



December 2, 2022

Project No. GL19119232

**Maureen Hatfield**

MC-127

VCP-CA Section, Team 1, Remediation Division

Texas Commission on Environmental Quality

P.O. Box 13087

Austin, Texas 78711-3087

**UPDATED BASELINE SOIL ASSESSMENT - UNION PACIFIC RAILROAD ENGLEWOOD INTERMODAL YARD, HOUSTON, TEXAS, POST-CLOSURE CARE PERMIT NO. HW-50343; INDUSTRIAL SWR NO. 31547**

Dear Ms. Hatfield,

Golder Associates USA Inc., a member of WSP (Golder), on behalf of Union Pacific Railroad Company (UPRR), is providing this letter summarizing the additional sampling activities conducted as part of the baseline soil assessment (BSA) within the Englewood Intermodal Yard (EIY or the Site) (IHW Permit 50343). The initial sampling results of the BSA were provided in a letter to the TCEQ dated September 19, 2022.

Based on the analytical results of the 46 soil samples collected from 23 soil borings in August 2022, 5 soil samples had arsenic concentrations and two other samples had lead concentrations that exceeded their respective residential assessment levels (RALs). None of the arsenic soil concentrations exceeded the residential Texas Risk Reduction Program (TRRP)  $\text{TotSoil}_{\text{Comb}}$  protective concentration level (PCL). One soil sample had a lead concentration that exceeded the residential  $\text{TotSoil}_{\text{Comb}}$  PCL; however, none of the lead soil concentrations exceeded the TRRP commercial/industrial  $\text{TotSoil}_{\text{Comb}}$  PCLs. These data indicate that the on-site commercial/industrial worker exposure is protective for arsenic, lead, and total petroleum hydrocarbon (TPH) concentrations.

Since arsenic and lead concentrations were not delineated along the southern property boundary to the applicable TRRP RALs in surface soils at specific locations, UPRR proposed to collect additional soil samples to further evaluate the lateral and vertical extent of the arsenic and lateral extent of lead concentrations at the Site. The results from the additional sampling conducted in October 2022 are discussed below.

**ADDITIONAL SAMPLING FOR BASELINE SOIL ASSESSMENT**

On October 11, 2022, Golder working with an environmental drilling contractor advanced six additional soil borings (BLS-24 through BLS-29) (Figure 1) and collected two soil samples at each of those locations, and advanced and sampled borings at two of the original locations (BLS-10 and BLS-12) for laboratory analysis. Soil borings were advanced using a track-mounted direct-push technology (DPT) rig to a depth of 10 feet below ground surface (bgs) for BLS-24 through BLS-29, and 15 feet bgs to obtain the 10–15-foot intervals at BLS-10 and BLS-12. Soil samples were collected from the soil cores, field screened using a photoionization detector (PID), and visually logged. Prior

to sampling, the PID was calibrated using 100 parts per million (ppm) by volume isobutylene standard.

Soil samples from borings BLS-24 through BLS-29 were selected for laboratory analysis based on PID screening and field observations:

- A 2.5-foot soil sample was collected from 0 to 5 feet bgs where the highest PID reading or visual staining was observed; or, if no PID or staining was observed, a sample from 0 to 2.5 feet bgs was collected; and
- A 2.5-foot soil sample was collected from the >5 feet bgs to a depth immediately above the saturated zone. If no PID readings or staining was observed, a soil sample was collected from immediately above the saturated zone or from the base of the boring. If no saturation was encountered, a sample from 7.5 to 10 feet bgs was collected and analyzed.

Soil samples from the initial borings BLS-10 and BLS-12 were collected during this additional investigation from the 12.5-15 feet bgs intervals to evaluate the vertical extent of arsenic concentrations.

Soils encountered generally consisted of gravel and sand from ground surface to about 2 feet below grade overlying brown to gray silty clay with occasional thin (less than 0.5 feet thick) gravel seams or lenses to the base of each boring. Saturated conditions were not encountered in the top 10 feet in any of the new locations or in the 10-15 foot interval of BLS-10 or BLS-12. Field PID headspace readings ranged from background levels to 1.1 ppm (at BLS-29 from 0-2.5 feet bgs) in the soils sampled in October 2022.

Soil samples collected from the assessment were analyzed for arsenic and lead using the SW-846 Methods 6000/7000 series. They were collected in laboratory-supplied containers and placed on wet ice in an insulated cooler to reduce and maintain sample temperature at  $4 \pm 2$  degrees Celsius. A chain-of custody record accompanied the samples through receipt at the ALS Environmental Laboratory in Houston, Texas. The data usability summary prepared by GHD and the laboratory analytical report for soil samples are provided in Attachment A.

Soil borings were plugged with bentonite chips in accordance with the State of Texas regulations. Investigation derived wastes (IDW), consisting of soil cuttings from drilling and decontamination fluids, were placed inside a labeled 55-gallon steel drum that was staged at a secure location on-site. IDW will be profiled and disposed of in accordance with state and federal rules and regulations.

## **DATA EVALUATION**

Golder evaluated the soil data by comparing the analytical results to TRRP residential Tier 1 and/or site-specific Tier 2 PCLs (last revised: March 2022), where applicable. The Tier 1 PCLs used were based on the TCEQ TRRP Tier 1 residential Soil PCLs conservatively assuming a 30-acre source area. The RALs are derived from the lower concentration of the TRRP Tier 1 residential Total Soil Combined ( $^{Tot}Soil_{Comb}$ ) and Tier 1 or Tier 2 Soil-to-Groundwater Ingestion ( $^{GW}Soil_{Ing}$ ) PCLs. In the event the published Texas-Specific Background Concentration (TSBC) values for metals are higher than the residential PCL, the TSBC is used as the applicable RAL. Tier 2 PCLs used for this evaluation were from the PCLs developed and presented in the Affected Property Assessment Report (APAR) dated October 15, 2010 (PBW, 2010).

## **Soil Analytical Results**

An updated summary of the soil analytical results is provided on Table 1. Arsenic and lead results are presented on Figure 2 and 3 and described below:

- Arsenic concentrations were not delineated to the applicable RAL of 5.9 mg/kg laterally with one sample at BLS-26 (7.5-10) near the south perimeter of the Site with a concentration of 8.15 mg/kg. This concentration does not exceed the residential  $TotSoil_{Comb}$  PCL (24 mg/kg).
- None of the additional soil samples analyzed for lead exceeded the applicable Tier 2 RAL (275 mg/kg). Therefore, the lead concentrations in soils are delineated to the applicable RAL.

## **CONCLUSIONS**

The additional investigation activities for the baseline soil assessment were conducted to evaluate the lateral and vertical extent of arsenic concentrations and lateral extent of lead concentrations to applicable RALs in the soils at the Site. The additional soil sampling and analysis for lead in samples collected in October 2022 did not exceed the applicable RAL. As a result, the lead concentrations at the site are delineated to the applicable RAL. Based on the analytical results of the additional soil sampling, only one soil sample (BLS-26 (7.5-10)) of the additional 10 samples collected had an arsenic concentration (8.15 mg/kg) that exceeded its respective RAL (5.9 mg/kg). This arsenic soil concentration did not exceed the residential or commercial/industrial  $TotSoil_{Comb}$  PCLs (24 and 200 mg/kg, respectively). Arsenic concentrations were delineated vertically to the RAL at BLS-10 and BLS-12. In addition, arsenic concentrations in groundwater samples collected from A-TZ monitoring wells in the vicinity of this area are below applicable PCLs. These lines of evidence indicate that the soil arsenic concentrations are protective of the A-TZ groundwater bearing unit. These data also indicate that the on-site commercial/industrial worker exposure is protective for arsenic concentrations.

Since arsenic concentrations in surface soil were not delineated along the property boundary to the applicable TRRP RAL, UPRR proposes to collect additional soil samples from two proposed soil borings south of BLS-26 near the property boundary. Samples will be collected from 0 to 2.5 feet, from 7.5 to 10 feet, and a 2.5-foot interval between 10 feet bgs and the top of the saturated zone (A-TZ) and analyzed for arsenic. Additional proposed borings are presented on Figure 4. The additional sampling activities will be collected within the next four weeks following the same general sampling procedures.

If you have any questions or need additional information, please feel free to call me at (512) 671-3434 or Mr. Kevin Peterburs of UPRR at (414) 267-4164.

Sincerely,

**Golder Associates Inc.**



Michelle Hermiston, P.G.  
Lead Consultant, Geologist



Eric C. Matzner, P.G.  
Vice President - Director, Hydrogeologist



Texas Geosciences Firm No. 50369

CC: Kevin Peterburs, UPRR

Attachments: Table  
Figures  
Attachment A – Data Usability Summary and Laboratory Reports

### References

Golder Associates Inc (Golder), 2020. Interim Non-Aqueous Phase Liquid (NAPL) and TPH-NAPL Assessment Report, April.

Pastor, Behling and Wheeler, LLC (PBW), 2010. Updated Affected Property Assessment Report. UPRR Houston Wood Preserving Works, October.

Texas Commission on Environmental Quality (TCEQ), 2010. Development of Human Health PCLs for Total Petroleum Hydrocarbon Mixtures, RG-366/TRRP-27, January.

## TABLE

Table 1  
Baseline Soil Assessment  
Union Pacific Railroad - Englewood Intermodal Yard; Schneider Lease Property  
Houston, TX

Location ID	TRRP Tier 1 or 2 Residential PCLs*		TRRP Tier 1 or 2 Commercial/Industrial PCLs		Texas Specific Background Concentration	BLS-01	BLS-01	BLS-02	BLS-02	BLS-03	BLS-03	BLS-04	BLS-04	BLS-05	BLS-05	BLS-06	BLS-06	BLS-07	BLS-07	BLS-08	BLS-08	BLS-09	BLS-09	BLS-10	BLS-10	BLS-10	BLS-11	
	Sample Interval	Sample Date	TotSoilComb	GWSoilIng		0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	6.5-8	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	2-3.5	7.5-10	0-2.5	7.5-10	12.5-15	0-2.5	
						8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022	8/22/2022
Constituent		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Metals																												
Arsenic		24	2.5	200	2.5	5.9	2.65	0.905	1.66	0.656	3.73	0.721	1.55	0.442 J	1.16	0.234 J	2.84	1.42	3.4	1.67	0.783	0.808	9.61	1.01	3.26	9.29	0.658	3.99
Lead		500	275	1600	275	15	43.7	7	13.3	6.85	15.4	6.17	9.59	3.75	8.76	4.31	31	6.2	48.4	8.92	14.8	12	162	6.64	797	12.6	NM	286
Volatile Organic Compounds																												
1,2-Dichloroethane		30	0.031	71	0.031	NA	< 0.00059	< 0.00055	< 0.0006	< 0.00063	< 0.00055	< 0.00057	< 0.00057	< 0.00054	< 0.00057	< 0.00057	< 0.00077	< 0.00054	< 0.00058	< 0.00057	< 0.00053	< 0.00059	< 0.00064	< 0.00054	< 0.00048	< 0.00055	NM	< 0.00096
Benzene		69	0.1	130	0.1	NA	< 0.00049	< 0.00046	< 0.0005	< 0.00052	< 0.00046	< 0.00048	< 0.00047	< 0.00045	< 0.00047	< 0.00048	< 0.00064	< 0.00045	< 0.00049	< 0.00047	< 0.00045	< 0.0005	< 0.00053	< 0.00045	< 0.0004	< 0.00046	NM	< 0.0008
Chlorobenzene		320	6.5	540	6.5	NA	< 0.00059	< 0.00055	< 0.0006	< 0.00063	< 0.00055	< 0.00057	< 0.00057	< 0.00054	< 0.00057	< 0.00057	< 0.00077	< 0.00054	< 0.00058	< 0.00057	< 0.00053	< 0.00059	< 0.00064	< 0.00054	< 0.00048	< 0.00055	NM	< 0.00096
Ethylbenzene		5300	44	17000	44	NA	< 0.00069	< 0.00064	< 0.0007	< 0.00073	< 0.00065	< 0.00067	< 0.00066	< 0.00063	< 0.00066	< 0.00067	< 0.0009	< 0.00063	< 0.00068	< 0.00066	< 0.00062	< 0.00069	< 0.00074	< 0.00063	< 0.00057	< 0.00065	NM	< 0.0011
Methylene chloride		1500	0.022	8600	0.021	NA	< 0.00099	< 0.00092	< 0.001	< 0.001	< 0.00092	< 0.00096	< 0.00095	< 0.0009	< 0.00095	< 0.00095	< 0.0013	< 0.0009	< 0.00097	< 0.00095	< 0.00089	< 0.00099	< 0.0011	< 0.0009	< 0.00081	< 0.00092	NM	< 0.0016
Toluene		5400	43	29000	43	NA	< 0.00059	< 0.00055	< 0.0006	< 0.00063	< 0.00055	< 0.00057	< 0.00057	< 0.00054	< 0.00057	< 0.00057	< 0.00077	< 0.00054	< 0.00058	< 0.00057	< 0.00053	< 0.00059	< 0.00064	< 0.00054	< 0.00048	< 0.00055	NM	< 0.00096
Xylenes, Total		3700	730	6500	730	NA	< 0.00099	< 0.00092	< 0.001	< 0.001	< 0.00092	< 0.00096	< 0.00095	< 0.0009	< 0.00095	< 0.00095	< 0.0013	< 0.0009	< 0.00097	< 0.00095	< 0.00089	< 0.00099	< 0.0011	< 0.0009	< 0.00081	< 0.00092	NM	< 0.0016
Semi-Volatile Organic Compounds																												
1,2-Diphenylhydrazine		5.4	0.23	20	0.51	NA	<0.014	<0.0014	<0.0013	<0.0014	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.012	<0.0013	<0.013	<0.0013	<0.063	<0.066	<0.013	<0.0013	<0.013	<0.064	NM	<0.013
2,4-Dimethylphenol		1300	18	14000	53	NA	<0.041	<0.0041	<0.0039	<0.0041	<0.0038	<0.0040	<0.0038	<0.0038	<0.0038	<0.0038	<0.037	<0.0039	<0.039	<0.0040	<0.19	<0.20	<0.038	<0.0039	<0.038	<0.19	NM	<0.040
2,4-Dinitrotoluene		6.9	0.022	28	0.049	NA	<0.011	<0.0011	<0.0011	<0.0011	<0.0010	<0.0011	<0.0010	<0.0010	<0.0010	<0.010	<0.0011	<0.011	<0.0011	<0.051	<0.054	<0.010	<0.0011	<0.010	<0.053	NM	<0.011	
2,6-Dinitrotoluene		6.9	0.018	28	0.04	NA	<0.041	<0.0041	<0.0039	<0.0041	<0.0038	<0.0040	<0.0038	<0.0038	<0.0038	<0.0038	<0.037	<0.0039	<0.039	<0.0040	<0.19	<0.20	<0.038	<0.0039	<0.038	<0.19	NM	<0.040
2-Chloronaphthalene		5000	5000	50000	15000	NA	<0.016	<0.0016	<0.0015	<0.0016	<0.0015	<0.0016	<0.0015	<0.0015	<0.0015	<0.015	<0.0015	<0.016	<0.0016	<0.074	<0.079	<0.015	<0.0015	<0.015	<0.076	NM	<0.016	
2-Methylnaphthalene		250	130	2500	380	NA	<0.0062	<0.00063	<0.00059	<0.00062	0.0024 J	<0.00061	0.0022 J	<0.00057	0.0021 J	<0.00058	<0.0057	<0.00059	<0.0060	<0.0060	<0.028	<0.030	0.37	<0.00059	0.059	<0.029	NM	0.13
4,6-Dinitro-2-methylphenol		6.7	0.0021	68	0.54	NA	<0.026	<0.0026	<0.0025	<0.0026	<0.0024	<0.0026	<0.0024	<0.0024	<0.0024	<0.0024	<0.024	<0.0025	<0.025	<0.0025	<0.12	<0.13	<0.024	<0.0025	<0.024	<0.12	NM	<0.026
4-Nitrophenol		130	0.089	1400	0.27	NA	<0.024	<0.0024	<0.0023	<0.0024	<0.0022	<0.0023	<0.0022	<0.0022	<0.0022	<0.0022	<0.022	<0.0023	<0.023	<0.0023	<0.11	<0.11	<0.022	<0.0022	<0.022	<0.11	NM	<0.023
Acenaphthene		3000	1800	37000	5200	NA	<0.0062	<0.00063	<0.00059	<0.00062	<0.00058	<0.00061	<0.00058	<0.00057	<0.00058	<0.0057	<0.00058	<0.0059	<0.0060	<0.0060	<0.028	<0.030	0.45	<0.00059	0.038	<0.029	NM	0.11
Acenaphthylene		3800	3000	37000	9100	NA	<0.012	<0.0013	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.011	<0.0012	<0.012	<0.012	<0.057	<0.060	<0.012	<0.0012	0.015 J	<0.058	NM	<0.012	
Anthracene		18000	3400	190000	10000	NA	<0.0062	<0.00063	<0.00059	<0.00062	<0.00058	<0.00061	<0.00058	<0.00057	<0.00058	<0.00058	0.014 J	<0.00059	0.0080 J	<0.00060	<0.028	<0.030	0.51	0.00089 J	0.28	<0.029	NM	0.78
Benz(a)anthracene		41	130	170	300	NA	<0.020	<0.0020	<0.0019	<0.0020	0.0032 J	<0.0019	<0.0018	0.0023 J	<0.0019	0.026 J	0.0031 J	0.044	<0.0019	<0.091	<0.097	0.34	<0.0019	0.13	<0.093	NM	0.12	
Benzo(a)pyrene		4.1	57	17	57	NA	<0.012	<0.0013	<0.0012	<0.0012	<0.0012	<0.0012	0.0026 J	<0.0011	<0.0012	<0.0012	<0.011	0.0028 J	0.033 J	<0.0012	<0.057	<0.060	<0.012	<0.0012	0.16	<0.058	NM	0.12
Bis(2-chloroethoxy)methane		2.5	0.077	6.2	0.17	NA	<0.011	<0.0011	<0.0011	<0.0011	<0.0010	<0.0011	<0.0010	<0.0010	<0.0010	<0.010	<0.0011	<0.011	<0.0011	<0.051	<0.054	<0.010	<0.0011	<0.010	<0.053	NM	<0.011	
Bis(2-ethylhexyl)phthalate		43	1200	560	1200	NA	<0.021	0.0056 J	<0.0020	0.0040 J	0.0094	0.0060 J	0.0074 J	0.0041 J	0.013	0.0069 J	<0.019	0.013	0.21	0.0027 J	<0.097	<0.10	0.22	0.0038 J	0.17	<0.099	NM	0.036 J
Chrysene		4100	12000	17000	26000	NA	<0.010	<0.0010	<0.00095	<0.0010	0.0021 J	<0.00097	<0.00093	<0.00092	0.0027 J	<0.00093	0.023 J	0.0032 J	0.043	<0.00097	<0.046	<0.048	0.28	<0.00094	0.13	<0.047	NM	0.12
Dibenzofuran		270	250	2700	740	NA	<0.0087	<0.00088	<0.00083	<0.00087	<0.00082	<0.00085	<0.00081	<0.00080	<0.00081	<0.00081	<0.0079	<0.00083	<0.0084	<0.00085	<0.040	<0.042	<0.0081	<0.00082	0.037 J	<0.041	NM	0.059
Di-n-butyl phthalate		6200	25000	68000	74000	NA	<0.015	0.0040 J</																				

Table 1  
Baseline Soil Assessment  
Union Pacific Railroad - Englewood Intermodal Yard; Schneider Lease Property  
Houston, TX

Location ID	TRRP Tier 1 or 2 Residential PCLs*		TRRP Tier 1 or 2 Commercial/Industrial PCLs		Texas Specific Background Concentration	BLS-11	BLS-12	BLS-12	BLS-12	BLS-13	BLS-13	BLS-14	BLS-14	BLS-15	BLS-15	BLS-16	BLS-16	BLS-17	BLS-17	BLS-18	BLS-18	BLS-19	BLS-19	BLS-20	BLS-20	BLS-21	BLS-21
	Sample Interval	Sample Date	TotSoil_Comb	GWSoil_Ing		TotSoil_Comb	GWSoil_Ing	8/23/2022	8/23/2022	8/23/2022	10/11/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022	8/23/2022
Constituent			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Metals																											
Arsenic	24	2.5	200	2.5	5.9	5.01	2.55	6.16	0.776	0.846	1.38	3.13	0.87	2.6	1.67	0.984	3.42	13.1	0.822	1.62	0.727	3.15	1.93	8.54	0.554	1.53	1.45
Lead	500	275	1600	275	15	8.91	190	12	NM	9.58	6.36	56.2	7.2	261	7.85	8.62	8.04	19.3	4.94	7.77	5.91	54.8	8.28	170	5.25	34.7	8.51
Volatile Organic Compounds																											
1,2 Dichloroethane	30	0.031	71	0.031	NA	< 0.00054	< 0.00087	< 0.00055	NM	< 0.00047	< 0.00055	< 0.00054	< 0.00056	< 0.00038	< 0.00055	< 0.00055	< 0.00057	< 0.00056	< 0.00058	< 0.00055	< 0.00059	< 0.00068	< 0.00056	< 0.00079	< 0.00053	< 0.00073	< 0.00055
Benzene	69	0.1	130	0.1	NA	< 0.00045	< 0.00073	< 0.00046	NM	< 0.00039	< 0.00046	< 0.00045	< 0.00047	< 0.00032	< 0.00046	< 0.00046	< 0.00048	< 0.00047	< 0.00048	< 0.00046	< 0.00049	< 0.00057	< 0.00047	< 0.00066	< 0.00045	< 0.00061	< 0.00046
Chlorobenzene	320	6.5	540	6.5	NA	< 0.00054	< 0.00087	< 0.00055	NM	< 0.00047	< 0.00055	< 0.00054	< 0.00056	< 0.00038	< 0.00055	< 0.00055	< 0.00057	< 0.00056	< 0.00058	< 0.00055	< 0.00059	< 0.00068	< 0.00056	< 0.00079	< 0.00053	< 0.00073	< 0.00055
Ethylbenzene	5300	44	17000	44	NA	< 0.00063	< 0.001	< 0.00064	NM	< 0.00055	< 0.00064	< 0.00064	< 0.00066	< 0.00044	< 0.00064	< 0.00064	< 0.00067	< 0.00066	< 0.00067	< 0.00064	< 0.00069	< 0.0008	< 0.00066	< 0.00092	< 0.00062	< 0.00085	< 0.00064
Methylene chloride	1500	0.022	8600	0.021	NA	< 0.0009	< 0.0015	< 0.00091	NM	< 0.00078	< 0.00092	< 0.00091	< 0.00094	< 0.00064	< 0.00092	< 0.00091	< 0.00096	< 0.00094	< 0.00096	< 0.00092	< 0.00098	< 0.0011	< 0.00094	< 0.0013	< 0.00089	< 0.0012	< 0.00091
Toluene	5400	43	29000	43	NA	< 0.00054	< 0.00087	< 0.00055	NM	< 0.00047	< 0.00055	< 0.00054	< 0.00056	< 0.00038	< 0.00055	< 0.00055	< 0.00057	< 0.00056	< 0.00058	< 0.00055	< 0.00059	< 0.00068	< 0.00056	< 0.00079	< 0.00053	< 0.00073	< 0.00055
Xylenes, Total	3700	730	6500	730	NA	< 0.0009	< 0.0015	< 0.00091	NM	< 0.00078	< 0.00092	< 0.00091	< 0.00094	< 0.00064	< 0.00092	< 0.00091	< 0.00096	< 0.00094	< 0.00096	< 0.00092	< 0.00098	< 0.0011	< 0.00094	< 0.0013	< 0.00089	< 0.0012	< 0.00091
Semi-Volatile Organic Compounds																											
1,2-Diphenylhydrazine	5.4	0.23	20	0.51	NA	<0.0013	<0.014	<0.0013	NM	<0.0013	<0.064	<1.3	<0.066	<1.3	<0.065	<0.063	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.013	<0.0013	<0.013	<0.0013	<0.013	<0.014
2,4-Dimethylphenol	1300	18	14000	53	NA	<0.0039	<0.041	<0.0040	NM	<0.0038	<0.19	<4.0	<0.20	<4.0	<0.20	<0.19	<0.0040	<0.0039	<0.0039	<0.0039	<0.0040	<0.038	<0.0039	<0.039	<0.0038	<0.039	<0.041
2,4-Dinitrotoluene	6.9	0.022	28	0.049	NA	<0.0011	<0.011	<0.0011	NM	<0.0010	<0.053	<1.1	<0.054	<1.1	<0.053	<0.052	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.010	<0.0011	<0.011	<0.0010	<0.011	<0.011
2,6-Dinitrotoluene	6.9	0.018	28	0.04	NA	<0.0039	<0.041	<0.0040	NM	<0.0038	<0.19	<4.0	<0.20	<4.0	<0.20	<0.19	<0.0040	<0.0039	<0.0039	<0.0039	<0.0040	<0.038	<0.0039	<0.039	<0.0038	<0.039	<0.041
2-Chloronaphthalene	5000	5000	50000	15000	NA	<0.0015	<0.016	<0.0016	NM	<0.0015	<0.076	<1.6	<0.078	<1.6	<0.077	<0.075	<0.0016	<0.0015	<0.0015	<0.0015	<0.0016	<0.015	<0.0015	<0.015	<0.0015	<0.015	<0.016
2-Methylnaphthalene	250	130	2500	380	NA	<0.00059	0.020 J	<0.00060	NM	<0.00058	<0.029	<0.61	<0.030	<0.60	<0.030	<0.029	<0.00060	<0.00059	<0.00059	<0.00059	<0.00061	<0.0057	<0.00059	0.15	<0.00057	<0.0059	<0.0062
4,6-Dinitro-2-methylphenol	6.7	0.0021	68	0.54	NA	<0.0025	<0.026	<0.0025	NM	<0.0024	<0.12	<2.6	<0.13	<2.5	<0.12	<0.12	<0.0025	<0.0025	<0.0025	<0.0025	<0.0026	<0.024	<0.0025	<0.0024	<0.0025	<0.0024	<0.026
4-Nitrophenol	130	0.089	1400	0.27	NA	<0.0022	<0.024	<0.0023	NM	<0.0022	<0.11	<2.3	<0.11	<2.3	<0.11	<0.11	<0.0023	<0.0023	<0.0023	<0.0022	<0.0023	<0.022	<0.0022	<0.0022	<0.0022	<0.0022	<0.023
Acenaphthene	3000	1800	37000	5200	NA	<0.00059	0.033 J	<0.00060	NM	<0.00058	<0.029	<0.61	<0.030	<0.60	<0.030	<0.029	<0.00060	<0.00059	<0.00059	<0.00059	<0.00061	<0.0057	<0.00059	0.028 J	<0.00057	<0.0059	<0.0062
Acenaphthylene	3800	3000	37000	9100	NA	<0.0012	<0.012	<0.0012	NM	<0.0012	<0.058	<1.2	<0.060	<1.2	<0.059	<0.058	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.011	<0.0012	<0.012	<0.0011	<0.012	<0.012
Anthracene	18000	3400	190000	10000	NA	<0.00059	0.077	<0.00060	NM	<0.00058	<0.029	<0.61	<0.030	<0.60	<0.030	<0.029	<0.00060	<0.00059	<0.00059	<0.00059	<0.00061	<0.0057	<0.00059	0.086	<0.00057	0.0063 J	<0.0062
Benz(a)anthracene	41	130	170	300	NA	<0.0019	0.11	<0.0019	NM	<0.0019	<0.093	<1.9	<0.097	<1.9	<0.095	<0.092	<0.0019	<0.0019	0.0039 J	<0.0019	<0.0019	<0.018	<0.0019	0.054	<0.0018	0.028 J	<0.020
Benzo(a)pyrene	4.1	57	17	57	NA	<0.0012	0.13	<0.0012	NM	0.0039	<0.058	<1.2	<0.060	<1.2	<0.059	<0.058	<0.0012	<0.0012	0.0020 J	<0.0012	<0.0012	<0.011	<0.0012	0.081	<0.0011	0.033 J	<0.012
Bis(2-chloroethoxy)methane	2.5	0.077	6.2	0.17	NA	<0.0011	<0.011	<0.0011	NM	<0.0010	<0.053	<1.1	<0.054	<1.1	<0.053	<0.052	<0.0011	<0.0011	0.0011	<0.0011	<0.0011	<0.010	<0.0011	<0.011	<0.0010	<0.011	<0.011
Bis(2-ethylhexyl)phthalate	43	1200	560	1200	NA	0.0038 J	<0.021	0.0039 J	NM	0.016	<0.099	<2.1	<0.10	<2.1	<0.10	<0.098	0.0028 J	<0.0020	0.0024 J	<0.0020	0.0091 J	<0.020	<0.0020	<0.020	0.0028 J	<0.020	<0.021
Chrysene	4100	12000	17000	26000	NA	<0.00094	0.09	<0.00096	NM	<0.00093	<0.047	<0.97	<0.048	<0.97	<0.048	<0.046	0.0017 J	<0.00095	0.0024 J	<0.00094	<0.00097	<0.0092	<0.00095	0.059	<0.00091	0.031 J	<0.0099
Dibenzofuran	270	250	2700	740	NA	<0.00082	0.017 J	<0.00084	NM	<0.00081	<0.041	<0.85	<0.042	<0.85	<0.042	<0.040	<0.00084	<0.00083	<0.00083	<0.00082	<0.00085	<0.0080	<0.00083	0.049	<0.00080	<0.0083	<0.0086
Di-n-butyl phthalate	6200	25000	68000	74000	NA	0.0022 J	<0.015	0.0025 J	NM	0.0026 J	<0.070	<1.5	<0.072	<1.4	<0.071	<0.069	<0.0014	<0.0014	<0.0014	0.0021 J	<0.014	0.0021 J	<0.014	0.0026 J	<0.014	<0.015	
Fluoranthene	2300	14000	25000	43000	NA	<0.0013	0.23	0.0015 J	NM	<0.0013	<0.064	&lt															



Table 1  
Baseline Soil Assessment  
Union Pacific Railroad - Englewood Intermodal Yard; Schneider Lease Property  
Houston, TX

Location ID	TRRP Tier 1 or 2 Residential PCLs*		TRRP Tier 1 or 2 Commercial/Industrial PCLs		Texas Specific Background Concentration	BLS-22	BLS-22	BLS-23	BLS-23	BLS-24	BLS-24	BLS-25	BLS-25	BLS-26	BLS-26	BLS-27	BLS-27	BLS-28	BLS-28	BLS-29	BLS-29	
	Sample Interval	TotSoilComb	GWSoilIng	TotSoilComb		GWSoilIng	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10	0-2.5	7.5-10
Sample Date	8/24/2022						8/24/2022	8/24/2022	8/24/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022
Constituent	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Metals																						
Arsenic	24	2.5	200	2.5	5.9	1.8	5.5	1.72	1.82	2.65	2.42	3.13	2.43	1.92	8.15	4.57	1.38	NM	NM	NM	NM	
Lead	500	275	1600	275	15	43	12.7	157	7.58	NM	NM	NM	NM	NM	NM	NM	NM	170	6.09	270	7.31	
Volatile Organic Compounds																						
1,2 Dichloroethane	30	0.031	71	0.031	NA	< 0.00053	< 0.00056	< 0.00064	< 0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Benzene	69	0.1	130	0.1	NA	< 0.00045	< 0.00047	< 0.00054	< 0.00049	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Chlorobenzene	320	6.5	540	6.5	NA	< 0.00053	< 0.00056	< 0.00064	< 0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Ethylbenzene	5300	44	17000	44	NA	< 0.00062	< 0.00066	< 0.00075	< 0.00069	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Methylene chloride	1500	0.022	8600	0.021	NA	< 0.00089	< 0.00094	< 0.0011	< 0.00098	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Toluene	5400	43	29000	43	NA	< 0.00053	< 0.00056	< 0.00064	< 0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Xylenes, Total	3700	730	6500	730	NA	< 0.00089	< 0.00094	< 0.0011	< 0.00098	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Semi-Volatile Organic Compounds																						
1,2-Diphenylhydrazine	5.4	0.23	20	0.51	NA	<0.013	<0.0013	<0.013	<0.0013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2,4-Dimethylphenol	1300	18	14000	53	NA	<0.040	<0.0038	<0.039	<0.0039	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2,4-Dinitrotoluene	6.9	0.022	28	0.049	NA	<0.011	<0.0010	<0.011	<0.0011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2,6-Dinitrotoluene	6.9	0.018	28	0.04	NA	<0.040	<0.0038	<0.039	<0.0039	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2-Chloronaphthalene	5000	5000	50000	15000	NA	<0.016	<0.0015	<0.015	<0.0015	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
2-Methylnaphthalene	250	130	2500	380	NA	<0.0060	<0.00058	<0.0059	<0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
4,6-Dinitro-2-methylphenol	6.7	0.0021	68	0.54	NA	<0.025	<0.0024	<0.025	<0.0025	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
4-Nitrophenol	130	0.089	1400	0.27	NA	<0.023	<0.0022	<0.022	<0.0023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Acenaphthene	3000	1800	37000	5200	NA	<0.0060	<0.00058	<0.0059	<0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Acenaphthylene	3800	3000	37000	9100	NA	<0.012	<0.0012	<0.012	<0.0012	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Anthracene	18000	3400	190000	10000	NA	<0.0060	<0.00058	<0.0059	<0.00059	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Benz(a)anthracene	41	130	170	300	NA	<0.019	<0.0019	0.020 J	<0.0019	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Benzo(a)pyrene	4.1	57	17	57	NA	<0.012	<0.0012	<0.012	<0.0012	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Bis(2-chloroethoxy)methane	2.5	0.077	6.2	0.17	NA	<0.011	<0.0010	<0.011	<0.0011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Bis(2-ethylhexyl)phthalate	43	1200	560	1200	NA	<0.020	<0.0020	<0.020	0.0032 J	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Chrysene	4100	12000	17000	26000	NA	<0.0096	<0.00093	<0.0095	<0.00095	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Dibenzofuran	270	250	2700	740	NA	<0.0084	<0.00082	<0.0083	<0.00083	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Di-n-butyl phthalate	6200	25000	68000	74000	NA	<0.014	0.0029 J	<0.014	0.0028 J	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Fluoranthene	2300	14000	25000	43000	NA	<0.013	0.0014 J	0.023 J	<0.0013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Fluorene	2300	2200	25000	6600	NA	<0.013	<0.0013	<0.013	<0.0013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Naphthalene	120	230	190	680	NA	<0.0072	<0.00070	<0.0071	<0.00071	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Nitrobenzene	34	0.49	57	1.5	NA	<0.011	<0.0010	<0.011	<0.0011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
N-Nitrosodiphenylamine	570	19	1900	42	NA	<0.0084	<0.00082	<0.0083	<0.00083	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Pentachlorophenol	0.73	0.12	32	0.12	NA	<0.040	<0.0038	<0.039	<0.0039	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Phenanthrene	1700	3100	19000	9300	NA	<0.018	<0.0017	<0.018	<0.0018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Phenol	950	45	1400	130	NA	<0.013	<0.0013	<0.013	<0.0013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Pyrene	1700	8400	19000	25000	NA	<0.0072	0.0013 J	0.018 J	<0.00071	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Total Petroleum Hydrocarbon																						
nC6 to nC12	---	---	---	---	NA	<9.6	<6.5	<8.6	<7.0	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
>nC12 to nC28	---	---	---	---	NA	<13	<8.5	<11	<9.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
>nC28 to nC35	---	---	---	---	NA	<13	<8.5	<11	<9.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
Total Petroleum Hydrocarbon	5,797	NC	58000	NC	NA	<9.6	<6.5	<8.6	<7.0	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	

Notes:

(1) Concentrations were compared to the lower of the TotSoilcomb and GWSoilIng TCEQ TRRP Tier 1 or Tier 2 Residential Soil PCLs (30 acre source area) (March 2022). Tier 2 calculations were presented in the Affected Property Assessment Report (APAR) dated October 15, 2010 (PBW, 2010).

(2) Metal concentrations were compared to the higher of the TRRP Tier 1 PCL and the Texas-Specific Background Concentrations (TSBC).

(3) Lead concentrations were compared to TRRP Tier 2 PCLs based on the formula and default values presented in TCEQ Guidance Document Establishing Critical Protective Concentration Levels (PCLs) for Lead-Affected Soils (TCEQ, August 2001).

(4) Constituent detections above the sample detection limit (SDL) have been bolded.

(5) Concentrations exceeding the RAL are highlighted yellow. The applicable action level is highlighted gray.

(6) J = Analyte detected below the quantitation limit.

(7) TPH PCL based on TPH mixture PCL for an unresolved complex mixture (UCM) as detailed in the Interim NAPL and TPH-NAPL Assessment Report (Golder, 2020).

NC- Not Calculated - According to the TCEQ TRRP Tier 1 TPH PCL Calculator for TCEQ Method 1006 Data, the GW-Soil-Ing PCL not needed based on the Hazard Index (Golder, 2020).

NM- Not Measured



## FIGURES



Path: \\golder-gb-complex\data\soil\Tearhead\Projects - Round Rock\ 2022\1404514 - UPRR MAP\MAP\PRODUCT\N\2022\1404514 - UPRR MAP\MAP\LOCATION Map.dwg | Last Edited By: usad701305 Date: 2022-10-28 Time: 4:29:27 PM | Printed By: usad701305 Date: 2022-10-28 Time: 4:39:31 PM



LEGEND

--- UPRR PROPERTY BOUNDARY

RAILROAD BALLAST CAP AREA

ASPHALT CAP AREA

SOIL CAP

CONCRETE CAP AREA

APPROXIMATE PROPOSED FENCE BOUNDARY

● BASELINE SOIL SAMPLING LOCATION (AUGUST 2022)

● BASELINE SOIL SAMPLING LOCATION (OCTOBER 2022)

NOTE(S)

1. PROPOSED FENCE TO BE TIED INTO EXISTING PERIMETER FENCE.

REFERENCE(S)

AERIAL: GOOGLE EARTH, IMAGERY DATED 2/23/19.

CLIENT  
UNION PACIFIC RAILROAD CO.

PROJECT  
HOUSTON WOOD PRESERVING WORKS

TITLE  
SOIL BORING LOCATION MAP

CONSULTANT	YYYY-MM-DD	2022-10-28
	DESIGNED	AJD
	PREPARED	AJD
	REVIEWED	MH
	APPROVED	ECM

PROJECT NO.  
31404514.014

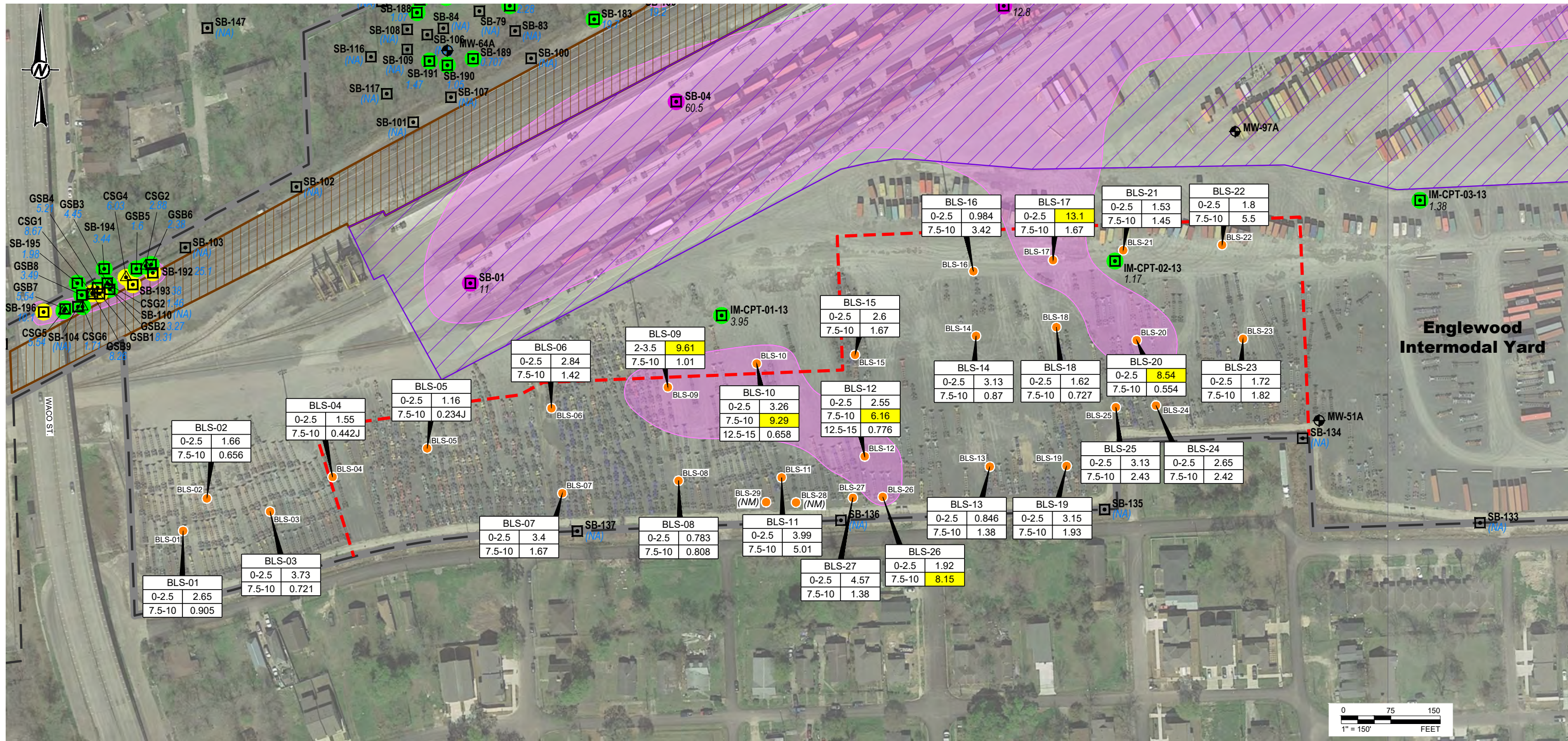
REV.  
0

FIGURE  
1

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



Path: \\golder-gbl-complex\data\soil\Harris\Projects - Round Rock\2023\1404514 - UPRR MAP\PRODUCT\CON\2023\10 - File Name: 2 - Surface Soil Arsenic Conc Map.dwg | Last Edited By: user701305 Date: 2023-11-09 Time: 12:48:08 PM | Printed By: user701305 Date: 2023-11-10 Time: 9:52:44 AM



#### LEGEND

- UPRR PROPERTY BOUNDARY
- RAILROAD BALLAST CAP AREA
- CONCRETE CAP AREA
- APPROXIMATE PROPOSED FENCE BOUNDARY
- BASILINE SOIL SAMPLING LOCATION
- AFFECTED PROPERTY/PCLE ZONE
- SOIL BORING LOCATION (PRESENTED IN 2017 RACR)
- CONFIRMATION SAMPLE LOCATION (PRESENTED IN 2017 RACR)
- DETECTED SURFACE SOIL CONCENTRATION <RAL (PRESENTED IN 2017 RACR)
- DETECTED SURFACE SOIL CONCENTRATION >RAL (PRESENTED IN 2017 RACR)
- DETECTED SURFACE SOIL CONCENTRATION >cPCL (PRESENTED IN 2017 RACR)
- A-TZ MONITORING WELL LOCATION

#### NOTE(S)

- PROPOSED FENCE TO BE TIED INTO EXISTING PERIMETER FENCE.

Sample ID	
Sample Interval (FT BGS)	Arsenic Concentration (mg/Kg)

#### NOTE(S)

- RESIDENTIAL ASSESSMENT LEVEL (RAL) = 5.9 mg/Kg.
- CRITICAL PCL (cPCL) = 5.9 mg/Kg (ON-SITE), 5.9 mg/Kg (OFF-SITE).
- RAL AND cPCL BASED ON TIER 1 AND 2 RES/CI PCLs, 30 ACRE SOURCE AREA.

#### REFERENCE(S)

- AERIAL: GOOGLE EARTH, IMAGERY DATED 2/23/19.
- 2017 RESPONSE ACTION COMPLETION REPORT (RACR), UNION PACIFIC RAILROAD, HOUSTON, TEXAS WOOD PRESERVING WORKS.



Texas Geosciences Firm No. 50369

#### CLIENT

UNION PACIFIC RAILROAD CO.

#### PROJECT

HOUSTON WOOD PRESERVING WORKS

#### TITLE

SURFACE SOIL ARSENIC CONCENTRATION MAP

#### CONSULTANT

YYYY-MM-DD	2022-11-09
DESIGNED	AJD
PREPARED	AJD
REVIEWED	MH
APPROVED	ECM

#### PROJECT NO.

31404514.014

#### REV.

0

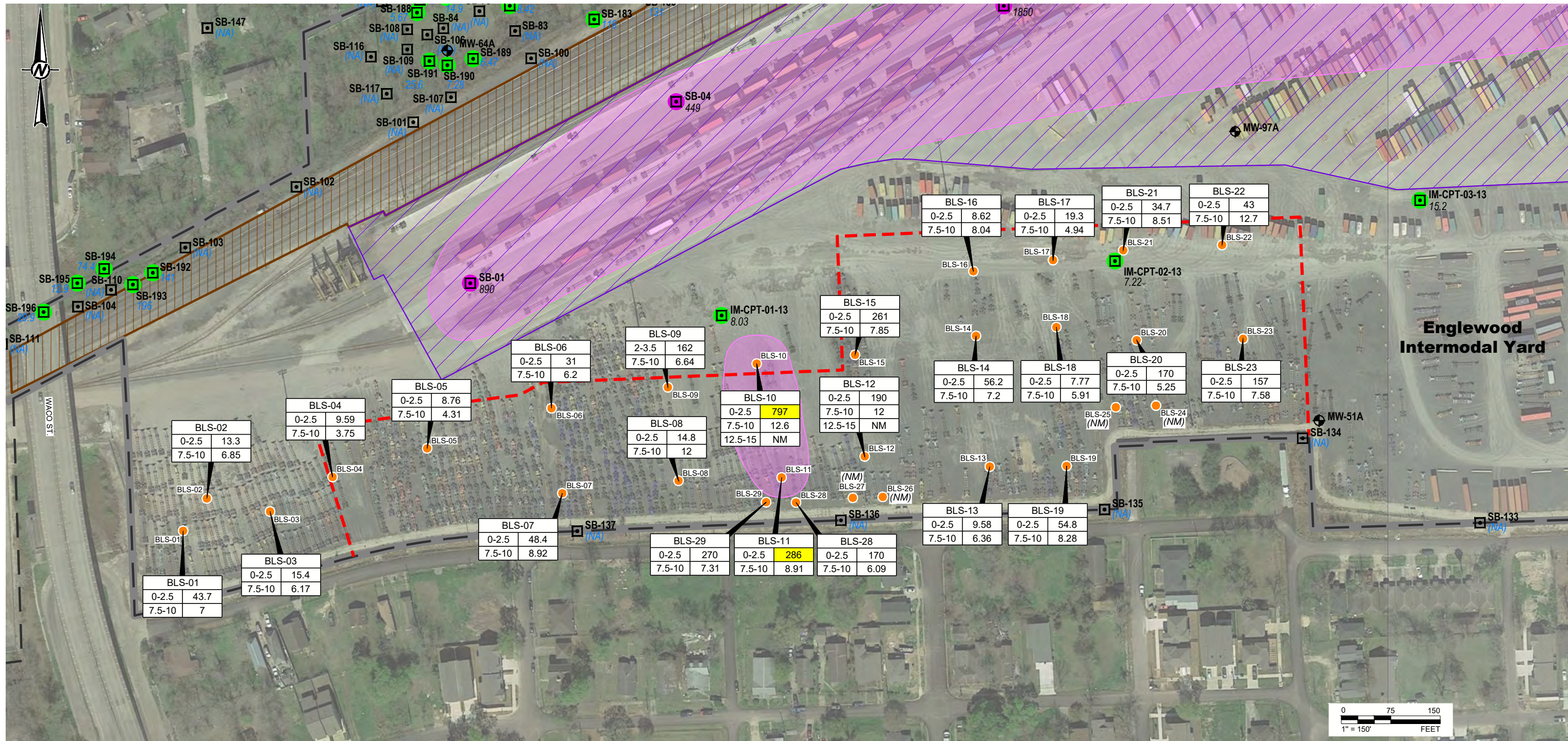
#### FIGURE

2

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



Path: \\golder-gb.com\projects\Houston\Projects - Round Rock\2022\1404514 - UPRR MAP\PRODUCT\2022\10 - File Name: 3 - Surface Soil Lead Core Map.dwg | Last Edited By: usad701305 Date: 2022-11-09 Time: 12:54:43 PM | Printed By: USAD701305 Date: 2022-11-10 Time: 9:49:16 AM



LEGEND

- UPRR PROPERTY BOUNDARY
- RAILROAD BALLAST CAP AREA
- ASPHALT CAP AREA
- SOIL CAP
- CONCRETE CAP AREA
- APPROXIMATE PROPOSED FENCE BOUNDARY
- BASELINE SOIL SAMPLING LOCATION
- AFFECTED PROPERTY/PCLE ZONE
- SOIL BORING LOCATION (PRESENTED IN 2017 RACR)
- DETECTED SURFACE SOIL CONCENTRATION <RAL (PRESENTED IN 2017 RACR)
- DETECTED SURFACE SOIL CONCENTRATION >cPCL (PRESENTED IN 2017 RACR)
- A-TZ MONITORING WELL LOCATION

NOTE(S)

- PROPOSED FENCE TO BE TIED INTO EXISTING PERIMETER FENCE.

Sample ID	
Sample Interval (FT BGS)	Lead Concentration (mg/Kg)

NOTE(S)

- RESIDENTIAL ASSESSMENT LEVEL (RAL) = 275 mg/Kg.
- CRITICAL PCL (cPCL) = 275 mg/Kg (ON-SITE), 275 mg/Kg (OFF-SITE).
- RAL AND cPCL BASED ON TIER 1 AND 2 RES/CI PCLs, 30 ACRE SOURCE AREA.

REFERENCE(S)

- AERIAL: GOOGLE EARTH, IMAGERY DATED 2/23/19.
- 2017 RESPONSE ACTION COMPLETION REPORT (RACR), UNION PACIFIC RAILROAD, HOUSTON, TEXAS WOOD PRESERVING WORKS.



Texas Geosciences Firm No. 50369

CLIENT  
UNION PACIFIC RAILROAD CO.

PROJECT  
HOUSTON WOOD PRESERVING WORKS

TITLE  
SURFACE SOIL LEAD CONCENTRATION MAP

CONSULTANT	YYYY-MM-DD	2022-11-09
DESIGNED	AJD	
PREPARED	AJD	
REVIEWED	MH	
APPROVED	ECM	

PROJECT NO.  
31404514.014

REV.  
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1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B







**ATTACHMENT A**

# Data Usability Summary and Laboratory Report

# Technical Memorandum

28 October 2022

<b>To</b>	Eric Matzner		
<b>Copy to</b>	Jesse Orth, Julie Lidstone		
<b>From</b>	Chris G. Knight/eew/1397	<b>Tel</b>	512-506-8803
<b>Subject</b>	Data Usability Summary Baseline Soil Assessment Union Pacific Railroad (UPRR)/Houston TX Wood Preserving Works Houston, Texas October 2022	<b>Project no.</b>	11183954-1620

## 1. Scope of Data Usability Study

This document details a Data Usability Summary (DUS) of analytical results for samples collected in support of the Baseline Soil Assessment at the UPRR/Houston TX-Wood Preserving Works site during October 2022. Samples were submitted to ALS Global, located in Houston, Texas and are reported in data package HS22100542. The intended use of the data is to support the Baseline Soil Assessment at the site by providing current concentration 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 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 form, the finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS)/duplicate analyses, the laboratory review checklists (LRC), and the laboratory exceptions (ER).

A sample collection and analysis summary is 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.

## 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 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, MS, and duplicate analyses.

### **4. Data Review/Validation Results**

#### **4.1 Sample Hold Time and Preservation**

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

Sample chain of custody documents and the 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 method.

#### **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 package.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch and results are reported in the laboratory data package.

All 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 Laboratory Control Sample Analyses**

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

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

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

#### **4.6 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.

The laboratory performed MS/MSD analyses on non-site samples. These cannot be used to assess accuracy and precision for the site samples.

#### **4.7 Duplicate Sample Analyses**

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for metals analysis. The relative percent differences (RPD) established by the laboratory are adopted as the acceptance criteria for the project.

The laboratory performed duplicate analyses on non-site samples. These cannot be used to assess precision for the site samples.

#### **4.8 Field Procedures**

Golder Associates, Inc. collected soil samples in accordance with their Standard Operating Procedures (SOP) for sample collection.

### **5. Analyte Reporting**

The laboratory reported detected results for each analyte down to the sample detection limit (SDL), which is defined as the MDL with sample-specific adjustments for dilutions, aliquot size, volumes, etc.

All detectability check standard (DCS) results supported the laboratory method detection limits (MDL).

All soil results were reported on a dry weight basis.

### **6. Conclusion**

Based on the assessment detailed in the foregoing, the analytical data summarized in Table 2 are usable for the purpose of supporting the Baseline Soil Assessment by providing current concentrations of the chemicals of concern in samples at the site without qualification.

Regards



**Chris G. Knight**  
Data Management Team – Data Validator

Table 1

**Sample Collection and Analysis Summary**  
**Baseline Soil Sampling**  
**Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works**  
**Houston, Texas**  
**October 2022**

**Analysis/Parameters**

<b>Sample Identification</b>	<b>Location</b>	<b>Matrix</b>	<b>Initial Sample Depth (ft bgs)</b>	<b>Final Sample Depth (ft bgs)</b>	<b>Collection Date (mm/dd/yyyy)</b>	<b>Collection Time (hr:min)</b>	<b>Metals</b>
SO-1620-BLS-24(0-2.5)-20221011	BLS-24	Soil	0	2.5	10/11/2022	11:00	X
SO-1620-BLS-24(7.5-10)-202210	BLS-24	Soil	7.5	10	10/11/2022	11:05	X
SO-1620-BLS-25(0-2.5)-20221011	BLS-25	Soil	0	2.5	10/11/2022	11:15	X
SO-1620-BLS-25(7.5-10)-202210	BLS-25	Soil	7.5	10	10/11/2022	11:20	X
SO-1620-BLS-26(0-2.5)-20221011	BLS-26	Soil	0	2.5	10/11/2022	11:30	X
SO-1620-BLS-26(7.5-10)-202210	BLS-26	Soil	7.5	10	10/11/2022	11:35	X
SO-1620-BLS-27(0-2.5)-20221011	BLS-27	Soil	0	2.5	10/11/2022	11:40	X
SO-1620-BLS-27(7.5-10)-202210	BLS-27	Soil	7.5	10	10/11/2022	11:45	X
SO-1620-BLS-28(0-2.5)-20221011	BLS-28	Soil	0	2.5	10/11/2022	12:00	X
SO-1620-BLS-28(7.5-10)-202210	BLS-28	Soil	7.5	10	10/11/2022	12:05	X
SO-1620-BLS-29(0-2.5)-20221011	BLS-29	Soil	0	2.5	10/11/2022	12:15	X
SO-1620-BLS-29(7.5-10)-202210	BLS-29	Soil	7.5	10	10/11/2022	12:20	X
SO-1620-BLS-10(12.5-15)-20221	BLS-10	Soil	12.5	15	10/11/2022	12:30	X
SO-1620-BLS-12(12.5-15)-20221	BLS-12	Soil	12.5	15	10/11/2022	12:50	X

Notes:

ft bgs      - Feet Below Ground Surface

Table 2

**Analytical Results Summary**  
**Baseline Soil Assessment**  
**Union Pacific Railroad (UPRR)/Houston TX-Wood Preserving Works**  
**Houston, Texas**  
**October 2022**

<b>Location ID:</b>	<b>BLS-10</b>	<b>BLS-12</b>	<b>BLS-24</b>	<b>BLS-24</b>	<b>BLS-25</b>
<b>Sample Name:</b>	SO-1620-BLS-10(12.5-15)-20221	SO-1620-BLS-12(12.5-15)-20221	SO-1620-BLS-24(7.5-10)-202210	SO-1620-BLS-24(0-2.5)-20221011	SO-1620-BLS-25(7.5-10)-202210
<b>Sample Date:</b>	10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022
<b>Depth:</b>	12.5-15 ft bgs	12.5-15 ft bgs	7.5-10 ft bgs	0-2.5 ft bgs	7.5-10 ft bgs

<b>Parameters</b>	<b>Unit</b>
-------------------	-------------

<b>Metals</b>						
Arsenic	mg/kg	0.658	0.776	2.42	2.65	2.43
Lead	mg/kg	--	--	--	--	--

Table 2

**Analytical Results Summary**  
**Baseline Soil Assessment**  
**Union Pacific Railroad (UPRR)/Houston TX-Wood Preserving Works**  
**Houston, Texas**  
**October 2022**

<b>Location ID:</b>		<b>BLS-25</b>	<b>BLS-26</b>	<b>BLS-26</b>	<b>BLS-27</b>	<b>BLS-27</b>
<b>Sample Name:</b>		SO-1620-BLS-25(0-2.5)-20221011	SO-1620-BLS-26(7.5-10)-202210	SO-1620-BLS-26(0-2.5)-20221011	SO-1620-BLS-27(7.5-10)-202210	SO-1620-BLS-27(0-2.5)-20221011
<b>Sample Date:</b>		10/11/2022	10/11/2022	10/11/2022	10/11/2022	10/11/2022
<b>Depth:</b>		0-2.5 ft bgs	7.5-10 ft bgs	0-2.5 ft bgs	7.5-10 ft bgs	0-2.5 ft bgs
<b>Parameters</b>	<b>Unit</b>					
<b>Metals</b>						
Arsenic	mg/kg	3.13	8.15	1.92	1.38	4.57
Lead	mg/kg	--	--	--	--	--

Table 2

**Analytical Results Summary**  
**Baseline Soil Assessment**  
**Union Pacific Railroad (UPRR)/Houston TX-Wood Preserving Works**  
**Houston, Texas**  
**October 2022**

<b>Location ID:</b>	<b>BLS-28</b>	<b>BLS-28</b>	<b>BLS-29</b>	<b>BLS-29</b>
<b>Sample Name:</b>	<b>SO-1620-BLS-28(7.5-10)-202210</b>	<b>SO-1620-BLS-28(0-2.5)-20221011</b>	<b>SO-1620-BLS-29(7.5-10)-202210</b>	<b>SO-1620-BLS-29(0-2.5)-20221011</b>
<b>Sample Date:</b>	<b>10/11/2022</b>	<b>10/11/2022</b>	<b>10/11/2022</b>	<b>10/11/2022</b>
<b>Depth:</b>	<b>7.5-10 ft bgs</b>	<b>0-2.5 ft bgs</b>	<b>7.5-10 ft bgs</b>	<b>0-2.5 ft bgs</b>

<b>Parameters</b>	<b>Unit</b>				
<b>Metals</b>					
Arsenic	mg/kg	--	--	--	--
Lead	mg/kg	6.09	170	7.31	270

## Notes:

ft bgs - Feet below ground surface

"--" - Not analyzed

Table 3

**Analytical Methods**  
**Baseline Soil Sampling**  
**Union Pacific Railroad (UPRR)/Houston, TX-Wood Preserving Works**  
**Houston, Texas**  
**October 2022**

Parameter	Method	Matrix	Holding Time
			Collection to Analysis (Days)
Metals	SW-846 6020A	Soil	180

Method References:

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



# Attachment A

## Laboratory NELAP Certificate(s)



## 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](http://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, likely belonging to the Executive Director of the Texas Commission on Environmental Quality.

**Certificate Number:** T104704231-22-29

**Effective Date:** 5/1/2022

**Expiration Date:** 4/30/2023

**Executive Director Texas Commission on  
Environmental Quality**



---

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

October 15, 2022

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

Work Order: **HS22100542**

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

Dear Eric Matzner,

ALS Environmental received 14 sample(s) on Oct 11, 2022 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

Dane J. Wacasey

---

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

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**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 Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

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**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.



Dane J. Wacasey

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group				LRC Date: 10/17/2022			
Project Name: Houston TX-Wood Preserving Works				Laboratory Job Number: HS22100542			
Reviewer Name: Dane Wacasey				Prep Batch Number(s): 184717,184720,R419407,R419409			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER <sup>5</sup>
R1	OI	<b>Chain-of-custody (C-O-C)</b>					
		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	<b>Sample and quality control (QC) identification</b>					
		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	<b>Test reports</b>					
		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	<b>Surrogate recovery data</b>					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	<b>Test reports/summary forms for blank samples</b>					
		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	<b>Laboratory control samples (LCS):</b>					
		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	<b>Matrix spike (MS) and matrix spike duplicate (MSD) data</b>					
		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			1
		Were MS/MSD RPDs within laboratory QC limits?		X			2
R8	OI	<b>Analytical duplicate data</b>					
		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	<b>Method quantitation limits (MQLs):</b>					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	<b>Other problems/anomalies</b>					
		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 effects 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: 10/17/2022			
Project Name: Houston TX-Wood Preserving Works				Laboratory Job Number: HS22100542			
Reviewer Name: Dane Wacasey				Prep Batch Number(s): 184717,184720,R419407,R419409			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER <sup>5</sup>
S1	OI	<b>Initial calibration (ICAL)</b>					
		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	<b>Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)</b>					
		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	<b>Mass spectral tuning:</b>					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	<b>Internal standards (IS):</b>					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	<b>Raw data</b> (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	<b>Dual column confirmation</b>					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	<b>Tentatively identified compounds (TICs):</b>					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	<b>Interference Check Sample (ICS) results:</b>					
		Were percent recoveries within method QC limits?	X				
S9	I	<b>Serial dilutions, post digestion spikes, and method of standard additions</b>					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	<b>Method detection limit (MDL) studies</b>					
		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	<b>Proficiency test reports:</b>					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	<b>Standards documentation</b>					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	<b>Compound/analyte identification procedures</b>					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	<b>Demonstration of analyst competency (DOC)</b>					
		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	<b>Verification/validation documentation for methods</b> (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	<b>Laboratory standard operating procedures (SOPs):</b>					
		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: 10/17/2022
Project Name: Houston TX-Wood Preserving Works	Laboratory Job Number: HS22100542
Reviewer Name: Dane Wacasey	Prep Batch Number(s): 184717,184720,R419407,R419409
ER# <sup>5</sup>	Description
1	Batch 184717, Metals Method SW6020, sample HS22091567-06, MS was performed on unrelated sample  Batch 184720, Metals Method SW6020A, sample HS22100001-26, MS was performed on unrelated sample
2	Batch 184717, Metals Method SW6020, sample HS22091567-06, MS/MSD RPD was performed on unrelated sample
<p>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.</p> <p>O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);</p> <p>NA = Not Applicable;</p> <p>NR = Not Reviewed;</p> <p>R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</p>	

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**Work Order:** HS22100542

**SAMPLE SUMMARY**

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22100542-01	SO-1620-BLS-24(0-2.5)-20221011	Soil		11-Oct-2022 11:00	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-02	SO-1620-BLS-24(7.5-10)-20221011	Soil		11-Oct-2022 11:05	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-03	SO-1620-BLS-25(0-2.5)-20221011	Soil		11-Oct-2022 11:15	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-04	SO-1620-BLS-25(7.5-10)-20221011	Soil		11-Oct-2022 11:20	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-05	SO-1620-BLS-26(0-2.5)-20221011	Soil		11-Oct-2022 11:30	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-06	SO-1620-BLS-26(7.5-10)-20221011	Soil		11-Oct-2022 11:35	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-07	SO-1620-BLS-27(0-2.5)-20221011	Soil		11-Oct-2022 11:40	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-08	SO-1620-BLS-27(7.5-10)-20221011	Soil		11-Oct-2022 11:45	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-09	SO-1620-BLS-28(0-2.5)-20221011	Soil		11-Oct-2022 12:00	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-10	SO-1620-BLS-28(7.5-10)-20221011	Soil		11-Oct-2022 12:05	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-11	SO-1620-BLS-29(0-2.5)-20221011	Soil		11-Oct-2022 12:15	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-12	SO-1620-BLS-29(7.5-10)-20221011	Soil		11-Oct-2022 12:20	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-13	SO-1620-BLS-10(12.5-15)-20221011	Soil		11-Oct-2022 12:30	11-Oct-2022 14:57	<input type="checkbox"/>
HS22100542-14	SO-1620-BLS-12(12.5-15)-20221011	Soil		11-Oct-2022 12:50	11-Oct-2022 14:57	<input type="checkbox"/>

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-24(0-2.5)-20221011  
Collection Date: 11-Oct-2022 11:00

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-01  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	2.65		0.0774	0.553	mg/Kg-dry	1	13-Oct-2022 23:15
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	16.6		0.0100	0.0100	wt%	1	13-Oct-2022 13:23

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-24(7.5-10)-20221011  
Collection Date: 11-Oct-2022 11:05

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-02  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	2.42		0.0825	0.590	mg/Kg-dry	1	13-Oct-2022 23:17
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	17.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:23

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-25(0-2.5)-20221011  
Collection Date: 11-Oct-2022 11:15

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-03  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	3.13		0.0776	0.555	mg/Kg-dry	1	13-Oct-2022 23:19
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	14.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-25(7.5-10)-20221011  
Collection Date: 11-Oct-2022 11:20

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-04  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	2.43		0.0816	0.583	mg/Kg-dry	1	13-Oct-2022 23:27
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	17.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-26(0-2.5)-20221011  
Collection Date: 11-Oct-2022 11:30

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-05  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	1.92		0.0779	0.557	mg/Kg-dry	1	13-Oct-2022 23:29
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	15.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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



Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-26(7.5-10)-20221011  
Collection Date: 11-Oct-2022 11:35

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-06  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	8.15		0.0781	0.558	mg/Kg-dry	1	13-Oct-2022 23:31
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	13.9		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-27(0-2.5)-20221011  
Collection Date: 11-Oct-2022 11:40

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-07  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	4.57		0.0739	0.528	mg/Kg-dry	1	13-Oct-2022 23:33
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	12.6		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-27(7.5-10)-20221011  
Collection Date: 11-Oct-2022 11:45

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-08  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	1.38		0.0750	0.536	mg/Kg-dry	1	13-Oct-2022 23:35
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	13.2		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-28(0-2.5)-20221011  
Collection Date: 11-Oct-2022 12:00

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-09  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Lead	170		0.0140	0.538	mg/Kg-dry	1	13-Oct-2022 23:37
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	14.0		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-28(7.5-10)-20221011  
Collection Date: 11-Oct-2022 12:05

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-10  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Lead	6.09		0.0140	0.537	mg/Kg-dry	1	13-Oct-2022 19:55
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	14.4		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-29(0-2.5)-20221011  
Collection Date: 11-Oct-2022 12:15

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-11  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Lead	270		0.290	11.1	mg/Kg-dry	20	14-Oct-2022 14:59
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	16.3		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-29(7.5-10)-20221011  
Collection Date: 11-Oct-2022 12:20

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-12  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Lead	7.31		0.0146	0.561	mg/Kg-dry	1	13-Oct-2022 19:59
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	14.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-10(12.5-15)-20221011  
Collection Date: 11-Oct-2022 12:30

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-13  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	0.658		0.0756	0.540	mg/Kg-dry	1	13-Oct-2022 20:01
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	13.7		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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



Client: WSP Golder  
Project: Houston TX-Wood Preserving Works  
Sample ID: SO-1620-BLS-12(12.5-15)-20221011  
Collection Date: 11-Oct-2022 12:50

**ANALYTICAL REPORT**

WorkOrder:HS22100542  
Lab ID:HS22100542-14  
Matrix:Soil

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>METALS BY SW6020A</b>		<b>Method:SW6020A</b>		Prep:SW3050B / 13-Oct-2022		Analyst: JC	
Arsenic	0.776		0.0765	0.546	mg/Kg-dry	1	13-Oct-2022 20:03
<b>MOISTURE - ASTM D2216</b>		<b>Method:ASTM D2216</b>				Analyst: FO	
Percent Moisture	14.0		0.0100	0.0100	wt%	1	13-Oct-2022 13:55

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

## Weight / Prep Log

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

<b>Batch ID:</b> 184717	<b>Start Date:</b> 13 Oct 2022 08:00	<b>End Date:</b> 13 Oct 2022 14:00
<b>Method:</b> METALS PREP - SOLIDS - SW3050B		<b>Prep Code:</b> 3050_I_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22100542-10		0.5442 (g)	50 (mL)	91.88	4-oz glass, Neat
HS22100542-11		0.536 (g)	50 (mL)	93.28	4-oz glass, Neat
HS22100542-12		0.522 (g)	50 (mL)	95.79	4-oz glass, Neat
HS22100542-13		0.5363 (g)	50 (mL)	93.23	4-oz glass, Neat
HS22100542-14		0.5322 (g)	50 (mL)	93.95	4-oz glass, Neat

<b>Batch ID:</b> 184720	<b>Start Date:</b> 13 Oct 2022 08:00	<b>End Date:</b> 13 Oct 2022 14:00
<b>Method:</b> METALS PREP - SOLIDS - SW3050B		<b>Prep Code:</b> 3050_I_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22100542-01		0.542 (g)	50 (mL)	92.25	4-oz glass, Neat
HS22100542-02		0.5152 (g)	50 (mL)	97.05	4-oz glass, Neat
HS22100542-03		0.5285 (g)	50 (mL)	94.61	4-oz glass, Neat
HS22100542-04		0.5209 (g)	50 (mL)	95.99	4-oz glass, Neat
HS22100542-05		0.5329 (g)	50 (mL)	93.83	4-oz glass, Neat
HS22100542-06		0.5203 (g)	50 (mL)	96.1	4-oz glass, Neat
HS22100542-07		0.5419 (g)	50 (mL)	92.27	4-oz glass, Neat
HS22100542-08		0.5378 (g)	50 (mL)	92.97	4-oz glass, Neat
HS22100542-09		0.54 (g)	50 (mL)	92.59	4-oz glass, Neat

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 184717 ( 0 )		<b>Test Name :</b> METALS BY SW6020A			<b>Matrix:</b> Soil	
HS22100542-10	SO-1620-BLS-28(7.5-10)-20221011	11 Oct 2022 12:05		13 Oct 2022 08:00	13 Oct 2022 19:55	1
HS22100542-11	SO-1620-BLS-29(0-2.5)-20221011	11 Oct 2022 12:15		13 Oct 2022 08:00	14 Oct 2022 14:59	20
HS22100542-11	SO-1620-BLS-29(0-2.5)-20221011	11 Oct 2022 12:15		13 Oct 2022 08:00	13 Oct 2022 19:57	1
HS22100542-12	SO-1620-BLS-29(7.5-10)-20221011	11 Oct 2022 12:20		13 Oct 2022 08:00	13 Oct 2022 19:59	1
HS22100542-13	SO-1620-BLS-10(12.5-15)-20221011	11 Oct 2022 12:30		13 Oct 2022 08:00	13 Oct 2022 20:01	1
HS22100542-14	SO-1620-BLS-12(12.5-15)-20221011	11 Oct 2022 12:50		13 Oct 2022 08:00	13 Oct 2022 20:03	1
<b>Batch ID:</b> 184720 ( 0 )		<b>Test Name :</b> METALS BY SW6020A			<b>Matrix:</b> Soil	
HS22100542-01	SO-1620-BLS-24(0-2.5)-20221011	11 Oct 2022 11:00		13 Oct 2022 08:00	13 Oct 2022 23:15	1
HS22100542-02	SO-1620-BLS-24(7.5-10)-20221011	11 Oct 2022 11:05		13 Oct 2022 08:00	13 Oct 2022 23:17	1
HS22100542-03	SO-1620-BLS-25(0-2.5)-20221011	11 Oct 2022 11:15		13 Oct 2022 08:00	13 Oct 2022 23:19	1
HS22100542-04	SO-1620-BLS-25(7.5-10)-20221011	11 Oct 2022 11:20		13 Oct 2022 08:00	13 Oct 2022 23:27	1
HS22100542-05	SO-1620-BLS-26(0-2.5)-20221011	11 Oct 2022 11:30		13 Oct 2022 08:00	13 Oct 2022 23:29	1
HS22100542-06	SO-1620-BLS-26(7.5-10)-20221011	11 Oct 2022 11:35		13 Oct 2022 08:00	13 Oct 2022 23:31	1
HS22100542-07	SO-1620-BLS-27(0-2.5)-20221011	11 Oct 2022 11:40		13 Oct 2022 08:00	13 Oct 2022 23:33	1
HS22100542-08	SO-1620-BLS-27(7.5-10)-20221011	11 Oct 2022 11:45		13 Oct 2022 08:00	13 Oct 2022 23:35	1
HS22100542-09	SO-1620-BLS-28(0-2.5)-20221011	11 Oct 2022 12:00		13 Oct 2022 08:00	13 Oct 2022 23:37	1
<b>Batch ID:</b> R419407 ( 0 )		<b>Test Name :</b> MOISTURE - ASTM D2216			<b>Matrix:</b> Soil	
HS22100542-01	SO-1620-BLS-24(0-2.5)-20221011	11 Oct 2022 11:00			13 Oct 2022 13:23	1
HS22100542-02	SO-1620-BLS-24(7.5-10)-20221011	11 Oct 2022 11:05			13 Oct 2022 13:23	1

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> R419409 ( 0 )		<b>Test Name :</b> MOISTURE - ASTM D2216			<b>Matrix:</b> Soil	
HS22100542-03	SO-1620-BLS-25(0-2.5)- 20221011	11 Oct 2022 11:15			13 Oct 2022 13:55	1
HS22100542-04	SO-1620-BLS-25(7.5-10)- 20221011	11 Oct 2022 11:20			13 Oct 2022 13:55	1
HS22100542-05	SO-1620-BLS-26(0-2.5)- 20221011	11 Oct 2022 11:30			13 Oct 2022 13:55	1
HS22100542-06	SO-1620-BLS-26(7.5-10)- 20221011	11 Oct 2022 11:35			13 Oct 2022 13:55	1
HS22100542-07	SO-1620-BLS-27(0-2.5)- 20221011	11 Oct 2022 11:40			13 Oct 2022 13:55	1
HS22100542-08	SO-1620-BLS-27(7.5-10)- 20221011	11 Oct 2022 11:45			13 Oct 2022 13:55	1
HS22100542-09	SO-1620-BLS-28(0-2.5)- 20221011	11 Oct 2022 12:00			13 Oct 2022 13:55	1
HS22100542-10	SO-1620-BLS-28(7.5-10)- 20221011	11 Oct 2022 12:05			13 Oct 2022 13:55	1
HS22100542-11	SO-1620-BLS-29(0-2.5)- 20221011	11 Oct 2022 12:15			13 Oct 2022 13:55	1
HS22100542-12	SO-1620-BLS-29(7.5-10)- 20221011	11 Oct 2022 12:20			13 Oct 2022 13:55	1
HS22100542-13	SO-1620-BLS-10(12.5-15)- 20221011	11 Oct 2022 12:30			13 Oct 2022 13:55	1
HS22100542-14	SO-1620-BLS-12(12.5-15)- 20221011	11 Oct 2022 12:50			13 Oct 2022 13:55	1

WorkOrder: HS22100542

InstrumentID: ICPMS06

Test Code: ICP\_S\_Low

Test Number: SW6020A

Test Name: Metals by SW6020A

**METHOD DETECTION /  
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Arsenic	7440-38-2	0.100	0.0935	0.0700	0.500
A	Lead	7439-92-1	0.100	0.0986	0.0130	0.500

WorkOrder: HS22100542  
InstrumentID: Balance1  
Test Code: MOIST\_ASTM  
Test Number: ASTM D2216  
Test Name: Moisture - ASTM D2216

**METHOD DETECTION /  
REPORTING LIMITS****Matrix:** Solid**Units:** wt%

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Percent Moisture	MOIST	0	0	0.0100	0.0100

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: 184717 ( 0 )		Instrument: ICPMS06		Method: METALS BY SW6020A					
<b>MBLK</b>	Sample ID: <b>MBLK-184717</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:09</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919476</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	< 0.0699	0.499							
Lead	< 0.0130	0.499							
<b>LCS</b>	Sample ID: <b>LCS-184717</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:11</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919477</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	9.612	0.494	9.874	0	97.3	80 - 120			
Lead	9.478	0.494	9.874	0	96.0	80 - 120			
<b>MS</b>	Sample ID: <b>HS22091567-06MS</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:17</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919480</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	9.845	0.466	9.323	0.7125	98.0	75 - 125			
Lead	34.38	0.466	9.323	9.831	263	75 - 125			S
<b>MSD</b>	Sample ID: <b>HS22091567-06MSD</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:19</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919481</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	9.891	0.476	9.511	0.7125	96.5	75 - 125	9.845	0.467	20
Lead	18.15	0.476	9.511	9.831	87.5	75 - 125	34.38	61.8	20 R
<b>PDS</b>	Sample ID: <b>HS22091567-06PDS</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:21</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919482</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	9.887	0.471	9.418	0.7125	97.4	75 - 125			
Lead	18.51	0.471	9.418	9.831	92.2	75 - 125			

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: 184717 ( 0 )		Instrument: ICPMS06		Method: METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS22091567-06SD</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 19:15</b>						
Client ID:	Run ID: <b>ICPMS06_419311</b>		SeqNo: <b>6919479</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>5</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	0.738	2.35					0.7125	0	10	J
Lead	10.05	2.35					9.831	2.27	10	
The following samples were analyzed in this batch:										
HS22100542-10 HS22100542-11 HS22100542-12 HS22100542-13										
HS22100542-14										



**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: 184720 ( 0 )		Instrument: ICPMS06		Method: METALS BY SW6020A					
<b>MBLK</b>	Sample ID: <b>MBLK-184720</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>14-Oct-2022 16:06</b>					
Client ID:	Run ID: <b>ICPMS06_419449</b>	SeqNo: <b>6921363</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	< 0.0695	0.497							
Lead	< 0.0129	0.497							
<b>LCS</b>	Sample ID: <b>LCS-184720</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 21:56</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919551</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	9.561	0.495	9.903	0	96.5	80 - 120			
Lead	9.489	0.495	9.903	0	95.8	80 - 120			
<b>MS</b>	Sample ID: <b>HS22100001-26MS</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 22:02</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919519</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	14.03	0.466	9.314	4.582	101	75 - 125			
Lead	34.51	0.466	9.314	16.62	192	75 - 125			S
<b>MSD</b>	Sample ID: <b>HS22100001-26MSD</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 22:04</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919520</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	14.35	0.474	9.479	4.582	103	75 - 125	14.03	2.25	20
Lead	28.47	0.474	9.479	16.62	125	75 - 125	34.51	19.2	20
<b>PDS</b>	Sample ID: <b>HS22100001-26PDS</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 22:06</b>					
Client ID:	Run ID: <b>ICPMS06_419311</b>	SeqNo: <b>6919521</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>1</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	13.72	0.464	9.276	4.582	98.5	75 - 125			
Lead	25.67	0.464	9.276	16.62	97.5	75 - 125			

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: 184720 ( 0 )		Instrument: ICPMS06		Method: METALS BY SW6020A						
<b>SD</b>	Sample ID: <b>HS22100001-26SD</b>	Units: <b>mg/Kg</b>		Analysis Date: <b>13-Oct-2022 22:00</b>						
Client ID:	Run ID: <b>ICPMS06_419311</b>		SeqNo: <b>6919518</b>		PrepDate: <b>13-Oct-2022</b>		DF: <b>5</b>			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	4.521	2.32					4.582	1.33	10	
Lead	16.76	2.32					16.62	0.801	10	

The following samples were analyzed in this batch:

HS22100542-01	HS22100542-02	HS22100542-03	HS22100542-04
HS22100542-05	HS22100542-06	HS22100542-07	HS22100542-08
HS22100542-09			

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: R419407 ( 0 )		Instrument: Balance1		Method: MOISTURE - ASTM D2216					
<b>DUP</b>		Sample ID: HS22100542-02DUP		Units: wt%		Analysis Date: 13-Oct-2022 13:23			
Client ID: SO-1620-BLS-24(7.5-10)-20221011		Run ID: Balance1_419407		SeqNo: 6920041		PrepDate:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Percent Moisture	17.7	0.0100					17.7	0	20
The following samples were analyzed in this batch:									
HS22100542-01 HS22100542-02									

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QC BATCH REPORT**

Batch ID: R419409 ( 0 )		Instrument: Balance1		Method: MOISTURE - ASTM D2216					
<b>DUP</b>	Sample ID: HS22100618-04DUP	Units: wt%		Analysis Date: 13-Oct-2022 13:55					
Client ID:	Run ID: Balance1_419409		SeqNo: 6920125		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Percent Moisture	11.9	0.0100					11.6	2.55	20

The following samples were analyzed in this batch:

HS22100542-03	HS22100542-04	HS22100542-05	HS22100542-06
HS22100542-07	HS22100542-08	HS22100542-09	HS22100542-10
HS22100542-11	HS22100542-12	HS22100542-13	HS22100542-14

**Client:** WSP Golder  
**Project:** Houston TX-Wood Preserving Works  
**WorkOrder:** HS22100542

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	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

<b>Acronym</b>	<b>Description</b>
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

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**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

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Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

## Sample Receipt Checklist

Work Order ID: HS22100542

Date/Time Received: 11-Oct-2022 14:57

Client Name: PBW

Received by: Corey GranditsCompleted By: /S/ Niles D. Ranchod 11-Oct-2022 16:08

eSignature

Date/Time

Reviewed by: /S/ Dane J. Wacasey 12-Oct-2022 22:10

eSignature

Date/Time

Matrices: SoilCarrier 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:282211/2208

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):

4.8C/4.6C UC/C

IR #31

Cooler(s)/Kit(s):

48319

Date/Time sample(s) sent to storage:

10/11/2022 17:00

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

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COC ID: 282211

HS22100542

WSP Golder

Houston TX-Wood Preserving Works

ALS Project Manager:



Customer Information		Project Information	
Purchase Order	4300139047/KevinPeterburs 1620	Project Name	Houston TX-Wood Preserving Works
Work Order		Project Number	1620-35-Rev0 SR 92688
Company Name	Golder Associates Inc.	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@golder.com	e-Mail Address	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SO-1620-WR BLS-24(0-2.5)-20221011	10/11/22	1100	Soil	8.9	21	X	X	X								
2	" " " BLS-24(7.5-10) "		1105	"			X		X								
3	" " " BLS-25(0-2.5) "		1115	"			X		X								
4	" " " BLS-25(7.5-10) "		1120	"			X		X								
5	" " " BLS-26(0-2.5) "		1130	"			X		X								
6	" " " BLS-26(7.5-10) "		1135	"			X		X								
7	" " " BLS-27(0-2.5) "		1140	"			X		X								
8	" " " BLS-27(7.5-10) "		1145	"			X		X								
9	" " " BLS-28(0-2.5) "		1200	"				X	X								
10	" " " BLS-28(7.5-10) "		1205	"				X	X								

Sampler(s) Please Print & Sign Chris Elotson		Shipment Method		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Other 3 days <input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: Chris Elotson		Date: 10/11/22	Time: 1457	Received by:		Notes: UPRR HWPW 1620-35	
Relinquished by:		Date:	Time:	Received by (Laboratory):		QC Package: (Check One Box Below)	
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):		Cooler ID: 18319	Cooler Temp: 4.8
Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035						<input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other	<input type="checkbox"/> TRRP Checklist <input type="checkbox"/> TRRP Level IV

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.

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# Chain of Custody Form

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COC ID: 282208

HS22100542

WSP Golder

Houston TX-Wood Preserving Works



ALS Project Manager:

Customer Information		Project Information		
Purchase Order	4300139047/Kevin Peterburs 1620	Project Name	Houston TX-Wood Preserving Works	A ICP_S_LOW (6020 Total As) [4oz-share]
Work Order		Project Number	1620-35-Rev0 SR 92688	B ICP_S_LOW (6020 Total <del>As</del> , Pb) [4oz-share]
Company Name	Golder Associates Inc.	Bill To Company	Union Pacific Railroad- A/P	C MOIST_ASTM [4oz-share]
Send Report To	Eric Matzner	Invoice Attn	Accounts Payable	D
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750	E
				F
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha NE 681790750	G
Phone	(512) 671-3434	Phone		H
Fax	(512) 671-3446	Fax		I
e-Mail Address	Eric_Matzner@golder.com	e-Mail Address		J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SO-1620-WR BLS-29 (0-25) 20221011	10/11/22	1215	Soil	8.9	21	X	X	X								
2	" " " BLS-29 (2.5-10) "	↓	1220	↓	↓	↓	X	X	X								
3	" " " BLS-10 (12.5-15) "	↓	1230	↓	↓	↓	X	X	X								
4	" " " BLS-12 (12.5-15) "	↓	1250	↓	↓	↓	X	X	X								
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <b>Chris Eklafson</b>		Shipment Method		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> Other 3 days <input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: <b>Chris Eklafson</b>	Date: 10/11/22	Time: 1457	Received by:		Notes: UPRR HWPW 1620-35		
Relinquished by:	Date:	Time:	Received by (Laboratory): 102574 10/11/22 1457		Cooler ID 48219	Cooler Temp. 4.80	QC Package: (Check One Box Below)
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist	
Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035					<input type="checkbox"/> Level III Std QC/Raw Date	<input type="checkbox"/> TRRP Level IV	
					<input type="checkbox"/> Level IV SW846/CLP	<input type="checkbox"/> Other	

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