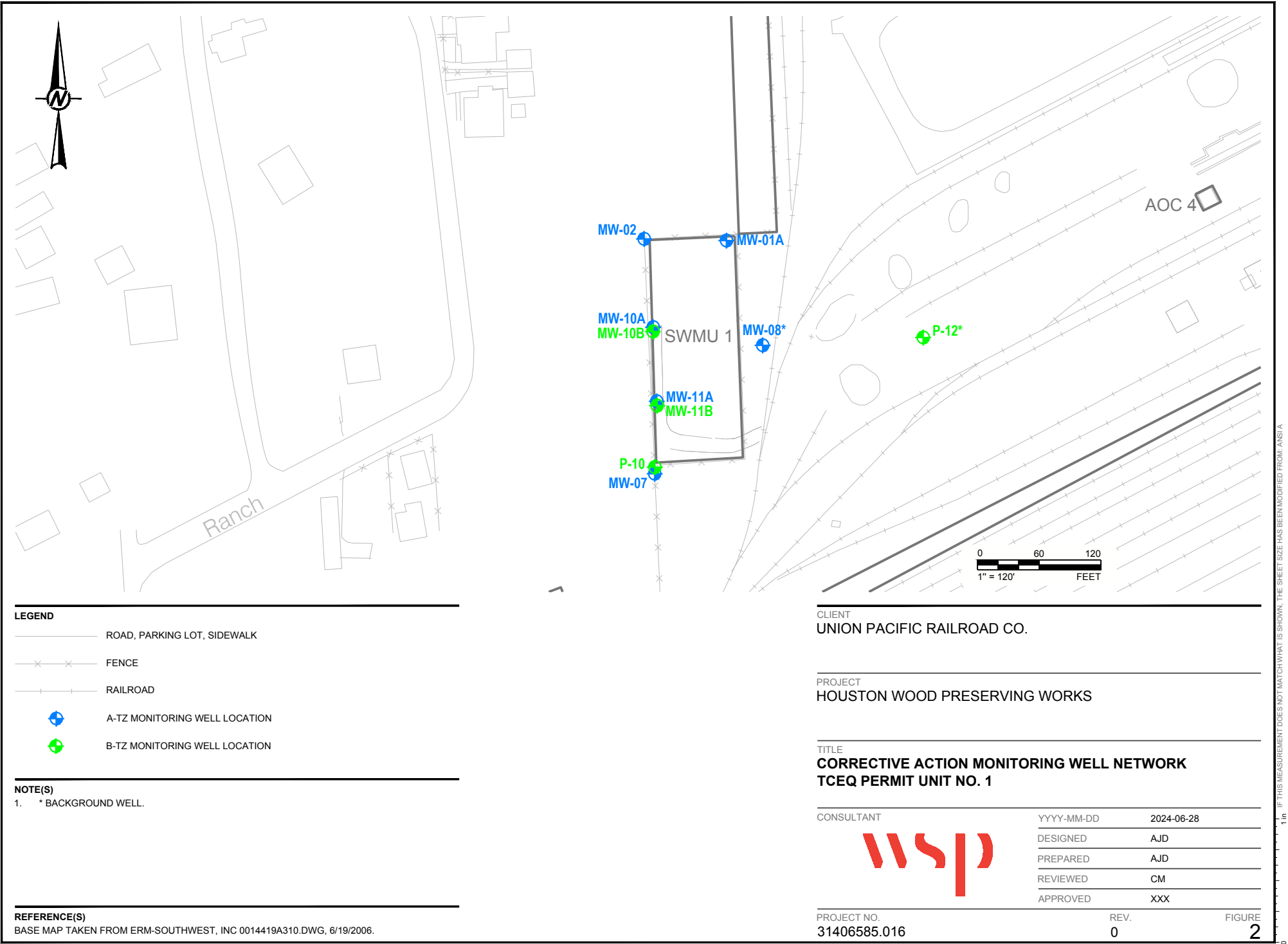
TITLE
SITE LOCATION MAP

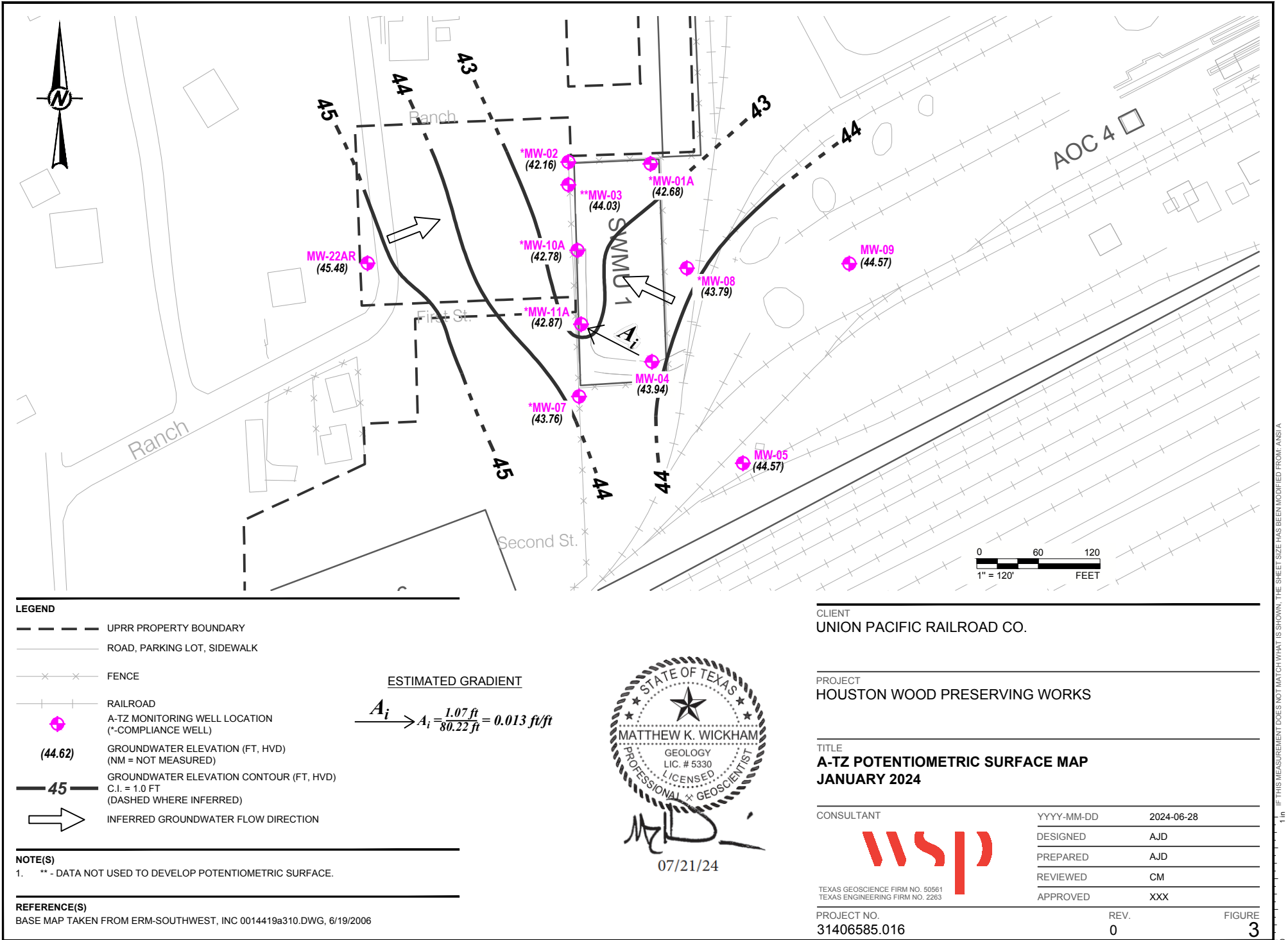
CONSULTANT	YYYY-MM-DD	2024-06-28
	DESIGNED	AJD
	PREPARED	AJD
	REVIEWED	CM
	APPROVED	XXX

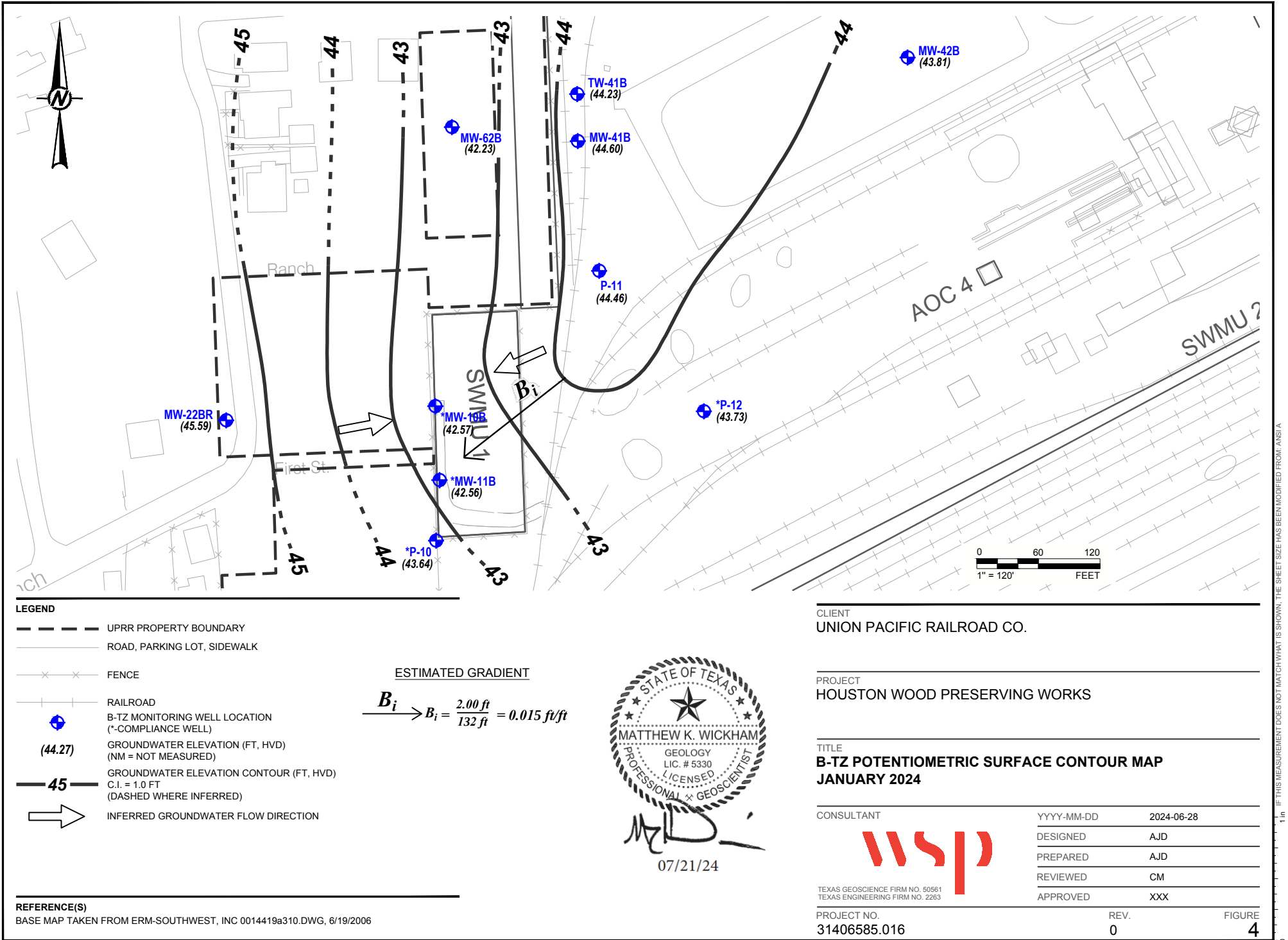
PROJECT NO. 31406585.016 REV. 0 FIGURE 1



QUADRANGLE LOCATION









Ranch

Constituent	Conc. (mg/L)
Acenaphthene	0.015
Acenaphthylene	<0.000015
Anthracene	0.00023
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	0.00068
Fluoranthene	0.00039
Fluorene	0.0095
2-Methylnaphthalene	0.0001
Naphthalene	0.0001
Phenanthrene	0.00022
Pyrene	0.0002

Constituent	Conc. (mg/L)	Conc. (mg/L) *
Acenaphthene	0.024	0.023
Acenaphthylene	<0.000015	0.00028 J
Anthracene	0.00063	0.00073
bis(2-ethylhexyl)phthalate	<0.000037	<0.000037
Dibenzofuran	0.0084	0.0067
Fluoranthene	0.0008 J	0.0012 J
Fluorene	0.0099	0.0097
2-Methylnaphthalene	0.00039 J	0.00021 J
Naphthalene	<0.00002	<0.00002
Phenanthrene	0.00069	0.00075
Pyrene	0.00044 J	0.00067 J

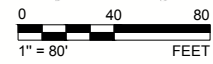
Constituent	Conc. (mg/L)
Acenaphthene	0.00018
Acenaphthylene	<0.000015
Anthracene	<0.000014
bis(2-ethylhexyl)phthalate	0.000054 J
Dibenzofuran	<0.00002
Fluoranthene	<0.00001
Fluorene	<0.00003
2-Methylnaphthalene	<0.000019
Naphthalene	<0.00002
Phenanthrene	<0.000021
Pyrene	<0.000019

Constituent	Conc. (mg/L)
Acenaphthene	<0.000027
Acenaphthylene	<0.000015
Anthracene	<0.000014
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	<0.00002
Fluoranthene	<0.00001
Fluorene	<0.00003
2-Methylnaphthalene	<0.000019
Naphthalene	<0.00002
Phenanthrene	<0.000021
Pyrene	<0.000019

Constituent	Conc. (mg/L)
Acenaphthene	<0.000027
Acenaphthylene	<0.000015
Anthracene	0.0002
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	<0.00002
Fluoranthene	<0.00001
Fluorene	<0.00003
2-Methylnaphthalene	<0.000019
Naphthalene	<0.00002
Phenanthrene	<0.000021
Pyrene	<0.000019

Constituent	Conc. (mg/L)
Acenaphthene	<0.000027
Acenaphthylene	<0.000015
Anthracene	<0.000014
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	<0.00002
Fluoranthene	0.000038 J
Fluorene	<0.0003
2-Methylnaphthalene	<0.000019
Naphthalene	<0.00002
Phenanthrene	<0.000021
Pyrene	0.00006 J

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
Phenanthrene	0.73
Pyrene	0.73



LEGEND

- FENCE
- RAILROAD
- A-TZ MONITORING WELL LOCATION

NOTE(S)

1. SAMPLES COLLECTED IN JANUARY 2024.
2. J = ESTIMATED CONCENTRATION.
3. < = VALUE NOT DETECTED GREATER THAN MDL.
4. * = FIELD DUPLICATE

REFERENCE(S)

BASE MAP TAKEN FROM ERM-SOUTHWEST, INC 0014419a310.DWG, 6/19/2006.

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

TITLE
**A-TZ REPORTED CONCENTRATIONS
2024 1ST SEMI-ANNUAL MONITORING EVENT**

CONSULTANT	WSP	YYYY-MM-DD	2024-06-28
DESIGNED		AJD	
PREPARED		AJD	
REVIEWED		CM	
APPROVED		XXX	

PROJECT NO.	31406585.016	REV.	0	FIGURE	5
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Last Edited By: adiamond Date: 2024-06-28 Time: 1:40:42 PM | Printed By: adiamond Date: 2024-06-28 Time: 2:08:44 PM
Path: \\golder-gds-complex\data\office\Texas\kna\Projects - Round Rock_2019\19119232 - HMP\WVO-Semi-Annual Monitoring Event\SWMU Figures\2024 - 1st Semi-Annual | File Name: 005 - A-TZ Reported Concentrations 2024 1st SEMI.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A



Constituent	Conc. (mg/L)
Acenaphthene	0.013
Acenaphthylene	0.00011
Anthracene	0.00036
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	0.0014
Di-n-butyl Phthalate	<0.000020
Fluoranthene	0.00072
Fluorene	0.0056
Naphthalene	0.00014
Phenol	<0.000035
Pyrene	0.00053

MW-10B

Constituent	Conc. (mg/L)
Acenaphthene	0.05
Acenaphthylene	0.00052
Anthracene	0.0027
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	0.0056
Di-n-butyl Phthalate	<0.000020
Fluoranthene	0.0054
Fluorene	0.02
Naphthalene	<0.00002
Phenol	<0.000035
Pyrene	0.0032

MW-11B

P-10

Constituent	Conc. (mg/L)	Conc. (mg/L) *
Acenaphthene	<0.000027 J	0.00014 J
Acenaphthylene	<0.000015	<0.000015
Anthracene	<0.000014	<0.000014
bis(2-ethylhexyl)phthalate	<0.000037 J	0.00012 J
Dibenzofuran	<0.00002	<0.00002
Di-n-butyl Phthalate	<0.00002	<0.00002
Fluoranthene	<0.00001	<0.00001
Fluorene	<0.00003 J	0.00011 J
Naphthalene	<0.00002	<0.00002
Phenol	<0.000035	<0.000035
Pyrene	<0.000019	<0.000019

Constituent	Conc. (mg/L)
Acenaphthene	<0.000027
Acenaphthylene	<0.000015
Anthracene	<0.000014
bis(2-ethylhexyl)phthalate	<0.000037
Dibenzofuran	<0.00002
Di-n-butyl Phthalate	<0.00002
Fluoranthene	<0.00001
Fluorene	<0.00003
Naphthalene	<0.00002
Phenol	<0.000035
Pyrene	<0.000019

P-12

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



LEGEND

- FENCE
- RAILROAD
- B-TZ MONITORING WELL LOCATION
- PIEZOMETER LOCATION

NOTE(S)

- SAMPLES COLLECTED IN JANUARY 2024.
- J = ESTIMATED CONCENTRATION.
- < = VALUE NOT DETECTED GREATER THAN MDL.
- * = FIELD DUPLICATE

REFERENCE(S)

BASE MAP TAKEN FROM ERM-SOUTHWEST, INC 0014419a310.DWG, 6/19/2006.

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

TITLE
**B-TZ REPORTED CONCENTRATIONS
2024 1st SEMI-ANNUAL MONITORING EVENT**

CONSULTANT



TEXAS GEOSCIENCE FIRM NO. 50561
TEXAS ENGINEERING FIRM NO. 2263

YYYY-MM-DD 2024-06-28

DESIGNED AJD

PREPARED AJD

REVIEWED CM

APPROVED XXX

PROJECT NO.
31406585.016

REV.
0

FIGURE
6

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)

<u>A-Transmissive Zone</u>		<u>B-Transmissive Zone</u>	
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.

TABLE V
Designation of Wells by Function

POINT OF COMPLIANCE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-01A, MW-02, MW-07, MW-10A, and MW-11A
B-Transmissive Zone: MW-10B, MW-11B, and P-10

POINT OF EXPOSURE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
None

BACKGROUND WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-8
B-Transmissive Zone: P-12

Note: Wells and piezometers identified on Attachment A maps that are not listed in this table are subject to change, upon approval by the executive director, without modification to the Compliance Plan. The wells and piezometers for the Closed Surface Impoundment are depicted on Attachment A, Sheets 3 and 4.

APPENDIX B

Field Parameters



Table B-1
Groundwater Sampling Field Parameters
Semiannual Monitoring Report: 2024 First Semi-Annual 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
	1/2/2024	1/2/2024	1/3/2024	1/3/2024	1/2/2024	1/2/2024	1/2/2024	1/2/2024	1/3/2024	1/2/2024
Time Sampled (hrs CST)	14:55	13:55	9:00	8:05	13:10	11:40	12:25	10:50	9:55	16:10
Temperature (°C)	21.5	21.9	22.4	21.1	21.9	21.4	21.6	22.5	-	22.2
pH (Standard Units)	6.78	6.63	6.76	6.93	6.65	6.73	6.87	6.94	-	7.08
Specific Conductivity (mmhos/cm)	950	1,140	780	980	1,020	830	1,030	950	-	830
Dissolved Oxygen (mg/L)	0.57	0.29	0.34	0.53	0.57	0.59	0.73	0.81	-	0.42
Turbidity (NTU)	6.7	7.4	6.4	6.9	3.2	2.9	5.6	4.6	-	2.9

APPENDIX C

**Laboratory Analytical Reports and
Data Usability Summaries**





10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

January 12, 2024

Eric Matzner
WSP Austin
1601 S. MoPac Expressway
Suite 325D
Austin, TX 78746

Work Order: **HS24010212**

Laboratory Results for: **Houston TX-Wood Preserving Works 1620-02**

Dear Eric Matzner,

ALS Environmental received 14 sample(s) on Jan 04, 2024 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental 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 Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

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

Sincerely,

Generated By: JUMOKE.LAWAL
James Guin

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

**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:

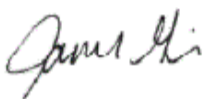
- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC Chapter 5,
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - 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) and detectability check sample results for each analyte for each method and matrix.
- R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

**TRRP Laboratory Data
Package Cover Page**

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are 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 have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: ☒ [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by ☐ TCEQ or ☐ _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.



James Guin

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group				LRC Date: 01/12/2024			
Project Name: Houston TX-Wood Preserving Works 1620-02				Laboratory Job Number: HS24010212			
Reviewer Name: James Guin				Prep Batch Number(s): 205693			
# 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 SDLs?	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 DCs 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 and 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: Supporting Data							
Laboratory Name: ALS Laboratory Group				LRC Date: 01/12/2024			
Project Name: Houston TX-Wood Preserving Works 1620-02				Laboratory Job Number: HS24010212			
Reviewer Name: James Guin				Prep Batch Number(s): 205693			
# 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			1
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: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 01/12/2024
Project Name: Houston TX-Wood Preserving Works 1620-02	Laboratory Job Number: HS24010212
Reviewer Name: James Guin	Prep Batch Number(s): 205693
ER# ⁵	Description
1	Batch 205696, Semivolatiles Method SW8270, sample WG-1620-FD01-20240102, Low area counts for 1, 4-Dichlorobenzene, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12 and Perylene-d12. Batch 205696, Semivolatiles Method SW8270, sample WG-1620-MW11B-20240102, Low area counts for 1, 4-Dichlorobenzene, Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12 and Perylene-d12. Batch 205693 Semivolatiles Method SW8270, sample WG-1620-P12-20240102, Low area counts for 1, 4-Dichlorobenzene, Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12 and Perylene-d12. and confirmed by MS/MSD
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).	

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
Work Order: HS24010212

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24010212-01	WG-1620-MW11B-20240102	Water		02-Jan-2024 10:50	04-Jan-2024 11:35	☐
HS24010212-02	WG-1620-MW11A-20240102	Water		02-Jan-2024 11:40	04-Jan-2024 11:35	☐
HS24010212-03	WG-1620-MW10B-20240102	Water		02-Jan-2024 12:25	04-Jan-2024 11:35	☐
HS24010212-04	WG-1620-MW10A-20240102	Water		02-Jan-2024 13:10	04-Jan-2024 11:35	☐
HS24010212-05	WG-1620-MW02-20240102	Water		02-Jan-2024 13:55	04-Jan-2024 11:35	☐
HS24010212-06	WG-1620-MW01A-20240102	Water		02-Jan-2024 14:55	04-Jan-2024 11:35	☐
HS24010212-07	WG-1620-FD01-20240102	Water		02-Jan-2024 14:55	04-Jan-2024 11:35	☐
HS24010212-08	WG-1620-P12-20240102	Water		02-Jan-2024 16:10	04-Jan-2024 11:35	☐
HS24010212-09	WG-1620-FB01-20240102	Water		02-Jan-2024 16:45	04-Jan-2024 11:35	☐
HS24010212-10	WG-1620-MW08-20240103	Water		03-Jan-2024 08:05	04-Jan-2024 11:35	☐
HS24010212-11	WG-1620-MW07-20240103	Water		03-Jan-2024 09:00	04-Jan-2024 11:35	☐
HS24010212-12	WG-1620-P10-20240103	Water		03-Jan-2024 09:55	04-Jan-2024 11:35	☐
HS24010212-13	WG-1620-FD02-20240103	Water		03-Jan-2024 09:55	04-Jan-2024 11:35	☐
HS24010212-14	WG-1620-FB02-20240103	Water		03-Jan-2024 10:20	04-Jan-2024 11:35	☐

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW11B-20240102
 Collection Date: 02-Jan-2024 10:50

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-01
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	0.050		0.00027	0.0010	mg/L	10	09-Jan-2024 22:27
Acenaphthylene	0.00052		0.000015	0.00010	mg/L	1	09-Jan-2024 02:16
Anthracene	0.0027		0.000014	0.00010	mg/L	1	09-Jan-2024 02:16
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 02:16
Dibenzofuran	0.0056		0.000020	0.00010	mg/L	1	09-Jan-2024 02:16
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	09-Jan-2024 02:16
Fluoranthene	0.0054		0.000010	0.00010	mg/L	1	09-Jan-2024 02:16
Fluorene	0.020		0.00030	0.0010	mg/L	10	09-Jan-2024 22:27
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 02:16
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	09-Jan-2024 02:16
Pyrene	0.0032		0.000019	0.00010	mg/L	1	09-Jan-2024 02:16
Surr: 2,4,6-Tribromophenol	101			34-129	%REC	1	09-Jan-2024 02:16
Surr: 2,4,6-Tribromophenol	108			34-129	%REC	10	09-Jan-2024 22:27
Surr: 2-Fluorobiphenyl	71.3			40-125	%REC	1	09-Jan-2024 02:16
Surr: 2-Fluorobiphenyl	84.3			40-125	%REC	10	09-Jan-2024 22:27
Surr: 2-Fluorophenol	48.4			20-120	%REC	10	09-Jan-2024 22:27
Surr: 2-Fluorophenol	82.5			20-120	%REC	1	09-Jan-2024 02:16
Surr: 4-Terphenyl-d14	96.3			40-135	%REC	10	09-Jan-2024 22:27
Surr: 4-Terphenyl-d14	90.0			40-135	%REC	1	09-Jan-2024 02:16
Surr: Nitrobenzene-d5	75.4			41-120	%REC	10	09-Jan-2024 22:27
Surr: Nitrobenzene-d5	65.3			41-120	%REC	1	09-Jan-2024 02:16
Surr: Phenol-d6	62.3			20-120	%REC	1	09-Jan-2024 02:16
Surr: Phenol-d6	82.6			20-120	%REC	10	09-Jan-2024 22:27

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW11A-20240102
 Collection Date: 02-Jan-2024 11:40

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-02
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 21:25
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	09-Jan-2024 21:25
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 21:25
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	09-Jan-2024 21:25
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 21:25
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 21:25
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	09-Jan-2024 21:25
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	09-Jan-2024 21:25
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 21:25
Phenanthrene	< 0.000021		0.000021	0.00010	mg/L	1	09-Jan-2024 21:25
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 21:25
Surr: 2,4,6-Tribromophenol	81.8			34-129	%REC	1	09-Jan-2024 21:25
Surr: 2-Fluorobiphenyl	81.3			40-125	%REC	1	09-Jan-2024 21:25
Surr: 2-Fluorophenol	56.1			20-120	%REC	1	09-Jan-2024 21:25
Surr: 4-Terphenyl-d14	84.0			40-135	%REC	1	09-Jan-2024 21:25
Surr: Nitrobenzene-d5	74.7			41-120	%REC	1	09-Jan-2024 21:25
Surr: Phenol-d6	75.9			20-120	%REC	1	09-Jan-2024 21:25

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW10B-20240102
 Collection Date: 02-Jan-2024 12:25

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-03
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	0.013		0.00027	0.0010	mg/L	10	09-Jan-2024 22:47
Acenaphthylene	0.00011		0.000015	0.00010	mg/L	1	09-Jan-2024 02:59
Anthracene	0.00036		0.000014	0.00010	mg/L	1	09-Jan-2024 02:59
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 02:59
Dibenzofuran	0.0014		0.000020	0.00010	mg/L	1	09-Jan-2024 02:59
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	09-Jan-2024 02:59
Fluoranthene	0.00072		0.000010	0.00010	mg/L	1	09-Jan-2024 02:59
Fluorene	0.0056		0.000030	0.00010	mg/L	1	09-Jan-2024 02:59
Naphthalene	0.00014		0.000020	0.00010	mg/L	1	09-Jan-2024 02:59
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	09-Jan-2024 02:59
Pyrene	0.00053		0.000019	0.00010	mg/L	1	09-Jan-2024 02:59
Surr: 2,4,6-Tribromophenol	75.3			34-129	%REC	1	09-Jan-2024 02:59
Surr: 2,4,6-Tribromophenol	75.1			34-129	%REC	10	09-Jan-2024 22:47
Surr: 2-Fluorobiphenyl	56.5			40-125	%REC	1	09-Jan-2024 02:59
Surr: 2-Fluorobiphenyl	68.2			40-125	%REC	10	09-Jan-2024 22:47
Surr: 2-Fluorophenol	47.6			20-120	%REC	10	09-Jan-2024 22:47
Surr: 2-Fluorophenol	48.8			20-120	%REC	1	09-Jan-2024 02:59
Surr: 4-Terphenyl-d14	78.1			40-135	%REC	1	09-Jan-2024 02:59
Surr: 4-Terphenyl-d14	81.4			40-135	%REC	10	09-Jan-2024 22:47
Surr: Nitrobenzene-d5	65.2			41-120	%REC	10	09-Jan-2024 22:47
Surr: Nitrobenzene-d5	61.0			41-120	%REC	1	09-Jan-2024 02:59
Surr: Phenol-d6	57.3			20-120	%REC	1	09-Jan-2024 02:59
Surr: Phenol-d6	59.0			20-120	%REC	10	09-Jan-2024 22:47

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW10A-20240102
 Collection Date: 02-Jan-2024 13:10

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-04
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 21:46
Acenaphthene	0.00018		0.000027	0.00010	mg/L	1	09-Jan-2024 21:46
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 21:46
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	09-Jan-2024 21:46
Bis(2-ethylhexyl)phthalate	0.000054	J	0.000037	0.00020	mg/L	1	09-Jan-2024 21:46
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 21:46
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	09-Jan-2024 21:46
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	09-Jan-2024 21:46
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 21:46
Phenanthrene	< 0.000021		0.000021	0.00010	mg/L	1	09-Jan-2024 21:46
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 21:46
<i>Surr: 2,4,6-Tribromophenol</i>	67.2			34-129	%REC	1	09-Jan-2024 21:46
<i>Surr: 2-Fluorobiphenyl</i>	70.6			40-125	%REC	1	09-Jan-2024 21:46
<i>Surr: 2-Fluorophenol</i>	49.9			20-120	%REC	1	09-Jan-2024 21:46
<i>Surr: 4-Terphenyl-d14</i>	83.0			40-135	%REC	1	09-Jan-2024 21:46
<i>Surr: Nitrobenzene-d5</i>	61.4			41-120	%REC	1	09-Jan-2024 21:46
<i>Surr: Phenol-d6</i>	70.3			20-120	%REC	1	09-Jan-2024 21:46

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW02-20240102
 Collection Date: 02-Jan-2024 13:55

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-05
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	0.00010		0.000019	0.00010	mg/L	1	09-Jan-2024 03:41
Acenaphthene	0.015		0.00027	0.0010	mg/L	10	09-Jan-2024 23:08
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 03:41
Anthracene	0.00023		0.000014	0.00010	mg/L	1	09-Jan-2024 03:41
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 03:41
Dibenzofuran	0.00068		0.000020	0.00010	mg/L	1	09-Jan-2024 03:41
Fluoranthene	0.00039		0.000010	0.00010	mg/L	1	09-Jan-2024 03:41
Fluorene	0.0095		0.000030	0.00010	mg/L	1	09-Jan-2024 03:41
Naphthalene	0.00010		0.000020	0.00010	mg/L	1	09-Jan-2024 03:41
Phenanthrene	0.00022		0.000021	0.00010	mg/L	1	09-Jan-2024 03:41
Pyrene	0.00020		0.000019	0.00010	mg/L	1	09-Jan-2024 03:41
Surr: 2,4,6-Tribromophenol	86.2			34-129	%REC	1	09-Jan-2024 03:41
Surr: 2,4,6-Tribromophenol	74.5			34-129	%REC	10	09-Jan-2024 23:08
Surr: 2-Fluorobiphenyl	67.9			40-125	%REC	10	09-Jan-2024 23:08
Surr: 2-Fluorobiphenyl	70.4			40-125	%REC	1	09-Jan-2024 03:41
Surr: 2-Fluorophenol	78.0			20-120	%REC	1	09-Jan-2024 03:41
Surr: 2-Fluorophenol	43.6			20-120	%REC	10	09-Jan-2024 23:08
Surr: 4-Terphenyl-d14	77.8			40-135	%REC	1	09-Jan-2024 03:41
Surr: 4-Terphenyl-d14	80.0			40-135	%REC	10	09-Jan-2024 23:08
Surr: Nitrobenzene-d5	55.5			41-120	%REC	10	09-Jan-2024 23:08
Surr: Nitrobenzene-d5	71.2			41-120	%REC	1	09-Jan-2024 03:41
Surr: Phenol-d6	72.0			20-120	%REC	1	09-Jan-2024 03:41
Surr: Phenol-d6	56.9			20-120	%REC	10	09-Jan-2024 23:08

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW01A-20240102
 Collection Date: 02-Jan-2024 14:55

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-06
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	0.00039		0.000019	0.00010	mg/L	1	09-Jan-2024 04:03
Acenaphthene	0.024		0.00027	0.0010	mg/L	10	09-Jan-2024 23:28
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 04:03
Anthracene	0.00063		0.000014	0.00010	mg/L	1	09-Jan-2024 04:03
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 04:03
Dibenzofuran	0.0084		0.000020	0.00010	mg/L	1	09-Jan-2024 04:03
Fluoranthene	0.00080		0.000010	0.00010	mg/L	1	09-Jan-2024 04:03
Fluorene	0.0099		0.00030	0.0010	mg/L	10	09-Jan-2024 23:28
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 04:03
Phenanthrene	0.00069		0.000021	0.00010	mg/L	1	09-Jan-2024 04:03
Pyrene	0.00044		0.000019	0.00010	mg/L	1	09-Jan-2024 04:03
Surr: 2,4,6-Tribromophenol	69.9			34-129	%REC	10	09-Jan-2024 23:28
Surr: 2,4,6-Tribromophenol	76.5			34-129	%REC	1	09-Jan-2024 04:03
Surr: 2-Fluorobiphenyl	59.6			40-125	%REC	1	09-Jan-2024 04:03
Surr: 2-Fluorobiphenyl	63.5			40-125	%REC	10	09-Jan-2024 23:28
Surr: 2-Fluorophenol	43.8			20-120	%REC	10	09-Jan-2024 23:28
Surr: 2-Fluorophenol	74.3			20-120	%REC	1	09-Jan-2024 04:03
Surr: 4-Terphenyl-d14	70.7			40-135	%REC	1	09-Jan-2024 04:03
Surr: 4-Terphenyl-d14	72.5			40-135	%REC	10	09-Jan-2024 23:28
Surr: Nitrobenzene-d5	59.2			41-120	%REC	10	09-Jan-2024 23:28
Surr: Nitrobenzene-d5	63.3			41-120	%REC	1	09-Jan-2024 04:03
Surr: Phenol-d6	67.8			20-120	%REC	1	09-Jan-2024 04:03
Surr: Phenol-d6	58.2			20-120	%REC	10	09-Jan-2024 23:28

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-FD01-20240102
 Collection Date: 02-Jan-2024 14:55

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-07
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	0.00021		0.000019	0.00010	mg/L	1	09-Jan-2024 04:24
Acenaphthene	0.023		0.00027	0.0010	mg/L	10	09-Jan-2024 23:49
Acenaphthylene	0.00028		0.000015	0.00010	mg/L	1	09-Jan-2024 04:24
Anthracene	0.00073		0.000014	0.00010	mg/L	1	09-Jan-2024 04:24
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 04:24
Dibenzofuran	0.0067		0.000020	0.00010	mg/L	1	09-Jan-2024 04:24
Fluoranthene	0.0012		0.000010	0.00010	mg/L	1	09-Jan-2024 04:24
Fluorene	0.0097		0.000030	0.00010	mg/L	1	09-Jan-2024 04:24
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 04:24
Phenanthrene	0.00075		0.000021	0.00010	mg/L	1	09-Jan-2024 04:24
Pyrene	0.00067		0.000019	0.00010	mg/L	1	09-Jan-2024 04:24
Surr: 2,4,6-Tribromophenol	67.9			34-129	%REC	10	09-Jan-2024 23:49
Surr: 2,4,6-Tribromophenol	82.8			34-129	%REC	1	09-Jan-2024 04:24
Surr: 2-Fluorobiphenyl	59.1			40-125	%REC	1	09-Jan-2024 04:24
Surr: 2-Fluorobiphenyl	55.9			40-125	%REC	10	09-Jan-2024 23:49
Surr: 2-Fluorophenol	39.5	J		20-120	%REC	10	09-Jan-2024 23:49
Surr: 2-Fluorophenol	48.1			20-120	%REC	1	09-Jan-2024 04:24
Surr: 4-Terphenyl-d14	80.6			40-135	%REC	1	09-Jan-2024 04:24
Surr: 4-Terphenyl-d14	66.8			40-135	%REC	10	09-Jan-2024 23:49
Surr: Nitrobenzene-d5	64.0			41-120	%REC	10	09-Jan-2024 23:49
Surr: Nitrobenzene-d5	59.2			41-120	%REC	1	09-Jan-2024 04:24
Surr: Phenol-d6	56.5			20-120	%REC	10	09-Jan-2024 23:49
Surr: Phenol-d6	50.4			20-120	%REC	1	09-Jan-2024 04:24

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

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
Sample ID: WG-1620-P12-20240102
Collection Date: 02-Jan-2024 16:10

ANALYTICAL REPORT

WorkOrder:HS24010212
Lab ID:HS24010212-08
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	08-Jan-2024 22:43
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	08-Jan-2024 22:43
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	08-Jan-2024 22:43
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	08-Jan-2024 22:43
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	08-Jan-2024 22:43
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	08-Jan-2024 22:43
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	08-Jan-2024 22:43
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	08-Jan-2024 22:43
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	08-Jan-2024 22:43
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	08-Jan-2024 22:43
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	08-Jan-2024 22:43
Surr: 2,4,6-Tribromophenol	51.2			34-129	%REC	1	08-Jan-2024 22:43
Surr: 2-Fluorobiphenyl	56.1			40-125	%REC	1	08-Jan-2024 22:43
Surr: 2-Fluorophenol	60.2			20-120	%REC	1	08-Jan-2024 22:43
Surr: 4-Terphenyl-d14	74.1			40-135	%REC	1	08-Jan-2024 22:43
Surr: Nitrobenzene-d5	51.8			41-120	%REC	1	08-Jan-2024 22:43
Surr: Phenol-d6	44.8			20-120	%REC	1	08-Jan-2024 22:43

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-FB01-20240102
 Collection Date: 02-Jan-2024 16:45

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-09
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 22:06
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	09-Jan-2024 22:06
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 22:06
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	09-Jan-2024 22:06
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 22:06
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 22:06
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	09-Jan-2024 22:06
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	09-Jan-2024 22:06
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 22:06
Phenanthrene	< 0.000021		0.000021	0.00010	mg/L	1	09-Jan-2024 22:06
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 22:06
Surr: 2,4,6-Tribromophenol	80.5			34-129	%REC	1	09-Jan-2024 22:06
Surr: 2-Fluorobiphenyl	94.5			40-125	%REC	1	09-Jan-2024 22:06
Surr: 2-Fluorophenol	63.1			20-120	%REC	1	09-Jan-2024 22:06
Surr: 4-Terphenyl-d14	89.7			40-135	%REC	1	09-Jan-2024 22:06
Surr: Nitrobenzene-d5	82.7			41-120	%REC	1	09-Jan-2024 22:06
Surr: Phenol-d6	90.5			20-120	%REC	1	09-Jan-2024 22:06

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW08-20240103
 Collection Date: 03-Jan-2024 08:05

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-10
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	< 0.000019		0.000019	0.00010	mg/L	1	09-Jan-2024 05:06
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	09-Jan-2024 05:06
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	09-Jan-2024 05:06
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	09-Jan-2024 05:06
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	09-Jan-2024 05:06
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 05:06
Fluoranthene	0.000038	J	0.000010	0.00010	mg/L	1	09-Jan-2024 05:06
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	09-Jan-2024 05:06
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	09-Jan-2024 05:06
Phenanthrene	< 0.000021		0.000021	0.00010	mg/L	1	09-Jan-2024 05:06
Pyrene	0.000060	J	0.000019	0.00010	mg/L	1	09-Jan-2024 05:06
Surr: 2,4,6-Tribromophenol	60.4			34-129	%REC	1	09-Jan-2024 05:06
Surr: 2-Fluorobiphenyl	74.0			40-125	%REC	1	09-Jan-2024 05:06
Surr: 2-Fluorophenol	71.3			20-120	%REC	1	09-Jan-2024 05:06
Surr: 4-Terphenyl-d14	87.7			40-135	%REC	1	09-Jan-2024 05:06
Surr: Nitrobenzene-d5	72.6			41-120	%REC	1	09-Jan-2024 05:06
Surr: Phenol-d6	52.0			20-120	%REC	1	09-Jan-2024 05:06

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-MW07-20240103
 Collection Date: 03-Jan-2024 09:00

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-11
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
2-Methylnaphthalene	< 0.000019		0.000019	0.00010	mg/L	1	10-Jan-2024 00:30
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	10-Jan-2024 00:30
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	10-Jan-2024 00:30
Anthracene	0.00020		0.000014	0.00010	mg/L	1	10-Jan-2024 00:30
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	10-Jan-2024 00:30
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 00:30
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	10-Jan-2024 00:30
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	10-Jan-2024 00:30
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 00:30
Phenanthrene	< 0.000021		0.000021	0.00010	mg/L	1	10-Jan-2024 00:30
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	10-Jan-2024 00:30
<i>Surr: 2,4,6-Tribromophenol</i>	<i>79.1</i>			<i>34-129</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>73.8</i>			<i>40-125</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>
<i>Surr: 2-Fluorophenol</i>	<i>50.4</i>			<i>20-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>79.4</i>			<i>40-135</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>
<i>Surr: Nitrobenzene-d5</i>	<i>65.1</i>			<i>41-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>
<i>Surr: Phenol-d6</i>	<i>75.8</i>			<i>20-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 00:30</i>

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-P10-20240103
 Collection Date: 03-Jan-2024 09:55

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-12
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	10-Jan-2024 00:50
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	10-Jan-2024 00:50
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	10-Jan-2024 00:50
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	10-Jan-2024 00:50
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 00:50
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	10-Jan-2024 00:50
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	10-Jan-2024 00:50
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	10-Jan-2024 00:50
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 00:50
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	10-Jan-2024 00:50
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	10-Jan-2024 00:50
<i>Surr: 2,4,6-Tribromophenol</i>	67.2			34-129	%REC	1	10-Jan-2024 00:50
<i>Surr: 2-Fluorobiphenyl</i>	64.8			40-125	%REC	1	10-Jan-2024 00:50
<i>Surr: 2-Fluorophenol</i>	40.2			20-120	%REC	1	10-Jan-2024 00:50
<i>Surr: 4-Terphenyl-d14</i>	80.2			40-135	%REC	1	10-Jan-2024 00:50
<i>Surr: Nitrobenzene-d5</i>	55.2			41-120	%REC	1	10-Jan-2024 00:50
<i>Surr: Phenol-d6</i>	60.5			20-120	%REC	1	10-Jan-2024 00:50

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-FD02-20240103
 Collection Date: 03-Jan-2024 09:55

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-13
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	0.00014		0.000027	0.00010	mg/L	1	10-Jan-2024 20:02
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	10-Jan-2024 20:02
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	10-Jan-2024 20:02
Bis(2-ethylhexyl)phthalate	0.00012	J	0.000037	0.00020	mg/L	1	10-Jan-2024 20:02
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 20:02
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	10-Jan-2024 20:02
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	10-Jan-2024 20:02
Fluorene	0.00011		0.000030	0.00010	mg/L	1	10-Jan-2024 20:02
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	10-Jan-2024 20:02
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	10-Jan-2024 20:02
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	10-Jan-2024 20:02
<i>Surr: 2,4,6-Tribromophenol</i>	<i>85.2</i>			<i>34-129</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>72.1</i>			<i>40-125</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>
<i>Surr: 2-Fluorophenol</i>	<i>53.9</i>			<i>20-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>78.6</i>			<i>40-135</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>
<i>Surr: Nitrobenzene-d5</i>	<i>54.4</i>			<i>41-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>
<i>Surr: Phenol-d6</i>	<i>60.0</i>			<i>20-120</i>	<i>%REC</i>	<i>1</i>	<i>10-Jan-2024 20:02</i>

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

Client: WSP Austin
 Project: Houston TX-Wood Preserving Works 1620-02
 Sample ID: WG-1620-FB02-20240103
 Collection Date: 03-Jan-2024 10:20

ANALYTICAL REPORT

WorkOrder:HS24010212
 Lab ID:HS24010212-14
 Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D		Method:SW8270		Prep:SW3510 / 05-Jan-2024		Analyst: GEY	
Acenaphthene	< 0.000027		0.000027	0.00010	mg/L	1	11-Jan-2024 20:32
Acenaphthylene	< 0.000015		0.000015	0.00010	mg/L	1	11-Jan-2024 20:32
Anthracene	< 0.000014		0.000014	0.00010	mg/L	1	11-Jan-2024 20:32
Bis(2-ethylhexyl)phthalate	< 0.000037		0.000037	0.00020	mg/L	1	11-Jan-2024 20:32
Dibenzofuran	< 0.000020		0.000020	0.00010	mg/L	1	11-Jan-2024 20:32
Di-n-butyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	11-Jan-2024 20:32
Fluoranthene	< 0.000010		0.000010	0.00010	mg/L	1	11-Jan-2024 20:32
Fluorene	< 0.000030		0.000030	0.00010	mg/L	1	11-Jan-2024 20:32
Naphthalene	< 0.000020		0.000020	0.00010	mg/L	1	11-Jan-2024 20:32
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	11-Jan-2024 20:32
Pyrene	< 0.000019		0.000019	0.00010	mg/L	1	11-Jan-2024 20:32
Surr: 2,4,6-Tribromophenol	62.5			34-129	%REC	1	11-Jan-2024 20:32
Surr: 2-Fluorobiphenyl	81.4			40-125	%REC	1	11-Jan-2024 20:32
Surr: 2-Fluorophenol	54.3			20-120	%REC	1	11-Jan-2024 20:32
Surr: 4-Terphenyl-d14	88.8			40-135	%REC	1	11-Jan-2024 20:32
Surr: Nitrobenzene-d5	101			41-120	%REC	1	11-Jan-2024 20:32
Surr: Phenol-d6	55.4			20-120	%REC	1	11-Jan-2024 20:32

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

Weight / Prep Log

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

Batch ID: 205693	Start Date: 05 Jan 2024 11:11	End Date: 05 Jan 2024 11:11
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C		Prep Code: 3510_B_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24010212-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-02	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-04	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-05	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-06	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-07	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-08	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-09	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-10	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-11	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-12	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-13	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS24010212-14	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 205693 (0)		Test Name : LOW-LEVEL SEMIVOLATILES BY 8270D			Matrix: Water	
HS24010212-01	WG-1620-MW11B-20240102	02 Jan 2024 10:50		05 Jan 2024 11:11	09 Jan 2024 22:27	10
HS24010212-01	WG-1620-MW11B-20240102	02 Jan 2024 10:50		05 Jan 2024 11:11	09 Jan 2024 02:16	1
HS24010212-02	WG-1620-MW11A-20240102	02 Jan 2024 11:40		05 Jan 2024 11:11	09 Jan 2024 21:25	1
HS24010212-03	WG-1620-MW10B-20240102	02 Jan 2024 12:25		05 Jan 2024 11:11	09 Jan 2024 22:47	10
HS24010212-03	WG-1620-MW10B-20240102	02 Jan 2024 12:25		05 Jan 2024 11:11	09 Jan 2024 02:59	1
HS24010212-04	WG-1620-MW10A-20240102	02 Jan 2024 13:10		05 Jan 2024 11:11	09 Jan 2024 21:46	1
HS24010212-05	WG-1620-MW02-20240102	02 Jan 2024 13:55		05 Jan 2024 11:11	09 Jan 2024 23:08	10
HS24010212-05	WG-1620-MW02-20240102	02 Jan 2024 13:55		05 Jan 2024 11:11	09 Jan 2024 03:41	1
HS24010212-06	WG-1620-MW01A-20240102	02 Jan 2024 14:55		05 Jan 2024 11:11	09 Jan 2024 23:28	10
HS24010212-06	WG-1620-MW01A-20240102	02 Jan 2024 14:55		05 Jan 2024 11:11	09 Jan 2024 04:03	1
HS24010212-07	WG-1620-FD01-20240102	02 Jan 2024 14:55		05 Jan 2024 11:11	09 Jan 2024 23:49	10
HS24010212-07	WG-1620-FD01-20240102	02 Jan 2024 14:55		05 Jan 2024 11:11	09 Jan 2024 04:24	1
HS24010212-08	WG-1620-P12-20240102	02 Jan 2024 16:10		05 Jan 2024 11:11	08 Jan 2024 22:43	1
HS24010212-09	WG-1620-FB01-20240102	02 Jan 2024 16:45		05 Jan 2024 11:11	09 Jan 2024 22:06	1
HS24010212-10	WG-1620-MW08-20240103	03 Jan 2024 08:05		05 Jan 2024 11:11	09 Jan 2024 05:06	1
HS24010212-11	WG-1620-MW07-20240103	03 Jan 2024 09:00		05 Jan 2024 11:11	10 Jan 2024 00:30	1
HS24010212-12	WG-1620-P10-20240103	03 Jan 2024 09:55		05 Jan 2024 11:11	10 Jan 2024 00:50	1
HS24010212-13	WG-1620-FD02-20240103	03 Jan 2024 09:55		05 Jan 2024 11:11	10 Jan 2024 20:02	1
HS24010212-14	WG-1620-FB02-20240103	03 Jan 2024 10:20		05 Jan 2024 11:11	11 Jan 2024 20:32	1

WorkOrder: HS24010212

InstrumentID: SV-7

Test Code: 8270_LOW_W

Test Number: SW8270

Test Name: Low-Level Semivolatiles by 8270D

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Aqueous**Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	2-Methylnaphthalene	91-57-6	0.00010	0.000068	0.000019	0.00010
A	Acenaphthene	83-32-9	0.00010	0.000066	0.000027	0.00010
A	Acenaphthylene	208-96-8	0.00010	0.000067	0.000015	0.00010
A	Anthracene	120-12-7	0.00010	0.000073	0.000014	0.00010
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.00010	0.000093	0.000037	0.00020
A	Dibenzofuran	132-64-9	0.00010	0.000065	0.000020	0.00010
A	Di-n-butyl phthalate	84-74-2	0.00010	0.00011	0.000020	0.00020
A	Fluoranthene	206-44-0	0.00010	0.000068	0.000010	0.00010
A	Fluorene	86-73-7	0.00010	0.000066	0.000030	0.00010
A	Naphthalene	91-20-3	0.00010	0.000063	0.000020	0.00010
A	Phenanthrene	85-01-8	0.00010	0.000071	0.000021	0.00010
A	Phenol	108-95-2	0.00010	0.000064	0.000035	0.00020
A	Pyrene	129-00-0	0.00010	0.000072	0.000019	0.00010
S	2,4,6-Tribromophenol	118-79-6	0	0	0	0.00020
S	2-Fluorobiphenyl	321-60-8	0	0	0	0.00020
S	2-Fluorophenol	367-12-4	0	0	0	0.00020
S	4-Terphenyl-d14	1718-51-0	0	0	0	0.00020
S	Nitrobenzene-d5	4165-60-0	0	0	0	0.00020
S	Phenol-d6	13127-88-3	0	0	0	0.00020

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

QC BATCH REPORT

Batch ID: 205693 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D					
MBLK	Sample ID: MBLK-205693	Units: ug/L		Analysis Date: 09-Jan-2024 17:59					
Client ID:	Run ID: SV-7_456176	SeqNo: 7773620		PrepDate: 05-Jan-2024		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2-Methylnaphthalene	< 0.019	0.10							
Acenaphthene	< 0.027	0.10							
Acenaphthylene	< 0.015	0.10							
Anthracene	< 0.014	0.10							
Bis(2-ethylhexyl)phthalate	< 0.037	0.20							
Dibenzofuran	< 0.020	0.10							
Di-n-butyl phthalate	< 0.020	0.20							
Fluoranthene	< 0.010	0.10							
Fluorene	< 0.030	0.10							
Naphthalene	< 0.020	0.10							
Phenanthrene	< 0.021	0.10							
Phenol	< 0.035	0.20							
Pyrene	< 0.019	0.10							
<i>Surr: 2,4,6-Tribromophenol</i>	3.568	0.20	5	0	71.4	34 - 129			
<i>Surr: 2-Fluorobiphenyl</i>	4.25	0.20	5	0	85.0	40 - 125			
<i>Surr: 2-Fluorophenol</i>	3.432	0.20	5	0	68.6	20 - 120			
<i>Surr: 4-Terphenyl-d14</i>	4.548	0.20	5	0	91.0	40 - 135			
<i>Surr: Nitrobenzene-d5</i>	3.736	0.20	5	0	74.7	41 - 120			
<i>Surr: Phenol-d6</i>	3.571	0.20	5	0	71.4	20 - 120			

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

QC BATCH REPORT

Batch ID: 205693 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D					
LCS		Sample ID: LCS-205693		Units: ug/L		Analysis Date: 09-Jan-2024 18:20			
Client ID:		Run ID: SV-7_456176		SeqNo: 7773621		PrepDate: 05-Jan-2024		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2-Methylnaphthalene	4.687	0.10	5	0	93.7	50 - 120			
Acenaphthene	4.331	0.10	5	0	86.6	45 - 120			
Acenaphthylene	4.524	0.10	5	0	90.5	47 - 120			
Anthracene	4.327	0.10	5	0	86.5	45 - 120			
Bis(2-ethylhexyl)phthalate	4.344	0.20	5	0	86.9	40 - 139			
Dibenzofuran	4.556	0.10	5	0	91.1	50 - 120			
Di-n-butyl phthalate	4.751	0.20	5	0	95.0	45 - 123			
Fluoranthene	4.368	0.10	5	0	87.4	45 - 125			
Fluorene	4.401	0.10	5	0	88.0	49 - 120			
Naphthalene	4.302	0.10	5	0	86.0	45 - 120			
Phenanthrene	4.441	0.10	5	0	88.8	45 - 121			
Phenol	4.217	0.20	5	0	84.3	20 - 124			
Pyrene	5.508	0.10	5	0	110	40 - 130			
<i>Surr: 2,4,6-Tribromophenol</i>	<i>4.689</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>93.8</i>	<i>34 - 129</i>			
<i>Surr: 2-Fluorobiphenyl</i>	<i>4.651</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>93.0</i>	<i>40 - 125</i>			
<i>Surr: 2-Fluorophenol</i>	<i>3.204</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>64.1</i>	<i>20 - 120</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>5.586</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>112</i>	<i>40 - 135</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>4.306</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>86.1</i>	<i>41 - 120</i>			
<i>Surr: Phenol-d6</i>	<i>3.8</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>76.0</i>	<i>20 - 120</i>			

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

QC BATCH REPORT

Batch ID: 205693 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D					
MS		Sample ID: HS24010212-08MS		Units: ug/L		Analysis Date: 08-Jan-2024 23:04			
Client ID: WG-1620-P12-20240102		Run ID: SV-7_456068		SeqNo: 7771421		PrepDate: 05-Jan-2024		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2-Methylnaphthalene	3.912	0.10	5	0	78.2	50 - 120			
Acenaphthene	3.522	0.10	5	0	70.4	45 - 120			
Acenaphthylene	3.432	0.10	5	0	68.6	47 - 120			
Anthracene	4.227	0.10	5	0	84.5	45 - 120			
Bis(2-ethylhexyl)phthalate	4.605	0.20	5	0	92.1	40 - 139			
Dibenzofuran	3.742	0.10	5	0	74.8	50 - 120			
Di-n-butyl phthalate	4.006	0.20	5	0	80.1	45 - 123			
Fluoranthene	4.301	0.10	5	0	86.0	45 - 125			
Fluorene	3.866	0.10	5	0	77.3	49 - 120			
Naphthalene	3.954	0.10	5	0	79.1	45 - 120			
Phenanthrene	4.14	0.10	5	0	82.8	45 - 121			
Phenol	3.41	0.20	5	0	68.2	20 - 124			
Pyrene	5.021	0.10	5	0	100	40 - 130			
<i>Surr: 2,4,6-Tribromophenol</i>	<i>3.684</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>73.7</i>	<i>34 - 129</i>			
<i>Surr: 2-Fluorobiphenyl</i>	<i>2.928</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>58.6</i>	<i>40 - 125</i>			
<i>Surr: 2-Fluorophenol</i>	<i>3.421</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>68.4</i>	<i>20 - 120</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>3.752</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>75.0</i>	<i>40 - 135</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>3.375</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>67.5</i>	<i>41 - 120</i>			
<i>Surr: Phenol-d6</i>	<i>3.181</i>	<i>0.20</i>	<i>5</i>	<i>0</i>	<i>63.6</i>	<i>20 - 120</i>			

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

QC BATCH REPORT

Batch ID: 205693 (0)		Instrument: SV-7		Method: LOW-LEVEL SEMIVOLATILES BY 8270D					
MSD		Sample ID: HS24010212-08MSD		Units: ug/L		Analysis Date: 08-Jan-2024 23:25			
Client ID: WG-1620-P12-20240102		Run ID: SV-7_456068		SeqNo: 7771422		PrepDate: 05-Jan-2024		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2-Methylnaphthalene	4.475	0.10	5	0	89.5	50 - 120	3.912	13.4	20
Acenaphthene	3.893	0.10	5	0	77.9	45 - 120	3.522	10	20
Acenaphthylene	3.699	0.10	5	0	74.0	47 - 120	3.432	7.47	20
Anthracene	4.47	0.10	5	0	89.4	45 - 120	4.227	5.58	20
Bis(2-ethylhexyl)phthalate	4.445	0.20	5	0	88.9	40 - 139	4.605	3.55	20
Dibenzofuran	4.081	0.10	5	0	81.6	50 - 120	3.742	8.67	20
Di-n-butyl phthalate	4.093	0.20	5	0	81.9	45 - 123	4.006	2.14	20
Fluoranthene	4.471	0.10	5	0	89.4	45 - 125	4.301	3.87	20
Fluorene	3.849	0.10	5	0	77.0	49 - 120	3.866	0.425	20
Naphthalene	3.895	0.10	5	0	77.9	45 - 120	3.954	1.49	20
Phenanthrene	4.472	0.10	5	0	89.4	45 - 121	4.14	7.7	20
Phenol	3.531	0.20	5	0	70.6	20 - 124	3.41	3.48	20
Pyrene	5.009	0.10	5	0	100	40 - 130	5.021	0.236	20
Surr: 2,4,6-Tribromophenol	3.755	0.20	5	0	75.1	34 - 129	3.684	1.92	20
Surr: 2-Fluorobiphenyl	3.068	0.20	5	0	61.4	40 - 125	2.928	4.68	20
Surr: 2-Fluorophenol	3.869	0.20	5	0	77.4	20 - 120	3.421	12.3	20
Surr: 4-Terphenyl-d14	3.614	0.20	5	0	72.3	40 - 135	3.752	3.73	20
Surr: Nitrobenzene-d5	3.555	0.20	5	0	71.1	41 - 120	3.375	5.2	20
Surr: Phenol-d6	3.245	0.20	5	0	64.9	20 - 120	3.181	2.01	20
The following samples were analyzed in this batch:									
		HS24010212-01		HS24010212-02		HS24010212-03		HS24010212-04	
		HS24010212-05		HS24010212-06		HS24010212-07		HS24010212-08	
		HS24010212-09		HS24010212-10		HS24010212-11		HS24010212-12	
		HS24010212-13		HS24010212-14					

Client: WSP Austin
Project: Houston TX-Wood Preserving Works 1620-02
WorkOrder: HS24010212

**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/SDL

Acronym	Description
DCS	Detectability Check Study
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 Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-32	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS24010212

Date/Time Received: 04-Jan-2024 11:35

Client Name: PBW

Received by: Paresh M. Giga

Completed By: /S/ Corey Grandits	04-Jan-2024 19:03	Reviewed by: /S/ James Guin	05-Jan-2024 15:03
eSignature	Date/Time	eSignature	Date/Time

Matrices: WCarrier 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 ☒

VOA/TX1005/TX1006 Solids in hermetically sealed vials?

Yes ☐No ☐Not Present ☒

Chain of custody present?

Yes ☒No ☐

2 Page(s)

Chain of custody signed when relinquished and received?

Yes ☒No ☐

COC IDs:306596, 306598

Samplers name present on COC?

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):

0.7UC/0.6C, 0.3UC/0.2C, 0.5UC/0.4C

IR31

Cooler(s)/Kit(s):

51008, Blue, 50662

Date/Time sample(s) sent to storage:

1/4/24

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:

Corrective Action:



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Chain of Custody Form

Page 1 of 2

COC ID: 306596

HS24010212

WSP Austin

Houston TX-Wood Preserving Works 1620-02



ALS Project Manager:

Customer Information		Project Information	
Purchase Order	TBD	Project Name	Houston TX-Wood Preserving Works
Work Order		Project Number	1620-20 SR 92688
Company Name	WSP Golder	Bill To Company	Union Pacific Railroad- A/P
Send Report To	Eric Matzner	Invoice Attn	Accounts Payable
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750
City/State/Zip	Round Rock / TX / 78664	City/State/Zip	Omaha NE 681790750
Phone	(512) 671-3434	Phone	
Fax	(512) 671-3446	Fax	
e-Mail Address	Eric_Matzner@WSP.com	e-Mail Address	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW11B-20240102	1-2-24	1050			2				X							
2	WG-1620-MW11A-20240102		1140			2			X								
3	WG-1620-MW10B-20240102		1225			2				X							
4	WG-1620-MW10A-20240102		1310			2			X								
5	WG-1620-MW02-20240102		1355			2			X								
6	WG-1620-MW01A-20240102		1455			2			X								
7	WG-1620-FDD1-20240102		1455			2			X								
8	WG-1620-P12-20240102		1610			4		X		X							
9	WG-1620-FB01-20240102		1645			2			X								
10	WG-1620-MW08-20240103	1-3-24	0805			2			X								

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)				Results Due Date:									
JOHN BRAYTON		HAND DELIVERED		☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour													
Relinquished by:	Date:	Time:	Received by:	Notes: UPRR HWPW 1620-20													
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)											
Relinquished by:	Date:	Time:	Received by (Laboratory):	51008	0.70	☐ Level II Std QC	☒ TRRP Checklist										
Relinquished by:	Date:	Time:	Received by (Laboratory):	50662	0.30	☐ Level III Std QC/Raw Data	☐ TRRP Level IV										
Relinquished by:	Date:	Time:	Received by (Laboratory):	50662	0.50	☐ Level IV SW/MS/CLP											
Relinquished by:	Date:	Time:	Received by (Laboratory):														
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O 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 Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.



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Chain of Custody Form

Page 2 of 2

COC ID: 306598

HS24010212

WSP Austin

Houston TX-Wood Preserving Works 1620-02



ALS Project Manager:

Customer Information		Project Information	
Purchase Order	TBD	Project Name	Houston TX-Wood Preserving Works
Work Order		Project Number	1620-20 SR 92688
Company Name	WSP Golder	Bill To Company	Union Pacific Railroad- A/P
Send Report To	Eric Matzner	Invoice Attn	Accounts Payable
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750
City/State/Zip	Round Rock / TX / 78664	City/State/Zip	Omaha NE 681790750
Phone	(512) 671-3434	Phone	
Fax	(512) 671-3446	Fax	
e-Mail Address	Eric_Matzner@WSP.com	e-Mail Address	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW07-20240103	1-3-24	0900			2			X								
2	WG-1620-PID-20240103		0955			2				X							
3	WG-1620-FD02-20240103		0955			2				X							
4	WG-1620-FB02-20240103		1020			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 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour		Results Due Date:	
Relinquished by: John		Date: 1-4-24	Time: 1135	Received by: [Signature]		Notes: UPRR HWPW 1620-20	
Relinquished by:		Date:	Time:	Received by (Laboratory): X 1/4/24 11:35		QC Package: (Check One Box Below)	
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):		☐ Level II Std QC ☒ TRRP Checklist ☐ Level III Std QC/Raw Data ☐ TRRP Level IV ☐ Level IV SW846/CLP ☐ Other	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O 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 Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental 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.

Copyright 2011 by ALS Environmental.

Data Validation Report

March 19, 2024

To	Eric Matzner (eric.matzner@wsp.com)	Project No.	11183954 95.06 (1620)
Copy to	Jesse Orth, Julie Lidstone	DVR No.	1758
From	Chris G. Knight/eew	Contact No.	512-777-5833
Project Name	UPRR - Various Data Mgmt	Email	christopher.knight@ghd.com
Subject	Data Usability Summary HWPW - Semiannual SWMU No. 1 Monitoring Event Union Pacific Railroad (UPRR)/Houston TX-Wood Preserving Works Houston, Texas January 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Scope of Data Usability Summary

This document details a Data Usability Summary (DUS) of analytical results for samples collected in support of the HWPW - Semiannual SWMU No. 1 Monitoring Event at the UPRR/Houston TX-Wood Preserving Works site during January 2024. Samples were submitted to ALS Global, located in Houston, Texas and are reported in data package HS24010212. The intended use of the data is to support the HWPW - Semi-Annual SWMU No. 1 Monitoring Event at the site by providing current concentrations of chemicals of concern.

Data were reviewed and validated by Chris G. Knight of GHD Services Inc. (GHD), in accordance with Title 30 of the Texas Risk Reduction Program (TRRP) Texas Administrative Code Section 350.54 (30 TAC 350.54) as described in the Texas Commission on Environmental Quality (TCEQ) Regulatory Guidance document entitled "Review and Reporting of COC Concentration Data under TRRP", (RG-366/TRRP-13), revised May 2010, herein referred to as "TRRP-13 Guidance". Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS), field quality assurance/quality control (QA/QC) samples, the laboratory review checklist (LRC), and the laboratory exception report (ER).

A sample collection and analysis summary are presented in Table 1. This summary provides a cross reference of field sample identification numbers and location identification. Each sample is assigned a unique field identification number.

The validated sample results are presented in Table 2. A summary of the analytical methodology is presented in Table 3. Each data package includes a cross-reference list of field sample identifications to laboratory sample designations.

2. Laboratory Qualifications

The Laboratory's quality assurance program is consistent with the quality standards outlined in the National Environmental Laboratory Accreditation Program (NELAP). This laboratory was accredited under Texas Certification number # T104704231 at the time the analysis was performed, and the certificate is included in Attachment A.

3. Project Objectives

3.1 Sampling/Analytical QA/QC Objectives

The QA/QC program was designed to identify contamination resulting from the sampling, sample transport and analytical process through the analysis of field blank samples, field duplicate sample sets, and method blanks. The QA/QC program was designed to evaluate the quality of the resulting data with respect to bias and precision through analysis of LCS and MS analyses.

4. Data Review/Validation Results

4.1 Sample Holding Time and Preservation

Samples were shipped with chains of custody and the paperwork was filled out properly. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

Sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

4.2 Sample Containers

Sample containers used were certified pre-cleaned glass containers provided by the laboratory. These containers meet or exceed analyte specifications established in the United States Environmental Protection Agency (USEPA) *Specifications and Guidance for Contaminant-Free Sample Containers*.

4.3 Calibrations

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

4.4 Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. As these were not discrete samples handled in the field, these blanks are not listed on the sample identification cross-reference- list found in the data packages.

For this summary, laboratory method blanks were analyzed at a minimum frequency of one per analytical batch and results are reported in the laboratory data package.

The method blank results were non-detect or below the method quantitation limit (MQL), indicating that laboratory contamination was not a factor for this investigation.

4.5 Internal Standard and Surrogate Spike Recoveries

Recoveries of internal standards are addressed in the LRC of the data packages. All internal standard recoveries associated with the compounds of interest were acceptable per the LRC.

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organic determinations are spiked with the appropriate number of surrogate compounds prior to sample extraction and analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices. The recovery ranges established by the laboratory are adopted as the acceptance criteria for the project. Each individual surrogate compound is expected to meet the laboratory control limits. According to the TRRP-13 Guidelines, one outlying surrogate is acceptable for methods with multiple surrogate spike compounds if the recovery is at least ten percent.

Surrogate recoveries were assessed against laboratory control limits and/or the guidance in TRRP-13. Samples analyzed at elevated sample dilutions (five times or greater) were not assessed. All surrogate recoveries met the above criteria.

4.6 Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The recovery ranges established by the laboratory are adopted as the acceptance criteria for the project.

For this summary, LCS were analyzed at a minimum frequency of one per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

4.7 Matrix Spike Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analytes of concern and analyzed as MS/matrix spike duplicate (MSD) samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1. The recovery ranges established by the laboratory are adopted as the acceptance criteria for the project.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

4.8 Field QA/QC Samples

The field QA/QC consisted of two field blank samples and two field duplicate sample sets.

Field Blank Sample Analysis

To assess ambient conditions at the site, two field blank samples were submitted for analysis, as identified in Table 1. All results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate sample sets were collected and submitted to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than thirty percent for water samples. The RPDs are only used when sample concentrations are above the estimated regions of detection.

Field duplicate summary data are presented in Table 2. Most field duplicate results met the above criteria demonstrating acceptable sampling and analytical precision. The following outliers were noted (see Table 4):

- i.) WG-1620-MW01A-20240102 and WG-1620-FD01-20240102 did show variability in the following compounds: 2-methylnaphthalene, acenaphthylene, fluoranthene, and pyrene. All associated sample results were qualified as estimated.

- ii.) WG-1620-P10-20240103 and WG-1620-FD02-20240103 did show variability in the following compounds: acenaphthene, bis(2-ethylhexyl)phthalate (DEHP), and fluorene. All associated sample results were qualified as estimated.

4.9 Field Procedures

WSP USA, Inc. collected groundwater samples in accordance with their Standard Operating Procedures (SOP) for sample collection.

4.10 Analyte Reporting

The laboratory reported detected results for each analyte down to the sample detection limit (SDL), which is defined as the method detection limit (MDL) with sample-specific adjustments for dilutions, aliquot size, volumes, etc. Positive analyte detections less than the MQL but greater than the SDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this report.

All detectability check standard (DCS) results supported the laboratory MDLs.

5. Conclusion

Based on the assessment detailed in the foregoing, the analytical data summarized in Table 2 are usable for the purpose of supporting the HWPW - Semiannual SWMU No. 1 Monitoring Event at the site with the specific qualifications noted herein.

Regards



Chris G. Knight

Data Intelligence – Digital Team Lead – Data Validator

Table 1

Sample Collection and Analysis Summary
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	<u>Analysis/Parameters</u>	
					SVOCs	Comments
WG-1620-MW11B-20240102	MW-11B	Water	01/02/2024	10:50	X	
WG-1620-MW11A-20240102	MW-11A	Water	01/02/2024	11:40	X	
WG-1620-MW10B-20240102	MW-10B	Water	01/02/2024	12:25	X	
WG-1620-MW10A-20240102	MW-10A	Water	01/02/2024	13:10	X	
WG-1620-MW02-20240102	MW-02	Water	01/02/2024	13:55	X	
WG-1620-MW01A-20240102	MW-01A	Water	01/02/2024	14:55	X	
WG-1620-FD01-20240102	MW-01A	Water	01/02/2024	14:55	X	Field duplicate of MW-01A
WG-1620-P12-20240102	P-12	Water	01/02/2024	16:10	X	MS/MSD
WG-1620-FB01-20240102	-	Water	01/02/2024	16:45	X	Field Blank
WG-1620-MW08-20240103	MW-08	Water	01/03/2024	08:05	X	
WG-1620-MW07-20240103	MW-07	Water	01/03/2024	09:00	X	
WG-1620-P10-20240103	P-10	Water	01/03/2024	09:55	X	
WG-1620-FD02-20240103	P-10	Water	01/03/2024	09:55	X	Field duplicate of P-10
WG-1620-FB02-20240103	-	Water	01/03/2024	10:20	X	Field Blank

Notes:

- SVOCs - Semi-volatile Organic Compounds
MS/MSD - Matrix Spike/ Matrix Spike Duplicate
"_" - Not Applicable

Table 2

Analytical Results Summary
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Location ID:		MW-01A	MW-01A	MW-02	MW-07
Sample Name:		WG-1620-MW01A-20240102	WG-1620-FD01-20240102	WG-1620-MW02-20240102	WG-1620-MW07-20240103
Sample Date:		01/02/2024	01/02/2024	01/02/2024	01/03/2024
		Duplicate			
Parameters	Unit				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	0.00039 J	0.00021 J	0.00010	<0.000019
Acenaphthene	mg/L	0.024	0.023	0.015	<0.000027
Acenaphthylene	mg/L	<0.000015 J	0.00028 J	<0.000015	<0.000015
Anthracene	mg/L	0.00063	0.00073	0.00023	0.00020
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.000037	<0.000037	<0.000037	<0.000037
Di-n-butylphthalate (DBP)	mg/L	--	--	--	--
Dibenzofuran	mg/L	0.0084	0.0067	0.00068	<0.000020
Fluoranthene	mg/L	0.00080 J	0.0012 J	0.00039	<0.000010
Fluorene	mg/L	0.0099	0.0097	0.0095	<0.000030
Naphthalene	mg/L	<0.000020	<0.000020	0.00010	<0.000020
Phenanthrene	mg/L	0.00069	0.00075	0.00022	<0.000021
Phenol	mg/L	--	--	--	--
Pyrene	mg/L	0.00044 J	0.00067 J	0.00020	<0.000019

Table 2

Analytical Results Summary
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Location ID:		MW-08	MW-10A	MW-10B	MW-11A
Sample Name:		WG-1620-MW08-20240103	WG-1620-MW10A-20240102	WG-1620-MW10B-20240102	WG-1620-MW11A-20240102
Sample Date:		01/03/2024	01/02/2024	01/02/2024	01/02/2024
Parameters	Unit				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	<0.000019	<0.000019	--	<0.000019
Acenaphthene	mg/L	<0.000027	0.00018	0.013	<0.000027
Acenaphthylene	mg/L	<0.000015	<0.000015	0.00011	<0.000015
Anthracene	mg/L	<0.000014	<0.000014	0.00036	<0.000014
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.000037	0.000054 J	<0.000037	<0.000037
Di-n-butylphthalate (DBP)	mg/L	--	--	<0.000020	--
Dibenzofuran	mg/L	<0.000020	<0.000020	0.0014	<0.000020
Fluoranthene	mg/L	0.000038 J	<0.000010	0.00072	<0.000010
Fluorene	mg/L	<0.000030	<0.000030	0.0056	<0.000030
Naphthalene	mg/L	<0.000020	<0.000020	0.00014	<0.000020
Phenanthrene	mg/L	<0.000021	<0.000021	--	<0.000021
Phenol	mg/L	--	--	<0.000035	--
Pyrene	mg/L	0.000060 J	<0.000019	0.00053	<0.000019

Table 2

Analytical Results Summary
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Location ID:		MW-11B	P-10	P-10	P-12
Sample Name:		WG-1620-MW11B-20240102	WG-1620-P10-20240103	WG-1620-FD02-20240103	WG-1620-P12-20240102
Sample Date:		01/02/2024	01/03/2024	01/03/2024 Duplicate	01/02/2024
Parameters	Unit				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	--	--	--	--
Acenaphthene	mg/L	0.050	<0.000027 J	0.00014 J	<0.000027
Acenaphthylene	mg/L	0.00052	<0.000015	<0.000015	<0.000015
Anthracene	mg/L	0.0027	<0.000014	<0.000014	<0.000014
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.000037	<0.000037 J	0.00012 J	<0.000037
Di-n-butylphthalate (DBP)	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Dibenzofuran	mg/L	0.0056	<0.000020	<0.000020	<0.000020
Fluoranthene	mg/L	0.0054	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.020	<0.000030 J	0.00011 J	<0.000030
Naphthalene	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Phenanthrene	mg/L	--	--	--	--
Phenol	mg/L	<0.000035	<0.000035	<0.000035	<0.000035
Pyrene	mg/L	0.0032	<0.000019	<0.000019	<0.000019

Notes:

< - Not detected at the associated reporting limit

J - Estimated concentration

"--" - Not analyzed

Table 3

Analytical Methods
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Extraction to Analysis (Days)
SVOCs	SW-846 8270D	Water	7	40

Notes:

SVOCs - Semi-volatile Organic Compounds

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846,
Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Data Due to Variability in Field Duplicate Results
Semiannual SWMU No. 1 Monitoring Event
Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works
Houston, Texas
January 2024

Parameter	Analyte	RPD	Diff	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
SVOCs	2-Methylnaphthalene	60	0.00018	WG-1620-MW01A-20240102	0.00039 J	WG-1620-FD01-20240102	0.00021 J	mg/L
	Acenaphthylene	179	0.000265		<0.000015 J		0.00028 J	mg/L
	Fluoranthene	40	0.0004		0.0008 J		0.0012 J	mg/L
	Pyrene	41.4	0.00023		0.00044 J		0.00067 J	mg/L
SVOCs	Acenaphthene	135	0.000113	WG-1620-P10-20240103	<0.000027 J	WG-1620-FD02-20240103	0.00014 J	mg/L
	bis(2-Ethylhexyl)phthalate (DEHP)	105	0.000083		<0.000037 J		0.00012 J	mg/L
	Fluorene	114	0.00008		<0.000030 J		0.00011 J	mg/L

Notes:

- RPD - Relative Percent Difference
Diff - Difference
SVOCs - Semi-volatile Organic Compounds
< - Not detected at the associated reporting limit
J - Estimated concentration

Attachment A

Laboratory NELAP Certificate



Texas Commission on Environmental Quality

NELAP-Recognized Laboratory Accreditation is hereby awarded to



ALS Laboratory Group, Environmental Services Division (Houston, Texas)

10450 Stancliff Road, Suite 115
Houston, TX 77099-4338

in accordance with Texas Water Code Chapter 5, Subchapter R, Title 30 Texas Administrative Code Chapter 25, and the National Environmental Laboratory Accreditation Program.

The laboratory's scope of accreditation includes the fields of accreditation that accompany this certificate. Continued accreditation depends upon successful ongoing participation in the program. The Texas Commission on Environmental Quality urges customers to verify the laboratory's current location(s) and accreditation status for particular methods and analyses (www.tceq.texas.gov/goto/lab). Accreditation does not imply that a product, process, system or person is approved by the Texas Commission on Environmental Quality.

A handwritten signature in black ink, reading "Erin E. Chamallo".

Certificate Number: T104704231-23-32

Effective Date: 7/19/2023

Expiration Date: 4/30/2024

Executive Director Texas Commission on
Environmental Quality

APPENDIX D

Waste Manifest

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXD000820266		2. Page 1 of 1		3. Emergency Response Phone (888) 877-7267		4. Manifest Tracking Number 024986837 JJK			
		5. Generator's Name and Mailing Address Union Pacific Railroad c/o GHD Services, Inc. 9100 Centre Pointe Dr Suite 240 West Chester, OH 45069 (414) 267-4164						Generator's Site Address (if different than mailing address) Union Pacific Railroad (UPRR) 4910 Liberty Road Houston, TX 77026			
6. Transporter 1 Company Name E3 OMI, LLC		U.S. EPA ID Number TXD981055163									
7. Transporter 2 Company Name <i>Republic services</i>		U.S. EPA ID Number <i>TXR0000 84095</i>									
8. Designated Facility Name and Site Address US Ecology 3277 County Rd 69 Robstown, TX 78380 (800) 242-3209		U.S. EPA ID Number TXD069452340									
Facility's Phone:											
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes					
X	1. NA3082, Hazardous waste, liquid, n.o.s. (Creosote), 9, III RQ (F034) ERG #171	5	DM	2000	P	F034	0914	101H			
	2.										
	3.										
	4.										
14. Special Handling Instructions and Additional Information 1. WR#017536/Profile#090129643-0 Exp:3/10/24 Bill to: E3 OMI- PO Box 1300, Clinton, MS 39060 Email invoices: admin@e3omi.com/claraque@e3omi.com Job#: 035-24-0026 PO#: 35-2024-0149											
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/Offor's Printed/Typed Name Anthony McMullins OBO UPRR		Signature <i>Anthony McMullins</i>		Month Day Year 2 21 24							
16. International Shipments ☐ Import to U.S. ☐ Export from U.S.		Port of entry/exit: Date leaving U.S.:									
17. Transporter Acknowledgment of Receipt of Materials											
Transporter 1 Printed/Typed Name James Henry		Signature <i>James Henry</i>		Month Day Year 2 21 24							
Transporter 2 Printed/Typed Name Zach Dunn		Signature <i>Zach Dunn</i>		Month Day Year 2 21 24							
18. Discrepancy											
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection											
18b. Alternate Facility (or Generator) Manifest Reference Number: 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.											
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		Signature		Month Day Year							

APPENDIX E

**POC Concentration vs. Time
Graphs**



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

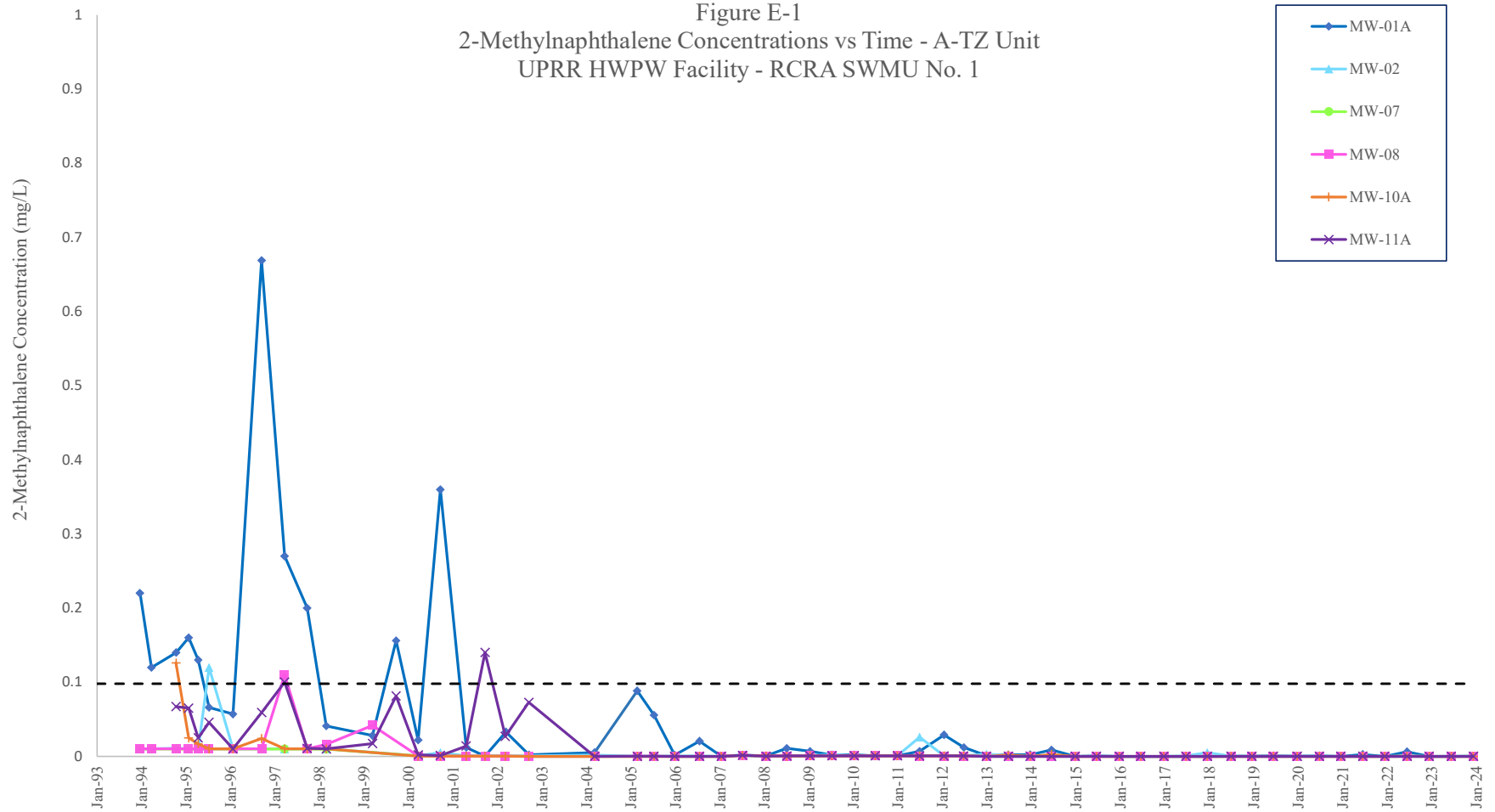


Figure E-2
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

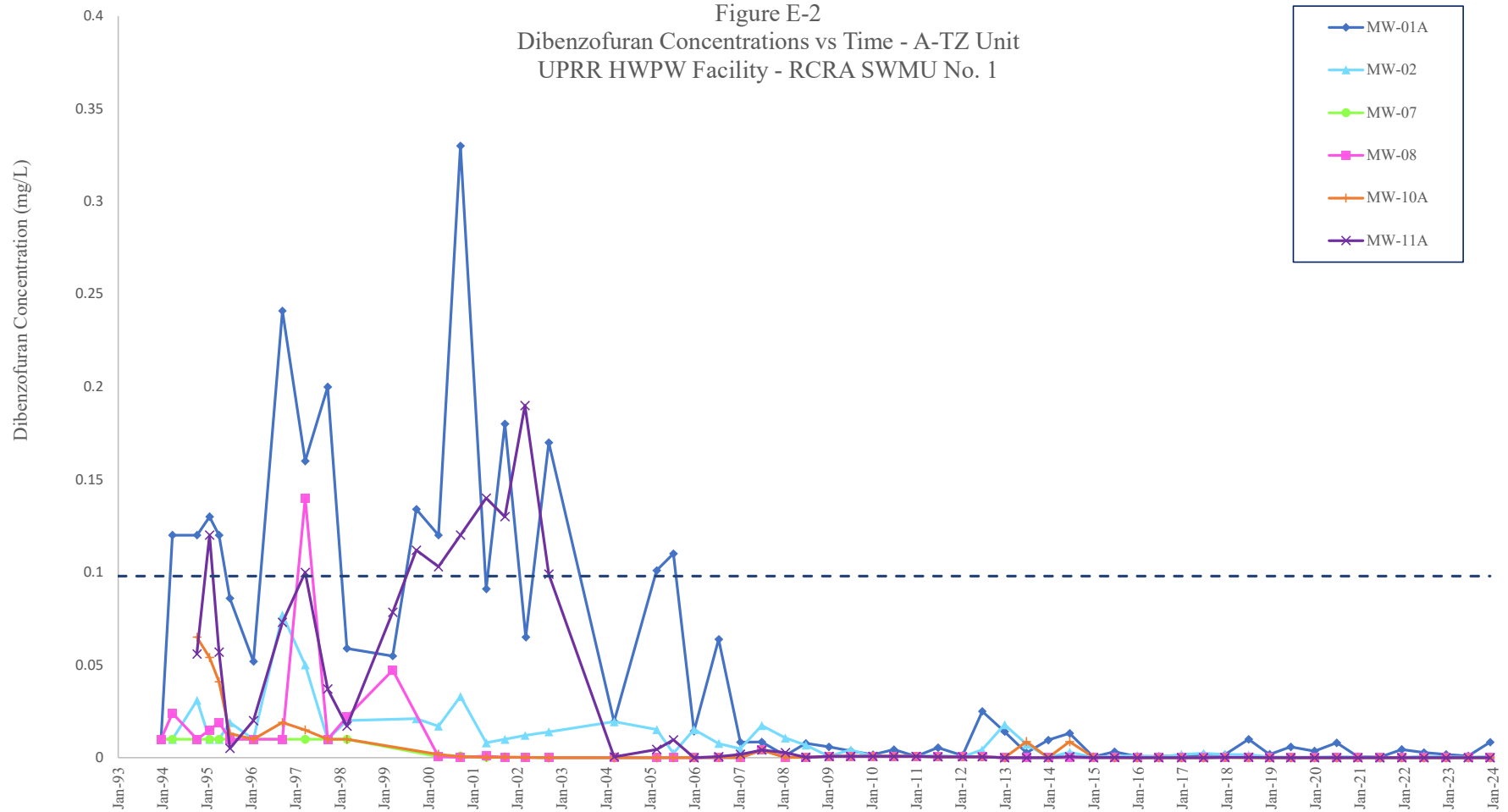


Figure E-3
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

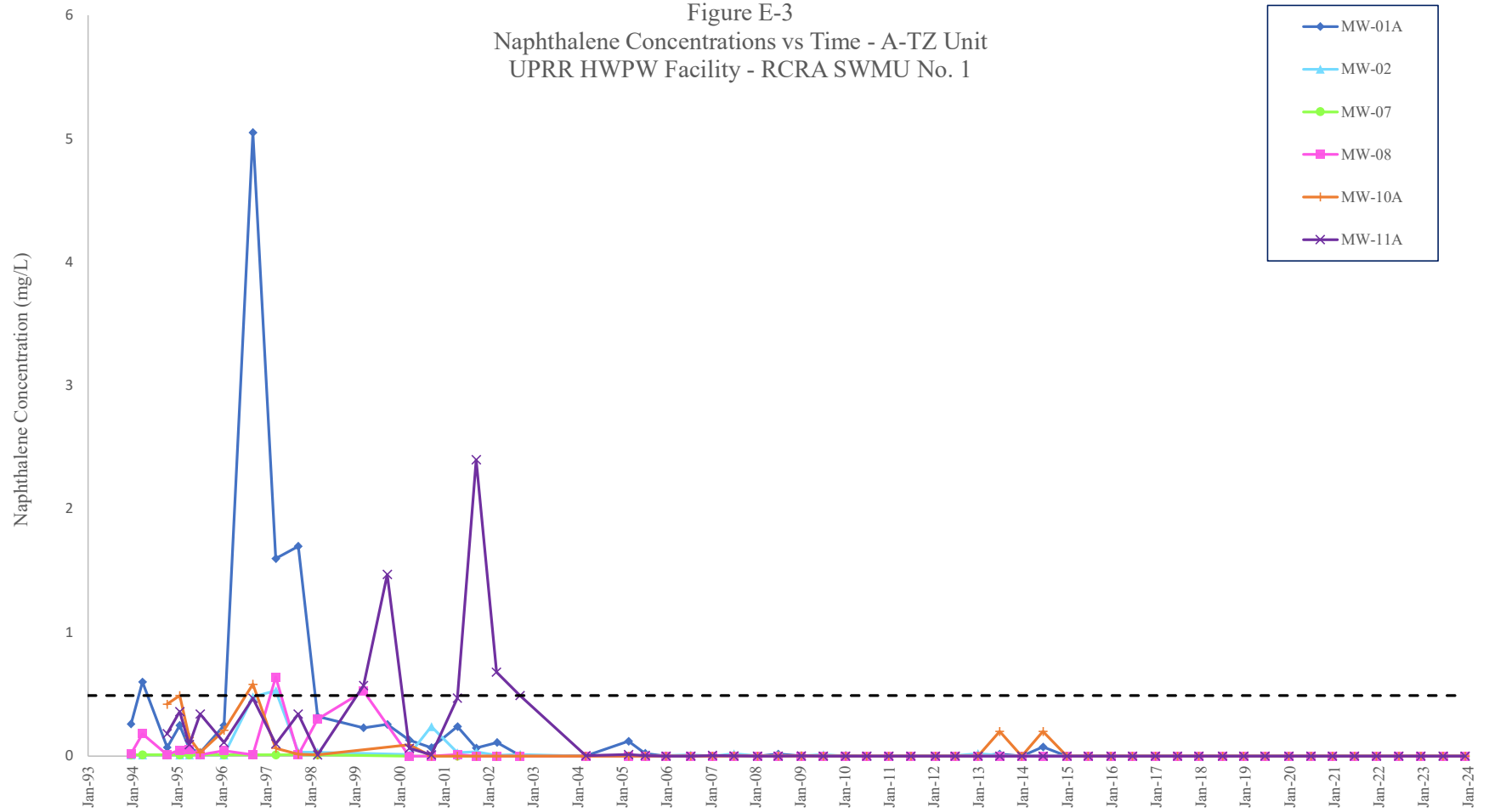


Figure E-4
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

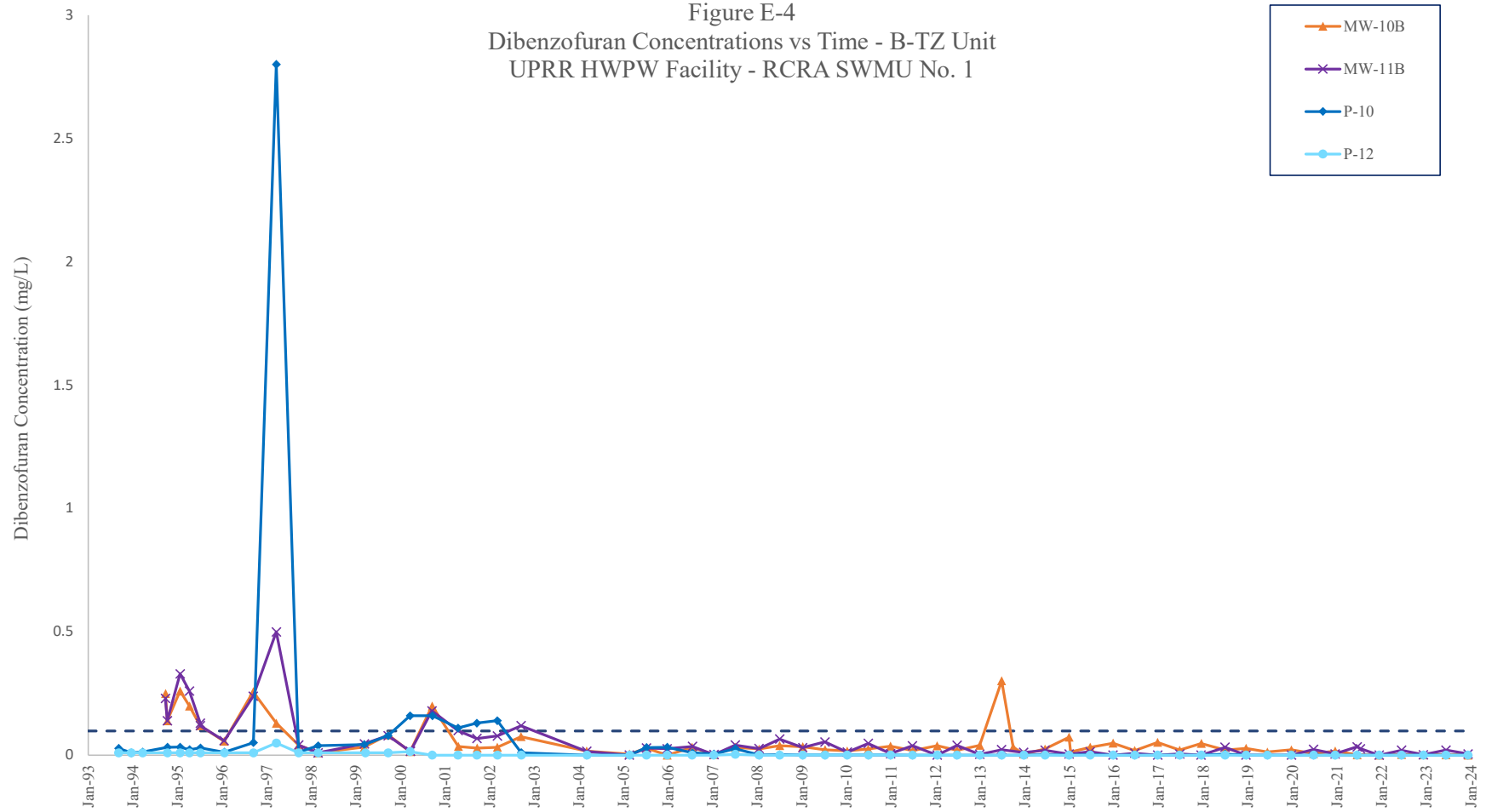
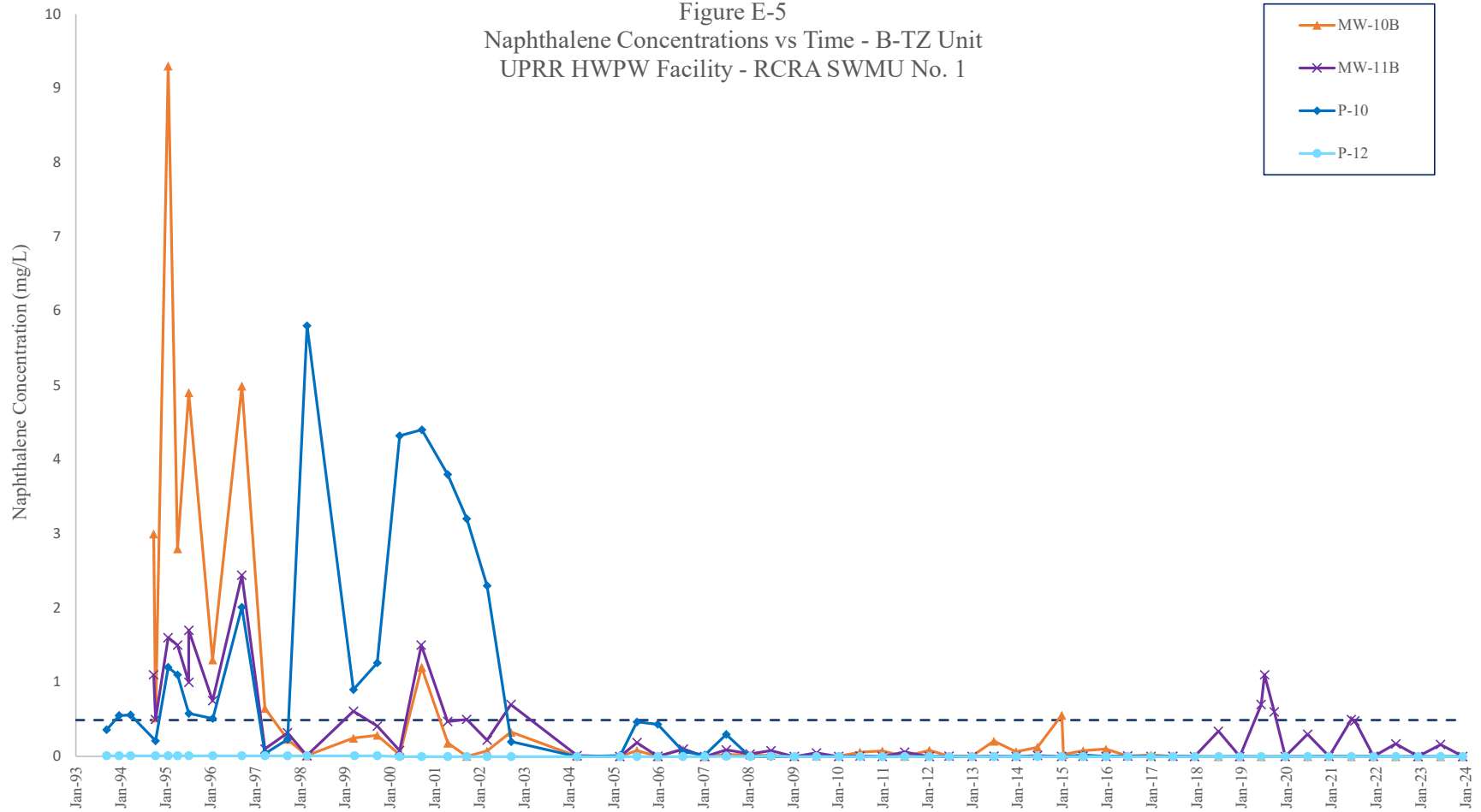


Figure E-5
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



APPENDIX F

Updated Compliance Schedule



ID	Task Name/Permit or CP Section No.	2023												2024						
		Qtr 1, 2023			Qtr 2, 2023			Qtr 3, 2023			Qtr 4, 2023			Qtr 1, 2024			Qtr 2, 2024			
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
1	Facility Management																			
2	RCRA Permit/Compliance Plan Renewal and Major Amendments																			
15	Permit Revision No. 5, 6, and 7																			
16	Preliminary Decision and Final Draft Permit Issued																			
17	Public Meeting																			
18	Public Comment Period																			
19	General Inspection Requirements (quarterly) [Permit Section III.D; Table III.D]																			
103	Corrective Measures Implementation (CMI)/Response Action Plan (RAP) [CP Section VIII.F]																			
110	Implement Corrective Action as detailed in RAP (pending approval of Permit Renewal/Compliance Plan)																			
111	Ground-Water Monitoring Program [Permit Section VI.A.; CP Section VI.]																			
112	Water Level Measurements (Semiannually) [CP Section VI.C.4.a]1																			
152	Monitoring Well Inspections (Semiannually) [CP Section VI.C.4.a]1																			
193	Groundwater Sampling and Data Evaluation [CP Section VI.C.2]																			
244	Response and Reporting [Permit Section II.B.7; CP Section VII.]																			
245	First Semi-Annual GW Monitoring Report - July 21 [CP Section VII.C.2]																			
265	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								
		Milestone	◆			Rolled Up Milestone			◇			Manual Summary			◀▶					
		Summary	◀▶			Rolled Up Progress			————											
July 2024		Page 1 of 1																		
		WSP USA Inc.																		

APPENDIX G

**Laboratory Data QA/QC Report
Checklist**

**FORMER HOUSTON WOOD PRESERVING WORKS
LABORATORY DATA QA/QC REPORT CHECKLIST
ANALYTICAL REPORT HS23070250
July 24, 2023**

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: Addison Savage			
Date: 7/2/2024	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 POCs included within the analytical methods 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 ☐	☐	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? <i>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.</i>		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: Former Houston Wood Preserving Works SWMU 1		Permit/ISW Reg No.: 50343
Laboratory Name: ALS Environmental		EPA I.D. No.:
Method No.	Non-conformance Description	Method Modification Description
SW8270		
SW8270		