

Melton, Dale

From: Melton, Dale
Sent: Thursday, May 04, 2017 2:29 PM
To: 'Parker, Eric (FL)'
Cc: Levin, Laxsamee; Parker, Wanda; Davila, Sirena; 'dperez@wm.com'; Rush, Kim
Subject: Approval to dispose of pond sediment at Vista Class III Landfill WACS I.D.: 87081
Attachments: J80338-1 UDS Level 2 Report Final Report.pdf

Mr. Eric Parker,

We have reviewed your request for Department approval of the proposed disposal of pond sediment from a closed waste water treatment plant (WWTP). Based upon our review of the laboratory analysis sheets that were submitted with the request, we concur that the laboratory test results show the material is not considered a hazardous waste and does not pose a threat to public health and/or the environment.

Therefore, the Vista Class III Landfill may accept the WWTP pond sediment for disposal in its lined cell.

Sincerely,

Dale Melton
Environmental Specialist III
Geologist
Solid Waste Permitting
FDEP Central District
Dale.Melton@dep.state.fl.us
407-897-4326



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Tampa
6712 Benjamin Road
Suite 100
Tampa, FL 33634
Tel: (813)885-7427

TestAmerica Job ID: 660-80338-1

Client Project/Site: Longwood Pond Samples

For:

GHD Services Inc.-HSA
5904 Hampton Oaks Parkway, Suite F
Tampa, Florida 33610

Attn: Eldon Stills

Kathryn Smith

Authorized for release by:

5/1/2017 4:00:15 PM

Kathryn Smith, Manager of Project Management
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Designee for

Haukur Gudnason, Project Manager II
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LINKS

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results through

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
660-80338-1	Pond 1	Solid	04/25/17 18:00	04/26/17 10:15
660-80338-2	Pond 2	Solid	04/25/17 18:30	04/26/17 10:15

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Case Narrative

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Job ID: 660-80338-1

Laboratory: TestAmerica Tampa

Narrative

Job Narrative 660-80338-1

Comments

No additional comments.

Receipt

The samples were received on 4/26/2017 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Metals

Method(s) 6010B: The method blank for <182213> reflected a result for vanadium at the method detection limit (MDL), significantly lower than the routine reporting limit for this project.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method(s) 351.2: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with preparation batch 680-477812 and analytical batch 680-478101 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Nitrogen, Kjeldahl in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Qualifiers

Metals

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 1

Lab Sample ID: 660-80338-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.33	I	2.9	0.23	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.036	I	0.58	0.030	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.097	I	0.73	0.041	mg/Kg	1	☼	6010B	Total/NA
Chromium	3.5		1.5	0.11	mg/Kg	1	☼	6010B	Total/NA
Copper	54		2.9	0.14	mg/Kg	1	☼	6010B	Total/NA
Lead	6.1		1.5	0.49	mg/Kg	1	☼	6010B	Total/NA
Nickel	0.92	I	5.8	0.093	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.32	I	1.5	0.28	mg/Kg	1	☼	6010B	Total/NA
Silver	0.34	I	1.5	0.28	mg/Kg	1	☼	6010B	Total/NA
Zinc	99		2.9	0.73	mg/Kg	1	☼	6010B	Total/NA
Vanadium	1.4	I	1.5	0.37	mg/Kg	1	☼	6010B	Total/NA
Chromium	0.0037	I	0.010	0.0020	mg/L	1		6010B	SPLP East
Copper	0.023		0.010	0.0025	mg/L	1		6010B	SPLP East
Lead	0.0025	I	0.010	0.0022	mg/L	1		6010B	SPLP East
Antimony	0.0044	I	0.020	0.0040	mg/L	1		6010B	SPLP East
Vanadium	0.0064	I	0.010	0.0025	mg/L	1		6010B	SPLP East
Zinc	0.047		0.020	0.0050	mg/L	1		6010B	SPLP East
Nitrogen, Kjeldahl	1400		700	420	mg/Kg	10	☼	351.2	Total/NA
Nitrogen, Total	1400		45	45	mg/Kg	1		Total Nitrogen	Total/NA

Client Sample ID: Pond 2

Lab Sample ID: 660-80338-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Beryllium	0.045	I	0.56	0.029	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.096	I	0.71	0.040	mg/Kg	1	☼	6010B	Total/NA
Chromium	4.6		1.4	0.10	mg/Kg	1	☼	6010B	Total/NA
Copper	110		2.8	0.14	mg/Kg	1	☼	6010B	Total/NA
Lead	7.5		1.4	0.47	mg/Kg	1	☼	6010B	Total/NA
Nickel	1.3	I	5.6	0.090	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.28	I	1.4	0.27	mg/Kg	1	☼	6010B	Total/NA
Silver	2.0		1.4	0.27	mg/Kg	1	☼	6010B	Total/NA
Zinc	74		2.8	0.71	mg/Kg	1	☼	6010B	Total/NA
Molybdenum	0.59	I	1.4	0.46	mg/Kg	1	☼	6010B	Total/NA
Vanadium	1.8		1.4	0.36	mg/Kg	1	☼	6010B	Total/NA
Chromium	0.010		0.010	0.0020	mg/L	1		6010B	SPLP East
Copper	0.073		0.010	0.0025	mg/L	1		6010B	SPLP East
Molybdenum	0.014	I	0.015	0.0064	mg/L	1		6010B	SPLP East
Nickel	0.0021	I	0.0080	0.0020	mg/L	1		6010B	SPLP East
Lead	0.011		0.010	0.0022	mg/L	1		6010B	SPLP East
Antimony	0.0052	I	0.020	0.0040	mg/L	1		6010B	SPLP East
Vanadium	0.011		0.010	0.0025	mg/L	1		6010B	SPLP East
Zinc	0.070		0.020	0.0050	mg/L	1		6010B	SPLP East
Mercury	0.017	I	0.042	0.017	mg/Kg	1	☼	7471A	Total/NA
Nitrogen, Kjeldahl	960		62	37	mg/Kg	1	☼	351.2	Total/NA
Nitrogen, Total	990		45	45	mg/Kg	1		Total Nitrogen	Total/NA
Nitrate Nitrite as N	32		14	2.8	mg/Kg	1	☼	353.2	Soluble
Nitrite as N	3.8	I	14	2.8	mg/Kg	1	☼	353.2	Soluble
Nitrate as N	28		14	2.8	mg/Kg	1	☼	353.2	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Tampa

Client Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 1

Date Collected: 04/25/17 18:00

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-1

Matrix: Solid

Percent Solids: 65.3

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.33	I	2.9	0.23	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Arsenic	0.34	U	1.5	0.34	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Beryllium	0.036	I	0.58	0.030	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Cadmium	0.097	I	0.73	0.041	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Chromium	3.5		1.5	0.11	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Copper	54		2.9	0.14	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Lead	6.1		1.5	0.49	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Nickel	0.92	I	5.8	0.093	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Cobalt	0.32	I	1.5	0.28	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Selenium	0.54	U	2.9	0.54	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Thallium	0.20	U	1.5	0.20	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Silver	0.34	I	1.5	0.28	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Zinc	99		2.9	0.73	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Molybdenum	0.48	U	1.5	0.48	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1
Vanadium	1.4	I	1.5	0.37	mg/Kg	☼	04/26/17 17:30	04/27/17 09:21	1

Method: 6010B - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0015	U	0.0040	0.0015	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Arsenic	0.0040	U	0.010	0.0040	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Beryllium	0.00050	U	0.0020	0.00050	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Cadmium	0.0010	U	0.0040	0.0010	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Cobalt	0.0025	U	0.010	0.0025	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Chromium	0.0037	I	0.010	0.0020	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Copper	0.023		0.010	0.0025	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Molybdenum	0.0064	U	0.015	0.0064	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Nickel	0.0020	U	0.0080	0.0020	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Lead	0.0025	I	0.010	0.0022	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Antimony	0.0044	I	0.020	0.0040	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Selenium	0.0050	U	0.020	0.0050	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Thallium	0.0050	U	0.020	0.0050	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Vanadium	0.0064	I	0.010	0.0025	mg/L	—	04/27/17 12:30	04/28/17 08:58	1
Zinc	0.047		0.020	0.0050	mg/L	—	04/27/17 12:30	04/28/17 08:58	1

Method: 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00050	U	0.00070	0.00050	mg/L	—	04/27/17 13:54	04/27/17 17:51	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019	U	0.048	0.019	mg/Kg	☼	04/27/17 09:50	04/27/17 12:56	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	1400		700	420	mg/Kg	☼	04/28/17 12:50	05/01/17 13:04	10
Nitrogen, Total	1400		45	45	mg/Kg	—		04/28/17 14:49	1

General Chemistry - Soluble

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	3.0	U	15	3.0	mg/Kg	☼		04/27/17 15:46	1

TestAmerica Tampa

Client Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 1

Date Collected: 04/25/17 18:00

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-1

Matrix: Solid

Percent Solids: 65.3

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	3.0	U	15	3.0	mg/Kg	☼		04/27/17 15:46	1
Nitrate as N	3.0	U	15	3.0	mg/Kg	☼		04/27/17 15:46	1

Client Sample ID: Pond 2

Date Collected: 04/25/17 18:30

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-2

Matrix: Solid

Percent Solids: 69.5

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.22	U	2.8	0.22	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Arsenic	0.32	U	1.4	0.32	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Beryllium	0.045	I	0.56	0.029	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Cadmium	0.096	I	0.71	0.040	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Chromium	4.6		1.4	0.10	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Copper	110		2.8	0.14	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Lead	7.5		1.4	0.47	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Nickel	1.3	I	5.6	0.090	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Cobalt	0.28	I	1.4	0.27	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Selenium	0.52	U	2.8	0.52	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Thallium	0.19	U	1.4	0.19	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Silver	2.0		1.4	0.27	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Zinc	74		2.8	0.71	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Molybdenum	0.59	I	1.4	0.46	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1
Vanadium	1.8		1.4	0.36	mg/Kg	☼	04/26/17 17:30	04/27/17 09:24	1

Method: 6010B - Metals (ICP) - SPLP East

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0015	U	0.0040	0.0015	mg/L		04/27/17 12:30	04/28/17 09:09	1
Arsenic	0.0040	U	0.010	0.0040	mg/L		04/27/17 12:30	04/28/17 09:09	1
Beryllium	0.00050	U	0.0020	0.00050	mg/L		04/27/17 12:30	04/28/17 09:09	1
Cadmium	0.0010	U	0.0040	0.0010	mg/L		04/27/17 12:30	04/28/17 09:09	1
Cobalt	0.0025	U	0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 09:09	1
Chromium	0.010		0.010	0.0020	mg/L		04/27/17 12:30	04/28/17 09:09	1
Copper	0.073		0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 09:09	1
Molybdenum	0.014	I	0.015	0.0064	mg/L		04/27/17 12:30	04/28/17 09:09	1
Nickel	0.0021	I	0.0080	0.0020	mg/L		04/27/17 12:30	04/28/17 09:09	1
Lead	0.011		0.010	0.0022	mg/L		04/27/17 12:30	04/28/17 09:09	1
Antimony	0.0052	I	0.020	0.0040	mg/L		04/27/17 12:30	04/28/17 09:09	1
Selenium	0.0050	U	0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 09:09	1
Thallium	0.0050	U	0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 09:09	1
Vanadium	0.011		0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 09:09	1
Zinc	0.070		0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 09:09	1

Method: 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00050	U	0.00070	0.00050	mg/L		04/27/17 13:54	04/27/17 17:56	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017	I	0.042	0.017	mg/Kg	☼	04/27/17 09:50	04/27/17 12:58	1

TestAmerica Tampa

Client Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 2

Date Collected: 04/25/17 18:30

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-2

Matrix: Solid

Percent Solids: 69.5

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	960		62	37	mg/Kg	☼	04/28/17 12:50	05/01/17 12:40	1
Nitrogen, Total	990		45	45	mg/Kg			04/28/17 14:49	1

General Chemistry - Soluble

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	32		14	2.8	mg/Kg	☼		04/27/17 15:47	1
Nitrite as N	3.8	I	14	2.8	mg/Kg	☼		04/27/17 15:47	1
Nitrate as N	28		14	2.8	mg/Kg	☼		04/27/17 15:47	1

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 660-182177/1-A

Matrix: Solid

Analysis Batch: 182199

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 182177

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	U	1.0	0.23	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Beryllium	0.020	U	0.40	0.020	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Cadmium	0.028	U	0.50	0.028	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Chromium	0.073	U	1.0	0.073	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Copper	0.099	U	2.0	0.099	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Cobalt	0.19	U	1.0	0.19	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Nickel	0.064	U	4.0	0.064	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Lead	0.33	U	1.0	0.33	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Antimony	0.16	U	2.0	0.16	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Selenium	0.37	U	2.0	0.37	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Silver	0.19	U	1.0	0.19	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Thallium	0.14	U	1.0	0.14	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Molybdenum	0.33	U	1.0	0.33	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Vanadium	0.26	U	1.0	0.26	mg/Kg		04/26/17 17:30	04/27/17 09:00	1
Zinc	0.50	U	2.0	0.50	mg/Kg		04/26/17 17:30	04/27/17 09:00	1

Lab Sample ID: LCS 660-182177/2-A

Matrix: Solid

Analysis Batch: 182199

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 182177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	50.0	47.0		mg/Kg		94	75 - 125
Beryllium	50.0	49.1		mg/Kg		98	75 - 125
Cadmium	50.0	48.6		mg/Kg		97	75 - 125
Chromium	50.0	51.1		mg/Kg		102	75 - 125
Copper	50.0	50.4		mg/Kg		101	75 - 125
Cobalt	50.0	49.9		mg/Kg		100	75 - 125
Nickel	50.0	50.4		mg/Kg		101	75 - 125
Lead	50.0	50.0		mg/Kg		100	75 - 125
Antimony	50.0	49.4		mg/Kg		99	75 - 125
Selenium	50.0	48.3		mg/Kg		97	75 - 125
Silver	50.0	49.6		mg/Kg		99	75 - 125
Thallium	50.0	47.3		mg/Kg		95	75 - 125
Molybdenum	50.0	51.3		mg/Kg		103	75 - 125
Vanadium	50.0	49.1		mg/Kg		98	75 - 125
Zinc	50.0	50.0		mg/Kg		100	75 - 125

Lab Sample ID: 660-80333-B-2-B MS

Matrix: Solid

Analysis Batch: 182199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 182177

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.30	U	61.1	51.4		mg/Kg	☼	84	75 - 125
Beryllium	0.034	I	61.1	53.6		mg/Kg	☼	88	75 - 125
Cadmium	0.037	U	61.1	53.3		mg/Kg	☼	87	75 - 125
Chromium	3.3		61.1	58.7		mg/Kg	☼	91	75 - 125
Copper	0.78	I	61.1	55.5		mg/Kg	☼	90	75 - 125
Cobalt	0.25	U	61.1	53.2		mg/Kg	☼	87	75 - 125

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 660-80333-B-2-B MS

Matrix: Solid

Analysis Batch: 182199

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 182177

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Nickel	0.29	I	61.1	52.9		mg/Kg	☼	86	75 - 125
Lead	4.2		61.1	57.1		mg/Kg	☼	87	75 - 125
Antimony	0.20	U	61.1	52.4		mg/Kg	☼	86	75 - 125
Selenium	0.48	U	61.1	53.0		mg/Kg	☼	87	75 - 125
Silver	0.25	U	61.1	52.6		mg/Kg	☼	86	75 - 125
Thallium	0.18	U	61.1	53.5		mg/Kg	☼	88	75 - 125
Molybdenum	0.43	U	61.1	54.8		mg/Kg	☼	90	75 - 125
Vanadium	2.0		61.1	54.9		mg/Kg	☼	87	75 - 125
Zinc	1.4	I	61.1	56.2		mg/Kg	☼	90	75 - 125

Lab Sample ID: 660-80333-B-2-C MSD

Matrix: Solid

Analysis Batch: 182199

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 182177

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.30	U	61.7	56.4		mg/Kg	☼	91	75 - 125	9	20
Beryllium	0.034	I	61.7	59.1		mg/Kg	☼	96	75 - 125	10	20
Cadmium	0.037	U	61.7	58.4		mg/Kg	☼	95	75 - 125	9	20
Chromium	3.3		61.7	63.6		mg/Kg	☼	98	75 - 125	8	20
Copper	0.78	I	61.7	61.7		mg/Kg	☼	99	75 - 125	11	20
Cobalt	0.25	U	61.7	57.8		mg/Kg	☼	94	75 - 125	8	20
Nickel	0.29	I	61.7	57.9		mg/Kg	☼	93	75 - 125	9	20
Lead	4.2		61.7	61.3		mg/Kg	☼	93	75 - 125	7	20
Antimony	0.20	U	61.7	57.5		mg/Kg	☼	93	75 - 125	9	20
Selenium	0.48	U	61.7	58.3		mg/Kg	☼	95	75 - 125	10	20
Silver	0.25	U	61.7	59.0		mg/Kg	☼	96	75 - 125	11	20
Thallium	0.18	U	61.7	58.9		mg/Kg	☼	95	75 - 125	10	20
Molybdenum	0.43	U	61.7	60.0		mg/Kg	☼	97	75 - 125	9	20
Vanadium	2.0		61.7	60.6		mg/Kg	☼	95	75 - 125	10	20
Zinc	1.4	I	61.7	61.4		mg/Kg	☼	97	75 - 125	9	20

Lab Sample ID: LCS 660-182213/2-A

Matrix: Solid

Analysis Batch: 182247

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 182213

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.00	0.951		mg/L		95	80 - 120
Beryllium	1.00	1.01		mg/L		101	80 - 120
Cadmium	1.00	0.996		mg/L		100	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Copper	1.00	1.02		mg/L		102	80 - 120
Cobalt	1.00	1.02		mg/L		102	80 - 120
Nickel	1.00	1.01		mg/L		101	80 - 120
Lead	1.00	1.01		mg/L		101	80 - 120
Antimony	1.00	0.992		mg/L		99	80 - 120
Selenium	1.00	0.985		mg/L		99	80 - 120
Silver	1.00	0.996		mg/L		100	80 - 120
Thallium	1.00	0.972		mg/L		97	80 - 120
Molybdenum	1.00	1.03		mg/L		103	80 - 120

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 660-182213/2-A
Matrix: Solid
Analysis Batch: 182247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 182213

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	1.00	1.01		mg/L		101	80 - 120
Zinc	1.00	1.01		mg/L		101	80 - 120

Lab Sample ID: LB 660-182212/1-B
Matrix: Solid
Analysis Batch: 182247

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 182213

Analyte	LB Result	LB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0040	U	0.010	0.0040	mg/L		04/27/17 12:30	04/28/17 08:49	1
Beryllium	0.00050	U	0.0020	0.00050	mg/L		04/27/17 12:30	04/28/17 08:49	1
Cadmium	0.0010	U	0.0040	0.0010	mg/L		04/27/17 12:30	04/28/17 08:49	1
Chromium	0.0020	U	0.010	0.0020	mg/L		04/27/17 12:30	04/28/17 08:49	1
Copper	0.0025	U	0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 08:49	1
Cobalt	0.0025	U	0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 08:49	1
Nickel	0.0020	U	0.0080	0.0020	mg/L		04/27/17 12:30	04/28/17 08:49	1
Lead	0.0022	U	0.010	0.0022	mg/L		04/27/17 12:30	04/28/17 08:49	1
Antimony	0.0040	U	0.020	0.0040	mg/L		04/27/17 12:30	04/28/17 08:49	1
Selenium	0.0050	U	0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 08:49	1
Silver	0.0015	U	0.0040	0.0015	mg/L		04/27/17 12:30	04/28/17 08:49	1
Thallium	0.0050	U	0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 08:49	1
Molybdenum	0.0064	U	0.015	0.0064	mg/L		04/27/17 12:30	04/28/17 08:49	1
Vanadium	0.00251	I	0.010	0.0025	mg/L		04/27/17 12:30	04/28/17 08:49	1
Zinc	0.0050	U	0.020	0.0050	mg/L		04/27/17 12:30	04/28/17 08:49	1

Lab Sample ID: 660-80338-1 MS
Matrix: Solid
Analysis Batch: 182247

Client Sample ID: Pond 1
Prep Type: SPLP East
Prep Batch: 182213

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0040	U	1.00	0.963		mg/L		96	80 - 120
Beryllium	0.00050	U	1.00	1.06		mg/L		106	80 - 120
Cadmium	0.0010	U	1.00	1.01		mg/L		101	80 - 120
Chromium	0.0037	I	1.00	1.03		mg/L		102	80 - 120
Copper	0.023		1.00	1.06		mg/L		104	80 - 120
Cobalt	0.0025	U	1.00	1.02		mg/L		102	80 - 120
Nickel	0.0020	U	1.00	1.02		mg/L		102	80 - 120
Lead	0.0025	I	1.00	0.999		mg/L		100	80 - 120
Antimony	0.0044	I	1.00	0.997		mg/L		99	80 - 120
Selenium	0.0050	U	1.00	0.992		mg/L		99	80 - 120
Silver	0.0015	U	1.00	1.01		mg/L		101	80 - 120
Thallium	0.0050	U	1.00	0.984		mg/L		98	80 - 120
Molybdenum	0.0064	U	1.00	1.04		mg/L		104	80 - 120
Vanadium	0.0064	I	1.00	1.03		mg/L		103	80 - 120
Zinc	0.047		1.00	1.06		mg/L		102	80 - 120

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 660-80338-1 MSD

Matrix: Solid

Analysis Batch: 182247

Client Sample ID: Pond 1

Prep Type: SPLP East

Prep Batch: 182213

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0040	U	1.00	0.944		mg/L		94	80 - 120	2	20
Beryllium	0.00050	U	1.00	1.03		mg/L		103	80 - 120	3	20
Cadmium	0.0010	U	1.00	0.993		mg/L		99	80 - 120	2	20
Chromium	0.0037	I	1.00	1.00		mg/L		100	80 - 120	3	20
Copper	0.023		1.00	1.03		mg/L		101	80 - 120	3	20
Cobalt	0.0025	U	1.00	1.00		mg/L		100	80 - 120	2	20
Nickel	0.0020	U	1.00	0.998		mg/L		100	80 - 120	2	20
Lead	0.0025	I	1.00	0.975		mg/L		97	80 - 120	2	20
Antimony	0.0044	I	1.00	0.980		mg/L		98	80 - 120	2	20
Selenium	0.0050	U	1.00	0.968		mg/L		97	80 - 120	2	20
Silver	0.0015	U	1.00	1.01		mg/L		101	80 - 120	0	20
Thallium	0.0050	U	1.00	0.960		mg/L		96	80 - 120	2	20
Molybdenum	0.0064	U	1.00	1.01		mg/L		101	80 - 120	2	20
Vanadium	0.0064	I	1.00	0.996		mg/L		99	80 - 120	4	20
Zinc	0.047		1.00	1.04		mg/L		99	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LCS 660-182217/14-A

Matrix: Solid

Analysis Batch: 182227

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 182217

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00140	0.00138		mg/L		99	80 - 120

Lab Sample ID: LB 660-182212/1-C

Matrix: Solid

Analysis Batch: 182227

Client Sample ID: Method Blank

Prep Type: SPLP East

Prep Batch: 182217

Analyte	LB Result	LB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00050	U	0.00070	0.00050	mg/L		04/27/17 13:54	04/27/17 17:46	1

Lab Sample ID: 660-80338-1 MS

Matrix: Solid

Analysis Batch: 182227

Client Sample ID: Pond 1

Prep Type: SPLP East

Prep Batch: 182217

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00050	U	0.00140	0.00137		mg/L		98	80 - 120

Lab Sample ID: 660-80338-1 MSD

Matrix: Solid

Analysis Batch: 182227

Client Sample ID: Pond 1

Prep Type: SPLP East

Prep Batch: 182217

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00050	U	0.00140	0.00140		mg/L		100	80 - 120	2	20

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 660-182196/13-A
Matrix: Solid
Analysis Batch: 182214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 182196

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0036	U	0.0090	0.0036	mg/Kg	-	04/27/17 09:50	04/27/17 12:46	1

Lab Sample ID: LCS 660-182196/14-A
Matrix: Solid
Analysis Batch: 182214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 182196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.0500	0.0510		mg/Kg	-	102	80 - 120

Lab Sample ID: 660-80333-B-2-E MS
Matrix: Solid
Analysis Batch: 182214

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 182196

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.032	I	0.200	0.220		mg/Kg	✱	94	80 - 120

Lab Sample ID: 660-80333-B-2-F MSD
Matrix: Solid
Analysis Batch: 182214

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 182196

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.032	I	0.221	0.276	J3	mg/Kg	✱	111	80 - 120	23	20

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 680-477812/1-A
Matrix: Solid
Analysis Batch: 478101

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 477812

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	30	U	50	30	mg/Kg	-	04/28/17 12:50	05/01/17 12:38	1

Lab Sample ID: LCS 680-477812/2-A
Matrix: Solid
Analysis Batch: 478101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 477812

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	400	432		mg/Kg	-	108	75 - 125

Lab Sample ID: 660-80338-2 MS
Matrix: Solid
Analysis Batch: 478101

Client Sample ID: Pond 2
Prep Type: Total/NA
Prep Batch: 477812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	960		509	1550		mg/Kg	✱	116	75 - 125

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: 660-80338-2 MSD

Matrix: Solid

Analysis Batch: 478101

Client Sample ID: Pond 2

Prep Type: Total/NA

Prep Batch: 477812

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Kjeldahl	960		536	1600		mg/Kg	✱	120	75 - 125	3	40

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 660-182268/8

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.10	U	0.50	0.10	mg/Kg			04/27/17 15:35	1
Nitrite as N	0.10	U	0.50	0.10	mg/Kg			04/27/17 15:35	1
Nitrate as N	0.10	U	0.50	0.10	mg/Kg			04/27/17 15:35	1

Lab Sample ID: DLCK 660-182268/9

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0200	0.10	U	mg/Kg		87	50 - 150
Nitrite as N	0.0100	0.10	U	mg/Kg		76	50 - 150

Lab Sample ID: LCS 660-182268/11

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.600	0.599		mg/Kg		100	90 - 110
Nitrite as N	0.300	0.293	I	mg/Kg		98	90 - 110

Lab Sample ID: 660-80369-J-4 MS

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.10	U	0.600	0.594		mg/Kg		99	90 - 110
Nitrite as N	0.10	U	0.300	0.231	I J3	mg/Kg		77	90 - 110

Lab Sample ID: 660-80369-J-4 MSD

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	0.10	U	0.600	0.581		mg/Kg		97	90 - 110	2	20
Nitrite as N	0.10	U	0.300	0.222	I J3	mg/Kg		74	90 - 110	4	20

TestAmerica Tampa

QC Sample Results

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: MB 660-182271/1-A

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.0	U	10	2.0	mg/Kg			04/27/17 15:34	1
Nitrite as N	2.0	U	10	2.0	mg/Kg			04/27/17 15:34	1
Nitrate as N	2.0	U	10	2.0	mg/Kg			04/27/17 15:34	1

Lab Sample ID: LCS 660-182271/2-A

Matrix: Solid

Analysis Batch: 182268

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	11.8	11.8		mg/Kg		100	90 - 110
Nitrite as N	5.91	5.50	I	mg/Kg		93	90 - 110

QC Association Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Metals

Prep Batch: 182177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	3050B	
660-80338-2	Pond 2	Total/NA	Solid	3050B	
MB 660-182177/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 660-182177/2-A	Lab Control Sample	Total/NA	Solid	3050B	
660-80333-B-2-B MS	Matrix Spike	Total/NA	Solid	3050B	
660-80333-B-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Prep Batch: 182196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	7471A	
660-80338-2	Pond 2	Total/NA	Solid	7471A	
MB 660-182196/13-A	Method Blank	Total/NA	Solid	7471A	
LCS 660-182196/14-A	Lab Control Sample	Total/NA	Solid	7471A	
660-80333-B-2-E MS	Matrix Spike	Total/NA	Solid	7471A	
660-80333-B-2-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 182199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	6010B	182177
660-80338-2	Pond 2	Total/NA	Solid	6010B	182177
MB 660-182177/1-A	Method Blank	Total/NA	Solid	6010B	182177
LCS 660-182177/2-A	Lab Control Sample	Total/NA	Solid	6010B	182177
660-80333-B-2-B MS	Matrix Spike	Total/NA	Solid	6010B	182177
660-80333-B-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	182177

Leach Batch: 182212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	SPLP East	Solid	1312	
660-80338-2	Pond 2	SPLP East	Solid	1312	
LB 660-182212/1-B	Method Blank	SPLP East	Solid	1312	
LB 660-182212/1-C	Method Blank	SPLP East	Solid	1312	
660-80338-1 MS	Pond 1	SPLP East	Solid	1312	
660-80338-1 MSD	Pond 1	SPLP East	Solid	1312	

Prep Batch: 182213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	SPLP East	Solid	3010A	182212
660-80338-2	Pond 2	SPLP East	Solid	3010A	182212
LB 660-182212/1-B	Method Blank	SPLP East	Solid	3010A	182212
LCS 660-182213/2-A	Lab Control Sample	Total/NA	Solid	3010A	
660-80338-1 MS	Pond 1	SPLP East	Solid	3010A	182212
660-80338-1 MSD	Pond 1	SPLP East	Solid	3010A	182212

Analysis Batch: 182214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	7471A	182196
660-80338-2	Pond 2	Total/NA	Solid	7471A	182196
MB 660-182196/13-A	Method Blank	Total/NA	Solid	7471A	182196
LCS 660-182196/14-A	Lab Control Sample	Total/NA	Solid	7471A	182196
660-80333-B-2-E MS	Matrix Spike	Total/NA	Solid	7471A	182196
660-80333-B-2-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	182196

TestAmerica Tampa

QC Association Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Prep Batch: 182217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	SPLP East	Solid	7470A	182212
660-80338-2	Pond 2	SPLP East	Solid	7470A	182212
LB 660-182212/1-C	Method Blank	SPLP East	Solid	7470A	182212
LCS 660-182217/14-A	Lab Control Sample	Total/NA	Solid	7470A	
660-80338-1 MS	Pond 1	SPLP East	Solid	7470A	182212
660-80338-1 MSD	Pond 1	SPLP East	Solid	7470A	182212

Analysis Batch: 182227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	SPLP East	Solid	7470A	182217
660-80338-2	Pond 2	SPLP East	Solid	7470A	182217
LB 660-182212/1-C	Method Blank	SPLP East	Solid	7470A	182217
LCS 660-182217/14-A	Lab Control Sample	Total/NA	Solid	7470A	182217
660-80338-1 MS	Pond 1	SPLP East	Solid	7470A	182217
660-80338-1 MSD	Pond 1	SPLP East	Solid	7470A	182217

Analysis Batch: 182247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	SPLP East	Solid	6010B	182213
660-80338-2	Pond 2	SPLP East	Solid	6010B	182213
LB 660-182212/1-B	Method Blank	SPLP East	Solid	6010B	182213
LCS 660-182213/2-A	Lab Control Sample	Total/NA	Solid	6010B	182213
660-80338-1 MS	Pond 1	SPLP East	Solid	6010B	182213
660-80338-1 MSD	Pond 1	SPLP East	Solid	6010B	182213

General Chemistry

Analysis Batch: 182207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	Moisture	
660-80338-2	Pond 2	Total/NA	Solid	Moisture	
660-80339-A-4 DU	Duplicate	Total/NA	Solid	Moisture	

Analysis Batch: 182268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Soluble	Solid	353.2	182271
660-80338-2	Pond 2	Soluble	Solid	353.2	182271
MB 660-182268/8	Method Blank	Total/NA	Solid	353.2	
MB 660-182271/1-A	Method Blank	Soluble	Solid	353.2	182271
DLCK 660-182268/9	Lab Control Sample	Total/NA	Solid	353.2	
LCS 660-182268/11	Lab Control Sample	Total/NA	Solid	353.2	
LCS 660-182271/2-A	Lab Control Sample	Soluble	Solid	353.2	182271
660-80369-J-4 MS	Matrix Spike	Total/NA	Solid	353.2	
660-80369-J-4 MSD	Matrix Spike Duplicate	Total/NA	Solid	353.2	

Leach Batch: 182271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Soluble	Solid	DI Leach	
660-80338-2	Pond 2	Soluble	Solid	DI Leach	
MB 660-182271/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 660-182271/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

TestAmerica Tampa

QC Association Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

General Chemistry (Continued)

Prep Batch: 477812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	Digestion	
660-80338-2	Pond 2	Total/NA	Solid	Digestion	
MB 680-477812/1-A	Method Blank	Total/NA	Solid	Digestion	
LCS 680-477812/2-A	Lab Control Sample	Total/NA	Solid	Digestion	
660-80338-2 MS	Pond 2	Total/NA	Solid	Digestion	
660-80338-2 MSD	Pond 2	Total/NA	Solid	Digestion	

Analysis Batch: 477842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	Total Nitrogen	
660-80338-2	Pond 2	Total/NA	Solid	Total Nitrogen	

Analysis Batch: 478101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-80338-1	Pond 1	Total/NA	Solid	351.2	477812
660-80338-2	Pond 2	Total/NA	Solid	351.2	477812
MB 680-477812/1-A	Method Blank	Total/NA	Solid	351.2	477812
LCS 680-477812/2-A	Lab Control Sample	Total/NA	Solid	351.2	477812
660-80338-2 MS	Pond 2	Total/NA	Solid	351.2	477812
660-80338-2 MSD	Pond 2	Total/NA	Solid	351.2	477812

Lab Chronicle

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 1

Date Collected: 04/25/17 18:00

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			182212	04/26/17 18:10	GH1	TAL TAM
SPLP East	Prep	3010A			182213	04/27/17 12:30	GH1	TAL TAM
SPLP East	Analysis	6010B		1	182247	04/28/17 08:58	GAF	TAL TAM
SPLP East	Leach	1312			182212	04/26/17 18:10	GH1	TAL TAM
SPLP East	Prep	7470A			182217	04/27/17 13:54	GH1	TAL TAM
SPLP East	Analysis	7470A		1	182227	04/27/17 17:51	GH1	TAL TAM
Total/NA	Analysis	Moisture		1	182207	04/27/17 06:29	AJG	TAL TAM
Total/NA	Analysis	Total Nitrogen		1	477842	04/28/17 14:49	JER	TAL SAV

Client Sample ID: Pond 1

Date Collected: 04/25/17 18:00

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-1

Matrix: Solid

Percent Solids: 65.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			182177	04/26/17 17:30	GH1	TAL TAM
Total/NA	Analysis	6010B		1	182199	04/27/17 09:21	GAF	TAL TAM
Total/NA	Prep	7471A			182196	04/27/17 09:50	GAF	TAL TAM
Total/NA	Analysis	7471A		1	182214	04/27/17 12:56	GAF	TAL TAM
Total/NA	Prep	Digestion			477812	04/28/17 12:50	CFJ	TAL SAV
Total/NA	Analysis	351.2		10	478101	05/01/17 13:04	JER	TAL SAV
Soluble	Leach	DI Leach			182271	04/27/17 11:45	ELE	TAL TAM
Soluble	Analysis	353.2		1	182268	04/27/17 15:46	ELE	TAL TAM

Client Sample ID: Pond 2

Date Collected: 04/25/17 18:30

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			182212	04/26/17 18:10	GH1	TAL TAM
SPLP East	Prep	3010A			182213	04/27/17 12:30	GH1	TAL TAM
SPLP East	Analysis	6010B		1	182247	04/28/17 09:09	GAF	TAL TAM
SPLP East	Leach	1312			182212	04/26/17 18:10	GH1	TAL TAM
SPLP East	Prep	7470A			182217	04/27/17 13:54	GH1	TAL TAM
SPLP East	Analysis	7470A		1	182227	04/27/17 17:56	GH1	TAL TAM
Total/NA	Analysis	Moisture		1	182207	04/27/17 06:42	AJG	TAL TAM
Total/NA	Analysis	Total Nitrogen		1	477842	04/28/17 14:49	JER	TAL SAV

Client Sample ID: Pond 2

Date Collected: 04/25/17 18:30

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-2

Matrix: Solid

Percent Solids: 69.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			182177	04/26/17 17:30	GH1	TAL TAM

TestAmerica Tampa

Lab Chronicle

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Client Sample ID: Pond 2

Date Collected: 04/25/17 18:30

Date Received: 04/26/17 10:15

Lab Sample ID: 660-80338-2

Matrix: Solid

Percent Solids: 69.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010B		1	182199	04/27/17 09:24	GAF	TAL TAM
Total/NA	Prep	7471A			182196	04/27/17 09:50	GAF	TAL TAM
Total/NA	Analysis	7471A		1	182214	04/27/17 12:58	GAF	TAL TAM
Total/NA	Prep	Digestion			477812	04/28/17 12:50	CFJ	TAL SAV
Total/NA	Analysis	351.2		1	478101	05/01/17 12:40	JER	TAL SAV
Soluble	Leach	DI Leach			182271	04/27/17 11:45	ELE	TAL TAM
Soluble	Analysis	353.2		1	182268	04/27/17 15:47	ELE	TAL TAM

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Method Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL TAM
7470A	Mercury (CVAA)	SW846	TAL TAM
7471A	Mercury (CVAA)	SW846	TAL TAM
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL TAM
Moisture	Percent Moisture	EPA	TAL TAM
Total Nitrogen	Nitrogen, Total	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Accreditation/Certification Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Laboratory: TestAmerica Tampa

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Florida	NELAP	4	E84282	06-30-17
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
Moisture		Solid	Percent Moisture	
Moisture		Solid	Percent Solids	

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17 *
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-17
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-16-9	11-30-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Tampa

Accreditation/Certification Summary

Client: GHD Services Inc.-HSA
Project/Site: Longwood Pond Samples

TestAmerica Job ID: 660-80338-1

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-11-17 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Tampa

Serial Number 018411

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Tampa
6712 Benjamin Road, Suite 100
Tampa, FL 33634

Website: www.testamericainc.com
Phone: (813) 885-7427
Fax: (813) 885-7049

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE <i>Lea wood</i>		PROJECT NO.	PROJECT LOCATION (STATE) <i>FL</i>	MATRIX TYPE	REQUIRED ANALYSIS		PAGE 1	OF 1
SAMPLER'S SIGNATURE <i>[Signature]</i>		P.O. NUMBER	CONTRACT NO.				STANDARD REPORT DELIVERY	0
CLIENT (SITE) PM <i>Siden Stills</i>		CLIENT PHONE	CLIENT FAX				DATE DUE	<i>3 day</i>
CLIENT NAME		CLIENT E-MAIL					EXPEDITED REPORT DELIVERY (SURCHARGE)	<i>X</i>
CLIENT ADDRESS <i>6712 Benjamin Road</i>							DATE DUE	<i>3 day</i>
COMPANY CONTRACTING THIS WORK (if applicable)							NUMBER OF COOLERS SUBMITTED PER SHIPMENT	<i>2</i>
SAMPLE		SAMPLE IDENTIFICATION					REMARKS	
DATE	TIME							
<i>4/24/17</i>	<i>1300</i>	<i>Pool 1</i>		☒	☒	☒	<i>* Metals List =</i>	
<i>4/24/17</i>	<i>1300</i>	<i>Pool 2</i>		☒	☒	☒	<i>PCRA 8,</i>	
							<i>Antimony, Beryllium,</i>	
							<i>Cobalt, Copper,</i>	
							<i>Molybdenum,</i>	
							<i>Nickel, Thallium,</i>	
							<i>Vanadium, and</i>	
							<i>Zinc</i>	
RELINQUISHED BY: (SIGNATURE) <i>[Signature]</i>				RELINQUISHED BY: (SIGNATURE)	DATE	TIME		
RECEIVED BY: (SIGNATURE) <i>[Signature]</i>				RECEIVED BY: (SIGNATURE)	DATE	TIME		
RECEIVED FOR LABORATORY BY: (SIGNATURE)				CUSTODY SEAL NO.	CUSTODY INTACT	DATE	TIME	
				YES ☐	NO ☐			
				TAMPA LOG NO.	COOLER TEMP. UPON RECEIPT	LABORATORY REMARKS		
					<i>3.0/3.1</i>	<i>UO</i>		

80338
Loc: 660



[illegible]

Login Sample Receipt Checklist

Client: GHD Services Inc.-HSA

Job Number: 660-80338-1

Login Number: 80338

List Number: 1

Creator: Moccia, Vanessa M

List Source: TestAmerica Tampa

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: GHD Services Inc.-HSA

Job Number: 660-80338-1

Login Number: 80338

List Number: 2

Creator: Edwards, Jessica R

List Source: TestAmerica Savannah

List Creation: 04/28/17 09:02 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	