The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.

8060.00 Indigo-Desoto Parish, LA

SGS Job Number: LA49341

Sampling Date: 10/30/18

Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 70

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-15-7), WV(257)

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SGS North America Inc.

Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA49341

8060.00 Indigo-Desoto Parish, LA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
LA49341-1	10/30/18	17:05	KC/DC	11/01/18	AQ	Water	031-9810Z (DENNISON RIG SUPPLY)
LA49341-1F	10/30/18	17:05	KC/DC	11/01/18	AQ	Water Filtered	031-9810Z (DENNISON RIG SUPPLY)

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G091055.D	1	11/06/18 03:41	CP	n/a	n/a	V2G5001
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	99%		89-111%

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SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0022773.D	1	11/05/18 18:47	PC	11/05/18 07:15	OP12727	EL599
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	0.0045	mg/l	
120-83-2	2,4-Dichlorophenol	ND	0.0045	mg/l	
105-67-9	2,4-Dimethylphenol	ND	0.0045	mg/l	
51-28-5	2,4-Dinitrophenol	ND	0.018	mg/l	
100-02-7	4-Nitrophenol	ND	0.023	mg/l	
87-86-5	Pentachlorophenol	ND	0.00091	mg/l	
108-95-2	Phenol	ND	0.0045	mg/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	0.0045	mg/l	
95-95-4	2,4,5-Trichlorophenol [a]	ND	0.0045	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	0.0045	mg/l	
83-32-9	Acenaphthene	ND	0.00018	mg/l	
208-96-8	Acenaphthylene	ND	0.00018	mg/l	
62-53-3	Aniline	ND	0.0045	mg/l	
120-12-7	Anthracene	ND	0.00018	mg/l	
56-55-3	Benzo(a)anthracene	ND	0.00018	mg/l	
50-32-8	Benzo(a)pyrene	ND	0.00018	mg/l	
205-99-2	Benzo(b)fluoranthene	ND	0.00018	mg/l	
207-08-9	Benzo(k)fluoranthene [a]	ND	0.00018	mg/l	
92-52-4	1,1'-Biphenyl	ND	0.0091	mg/l	
85-68-7	Butyl Benzyl Phthalate [a]	ND	0.0045	mg/l	
106-47-8	4-Chloroaniline	ND	0.0045	mg/l	
111-44-4	bis(2-Chloroethyl)ether	ND	0.0045	mg/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	0.0045	mg/l	
91-58-7	2-Chloronaphthalene	ND	0.0045	mg/l	
218-01-9	Chrysene	ND	0.00018	mg/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.00018	mg/l	
132-64-9	Dibenzofuran	ND	0.0045	mg/l	
91-94-1	3,3'-Dichlorobenzidine	ND	0.0091	mg/l	
84-66-2	Diethyl Phthalate	ND	0.0045	mg/l	
131-11-3	Dimethyl Phthalate	ND	0.0045	mg/l	
117-84-0	Di-n-octyl Phthalate [a]	ND	0.0045	mg/l	
99-65-0	1,3-Dinitrobenzene [a]	ND	0.0045	mg/l	

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SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
121-14-2	2,4-Dinitrotoluene [a]	ND	0.0045	mg/l	
606-20-2	2,6-Dinitrotoluene	ND	0.0045	mg/l	
117-81-7	bis(2-Ethylhexyl)phthalate [a]	ND	0.0045	mg/l	
206-44-0	Fluoranthene	ND	0.00018	mg/l	
86-73-7	Fluorene	ND	0.00018	mg/l	
118-74-1	Hexachlorobenzene	ND	0.00091	mg/l	
87-68-3	Hexachlorobutadiene	ND	0.00045	mg/l	
77-47-4	Hexachlorocyclopentadiene	ND	0.0091	mg/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.00018	mg/l	
78-59-1	Isophorone	ND	0.0045	mg/l	
91-57-6	2-Methylnaphthalene	ND	0.00018	mg/l	
91-20-3	Naphthalene	ND	0.00018	mg/l	
88-74-4	2-Nitroaniline	ND	0.0045	mg/l	
99-09-2	3-Nitroaniline	ND	0.0045	mg/l	
100-01-6	4-Nitroaniline	ND	0.0045	mg/l	
98-95-3	Nitrobenzene	ND	0.00091	mg/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.0045	mg/l	
86-30-6	N-Nitrosodiphenylamine	ND	0.0045	mg/l	
85-01-8	Phenanthrene	ND	0.00018	mg/l	
129-00-0	Pyrene	ND	0.00018	mg/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	0.00091	mg/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0045	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	62%		23-85%
4165-62-2	Phenol-d5	48%		10-69%
118-79-6	2,4,6-Tribromophenol	95%		48-138%
4165-60-0	Nitrobenzene-d5	77%		51-128%
321-60-8	2-Fluorobiphenyl	76%		55-122%
1718-51-0	Terphenyl-d14	86%		43-138%

(a) Associated CCV outside of control limits high, sample was ND.

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J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC381385.D	1	11/03/18 15:31	MB	n/a	n/a	GLC1891
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	103% [a]		70-130%
615-59-8	2,5-Dibromotoluene	99% [b]		70-130%

(a) Recovery from Aromatics fraction.
(b) Recovery from Aliphatics fraction.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LK113997.D	1	11/08/18 03:40	JS	11/06/18 16:00	OP12750	GLK743
Run #2							

	Initial Volume	Final Volume
Run #1	35.7 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.000020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
348-51-6	1-Chloro-2-fluorobenzene	88%		55-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
Method:	MADEP EPH REV 1.1 SW846 3511	**Percent Solids:**	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0005703.D	1	11/05/18 21:55	JT	11/02/18 14:00	OP12712	GLB1657
Run #2	Y0005703.D	1	11/05/18 21:56	JT	11/02/18 14:00	OP12712	GLB1658

	Initial Volume	Final Volume
Run #1	54.0 ml	4.0 ml
Run #2	54.0 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND [a]	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		87%	40-140%
84-15-1	o-Terphenyl	79%		40-140%
321-60-8	2-Fluorobiphenyl	74%		40-140%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
		Percent Solids:	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0223	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	4.49	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	11/05/18	11/05/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	1.33	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	362	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.233	0.020	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13853
(2) Instrument QC Batch: MA13864
(3) Prep QC Batch: MP13233
(4) Prep QC Batch: MP13253

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1	**Date Sampled:**	10/30/18
Matrix:	AQ - Water	**Date Received:**	11/01/18
		Percent Solids:	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate [a]	536	5.0	mg/l	1	11/05/18 14:30	ATX	SM18 2320B
Alkalinity, Carbonate [a]	24.1	5.0	mg/l	1	11/05/18 14:30	ATX	SM18 2320B
Alkalinity, Total as CaCO3 [a]	560	5.0	mg/l	1	11/05/18 14:30	ATX	SM 2320B-2011
Bromide [a]	0.60	0.50	mg/l	1	11/15/18 19:37	ATX	SW846 9056A
Chloride [a]	112	5.0	mg/l	10	11/15/18 06:08	ATX	SW846 9056A
Silica, Dissolved [a]	14.6	0.35	mg/l	5	11/12/18	ATX	SM4500SIO2 C-2011
Solids, Total Dissolved [a]	858	10	mg/l	1	11/05/18	ATX	SM 2540C-2011
Specific Conductivity [b]	1460	1.0	umhos/cm	1	11/02/18 16:35	ATX	EPA 120.1
Sulfate [a]	< 0.50	0.50	mg/l	1	11/15/18 19:37	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.
(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	031-9810Z (DENNISON RIG SUPPLY)		
Lab Sample ID:	LA49341-1F	**Date Sampled:**	10/30/18
Matrix:	AQ - Water Filtered	**Date Received:**	11/01/18
		Percent Solids:	n/a
Project:	8060.00 Indigo-Desoto Parish, LA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0218	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	1.29	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	11/05/18	11/05/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	1.09	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	357	1.0	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.0899	0.020	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	11/02/18	11/03/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13853
(2) Instrument QC Batch: MA13864
(3) Prep QC Batch: MP13233
(4) Prep QC Batch: MP13253

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
P.O. Box 60295
Lafayette, LA 70596-0295
Phone (337) 261-1963 FAX (337) 261-1953

LA49341

SAMPLE CHAIN-OF-CUSTODY RECORD

Laboratory:	SGS Lafayette		
Project Name:	Indigo	*Collected By:*	KC / DC
Project Number:	8060.00	*Company:*	Hydro-Environmental Technology, Inc.
Project Location:	DeSoto Parish, Louisiana	*Date:*	10/30/2018

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
~~031-9810Z~~ (Dennison Rig Supply)	AQ	10/30/2018	17:05	(7) 40mL Glass HCl (3) 60mL Amber Glass HCl (2) 4oz Amber Glass (1) 500mL Plastic (2) 250mL Plastic HNO3	VOC 8260, SVOC 8270, VPH, EPH, Chlorides, TDS, Specific Conductance, Silica, Cations*, Anions*, Total Metals*, Dissolved Metals*	4°C Field filtered: Dissolved metals

*Metals: ~~arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, strontium, zinc~~
*Cations: aluminum, calcium, iron, magnesium, manganese, potassium, sodium
*Anions: bromide, sulfate, carbonate alkalinity, bicarbonate alkalinity

Relinquished By: Ken S. Cobb	Received By: 11-1-18
Date/Time: 11/01/18 1105	Date/Time: 11:05
Relinquished By:	Received By: Walter Newman
Date/Time: 11.1.18 11:25	Date/Time: 11.1.18 1125
Analysis Due: Verbal:	Written:
Temp: 1.7 dy 439	VW(RSL3) OC 3W2 3W2F pH<2
NO/CS/OC	11 D2 (YSL39) 1 B2 (YSL41)

LA49341: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: LA49341 **Client:** HYDRO ENVIRONMENTAL **Project:** INDIGO

Date / Time Received: 11/1/2018 11:25:00 AM **Delivery Method:** Accutest Courier **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (1.7/1.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☐		☑	3. COC Present:	☑		☐
2. Custody Seals Intact:	☐		☑	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Thermometer ID:	DV439;		
3. Cooler media:	Ice (direct contact)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

LA49341: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2G5001-MB2	2G091033.D	1	11/05/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
75-15-0	Carbon Disulfide	ND	1.0	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
542-75-6	1,3-Dichloropropene (total)	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
67-72-1	Hexachloroethane	ND	1.0	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	ug/l	
74-83-9	Methyl Bromide	ND	1.0	ug/l	
74-87-3	Methyl Chloride	ND	1.0	ug/l	
75-09-2	Methylene Chloride	ND	1.0	ug/l	
78-93-3	Methyl Ethyl Ketone	ND	13	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	13	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2G5001-MB2	2G091033.D	1	11/05/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	2.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	98%	84-124%
2037-26-5	Toluene-D8	99%	83-115%
460-00-4	4-Bromofluorobenzene	98%	89-111%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2G5001-BS1	2G091027.D	1	11/05/18	CP	n/a	n/a	V2G5001
V2G5001-BSD1	2G091029.D	1	11/05/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	44.5	89	41.9	84	6	38-178/30
71-43-2	Benzene	20	20.2	101	20.1	101	0	82-119/30
75-27-4	Bromodichloromethane	20	19.9	100	20.0	100	1	79-120/30
75-25-2	Bromoform	20	16.9	85	16.1	81	5	68-128/30
75-15-0	Carbon Disulfide	20	20.3	102	20.2	101	0	64-133/30
56-23-5	Carbon Tetrachloride	20	20.5	103	19.8	99	3	69-132/30
108-90-7	Chlorobenzene	20	20.8	104	20.3	102	2	85-120/30
75-00-3	Chloroethane	20	20.0	100	18.5	93	8	33-170/30
67-66-3	Chloroform	20	19.6	98	19.6	98	0	80-122/30
124-48-1	Dibromochloromethane	20	20.3	102	19.9	100	2	73-125/30
541-73-1	m-Dichlorobenzene	20	20.0	100	20.8	104	4	84-121/30
95-50-1	o-Dichlorobenzene	20	20.0	100	20.0	100	0	83-120/30
106-46-7	p-Dichlorobenzene	20	20.0	100	20.1	101	0	83-122/30
75-34-3	1,1-Dichloroethane	20	20.8	104	20.2	101	3	78-124/30
107-06-2	1,2-Dichloroethane	20	20.4	102	19.9	100	2	74-127/30
75-35-4	1,1-Dichloroethylene	20	20.1	101	19.8	99	2	70-134/30
156-59-2	cis-1,2-Dichloroethylene	20	19.5	98	19.1	96	2	78-122/30
156-60-5	trans-1,2-Dichloroethylene	20	20.2	101	19.6	98	3	75-127/30
540-59-0	1,2-Dichloroethene (total)	40	39.7	99	38.7	97	3	78-123/30
78-87-5	1,2-Dichloropropane	20	20.6	103	20.2	101	2	82-120/30
10061-01-5	cis-1,3-Dichloropropene	20	20.4	102	20.4	102	0	79-122/30
10061-02-6	trans-1,3-Dichloropropene	20	21.2	106	21.0	105	1	78-124/30
542-75-6	1,3-Dichloropropene (total)	40	41.7	104	41.3	103	1	50-150/30 [a]
100-41-4	Ethylbenzene	20	20.8	104	20.5	103	1	84-117/30
67-72-1	Hexachloroethane	20	20.7	104	22.1	111	7	53-141/30
78-83-1	Isobutyl Alcohol	200	167	84	167	84	0	20-175/30
74-83-9	Methyl Bromide	20	19.5	98	18.9	95	3	37-198/30
74-87-3	Methyl Chloride	20	19.5	98	19.1	96	2	50-136/30
75-09-2	Methylene Chloride	20	19.4	97	18.7	94	4	71-130/30
78-93-3	Methyl Ethyl Ketone	50	48.7	97	46.9	94	4	59-149/30
108-10-1	4-Methyl-2-pentanone	50	50.6	101	48.4	97	4	74-131/30
1634-04-4	Methyl Tert Butyl Ether	20	20.1	101	19.3	97	4	70-126/30
100-42-5	Styrene	20	21.3	107	21.0	105	1	79-128/30
630-20-6	1,1,1,2-Tetrachloroethane	20	19.6	98	19.7	99	1	84-120/30
79-34-5	1,1,2,2-Tetrachloroethane	20	20.0	100	19.3	97	4	77-126/30
127-18-4	Tetrachloroethylene	20	20.3	102	20.1	101	1	75-133/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2G5001-BS1	2G091027.D	1	11/05/18	CP	n/a	n/a	V2G5001
V2G5001-BSD1	2G091029.D	1	11/05/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
108-88-3	Toluene	20	20.4	102	19.8	99	3	80-121/30
71-55-6	1,1,1-Trichloroethane	20	19.8	99	20.0	100	1	74-126/30
79-00-5	1,1,2-Trichloroethane	20	19.4	97	19.4	97	0	80-123/30
79-01-6	Trichloroethylene	20	20.8	104	20.8	104	0	62-125/30
75-69-4	Trichlorofluoromethane	20	19.5	98	19.2	96	2	62-148/30
75-01-4	Vinyl Chloride	20	20.0	100	19.5	98	3	67-130/30
	m,p-Xylene	40	41.8	105	40.9	102	2	82-121/30
95-47-6	o-Xylene	20	20.9	105	20.8	104	0	84-119/30
1330-20-7	Xylene (total)	60	62.8	105	61.8	103	2	81-122/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17060-07-0	1,2-Dichloroethane-D4	100%	97%	84-124%
2037-26-5	Toluene-D8	102%	100%	83-115%
460-00-4	4-Bromofluorobenzene	100%	99%	89-111%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA49317-5MS	2G091057.D	5	11/06/18	CP	n/a	n/a	V2G5001
LA49317-5MSD	2G091059.D	5	11/06/18	CP	n/a	n/a	V2G5001
LA49317-5	2G091045.D	5	11/06/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	LA49317-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	15.1		250	137	49	250	130	46	5	39-164/27
71-43-2	Benzene	200		100	258	58	100	254	54	2	31-161/15
75-27-4	Bromodichloromethane	ND		100	82.6	83	100	82.3	82	0	64-122/36
75-25-2	Bromoform	ND		100	63.8	64	100	64.2	64	1	43-125/37
75-15-0	Carbon Disulfide	ND		100	76.4	76	100	75.3	75	1	38-138/36
56-23-5	Carbon Tetrachloride	ND		100	82.5	83	100	79.0	79	4	53-133/36
108-90-7	Chlorobenzene	ND		100	85.4	85	100	86.4	86	1	74-122/34
75-00-3	Chloroethane	ND		100	93.8	94	100	96.7	97	3	14-181/43
67-66-3	Chloroform	ND		100	84.4	84	100	81.6	82	3	65-130/24
124-48-1	Dibromochloromethane	ND		100	83.9	84	100	77.4	77	8	57-121/36
541-73-1	m-Dichlorobenzene	ND		100	81.1	81	100	84.8	85	4	70-120/35
95-50-1	o-Dichlorobenzene	ND		100	83.4	83	100	83.5	84	0	72-120/35
106-46-7	p-Dichlorobenzene	ND		100	81.8	82	100	81.1	81	1	68-120/35
75-34-3	1,1-Dichloroethane	ND		100	85.8	86	100	84.3	84	2	56-138/32
107-06-2	1,2-Dichloroethane	ND		100	87.3	87	100	86.0	86	2	51-141/39
75-35-4	1,1-Dichloroethylene	ND		100	82.9	83	100	80.9	81	2	48-139/37
156-59-2	cis-1,2-Dichloroethylene	ND		100	81.4	81	100	79.2	79	3	56-133/15
156-60-5	trans-1,2-Dichloroethylene	ND		100	81.5	82	100	78.7	79	3	59-128/37
540-59-0	1,2-Dichloroethene (total)	ND		200	163	82	200	158	79	3	54-134/30
78-87-5	1,2-Dichloropropane	ND		100	84.8	85	100	83.2	83	2	68-124/32
10061-01-5	cis-1,3-Dichloropropene	ND		100	83.5	84	100	81.4	81	3	62-120/35
10061-02-6	trans-1,3-Dichloropropene	ND		100	85.7	86	100	84.0	84	2	64-119/36
542-75-6	1,3-Dichloropropene (total)	ND		200	169	85	200	165	83	2	50-150/30 [a]
100-41-4	Ethylbenzene	82.6		100	151	68	100	147	64	3	47-146/30
67-72-1	Hexachloroethane	ND		100	84.6	85	100	83.2	83	2	32-128/39
78-83-1	Isobutyl Alcohol	ND		1000	745	75	1000	790	79	6	33-142/54
74-83-9	Methyl Bromide	ND		100	82.4	82	100	94.2	94	13	1-150/64
74-87-3	Methyl Chloride	ND		100	95.1	95	100	94.8	95	0	16-146/29
75-09-2	Methylene Chloride	2.1		100	80.3	78	100	77.7	76	3	55-134/36
78-93-3	Methyl Ethyl Ketone	6.2		250	190	74	250	177	68	7	54-142/39
108-10-1	4-Methyl-2-pentanone	ND		250	211	84	250	213	85	1	60-140/40
1634-04-4	Methyl Tert Butyl Ether	52.5		100	140	88	100	136	84	3	52-146/32
100-42-5	Styrene	ND		100	86.8	87	100	86.7	87	0	67-128/35
630-20-6	1,1,1,2-Tetrachloroethane	ND		100	79.9	80	100	78.5	79	2	67-121/35
79-34-5	1,1,2,2-Tetrachloroethane	ND		100	85.9	86	100	86.4	86	1	64-133/38
127-18-4	Tetrachloroethylene	ND		100	81.1	81	100	82.9	83	2	58-135/37

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA49317-5MS	2G091057.D	5	11/06/18	CP	n/a	n/a	V2G5001
LA49317-5MSD	2G091059.D	5	11/06/18	CP	n/a	n/a	V2G5001
LA49317-5	2G091045.D	5	11/06/18	CP	n/a	n/a	V2G5001

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA49341-1

CAS No.	Compound	LA49317-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-88-3	Toluene	458		100	447	-11* [b]	100	439	-19* [b]	2	36-155/17
71-55-6	1,1,1-Trichloroethane	ND		100	83.4	83	100	79.6	80	5	63-128/36
79-00-5	1,1,2-Trichloroethane	ND		100	86.5	87	100	83.5	84	4	61-138/17
79-01-6	Trichloroethylene	ND		100	82.8	83	100	81.9	82	1	57-131/36
75-69-4	Trichlorofluoromethane	ND		100	95.2	95	100	96.7	97	2	31-156/36
75-01-4	Vinyl Chloride	ND		100	99.3	99	100	96.8	97	3	22-155/49
	m,p-Xylene	214		200	336	61	200	331	59	1	35-159/31
95-47-6	o-Xylene	172		100	224	52	100	221	49*	1	50-144/35
1330-20-7	Xylene (total)	387		300	559	57	300	551	55	1	41-154/29

CAS No.	Surrogate Recoveries	MS	MSD	LA49317-5	Limits
17060-07-0	1,2-Dichloroethane-D4	97%	95%	97%	84-124%
2037-26-5	Toluene-D8	100%	101%	99%	83-115%
460-00-4	4-Bromofluorobenzene	98%	99%	99%	89-111%

(a) Advisory control limits.
(b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MB	L0022765.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	10	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	0.20	ug/l	
208-96-8	Acenaphthylene	ND	0.20	ug/l	
62-53-3	Aniline	ND	5.0	ug/l	
120-12-7	Anthracene	ND	0.20	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
92-52-4	1,1'-Biphenyl	ND	10	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
218-01-9	Chrysene	ND	0.20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	0.20	ug/l	

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MB	L0022765.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
86-73-7	Fluorene	ND	0.20	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	0.20	ug/l	
129-00-0	Pyrene	ND	0.20	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	67%	23-85%
4165-62-2	Phenol-d5	53%	10-69%
118-79-6	2,4,6-Tribromophenol	85%	48-138%
4165-60-0	Nitrobenzene-d5	78%	51-128%
321-60-8	2-Fluorobiphenyl	75%	55-122%
1718-51-0	Terphenyl-d14	88%	43-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-BS	L0022766.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-BSD [a]	L0022767.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	5	4.3	86	8.8	176* [b]	69* [c]	63-104/19
120-83-2	2,4-Dichlorophenol	5	4.4	88	8.9	178* [b]	68* [c]	68-112/19
105-67-9	2,4-Dimethylphenol	5	4.4	88	8.8	176* [b]	67* [c]	64-110/20
51-28-5	2,4-Dinitrophenol	25	19.3	77	37.5	150* [b]	64* [c]	51-121/30
100-02-7	4-Nitrophenol	25	15.0	60	29.7	119* [b]	66* [c]	20-68/23
87-86-5	Pentachlorophenol	25	20.4	82	39.5	158* [b]	64* [c]	52-120/29
108-95-2	Phenol	5	2.9	58	5.9	118* [b]	68* [c]	18-67/20
58-90-2	2,3,4,6-Tetrachlorophenol	5	4.7	94	9.5	190* [b]	68* [c]	67-121/21
95-95-4	2,4,5-Trichlorophenol	5	4.9	98	9.5	190* [b]	64* [c]	67-119/21
88-06-2	2,4,6-Trichlorophenol	5	4.5	90	8.9	178* [b]	66* [c]	67-120/21
83-32-9	Acenaphthene	5	3.9	78	7.9	158* [b]	68* [c]	67-114/28
208-96-8	Acenaphthylene	5	4.1	82	8.1	162* [b]	66* [c]	67-119/26
62-53-3	Aniline	5	2.4	48	3.5	70	37 [c]	40-114/40
120-12-7	Anthracene	5	4.1	82	8.3	166* [b]	68* [c]	68-121/24
56-55-3	Benzo(a)anthracene	5	4.3	86	8.0	160* [b]	60* [c]	69-113/20
50-32-8	Benzo(a)pyrene	5	4.5	90	8.2	164* [b]	58* [c]	71-124/22
205-99-2	Benzo(b)fluoranthene	5	4.2	84	7.3	146* [b]	54* [c]	72-120/22
207-08-9	Benzo(k)fluoranthene	5	4.7	94	9.0	180* [b]	63* [c]	71-124/21
92-52-4	1,1'-Biphenyl	5	3.8	76	7.7	154* [b]	68* [c]	65-122/29
85-68-7	Butyl Benzyl Phthalate	5	5.0	100	9.8	196* [b]	65* [c]	73-123/21
106-47-8	4-Chloroaniline	5	3.6	72	6.6	132* [b]	59* [c]	58-113/51
111-44-4	bis(2-Chloroethyl)ether	5	4.1	82	8.4	168* [b]	69* [c]	50-118/28
108-60-1	2,2'-Oxybis(1-chloropropane)	5	4.1	82	8.0	160* [b]	64* [c]	43-138/21
91-58-7	2-Chloronaphthalene	5	3.8	76	7.5	150* [b]	65* [c]	64-114/30
218-01-9	Chrysene	5	4.2	84	8.1	162* [b]	63* [c]	70-115/20
53-70-3	Dibenzo(a,h)anthracene	5	4.6	92	8.7	174* [b]	62* [c]	70-124/21
132-64-9	Dibenzofuran	5	4.0	80	7.9	158* [b]	66* [c]	67-117/27
91-94-1	3,3'-Dichlorobenzidine	5	4.1	82	6.9	138* [b]	51* [c]	69-122/38
84-66-2	Diethyl Phthalate	5	4.4	88	8.5	170* [b]	64* [c]	71-123/21
131-11-3	Dimethyl Phthalate	5	4.4	88	8.6	172* [b]	65* [c]	69-119/20
117-84-0	Di-n-octyl Phthalate	5	5.1	102	10.0	200* [b]	65* [c]	66-121/22
99-65-0	1,3-Dinitrobenzene	25	24.2	97	47.7	191* [b]	65* [c]	71-122/21
121-14-2	2,4-Dinitrotoluene	5	4.9	98	9.7	194* [b]	66* [c]	73-122/21
606-20-2	2,6-Dinitrotoluene	5	4.5	90	8.8	176* [b]	65* [c]	72-121/21
117-81-7	bis(2-Ethylhexyl)phthalate	5	5.0	100	9.9	198* [b]	66* [c]	68-126/21
206-44-0	Fluoranthene	5	4.2	84	8.7	174* [b]	70* [c]	73-120/21

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-BS	L0022766.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-BSD [a]	L0022767.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
86-73-7	Fluorene	5	4.1	82	8.2	164* [b]	67* [c]	69-118/25
118-74-1	Hexachlorobenzene	5	4.0	80	8.3	166* [b]	70* [c]	67-117/23
87-68-3	Hexachlorobutadiene	5	3.0	60	6.1	122* [b]	68* [c]	42-120/35
77-47-4	Hexachlorocyclopentadiene	5	2.9	58	5.6	112	64* [c]	35-123/48
193-39-5	Indeno(1,2,3-cd)pyrene	5	4.7	94	8.6	172* [b]	59* [c]	70-123/21
78-59-1	Isophorone	5	4.4	88	8.9	178* [b]	68* [c]	70-119/19
91-57-6	2-Methylnaphthalene	5	3.9	78	7.8	156* [b]	67* [c]	65-113/27
91-20-3	Naphthalene	5	3.8	76	7.6	152* [b]	67* [c]	63-114/23
88-74-4	2-Nitroaniline	25	23.6	94	46.6	186* [b]	66* [c]	68-125/21
99-09-2	3-Nitroaniline	25	21.5	86	41.8	167* [b]	64* [c]	69-117/23
100-01-6	4-Nitroaniline	25	22.3	89	43.9	176* [b]	65* [c]	67-122/19
98-95-3	Nitrobenzene	5	4.4	88	8.7	174* [b]	66* [c]	69-116/21
621-64-7	N-Nitroso-di-n-propylamine	5	4.4	88	9.4	188* [b]	72* [c]	67-120/20
86-30-6	N-Nitrosodiphenylamine	5	4.1	82	8.2	164* [b]	67* [c]	67-119/25
85-01-8	Phenanthrene	5	3.9	78	8.1	162* [b]	70* [c]	70-117/23
129-00-0	Pyrene	5	4.4	88	8.4	168* [b]	63* [c]	70-119/21
95-94-3	1,2,4,5-Tetrachlorobenzene	5	3.6	72	7.1	142* [b]	65* [c]	55-117/35
120-82-1	1,2,4-Trichlorobenzene	5	3.6	72	7.1	142* [b]	65* [c]	56-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	67%	131%*	23-85%
4165-62-2	Phenol-d5	54%	112%*	10-69%
118-79-6	2,4,6-Tribromophenol	88%	174%*	48-138%
4165-60-0	Nitrobenzene-d5	79%	155%*	51-128%
321-60-8	2-Fluorobiphenyl	74%	145%*	55-122%
1718-51-0	Terphenyl-d14	85%	164%*	43-138%

(a) Internal Standard outside control limits due to spiking error.
(b) Outside control limits due to low ISTD. Laboratory spiking error suspected.
(c) Analytical precision exceeds laboratory control limits. Laboratory spiking error suspected.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MS	L0022778.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-MSD	L0022779.D	1	11/05/18	PC	11/05/18	OP12727	EL599
LA49355-3	L0022777.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	LA49355-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		4.55	3.8	84	4.55	4.0	88	5	63-104/19
120-83-2	2,4-Dichlorophenol	ND		4.55	3.8	84	4.55	3.9	86	3	68-112/19
105-67-9	2,4-Dimethylphenol	ND		4.55	3.7	81	4.55	3.9	86	5	64-110/20
51-28-5	2,4-Dinitrophenol	ND		22.7	17.5	77	22.7	18.8	83	7	51-121/30
100-02-7	4-Nitrophenol	ND		22.7	11.7	51	22.7	11.9	52	2	20-68/23
87-86-5	Pentachlorophenol	ND		22.7	20.0	88	22.7	20.1	88	0	52-120/29
108-95-2	Phenol	0.54		4.55	2.6	45	4.55	2.8	50	7	18-67/20
58-90-2	2,3,4,6-Tetrachlorophenol	ND		4.55	4.3	95	4.55	4.5	99	5	67-121/21
95-95-4	2,4,5-Trichlorophenol	ND		4.55	4.4	97	4.55	4.7	103	7	67-119/21
88-06-2	2,4,6-Trichlorophenol	ND		4.55	4.2	92	4.55	4.3	95	2	67-120/21
83-32-9	Acenaphthene	ND		4.55	3.5	77	4.55	3.7	81	6	67-114/28
208-96-8	Acenaphthylene	ND		4.55	3.6	79	4.55	3.7	81	3	67-119/26
62-53-3	Aniline	ND		4.55	0.64	14* [a]	4.55	0.70	15* [a]	9	40-114/40
120-12-7	Anthracene	ND		4.55	3.7	81	4.55	3.9	86	5	68-121/24
56-55-3	Benzo(a)anthracene	ND		4.55	3.8	84	4.55	3.9	86	3	69-113/20
50-32-8	Benzo(a)pyrene	ND		4.55	4.1	90	4.55	4.1	90	0	71-124/22
205-99-2	Benzo(b)fluoranthene	ND		4.55	3.8	84	4.55	4.2	92	10	72-120/22
207-08-9	Benzo(k)fluoranthene	ND		4.55	4.1	90	4.55	3.9	86	5	71-124/21
92-52-4	1,1'-Biphenyl	0.50		4.55	3.9	75	4.55	4.0	77	3	65-122/29
85-68-7	Butyl Benzyl Phthalate	ND		4.55	4.4	97	4.55	4.6	101	4	73-123/21
106-47-8	4-Chloroaniline	ND		4.55	0.95	21* [a]	4.55	2.2	48* [a]	79* [b]	58-113/51
111-44-4	bis(2-Chloroethyl)ether	ND		4.55	3.7	81	4.55	3.9	86	5	50-118/28
108-60-1	2,2'-Oxybis(1-chloropropane)	ND		4.55	3.6	79	4.55	3.6	79	0	43-138/21
91-58-7	2-Chloronaphthalene	ND		4.55	3.5	77	4.55	3.5	77	0	64-114/30
218-01-9	Chrysene	ND		4.55	3.7	81	4.55	3.9	86	5	70-115/20
53-70-3	Dibenzo(a,h)anthracene	ND		4.55	4.3	95	4.55	4.4	97	2	70-124/21
132-64-9	Dibenzofuran	ND		4.55	3.5	77	4.55	3.7	81	6	67-117/27
91-94-1	3,3'-Dichlorobenzidine	ND		4.55	ND	0* [a]	4.55	ND	0* [a]	nc	69-122/38
84-66-2	Diethyl Phthalate	ND		4.55	4.0	88	4.55	4.2	92	5	71-123/21
131-11-3	Dimethyl Phthalate	ND		4.55	3.8	84	4.55	4.0	88	5	69-119/20
117-84-0	Di-n-octyl Phthalate	ND		4.55	4.5	99	4.55	4.6	101	2	66-121/22
99-65-0	1,3-Dinitrobenzene	ND		22.7	20.7	91	22.7	22.2	98	7	71-122/21
121-14-2	2,4-Dinitrotoluene	ND		4.55	4.3	95	4.55	4.5	99	5	73-122/21
606-20-2	2,6-Dinitrotoluene	ND		4.55	3.9	86	4.55	4.1	90	5	72-121/21
117-81-7	bis(2-Ethylhexyl)phthalate	0.35		4.55	4.5	91	4.55	4.7	96	4	68-126/21
206-44-0	Fluoranthene	0.027		4.55	4.0	87	4.55	4.1	90	2	73-120/21

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12727-MS	L0022778.D	1	11/05/18	PC	11/05/18	OP12727	EL599
OP12727-MSD	L0022779.D	1	11/05/18	PC	11/05/18	OP12727	EL599
LA49355-3	L0022777.D	1	11/05/18	PC	11/05/18	OP12727	EL599

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA49341-1

CAS No.	Compound	LA49355-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
86-73-7	Fluorene	ND		4.55	3.6	79	4.55	3.8	84	5	69-118/25
118-74-1	Hexachlorobenzene	ND		4.55	3.8	84	4.55	4.1	90	8	67-117/23
87-68-3	Hexachlorobutadiene	ND		4.55	2.9	64	4.55	3.0	66	3	42-120/35
77-47-4	Hexachlorocyclopentadiene	ND		4.55	2.1	46	4.55	1.6	35	27	35-123/48
193-39-5	Indeno(1,2,3-cd)pyrene	ND		4.55	4.3	95	4.55	4.4	97	2	70-123/21
78-59-1	Isophorone	ND		4.55	4.0	88	4.55	4.1	90	2	70-119/19
91-57-6	2-Methylnaphthalene	ND		4.55	3.5	77	4.55	3.6	79	3	65-113/27
91-20-3	Naphthalene	ND		4.55	3.5	77	4.55	3.6	79	3	63-114/23
88-74-4	2-Nitroaniline	ND		22.7	20.5	90	22.7	21.9	96	7	68-125/21
99-09-2	3-Nitroaniline	ND		22.7	14.0	62* [a]	22.7	15.4	68* [a]	10	69-117/23
100-01-6	4-Nitroaniline	ND		22.7	13.0	57* [a]	22.7	13.9	61* [a]	7	67-122/19
98-95-3	Nitrobenzene	ND		4.55	3.9	86	4.55	4.0	88	3	69-116/21
621-64-7	N-Nitroso-di-n-propylamine	ND		4.55	4.0	88	4.55	4.2	92	5	67-120/20
86-30-6	N-Nitrosodiphenylamine	ND		4.55	3.6	79	4.55	3.9	86	8	67-119/25
85-01-8	Phenanthrene	0.056		4.55	3.6	78	4.55	3.8	82	5	70-117/23
129-00-0	Pyrene	ND		4.55	3.9	86	4.55	4.0	88	3	70-119/21
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		4.55	3.2	70	4.55	3.3	73	3	55-117/35
120-82-1	1,2,4-Trichlorobenzene	ND		4.55	3.2	70	4.55	3.4	75	6	56-111/30

CAS No.	Surrogate Recoveries	MS	MSD	LA49355-3	Limits
367-12-4	2-Fluorophenol	56%	63%	61%	23-85%
4165-62-2	Phenol-d5	44%	46%	50%	10-69%
118-79-6	2,4,6-Tribromophenol	93%	99%	98%	48-138%
4165-60-0	Nitrobenzene-d5	76%	77%	79%	51-128%
321-60-8	2-Fluorobiphenyl	74%	76%	77%	55-122%
1718-51-0	Terphenyl-d14	80%	83%	85%	43-138%

(a) Outside control limits due to matrix interference.
(b) Analytical precision exceeds laboratory control limits.

* = Outside of Control Limits.

GC Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1891-MB1	LC381384.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	30	ug/l	
	Aliphatics > C8-C10 (Unadj.)	ND	50	ug/l	
	Aromatics > C8-C10 (Unadj.)	ND	50	ug/l	

CAS No.	Surrogate Recoveries		Limits
615-59-8	2,5-Dibromotoluene	105% [a]	70-130%
615-59-8	2,5-Dibromotoluene	101% [b]	70-130%

(a) Recovery from Aromatics fraction.
(b) Recovery from Aliphatics fraction.

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-MB	LK113994.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples: **Method:** SW846 8011

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
348-51-6	1-Chloro-2-fluorobenzene	89%	55-149%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1891-BS1	LC381382.D	1	11/03/18	MB	n/a	n/a	GLC1891
GLC1891-BSD1	LC381383.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	150	153	102	151	101	1	70-130/30
	Aliphatics > C8-C10 (Unadj.)	250	272	109	273	109	0	70-130/30
	Aromatics > C8-C10 (Unadj.)	250	270	108	268	107	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
615-59-8	2,5-Dibromotoluene	109% [a]	107% [a]	70-130%
615-59-8	2,5-Dibromotoluene	107% [b]	105% [b]	70-130%

(a) Recovery from Aromatics fraction.
(b) Recovery from Aliphatics fraction.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-BS	LK113995.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
OP12750-BSD	LK113996.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples: **Method:** SW846 8011

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.251	0.30	119	0.32	127	6	60-148/18

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
348-51-6	1-Chloro-2-fluorobenzene	91%	91%	55-149%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA49317-2MS	LC381397.D	5	11/04/18	MB	n/a	n/a	GLC1891
LA49317-2MSD	LC381398.D	5	11/04/18	MB	n/a	n/a	GLC1891
LA49317-2	LC381388.D	1	11/03/18	MB	n/a	n/a	GLC1891

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA49341-1

CAS No.	Compound	LA49317-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	1110		750	1560	60* [a]	750	1600	65* [a]	3	70-130/50
	Aliphatics > C8-C10 (Unadj.)	733		1250	1760	82	1250	1770	83	1	70-130/50
	Aromatics > C8-C10 (Unadj.)	927		1250	1940	81	1250	1950	82	1	70-130/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49317-2	Limits
615-59-8	2,5-Dibromotoluene	113% [b]	108% [b]	112% [b]	70-130%
615-59-8	2,5-Dibromotoluene	107% [c]	107% [c]	106% [c]	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Recovery from Aromatics fraction.
(c) Recovery from Aliphatics fraction.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12750-MS	LK114013.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
OP12750-MSD	LK114014.D	1	11/08/18	JS	11/06/18	OP12750	GLK743
LA49360-13	LK114012.D	1	11/08/18	JS	11/06/18	OP12750	GLK743

The QC reported here applies to the following samples: **Method:** SW846 8011

LA49341-1

CAS No.	Compound	LA49360-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.246	0.30	122	0.25	0.29	116	3	60-151/32

CAS No.	Surrogate Recoveries	MS	MSD	LA49360-13	Limits
348-51-6	1-Chloro-2-fluorobenzene	90%	90%	93%	55-149%

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MB	X0005679.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
	Aromatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aromatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aromatics > C16-C21 (Unadj.)	ND	140	ug/l	
	Aromatics > C21-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	75%	40-140%
321-60-8	2-Fluorobiphenyl	73%	40-140%

Method Blank Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MB	Y0005679.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aliphatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aliphatics > C16-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries		Limits
3386-33-2	1-Chlorooctadecane	76%	40-140%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-BS	X0005680.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
OP12712-BSD	X0005681.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aromatics > C10-C12 (Unadj.)	469	325	69	332	70	2	40-140/30
	Aromatics > C12-C16 (Unadj.)	1410	992	70	1000	71	1	40-140/30
	Aromatics > C16-C21 (Unadj.)	2350	1870	80	1880	80	1	40-140/30
	Aromatics > C21-C35 (Unadj.)	3750	2730	73	2690	71	1	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	78%	76%	40-140%
321-60-8	2-Fluorobiphenyl	72%	69%	40-140%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-BS	Y0005680.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
OP12712-BSD	Y0005681.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	469	255	54	281	60	10	40-140/30
	Aliphatics > C12-C16 (Unadj.)	938	510	54	550	58	8	40-140/30
	Aliphatics > C16-C35 (Unadj.)	4220	2120	50	2300	54	8	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3386-33-2	1-Chlorooctadecane	56%	58%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MS	X0005682.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
OP12712-MSD	X0005683.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657
LA49340-2	X0005696.D	1	11/05/18	JT	11/02/18	OP12712	GLB1657

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	LA49340-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aromatics >C10-C12 (Unadj.)	ND		464	341	74	466	323	69	5	40-140/50
	Aromatics >C12-C16 (Unadj.)	ND		1390	1040	75	1400	981	70	6	40-140/50
	Aromatics >C16-C21 (Unadj.)	77.9		2320	1960	81	2330	1840	76	6	40-140/50
	Aromatics >C21-C35 (Unadj.)	ND		3710	2870	77	3730	2670	72	7	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49340-2	Limits
84-15-1	o-Terphenyl	81%	75%	79%	40-140%
321-60-8	2-Fluorobiphenyl	75%	74%	81%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA49341
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12712-MS	Y0005682.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
OP12712-MSD	Y0005683.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658
LA49340-2	Y0005696.D	1	11/05/18	JT	11/02/18	OP12712	GLB1658

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA49341-1

CAS No.	Compound	LA49340-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	ND		464	328	71	466	323	69	2	40-140/50
	Aliphatics > C12-C16 (Unadj.)	ND		928	636	69	933	642	69	1	40-140/50
	Aliphatics > C16-C35 (Unadj.)	92.4		4170	2700	62	4200	2780	64	3	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA49340-2	Limits
3386-33-2	1-Chlorooctadecane	69%	70%	80%	40-140%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	6.9	9.3	-1.3	<100
Antimony	1.0	.043	.34		
Arsenic	1.0	.062	.26	-0.022	<1.0
Barium	1.0	.033	.46	0.035	<1.0
Beryllium	1.0	.0077	.28		
Boron	20	1.3	2.9		
Cadmium	0.50	.011	.12	-0.091	<0.50
Calcium	100	5.7	20	1.7	<100
Cerium	1.0	.0041	.16		
Chromium	1.0	.11	.15	-0.19	<1.0
Cobalt	1.0	.012	.14		
Copper	1.0	.91	.74		
Iron	100	48	16	-22	<100
Lanthanum	1.0	.0038	.41		
Lithium	2.0	.1	.61		
Lead	1.0	.0081	.13	-0.13	<1.0
Magnesium	100	1.6	11	-19	<100
Manganese	2.0	.48	.53	-0.072	<2.0
Molybdenum	1.0	.048	.89		
Nickel	1.0	.037	.2		
Potassium	100	3.4	7.6	-20	<100
Selenium	5.0	.38	3.1	-0.30	<5.0
Silver	1.0	.0047	.13	-0.14	<1.0
Silicon	500	6.6	130		
Sodium	100	24	9.9	0.046	<100
Strontium	2.0	.12	.27	-0.033	<2.0
Thallium	1.0	.021	.86		
Tin	2.0	.034	.19		
Titanium	1.0	.15	.77		
Uranium	1.0	.0048	.17		
Vanadium	1.0	.027	.1		
Zinc	5.0	1.5	1.1	-0.34	<5.0

Associated samples MP13233: LA49341-1, LA49341-1F

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

Metal	RL	IDL	MDL	MB raw	final

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original	MS	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum	0.00	5090	5100	99.8	75-125
Antimony					
Arsenic	11.8	119	100	107.2	75-125
Barium	75.9	161	100	85.1	75-125
Beryllium					
Boron					
Cadmium	0.0	107	100	107.0	75-125
Calcium	51500	44000	5000	-150.0(a	75-125
Cerium					
Chromium	1.5	112	100	110.5	75-125
Cobalt					
Copper	anr				
Iron	0.00	5420	5000	108.4	75-125
Lanthanum					
Lithium					
Lead	0.0	105	100	105.0	75-125
Magnesium	7860	11800	5000	78.8	75-125
Manganese	69.2	166	100	96.8	75-125
Molybdenum					
Nickel	anr				
Potassium	20300	20400	5000	2.0 (a)	75-125
Selenium	0.0	530	500	106.0	75-125
Silver	0.0	108	100	108.0	75-125
Silicon					
Sodium	12100	15100	5000	60.0N(b)	75-125
Strontium	153	231	100	78.0	75-125
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	311	365	100	54.0N(b)	75-125

Associated samples MP13233: LA49341-1, LA49341-1F

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MS	Spikelot MPICPMS6 % Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) Spike recovery indicates possible matrix interference or sample non-homogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original	MSD	Spikelot MPICPMS6	% Rec	MSD RPD	QC Limit
Aluminum	0.00	5670	5100	111.2	10.8	20
Antimony						
Arsenic	11.8	128	100	116.2	7.3	20
Barium	75.9	188	100	112.1	15.5	20
Beryllium						
Boron						
Cadmium	0.0	118	100	118.0	9.8	20
Calcium	51500	49800	5000	-34.0(a)	12.4	20
Cerium						
Chromium	1.5	120	100	118.5	6.9	20
Cobalt						
Copper	anr					
Iron	0.00	5810	5000	116.2	6.9	20
Lanthanum						
Lithium						
Lead	0.0	117	100	117.0	10.8	20
Magnesium	7860	12800	5000	98.8	8.1	20
Manganese	69.2	179	100	109.8	7.5	20
Molybdenum						
Nickel	anr					
Potassium	20300	23200	5000	58.0 (a)	12.8	20
Selenium	0.0	540	500	108.0	1.9	20
Silver	0.0	125	100	125.0	14.6	20
Silicon						
Sodium	12100	17100	5000	100.0	12.4	20
Strontium	153	248	100	95.0	7.1	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	311	393	100	82.0	7.4	20

Associated samples MP13233: LA49341-1, LA49341-1F

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original MSD	Spikelot MPICPMS6 % Rec	MSD RPD	QC Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	BSP Result	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum	5140	5100	100.8	80-120
Antimony				
Arsenic	103	100	103.0	80-120
Barium	102	100	102.0	80-120
Beryllium				
Boron				
Cadmium	101	100	101.0	80-120
Calcium	5120	5000	102.4	80-120
Cerium				
Chromium	101	100	101.0	80-120
Cobalt				
Copper	anr			
Iron	4970	5000	99.4	80-120
Lanthanum				
Lithium				
Lead	104	100	104.0	80-120
Magnesium	5150	5000	103.0	80-120
Manganese	100	100	100.0	80-120
Molybdenum				
Nickel	anr			
Potassium	5200	5000	104.0	80-120
Selenium	509	500	101.8	80-120
Silver	101	100	101.0	80-120
Silicon				
Sodium	5100	5000	102.0	80-120
Strontium	102	100	102.0	80-120
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	104	100	104.0	80-120

Associated samples MP13233: LA49341-1, LA49341-1F

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

Metal	BSP Result	Spikelot MPICPMS6 % Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

Metal	TD29644-5F Original	SDL 10:50%DIF		QC Limits
Aluminum	0.00	0.00	NC	0-10
Antimony				
Arsenic	11.8	9.13	22.5 (a)	0-10
Barium	75.9	44.7	41.1*(b)	0-10
Beryllium				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium	51500	28200	45.1*(b)	0-10
Cerium				
Chromium	1.52	0.00	100.0(a)	0-10
Cobalt				
Copper	anr			
Iron	0.00	0.00	NC	0-10
Lanthanum				
Lithium				
Lead	0.00	0.00	NC	0-10
Magnesium	7860	3910	50.2*(b)	0-10
Manganese	69.2	40.8	41.1 (a)	0-10
Molybdenum				
Nickel	anr			
Potassium	20300	10800	46.5*(b)	0-10
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Silicon				
Sodium	12100	7340	39.3*(b)	0-10
Strontium	153	91.4	40.2*(b)	0-10
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	311	195	37.4 (a)	0-10

Associated samples MP13233: LA49341-1, LA49341-1F

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/02/18

	TD29644-5F	QC
Metal	Original SDL 10:50%DIF	Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13233
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 11/02/18

Metal	Sample ml	Final ml	TD29644-5F Raw	TD29644-5F Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Antimony										
Beryllium										
Boron										
Cerium										
Cobalt										
Lanthanum										
Lithium										
Molybdenum										
Silicon										
Sodium	0.2	10	12100	242	5925	0.025	2000	5000	113.7	75-125
Thallium										
Tin										
Titanium										
Uranium										
Vanadium										
Zinc	0.2	10	311	6.22	115.6	0.1	10	100	109.4	75-125

Associated samples MP13233: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/05/18

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.06	.081	-0.0031	<0.20

Associated samples MP13253: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/05/18

Metal	TD29567-16 Original	MS	Spikelot HGSPIKE1	% Rec	QC Limits
Mercury	0.0	4.5	5	90.0	75-125

Associated samples MP13253: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/05/18

Metal	TD29567-16 Original	MSD	Spikelot HGSPIKE1	% Rec	MSD RPD	QC Limit
Mercury	0.0	4.4	5	88.0	2.2	20

Associated samples MP13253: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

8.2.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 11/05/18

Metal	BSP Result	Spikelot HGSPIKE1	% Rec	QC Limits
Mercury	5.1	5	102.0	80-120

Associated samples MP13253: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA49341
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 Indigo-Desoto Parish, LA

QC Batch ID: MP13253 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 11/05/18

	TD29567-16			QC
Metal	Original	SDL 1:5	%DIF	Limits
Mercury	0.00	0.00	NC	0-

Associated samples MP13253: LA49341-1, LA49341-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.2.4
8

Misc. Forms

Custody Documents and Other Forms

(SGS Houston, TX)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

SGS

Cooler 2

Page 1 of 1

TX

500 Ambassador Caffery Parkway, Scott, LA 70583
Phone: 800-304-5227 Fax: 337-237-7838

FED-EX Tracking #

Bottle Order Control #

SGS Quote #

SGS Job # LA49341

Client / Reporting Information

Company Name: SGS North America Inc.

Street Address: 500 Ambassador Caffery Parkway

City: Scott State: LA Zip: 70583

Project Contact: ralph.frye@sgs.com E-mail:

Phone #: 800-304-5227 Fax #:

Sampler(s) Name(s): KC/DC Phone:

Project Information

Project Name: 8060.00 Indigo-Desoto Parish, LA

Street:

City: State:

Project #:

Client Purchase Order #:

Project Manager:

Billing Information (if different from Report to)

Company Name:

Street Address:

City: State: Zip:

Attention:

Requested Analysis (see TEST CODE sheet)

BROMC9056,CHLIC9056,SCON,SIL,SO4IC9056,TDS,XCARBICALK

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE		LAB USE ONLY
1	031-9810Z (DENNISON RIG SUPPLY)		10/30/18	5:05:00 PM	KC/DC	AQ										X	

Turnaround Time (Business days)

Approved By (SGS PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other Due 11/12/2018

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C" X COMMB
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Comments / Special Instructions

1-500ml unp

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	11/1/18	1	2	1111	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3 11-1-18	4 11-1-18	2337	4 2355 11-1-18
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice	Cooler Temp
5		5					2.0

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SGS Sample Receipt Summary

Job Number: LA49341 **Client:** SGS **Project:** 8060.00 INDIGO

Date / Time Received: **Delivery Method:** Accutest Courier **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR9; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (2/2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☐		☐	☑		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: LA49341 **Date / Time Received:** 11/1/2018 **Initials:** DS

Client:

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	LA49341-1	500ml	1	M1A	N/P	Note #2 - Preservative check not applicable.				

General Chemistry

QC Data Summaries

(SGS Houston, TX)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49341
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate	GN94106	5.0	2.0	mg/l				
Alkalinity, Carbonate	GN94107	5.0	0.0	mg/l				
Alkalinity, Total as CaCO3	GN94105	5.0	0.0	mg/l	100	104	104.0	90-100%
Bromide	GP50445/GN94345	0.50	0.0	mg/l	10	9.90	99.0	90-110%
Bromide	GP50471/GN94417	0.50	0.0	mg/l	10	9.71	97.1	90-110%
Chloride	GP50445/GN94345	0.50	0.0	mg/l	10	9.73	97.3	90-110%
Chloride	GP50471/GN94417	0.50	0.0	mg/l	10	9.46	94.6	90-110%
Fluoride	GP50445/GN94345	0.50	0.0	mg/l	10	9.89	98.9	90-110%
Fluoride	GP50471/GN94417	0.50	0.0	mg/l	10	9.90	99.0	90-110%
Nitrogen, Nitrate	GP50445/GN94345	0.50	0.0	mg/l	10	9.47	94.7	90-110%
Nitrogen, Nitrate	GP50471/GN94417	0.50	0.0	mg/l	10	9.26	92.6	90-110%
Nitrogen, Nitrite	GP50445/GN94345	0.50	0.0	mg/l	10	10.2	102.0	90-110%
Nitrogen, Nitrite	GP50471/GN94417	0.50	0.0	mg/l	10	9.88	98.8	90-110%
Silica, Dissolved	GN94250	0.070	0.0	mg/l	1.07	1.0	93.5	80-120%
Solids, Total Dissolved	GN94086	10	0.0	mg/l	500	483	96.6	88-110%
Specific Conductivity	GN94054	1.0	<1.0	umhos/cm				
Sulfate	GP50445/GN94345	0.50	0.0	mg/l	10	9.87	98.7	90-110%
Sulfate	GP50471/GN94417	0.50	0.0	mg/l	10	9.71	97.1	90-110%

Associated Samples:
Batch GN94054: LA49341-1
Batch GN94086: LA49341-1
Batch GN94105: LA49341-1
Batch GN94106: LA49341-1
Batch GN94107: LA49341-1
Batch GN94250: LA49341-1
Batch GP50445: LA49341-1
Batch GP50471: LA49341-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49341
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Bicarbonate	GN94106	LA49344-1	mg/l	35.0	35.0	0.0	0-10%
Alkalinity, Carbonate	GN94107	LA49344-1	mg/l	0.0	0.0	0.0	0-20%
Alkalinity, Total as CaCO3	GN94105	LA49344-1	mg/l	35.0	35.0	0.0	0-10%
Bromide	GP50445/GN94345	LA49269-25	mg/l	1200	1200	0.0	0-19%
Bromide	GP50471/GN94417	LA49322-5	mg/l	0.40	0.42	4.9	0-19%
Chloride	GP50445/GN94345	LA49269-25	mg/l	282	282	0.0	0-13%
Silica, Dissolved	GN94250	LA49341-1	mg/l	14.6	14.0	4.2	0-20%
Solids, Total Dissolved	GN94086	LA49234-3	mg/l	594	598	0.7	0-5%
Specific Conductivity	GN94054	LA49341-1	umhos/cm	1460	1460	0.0	0-10%
Sulfate	GP50471/GN94417	LA49322-5	mg/l	3.1	3.2	3.2	0-20%

Associated Samples:
Batch GN94054: LA49341-1
Batch GN94086: LA49341-1
Batch GN94105: LA49341-1
Batch GN94106: LA49341-1
Batch GN94107: LA49341-1
Batch GN94250: LA49341-1
Batch GP50445: LA49341-1
Batch GP50471: LA49341-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA49341
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN94105	LA49344-1	mg/l	35.0	25	56.0	84.0	75-117%
Bromide	GP50445/GN94345	LA49269-25	mg/l	1200	1000	2300	110.0	80-120%
Bromide	GP50471/GN94417	LA49322-5	mg/l	0.40	10	9.9	95.0	80-120%
Chloride	GP50445/GN94345	LA49269-25	mg/l	282	1000	1280	99.8	80-120%
Silica, Dissolved	GN94250	LA49341-1	mg/l	14.6	5.35	19.3	87.9	75-125%
Sulfate	GP50471/GN94417	LA49322-5	mg/l	3.1	10	12.7	96.0	80-120%

Associated Samples:
Batch GN94105: LA49341-1
Batch GN94250: LA49341-1
Batch GP50445: LA49341-1
Batch GP50471: LA49341-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits