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January 12, 2021

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

Work Order: **HS21010226**

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

Dear Eric Matzner,

ALS Environmental received 2 sample(s) on Jan 07, 2021 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.
Project: Houston TX-Wood Preserving Works IDW
Work Order: HS21010226

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21010226-01	WW-1620-IDW-V427-20210107	Water		07-Jan-2021 12:35	07-Jan-2021 14:35	<input type="checkbox"/>
HS21010226-02	WW-1620-IDW-V714-20210107	Water		07-Jan-2021 12:50	07-Jan-2021 14:35	<input type="checkbox"/>

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
Work Order: HS21010226

CASE NARRATIVE

Work Order Comments

- 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 °C.
-

GC Semivolatiles by Method TX1005**Batch ID: 161430**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

GCMS Volatiles by Method SW8260**Batch ID: R376058**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Metals by Method SW1311/6020**Batch ID: 161445**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Metals by Method SW6020**Batch ID: 161403****Sample ID: HS21010060-08MS**

- MS and MSD are for an unrelated sample (Barium)

Batch ID: 161454

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Metals by Method SW7470**Batch ID: 161400****Sample ID: HS21010125-01MS**

- MS and MSD are for an unrelated sample
-

WetChemistry by Method SM4500 S2-F**Batch ID: R376126**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method SW9040C**Batch ID: R376121**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

WetChemistry by Method SW1010**Batch ID: R376018**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
Work Order: HS21010226

CASE NARRATIVE

WetChemistry by Method SW1010

WetChemistry by Method SW9014

Batch ID: 161428

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Golder Associates Inc.
 Project: Houston TX-Wood Preserving Works IDW
 Sample ID: WW-1620-IDW-V427-20210107
 Collection Date: 07-Jan-2021 12:35

ANALYTICAL REPORT
 WorkOrder:HS21010226
 Lab ID:HS21010226-01
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A	Method:SW1311/6020		Leache:SW1311 / 08-Jan-2021		Prep:SW3010A / 09-Jan-2021		Analyst: JHD
Lead	0.179		0.00600	0.0500	mg/L	1	11-Jan-2021 17:50
ICP-MS METALS BY SW6020A	Method:SW6020				Prep:SW3010A / 08-Jan-2021		Analyst: JHD
Arsenic	0.0107		0.000400	0.00200	mg/L	1	08-Jan-2021 14:28
Barium	0.280		0.00190	0.00400	mg/L	1	08-Jan-2021 14:28
Cadmium	0.00463		0.000200	0.00200	mg/L	1	08-Jan-2021 14:28
Chromium	0.00857		0.000400	0.00400	mg/L	1	08-Jan-2021 14:28
Lead	0.645		0.000600	0.00200	mg/L	1	08-Jan-2021 14:28
Selenium	< 0.00110		0.00110	0.00200	mg/L	1	08-Jan-2021 14:28
Silver	< 0.000200		0.000200	0.00200	mg/L	1	08-Jan-2021 14:28
DISSOLVED METALS BY SW6020A	Method:SW6020 (dissolved)				Prep:SW3010A / 11-Jan-2021		Analyst: JHD
Lead	0.0278		0.000600	0.00200	mg/L	1	11-Jan-2021 15:34
MERCURY BY SW7470A	Method:SW7470				Prep:SW7470 / 08-Jan-2021		Analyst: JC
Mercury	0.000294		0.0000300	0.000200	mg/L	1	08-Jan-2021 16:03

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

Client: Golder Associates Inc.
 Project: Houston TX-Wood Preserving Works IDW
 Sample ID: WW-1620-IDW-V714-20210107
 Collection Date: 07-Jan-2021 12:50

ANALYTICAL REPORT
 WorkOrder:HS21010226
 Lab ID:HS21010226-02
 Matrix:Water

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method:SW8260		Analyst: AKP			
Benzene	< 0.00020		0.00020	0.0010	mg/L	1	07-Jan-2021 20:43
Ethylbenzene	< 0.00030		0.00030	0.0010	mg/L	1	07-Jan-2021 20:43
Toluene	< 0.00020		0.00020	0.0010	mg/L	1	07-Jan-2021 20:43
Xylenes, Total	< 0.00030		0.00030	0.0010	mg/L	1	07-Jan-2021 20:43
Surr: 1,2-Dichloroethane-d4	103			70-126	%REC	1	07-Jan-2021 20:43
Surr: 4-Bromofluorobenzene	102			81-113	%REC	1	07-Jan-2021 20:43
Surr: Dibromofluoromethane	102			77-123	%REC	1	07-Jan-2021 20:43
Surr: Toluene-d8	98.2			82-127	%REC	1	07-Jan-2021 20:43
LOW-LEVEL TEXAS TPH BY TX1005		Method:TX1005		Prep:TX1005PR / 08-Jan-2021		Analyst: SAM	
nC6 to nC12	< 0.20		0.20	0.50	mg/L	1	08-Jan-2021 18:20
>nC12 to nC28	< 0.20		0.20	0.50	mg/L	1	08-Jan-2021 18:20
>nC28 to nC35	< 0.20		0.20	0.50	mg/L	1	08-Jan-2021 18:20
Total Petroleum Hydrocarbon	< 0.20		0.20	0.50	mg/L	1	08-Jan-2021 18:20
Surr: 2-Fluorobiphenyl	88.3			70-130	%REC	1	08-Jan-2021 18:20
Surr: Trifluoromethyl benzene	97.9			70-130	%REC	1	08-Jan-2021 18:20
TCLP METALS BY SW6020A		Method:SW1311/6020		Leache:SW1311 / 08-Jan-2021		Prep:SW3010A / 09-Jan-2021	
Lead	0.136		0.00600	0.0500	mg/L	1	11-Jan-2021 17:52
ICP-MS METALS BY SW6020A		Method:SW6020		Prep:SW3010A / 08-Jan-2021		Analyst: JHD	
Arsenic	0.0175		0.000400	0.00200	mg/L	1	12-Jan-2021 14:41
Barium	0.903		0.00190	0.00400	mg/L	1	12-Jan-2021 14:41
Cadmium	0.0178		0.000200	0.00200	mg/L	1	12-Jan-2021 14:41
Chromium	0.0609		0.000400	0.00400	mg/L	1	12-Jan-2021 14:41
Lead	1.65		0.00600	0.0200	mg/L	10	12-Jan-2021 15:52
Selenium	0.00150	J	0.00110	0.00200	mg/L	1	12-Jan-2021 14:41
Silver	0.000930	J	0.000200	0.00200	mg/L	1	12-Jan-2021 14:41
DISSOLVED METALS BY SW6020A		Method:SW6020 (dissolved)		Prep:SW3010A / 11-Jan-2021		Analyst: JHD	
Lead	0.0194		0.000600	0.00200	mg/L	1	11-Jan-2021 15:44
MERCURY BY SW7470A		Method:SW7470		Prep:SW7470 / 08-Jan-2021		Analyst: JC	
Mercury	0.000561		0.0000300	0.000200	mg/L	1	08-Jan-2021 16:04
SULFIDE BY SM4500 S2-F		Method:SM4500 S2-F		Analyst: KVL			
Sulfide	< 1.00		1.00	1.00	mg/L	1	11-Jan-2021 13:00
FLASH POINT BY PENSKY-MARTENS SW1010A		Method:SW1010		Analyst: TH			
Ignitability	> 212		70.0	70.0	°F	1	07-Jan-2021 15:00
CYANIDE - SW9014		Method:SW9014		Prep:SW9010C / 08-Jan-2021		Analyst: KVL	
Cyanide	0.00500		0.00200	0.00500	mg/L	1	08-Jan-2021 13:00
PH BY SW9040C		Method:SW9040C		Analyst: JAC			
pH	8.27	H	0.100	0.100	pH Units	1	11-Jan-2021 13:58
Temp Deg C @pH	19.6	H	0	0	DEG C	1	11-Jan-2021 13:58

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 IDW
WorkOrder: HS21010226

Batch ID: 161400 **Start Date:** 08 Jan 2021 12:00 **End Date:** 08 Jan 2021 14:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS21010226-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 161403 **Start Date:** 08 Jan 2021 09:00 **End Date:** 08 Jan 2021 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS21010226-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 161428 **Start Date:** 08 Jan 2021 11:00 **End Date:** 08 Jan 2021 12:30
Method: CYANIDE PREP - SW9010C **Prep Code:** CN_TW_PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-02		50 (mL)	50 (mL)	1	250 mL plastic, NaOH/ASE

Batch ID: 161430 **Start Date:** 08 Jan 2021 12:30 **End Date:** 08 Jan 2021 14:30
Method: TX 1005 PREP **Prep Code:** TX 1005_W PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-02		30.17 (g)	3 (mL)	0.09944	40 mL VOA w/ HCL

Batch ID: 161434 **Start Date:** 08 Jan 2021 14:30 **End Date:** 08 Jan 2021 15:30
Method: TCLP METALS EXTRACTION BY SW1311 **Prep Code:** 1311LM EXT

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-01		100 (grams)	2000 (mL)	20	250 mL plastic, Neat
HS21010226-02		100 (grams)	2000 (mL)	20	250 mL plastic, Neat

Batch ID: 161445 **Start Date:** 09 Jan 2021 09:00 **End Date:** 09 Jan 2021 13:00
Method: TCLP LEACHATE DIGESTION BY SW3010A **Prep Code:** 3010A_TCLP

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-01		1 (mL)	10 (mL)	10	250 mL plastic, Neat
HS21010226-02		1 (mL)	10 (mL)	10	250 mL plastic, Neat

Batch ID: 161454 **Start Date:** 11 Jan 2021 10:26 **End Date:** 11 Jan 2021 14:00
Method: DISS METALS PREP - WATER - SW3010A **Prep Code:** 3010A DISS

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21010226-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS21010226-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 161400 (0)		Test Name : MERCURY BY SW7470A			Matrix: Water	
HS21010226-01	WW-1620-IDW-V427-20210107	07 Jan 2021 12:35		08 Jan 2021 08:37	08 Jan 2021 16:03	1
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		08 Jan 2021 08:37	08 Jan 2021 16:04	1
Batch ID: 161403 (0)		Test Name : ICP-MS METALS BY SW6020A			Matrix: Water	
HS21010226-01	WW-1620-IDW-V427-20210107	07 Jan 2021 12:35		08 Jan 2021 13:00	08 Jan 2021 14:28	1
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		08 Jan 2021 13:00	12 Jan 2021 15:52	10
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		08 Jan 2021 13:00	12 Jan 2021 14:41	1
Batch ID: 161428 (0)		Test Name : CYANIDE - SW9014			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		08 Jan 2021 11:00	08 Jan 2021 13:00	1
Batch ID: 161430 (0)		Test Name : LOW-LEVEL TEXAS TPH BY TX1005			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		08 Jan 2021 12:30	08 Jan 2021 18:20	1
Batch ID: 161445 (0)		Test Name : TCLP METALS BY SW6020A			Matrix: Water	
HS21010226-01	WW-1620-IDW-V427-20210107	07 Jan 2021 12:35	08 Jan 2021 15:30	09 Jan 2021 13:00	11 Jan 2021 17:50	1
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50	08 Jan 2021 15:30	09 Jan 2021 13:00	11 Jan 2021 17:52	1
Batch ID: 161454 (0)		Test Name : DISSOLVED METALS BY SW6020A			Matrix: Water	
HS21010226-01	WW-1620-IDW-V427-20210107	07 Jan 2021 12:35		11 Jan 2021 14:00	11 Jan 2021 15:34	1
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50		11 Jan 2021 14:00	11 Jan 2021 15:44	1
Batch ID: R376018 (0)		Test Name : FLASH POINT BY PENSKY-MARTENS SW1010A			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50			07 Jan 2021 15:00	1
Batch ID: R376058 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50			07 Jan 2021 20:43	1
Batch ID: R376121 (0)		Test Name : PH BY SW9040C			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50			11 Jan 2021 13:58	1
Batch ID: R376126 (0)		Test Name : SULFIDE BY SM4500 S2-F			Matrix: Water	
HS21010226-02	WW-1620-IDW-V714-20210107	07 Jan 2021 12:50			11 Jan 2021 13:00	1

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161430 (0) **Instrument:** FID-13 **Method:** LOW-LEVEL TEXAS TPH BY TX1005

MBLK		Sample ID: MBLK-161430		Units: mg/L		Analysis Date: 08-Jan-2021 16:53				
Client ID:		Run ID: FID-13_376093		SeqNo: 5914474		PrepDate: 08-Jan-2021		DF: 1		
Analyte	Result	PQL	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	2.38	0	2.5	0	95.2	70 - 130				
Surr: Trifluoromethyl benzene	2.583	0	2.5	0	103	70 - 130				

LCS		Sample ID: LCS-161430		Units: mg/L		Analysis Date: 08-Jan-2021 17:22				
Client ID:		Run ID: FID-13_376093		SeqNo: 5914475		PrepDate: 08-Jan-2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	25.19	0.50	25	0	101	75 - 125				
>nC12 to nC28	28.38	0.50	25	0	114	75 - 125				
Surr: 2-Fluorobiphenyl	2.97	0	2.5	0	119	70 - 130				
Surr: Trifluoromethyl benzene	2.636	0	2.5	0	105	70 - 130				

LCSD		Sample ID: LCSD-161430		Units: mg/L		Analysis Date: 08-Jan-2021 17:51				
Client ID:		Run ID: FID-13_376093		SeqNo: 5914476		PrepDate: 08-Jan-2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	23.46	0.50	25	0	93.8	75 - 125	25.19	7.12	20	
>nC12 to nC28	29.59	0.50	25	0	118	75 - 125	28.38	4.2	20	
Surr: 2-Fluorobiphenyl	2.908	0	2.5	0	116	70 - 130	2.97	2.1	20	
Surr: Trifluoromethyl benzene	2.657	0	2.5	0	106	70 - 130	2.636	0.823	20	

MS		Sample ID: HS21010226-02MS		Units: mg/L		Analysis Date: 08-Jan-2021 18:49				
Client ID: WW-1620-IDW-V714-20210107		Run ID: FID-13_376093		SeqNo: 5914478		PrepDate: 08-Jan-2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	26.31	0.48	24.01	0	110	75 - 125				
>nC12 to nC28	29.65	0.48	24.01	0	123	75 - 125				
Surr: 2-Fluorobiphenyl	2.783	0	2.401	0	116	70 - 130				
Surr: Trifluoromethyl benzene	2.743	0	2.401	0	114	70 - 130				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161430 (0) **Instrument:** FID-13 **Method:** LOW-LEVEL TEXAS TPH BY TX1005

MSD		Sample ID: HS21010226-02MSD		Units: mg/L		Analysis Date: 08-Jan-2021 19:18			
Client ID: WW-1620-IDW-V714-20210107		Run ID: FID-13_376093		SeqNo: 5914479		PrepDate: 08-Jan-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
nC6 to nC12	25.2	0.49	24.53	0	103	75 - 125	26.31	4.32	20
>nC12 to nC28	29.71	0.49	24.53	0	121	75 - 125	29.65	0.203	20
<i>Surr: 2-Fluorobiphenyl</i>	2.431	0	2.453	0	99.1	70 - 130	2.783	13.5	20
<i>Surr: Trifluoromethyl benzene</i>	2.531	0	2.453	0	103	70 - 130	2.743	8.03	20

The following samples were analyzed in this batch: HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161400 (0)		Instrument: HG03		Method: MERCURY BY SW7470A						
MBLK	Sample ID: MBLK-161400	Units: mg/L		Analysis Date: 08-Jan-2021 14:50						
Client ID:	Run ID: HG03_376074	SeqNo: 5914158		PrepDate: 08-Jan-2021		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Mercury	< 0.0000300	0.000200								
LCS	Sample ID: LCS-161400	Units: mg/L		Analysis Date: 08-Jan-2021 14:54						
Client ID:	Run ID: HG03_376074	SeqNo: 5914159		PrepDate: 08-Jan-2021		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Mercury	0.00536	0.000200	0.005	0	107	80 - 120				
MS	Sample ID: HS21010125-01MS	Units: mg/L		Analysis Date: 08-Jan-2021 15:12						
Client ID:	Run ID: HG03_376074	SeqNo: 5914163		PrepDate: 08-Jan-2021		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Mercury	0.00333	0.000200	0.005	0.000193	62.7	75 - 125			S	
MSD	Sample ID: HS21010125-01MSD	Units: mg/L		Analysis Date: 08-Jan-2021 15:06						
Client ID:	Run ID: HG03_376074	SeqNo: 5914162		PrepDate: 08-Jan-2021		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Mercury	0.00356	0.000200	0.005	0.000193	67.3	75 - 125	0.00333	6.68 20	S	

The following samples were analyzed in this batch: HS21010226-01 HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161403 (0)	Instrument: ICPMS05	Method: ICP-MS METALS BY SW6020A
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MBLK	Sample ID: MBLK-161403	Units: mg/L	Analysis Date: 08-Jan-2021 13:55							
Client ID:	Run ID: ICPMS05_376081	SeqNo: 5914171	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Arsenic	< 0.000400	0.00200								
Barium	< 0.00190	0.00400								
Cadmium	< 0.000200	0.00200								
Chromium	< 0.000400	0.00400								
Lead	< 0.000600	0.00200								
Selenium	< 0.00110	0.00200								
Silver	< 0.000200	0.00200								

LCS	Sample ID: LCS-161403	Units: mg/L	Analysis Date: 08-Jan-2021 13:57							
Client ID:	Run ID: ICPMS05_376081	SeqNo: 5914172	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Arsenic	0.05454	0.00200	0.05	0	109	80 - 120				
Barium	0.04644	0.00400	0.05	0	92.9	80 - 120				
Cadmium	0.05046	0.00200	0.05	0	101	80 - 120				
Chromium	0.04937	0.00400	0.05	0	98.7	80 - 120				
Lead	0.04573	0.00200	0.05	0	91.5	80 - 120				
Silver	0.05191	0.00200	0.05	0	104	80 - 120				

LCS	Sample ID: LCS-161403	Units: mg/L	Analysis Date: 08-Jan-2021 14:30							
Client ID:	Run ID: ICPMS05_376081	SeqNo: 5914185	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Selenium	0.04451	0.00200	0.05	0	89.0	80 - 120				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161403 (0)		Instrument: ICPMS05			Method: ICP-MS METALS BY SW6020A					
MS		Sample ID: HS21010060-08MS			Units: mg/L		Analysis Date: 08-Jan-2021 14:18			
Client ID:		Run ID: ICPMS05_376081			SeqNo: 5914179		PrepDate: 08-Jan-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0584	0.00200	0.05	0.001729	113	80 - 120				
Barium	0.68	0.00400	0.05	0.5449	270	80 - 120				SO
Cadmium	0.05178	0.00200	0.05	0.000028	104	80 - 120				
Chromium	0.05255	0.00400	0.05	-0.000018	105	80 - 120				
Lead	0.05299	0.00200	0.05	0.000034	106	80 - 120				
Selenium	0.05749	0.00200	0.05	0.000038	115	80 - 120				
Silver	0.05293	0.00200	0.05	0.000002	106	80 - 120				
MSD		Sample ID: HS21010060-08MSD			Units: mg/L		Analysis Date: 08-Jan-2021 14:20			
Client ID:		Run ID: ICPMS05_376081			SeqNo: 5914180		PrepDate: 08-Jan-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05853	0.00200	0.05	0.001729	114	80 - 120	0.0584	0.217	20	
Barium	0.6763	0.00400	0.05	0.5449	263	80 - 120	0.68	0.538	20	SO
Cadmium	0.05295	0.00200	0.05	0.000028	106	80 - 120	0.05178	2.23	20	
Chromium	0.05227	0.00400	0.05	-0.000018	105	80 - 120	0.05255	0.527	20	
Lead	0.05386	0.00200	0.05	0.000034	108	80 - 120	0.05299	1.62	20	
Selenium	0.0576	0.00200	0.05	0.000038	115	80 - 120	0.05749	0.191	20	
Silver	0.05755	0.00200	0.05	0.000002	115	80 - 120	0.05293	8.37	20	
PDS		Sample ID: HS21010060-08PDS			Units: mg/L		Analysis Date: 08-Jan-2021 14:22			
Client ID:		Run ID: ICPMS05_376081			SeqNo: 5914181		PrepDate: 08-Jan-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.087	0.00200	0.1	0.001729	85.3	75 - 125				
Barium	0.6483	0.00400	0.1	0.5449	103	75 - 125				O
Cadmium	0.08658	0.00200	0.1	0.000028	86.6	75 - 125				
Chromium	0.08279	0.00400	0.1	-0.000018	82.8	75 - 125				
Lead	0.08997	0.00200	0.1	0.000034	89.9	75 - 125				
Selenium	0.0878	0.00200	0.1	0.000038	87.8	75 - 125				
Silver	0.08522	0.00200	0.1	0.000002	85.2	75 - 125				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161403 (0) **Instrument:** ICPMS05 **Method:** ICP-MS METALS BY SW6020A

SD	Sample ID: HS21010060-08SD	Units: mg/L			Analysis Date: 08-Jan-2021 20:19					
Client ID:	Run ID: ICPMS05_376081	SeqNo: 5914356	PrepDate: 08-Jan-2021	DF: 5						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	Limit	Qual
Arsenic	< 0.00200	0.0100					0.001729	0	10	
Barium	0.5206	0.0200					0.5449	4.46	10	
Cadmium	< 0.00100	0.0100					0	0	10	
Chromium	< 0.00200	0.0200					0	0	10	
Lead	< 0.00300	0.0100					0	0	10	
Selenium	< 0.00550	0.0100					0	0	10	
Silver	< 0.00100	0.0100					0	0	10	

The following samples were analyzed in this batch: HS21010226-01 HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161445 (0)		Instrument: ICPMS05		Method: TCLP METALS BY SW6020A					
MBLK	Sample ID: MBLKT2-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:48					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915560		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	< 0.00600	0.0500							
MBLK	Sample ID: MBLKT4-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:52					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915562		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	< 0.00600	0.0500							
MBLK	Sample ID: MBLKT3-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:50					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915561		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	< 0.00600	0.0500							
MBLK	Sample ID: MBLKT1-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:39					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915557		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	< 0.00600	0.0500							
MBLK	Sample ID: MBLK-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:37					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915556		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	< 0.00600	0.0500							
LCS	Sample ID: LCS-161445	Units: mg/L		Analysis Date: 11-Jan-2021 16:54					
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915563		PrepDate: 09-Jan-2021		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD Limit Qual	
Lead	0.0412	0.00500	0.05	0	82.4	80 - 120			

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161445 (0)	Instrument: ICPMS05	Method: TCLP METALS BY SW6020A
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MS	Sample ID: HS21010069-01MS	Units: mg/L	Analysis Date: 11-Jan-2021 17:00							
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915566	PrepDate: 09-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Lead 0.4387 0.0500 0.5 0.00099 87.5 80 - 120

MSD	Sample ID: HS21010069-01MSD	Units: mg/L	Analysis Date: 11-Jan-2021 17:02							
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915567	PrepDate: 09-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Lead 0.4526 0.0500 0.5 0.00099 90.3 80 - 120 0.4387 3.13 20

PDS	Sample ID: HS21010069-01PDS	Units: mg/L	Analysis Date: 11-Jan-2021 17:04							
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915568	PrepDate: 09-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Lead 1.003 0.0500 1 0.00099 100 75 - 125

SD	Sample ID: HS21010069-01SD	Units: mg/L	Analysis Date: 11-Jan-2021 16:58							
Client ID:	Run ID: ICPMS05_376125	SeqNo: 5915565	PrepDate: 09-Jan-2021 DF: 5							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual

Lead < 0.0300 0.250 0.00099 0 10

The following samples were analyzed in this batch: HS21010226-01 HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161454 (0)		Instrument: ICPMS05		Method: DISSOLVED METALS BY SW6020A (DISSOLVED)						
MBLK	Sample ID: MBLK-161454	Units: mg/L		Analysis Date: 11-Jan-2021 15:30						
Client ID:		Run ID: ICPMS05_376125	SeqNo: 5915423	PrepDate: 11-Jan-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Lead	< 0.000600	0.00200								
LCS	Sample ID: LCS-161454	Units: mg/L		Analysis Date: 11-Jan-2021 15:32						
Client ID:		Run ID: ICPMS05_376125	SeqNo: 5915424	PrepDate: 11-Jan-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Lead	0.04134	0.00200	0.05	0	82.7	80 - 120				
MS	Sample ID: HS21010226-01MS	Units: mg/L		Analysis Date: 11-Jan-2021 15:38						
Client ID: WW-1620-IDW-V427-20210107		Run ID: ICPMS05_376125	SeqNo: 5915427	PrepDate: 11-Jan-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Lead	0.07418	0.00200	0.05	0.02783	92.7	75 - 125				
MSD	Sample ID: HS21010226-01MSD	Units: mg/L		Analysis Date: 11-Jan-2021 15:40						
Client ID: WW-1620-IDW-V427-20210107		Run ID: ICPMS05_376125	SeqNo: 5915428	PrepDate: 11-Jan-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Lead	0.07029	0.00200	0.05	0.02783	84.9	75 - 125	0.07418	5.38	20	
PDS	Sample ID: HS21010226-01PDS	Units: mg/L		Analysis Date: 11-Jan-2021 15:42						
Client ID: WW-1620-IDW-V427-20210107		Run ID: ICPMS05_376125	SeqNo: 5915429	PrepDate: 11-Jan-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual	
Lead	0.1266	0.00200	0.1	0.02783	98.8	75 - 125				
SD	Sample ID: HS21010226-01SD	Units: mg/L		Analysis Date: 11-Jan-2021 15:36						
Client ID: WW-1620-IDW-V427-20210107		Run ID: ICPMS05_376125	SeqNo: 5915426	PrepDate: 11-Jan-2021	DF: 5					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	RPD Limit Qual	
Lead	0.02764	0.0100					0.02783	0.668	10	

The following samples were analyzed in this batch: HS21010226-01 HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: R376058 (0) **Instrument:** VOA4 **Method:** LOW LEVEL VOLATILES BY SW8260C

MBLK		Sample ID: VBLKW-210107			Units: ug/L		Analysis Date: 07-Jan-2021 16:35			
Client ID:		Run ID: VOA4_376058			SeqNo: 5913772		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	< 0.20	1.0								
Ethylbenzene	< 0.30	1.0								
Toluene	< 0.20	1.0								
Xylenes, Total	< 0.30	1.0								
<i>Surr: 1,2-Dichloroethane-d4</i>	53.31	1.0	50	0	107	70 - 123				
<i>Surr: 4-Bromofluorobenzene</i>	49.3	1.0	50	0	98.6	82 - 115				
<i>Surr: Dibromofluoromethane</i>	49.33	1.0	50	0	98.7	73 - 126				
<i>Surr: Toluene-d8</i>	49.1	1.0	50	0	98.2	81 - 120				

LCS		Sample ID: VLCSW-210107			Units: ug/L		Analysis Date: 07-Jan-2021 15:53			
Client ID:		Run ID: VOA4_376058			SeqNo: 5913771		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.55	1.0	20	0	97.7	74 - 120				
Ethylbenzene	19.49	1.0	20	0	97.5	77 - 117				
Toluene	19.82	1.0	20	0	99.1	77 - 118				
Xylenes, Total	61.59	1.0	60	0	103	75 - 122				
<i>Surr: 1,2-Dichloroethane-d4</i>	50.6	1.0	50	0	101	70 - 130				
<i>Surr: 4-Bromofluorobenzene</i>	51.36	1.0	50	0	103	82 - 115				
<i>Surr: Dibromofluoromethane</i>	49.19	1.0	50	0	98.4	73 - 126				
<i>Surr: Toluene-d8</i>	50.32	1.0	50	0	101	81 - 120				

MS		Sample ID: HS21010113-01MS			Units: ug/L		Analysis Date: 07-Jan-2021 21:04			
Client ID:		Run ID: VOA4_376058			SeqNo: 5913785		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.23	1.0	20	0	86.1	70 - 127				
Ethylbenzene	16.33	1.0	20	0	81.7	70 - 124				
Toluene	17.03	1.0	20	0	85.2	70 - 123				
Xylenes, Total	49.44	1.0	60	0	82.4	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	51.05	1.0	50	0	102	70 - 126				
<i>Surr: 4-Bromofluorobenzene</i>	49.53	1.0	50	0	99.1	81 - 113				
<i>Surr: Dibromofluoromethane</i>	50.17	1.0	50	0	100	77 - 123				
<i>Surr: Toluene-d8</i>	48.87	1.0	50	0	97.7	82 - 127				

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: R376058 (0) **Instrument:** VOA4 **Method:** LOW LEVEL VOLATILES BY SW8260C

MSD		Sample ID: HS21010113-01MSD			Units: ug/L		Analysis Date: 07-Jan-2021 21:25			
Client ID:		Run ID: VOA4_376058			SeqNo: 5913786		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16.32	1.0	20	0	81.6	70 - 127	17.23	5.41	20	
Ethylbenzene	15.1	1.0	20	0	75.5	70 - 124	16.33	7.83	20	
Toluene	16.04	1.0	20	0	80.2	70 - 123	17.03	6	20	
Xylenes, Total	48.7	1.0	60	0	81.2	70 - 130	49.44	1.5	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>50.02</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>70 - 126</i>	<i>51.05</i>	<i>2.04</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.32</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.6</i>	<i>81 - 113</i>	<i>49.53</i>	<i>0.431</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>49.7</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>99.4</i>	<i>77 - 123</i>	<i>50.17</i>	<i>0.956</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>49.11</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>98.2</i>	<i>82 - 127</i>	<i>48.87</i>	<i>0.502</i>	<i>20</i>	

The following samples were analyzed in this batch: HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: 161428 (0)	Instrument: UV-2450	Method: CYANIDE - SW9014
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MBLK	Sample ID: MBLK-161428	Units: mg/L	Analysis Date: 08-Jan-2021 13:00							
Client ID:	Run ID: UV-2450_376076	SeqNo: 5914020	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Cyanide < 0.00200 0.00500

LCS	Sample ID: LCS-161428	Units: mg/L	Analysis Date: 08-Jan-2021 13:00							
Client ID:	Run ID: UV-2450_376076	SeqNo: 5914019	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Cyanide 0.195 0.00500 0.2 0 97.5 80 - 120

MS	Sample ID: HS21010083-01MS	Units: mg/L	Analysis Date: 08-Jan-2021 13:00							
Client ID:	Run ID: UV-2450_376076	SeqNo: 5914017	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Cyanide 0.186 0.00500 0.2 0.002 92.0 80 - 120

MSD	Sample ID: HS21010083-01MSD	Units: mg/L	Analysis Date: 08-Jan-2021 13:00							
Client ID:	Run ID: UV-2450_376076	SeqNo: 5914018	PrepDate: 08-Jan-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Cyanide 0.177 0.00500 0.2 0.002 87.5 80 - 120 0.186 4.96 20

The following samples were analyzed in this batch: HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: R376018 (0) **Instrument:** WetChem_HS **Method:** FLASH POINT BY PENSKY-MARTENS SW1010A

LCS Sample ID: **LCS-R376018** Units: °F Analysis Date: **07-Jan-2021 09:30**
 Client ID: Run ID: **WetChem_HS_376018** SeqNo: **5912903** PrepDate: DF: 1
 Analyte Result PQL SPK Val SPK Ref Value %REC Control Limit RPD Ref Value %RPD RPD Limit Qual

Ignitability 80.3 70.0 81 0 99.1 95 - 105

DUP Sample ID: **HS20121419-03DUP** Units: °F Analysis Date: **07-Jan-2021 09:30**
 Client ID: Run ID: **WetChem_HS_376018** SeqNo: **5912904** PrepDate: DF: 1
 Analyte Result PQL 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:

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: R376121 (0)		Instrument: WetChem_HS		Method: PH BY SW9040C					
DUP	Sample ID: HS21010217-05DUP	Units: pH Units			Analysis Date: 11-Jan-2021 13:58				
Client ID:	Run ID: WetChem_HS_376121	SeqNo: 5914982		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

pH	6.85	0.100					6.88	0.437	10
Temp Deg C @pH	18.8	0					18.9	0.531	10

The following samples were analyzed in this batch: HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

QC BATCH REPORT

Batch ID: R376126 (0)	Instrument: WetChem_HS	Method: SULFIDE BY SM4500 S2-F
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MBLK	Sample ID: MBLK-R376126	Units: mg/L	Analysis Date: 11-Jan-2021 13:00							
Client ID:	Run ID: WetChem_HS_376126	SeqNo: 5915055	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Sulfide < 1.00 1.00

LCS	Sample ID: LCS-R376126	Units: mg/L	Analysis Date: 11-Jan-2021 13:00							
Client ID:	Run ID: WetChem_HS_376126	SeqNo: 5915054	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Sulfide 21.88 1.00 25 0 87.5 85 - 115

LCSD	Sample ID: LCSD-R376126	Units: mg/L	Analysis Date: 11-Jan-2021 13:00							
Client ID:	Run ID: WetChem_HS_376126	SeqNo: 5915053	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Sulfide 21.68 1.00 25 0 86.7 85 - 115 21.88 0.918 20

MS	Sample ID: HS21010144-01MS	Units: mg/L	Analysis Date: 11-Jan-2021 13:00							
Client ID:	Run ID: WetChem_HS_376126	SeqNo: 5915056	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Sulfide 24.48 1.00 25 -1.32 103 80 - 120

The following samples were analyzed in this batch: HS21010226-02

Client: Golder Associates Inc.
Project: Houston TX-Wood Preserving Works IDW
WorkOrder: HS21010226

**QUALIFIERS,
ACRONYMS, UNITS**

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

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

Unit Reported	Description
Date	
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 Carolina	624-2021	31-Dec-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: HS21010226

Date/Time Received: **07-Jan-2021 14:35**

Client Name: PBW

Received by: **Pablo Martinez**

Completed By: /S/ Pablo Martinez

07-Jan-2021 15:11

Reviewed by: /S/ Dane J. Wacasey

12-Jan-2021 12:30

eSignature

Date/Time

eSignature

Date/Time

Matrices: **WATER**

Carrier name: **Client**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- 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:236494
- 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): 0.2°C UC/C IR 25

Cooler(s)/Kit(s): 46844

Date/Time sample(s) sent to storage: 1/7/21 15:20

Water - VOA vials have zero headspace? Yes No No VOA vials submitted

Water - pH acceptable upon receipt? Yes No N/A

pH adjusted? Yes No N/A

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



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: 236494

HS21010226

Golder Associates Inc.
Houston TX-Wood Preserving Works IDW



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:											
Purchase Order	UPRR/Kevin Petarburs 1620-23	Project Name	Houston TX-Wood Preserving Works IDW	A	8260_LL_W (5652652 BTEX)										
Work Order		Project Number	1620-23-Rev0 SR 92688	B	TX1005_W_Low (5643233 TPH TX1005)										
Company Name	Golder Associates Inc.	Bill To Company	Union Pacific Railroad- A/P	C	RCRA 8 Waters (5652643 RCRA 8 Metals)										
Send Report To	Eric Matzner	Invoice Attn	Accounts Payable	D	CN_TW_9014 (5632370 Cyanide - RCI)										
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0750	E	SULFD_4500S F (5636267 Sulfide - RCI)										
				F	pH_W_9040C (5635957 pH - RCI)										
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha NE 681790750	G	IGN_W (5652637 Ignitability - RCI)										
Phone	(512) 671-3434	Phone		H	1311_TCLP ICP Metals (5640672 5636002 TCLP Pb)										
Fax	(512) 671-3445	Fax		I	ICP_DISS (5636002 6020 DISS Lead (Fld Fitr 0.45um))										
e-Mail Address	Eric_Matzner@golder.com	e-Mail Address		J											

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WW-1620-IDW-V427-20210107	1-7-21	1235						X					X	X		
2	WW-1620-IDW-V714-20210107	1-7-21	1250				X	X	X	X	X	X	X	X	X		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign JOHN BRAYTON		Shipment Method HAND DELIVERED		Required Turnaround Time: (Check Box) <input checked="" type="checkbox"/> 3 <input type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hrs				Results Due Date:			
Relinquished by: <i>[Signature]</i>	Date: 1-7-2021	Time: 14:35	Received by: <i>[Signature]</i>	Notes: UPRR HWPIW 1620-23 WR# 003256							
Relinquished by:	Date:	Time:	Received by (Laboratory): <i>[Signature]</i>	Cooler ID: 46844	Cooler Temp.: 0.2C	QC Package: (Check One Box Below)					
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory): 1-7-21 14:35			<input checked="" type="checkbox"/> Level II Std QC	<input type="checkbox"/> TRRP Checklist				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035						<input type="checkbox"/> Level III Std QC/Raw Data	<input type="checkbox"/> TRRP Level IV				
						<input type="checkbox"/> Level IV SW/8/CLP					
						<input type="checkbox"/> Other					

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

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