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January 05, 2021

Eric Matzner
Golder Associates Inc.
2201 Double Creek Drive
Suite 4004
Round Rock, TX 78664

Work Order: **HS20121076**

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

Dear Eric Matzner,

ALS Environmental received 1 sample(s) on Dec 22, 2020 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:	Golder Associates Inc.	**TRRP Laboratory Data Package Cover Page**
Project:	Houston TX-Wood Preserving Works	
WorkOrder:	**HS20121076**	

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:	Golder Associates Inc.	**TRRP Laboratory Data Package Cover Page**
Project:	Houston TX-Wood Preserving Works	
WorkOrder:	**HS20121076**	

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:01/05/2021					
Project Name: Houston TX-Wood Preserving Works			Laboratory Job Number: HS20121076					
Reviewer Name: Corey Grandits			Prep Batch Number: 160999,161002,161184,161187,161270,R375328,R375569,R375794,R375858					
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?		X			1
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?		X			2
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			3
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Supportin9 Data								
Laboratory Name: ALS Laboratory Group			LRC Date:01/05/2021					
Project Name: Houston TX-Wood Preserving Works			Laboratory Job Number: HS20121076					
Reviewer Name: Corey Grandits			Prep Batch Number: 160999,161002,161184,161187,161270,R375328,R375569,R375794, R375858					
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			4
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date:01/05/2021
Project Name: Houston TX-Wood Preserving Works	Laboratory Job Number: HS20121076
Reviewer Name: Corey Grandits	Prep Batch Number: 160999,161002,161184,161187,161270,R375328,R375569,R375794,R375858

ER#[5]	Description
1	Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 degrees C.
2	Batch 160999, Semivolatile Organics Method SW8270, LCS/LCSD were analyzed and reported in lieu of an MS/MSD for this batch.
3	Batch 161187, Metals Method SW6020, sample HS20120903-01, MS and MSD were performed on unrelated sample. Batch R375858, Volatile Organics Method SW8260, sample HS20121366-01, MS and MSD were performed on unrelated sample.
4	Batch 161187, Metals Method SW6020, sample HS20120903-01, Serial Dilution was performed on unrelated sample.

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

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
Work Order: HS20121076

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20121076-01	WW-1620-IDW 003256-20201222	Water		22-Dec-2020 09:15	22-Dec-2020 09:30	☐

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
Sample ID: WW-1620-IDW 003256-20201222
Collection Date: 22-Dec-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20121076
Lab ID:HS20121076-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**						Analyst: PC
1,1,1-Trichloroethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
1,1,2,2-Tetrachloroethane	< 0.00050		0.00050	0.0010	mg/L	1	04-Jan-2021 20:23
1,1,2-Trichloroethane	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
1,1-Dichloroethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
1,1-Dichloroethene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
1,2-Dichlorobenzene	< 0.00050		0.00050	0.0010	mg/L	1	04-Jan-2021 20:23
1,2-Dichloroethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
1,2-Dichloropropane	< 0.00050		0.00050	0.0010	mg/L	1	04-Jan-2021 20:23
1,3-Dichlorobenzene	< 0.00040		0.00040	0.0010	mg/L	1	04-Jan-2021 20:23
1,4-Dichlorobenzene	< 0.00040		0.00040	0.0010	mg/L	1	04-Jan-2021 20:23
2-Butanone	**0.0019**	J	**0.00050**	**0.0020**	**mg/L**	1	04-Jan-2021 20:23
2-Hexanone	< 0.0010		0.0010	0.0020	mg/L	1	04-Jan-2021 20:23
4-Methyl-2-pentanone	< 0.00070		0.00070	0.0020	mg/L	1	04-Jan-2021 20:23
Acetone	**0.0093**		**0.0020**	**0.0020**	**mg/L**	1	04-Jan-2021 20:23
Benzene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Bromochloromethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Bromodichloromethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Bromoform	< 0.00040		0.00040	0.0010	mg/L	1	04-Jan-2021 20:23
Bromomethane	< 0.00040		0.00040	0.0010	mg/L	1	04-Jan-2021 20:23
Carbon disulfide	< 0.00060		0.00060	0.0020	mg/L	1	04-Jan-2021 20:23
Carbon tetrachloride	< 0.00050		0.00050	0.0010	mg/L	1	04-Jan-2021 20:23
Chlorobenzene	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Chloroethane	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Chloroform	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Chloromethane	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
cis-1,2-Dichloroethene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
cis-1,3-Dichloropropene	< 0.00010		0.00010	0.0010	mg/L	1	04-Jan-2021 20:23
Dibromochloromethane	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Ethylbenzene	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
m,p-Xylene	< 0.00050		0.00050	0.0020	mg/L	1	04-Jan-2021 20:23
Methylene chloride	< 0.0010		0.0010	0.0020	mg/L	1	04-Jan-2021 20:23
o-Xylene	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Styrene	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Tetrachloroethene	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
Toluene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
trans-1,2-Dichloroethene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
trans-1,3-Dichloropropene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Trichloroethene	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Vinyl acetate	< 0.00050		0.00050	0.0010	mg/L	1	04-Jan-2021 20:23

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

Client: Golder Associates Inc.
ANALYTICAL REPORT
Project: Houston TX-Wood Preserving Works
WorkOrder:HS20121076
Sample ID: WW-1620-IDW 003256-20201222
Lab ID:HS20121076-01
Collection Date: 22-Dec-2020 09:15
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**						Analyst: PC
Vinyl chloride	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Xylenes, Total	< 0.00030		0.00030	0.0010	mg/L	1	04-Jan-2021 20:23
1,2-Dichloroethene, Total	< 0.00020		0.00020	0.0010	mg/L	1	04-Jan-2021 20:23
Surr: 1,2-Dichloroethane-d4	*94.5*			*70-126*	*%REC*	*1*	*04-Jan-2021 20:23*
Surr: 4-Bromofluorobenzene	*96.1*			*81-113*	*%REC*	*1*	*04-Jan-2021 20:23*
Surr: Dibromofluoromethane	*92.8*			*77-123*	*%REC*	*1*	*04-Jan-2021 20:23*
Surr: Toluene-d8	*101*			*82-127*	*%REC*	*1*	*04-Jan-2021 20:23*

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

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
Sample ID: WW-1620-IDW 003256-20201222
Collection Date: 22-Dec-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20121076
Lab ID:HS20121076-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D	**Method:SW8270**				Prep:SW3510 / 23-Dec-2020		Analyst: ACN
1,2,4-Trichlorobenzene	< 0.000030		0.000030	0.00020	mg/L	1	29-Dec-2020 20:37
2,4,5-Trichlorophenol	< 0.000057		0.000057	0.00020	mg/L	1	29-Dec-2020 20:37
2,4,6-Trichlorophenol	< 0.000048		0.000048	0.00020	mg/L	1	29-Dec-2020 20:37
2,4-Dichlorophenol	< 0.000043		0.000043	0.00020	mg/L	1	29-Dec-2020 20:37
2,4-Dimethylphenol	< 0.000040		0.000040	0.00020	mg/L	1	29-Dec-2020 20:37
2,4-Dinitrophenol	< 0.00010		0.00010	0.0010	mg/L	1	29-Dec-2020 20:37
2,4-Dinitrotoluene	< 0.000058		0.000058	0.00020	mg/L	1	29-Dec-2020 20:37
2,6-Dinitrotoluene	< 0.000042		0.000042	0.00020	mg/L	1	29-Dec-2020 20:37
2-Chloronaphthalene	< 0.000021		0.000021	0.00020	mg/L	1	29-Dec-2020 20:37
2-Chlorophenol	< 0.000036		0.000036	0.00020	mg/L	1	29-Dec-2020 20:37
2-Methylnaphthalene	**0.00022**		**0.000019**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
2-Methylphenol	< 0.000045		0.000045	0.00020	mg/L	1	29-Dec-2020 20:37
2-Nitroaniline	< 0.000041		0.000041	0.00020	mg/L	1	29-Dec-2020 20:37
2-Nitrophenol	< 0.000034		0.000034	0.00020	mg/L	1	29-Dec-2020 20:37
3&4-Methylphenol	< 0.000036		0.000036	0.00020	mg/L	1	29-Dec-2020 20:37
3,3´-Dichlorobenzidine	< 0.000044		0.000044	0.00020	mg/L	1	29-Dec-2020 20:37
3-Nitroaniline	< 0.000049		0.000049	0.00020	mg/L	1	29-Dec-2020 20:37
4,6-Dinitro-2-methylphenol	< 0.000020		0.000020	0.00020	mg/L	1	29-Dec-2020 20:37
4-Bromophenyl phenyl ether	< 0.000051		0.000051	0.00020	mg/L	1	29-Dec-2020 20:37
4-Chloro-3-methylphenol	< 0.000032		0.000032	0.00020	mg/L	1	29-Dec-2020 20:37
4-Chloroaniline	< 0.000039		0.000039	0.00020	mg/L	1	29-Dec-2020 20:37
4-Chlorophenyl phenyl ether	< 0.000044		0.000044	0.00020	mg/L	1	29-Dec-2020 20:37
4-Nitroaniline	< 0.000035		0.000035	0.00020	mg/L	1	29-Dec-2020 20:37
4-Nitrophenol	< 0.000047		0.000047	0.0010	mg/L	1	29-Dec-2020 20:37
Acenaphthene	**0.0024**		**0.000027**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Acenaphthylene	**0.000030**	J	**0.000015**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Anthracene	**0.00072**		**0.000014**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benz(a)anthracene	**0.00017**		**0.000050**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benzidine	< 0.00010		0.00010	0.00020	mg/L	1	29-Dec-2020 20:37
Benzo(a)pyrene	**0.000082**	J	**0.000020**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benzo(b)fluoranthene	**0.000091**	J	**0.000023**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benzo(g,h,i)perylene	**0.000024**	J	**0.000014**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benzo(k)fluoranthene	**0.000045**	J	**0.000019**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Benzyl alcohol	< 0.000054		0.000054	0.00020	mg/L	1	29-Dec-2020 20:37
Bis(2-chloroethoxy)methane	< 0.000030		0.000030	0.00020	mg/L	1	29-Dec-2020 20:37
Bis(2-chloroethyl)ether	< 0.000026		0.000026	0.00020	mg/L	1	29-Dec-2020 20:37
Bis(2-chloroisopropyl)ether	< 0.000070		0.000070	0.00020	mg/L	1	29-Dec-2020 20:37
Bis(2-ethylhexyl)phthalate	**0.00019**	J	**0.000037**	**0.00020**	**mg/L**	1	29-Dec-2020 20:37
Butyl benzyl phthalate	< 0.000019		0.000019	0.00020	mg/L	1	29-Dec-2020 20:37

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

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
Sample ID: WW-1620-IDW 003256-20201222
Collection Date: 22-Dec-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20121076
Lab ID:HS20121076-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW-LEVEL SEMIVOLATILES BY 8270D	**Method:SW8270**				Prep:SW3510 / 23-Dec-2020		Analyst: ACN
Carbazole	**0.000077**	J	**0.000025**	**0.00020**	**mg/L**	1	29-Dec-2020 20:37
Chrysene	**0.00022**		**0.000021**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Di-n-butyl phthalate	**0.000047**	J	**0.000020**	**0.00020**	**mg/L**	1	29-Dec-2020 20:37
Di-n-octyl phthalate	< 0.000020		0.000020	0.00020	mg/L	1	29-Dec-2020 20:37
Dibenz(a,h)anthracene	< 0.000024		0.000024	0.00010	mg/L	1	29-Dec-2020 20:37
Dibenzofuran	**0.0013**		**0.000020**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Diethyl phthalate	< 0.000030		0.000030	0.00020	mg/L	1	29-Dec-2020 20:37
Dimethyl phthalate	< 0.000041		0.000041	0.00020	mg/L	1	29-Dec-2020 20:37
Fluoranthene	**0.0019**		**0.000010**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Fluorene	**0.0014**		**0.000030**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Hexachlorobenzene	< 0.000044		0.000044	0.00020	mg/L	1	29-Dec-2020 20:37
Hexachlorobutadiene	< 0.000030		0.000030	0.00020	mg/L	1	29-Dec-2020 20:37
Hexachlorocyclopentadiene	< 0.000030		0.000030	0.00020	mg/L	1	29-Dec-2020 20:37
Hexachloroethane	< 0.000059		0.000059	0.00020	mg/L	1	29-Dec-2020 20:37
Indeno(1,2,3-cd)pyrene	< 0.000022		0.000022	0.00010	mg/L	1	29-Dec-2020 20:37
Isophorone	< 0.000025		0.000025	0.00020	mg/L	1	29-Dec-2020 20:37
N-Nitrosodi-n-propylamine	< 0.000032		0.000032	0.00020	mg/L	1	29-Dec-2020 20:37
N-Nitrosodimethylamine	< 0.00010		0.00010	0.00020	mg/L	1	29-Dec-2020 20:37
N-Nitrosodiphenylamine	< 0.000025		0.000025	0.00020	mg/L	1	29-Dec-2020 20:37
Naphthalene	**0.000062**	J	**0.000020**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Nitrobenzene	< 0.000024		0.000024	0.00020	mg/L	1	29-Dec-2020 20:37
Pentachlorophenol	< 0.000079		0.000079	0.00020	mg/L	1	29-Dec-2020 20:37
Phenanthrene	**0.00088**		**0.000021**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Phenol	< 0.000035		0.000035	0.00020	mg/L	1	29-Dec-2020 20:37
Pyrene	**0.0011**		**0.000019**	**0.00010**	**mg/L**	1	29-Dec-2020 20:37
Pyridine	< 0.000030		0.000030	0.0010	mg/L	1	29-Dec-2020 20:37
Surr: 2,4,6-Tribromophenol	*70.8*			*34-129*	*%REC*	*1*	*29-Dec-2020 20:37*
Surr: 2-Fluorobiphenyl	*94.8*			*40-125*	*%REC*	*1*	*29-Dec-2020 20:37*
Surr: 2-Fluorophenol	*86.2*			*20-120*	*%REC*	*1*	*29-Dec-2020 20:37*
Surr: 4-Terphenyl-d14	*107*			*40-135*	*%REC*	*1*	*29-Dec-2020 20:37*
Surr: Nitrobenzene-d5	*108*			*41-120*	*%REC*	*1*	*29-Dec-2020 20:37*
Surr: Phenol-d6	*85.1*			*20-120*	*%REC*	*1*	*29-Dec-2020 20:37*
LOW-LEVEL TEXAS TPH BY TX1005	**Method:TX1005**				Prep:TX1005PR / 23-Dec-2020		Analyst: SAM
nC6 to nC12	< 0.20		0.20	0.51	mg/L	1	24-Dec-2020 01:03
>nC12 to nC28	**1.2**		**0.20**	**0.51**	**mg/L**	1	24-Dec-2020 01:03
>nC28 to nC35	< 0.20		0.20	0.51	mg/L	1	24-Dec-2020 01:03
Total Petroleum Hydrocarbon	**1.20**		**0.20**	**0.51**	**mg/L**	1	24-Dec-2020 01:03
Surr: 2-Fluorobiphenyl	*84.5*			*70-130*	*%REC*	*1*	*24-Dec-2020 01:03*
Surr: Trifluoromethyl benzene	*98.1*			*70-130*	*%REC*	*1*	*24-Dec-2020 01:03*

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

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
Sample ID: WW-1620-IDW 003256-20201222
Collection Date: 22-Dec-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20121076
Lab ID:HS20121076-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020**			Prep:SW3010A / 30-Dec-2020		Analyst: JHD
Antimony	**0.00616**		**0.000400**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Arsenic	**0.0806**		**0.000400**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Barium	**4.01**		**0.00950**	**0.0200**	**mg/L**	5	31-Dec-2020 12:58
Beryllium	**0.00785**		**0.000200**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Cadmium	**0.0532**		**0.000200**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Chromium	**0.314**		**0.000400**	**0.00400**	**mg/L**	1	31-Dec-2020 13:20
Lead	**6.11**		**0.00300**	**0.0100**	**mg/L**	5	31-Dec-2020 12:58
Nickel	**0.356**		**0.000600**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Selenium	**0.00795**		**0.00110**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
Silver	**0.00868**		**0.000200**	**0.00200**	**mg/L**	1	31-Dec-2020 13:20
MERCURY BY SW7470A		**Method:SW7470**			Prep:SW7470 / 04-Jan-2021		Analyst: JC
Mercury	**0.000321**		**0.0000300**	**0.000200**	**mg/L**	1	04-Jan-2021 15:15
SULFIDE BY SM4500 S2-F		**Method:SM4500 S2-F**					Analyst: KVL
Sulfide	< 1.00		1.00	1.00	mg/L	1	24-Dec-2020 10:30
FLASH POINT BY PENSKY-MARTENS SW1010A		**Method:SW1010**					Analyst: TH
Ignitability	> 212		70.0	70.0	°F	1	29-Dec-2020 08:00
CYANIDE - SW9014		**Method:SW9014**			Prep:SW9010C / 29-Dec-2020		Analyst: KVL
Cyanide	**0.00300**	J	**0.00200**	**0.00500**	**mg/L**	1	29-Dec-2020 16:10
PH BY SW9040C		**Method:SW9040C**					Analyst: JAC
pH	**7.69**	H	**0.100**	**0.100**	**pH Units**	1	04-Jan-2021 12:16
Temp Deg C @pH	**22.5**	H	**0**	**0**	**DEG C**	1	04-Jan-2021 12:16

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

Weight / Prep Log

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

Batch ID: 160999 **Start Date:** 23 Dec 2020 09:00 **End Date:** 23 Dec 2020 15:00
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20121076-01		1000 (mL)	1 (mL)	0.001

Batch ID: 161002 **Start Date:** 23 Dec 2020 10:59 **End Date:** 23 Dec 2020 12:09
Method: TX 1005 PREP **Prep Code:** TX 1005_W PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20121076-01	1	29.65 (g)	3 (mL)	0.1012

Batch ID: 161184 **Start Date:** 29 Dec 2020 10:30 **End Date:** 29 Dec 2020 12:00
Method: CYANIDE PREP - SW9010C **Prep Code:** CN_TW_PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20121076-01		50 (mL)	50 (mL)	1

Batch ID: 161187 **Start Date:** 30 Dec 2020 09:00 **End Date:** 30 Dec 2020 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20121076-01		10 (mL)	10 (mL)	1

Batch ID: 161270 **Start Date:** 04 Jan 2021 09:00 **End Date:** 04 Jan 2021 11:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20121076-01		10 (mL)	10 (mL)	1

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 160999 (0)	**Test Name :** LOW-LEVEL SEMIVOLATILES BY 8270D				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		23 Dec 2020 10:52	29 Dec 2020 20:37	1
Batch ID: 161002 (0)	**Test Name :** LOW-LEVEL TEXAS TPH BY TX1005				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		23 Dec 2020 10:59	24 Dec 2020 01:03	1
Batch ID: 161184 (0)	**Test Name :** CYANIDE - SW9014				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		29 Dec 2020 10:30	29 Dec 2020 16:10	1
Batch ID: 161187 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		30 Dec 2020 13:00	31 Dec 2020 13:20	1
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		30 Dec 2020 13:00	31 Dec 2020 12:58	5
Batch ID: 161270 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15		04 Jan 2021 09:20	04 Jan 2021 15:15	1
Batch ID: R375328 (0)	**Test Name :** SULFIDE BY SM4500 S2-F				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15			24 Dec 2020 10:30	1
Batch ID: R375569 (0)	**Test Name :** FLASH POINT BY PENSKY-MARTENS SW1010A				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15			29 Dec 2020 08:00	1
Batch ID: R375794 (0)	**Test Name :** PH BY SW9040C				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15			04 Jan 2021 12:16	1
Batch ID: R375858 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS20121076-01	WW-1620-IDW 003256-20201222	22 Dec 2020 09:15			04 Jan 2021 20:23	1

WorkOrder: HS20121076
InstrumentID: FID-12
Test Code: TX1005_W_Low
Test Number: TX1005
Test Name: Low-level Texas TPH by TX1005

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	nC6 to nC12	TPH-1005-1	0.25	0.24	0.20	0.50
A	>nC12 to nC28	TPH-1005-2	0.25	0.26	0.20	0.50
A	>nC28 to nC35	TPH-1005-4	0.25	0.24	0.20	0.50
A	Total Petroleum Hydrocarbon	TPH	0.25	0.24	0.20	0.50
S	2-Fluorobiphenyl	321-60-8	0	0	0	0
S	Trifluoromethyl benzene	98-08-8	0	0	0	0

WorkOrder: HS20121076
InstrumentID: HG03
Test Code: HG_W
Test Number: SW7470
Test Name: Mercury by SW7470A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Mercury	7439-97-6	0.000100	0.000120	0.0000300	0.000200

WorkOrder: HS20121076
InstrumentID: ICPMS05
Test Code: ICP_TW
Test Number: SW6020
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Antimony	7440-36-0	0.00100	0.000857	0.000400	0.00200
A	Arsenic	7440-38-2	0.00100	0.000837	0.000400	0.00200
A	Barium	7440-39-3	0.00250	0.00210	0.00190	0.00400
A	Beryllium	7440-41-7	0.000500	0.000410	0.000200	0.00200
A	Cadmium	7440-43-9	0.000500	0.000431	0.000200	0.00200
A	Chromium	7440-47-3	0.00100	0.000822	0.000400	0.00400
A	Lead	7439-92-1	0.00100	0.00117	0.000600	0.00200
A	Nickel	7440-02-0	0.00100	0.000925	0.000600	0.00200
A	Selenium	7782-49-2	0.00250	0.00204	0.00110	0.00200
A	Silver	7440-22-4	0.000500	0.000463	0.000200	0.00200

WorkOrder: HS20121076
InstrumentID: SV-7
Test Code: 8270_LOW_W
Test Number: SW8270
Test Name: Low-Level Semivolatiles by 8270D

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	1,2,4-Trichlorobenzene	120-82-1	0.00010	0.000068	0.000030	0.00020
A	2,4,5-Trichlorophenol	95-95-4	0.00010	0.000077	0.000057	0.00020
A	2,4,6-Trichlorophenol	88-06-2	0.00010	0.00011	0.000048	0.00020
A	2,4-Dichlorophenol	120-83-2	0.00010	0.000075	0.000043	0.00020
A	2,4-Dimethylphenol	105-67-9	0.00010	0.000086	0.000040	0.00020
A	2,4-Dinitrophenol	51-28-5	0.00010	0.000050	0.00010	0.0010
A	2,4-Dinitrotoluene	121-14-2	0.00010	0.000095	0.000058	0.00020
A	2,6-Dinitrotoluene	606-20-2	0.00010	0.000091	0.000042	0.00020
A	2-Chloronaphthalene	91-58-7	0.00010	0.000092	0.000021	0.00020
A	2-Chlorophenol	95-57-8	0.00010	0.000088	0.000036	0.00020
A	2-Methylnaphthalene	91-57-6	0.000050	0.000050	0.000019	0.00010
A	2-Methylphenol	95-48-7	0.00010	0.000098	0.000045	0.00020
A	2-Nitroaniline	88-74-4	0.00010	0.00012	0.000041	0.00020
A	2-Nitrophenol	88-75-5	0.00010	0.000078	0.000034	0.00020
A	3&4-Methylphenol	3/4-CRESOL	0.00010	0.000091	0.000036	0.00020
A	3,3´-Dichlorobenzidine	91-94-1	0.00010	0.000078	0.000044	0.00020
A	3-Nitroaniline	99-09-2	0.00010	0.00011	0.000049	0.00020
A	4,6-Dinitro-2-methylphenol	534-52-1	0.00010	0.000090	0.000020	0.00020
A	4-Bromophenyl phenyl ether	101-55-3	0.00010	0.000082	0.000051	0.00020
A	4-Chloro-3-methylphenol	59-50-7	0.00010	0.000093	0.000032	0.00020
A	4-Chloroaniline	106-47-8	0.00010	0.000079	0.000039	0.00020
A	4-Chlorophenyl phenyl ether	7005-72-3	0.00010	0.000086	0.000044	0.00020
A	4-Nitroaniline	100-01-6	0.00010	0.00010	0.000035	0.00020
A	4-Nitrophenol	100-02-7	0.00010	0.000062	0.000047	0.0010
A	Acenaphthene	83-32-9	0.000050	0.000055	0.000027	0.00010
A	Acenaphthylene	208-96-8	0.000050	0.000054	0.000015	0.00010
A	Anthracene	120-12-7	0.000050	0.000057	0.000014	0.00010
A	Benz(a)anthracene	56-55-3	0.000050	0.000056	0.000050	0.00010
A	Benzidine	92-87-5	0.00010	0.000066	0.00010	0.00020
A	Benzo(a)pyrene	50-32-8	0.000050	0.000048	0.000020	0.00010
A	Benzo(b)fluoranthene	205-99-2	0.000050	0.000041	0.000023	0.00010
A	Benzo(g,h,i)perylene	191-24-2	0.000050	0.000044	0.000014	0.00010
A	Benzo(k)fluoranthene	207-08-9	0.000050	0.000050	0.000019	0.00010
A	Benzyl alcohol	100-51-6	0.00010	0.000098	0.000054	0.00020
A	Bis(2-chloroethoxy)methane	111-91-1	0.00010	0.000087	0.000030	0.00020
A	Bis(2-chloroethyl)ether	111-44-4	0.00010	0.000088	0.000026	0.00020
A	Bis(2-chloroisopropyl)ether	108-60-1	0.00010	0.00013	0.000070	0.00020
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.00010	0.000058	0.000037	0.00020
A	Butyl benzyl phthalate	85-68-7	0.00010	0.000086	0.000019	0.00020
A	Carbazole	86-74-8	0.00010	0.00011	0.000025	0.00020

WorkOrder: HS20121076
InstrumentID: SV-7
Test Code: 8270_LOW_W
Test Number: SW8270
Test Name: Low-Level Semivolatiles by 8270D

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chrysene	218-01-9	0.000050	0.000064	0.000021	0.00010
A	Di-n-butyl phthalate	84-74-2	0.00010	0.000090	0.000020	0.00020
A	Di-n-octyl phthalate	117-84-0	0.00010	0.000061	0.000020	0.00020
A	Dibenz(a,h)anthracene	53-70-3	0.000050	0.000039	0.000024	0.00010
A	Dibenzofuran	132-64-9	0.000050	0.000056	0.000020	0.00010
A	Diethyl phthalate	84-66-2	0.00010	0.00010	0.000030	0.00020
A	Dimethyl phthalate	131-11-3	0.00010	0.000097	0.000041	0.00020
A	Fluoranthene	206-44-0	0.000050	0.000056	0.000010	0.00010
A	Fluorene	86-73-7	0.000050	0.000055	0.000030	0.00010
A	Hexachlorobenzene	118-74-1	0.00010	0.000085	0.000044	0.00020
A	Hexachlorobutadiene	87-68-3	0.00010	0.000072	0.000030	0.00020
A	Hexachlorocyclopentadiene	77-47-4	0.00010	0.000094	0.000030	0.00020
A	Hexachloroethane	67-72-1	0.00010	0.00010	0.000059	0.00020
A	Indeno(1,2,3-cd)pyrene	193-39-5	0.000050	0.000032	0.000022	0.00010
A	Isophorone	78-59-1	0.00010	0.000097	0.000025	0.00020
A	N-Nitrosodi-n-propylamine	621-64-7	0.00010	0.00011	0.000032	0.00020
A	N-Nitrosodimethylamine	62-75-9	0.00020	0.00030	0.00010	0.00020
A	N-Nitrosodiphenylamine	86-30-6	0.00010	0.000083	0.000025	0.00020
A	Naphthalene	91-20-3	0.000050	0.000053	0.000020	0.00010
A	Nitrobenzene	98-95-3	0.00010	0.00011	0.000024	0.00020
A	Pentachlorophenol	87-86-5	0.00010	0.000068	0.000079	0.00020
A	Phenanthrene	85-01-8	0.000050	0.000061	0.000021	0.00010
A	Phenol	108-95-2	0.00010	0.000092	0.000035	0.00020
A	Pyrene	129-00-0	0.000050	0.000052	0.000019	0.00010
A	Pyridine	110-86-1	0.00010	0.00010	0.000030	0.0010
S	2,4,6-Tribromophenol	118-79-6	0	0	0	0.00020
S	2-Fluorobiphenyl	321-60-8	0	0	0	0.00020
S	2-Fluorophenol	367-12-4	0	0	0	0.00020
S	4-Terphenyl-d14	1718-51-0	0	0	0	0.00020
S	Nitrobenzene-d5	4165-60-0	0	0	0	0.00020
S	Phenol-d6	13127-88-3	0	0	0	0.00020

WorkOrder: HS20121076
InstrumentID: VOA9
Test Code: 8260_LL_W
Test Number: SW8260
Test Name: Low Level Volatiles by SW8260C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	1,1,1-Trichloroethane	71-55-6	0.00050	0.00050	0.00020	0.0010
A	1,1,2,2-Tetrachloroethane	79-34-5	0.0010	0.0010	0.00050	0.0010
A	1,1,2-Trichloroethane	79-00-5	0.0010	0.00097	0.00030	0.0010
A	1,1-Dichloroethane	75-34-3	0.00050	0.00055	0.00020	0.0010
A	1,1-Dichloroethene	75-35-4	0.00050	0.00061	0.00020	0.0010
A	1,2-Dichlorobenzene	95-50-1	0.0010	0.0010	0.00050	0.0010
A	1,2-Dichloroethane	107-06-2	0.00050	0.00064	0.00020	0.0010
A	1,2-Dichloropropane	78-87-5	0.0010	0.0010	0.00050	0.0010
A	1,3-Dichlorobenzene	541-73-1	0.0010	0.0011	0.00040	0.0010
A	1,4-Dichlorobenzene	106-46-7	0.0010	0.0012	0.00040	0.0010
A	2-Butanone	78-93-3	0.0010	0.0013	0.00050	0.0020
A	2-Hexanone	591-78-6	0.0020	0.0019	0.0010	0.0020
A	4-Methyl-2-pentanone	108-10-1	0.0020	0.0011	0.00070	0.0020
A	Acetone	67-64-1	0.0020	0.0018	0.0020	0.0020
A	Benzene	71-43-2	0.00050	0.00057	0.00020	0.0010
A	Bromochloromethane	74-97-5	0.00050	0.00055	0.00020	0.0010
A	Bromodichloromethane	75-27-4	0.00050	0.00048	0.00020	0.0010
A	Bromoform	75-25-2	0.0010	0.00082	0.00040	0.0010
A	Bromomethane	74-83-9	0.0010	0.0014	0.00040	0.0010
A	Carbon disulfide	75-15-0	0.0020	0.0023	0.00060	0.0020
A	Carbon tetrachloride	56-23-5	0.0010	0.00087	0.00050	0.0010
A	Chlorobenzene	108-90-7	0.0010	0.0010	0.00030	0.0010
A	Chloroethane	75-00-3	0.0010	0.00087	0.00030	0.0010
A	Chloroform	67-66-3	0.00050	0.00053	0.00020	0.0010
A	Chloromethane	74-87-3	0.00050	0.0011	0.00020	0.0010
A	cis-1,2-Dichloroethene	156-59-2	0.00050	0.00056	0.00020	0.0010
A	cis-1,3-Dichloropropene	10061-01-5	0.00040	0.00048	0.00010	0.0010
A	Dibromochloromethane	124-48-1	0.0010	0.00086	0.00030	0.0010
A	Ethylbenzene	100-41-4	0.0010	0.0010	0.00030	0.0010
A	m,p-Xylene	179601-23-1	0.0010	0.0011	0.00050	0.0020
A	Methylene chloride	75-09-2	0.0020	0.0030	0.0010	0.0020
A	o-Xylene	95-47-6	0.0010	0.00093	0.00030	0.0010
A	Styrene	100-42-5	0.0010	0.00092	0.00030	0.0010
A	Tetrachloroethene	127-18-4	0.0010	0.0013	0.00030	0.0010
A	Toluene	108-88-3	0.00050	0.00058	0.00020	0.0010
A	trans-1,2-Dichloroethene	156-60-5	0.00050	0.00065	0.00020	0.0010
A	trans-1,3-Dichloropropene	10061-02-6	0.00050	0.00048	0.00020	0.0010
A	Trichloroethene	79-01-6	0.00050	0.00061	0.00020	0.0010
A	Vinyl acetate	108-05-4	0.0010	0.0011	0.00050	0.0010
A	Vinyl chloride	75-01-4	0.00050	0.00061	0.00020	0.0010

WorkOrder: HS20121076
InstrumentID: VOA9
Test Code: 8260_LL_W
Test Number: SW8260
Test Name: Low Level Volatiles by SW8260C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Xylenes, Total	1330-20-7	0.0010	0.0030	0.00030	0.0010
A	1,2-Dichloroethene, Total	540-59-0	0.00050	0.0012	0.00020	0.0010
S	1,2-Dichloroethane-d4	17060-07-0	0	0	0	0.0010
S	4-Bromofluorobenzene	460-00-4	0	0	0	0.0010
S	Dibromofluoromethane	1868-53-7	0	0	0	0.0010
S	Toluene-d8	2037-26-5	0	0	0	0.0010

WorkOrder: HS20121076
InstrumentID: UV-2450
Test Code: CN_TW_9014
Test Number: SW9014
Test Name: Cyanide - SW9014

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Cyanide	57-12-5	0.00500	0.00600	0.00200	0.00500

WorkOrder: HS20121076
InstrumentID: WetChem_HS
Test Code: IGN_W
Test Number: SW1010
Test Name: Flash Point by Pensky-Martens

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** °F

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Ignitability	IGNIT	70.0	70.0	70.0	70.0

WorkOrder: HS20121076
InstrumentID: WetChem_HS
Test Code: pH_W_9040C
Test Number: SW9040C
Test Name: pH by SW9040C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** pH Units

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	pH	PH	0.100	0.100	0.100	0.100
A	Temp Deg C @pH	TEMP	0	0	0	0

WorkOrder: HS20121076
InstrumentID: WetChem_HS
Test Code: SULFD_4500S F
Test Number: SM4500 S2-F
Test Name: Sulfide by SM4500 S2-F

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Sulfide	18496-25-8	1.00	1.00	1.00	1.00

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161002 (0) **Instrument: FID-12** **Method: LOW-LEVEL TEXAS TPH BY TX1005**

MBLK Sample ID: **MBLK-161002** Units: **mg/L** Analysis Date: **23-Dec-2020 15:13**
Client ID: Run ID: **FID-12_375294** SeqNo: **5896464** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	< 0.20	0.50								
>nC12 to nC28	< 0.20	0.50								
>nC28 to nC35	< 0.20	0.50								
Total Petroleum Hydrocarbon	< 0.20	0.50								
Surr: 2-Fluorobiphenyl	*2.414*	*0*	*2.5*	*0*	*96.6*	*70 - 130*				
Surr: Trifluoromethyl benzene	*2.709*	*0*	*2.5*	*0*	*108*	*70 - 130*				

LCS Sample ID: **LCS-161002** Units: **mg/L** Analysis Date: **23-Dec-2020 15:43**
Client ID: Run ID: **FID-12_375294** SeqNo: **5896465** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	24.23	0.50	25	0	96.9	75 - 125				
>nC12 to nC28	29.12	0.50	25	0	116	75 - 125				
Surr: 2-Fluorobiphenyl	*2.869*	*0*	*2.5*	*0*	*115*	*70 - 130*				
Surr: Trifluoromethyl benzene	*2.745*	*0*	*2.5*	*0*	*110*	*70 - 130*				

LCSD Sample ID: **LCSD-161002** Units: **mg/L** Analysis Date: **23-Dec-2020 16:12**
Client ID: Run ID: **FID-12_375294** SeqNo: **5896466** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	23.28	0.50	25	0	93.1	75 - 125	24.23	3.99	20	
>nC12 to nC28	28.63	0.50	25	0	115	75 - 125	29.12	1.69	20	
Surr: 2-Fluorobiphenyl	*2.754*	*0*	*2.5*	*0*	*110*	*70 - 130*	*2.869*	*4.08*	*20*	
Surr: Trifluoromethyl benzene	*2.661*	*0*	*2.5*	*0*	*106*	*70 - 130*	*2.745*	*3.09*	*20*	

MS Sample ID: **HS20121124-01MS** Units: **mg/L** Analysis Date: **23-Dec-2020 17:12**
Client ID: Run ID: **FID-12_375294** SeqNo: **5896468** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	23.43	0.51	25.42	0	92.2	75 - 125				
>nC12 to nC28	28.78	0.51	25.42	0	113	75 - 125				
Surr: 2-Fluorobiphenyl	*2.757*	*0*	*2.542*	*0*	*108*	*70 - 130*				
Surr: Trifluoromethyl benzene	*2.659*	*0*	*2.542*	*0*	*105*	*70 - 130*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161002 (0) **Instrument: FID-12** **Method: LOW-LEVEL TEXAS TPH BY TX1005**

MSD Sample ID: **HS20121124-01MSD** Units: **mg/L** Analysis Date: **23-Dec-2020 17:41**
Client ID: Run ID: **FID-12_375294** SeqNo: **5896469** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	23.96	0.50	25.18	0	95.2	75 - 125	23.43	2.24	20	
>nC12 to nC28	31.19	0.50	25.18	0	124	75 - 125	28.78	8.02	20	
Surr: 2-Fluorobiphenyl	*2.85*	*0*	*2.518*	*0*	*113*	*70 - 130*	*2.757*	*3.33*	*20*	
Surr: Trifluoromethyl benzene	*2.693*	*0*	*2.518*	*0*	*107*	*70 - 130*	*2.659*	*1.26*	*20*	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161187 (0) **Instrument: ICPMS05** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-161187** Units: **mg/L** Analysis Date: **31-Dec-2020 12:20**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906596** PrepDate: **30-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	< 0.000400	0.00200								
Arsenic	< 0.000400	0.00200								
Barium	< 0.00190	0.00400								
Beryllium	< 0.000200	0.00200								
Cadmium	< 0.000200	0.00200								
Chromium	< 0.000400	0.00400								
Lead	< 0.000600	0.00200								
Nickel	< 0.000600	0.00200								
Selenium	< 0.00110	0.00200								
Silver	< 0.000200	0.00200								

LCS Sample ID: **LCS-161187** Units: **mg/L** Analysis Date: **31-Dec-2020 12:22**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906597** PrepDate: **30-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04796	0.00200	0.05	0	95.9	80 - 120				
Arsenic	0.05006	0.00200	0.05	0	100	80 - 120				
Barium	0.04521	0.00400	0.05	0	90.4	80 - 120				
Beryllium	0.04833	0.00200	0.05	0	96.7	80 - 120				
Cadmium	0.04781	0.00200	0.05	0	95.6	80 - 120				
Chromium	0.04618	0.00400	0.05	0	92.4	80 - 120				
Lead	0.04366	0.00200	0.05	0	87.3	80 - 120				
Nickel	0.04746	0.00200	0.05	0	94.9	80 - 120				
Selenium	0.05597	0.00200	0.05	0	112	80 - 120				
Silver	0.04623	0.00200	0.05	0	92.5	80 - 120				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161187 (0) **Instrument: ICPMS05** **Method: ICP-MS METALS BY SW6020A**

MS Sample ID: **HS20120903-01MS** Units: **mg/L** Analysis Date: **31-Dec-2020 12:50**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906603** PrepDate: **30-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04984	0.00200	0.05	-0.000094	99.9	80 - 120				
Arsenic	0.05228	0.00200	0.05	0.002538	99.5	80 - 120				
Barium	0.5528	0.00400	0.05	0.5439	17.7	80 - 120				SO
Beryllium	0.05062	0.00200	0.05	-0.000002	101	80 - 120				
Cadmium	0.04705	0.00200	0.05	0.000001	94.1	80 - 120				
Chromium	0.04852	0.00400	0.05	0.00221	92.6	80 - 120				
Lead	0.0453	0.00200	0.05	0.000016	90.6	80 - 120				
Nickel	0.04728	0.00200	0.05	0.000626	93.3	80 - 120				
Selenium	0.05927	0.00200	0.05	0.006395	106	80 - 120				
Silver	0.04532	0.00200	0.05	-0.000007	90.7	80 - 120				

MSD Sample ID: **HS20120903-01MSD** Units: **mg/L** Analysis Date: **31-Dec-2020 12:52**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906604** PrepDate: **30-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.04977	0.00200	0.05	-0.000094	99.7	80 - 120	0.04984	0.126	20	
Arsenic	0.05237	0.00200	0.05	0.002538	99.7	80 - 120	0.05228	0.17	20	
Barium	0.5577	0.00400	0.05	0.5439	27.5	80 - 120	0.5528	0.877	20	SO
Beryllium	0.05109	0.00200	0.05	-0.000002	102	80 - 120	0.05062	0.928	20	
Cadmium	0.04808	0.00200	0.05	0.000001	96.2	80 - 120	0.04705	2.17	20	
Chromium	0.0483	0.00400	0.05	0.00221	92.2	80 - 120	0.04852	0.463	20	
Lead	0.04464	0.00200	0.05	0.000016	89.2	80 - 120	0.0453	1.47	20	
Nickel	0.04656	0.00200	0.05	0.000626	91.9	80 - 120	0.04728	1.53	20	
Selenium	0.05791	0.00200	0.05	0.006395	103	80 - 120	0.05927	2.33	20	
Silver	0.04623	0.00200	0.05	-0.000007	92.5	80 - 120	0.04532	1.98	20	

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161187 (0) **Instrument: ICPMS05** **Method: ICP-MS METALS BY SW6020A**

PDS Sample ID: **HS20120903-01PDS** Units: **mg/L** Analysis Date: **31-Dec-2020 12:54**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906605** PrepDate: **30-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09775	0.00200	0.1	-0.000094	97.8	75 - 125				
Arsenic	0.1101	0.00200	0.1	0.002538	108	75 - 125				
Barium	0.6491	0.00400	0.1	0.5439	105	75 - 125				O
Beryllium	0.1053	0.00200	0.1	-0.000002	105	75 - 125				
Cadmium	0.1049	0.00200	0.1	0.000001	105	75 - 125				
Chromium	0.1014	0.00400	0.1	0.00221	99.2	75 - 125				
Lead	0.09588	0.00200	0.1	0.000016	95.9	75 - 125				
Nickel	0.09908	0.00200	0.1	0.000626	98.5	75 - 125				
Selenium	0.1223	0.00200	0.1	0.006395	116	75 - 125				
Silver	0.1	0.00200	0.1	-0.000007	100	75 - 125				

SD Sample ID: **HS20120903-01SD** Units: **mg/L** Analysis Date: **31-Dec-2020 12:48**
Client ID: Run ID: **ICPMS05_375725** SeqNo: **5906602** PrepDate: **30-Dec-2020** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	< 0.00200	0.0100					-0.000094	0	10	
Arsenic	0.002867	0.0100					0.002538	0	10	J
Barium	0.4745	0.0200					0.5439	12.8	10	R
Beryllium	< 0.00100	0.0100					-0.000002	0	10	
Cadmium	< 0.00100	0.0100					0.000001	0	10	
Chromium	0.002197	0.0200					0.00221	0	10	J
Lead	< 0.00300	0.0100					0.000016	0	10	
Nickel	< 0.00300	0.0100					0.000626	0	10	
Selenium	< 0.00550	0.0100					0.006395	0	10	
Silver	< 0.00100	0.0100					-0.000007	0	10	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161270 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-161270** Units: **mg/L** Analysis Date: **04-Jan-2021 13:57**
Client ID: Run ID: **HG03_375805** SeqNo: **5908245** PrepDate: **04-Jan-2021** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	< 0.0000300	0.000200								

LCS Sample ID: **LCS-161270** Units: **mg/L** Analysis Date: **04-Jan-2021 14:01**
Client ID: Run ID: **HG03_375805** SeqNo: **5908246** PrepDate: **04-Jan-2021** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00504	0.000200	0.005	0	101	80 - 120				

MS Sample ID: **HS20121017-05MS** Units: **mg/L** Analysis Date: **04-Jan-2021 14:29**
Client ID: Run ID: **HG03_375805** SeqNo: **5908303** PrepDate: **04-Jan-2021** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00404	0.000200	0.005	0	80.8	75 - 125				

MSD Sample ID: **HS20121017-05MSD** Units: **mg/L** Analysis Date: **04-Jan-2021 14:09**
Client ID: Run ID: **HG03_375805** SeqNo: **5908249** PrepDate: **04-Jan-2021** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00393	0.000200	0.005	0	78.6	75 - 125	0.00404	2.76	20	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

MBLK Sample ID: **MBLK-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:21**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900305** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	< 0.030	0.20								
2,4,5-Trichlorophenol	< 0.057	0.20								
2,4,6-Trichlorophenol	< 0.048	0.20								
2,4-Dichlorophenol	< 0.043	0.20								
2,4-Dimethylphenol	< 0.040	0.20								
2,4-Dinitrophenol	< 0.10	1.0								
2,4-Dinitrotoluene	< 0.058	0.20								
2,6-Dinitrotoluene	< 0.042	0.20								
2-Chloronaphthalene	< 0.021	0.20								
2-Chlorophenol	< 0.036	0.20								
2-Methylnaphthalene	< 0.019	0.10								
2-Methylphenol	< 0.045	0.20								
2-Nitroaniline	< 0.041	0.20								
2-Nitrophenol	< 0.034	0.20								
3&4-Methylphenol	< 0.036	0.20								
3,3´-Dichlorobenzidine	< 0.044	0.20								
3-Nitroaniline	< 0.049	0.20								
4,6-Dinitro-2-methylphenol	< 0.020	0.20								
4-Bromophenyl phenyl ether	< 0.051	0.20								
4-Chloro-3-methylphenol	< 0.032	0.20								
4-Chloroaniline	< 0.039	0.20								
4-Chlorophenyl phenyl ether	< 0.044	0.20								
4-Nitroaniline	< 0.035	0.20								
4-Nitrophenol	< 0.047	1.0								
Acenaphthene	< 0.027	0.10								
Acenaphthylene	< 0.015	0.10								
Anthracene	< 0.014	0.10								
Benz(a)anthracene	< 0.050	0.10								
Benzidine	< 0.10	0.20								
Benzo(a)pyrene	< 0.020	0.10								
Benzo(b)fluoranthene	< 0.023	0.10								
Benzo(g,h,i)perylene	< 0.014	0.10								
Benzo(k)fluoranthene	< 0.019	0.10								
Benzyl alcohol	< 0.054	0.20								

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

MBLK Sample ID: **MBLK-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:21**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900305** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(2-chloroethoxy)methane	< 0.030	0.20								
Bis(2-chloroethyl)ether	< 0.026	0.20								
Bis(2-chloroisopropyl)ether	< 0.070	0.20								
Bis(2-ethylhexyl)phthalate	< 0.037	0.20								
Butyl benzyl phthalate	< 0.019	0.20								
Carbazole	< 0.025	0.20								
Chrysene	< 0.021	0.10								
Dibenz(a,h)anthracene	< 0.024	0.10								
Dibenzofuran	< 0.020	0.10								
Diethyl phthalate	< 0.030	0.20								
Dimethyl phthalate	< 0.041	0.20								
Di-n-butyl phthalate	< 0.020	0.20								
Di-n-octyl phthalate	< 0.020	0.20								
Fluoranthene	< 0.010	0.10								
Fluorene	< 0.030	0.10								
Hexachlorobenzene	< 0.044	0.20								
Hexachlorobutadiene	< 0.030	0.20								
Hexachlorocyclopentadiene	< 0.030	0.20								
Hexachloroethane	< 0.059	0.20								
Indeno(1,2,3-cd)pyrene	< 0.022	0.10								
Isophorone	< 0.025	0.20								
Naphthalene	< 0.020	0.10								
Nitrobenzene	< 0.024	0.20								
N-Nitrosodimethylamine	< 0.10	0.20								
N-Nitrosodi-n-propylamine	< 0.032	0.20								
N-Nitrosodiphenylamine	< 0.025	0.20								
Pentachlorophenol	< 0.079	0.20								
Phenanthrene	< 0.021	0.10								
Phenol	< 0.035	0.20								
Pyrene	< 0.019	0.10								
Pyridine	< 0.030	1.0								
Surr: 2,4,6-Tribromophenol	*2.771*	*0.20*	*5*	*0*	*55.4*	*34 - 129*				
Surr: 2-Fluorobiphenyl	*3.95*	*0.20*	*5*	*0*	*79.0*	*40 - 125*				
Surr: 2-Fluorophenol	*4.172*	*0.20*	*5*	*0*	*83.4*	*20 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

MBLK Sample ID: **MBLK-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:21**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900305** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: 4-Terphenyl-d14	*4.123*	*0.20*	*5*	*0*	*82.5*	*40 - 135*				
Surr: Nitrobenzene-d5	*4.253*	*0.20*	*5*	*0*	*85.1*	*41 - 120*				
Surr: Phenol-d6	*4.182*	*0.20*	*5*	*0*	*83.6*	*20 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCS Sample ID: **LCS-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:40**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900306** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	2.832	0.20	5	0	56.6	45 - 120				
2,4,5-Trichlorophenol	3.429	0.20	5	0	68.6	46 - 120				
2,4,6-Trichlorophenol	3.332	0.20	5	0	66.6	42 - 120				
2,4-Dichlorophenol	3.137	0.20	5	0	62.7	49 - 120				
2,4-Dimethylphenol	3.634	0.20	5	0	72.7	35 - 120				
2,4-Dinitrophenol	3.744	1.0	5	0	74.9	15 - 120				
2,4-Dinitrotoluene	3.939	0.20	5	0	78.8	50 - 122				
2,6-Dinitrotoluene	4.08	0.20	5	0	81.6	50 - 120				
2-Chloronaphthalene	3.8	0.20	5	0	76.0	50 - 120				
2-Chlorophenol	4.15	0.20	5	0	83.0	40 - 120				
2-Methylnaphthalene	3.422	0.10	5	0	68.4	50 - 120				
2-Methylphenol	4.34	0.20	5	0	86.8	45 - 120				
2-Nitroaniline	5.894	0.20	5	0	118	28 - 139				
2-Nitrophenol	3.665	0.20	5	0	73.3	40 - 120				
3&4-Methylphenol	4.388	0.20	5	0	87.8	35 - 120				
3,3´-Dichlorobenzidine	3.391	0.20	5	0	67.8	15 - 120				
3-Nitroaniline	4.505	0.20	5	0	90.1	30 - 120				
4,6-Dinitro-2-methylphenol	3.764	0.20	5	0	75.3	25 - 121				
4-Bromophenyl phenyl ether	3.255	0.20	5	0	65.1	45 - 120				
4-Chloro-3-methylphenol	3.762	0.20	5	0	75.2	47 - 120				
4-Chloroaniline	3.777	0.20	5	0	75.5	20 - 120				
4-Chlorophenyl phenyl ether	3.233	0.20	5	0	64.7	50 - 120				
4-Nitroaniline	4.571	0.20	5	0	91.4	30 - 133				
4-Nitrophenol	3.769	1.0	5	0	75.4	30 - 130				
Acenaphthene	3.918	0.10	5	0	78.4	45 - 120				
Acenaphthylene	3.923	0.10	5	0	78.5	47 - 120				
Anthracene	3.836	0.10	5	0	76.7	45 - 120				
Benz(a)anthracene	3.596	0.10	5	0	71.9	40 - 120				
Benzidine	2.192	0.20	5	0	43.8	10 - 120				
Benzo(a)pyrene	3.96	0.10	5	0	79.2	45 - 120				
Benzo(b)fluoranthene	4.126	0.10	5	0	82.5	50 - 120				
Benzo(g,h,i)perylene	3.578	0.10	5	0	71.6	42 - 127				
Benzo(k)fluoranthene	3.911	0.10	5	0	78.2	45 - 127				
Benzyl alcohol	4.203	0.20	5	0	84.1	35 - 122				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCS Sample ID: **LCS-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:40**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900306** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bis(2-chloroethoxy)methane	4.187	0.20	5	0	83.7	45 - 120				
Bis(2-chloroethyl)ether	4.716	0.20	5	0	94.3	37 - 121				
Bis(2-chloroisopropyl)ether	4.642	0.20	5	0	92.8	40 - 120				
Bis(2-ethylhexyl)phthalate	5.091	0.20	5	0	102	40 - 139				
Butyl benzyl phthalate	5.033	0.20	5	0	101	47 - 123				
Carbazole	4.192	0.20	5	0	83.8	42 - 128				
Chrysene	4.098	0.10	5	0	82.0	43 - 120				
Dibenz(a,h)anthracene	3.519	0.10	5	0	70.4	45 - 125				
Dibenzofuran	3.706	0.10	5	0	74.1	50 - 120				
Diethyl phthalate	4.103	0.20	5	0	82.1	41 - 120				
Dimethyl phthalate	3.782	0.20	5	0	75.6	40 - 122				
Di-n-butyl phthalate	4.942	0.20	5	0	98.8	45 - 123				
Di-n-octyl phthalate	5.339	0.20	5	0	107	45 - 129				
Fluoranthene	3.755	0.10	5	0	75.1	45 - 125				
Fluorene	3.764	0.10	5	0	75.3	49 - 120				
Hexachlorobenzene	3.244	0.20	5	0	64.9	48 - 120				
Hexachlorobutadiene	2.504	0.20	5	0	50.1	40 - 120				
Hexachlorocyclopentadiene	2.73	0.20	5	0	54.6	34 - 136				
Hexachloroethane	4.126	0.20	5	0	82.5	40 - 120				
Indeno(1,2,3-cd)pyrene	3.645	0.10	5	0	72.9	41 - 128				
Isophorone	3.899	0.20	5	0	78.0	40 - 121				
Naphthalene	3.576	0.10	5	0	71.5	45 - 120				
Nitrobenzene	3.715	0.20	5	0	74.3	44 - 120				
N-Nitrosodimethylamine	4.601	0.20	5	0	92.0	30 - 121				
N-Nitrosodi-n-propylamine	4.41	0.20	5	0	88.2	40 - 120				
N-Nitrosodiphenylamine	3.93	0.20	5	0	78.6	40 - 125				
Pentachlorophenol	3.598	0.20	5	0	72.0	19 - 121				
Phenanthrene	3.786	0.10	5	0	75.7	45 - 121				
Phenol	4.47	0.20	5	0	89.4	20 - 124				
Pyrene	4.077	0.10	5	0	81.5	40 - 130				
Pyridine	3.683	1.0	5	0	73.7	15 - 120				
Surr: 2,4,6-Tribromophenol	*2.967*	*0.20*	*5*	*0*	*59.3*	*34 - 129*				
Surr: 2-Fluorobiphenyl	*3.84*	*0.20*	*5*	*0*	*76.8*	*40 - 125*				
Surr: 2-Fluorophenol	*3.966*	*0.20*	*5*	*0*	*79.3*	*20 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCS Sample ID: **LCS-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 10:40**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900306** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: 4-Terphenyl-d14	*4.225*	*0.20*	*5*	*0*	*84.5*	*40 - 135*				
Surr: Nitrobenzene-d5	*4.186*	*0.20*	*5*	*0*	*83.7*	*41 - 120*				
Surr: Phenol-d6	*4.246*	*0.20*	*5*	*0*	*84.9*	*20 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCSD Sample ID: **LCSD-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 11:00**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900307** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	2.79	0.20	5	0	55.8	45 - 120	2.832	1.48	20	
2,4,5-Trichlorophenol	3.227	0.20	5	0	64.5	46 - 120	3.429	6.08	20	
2,4,6-Trichlorophenol	3.401	0.20	5	0	68.0	42 - 120	3.332	2.04	20	
2,4-Dichlorophenol	3.142	0.20	5	0	62.8	49 - 120	3.137	0.166	20	
2,4-Dimethylphenol	3.567	0.20	5	0	71.3	35 - 120	3.634	1.85	20	
2,4-Dinitrophenol	3.85	1.0	5	0	77.0	15 - 120	3.744	2.79	50	
2,4-Dinitrotoluene	3.858	0.20	5	0	77.2	50 - 122	3.939	2.07	20	
2,6-Dinitrotoluene	3.905	0.20	5	0	78.1	50 - 120	4.08	4.39	20	
2-Chloronaphthalene	3.743	0.20	5	0	74.9	50 - 120	3.8	1.52	20	
2-Chlorophenol	3.985	0.20	5	0	79.7	40 - 120	4.15	4.06	20	
2-Methylnaphthalene	3.461	0.10	5	0	69.2	50 - 120	3.422	1.13	20	
2-Methylphenol	4.303	0.20	5	0	86.1	45 - 120	4.34	0.843	20	
2-Nitroaniline	5.781	0.20	5	0	116	28 - 139	5.894	1.94	20	
2-Nitrophenol	3.601	0.20	5	0	72.0	40 - 120	3.665	1.76	20	
3&4-Methylphenol	4.397	0.20	5	0	87.9	35 - 120	4.388	0.185	20	
3,3´-Dichlorobenzidine	3.444	0.20	5	0	68.9	15 - 120	3.391	1.54	20	
3-Nitroaniline	4.352	0.20	5	0	87.0	30 - 120	4.505	3.46	20	
4,6-Dinitro-2-methylphenol	3.92	0.20	5	0	78.4	25 - 121	3.764	4.06	30	
4-Bromophenyl phenyl ether	3.085	0.20	5	0	61.7	45 - 120	3.255	5.35	20	
4-Chloro-3-methylphenol	3.891	0.20	5	0	77.8	47 - 120	3.762	3.39	20	
4-Chloroaniline	3.73	0.20	5	0	74.6	20 - 120	3.777	1.26	20	
4-Chlorophenyl phenyl ether	3.192	0.20	5	0	63.8	50 - 120	3.233	1.29	20	
4-Nitroaniline	4.399	0.20	5	0	88.0	30 - 133	4.571	3.84	20	
4-Nitrophenol	3.786	1.0	5	0	75.7	30 - 130	3.769	0.453	20	
Acenaphthene	3.534	0.10	5	0	70.7	45 - 120	3.918	10.3	20	
Acenaphthylene	3.797	0.10	5	0	75.9	47 - 120	3.923	3.26	20	
Anthracene	3.84	0.10	5	0	76.8	45 - 120	3.836	0.109	20	
Benz(a)anthracene	3.768	0.10	5	0	75.4	40 - 120	3.596	4.65	20	
Benzidine	2.197	0.20	5	0	43.9	10 - 120	2.192	0.245	30	
Benzo(a)pyrene	3.945	0.10	5	0	78.9	45 - 120	3.96	0.369	20	
Benzo(b)fluoranthene	4.146	0.10	5	0	82.9	50 - 120	4.126	0.482	20	
Benzo(g,h,i)perylene	3.65	0.10	5	0	73.0	42 - 127	3.578	1.98	20	
Benzo(k)fluoranthene	3.972	0.10	5	0	79.4	45 - 127	3.911	1.55	20	
Benzyl alcohol	4.314	0.20	5	0	86.3	35 - 122	4.203	2.61	20	

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCSD Sample ID: **LCSD-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 11:00**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900307** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bis(2-chloroethoxy)methane	4.198	0.20	5	0	84.0	45 - 120	4.187	0.27	20	
Bis(2-chloroethyl)ether	4.724	0.20	5	0	94.5	37 - 121	4.716	0.168	20	
Bis(2-chloroisopropyl)ether	4.583	0.20	5	0	91.7	40 - 120	4.642	1.28	20	
Bis(2-ethylhexyl)phthalate	5.163	0.20	5	0	103	40 - 139	5.091	1.4	20	
Butyl benzyl phthalate	4.999	0.20	5	0	100.0	47 - 123	5.033	0.678	20	
Carbazole	4.254	0.20	5	0	85.1	42 - 128	4.192	1.48	20	
Chrysene	4	0.10	5	0	80.0	43 - 120	4.098	2.42	20	
Dibenz(a,h)anthracene	3.625	0.10	5	0	72.5	45 - 125	3.519	2.96	20	
Dibenzofuran	3.597	0.10	5	0	71.9	50 - 120	3.706	3	20	
Diethyl phthalate	4.023	0.20	5	0	80.5	41 - 120	4.103	1.97	20	
Dimethyl phthalate	3.712	0.20	5	0	74.2	40 - 122	3.782	1.87	20	
Di-n-butyl phthalate	5.019	0.20	5	0	100	45 - 123	4.942	1.54	20	
Di-n-octyl phthalate	5.406	0.20	5	0	108	45 - 129	5.339	1.25	20	
Fluoranthene	3.756	0.10	5	0	75.1	45 - 125	3.755	0.00514	20	
Fluorene	3.665	0.10	5	0	73.3	49 - 120	3.764	2.68	20	
Hexachlorobenzene	3.272	0.20	5	0	65.4	48 - 120	3.244	0.857	20	
Hexachlorobutadiene	2.568	0.20	5	0	51.4	40 - 120	2.504	2.55	20	
Hexachlorocyclopentadiene	2.533	0.20	5	0	50.7	34 - 136	2.73	7.47	20	
Hexachloroethane	3.984	0.20	5	0	79.7	40 - 120	4.126	3.5	20	
Indeno(1,2,3-cd)pyrene	3.724	0.10	5	0	74.5	41 - 128	3.645	2.15	20	
Isophorone	3.891	0.20	5	0	77.8	40 - 121	3.899	0.212	20	
Naphthalene	3.605	0.10	5	0	72.1	45 - 120	3.576	0.817	20	
Nitrobenzene	3.755	0.20	5	0	75.1	44 - 120	3.715	1.07	20	
N-Nitrosodimethylamine	4.689	0.20	5	0	93.8	30 - 121	4.601	1.89	20	
N-Nitrosodi-n-propylamine	4.49	0.20	5	0	89.8	40 - 120	4.41	1.8	20	
N-Nitrosodiphenylamine	3.965	0.20	5	0	79.3	40 - 125	3.93	0.899	20	
Pentachlorophenol	3.64	0.20	5	0	72.8	19 - 121	3.598	1.16	20	
Phenanthrene	3.887	0.10	5	0	77.7	45 - 121	3.786	2.65	20	
Phenol	4.479	0.20	5	0	89.6	20 - 124	4.47	0.212	20	
Pyrene	4.109	0.10	5	0	82.2	40 - 130	4.077	0.765	20	
Pyridine	3.851	1.0	5	0	77.0	15 - 120	3.683	4.48	20	
Surr: 2,4,6-Tribromophenol	*2.948*	*0.20*	*5*	*0*	*59.0*	*34 - 129*	*2.967*	*0.662*	*20*	
Surr: 2-Fluorobiphenyl	*3.699*	*0.20*	*5*	*0*	*74.0*	*40 - 125*	*3.84*	*3.74*	*20*	
Surr: 2-Fluorophenol	*3.932*	*0.20*	*5*	*0*	*78.6*	*20 - 120*	*3.966*	*0.859*	*20*	

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 160999 (0) **Instrument: SV-8** **Method: LOW-LEVEL SEMIVOLATILES BY 8270D**

LCSD Sample ID: **LCSD-160999** Units: **ug/L** Analysis Date: **28-Dec-2020 11:00**
Client ID: Run ID: **SV-8_375463** SeqNo: **5900307** PrepDate: **23-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: 4-Terphenyl-d14	*4.199*	*0.20*	*5*	*0*	*84.0*	*40 - 135*	*4.225*	*0.628*	*20*	
Surr: Nitrobenzene-d5	*4.07*	*0.20*	*5*	*0*	*81.4*	*41 - 120*	*4.186*	*2.81*	*20*	
Surr: Phenol-d6	*4.186*	*0.20*	*5*	*0*	*83.7*	*20 - 120*	*4.246*	*1.41*	*20*	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-210104** Units: **ug/L** Analysis Date: **04-Jan-2021 14:24**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909650** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	< 0.20	1.0								
1,1,2,2-Tetrachloroethane	< 0.50	1.0								
1,1,2-Trichlor-1,2,2-trifluoroethane	< 0.50	1.0								
1,1,2-Trichloroethane	< 0.30	1.0								
1,1-Dichloroethane	< 0.20	1.0								
1,1-Dichloroethene	< 0.20	1.0								
1,2,4-Trichlorobenzene	< 0.50	1.0								
1,2-Dibromo-3-chloropropane	< 1.0	1.0								
1,2-Dibromoethane	< 0.20	1.0								
1,2-Dichlorobenzene	< 0.50	1.0								
1,2-Dichloroethane	< 0.20	1.0								
1,2-Dichloropropane	< 0.50	1.0								
1,3-Dichlorobenzene	< 0.40	1.0								
1,4-Dichlorobenzene	< 0.40	1.0								
2-Butanone	< 0.50	2.0								
2-Hexanone	< 1.0	2.0								
4-Methyl-2-pentanone	< 0.70	2.0								
Acetone	< 2.0	2.0								
Benzene	< 0.20	1.0								
Bromochloromethane	< 0.20	1.0								
Bromodichloromethane	< 0.20	1.0								
Bromoform	< 0.40	1.0								
Bromomethane	< 0.40	1.0								
Carbon disulfide	< 0.60	2.0								
Carbon tetrachloride	< 0.50	1.0								
Chlorobenzene	< 0.30	1.0								
Chloroethane	< 0.30	1.0								
Chloroform	< 0.20	1.0								
Chloromethane	< 0.20	1.0								
cis-1,2-Dichloroethene	< 0.20	1.0								
cis-1,3-Dichloropropene	< 0.10	1.0								
Cyclohexane	< 0.30	1.0								
Dibromochloromethane	< 0.30	1.0								
Dichlorodifluoromethane	< 0.30	1.0								

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-210104** Units: **ug/L** Analysis Date: **04-Jan-2021 14:24**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909650** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	< 0.30	1.0								
Isopropylbenzene	< 0.30	1.0								
m,p-Xylene	< 0.50	2.0								
Methyl acetate	< 1.0	1.0								
Methyl tert-butyl ether	< 0.20	1.0								
Methylcyclohexane	< 0.30	1.0								
Methylene chloride	< 1.0	2.0								
o-Xylene	< 0.30	1.0								
Styrene	< 0.30	1.0								
Tetrachloroethene	< 0.30	1.0								
Toluene	< 0.20	1.0								
trans-1,2-Dichloroethene	< 0.20	1.0								
trans-1,3-Dichloropropene	< 0.20	1.0								
Trichloroethene	< 0.20	1.0								
Trichlorofluoromethane	< 0.30	1.0								
Vinyl acetate	< 0.50	1.0								
Vinyl chloride	< 0.20	1.0								
Xylenes, Total	< 0.30	1.0								
1,2-Dichloroethene, Total	< 0.20	1.0								
Surr: 1,2-Dichloroethane-d4	*45.73*	*1.0*	*50*	*0*	*91.5*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*47.77*	*1.0*	*50*	*0*	*95.5*	*82 - 115*				
Surr: Dibromofluoromethane	*46.63*	*1.0*	*50*	*0*	*93.3*	*73 - 126*				
Surr: Toluene-d8	*50.34*	*1.0*	*50*	*0*	*101*	*81 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

LCS Sample ID: **VLCSW-210104** Units: **ug/L** Analysis Date: **04-Jan-2021 13:42**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909649** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1-Trichloroethane	18.38	1.0	20	0	91.9	70 - 130				
1,1,2,2-Tetrachloroethane	19.45	1.0	20	0	97.2	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	23.8	1.0	20	0	119	70 - 130				
1,1,2-Trichloroethane	18.84	1.0	20	0	94.2	77 - 113				
1,1-Dichloroethane	17.78	1.0	20	0	88.9	71 - 122				
1,1-Dichloroethene	20.2	1.0	20	0	101	70 - 130				
1,2,4-Trichlorobenzene	22.76	1.0	20	0	114	77 - 126				
1,2-Dibromo-3-chloropropane	21.52	1.0	20	0	108	70 - 130				
1,2-Dibromoethane	20.19	1.0	20	0	101	76 - 123				
1,2-Dichlorobenzene	19.69	1.0	20	0	98.5	77 - 113				
1,2-Dichloroethane	18.03	1.0	20	0	90.2	70 - 124				
1,2-Dichloropropane	18.6	1.0	20	0	93.0	72 - 119				
1,3-Dichlorobenzene	19.81	1.0	20	0	99.0	78 - 118				
1,4-Dichlorobenzene	19.54	1.0	20	0	97.7	79 - 113				
2-Butanone	38.7	2.0	40	0	96.8	70 - 130				
2-Hexanone	43.76	2.0	40	0	109	70 - 130				
4-Methyl-2-pentanone	41.04	2.0	40	0	103	70 - 130				
Acetone	49.01	2.0	40	0	123	70 - 130				
Benzene	18.79	1.0	20	0	93.9	74 - 120				
Bromochloromethane	18.14	1.0	20	0	90.7	76 - 124				
Bromodichloromethane	19.38	1.0	20	0	96.9	74 - 122				
Bromoform	20.03	1.0	20	0	100	73 - 128				
Bromomethane	20.63	1.0	20	0	103	70 - 130				
Carbon disulfide	41.05	2.0	40	0	103	70 - 130				
Carbon tetrachloride	19.26	1.0	20	0	96.3	71 - 125				
Chlorobenzene	19.41	1.0	20	0	97.1	76 - 113				
Chloroethane	17.32	1.0	20	0	86.6	70 - 130				
Chloroform	17.81	1.0	20	0	89.0	71 - 121				
Chloromethane	18.91	1.0	20	0	94.6	70 - 129				
cis-1,2-Dichloroethene	18.16	1.0	20	0	90.8	75 - 122				
cis-1,3-Dichloropropene	18.89	1.0	20	0	94.5	73 - 127				
Cyclohexane	21.31	1.0	20	0	107	70 - 130				
Dibromochloromethane	20.83	1.0	20	0	104	77 - 122				
Dichlorodifluoromethane	15.88	1.0	20	0	79.4	70 - 130				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

LCS Sample ID: **VLCSW-210104** Units: **ug/L** Analysis Date: **04-Jan-2021 13:42**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909649** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	20.42	1.0	20	0	102	77 - 117				
Isopropylbenzene	21.02	1.0	20	0	105	73 - 127				
m,p-Xylene	41.35	2.0	40	0	103	77 - 122				
Methyl acetate	17.86	1.0	20	0	89.3	76 - 122				
Methyl tert-butyl ether	20.88	1.0	20	0	104	70 - 130				
Methylcyclohexane	19.69	1.0	20	0	98.4	61 - 157				
Methylene chloride	18.37	2.0	20	0	91.9	70 - 127				
o-Xylene	20.42	1.0	20	0	102	75 - 119				
Styrene	20.14	1.0	20	0	101	72 - 126				
Tetrachloroethene	20.46	1.0	20	0	102	76 - 119				
Toluene	19.62	1.0	20	0	98.1	77 - 118				
trans-1,2-Dichloroethene	19.63	1.0	20	0	98.1	72 - 127				
trans-1,3-Dichloropropene	18.36	1.0	20	0	91.8	77 - 119				
Trichloroethene	19.91	1.0	20	0	99.6	77 - 121				
Trichlorofluoromethane	20.36	1.0	20	0	102	70 - 130				
Vinyl acetate	38.22	1.0	40	0	95.5	70 - 130				
Vinyl chloride	16.94	1.0	20	0	84.7	70 - 130				
Xylenes, Total	61.77	1.0	60	0	103	75 - 122				
1,2-Dichloroethene, Total	37.79	1.0	40	0	94.5	72 - 127				
Surr: 1,2-Dichloroethane-d4	*45.07*	*1.0*	*50*	*0*	*90.1*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*49.05*	*1.0*	*50*	*0*	*98.1*	*82 - 115*				
Surr: Dibromofluoromethane	*46.73*	*1.0*	*50*	*0*	*93.5*	*73 - 126*				
Surr: Toluene-d8	*50.38*	*1.0*	*50*	*0*	*101*	*81 - 120*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS20121366-01MS** Units: **ug/L** Analysis Date: **04-Jan-2021 16:52**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909657** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	23.4	1.0	20	0	117	70 - 130				
1,1,2,2-Tetrachloroethane	23.07	1.0	20	0	115	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	31.8	1.0	20	0	159	70 - 130				S
1,1,2-Trichloroethane	23.04	1.0	20	0	115	70 - 117				
1,1-Dichloroethane	21.36	1.0	20	0	107	70 - 127				
1,1-Dichloroethene	25.77	1.0	20	0	129	70 - 130				
1,2,4-Trichlorobenzene	26.16	1.0	20	0	131	70 - 125				S
1,2-Dibromo-3-chloropropane	24.8	1.0	20	0	124	70 - 130				
1,2-Dibromoethane	23.91	1.0	20	0	120	70 - 124				
1,2-Dichlorobenzene	23.86	1.0	20	0	119	70 - 115				S
1,2-Dichloroethane	21.39	1.0	20	0.5172	104	70 - 127				
1,2-Dichloropropane	22.09	1.0	20	0	110	70 - 122				
1,3-Dichlorobenzene	23.26	1.0	20	0	116	70 - 119				
1,4-Dichlorobenzene	23.03	1.0	20	0	115	70 - 114				S
2-Butanone	44.1	2.0	40	0	110	70 - 130				
2-Hexanone	49.91	2.0	40	0	125	70 - 130				
4-Methyl-2-pentanone	49.22	2.0	40	0	123	70 - 130				
Acetone	57.08	2.0	40	3.169	135	70 - 130				S
Benzene	24.66	1.0	20	1.842	114	70 - 127				
Bromochloromethane	21.94	1.0	20	0	110	70 - 127				
Bromodichloromethane	22.63	1.0	20	0	113	70 - 124				
Bromoform	22.84	1.0	20	0	114	70 - 129				
Bromomethane	23.67	1.0	20	0	118	70 - 130				
Carbon disulfide	50.76	2.0	40	0	127	70 - 130				
Carbon tetrachloride	25.82	1.0	20	0	129	70 - 130				
Chlorobenzene	22.65	1.0	20	0	113	70 - 114				
Chloroethane	20.76	1.0	20	0	104	70 - 130				
Chloroform	21.31	1.0	20	0	107	70 - 125				
Chloromethane	20.35	1.0	20	0	102	70 - 130				
cis-1,2-Dichloroethene	24.88	1.0	20	3.227	108	70 - 128				
cis-1,3-Dichloropropene	21.03	1.0	20	0	105	70 - 125				
Cyclohexane	28.83	1.0	20	0	144	70 - 130				S
Dibromochloromethane	24.33	1.0	20	0	122	70 - 124				
Dichlorodifluoromethane	16.39	1.0	20	0	82.0	70 - 130				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS20121366-01MS** Units: **ug/L** Analysis Date: **04-Jan-2021 16:52**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909657** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethylbenzene	25.41	1.0	20	0	127	70 - 124				S
Isopropylbenzene	26.02	1.0	20	0	130	70 - 130				S
m,p-Xylene	50.96	2.0	40	0.7627	125	70 - 130				
Methyl acetate	18.4	1.0	20	0	92.0	76 - 122				
Methyl tert-butyl ether	16.75	1.0	20	0.766	79.9	70 - 130				
Methylcyclohexane	20.81	1.0	20	1.82	94.9	61 - 158				
Methylene chloride	20.34	2.0	20	0	102	70 - 128				
o-Xylene	25.21	1.0	20	0	126	70 - 124				S
Styrene	24.73	1.0	20	0	124	70 - 130				
Tetrachloroethene	28.29	1.0	20	2.753	128	70 - 130				
Toluene	23.65	1.0	20	0	118	70 - 123				
trans-1,2-Dichloroethene	22.26	1.0	20	0	111	70 - 130				
trans-1,3-Dichloropropene	20.98	1.0	20	0	105	70 - 121				
Trichloroethene	25.23	1.0	20	1.258	120	70 - 129				
Trichlorofluoromethane	27.81	1.0	20	0	139	70 - 130				S
Vinyl acetate	40.28	1.0	40	0	101	70 - 130				
Vinyl chloride	21.99	1.0	20	1.225	104	70 - 130				
Xylenes, Total	76.17	1.0	60	0.7627	126	70 - 130				
1,2-Dichloroethene, Total	47.14	1.0	40	3.227	110	70 - 130				
Surr: 1,2-Dichloroethane-d4	*46.37*	*1.0*	*50*	*0*	*92.7*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*49.28*	*1.0*	*50*	*0*	*98.6*	*81 - 113*				
Surr: Dibromofluoromethane	*48.64*	*1.0*	*50*	*0*	*97.3*	*77 - 123*				
Surr: Toluene-d8	*50.85*	*1.0*	*50*	*0*	*102*	*82 - 127*				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MSD Sample ID: **HS20121366-01MSD** Units: **ug/L** Analysis Date: **04-Jan-2021 17:13**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909658** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1-Trichloroethane	23.04	1.0	20	0	115	70 - 130	23.4	1.53	20	
1,1,2,2-Tetrachloroethane	22.25	1.0	20	0	111	70 - 123	23.07	3.62	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	30.95	1.0	20	0	155	70 - 130	31.8	2.68	20	S
1,1,2-Trichloroethane	21.62	1.0	20	0	108	70 - 117	23.04	6.38	20	
1,1-Dichloroethane	20.89	1.0	20	0	104	70 - 127	21.36	2.23	20	
1,1-Dichloroethene	25.13	1.0	20	0	126	70 - 130	25.77	2.5	20	
1,2,4-Trichlorobenzene	26.79	1.0	20	0	134	70 - 125	26.16	2.4	20	S
1,2-Dibromo-3-chloropropane	24.19	1.0	20	0	121	70 - 130	24.8	2.51	20	
1,2-Dibromoethane	22.92	1.0	20	0	115	70 - 124	23.91	4.23	20	
1,2-Dichlorobenzene	23.45	1.0	20	0	117	70 - 115	23.86	1.73	20	S
1,2-Dichloroethane	21.3	1.0	20	0.5172	104	70 - 127	21.39	0.453	20	
1,2-Dichloropropane	21.57	1.0	20	0	108	70 - 122	22.09	2.37	20	
1,3-Dichlorobenzene	23.01	1.0	20	0	115	70 - 119	23.26	1.08	20	
1,4-Dichlorobenzene	22.51	1.0	20	0	113	70 - 114	23.03	2.27	20	
2-Butanone	45.11	2.0	40	0	113	70 - 130	44.1	2.27	20	
2-Hexanone	49.24	2.0	40	0	123	70 - 130	49.91	1.33	20	
4-Methyl-2-pentanone	48.82	2.0	40	0	122	70 - 130	49.22	0.831	20	
Acetone	49.65	2.0	40	3.169	116	70 - 130	57.08	13.9	20	
Benzene	23.82	1.0	20	1.842	110	70 - 127	24.66	3.48	20	
Bromochloromethane	21.71	1.0	20	0	109	70 - 127	21.94	1.07	20	
Bromodichloromethane	22.18	1.0	20	0	111	70 - 124	22.63	2.04	20	
Bromoform	21.95	1.0	20	0	110	70 - 129	22.84	3.96	20	
Bromomethane	22.98	1.0	20	0	115	70 - 130	23.67	2.93	20	
Carbon disulfide	45.62	2.0	40	0	114	70 - 130	50.76	10.7	20	
Carbon tetrachloride	24.5	1.0	20	0	123	70 - 130	25.82	5.24	20	
Chlorobenzene	22.16	1.0	20	0	111	70 - 114	22.65	2.21	20	
Chloroethane	20.77	1.0	20	0	104	70 - 130	20.76	0.0659	20	
Chloroform	20.86	1.0	20	0	104	70 - 125	21.31	2.13	20	
Chloromethane	19.38	1.0	20	0	96.9	70 - 130	20.35	4.92	20	
cis-1,2-Dichloroethene	24.48	1.0	20	3.227	106	70 - 128	24.88	1.63	20	
cis-1,3-Dichloropropene	21.31	1.0	20	0	107	70 - 125	21.03	1.33	20	
Cyclohexane	27.62	1.0	20	0	138	70 - 130	28.83	4.29	20	S
Dibromochloromethane	23.26	1.0	20	0	116	70 - 124	24.33	4.48	20	
Dichlorodifluoromethane	15.81	1.0	20	0	79.0	70 - 130	16.39	3.63	20	

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375858 (0) **Instrument: VOA9** **Method: LOW LEVEL VOLATILES BY SW8260C**

MSD Sample ID: **HS20121366-01MSD** Units: **ug/L** Analysis Date: **04-Jan-2021 17:13**
Client ID: Run ID: **VOA9_375858** SeqNo: **5909658** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Ethylbenzene	24.4	1.0	20	0	122	70 - 124	25.41	4.03	20	
Isopropylbenzene	25.35	1.0	20	0	127	70 - 130	26.02	2.63	20	
m,p-Xylene	48.59	2.0	40	0.7627	120	70 - 130	50.96	4.76	20	
Methyl acetate	18.63	1.0	20	0	93.1	76 - 122	18.4	1.26	20	
Methyl tert-butyl ether	17.07	1.0	20	0.766	81.5	70 - 130	16.75	1.92	20	
Methylcyclohexane	20.71	1.0	20	1.82	94.4	61 - 158	20.81	0.497	20	
Methylene chloride	19.35	2.0	20	0	96.8	70 - 128	20.34	5.01	20	
o-Xylene	24.35	1.0	20	0	122	70 - 124	25.21	3.48	20	
Styrene	23.45	1.0	20	0	117	70 - 130	24.73	5.32	20	
Tetrachloroethene	27.28	1.0	20	2.753	123	70 - 130	28.29	3.63	20	
Toluene	22.78	1.0	20	0	114	70 - 123	23.65	3.74	20	
trans-1,2-Dichloroethene	21.33	1.0	20	0	107	70 - 130	22.26	4.27	20	
trans-1,3-Dichloropropene	20.44	1.0	20	0	102	70 - 121	20.98	2.61	20	
Trichloroethene	24.69	1.0	20	1.258	117	70 - 129	25.23	2.16	20	
Trichlorofluoromethane	25.97	1.0	20	0	130	70 - 130	27.81	6.86	20	
Vinyl acetate	40.03	1.0	40	0	100	70 - 130	40.28	0.641	20	
Vinyl chloride	20.64	1.0	20	1.225	97.1	70 - 130	21.99	6.33	20	
Xylenes, Total	72.94	1.0	60	0.7627	120	70 - 130	76.17	4.33	20	
1,2-Dichloroethene, Total	45.81	1.0	40	3.227	106	70 - 130	47.14	2.87	20	
Surr: 1,2-Dichloroethane-d4	*46.2*	*1.0*	*50*	*0*	*92.4*	*70 - 126*	*46.37*	*0.358*	*20*	
Surr: 4-Bromofluorobenzene	*48.86*	*1.0*	*50*	*0*	*97.7*	*81 - 113*	*49.28*	*0.857*	*20*	
Surr: Dibromofluoromethane	*47.22*	*1.0*	*50*	*0*	*94.4*	*77 - 123*	*48.64*	*2.97*	*20*	
Surr: Toluene-d8	*49.7*	*1.0*	*50*	*0*	*99.4*	*82 - 127*	*50.85*	*2.3*	*20*	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: 161184 (0) **Instrument: UV-2450** **Method: CYANIDE - SW9014**

MBLK Sample ID: **MBLK-161184** Units: **mg/L** Analysis Date: **29-Dec-2020 16:10**
Client ID: Run ID: **UV-2450_375567** SeqNo: **5902549** PrepDate: **29-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	< 0.00200	0.00500								

LCS Sample ID: **LCS-161184** Units: **mg/L** Analysis Date: **29-Dec-2020 16:10**
Client ID: Run ID: **UV-2450_375567** SeqNo: **5902548** PrepDate: **29-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.192	0.00500	0.2	0	96.0	80 - 120				

MS Sample ID: **HS20121188-04MS** Units: **mg/L** Analysis Date: **29-Dec-2020 16:10**
Client ID: Run ID: **UV-2450_375567** SeqNo: **5902546** PrepDate: **29-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.179	0.00500	0.2	0	89.5	80 - 120				

MSD Sample ID: **HS20121188-04MSD** Units: **mg/L** Analysis Date: **29-Dec-2020 16:10**
Client ID: Run ID: **UV-2450_375567** SeqNo: **5902547** PrepDate: **29-Dec-2020** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.161	0.00500	0.2	0	80.5	80 - 120	0.179	10.6	20	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375328 (0) **Instrument: WetChem_HS** **Method: SULFIDE BY SM4500 S2-F**

MBLK Sample ID: **MBLK-R375328** Units: **mg/L** Analysis Date: **24-Dec-2020 10:30**
Client ID: Run ID: **WetChem_HS_375328** SeqNo: **5897169** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	< 1.00	1.00								

LCS Sample ID: **LCS-R375328** Units: **mg/L** Analysis Date: **24-Dec-2020 10:30**
Client ID: Run ID: **WetChem_HS_375328** SeqNo: **5897168** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23.4	1.00	25	0	93.6	85 - 115				

LCSD Sample ID: **LCSD-R375328** Units: **mg/L** Analysis Date: **24-Dec-2020 10:30**
Client ID: Run ID: **WetChem_HS_375328** SeqNo: **5897167** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23.2	1.00	25	0	92.8	85 - 115	23.4	0.858	20	

MS Sample ID: **HS20121155-01MS** Units: **mg/L** Analysis Date: **24-Dec-2020 10:30**
Client ID: Run ID: **WetChem_HS_375328** SeqNo: **5897170** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	20	1.00	25	-0.2	80.8	80 - 120				

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: R375569 (0) **Instrument:** WetChem_HS **Method:** FLASH POINT BY PENSKY-MARTENS SW1010A

LCS Sample ID: **LCS-R375569** Units: **°F** Analysis Date: **29-Dec-2020 08:00**
Client ID: Run ID: **WetChem_HS_375569** SeqNo: **5902601** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability	80.25	70.0	81	0	99.1	95 - 105				

DUP Sample ID: **HS20121127-01DUP** Units: **°F** Analysis Date: **29-Dec-2020 08:00**
Client ID: Run ID: **WetChem_HS_375569** SeqNo: **5902602** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability	> 212	70.0					0	0	20	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: HS20121076

QC BATCH REPORT

Batch ID: **R375794 (0)** **Instrument:** **WetChem_HS** **Method:** **PH BY SM4500H+ B**

DUP Sample ID: **HS20120872-01DUP** Units: **pH Units** Analysis Date: **04-Jan-2021 12:16**
Client ID: Run ID: **WetChem_HS_375794** SeqNo: **5908002** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.75	0.100					7.7	0.647	10	
Temp Deg C @pH	23.7	0					23.8	0.421	10	

The following samples were analyzed in this batch: HS20121076-01

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works
WorkOrder: **HS20121076**

QUALIFIERS, ACRONYMS, UNITS

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

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

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	20-030-0	26-Mar-2021
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Dakota	R-193 2020-2021	30-Apr-2021
Oklahoma	2020-165	31-Aug-2021
Texas	T104704231-20-26	30-Apr-2021

Sample Receipt Checklist

Work Order ID: HS20121076 **Date/Time Received:** **22-Dec-2020 09:30**

Client Name: PBW **Received by:** **Donald Gilmore**

Completed By: */S/ Nilesh D. Ranchod* (eSignature) 22-Dec-2020 10:14 (Date/Time) **Reviewed by:** (eSignature) (Date/Time)

Matrices: **Water** Carrier name: **ALS.HS**

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 ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:232007
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	0.9C UC/C	IR # 31
Cooler(s)/Kit(s):	RED	
Date/Time sample(s) sent to storage:	12/22/2020 14:00	

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:	Si Ma		

Login Notes: Sx # WW-1620-IDW003256-20201222 Metals pH >2 Preserved with 0.5mL HNO3 on 12/22/2020 @ 2:45pm by SM
LOT # 315013409
After Preservation pH (1)

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 232007

HS20121076

Golder Associates Inc.
Houston TX-Wood Preserving Works

ALS Project Manager:

Customer Information		Project Information	
Purchase Order	UPRR/Kevin Peterburs	Project Name	Houston TX-Wood Preserving Works
Work Order	#003256	Project Number	1620-21-Rev0 SR 92683
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	

A	8260_LL_W (5632528 Volatile Organics)
B	TX1005_W_Low (5643233 TPH TX1005)
C	8270_LOW_W (5632532 SemiVolatiles (w/pyridine))
D	ICP_TW (5652643 5652646 RCRA 8+3 Metals)
E	CN_TW_9014 (5656268 Cyanide - RCI DVW)
F	SULFD_4500S F (5656263 Sulfide - RCI)
G	pH_W_9040C (5632436 pH - RCI)
H	IGN_W (5652637 Ignitability - RCI)
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WW-1620-IDW003256-20201222	12-22-20	9:15	W		12	X	X	X	X	X	X	X	X			
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Tim McSpadden / Will Carter

Shipment Method:

Required Turnaround Time: (Check Box) [X] 7 Wrk Days [ ] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour

Results Due Date:

Relinquished by: Tim McSpadden — Date: 12-22-20 — Time: 9:30 — Received by:

Relinquished by: — Date: 12-22-20 — Time: 1256 — Received by (Laboratory):

Logged by (Laboratory): — Date: — Time: — Checked by (Laboratory):

Notes: UPRR HWPW 1620-21

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
Red	0.9	[X] Level II Std QC

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

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS 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.