November 15, 2024

An Annual Groundwater Monitoring and Corrective Action Report (Annual Report) documenting the activities completed in 2017 for the Agremax Staging Area at AES Puerto Rico, LP in Guayama, PR (AES-PR) was completed and placed in the facilities operating record on January 31, 2018, as required by 40 CFR Part 257 §257.90(e)(1) through §257.90(e)(6) and subsequently posted to the AES-PR CCR public website.

This Addendum has been prepared to supplement the 2017 Annual Report. AES Puerto Rico is providing the following, as applicable:

- Laboratory Analytical Reports;
- Well Purging and Sampling Field Data Sheets;
- Statistical Analysis Reports; and
- Well Installation Information.

This information is being provided in the appendices to this Addendum as follows:

- Appendix A – Laboratory Analytical Reports
  Includes laboratory data packages with supporting information, such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation.
- Appendix B – Well Purging and Sampling and Field Data Sheets
  Includes forms documenting well purging and sampling efforts from groundwater sampling events.
- Appendix C – Statistical Analysis Reports
  Includes a discussion of statistical methods employed, statistical evaluation findings, and statistical software outputs.
- Appendix D – Well Installation Information
  Includes soil boring long and well construction diagrams for the five (5) monitoring wells installed in 2017 at the site. These documents were first reported in the Groundwater Monitoring System & Sampling and Analysis Program, AES Puerto Rico LP, Guayama, Puerto Rico in 2017.

APPENDIX A
Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-141718-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 3

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:19:42 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 17
Chronicle 18
QC Association 21
QC Sample Results 25
Chain of Custody 33
Receipt Checklists 34
Certification Summary 35

Job ID: 400-141718-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-141718-1

Comments
Revised Report (Rev. 3) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 2) - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Revised Report (Rev. 1) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

No additional comments.

Metals
Method(s) 6020: The post digestion spike % recovery for Boron associated with batch 400-365637 was outside of control limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-080817 (400-141718-1), AES-MW3-080817 (400-141718-3), AES-MW4-080817 (400-141718-4), AES-MW4-DUP-080817 (400-141718-5) and AES-MW5-080917 (400-141718-7). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Prep Batch 364388 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

General Chemistry
Method(s) SM 4500 F C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 400-364695 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-080817 (400-141718-1), AES-MW3-080817 (400-141718-3), AES-MW4-080817 (400-141718-4), AES-MW4-080817 (400-141718-4[MS]), AES-MW4-080817 (400-141718-4[MSD]), AES-MW4-DUP-080817 (400-141718-5), AES-FB-080817 (400-141718-6), AES-MW5-080917 (400-141718-7), (400-141767-D-1), (400-141767-D-1 MS) and (400-141767-D-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 400-364274 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 400-364315 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-080817 (400-141718-1), AES-MW3-080817 (400-141718-3), AES-MW4-080817 (400-141718-4), AES-MW4-080817 (400-141718-4[MS]), AES-MW4-080817 (400-141718-4[MSD]), AES-MW4-DUP-080817 (400-141718-5) and AES-MW5-080917 (400-141718-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 400-364242 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-080817 — Lab Sample ID: 400-141718-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.050		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.26		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00058	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0011	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0022	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0073		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	140		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1100		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	240		10	3.0	mg/L	5		SM 4500 Cl- E	Total/NA
Fluoride	0.47		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	340		50	14	mg/L	10		SM 4500 SO4 E	Total/NA
Field pH	6.87				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-080817 — Lab Sample ID: 400-141718-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.10		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.16		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	88		0.25	0.13	mg/L	5		6020	Total Recoverable
Lithium	0.0012	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.00035	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	460		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	37		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.36		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.7		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.53				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-080817 — Lab Sample ID: 400-141718-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0038		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.33		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.78		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0068		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.096		0.015	0.00085	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-080817 (Continued) — Lab Sample ID: 400-141718-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.052		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	290		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	6000		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	2900		120	36	mg/L	60		SM 4500 Cl- E	Total/NA
Fluoride	2.0		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	630		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.74				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-080817 — Lab Sample ID: 400-141718-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0036		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.057		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00036	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.44		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.011		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.4		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	590		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	1.0		0.050	0.011	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	9800		400	120	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	0.63	F2	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000	F1	3000	840	mg/L	600		SM 4500 SO4 E	Total/NA
Field pH	6.91				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-080817 — Lab Sample ID: 400-141718-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0014	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0031		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.057		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.45		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.011		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.4		0.50	0.21	mg/L	50		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW4-DUP-080817 (Continued) — Lab Sample ID: 400-141718-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium - DL	620		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	1.0		0.050	0.011	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	9900		400	120	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	0.61		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000		3000	840	mg/L	600		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-FB-080817 — Lab Sample ID: 400-141718-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	4.6	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-MW5-080917 — Lab Sample ID: 400-141718-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0032		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.041		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.37		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0034		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0022	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.010		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	850		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	8200		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	3800		160	48	mg/L	80		SM 4500 Cl- E	Total/NA
Fluoride	0.42		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2500		400	110	mg/L	80		SM 4500 SO4 E	Total/NA
Field pH	6.52				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-080917 — Lab Sample ID: 400-141718-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2.6	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-141718-1	AES-MW1-080817	Water	08/08/17 10:25	08/10/17 08:29
400-141718-2	AES-MW2-080817	Water	08/08/17 11:55	08/10/17 08:29
400-141718-3	AES-MW3-080817	Water	08/08/17 14:27	08/10/17 08:29
400-141718-4	AES-MW4-080817	Water	08/08/17 15:55	08/10/17 08:29
400-141718-5	AES-MW4-DUP-080817	Water	08/08/17 16:14	08/10/17 08:29
400-141718-6	AES-FB-080817	Water	08/08/17 17:08	08/10/17 08:29
400-141718-7	AES-MW5-080917	Water	08/09/17 11:24	08/10/17 08:29
400-141718-8	AES-FB-080917	Water	08/09/17 11:50	08/10/17 08:29

Client Sample ID: AES-MW1-080817

Date Collected: 08/08/17 10:25
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 00:36	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 00:36	5
Barium	**0.050**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 00:36	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:36	5
Boron	**0.26**		0.050	0.021	mg/L		08/19/17 12:04	08/25/17 00:36	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:36	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 00:36	5
Cobalt	**0.00058**	**J**	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 00:36	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 00:36	5
Lithium	**0.0011**	**J**	0.0050	0.0011	mg/L		08/19/17 12:04	08/25/17 00:36	5
Molybdenum	**0.0022**	**J**	0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 00:36	5
Selenium	**0.0073**		0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 00:36	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 00:36	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**140**		1.3	0.63	mg/L		08/19/17 12:04	08/28/17 12:51	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1100**		25	17	mg/L			08/12/17 13:45	1
Chloride	**240**		10	3.0	mg/L			08/17/17 09:53	5
Fluoride	**0.47**		0.10	0.032	mg/L			08/18/17 11:05	1
Sulfate	**340**		50	14	mg/L			08/15/17 09:10	10

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.87**				SU			08/08/17 08:25	1

Client Sample ID: AES-MW2-080817

Date Collected: 08/08/17 11:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 00:41	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 00:41	5
Barium	**0.10**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 00:41	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:41	5
Boron	**0.16**		0.050	0.021	mg/L		08/19/17 12:04	08/25/17 00:41	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:41	5
Calcium	**88**		0.25	0.13	mg/L		08/19/17 12:04	08/25/17 00:41	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 00:41	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 00:41	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 00:41	5
Lithium	**0.0012**	**J**	0.0050	0.0011	mg/L		08/19/17 12:04	08/25/17 00:41	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 00:41	5
Selenium	**0.00035**	**J**	0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 00:41	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 00:41	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 13:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**460**		5.0	3.4	mg/L			08/12/17 13:45	1
Chloride	**37**		2.0	0.60	mg/L			08/15/17 11:15	1
Fluoride	**0.36**		0.10	0.032	mg/L			08/18/17 11:07	1
Sulfate	**7.7**		5.0	1.4	mg/L			08/15/17 08:11	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.53**				SU			08/08/17 09:55	1

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-080817
Date Collected: 08/08/17 14:27
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-3
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 00:45	5
Arsenic	**0.0038**		0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 00:45	5
Barium	**0.33**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 00:45	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:45	5
Boron	**0.78**		0.050	0.021	mg/L		08/19/17 12:04	08/25/17 00:45	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:45	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 00:45	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 00:45	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 00:45	5
Lithium	**0.0068**		0.0050	0.0011	mg/L		08/19/17 12:04	08/25/17 00:45	5
Molybdenum	**0.096**		0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 00:45	5
Selenium	**0.052**		0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 00:45	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 00:45	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**290**		1.3	0.63	mg/L		08/19/17 12:04	08/28/17 12:56	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**6000**		25	17	mg/L			08/12/17 13:45	1
Chloride	**2900**		120	36	mg/L			08/15/17 11:55	60
Fluoride	**2.0**		0.10	0.032	mg/L			08/18/17 11:08	1
Sulfate	**630**		100	28	mg/L			08/15/17 09:10	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.74**				SU			08/08/17 12:27	1

Client Sample ID: AES-MW4-080817

Date Collected: 08/08/17 15:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 00:50	5
Arsenic	**0.0036**		0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 00:50	5
Barium	**0.057**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 00:50	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:50	5
Cadmium	**0.00036**	**J**	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 00:50	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 00:50	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 00:50	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 00:50	5
Molybdenum	**0.44**		0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 00:50	5
Selenium	**0.011**		0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 00:50	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 00:50	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.4**		0.50	0.21	mg/L		08/19/17 12:04	08/27/17 19:29	50
Calcium	**590**		2.5	1.3	mg/L		08/19/17 12:04	08/27/17 19:29	50
Lithium	**1.0**		0.050	0.011	mg/L		08/19/17 12:04	08/27/17 19:29	50

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U F1	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			08/12/17 13:45	1
Chloride	**9800**		400	120	mg/L			08/15/17 11:19	200
Fluoride	**0.63**	**F2**	0.10	0.032	mg/L			08/18/17 10:21	1
Sulfate	**15000**	**F1**	3000	840	mg/L			08/15/17 09:48	600

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.91**				SU			08/08/17 13:55	1

Client Sample ID: AES-MW4-DUP-080817

Date Collected: 08/08/17 16:14
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0014**	**J**	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 01:31	5
Arsenic	**0.0031**		0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 01:31	5
Barium	**0.057**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 01:31	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:31	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:31	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 01:31	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 01:31	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 01:31	5
Molybdenum	**0.45**		0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 01:31	5
Selenium	**0.011**		0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 01:31	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 01:31	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.4**		0.50	0.21	mg/L		08/19/17 12:04	08/27/17 19:34	50
Calcium	**620**		2.5	1.3	mg/L		08/19/17 12:04	08/27/17 19:34	50
Lithium	**1.0**		0.050	0.011	mg/L		08/19/17 12:04	08/27/17 19:34	50

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			08/12/17 13:45	1
Chloride	**9900**		400	120	mg/L			08/15/17 11:20	200
Fluoride	**0.61**		0.10	0.032	mg/L			08/18/17 11:10	1
Sulfate	**15000**		3000	840	mg/L			08/15/17 09:51	600

Client Sample ID: AES-FB-080817

Date Collected: 08/08/17 17:08
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 01:36	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 01:36	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 01:36	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:36	5
Boron	0.021	U	0.050	0.021	mg/L		08/19/17 12:04	08/25/17 01:36	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:36	5
Calcium	0.13	U	0.25	0.13	mg/L		08/19/17 12:04	08/25/17 01:36	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 01:36	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 01:36	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 01:36	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/17 12:04	08/25/17 01:36	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 01:36	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 01:36	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 01:36	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/12/17 13:45	1
Chloride	0.60	U	2.0	0.60	mg/L			08/15/17 11:16	1
Fluoride	0.032	U	0.10	0.032	mg/L			08/18/17 11:13	1
Sulfate	**4.6**	**J**	5.0	1.4	mg/L			08/15/17 08:11	1

Client Sample ID: AES-MW5-080917

Date Collected: 08/09/17 11:24
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 01:40	5
Arsenic	**0.0032**		0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 01:40	5
Barium	**0.041**		0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 01:40	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:40	5
Boron	**0.37**		0.050	0.021	mg/L		08/19/17 12:04	08/25/17 01:40	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:40	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 01:40	5
Cobalt	**0.0034**		0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 01:40	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 01:40	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/17 12:04	08/25/17 01:40	5
Molybdenum	**0.0022**	**J**	0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 01:40	5
Selenium	**0.010**		0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 01:40	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 01:40	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**850**		5.0	2.5	mg/L		08/19/17 12:04	08/27/17 20:01	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**8200**		50	34	mg/L			08/13/17 13:32	1
Chloride	**3800**		160	48	mg/L			08/15/17 14:13	80
Fluoride	**0.42**		0.10	0.032	mg/L			08/18/17 11:15	1
Sulfate	**2500**		400	110	mg/L			08/15/17 09:48	80

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.52**				SU			08/09/17 09:24	1

Client Sample ID: AES-FB-080917

Date Collected: 08/09/17 11:50
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/25/17 01:45	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/19/17 12:04	08/25/17 01:45	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/19/17 12:04	08/25/17 01:45	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:45	5
Boron	0.021	U	0.050	0.021	mg/L		08/19/17 12:04	08/25/17 01:45	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/25/17 01:45	5
Calcium	0.13	U	0.25	0.13	mg/L		08/19/17 12:04	08/25/17 01:45	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/25/17 01:45	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/19/17 12:04	08/25/17 01:45	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/25/17 01:45	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/19/17 12:04	08/25/17 01:45	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/19/17 12:04	08/25/17 01:45	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/25/17 01:45	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/17 12:04	08/27/17 18:49	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/13/17 13:32	1
Chloride	0.60	U	2.0	0.60	mg/L			08/15/17 13:04	1
Fluoride	0.032	U	0.10	0.032	mg/L			08/19/17 10:11	1
Sulfate	**2.6**	**J**	5.0	1.4	mg/L			08/15/17 08:11	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Client Sample ID: AES-MW1-080817

Lab Sample ID: 400-141718-1

Date Collected: 08/08/17 10:25

Matrix: Water

Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 00:36	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366042	08/28/17 12:51	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 13:57	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		5	364542	08/17/17 09:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:05	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	364242	08/15/17 09:10	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/08/17 08:25	BWS	TAL PEN

Client Sample ID: AES-MW2-080817

Lab Sample ID: 400-141718-2

Date Collected: 08/08/17 11:55

Matrix: Water

Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 00:41	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 13:58	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	364274	08/15/17 11:15	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:07	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	364242	08/15/17 08:11	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/08/17 09:55	BWS	TAL PEN

Client Sample ID: AES-MW3-080817

Lab Sample ID: 400-141718-3

Date Collected: 08/08/17 14:27

Matrix: Water

Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 00:45	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366042	08/28/17 12:56	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:00	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		60	364274	08/15/17 11:55	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:08	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	364242	08/15/17 09:10	RRC	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	365120	08/08/17 12:27	BWS	TAL PEN

Client Sample ID: AES-MW4-080817
Lab Sample ID: 400-141718-4

Date Collected: 08/08/17 15:55
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 00:50	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	365886	08/27/17 19:29	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:02	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	364274	08/15/17 11:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 10:21	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	364242	08/15/17 09:48	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/08/17 13:55	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-080817
Lab Sample ID: 400-141718-5

Date Collected: 08/08/17 16:14
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 01:31	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	365886	08/27/17 19:34	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:09	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	364274	08/15/17 11:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:10	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	364242	08/15/17 09:51	RRC	TAL PEN

Client Sample ID: AES-FB-080817
Lab Sample ID: 400-141718-6

Date Collected: 08/08/17 17:08
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 01:36	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:11	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	363977	08/12/17 13:45	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	364274	08/15/17 11:16	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-080817

Lab Sample ID: 400-141718-6

Date Collected: 08/08/17 17:08
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:13	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	364242	08/15/17 08:11	RRC	TAL PEN

Client Sample ID: AES-MW5-080917

Lab Sample ID: 400-141718-7

Date Collected: 08/09/17 11:24
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 01:40	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	365886	08/27/17 20:01	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:23	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	364013	08/13/17 13:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		80	364315	08/15/17 14:13	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364695	08/18/17 11:15	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		80	364242	08/15/17 09:48	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/09/17 09:24	BWS	TAL PEN

Client Sample ID: AES-FB-080917

Lab Sample ID: 400-141718-8

Date Collected: 08/09/17 11:50
Matrix: Water
Date Received: 08/10/17 08:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	365637	08/25/17 01:45	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		364826	08/19/17 12:04	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	365886	08/27/17 18:49	DRE	TAL PEN
Total/NA	Prep	7470A			364388	08/16/17 09:19	JAP	TAL PEN
Total/NA	Analysis	7470A		1	364740	08/18/17 14:25	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	364013	08/13/17 13:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	364315	08/15/17 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	364824	08/19/17 10:11	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	364242	08/15/17 08:11	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 364388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	7470A	
400-141718-2	AES-MW2-080817	Total/NA	Water	7470A	
400-141718-3	AES-MW3-080817	Total/NA	Water	7470A	
400-141718-4	AES-MW4-080817	Total/NA	Water	7470A	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	7470A	
400-141718-6	AES-FB-080817	Total/NA	Water	7470A	
400-141718-7	AES-MW5-080917	Total/NA	Water	7470A	
400-141718-8	AES-FB-080917	Total/NA	Water	7470A	
MB 400-364388/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-364388/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	7470A	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	7470A	

Analysis Batch: 364740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	7470A	364388
400-141718-2	AES-MW2-080817	Total/NA	Water	7470A	364388
400-141718-3	AES-MW3-080817	Total/NA	Water	7470A	364388
400-141718-4	AES-MW4-080817	Total/NA	Water	7470A	364388
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	7470A	364388
400-141718-6	AES-FB-080817	Total/NA	Water	7470A	364388
400-141718-7	AES-MW5-080917	Total/NA	Water	7470A	364388
400-141718-8	AES-FB-080917	Total/NA	Water	7470A	364388
MB 400-364388/14-A	Method Blank	Total/NA	Water	7470A	364388
LCS 400-364388/15-A	Lab Control Sample	Total/NA	Water	7470A	364388
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	7470A	364388
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	7470A	364388

Prep Batch: 364826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total Recoverable	Water	3005A	
400-141718-1 - DL	AES-MW1-080817	Total Recoverable	Water	3005A	
400-141718-2	AES-MW2-080817	Total Recoverable	Water	3005A	
400-141718-3	AES-MW3-080817	Total Recoverable	Water	3005A	
400-141718-3 - DL	AES-MW3-080817	Total Recoverable	Water	3005A	
400-141718-4	AES-MW4-080817	Total Recoverable	Water	3005A	
400-141718-4 - DL	AES-MW4-080817	Total Recoverable	Water	3005A	
400-141718-5	AES-MW4-DUP-080817	Total Recoverable	Water	3005A	
400-141718-5 - DL	AES-MW4-DUP-080817	Total Recoverable	Water	3005A	
400-141718-6	AES-FB-080817	Total Recoverable	Water	3005A	
400-141718-7 - DL	AES-MW5-080917	Total Recoverable	Water	3005A	
400-141718-7	AES-MW5-080917	Total Recoverable	Water	3005A	
400-141718-8	AES-FB-080917	Total Recoverable	Water	3005A	
400-141718-8 - RA	AES-FB-080917	Total Recoverable	Water	3005A	
MB 400-364826/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-364826/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-141718-4 MS	AES-MW4-080817	Total Recoverable	Water	3005A	
400-141718-4 MSD	AES-MW4-080817	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 365637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total Recoverable	Water	6020	364826
400-141718-2	AES-MW2-080817	Total Recoverable	Water	6020	364826
400-141718-3	AES-MW3-080817	Total Recoverable	Water	6020	364826
400-141718-4	AES-MW4-080817	Total Recoverable	Water	6020	364826
400-141718-5	AES-MW4-DUP-080817	Total Recoverable	Water	6020	364826
400-141718-6	AES-FB-080817	Total Recoverable	Water	6020	364826
400-141718-7	AES-MW5-080917	Total Recoverable	Water	6020	364826
400-141718-8	AES-FB-080917	Total Recoverable	Water	6020	364826
MB 400-364826/1-A ^5	Method Blank	Total Recoverable	Water	6020	364826
LCS 400-364826/2-A	Lab Control Sample	Total Recoverable	Water	6020	364826
400-141718-4 MS	AES-MW4-080817	Total Recoverable	Water	6020	364826
400-141718-4 MSD	AES-MW4-080817	Total Recoverable	Water	6020	364826

Analysis Batch: 365886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-4 - DL	AES-MW4-080817	Total Recoverable	Water	6020	364826
400-141718-5 - DL	AES-MW4-DUP-080817	Total Recoverable	Water	6020	364826
400-141718-7 - DL	AES-MW5-080917	Total Recoverable	Water	6020	364826
400-141718-8 - RA	AES-FB-080917	Total Recoverable	Water	6020	364826

Analysis Batch: 366042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1 - DL	AES-MW1-080817	Total Recoverable	Water	6020	364826
400-141718-3 - DL	AES-MW3-080817	Total Recoverable	Water	6020	364826

General Chemistry

Analysis Batch: 363977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	SM 2540C	
400-141718-2	AES-MW2-080817	Total/NA	Water	SM 2540C	
400-141718-3	AES-MW3-080817	Total/NA	Water	SM 2540C	
400-141718-4	AES-MW4-080817	Total/NA	Water	SM 2540C	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	SM 2540C	
400-141718-6	AES-FB-080817	Total/NA	Water	SM 2540C	
MB 400-363977/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-363977/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-141713-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
400-141713-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 364013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-7	AES-MW5-080917	Total/NA	Water	SM 2540C	
400-141718-8	AES-FB-080917	Total/NA	Water	SM 2540C	
MB 400-364013/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-364013/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-141710-J-6 DU	Duplicate	Total/NA	Water	SM 2540C	
400-141809-F-11 DU	Duplicate	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 364242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-2	AES-MW2-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-3	AES-MW3-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-4	AES-MW4-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-6	AES-FB-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-7	AES-MW5-080917	Total/NA	Water	SM 4500 SO4 E	
400-141718-8	AES-FB-080917	Total/NA	Water	SM 4500 SO4 E	
MB 400-364242/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-364242/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-364242/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	SM 4500 SO4 E	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 364274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-2	AES-MW2-080817	Total/NA	Water	SM 4500 Cl- E	
400-141718-3	AES-MW3-080817	Total/NA	Water	SM 4500 Cl- E	
400-141718-4	AES-MW4-080817	Total/NA	Water	SM 4500 Cl- E	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	SM 4500 Cl- E	
400-141718-6	AES-FB-080817	Total/NA	Water	SM 4500 Cl- E	
MB 400-364274/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-364274/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-364274/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	SM 4500 Cl- E	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 364315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-7	AES-MW5-080917	Total/NA	Water	SM 4500 Cl- E	
400-141718-8	AES-FB-080917	Total/NA	Water	SM 4500 Cl- E	
MB 400-364315/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-364315/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-364315/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-141767-C-3 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-141767-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	
400-141767-D-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-141767-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 364542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	SM 4500 Cl- E	
MB 400-364542/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-364542/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-364542/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 364695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	SM 4500 F C	
400-141718-2	AES-MW2-080817	Total/NA	Water	SM 4500 F C	
400-141718-3	AES-MW3-080817	Total/NA	Water	SM 4500 F C	

General Chemistry (Continued)

Analysis Batch: 364695 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-4	AES-MW4-080817	Total/NA	Water	SM 4500 F C	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	SM 4500 F C	
400-141718-6	AES-FB-080817	Total/NA	Water	SM 4500 F C	
400-141718-7	AES-MW5-080917	Total/NA	Water	SM 4500 F C	
MB 400-364695/4	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-364695/5	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	SM 4500 F C	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	SM 4500 F C	
400-141890-A-9 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 364824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-8	AES-FB-080917	Total/NA	Water	SM 4500 F C	
MB 400-364824/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-364824/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-141890-A-10 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-141890-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 365120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	Field Sampling	
400-141718-2	AES-MW2-080817	Total/NA	Water	Field Sampling	
400-141718-3	AES-MW3-080817	Total/NA	Water	Field Sampling	
400-141718-4	AES-MW4-080817	Total/NA	Water	Field Sampling	
400-141718-7	AES-MW5-080917	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-364826/1-A ^5
Matrix: Water
Analysis Batch: 365637

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 364826

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/19/17 12:04	08/24/17 23:51	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/19/17 12:04	08/24/17 23:51	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/19/17 12:04	08/24/17 23:51	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/24/17 23:51	5
Boron	0.021	U	0.050	0.021	mg/L		08/19/17 12:04	08/24/17 23:51	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/19/17 12:04	08/24/17 23:51	5
Calcium	0.13	U	0.25	0.13	mg/L		08/19/17 12:04	08/24/17 23:51	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/19/17 12:04	08/24/17 23:51	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/19/17 12:04	08/24/17 23:51	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/19/17 12:04	08/24/17 23:51	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/19/17 12:04	08/24/17 23:51	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/19/17 12:04	08/24/17 23:51	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/19/17 12:04	08/24/17 23:51	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/19/17 12:04	08/24/17 23:51	5

Lab Sample ID: LCS 400-364826/2-A
Matrix: Water
Analysis Batch: 365637

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 364826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0515		mg/L		103	80 - 120
Arsenic	0.0500	0.0522		mg/L		104	80 - 120
Barium	0.0500	0.0490		mg/L		98	80 - 120
Beryllium	0.0500	0.0504		mg/L		101	80 - 120
Boron	0.100	0.0994		mg/L		99	80 - 120
Cadmium	0.0500	0.0527		mg/L		105	80 - 120
Calcium	5.00	4.86		mg/L		97	80 - 120
Chromium	0.0500	0.0513		mg/L		103	80 - 120
Cobalt	0.0500	0.0534		mg/L		107	80 - 120
Lead	0.0500	0.0499		mg/L		100	80 - 120
Lithium	0.0500	0.0536		mg/L		107	80 - 120
Molybdenum	0.100	0.103		mg/L		103	80 - 120
Selenium	0.0500	0.0516		mg/L		103	80 - 120
Thallium	0.0100	0.00988		mg/L		99	80 - 120

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 365637

Client Sample ID: AES-MW4-080817
Prep Type: Total Recoverable
Prep Batch: 364826

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0589		mg/L		118	75 - 125
Arsenic	0.0036		0.0500	0.0592		mg/L		111	75 - 125
Barium	0.057		0.0500	0.114		mg/L		114	75 - 125
Beryllium	0.00034	U	0.0500	0.0478		mg/L		96	75 - 125
Boron	3.7	E	0.100	3.82	E 4	mg/L		121	75 - 125
Cadmium	0.00036	J	0.0500	0.0467		mg/L		93	75 - 125
Calcium	640	E	5.00	718	E 4	mg/L		1590	75 - 125
Chromium	0.0011	U	0.0500	0.0528		mg/L		106	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 365637

Client Sample ID: AES-MW4-080817
Prep Type: Total Recoverable
Prep Batch: 364826

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0018	J	0.0500	0.0507		mg/L		98	75 - 125
Lead	0.00035	U	0.0500	0.0545		mg/L		109	75 - 125
Lithium	1.1	E	0.0500	1.11	E 4	mg/L		101	75 - 125
Molybdenum	0.44		0.100	0.560	4	mg/L		125	75 - 125
Selenium	0.011		0.0500	0.0732		mg/L		124	75 - 125
Thallium	0.000085	U	0.0100	0.0108		mg/L		108	75 - 125

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 365637

Client Sample ID: AES-MW4-080817
Prep Type: Total Recoverable
Prep Batch: 364826

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0579		mg/L		116	75 - 125	2	20
Arsenic	0.0036		0.0500	0.0569		mg/L		107	75 - 125	4	20
Barium	0.057		0.0500	0.114		mg/L		113	75 - 125	0	20
Beryllium	0.00034	U	0.0500	0.0478		mg/L		96	75 - 125	0	20
Boron	3.7	E	0.100	3.71	E 4	mg/L		18	75 - 125	3	20
Cadmium	0.00036	J	0.0500	0.0454		mg/L		90	75 - 125	3	20
Calcium	640	E	5.00	723	E 4	mg/L		1692	75 - 125	1	20
Chromium	0.0011	U	0.0500	0.0532		mg/L		106	75 - 125	1	20
Cobalt	0.0018	J	0.0500	0.0499		mg/L		96	75 - 125	2	20
Lead	0.00035	U	0.0500	0.0537		mg/L		107	75 - 125	1	20
Lithium	1.1	E	0.0500	1.07	E 4	mg/L		15	75 - 125	4	20
Molybdenum	0.44		0.100	0.530	4	mg/L		95	75 - 125	6	20
Selenium	0.011		0.0500	0.0712		mg/L		119	75 - 125	3	20
Thallium	0.000085	U	0.0100	0.0107		mg/L		107	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-364388/14-A
Matrix: Water
Analysis Batch: 364740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 364388

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/16/17 09:19	08/18/17 13:45	1

Lab Sample ID: LCS 400-364388/15-A
Matrix: Water
Analysis Batch: 364740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 364388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.00103		mg/L		103	80 - 120

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 364740

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA
Prep Batch: 364388

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U F1	0.00201	0.00126	F1	mg/L		63	80 - 120

Lab Sample ID: 400-141718-4 MSD — **Client Sample ID: AES-MW4-080817**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364740 — **Prep Batch: 364388**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U F1	0.00201	0.00116	F1	mg/L		57	80 - 120	9	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-363977/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 363977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/12/17 13:45	1

Lab Sample ID: LCS 400-363977/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 363977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	246		mg/L		84	78 - 122

Lab Sample ID: 400-141713-A-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 363977

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	62		62.0		mg/L		0	5

Lab Sample ID: 400-141713-A-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 363977

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3.4	U	3.4	U	mg/L		NC	5

Lab Sample ID: MB 400-364013/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364013

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/13/17 13:32	1

Lab Sample ID: LCS 400-364013/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364013

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	254		mg/L		87	78 - 122

Lab Sample ID: 400-141710-J-6 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 364013

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	24		24.0		mg/L		0	5

Lab Sample ID: 400-141809-F-11 DU
Matrix: Water
Analysis Batch: 364013

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	970		970		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-364274/6
Matrix: Water
Analysis Batch: 364274

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/15/17 10:28	1

Lab Sample ID: LCS 400-364274/7
Matrix: Water
Analysis Batch: 364274

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.6		mg/L		99	90 - 110

Lab Sample ID: MRL 400-364274/3
Matrix: Water
Analysis Batch: 364274

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.79	J	mg/L		89	50 - 150

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 364274

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	9800		2000	9540	4	mg/L		-14	73 - 120

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 364274

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9800		2000	9570	4	mg/L		-12	73 - 120	0	8

Lab Sample ID: MB 400-364315/6
Matrix: Water
Analysis Batch: 364315

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/15/17 12:48	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 400-364315/7
Matrix: Water
Analysis Batch: 364315

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.1		mg/L		100	90 - 110

Lab Sample ID: MRL 400-364315/3
Matrix: Water
Analysis Batch: 364315

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.83	J	mg/L		91	50 - 150

Lab Sample ID: 400-141767-C-3 MS
Matrix: Water
Analysis Batch: 364315

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
Chloride	19		10.0	27.2		mg/L		77	73 - 120

Lab Sample ID: 400-141767-C-3 MSD
Matrix: Water
Analysis Batch: 364315

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
Chloride	19		10.0	27.1		mg/L		77	73 - 120	0	8

Lab Sample ID: 400-141767-D-1 MS
Matrix: Water
Analysis Batch: 364315

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
Chloride	85		20.0	91.4	4	mg/L		32	73 - 120

Lab Sample ID: 400-141767-D-1 MSD
Matrix: Water
Analysis Batch: 364315

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
Chloride	85		20.0	90.5	4	mg/L		27	73 - 120	1	8

Lab Sample ID: MB 400-364542/6
Matrix: Water
Analysis Batch: 364542

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/17/17 08:55	1

Lab Sample ID: LCS 400-364542/7
Matrix: Water
Analysis Batch: 364542

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.7		mg/L		99	90 - 110

Lab Sample ID: MRL 400-364542/3
Matrix: Water
Analysis Batch: 364542

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.94	J	mg/L		97	50 - 150

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-364695/4
Matrix: Water
Analysis Batch: 364695

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			08/18/17 10:07	1

Lab Sample ID: LCS 400-364695/5
Matrix: Water
Analysis Batch: 364695

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.26		mg/L		107	90 - 110

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 364695

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.63	F2	1.00	1.71		mg/L		108	75 - 125

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 364695

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.63	F2	1.00	1.43	F2	mg/L		80	75 - 125	18	4

Lab Sample ID: 400-141890-A-9 DU
Matrix: Water
Analysis Batch: 364695

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.032	U	0.032	U	mg/L		NC	4

Lab Sample ID: MB 400-364824/3
Matrix: Water
Analysis Batch: 364824

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			08/19/17 09:57	1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 400-364824/4
Matrix: Water
Analysis Batch: 364824

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			4.00	4.34		mg/L		109	90 - 110		

Lab Sample ID: 400-141890-A-10 MS
Matrix: Water
Analysis Batch: 364824

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		
Fluoride	0.36		1.00	1.55		mg/L		119	75 - 125		

Lab Sample ID: 400-141890-A-10 MSD
Matrix: Water
Analysis Batch: 364824

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
Fluoride	0.36		1.00	1.55		mg/L		119	75 - 125	0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-364242/6
Matrix: Water
Analysis Batch: 364242

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			08/15/17 07:11	1

Lab Sample ID: LCS 400-364242/7
Matrix: Water
Analysis Batch: 364242

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			15.0	15.0		mg/L		100	90 - 110		

Lab Sample ID: MRL 400-364242/3
Matrix: Water
Analysis Batch: 364242

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			5.00	5.03		mg/L		101	50 - 150		

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 364242

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	15000	F1	6000	15000	F1	mg/L		-0.9	77 - 128		

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 364242

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	15000	F1	6000	15200	F1	mg/L		3	77 - 128	1	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #: 400-141718
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:			
City: Guaynabo	TAT Requested (days): REGULAR TAT			
State, Zip: PR, 00969-5375	PO #:			
Phone: 787-209-6386(Tel)	WO #:			
Email: dna.environment1@gmail.com	Project #: 40008317			
Project Name: CCR App.III/IV GW Monitoring	SSOW#:			
Site: AES PUERTO RICO, LP				

Analysis Requested

400-141718 COC

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-080817	8-8-17	1025	G	Water			X	X	X		*pH = 6.87
AES-MW2-080817		1155		Water			X	X	X		*pH = 6.53
AES-MW3-080817		1315 1427		Water			X	X	X		*pH = 6.74
AES-MW4-080817		1555		Water			X	X	X		*pH = 6.91
AES-MW4-DUP-080817		1614		Water			X	X	X		
AES-MW4-MS-080817		1632		Water			X	X	X		
AES-MW4-MSD-080817		1653		Water			X	X	X		
AES-FB-080817		1708		Water			X	X	X		
AES-MW5-080917	8-9-17	1124		Water			X	X	X		*pH = 6.52
AES-FB-080917	8-9-17	1150		Water			X	X	X		*SAMPLE pH READING (FIELD pH)

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	08/09/17 14:25	DNA		8/10/17 0829	TAPC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.0C, 3.0C

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-141718-1
SDG Number: AES Puerto Rico, LP

Login Number: 141718
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	1.6°C IR-2 Wet chem & Metals cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-141718-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Cheyenne Whitmire

Authorized for release by:
9/12/2017 4:56:38 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Method Summary 3
Sample Summary 4
Client Sample Results 5
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 20
Receipt Checklists 21
Certification Summary 22

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-141718-1	AES-MW1-080817	Water	08/08/17 10:25	08/10/17 08:29
400-141718-2	AES-MW2-080817	Water	08/08/17 11:55	08/10/17 08:29
400-141718-3	AES-MW3-080817	Water	08/08/17 14:27	08/10/17 08:29
400-141718-4	AES-MW4-080817	Water	08/08/17 15:55	08/10/17 08:29
400-141718-5	AES-MW4-DUP-080817	Water	08/08/17 16:14	08/10/17 08:29
400-141718-6	AES-FB-080817	Water	08/08/17 17:08	08/10/17 08:29
400-141718-7	AES-MW5-080917	Water	08/09/17 11:24	08/10/17 08:29
400-141718-8	AES-FB-080917	Water	08/09/17 11:50	08/10/17 08:29

Client Sample ID: AES-MW1-080817

Date Collected: 08/08/17 10:25
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0539	U	0.0528	0.0530	1.00	0.0801	pCi/L	08/15/17 12:16	09/06/17 06:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0360	U	0.183	0.183	1.00	0.323	pCi/L	08/15/17 12:46	08/24/17 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*
Y Carrier	*90.1*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0899	U	0.190	0.190	5.00	0.323	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-MW2-080817

Date Collected: 08/08/17 11:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0458	U	0.0512	0.0514	1.00	0.0813	pCi/L	08/15/17 12:16	09/06/17 06:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0835	U	0.195	0.196	1.00	0.337	pCi/L	08/15/17 12:46	08/24/17 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*
Y Carrier	*87.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.129	U	0.202	0.202	5.00	0.337	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-MW3-080817

Date Collected: 08/08/17 14:27
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0990		0.0543	0.0551	1.00	0.0555	pCi/L	08/15/17 12:16	09/06/17 06:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.173	U	0.178	0.178	1.00	0.289	pCi/L	08/15/17 12:46	08/24/17 13:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*
Y Carrier	*88.2*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.272	U	0.186	0.187	5.00	0.289	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-MW4-080817

Date Collected: 08/08/17 15:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0920		0.0588	0.0593	1.00	0.0732	pCi/L	08/15/17 12:16	09/06/17 06:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:12*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.435		0.198	0.202	1.00	0.279	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*
Y Carrier	*92.7*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.527		0.207	0.211	5.00	0.279	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-MW4-DUP-080817

Date Collected: 08/08/17 16:14
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.137**		0.0682	0.0693	1.00	0.0739	pCi/L	08/15/17 12:16	09/06/17 06:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:12*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.244	U	0.189	0.190	1.00	0.295	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*
Y Carrier	*85.6*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.381**		0.200	0.202	5.00	0.295	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-FB-080817

Date Collected: 08/08/17 17:08
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0231	U	0.0431	0.0431	1.00	0.0779	pCi/L	08/15/17 12:16	09/06/17 06:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:12*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0699	U	0.170	0.170	1.00	0.295	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*
Y Carrier	*87.5*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0930	U	0.175	0.175	5.00	0.295	pCi/L		09/12/17 10:25	1

Client Sample ID: AES-MW5-080917

Date Collected: 08/09/17 11:24
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.107		0.0690	0.0697	1.00	0.0921	pCi/L	08/15/17 12:16	09/06/17 06:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:12*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.366		0.209	0.211	1.00	0.310	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*
Y Carrier	*86.7*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.473		0.220	0.223	5.00	0.310	pCi/L		09/12/17 10:25	1

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-080917
Date Collected: 08/09/17 11:50
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-8
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0211	U	0.0438	0.0438	1.00	0.0803	pCi/L	08/15/17 12:16	09/06/17 06:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:13*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00188	U	0.179	0.179	1.00	0.324	pCi/L	08/15/17 12:46	08/24/17 13:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*
Y Carrier	*87.9*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:21*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0192	U	0.185	0.185	5.00	0.324	pCi/L		09/12/17 10:25	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-080817
Date Collected: 08/08/17 10:25
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-MW2-080817
Date Collected: 08/08/17 11:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-MW3-080817
Date Collected: 08/08/17 14:27
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:11	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-MW4-080817
Date Collected: 08/08/17 15:55
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:12	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-DUP-080817
Date Collected: 08/08/17 16:14
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:12	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-FB-080817
Date Collected: 08/08/17 17:08
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:12	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-MW5-080917
Date Collected: 08/09/17 11:24
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:12	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Client Sample ID: AES-FB-080917
Date Collected: 08/09/17 11:50
Date Received: 08/10/17 08:29

Lab Sample ID: 400-141718-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			322286	08/15/17 12:16	LDE	TAL SL
Total/NA	Analysis	9315		1	325781	09/06/17 06:13	ALD	TAL SL
Total/NA	Prep	PrecSep_0			322289	08/15/17 12:46	LDE	TAL SL
Total/NA	Analysis	9320		1	323927	08/24/17 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	326912	09/12/17 10:25	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 322286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	PrecSep-21	
400-141718-2	AES-MW2-080817	Total/NA	Water	PrecSep-21	
400-141718-3	AES-MW3-080817	Total/NA	Water	PrecSep-21	
400-141718-4	AES-MW4-080817	Total/NA	Water	PrecSep-21	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	PrecSep-21	
400-141718-6	AES-FB-080817	Total/NA	Water	PrecSep-21	
400-141718-7	AES-MW5-080917	Total/NA	Water	PrecSep-21	
400-141718-8	AES-FB-080917	Total/NA	Water	PrecSep-21	
MB 160-322286/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-322286/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	PrecSep-21	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	PrecSep-21	

Prep Batch: 322289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-141718-1	AES-MW1-080817	Total/NA	Water	PrecSep_0	
400-141718-2	AES-MW2-080817	Total/NA	Water	PrecSep_0	
400-141718-3	AES-MW3-080817	Total/NA	Water	PrecSep_0	
400-141718-4	AES-MW4-080817	Total/NA	Water	PrecSep_0	
400-141718-5	AES-MW4-DUP-080817	Total/NA	Water	PrecSep_0	
400-141718-6	AES-FB-080817	Total/NA	Water	PrecSep_0	
400-141718-7	AES-MW5-080917	Total/NA	Water	PrecSep_0	
400-141718-8	AES-FB-080917	Total/NA	Water	PrecSep_0	
MB 160-322289/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-322289/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-141718-4 MS	AES-MW4-080817	Total/NA	Water	PrecSep_0	
400-141718-4 MSD	AES-MW4-080817	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-322286/1-A
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322286

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06065	U	0.0521	0.0524	1.00	0.0753	pCi/L	08/15/17 12:16	09/06/17 06:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/15/17 12:16*	*09/06/17 06:11*	*1*

Lab Sample ID: LCS 160-322286/2-A
Matrix: Water
Analysis Batch: 325781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322286

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.156		0.956	1.00	0.0864	pCi/L	95	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 325781

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA
Prep Batch: 322286

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0920		9.60	9.918		1.03	1.00	0.0769	pCi/L	102	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*92.3*		*40 - 110*

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 325781

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA
Prep Batch: 322286

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0920		9.61	10.51		1.08	1.00	0.0772	pCi/L	108	75 - 138	0.28	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-322289/1-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 322289

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.06060	U	0.174	0.174	1.00	0.303	pCi/L	08/15/17 12:46	08/24/17 13:20	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*
Y Carrier	*86.7*		*40 - 110*	*08/15/17 12:46*	*08/24/17 13:20*	*1*

Lab Sample ID: LCS 160-322289/2-A
Matrix: Water
Analysis Batch: 323927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 322289

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	13.49		1.43	1.00	0.256	pCi/L	104	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*90.1*		*40 - 110*

Lab Sample ID: 400-141718-4 MS
Matrix: Water
Analysis Batch: 323927

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA
Prep Batch: 322289

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.435		13.0	16.11		1.71	1.00	0.370	pCi/L	121	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*92.3*		*40 - 110*
Y Carrier	*83.0*		*40 - 110*

Lab Sample ID: 400-141718-4 MSD
Matrix: Water
Analysis Batch: 323927

Client Sample ID: AES-MW4-080817
Prep Type: Total/NA
Prep Batch: 322289

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.435		13.0	14.19		1.53	1.00	0.359	pCi/L	106	45 - 150	0.59	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.1*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

QC Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-141841-A-12 DU
Matrix: Water
Analysis Batch: 326912

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	0.379			0.5898		0.254	5.00	0.354	pCi/L			0.43	

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #: 400-141718
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:			
City: Guaynabo	TAT Requested (days): REGULAR TAT			
State, Zip: PR, 00969-5375	PO #:			
Phone: 787-209-6386(Tel)	WO #:			
Email: dna.environment1@gmail.com	Project #: 40008317			
Project Name: CCR App.III/IV GW Monitoring	SSOW#:			
Site: AES PUERTO RICO, LP				

Analysis Requested

400-141718 COC

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-080817	8-8-17	1025	G	Water			X	X	X		*pH = 6.87
AES-MW2-080817		1155		Water			X	X	X		*pH = 6.53
AES-MW3-080817		1315 1427		Water			X	X	X		*pH = 6.74
AES-MW4-080817		1555		Water			X	X	X		*pH = 6.91
AES-MW4-DUP-080817		1614		Water			X	X	X		
AES-MW4-MS-080817		1632		Water			X	X	X		
AES-MW4-MSD-080817		1653		Water			X	X	X		
AES-FB-080817		1708		Water			X	X	X		
AES-MW5-080917	8-9-17	1124		Water			X	X	X		*pH = 6.52
AES-FB-080917	8-9-17	1150		Water			X	X	X		*SAMPLE pH READING (FIELD pH)

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	08/09/17 14:25	DNA		8/10/17 0829	TAL PEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 4.0C, IR

9/12/2017

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-141718-2
SDG Number: AES Puerto Rico, LP

Login Number: 141718
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	30.0°C Rad cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-17 *
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-11	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-141718-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-17 *
West Virginia DEP	State Program	3	381	08-31-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142056-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/28/2018 4:06:21 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 17
Chronicle 18
QC Association 21
QC Sample Results 24
Chain of Custody 29
Receipt Checklists 30
Certification Summary 31

Job ID: 400-142056-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-142056-1

Comments
Revised Report - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The serial dilution performed for the following sample associated with batch 366042 was outside control limits: (400-142056-B-5-D SD)

Method(s) 6020: The post digestion spike % recovery for Boron, Beryllium, and Lithium associated with batch 366042 was outside of control limits.

Method(s) 6020: The matrix spike duplicate (MSD) recoveries for preparation batch 400-365683 and analytical batch 366042 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-081517 (400-142056-1), AES-MW3-081517 (400-142056-3), AES-MW4-081617 (400-142056-5), AES-MW4-DUP-081617 (400-142056-6) and AES-MW5-081617 (400-142056-7). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 365323 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

General Chemistry
Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 365314 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-081517 (400-142056-1), AES-MW3-081517 (400-142056-3), AES-MW4-081617 (400-142056-5), AES-MW4-081617 (400-142056-5[MS]), AES-MW4-081617 (400-142056-5[MSD]), AES-MW4-DUP-081617 (400-142056-6) and AES-MW5-081617 (400-142056-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 365448 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-081517 (400-142056-1), AES-MW3-081517 (400-142056-3), AES-MW4-081617 (400-142056-5), AES-MW4-081617 (400-142056-5[MS]), AES-MW4-081617 (400-142056-5[MSD]), AES-MW4-DUP-081617 (400-142056-6) and AES-MW5-081617 (400-142056-7). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-081517 — Lab Sample ID: 400-142056-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00055	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.056		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.26		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00055	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Selenium	0.0062		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	150		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1400		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	260		20	6.0	mg/L	10		SM 4500 Cl- E	Total/NA
Fluoride	0.53		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	410		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.07				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-081517 — Lab Sample ID: 400-142056-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00047	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.11		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.17		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	88		0.25	0.13	mg/L	5		6020	Total Recoverable
Lithium	0.0011	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	470		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	37		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.40		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.1		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.83				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-081517 — Lab Sample ID: 400-142056-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0034		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.29		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.85		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0019	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0077		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.16		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.098		0.0013	0.00024	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-081517 (Continued) — Lab Sample ID: 400-142056-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium - DL	320		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	7600		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3400		140	42	mg/L	70		SM 4500 Cl- E	Total/NA
Fluoride	2.1		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	1300		250	70	mg/L	50		SM 4500 SO4 E	Total/NA
Field pH	7.10				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-081517 — Lab Sample ID: 400-142056-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00051	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Chloride	0.64	J	2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: AES-MW4-081617 — Lab Sample ID: 400-142056-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0037		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.060		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.40	F1	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0048		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.7		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	620		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	1.1		0.050	0.011	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	43000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	11000	F1	600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.63		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16000	F1	3000	840	mg/L	600		SM 4500 SO4 E	Total/NA
Field pH	7.08				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-081617 — Lab Sample ID: 400-142056-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0033		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.38		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0061		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	4.1		0.50	0.21	mg/L	50		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW4-DUP-081617 (Continued) — Lab Sample ID: 400-142056-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium - DL	630		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	1.1		0.050	0.011	mg/L	50		6020	Total Recoverable
Barium - RA	0.060		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	43000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	10000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.61		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16000		3000	840	mg/L	600		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-MW5-081617 — Lab Sample ID: 400-142056-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.46		0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium	0.0047	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.013		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	890		5.0	2.5	mg/L	100		6020	Total Recoverable
Arsenic - RA	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium - RA	0.043		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.0035		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum - RA	0.0086	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	7900		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	3800		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.45		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2700		450	130	mg/L	90		SM 4500 SO4 E	Total/NA
Field pH	6.61				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-081617 — Lab Sample ID: 400-142056-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00040	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Barium - RA	0.012		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium - RA	3.1		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142056-1	AES-MW1-081517	Water	08/15/17 10:25	08/17/17 08:47
400-142056-2	AES-MW2-081517	Water	08/15/17 11:40	08/17/17 08:47
400-142056-3	AES-MW3-081517	Water	08/15/17 14:40	08/17/17 08:47
400-142056-4	AES-FB-081517	Water	08/15/17 14:55	08/17/17 08:47
400-142056-5	AES-MW4-081617	Water	08/16/17 10:41	08/17/17 08:47
400-142056-6	AES-MW4-DUP-081617	Water	08/16/17 11:10	08/17/17 08:47
400-142056-7	AES-MW5-081617	Water	08/16/17 14:15	08/17/17 08:47
400-142056-8	AES-FB-081617	Water	08/16/17 14:40	08/17/17 08:47

Client Sample ID: AES-MW1-081517

Date Collected: 08/15/17 10:25
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 18:24	5
Arsenic	**0.00055**	**J**	0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 18:24	5
Barium	**0.056**		0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 18:24	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:24	5
Boron	**0.26**		0.050	0.021	mg/L		08/25/17 13:05	08/28/17 18:24	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:24	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 18:24	5
Cobalt	**0.00055**	**J**	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 18:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 18:24	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 18:24	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 18:24	5
Selenium	**0.0062**		0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 18:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 18:24	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**150**		1.3	0.63	mg/L		08/25/17 13:05	08/29/17 20:21	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		5.0	3.4	mg/L			08/22/17 13:47	1
Chloride	**260**		20	6.0	mg/L			08/23/17 11:20	10
Fluoride	**0.53**		0.10	0.032	mg/L			08/25/17 14:18	1
Sulfate	**410**		100	28	mg/L			08/24/17 08:29	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.07**				SU			08/15/17 08:25	1

Client Sample ID: AES-MW2-081517

Date Collected: 08/15/17 11:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 18:29	5
Arsenic	**0.00047**	**J**	0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 18:29	5
Barium	**0.11**		0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 18:29	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:29	5
Boron	**0.17**		0.050	0.021	mg/L		08/25/17 13:05	08/28/17 18:29	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:29	5
Calcium	**88**		0.25	0.13	mg/L		08/25/17 13:05	08/28/17 18:29	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 18:29	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 18:29	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 18:29	5
Lithium	**0.0011**	**J**	0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 18:29	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 18:29	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 18:29	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 18:29	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**470**		5.0	3.4	mg/L			08/22/17 13:47	1
Chloride	**37**		2.0	0.60	mg/L			08/23/17 10:07	1
Fluoride	**0.40**		0.10	0.032	mg/L			08/25/17 14:32	1
Sulfate	**7.1**		5.0	1.4	mg/L			08/24/17 07:43	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.83**				SU			08/15/17 09:40	1

Client Sample ID: AES-MW3-081517

Date Collected: 08/15/17 14:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 18:33	5
Arsenic	**0.0034**		0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 18:33	5
Barium	**0.29**		0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 18:33	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:33	5
Boron	**0.85**		0.050	0.021	mg/L		08/25/17 13:05	08/28/17 18:33	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:33	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 18:33	5
Cobalt	**0.0019**	**J**	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 18:33	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 18:33	5
Lithium	**0.0077**		0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 18:33	5
Molybdenum	**0.16**		0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 18:33	5
Selenium	**0.098**		0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 18:33	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 18:33	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**320**		1.3	0.63	mg/L		08/25/17 13:05	08/29/17 20:25	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**7600**		25	17	mg/L			08/22/17 13:47	1
Chloride	**3400**		140	42	mg/L			08/23/17 10:54	70
Fluoride	**2.1**		0.10	0.032	mg/L			08/25/17 14:34	1
Sulfate	**1300**		250	70	mg/L			08/24/17 08:29	50

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.10**				SU			08/15/17 12:40	1

Client Sample ID: AES-FB-081517

Date Collected: 08/15/17 14:55
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 18:38	5
Arsenic	**0.00051**	**J**	0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 18:38	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 18:38	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:38	5
Boron	0.021	U	0.050	0.021	mg/L		08/25/17 13:05	08/28/17 18:38	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:38	5
Calcium	0.13	U	0.25	0.13	mg/L		08/25/17 13:05	08/28/17 18:38	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 18:38	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 18:38	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 18:38	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 18:38	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 18:38	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 18:38	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 18:38	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/22/17 13:47	1
Chloride	**0.64**	**J**	2.0	0.60	mg/L			08/23/17 10:07	1
Fluoride	0.032	U	0.10	0.032	mg/L			08/25/17 14:36	1
Sulfate	1.4	U	5.0	1.4	mg/L			08/24/17 07:45	1

Client Sample ID: AES-MW4-081617

Date Collected: 08/16/17 10:41
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 18:42	5
Arsenic	**0.0037**		0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 18:42	5
Barium	**0.060**		0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 18:42	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:42	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 18:42	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 18:42	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 18:42	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 18:42	5
Molybdenum	**0.40**	**F1**	0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 18:42	5
Selenium	**0.0048**		0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 18:42	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 18:42	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.7**		0.50	0.21	mg/L		08/25/17 13:05	08/29/17 20:30	50
Calcium	**620**		2.5	1.3	mg/L		08/25/17 13:05	08/29/17 20:30	50
Lithium	**1.1**		0.050	0.011	mg/L		08/25/17 13:05	08/29/17 20:30	50

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U F1	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**43000**		130	85	mg/L			08/22/17 13:47	1
Chloride	**11000**	**F1**	600	180	mg/L			08/23/17 11:20	300
Fluoride	**0.63**		0.10	0.032	mg/L			08/25/17 13:59	1
Sulfate	**16000**	**F1**	3000	840	mg/L			08/24/17 09:09	600

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.08**				SU			08/16/17 08:41	1

Client Sample ID: AES-MW4-DUP-081617

Date Collected: 08/16/17 11:10
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0033**		0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 19:23	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 19:23	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 19:23	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 19:23	5
Cobalt	**0.0016**	**J**	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 19:23	5
Molybdenum	**0.38**		0.015	0.00085	mg/L		08/25/17 13:05	08/28/17 19:23	5
Selenium	**0.0061**		0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 19:23	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**4.1**		0.50	0.21	mg/L		08/25/17 13:05	08/29/17 20:44	50
Calcium	**630**		2.5	1.3	mg/L		08/25/17 13:05	08/29/17 20:44	50
Lithium	**1.1**		0.050	0.011	mg/L		08/25/17 13:05	08/29/17 20:44	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/29/17 20:34	5
Barium	**0.060**		0.0025	0.00049	mg/L		08/25/17 13:05	08/29/17 20:34	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/29/17 20:34	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/29/17 20:34	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**43000**		130	85	mg/L			08/22/17 13:47	1
Chloride	**10000**		600	180	mg/L			08/23/17 11:20	300
Fluoride	**0.61**		0.10	0.032	mg/L			08/25/17 14:38	1
Sulfate	**16000**		3000	840	mg/L			08/24/17 09:11	600

Client Sample ID: AES-MW5-081617

Date Collected: 08/16/17 14:15
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 19:27	5
Boron	**0.46**		0.050	0.021	mg/L		08/25/17 13:05	08/28/17 19:27	5
Lithium	**0.0047**	**J**	0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 19:27	5
Selenium	**0.013**		0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 19:27	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**890**		5.0	2.5	mg/L		08/25/17 13:05	08/29/17 20:57	100

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/29/17 20:48	5
Arsenic	**0.0024**		0.0013	0.00046	mg/L		08/25/17 13:05	08/29/17 20:48	5
Barium	**0.043**		0.0025	0.00049	mg/L		08/25/17 13:05	08/29/17 20:48	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/29/17 20:48	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/29/17 20:48	5
Cobalt	**0.0035**		0.0025	0.00040	mg/L		08/25/17 13:05	08/29/17 20:48	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/29/17 20:48	5
Molybdenum	**0.0086**	**J**	0.015	0.00085	mg/L		08/25/17 13:05	08/29/17 20:48	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/29/17 20:48	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**7900**		50	34	mg/L			08/22/17 13:47	1
Chloride	**3800**		180	54	mg/L			08/23/17 11:21	90
Fluoride	**0.45**		0.10	0.032	mg/L			08/25/17 14:40	1
Sulfate	**2700**		450	130	mg/L			08/24/17 09:09	90

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.61**				SU			08/16/17 12:15	1

Client Sample ID: AES-FB-081617

Date Collected: 08/16/17 14:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/28/17 19:32	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/25/17 13:05	08/28/17 19:32	5
Selenium	**0.00040**	**J**	0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 19:32	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/29/17 20:11	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/25/17 13:05	08/29/17 20:11	5
Barium	**0.012**		0.0025	0.00049	mg/L		08/25/17 13:05	08/29/17 20:11	5
Boron	0.021	U	0.050	0.021	mg/L		08/25/17 13:05	08/29/17 20:11	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/25/17 13:05	08/29/17 20:11	5
Calcium	**3.1**		0.25	0.13	mg/L		08/25/17 13:05	08/29/17 20:11	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/29/17 20:11	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/25/17 13:05	08/29/17 20:11	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/29/17 20:11	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/25/17 13:05	08/29/17 20:11	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/29/17 20:11	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/22/17 13:47	1
Chloride	0.60	U	2.0	0.60	mg/L			08/23/17 10:08	1
Fluoride	0.032	U	0.10	0.032	mg/L			08/25/17 14:43	1
Sulfate	1.4	U	5.0	1.4	mg/L			08/24/17 08:01	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Client Sample ID: AES-MW1-081517

Lab Sample ID: 400-142056-1
Matrix: Water
Date Collected: 08/15/17 10:25
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 18:24	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366202	08/29/17 20:21	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:33	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		10	365314	08/23/17 11:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:18	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	365448	08/24/17 08:29	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/15/17 08:25	BWS	TAL PEN

Client Sample ID: AES-MW2-081517

Lab Sample ID: 400-142056-2
Matrix: Water
Date Collected: 08/15/17 11:40
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 18:29	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:34	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	365314	08/23/17 10:07	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:32	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	365448	08/24/17 07:43	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/15/17 09:40	BWS	TAL PEN

Client Sample ID: AES-MW3-081517

Lab Sample ID: 400-142056-3
Matrix: Water
Date Collected: 08/15/17 14:40
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 18:33	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366202	08/29/17 20:25	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:36	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		70	365314	08/23/17 10:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:34	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		50	365448	08/24/17 08:29	RRC	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	365120	08/15/17 12:40	BWS	TAL PEN

Client Sample ID: AES-FB-081517
Lab Sample ID: 400-142056-4
Date Collected: 08/15/17 14:55
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 18:38	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:38	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	365314	08/23/17 10:07	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:36	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	365448	08/24/17 07:45	RRC	TAL PEN

Client Sample ID: AES-MW4-081617
Lab Sample ID: 400-142056-5
Date Collected: 08/16/17 10:41
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 18:42	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	366202	08/29/17 20:30	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:40	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	365314	08/23/17 11:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 13:59	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	365448	08/24/17 09:09	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/16/17 08:41	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-081617
Lab Sample ID: 400-142056-6
Date Collected: 08/16/17 11:10
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 19:23	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 20:34	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	366202	08/29/17 20:44	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:56	JAP	TAL PEN

Client Sample ID: AES-MW4-DUP-081617

Lab Sample ID: 400-142056-6

Date Collected: 08/16/17 11:10
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	365314	08/23/17 11:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:38	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	365448	08/24/17 09:11	RRC	TAL PEN

Client Sample ID: AES-MW5-081617

Lab Sample ID: 400-142056-7

Date Collected: 08/16/17 14:15
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 19:27	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 20:48	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	366202	08/29/17 20:57	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 13:58	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	365314	08/23/17 11:21	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:40	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		90	365448	08/24/17 09:09	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	365120	08/16/17 12:15	BWS	TAL PEN

Client Sample ID: AES-FB-081617

Lab Sample ID: 400-142056-8

Date Collected: 08/16/17 14:40
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 19:32	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365683	08/25/17 13:05	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 20:11	DRE	TAL PEN
Total/NA	Prep	7470A			365323	08/23/17 12:33	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365545	08/24/17 14:00	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365151	08/22/17 13:47	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	365314	08/23/17 10:08	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	365727	08/25/17 14:43	CAC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	365448	08/24/17 08:01	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 365323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	7470A	
400-142056-2	AES-MW2-081517	Total/NA	Water	7470A	
400-142056-3	AES-MW3-081517	Total/NA	Water	7470A	
400-142056-4	AES-FB-081517	Total/NA	Water	7470A	
400-142056-5	AES-MW4-081617	Total/NA	Water	7470A	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	7470A	
400-142056-7	AES-MW5-081617	Total/NA	Water	7470A	
400-142056-8	AES-FB-081617	Total/NA	Water	7470A	
MB 400-365323/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-365323/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	7470A	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	7470A	

Analysis Batch: 365545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	7470A	365323
400-142056-2	AES-MW2-081517	Total/NA	Water	7470A	365323
400-142056-3	AES-MW3-081517	Total/NA	Water	7470A	365323
400-142056-4	AES-FB-081517	Total/NA	Water	7470A	365323
400-142056-5	AES-MW4-081617	Total/NA	Water	7470A	365323
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	7470A	365323
400-142056-7	AES-MW5-081617	Total/NA	Water	7470A	365323
400-142056-8	AES-FB-081617	Total/NA	Water	7470A	365323
MB 400-365323/14-A	Method Blank	Total/NA	Water	7470A	365323
LCS 400-365323/15-A	Lab Control Sample	Total/NA	Water	7470A	365323
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	7470A	365323
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	7470A	365323

Prep Batch: 365683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1 - DL	AES-MW1-081517	Total Recoverable	Water	3005A	
400-142056-1	AES-MW1-081517	Total Recoverable	Water	3005A	
400-142056-2	AES-MW2-081517	Total Recoverable	Water	3005A	
400-142056-3 - DL	AES-MW3-081517	Total Recoverable	Water	3005A	
400-142056-3	AES-MW3-081517	Total Recoverable	Water	3005A	
400-142056-4	AES-FB-081517	Total Recoverable	Water	3005A	
400-142056-5 - DL	AES-MW4-081617	Total Recoverable	Water	3005A	
400-142056-5	AES-MW4-081617	Total Recoverable	Water	3005A	
400-142056-6 - DL	AES-MW4-DUP-081617	Total Recoverable	Water	3005A	
400-142056-6 - RA	AES-MW4-DUP-081617	Total Recoverable	Water	3005A	
400-142056-6	AES-MW4-DUP-081617	Total Recoverable	Water	3005A	
400-142056-7 - DL	AES-MW5-081617	Total Recoverable	Water	3005A	
400-142056-7 - RA	AES-MW5-081617	Total Recoverable	Water	3005A	
400-142056-7	AES-MW5-081617	Total Recoverable	Water	3005A	
400-142056-8	AES-FB-081617	Total Recoverable	Water	3005A	
400-142056-8 - RA	AES-FB-081617	Total Recoverable	Water	3005A	
MB 400-365683/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-365683/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-142056-5 MS	AES-MW4-081617	Total Recoverable	Water	3005A	
400-142056-5 MSD	AES-MW4-081617	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 366042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total Recoverable	Water	6020	365683
400-142056-2	AES-MW2-081517	Total Recoverable	Water	6020	365683
400-142056-3	AES-MW3-081517	Total Recoverable	Water	6020	365683
400-142056-4	AES-FB-081517	Total Recoverable	Water	6020	365683
400-142056-5	AES-MW4-081617	Total Recoverable	Water	6020	365683
400-142056-6	AES-MW4-DUP-081617	Total Recoverable	Water	6020	365683
400-142056-7	AES-MW5-081617	Total Recoverable	Water	6020	365683
400-142056-8	AES-FB-081617	Total Recoverable	Water	6020	365683
MB 400-365683/1-A ^5	Method Blank	Total Recoverable	Water	6020	365683
LCS 400-365683/2-A	Lab Control Sample	Total Recoverable	Water	6020	365683
400-142056-5 MS	AES-MW4-081617	Total Recoverable	Water	6020	365683
400-142056-5 MSD	AES-MW4-081617	Total Recoverable	Water	6020	365683

Analysis Batch: 366202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1 - DL	AES-MW1-081517	Total Recoverable	Water	6020	365683
400-142056-3 - DL	AES-MW3-081517	Total Recoverable	Water	6020	365683
400-142056-5 - DL	AES-MW4-081617	Total Recoverable	Water	6020	365683
400-142056-6 - RA	AES-MW4-DUP-081617	Total Recoverable	Water	6020	365683
400-142056-6 - DL	AES-MW4-DUP-081617	Total Recoverable	Water	6020	365683
400-142056-7 - RA	AES-MW5-081617	Total Recoverable	Water	6020	365683
400-142056-7 - DL	AES-MW5-081617	Total Recoverable	Water	6020	365683
400-142056-8 - RA	AES-FB-081617	Total Recoverable	Water	6020	365683

General Chemistry

Analysis Batch: 365151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	SM 2540C	
400-142056-2	AES-MW2-081517	Total/NA	Water	SM 2540C	
400-142056-3	AES-MW3-081517	Total/NA	Water	SM 2540C	
400-142056-4	AES-FB-081517	Total/NA	Water	SM 2540C	
400-142056-5	AES-MW4-081617	Total/NA	Water	SM 2540C	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	SM 2540C	
400-142056-7	AES-MW5-081617	Total/NA	Water	SM 2540C	
400-142056-8	AES-FB-081617	Total/NA	Water	SM 2540C	
MB 400-365151/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-365151/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-142056-1 DU	AES-MW1-081517	Total/NA	Water	SM 2540C	

Analysis Batch: 365314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	SM 4500 Cl- E	
400-142056-2	AES-MW2-081517	Total/NA	Water	SM 4500 Cl- E	
400-142056-3	AES-MW3-081517	Total/NA	Water	SM 4500 Cl- E	
400-142056-4	AES-FB-081517	Total/NA	Water	SM 4500 Cl- E	
400-142056-5	AES-MW4-081617	Total/NA	Water	SM 4500 Cl- E	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	SM 4500 Cl- E	
400-142056-7	AES-MW5-081617	Total/NA	Water	SM 4500 Cl- E	
400-142056-8	AES-FB-081617	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 365314 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-365314/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-365314/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-365314/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	SM 4500 Cl- E	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 365448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	SM 4500 SO4 E	
400-142056-2	AES-MW2-081517	Total/NA	Water	SM 4500 SO4 E	
400-142056-3	AES-MW3-081517	Total/NA	Water	SM 4500 SO4 E	
400-142056-4	AES-FB-081517	Total/NA	Water	SM 4500 SO4 E	
400-142056-5	AES-MW4-081617	Total/NA	Water	SM 4500 SO4 E	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	SM 4500 SO4 E	
400-142056-7	AES-MW5-081617	Total/NA	Water	SM 4500 SO4 E	
400-142056-8	AES-FB-081617	Total/NA	Water	SM 4500 SO4 E	
MB 400-365448/16	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-365448/17	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-365448/13	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	SM 4500 SO4 E	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 365727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	SM 4500 F C	
400-142056-2	AES-MW2-081517	Total/NA	Water	SM 4500 F C	
400-142056-3	AES-MW3-081517	Total/NA	Water	SM 4500 F C	
400-142056-4	AES-FB-081517	Total/NA	Water	SM 4500 F C	
400-142056-5	AES-MW4-081617	Total/NA	Water	SM 4500 F C	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	SM 4500 F C	
400-142056-7	AES-MW5-081617	Total/NA	Water	SM 4500 F C	
400-142056-8	AES-FB-081617	Total/NA	Water	SM 4500 F C	
MB 400-365727/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-365727/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	SM 4500 F C	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	SM 4500 F C	
400-141890-A-15 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 365120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	Field Sampling	
400-142056-2	AES-MW2-081517	Total/NA	Water	Field Sampling	
400-142056-3	AES-MW3-081517	Total/NA	Water	Field Sampling	
400-142056-5	AES-MW4-081617	Total/NA	Water	Field Sampling	
400-142056-7	AES-MW5-081617	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-365683/1-A ^5
Matrix: Water
Analysis Batch: 366042

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 365683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/25/17 13:05	08/28/17 17:57	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/25/17 13:05	08/28/17 17:57	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/25/17 13:05	08/28/17 17:57	5
Beryllium	0.00034	U	0.0020	0.00034	mg/L		08/25/17 13:05	08/28/17 17:57	5
Boron	0.021	U	0.050	0.021	mg/L		08/25/17 13:05	08/28/17 17:57	5
Cadmium	0.00034	U	0.0010	0.00034	mg/L		08/25/17 13:05	08/28/17 17:57	5
Calcium	0.13	U	0.25	0.13	mg/L		08/25/17 13:05	08/28/17 17:57	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/25/17 13:05	08/28/17 17:57	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/25/17 13:05	08/28/17 17:57	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/25/17 13:05	08/28/17 17:57	5
Lithium	0.0032	U	0.0025	0.0032	mg/L		08/25/17 13:05	08/28/17 17:57	5
Molybdenum	0.00085	U	0.010	0.00085	mg/L		08/25/17 13:05	08/28/17 17:57	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/25/17 13:05	08/28/17 17:57	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/25/17 13:05	08/28/17 17:57	5

Lab Sample ID: LCS 400-365683/2-A
Matrix: Water
Analysis Batch: 366042

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 365683

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0540		mg/L		108	80 - 120
Arsenic	0.0500	0.0533		mg/L		107	80 - 120
Barium	0.0500	0.0522		mg/L		104	80 - 120
Beryllium	0.0500	0.0493		mg/L		99	80 - 120
Boron	0.100	0.108		mg/L		108	80 - 120
Cadmium	0.0500	0.0524		mg/L		105	80 - 120
Calcium	5.00	4.86		mg/L		97	80 - 120
Chromium	0.0500	0.0502		mg/L		100	80 - 120
Cobalt	0.0500	0.0533		mg/L		107	80 - 120
Lead	0.0500	0.0518		mg/L		104	80 - 120
Lithium	0.0500	0.0556		mg/L		111	80 - 120
Molybdenum	0.100	0.103		mg/L		103	80 - 120
Selenium	0.0500	0.0523		mg/L		105	80 - 120
Thallium	0.0100	0.0105		mg/L		105	80 - 120

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 366042

Client Sample ID: AES-MW4-081617
Prep Type: Total Recoverable
Prep Batch: 365683

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0597		mg/L		119	75 - 125
Arsenic	0.0037		0.0500	0.0572		mg/L		107	75 - 125
Barium	0.060		0.0500	0.112		mg/L		105	75 - 125
Beryllium	0.00034	U	0.0500	0.0473		mg/L		95	75 - 125
Boron	4.1	E	0.100	4.20	E 4	mg/L		63	75 - 125
Cadmium	0.00034	U	0.0500	0.0416		mg/L		83	75 - 125
Calcium	620	E	5.00	660	E 4	mg/L		807	75 - 125
Chromium	0.0011	U	0.0500	0.0507		mg/L		101	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 366042

Client Sample ID: AES-MW4-081617
Prep Type: Total Recoverable
Prep Batch: 365683

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0017	J	0.0500	0.0490		mg/L		95	75 - 125
Lead	0.00035	U	0.0500	0.0436		mg/L		87	75 - 125
Lithium	1.0	E	0.0500	1.13	E 4	mg/L		191	75 - 125
Molybdenum	0.40	F1	0.100	0.483		mg/L		83	75 - 125
Selenium	0.0048		0.0500	0.0660		mg/L		123	75 - 125
Thallium	0.000085	U	0.0100	0.00846		mg/L		85	75 - 125

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 366042

Client Sample ID: AES-MW4-081617
Prep Type: Total Recoverable
Prep Batch: 365683

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0584		mg/L		117	75 - 125	2	20
Arsenic	0.0037		0.0500	0.0546		mg/L		102	75 - 125	5	20
Barium	0.060		0.0500	0.112		mg/L		104	75 - 125	0	20
Beryllium	0.00034	U	0.0500	0.0487		mg/L		97	75 - 125	3	20
Boron	4.1	E	0.100	4.35	E 4	mg/L		215	75 - 125	4	20
Cadmium	0.00034	U	0.0500	0.0402		mg/L		80	75 - 125	3	20
Calcium	620	E	5.00	658	E 4	mg/L		771	75 - 125	0	20
Chromium	0.0011	U	0.0500	0.0500		mg/L		100	75 - 125	1	20
Cobalt	0.0017	J	0.0500	0.0476		mg/L		92	75 - 125	3	20
Lead	0.00035	U	0.0500	0.0406		mg/L		81	75 - 125	7	20
Lithium	1.0	E	0.0500	1.15	E 4	mg/L		227	75 - 125	2	20
Molybdenum	0.40	F1	0.100	0.468	F1	mg/L		68	75 - 125	3	20
Selenium	0.0048		0.0500	0.0639		mg/L		118	75 - 125	3	20
Thallium	0.000085	U	0.0100	0.00792		mg/L		79	75 - 125	7	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-365323/14-A
Matrix: Water
Analysis Batch: 365545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 365323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/23/17 12:33	08/24/17 13:29	1

Lab Sample ID: LCS 400-365323/15-A
Matrix: Water
Analysis Batch: 365545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 365323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000972		mg/L		97	80 - 120

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 365545

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 365323

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U F1	0.00201	0.00122	F1	mg/L		61	80 - 120

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 365545

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 365323

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U F1	0.00201	0.00115	F1	mg/L		57	80 - 120	6	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-365151/1
Matrix: Water
Analysis Batch: 365151

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/22/17 13:47	1

Lab Sample ID: LCS 400-365151/2
Matrix: Water
Analysis Batch: 365151

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	292		mg/L		100	78 - 122

Lab Sample ID: 400-142056-1 DU
Matrix: Water
Analysis Batch: 365151

Client Sample ID: AES-MW1-081517
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1400		1430		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-365314/6
Matrix: Water
Analysis Batch: 365314

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/23/17 09:49	1

Lab Sample ID: LCS 400-365314/7
Matrix: Water
Analysis Batch: 365314

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.2		mg/L		101	90 - 110

Lab Sample ID: MRL 400-365314/3
Matrix: Water
Analysis Batch: 365314

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.16		mg/L		108	50 - 150

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 365314

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	11000	F1	3000	10200	F1	mg/L		-12	73 - 120

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 365314

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	11000	F1	3000	10100	F1	mg/L		-16	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-365727/3
Matrix: Water
Analysis Batch: 365727

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			08/25/17 13:45	1

Lab Sample ID: LCS 400-365727/4
Matrix: Water
Analysis Batch: 365727

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.34		mg/L		109	90 - 110

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 365727

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.63		1.00	1.71		mg/L		108	75 - 125

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 365727

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.63		1.00	1.74		mg/L		111	75 - 125	2	4

Lab Sample ID: 400-141890-A-15 DU
Matrix: Water
Analysis Batch: 365727

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.51		0.510		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-365448/16
Matrix: Water
Analysis Batch: 365448

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			08/24/17 07:25	1

Lab Sample ID: LCS 400-365448/17
Matrix: Water
Analysis Batch: 365448

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.2		mg/L		102	90 - 110

Lab Sample ID: MRL 400-365448/13
Matrix: Water
Analysis Batch: 365448

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.59	J	mg/L		92	50 - 150

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 365448

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	16000	F1	6000	15500	F1	mg/L		-14	77 - 128

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 365448

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	16000	F1	6000	15700	F1	mg/L		-10	77 - 128	1	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

400-142056 COC

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	ier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:	Analysis Requested
City: Guaynabo	TAT Requested (days): REGULAR TAT	
State, Zip: PR, 00969-5375		
Phone: 787-209-6386(Tel)	PO #:	
Email: dna.environment1@gmail.com	WO #:	
Project Name: CCR App.III/IV GW Monitoring	Project #: 40008317	
Site: AES PUERTO RICO, LP	SSOW#:	

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-081517	8-15-17	1025	G	Water	NO		X	X	X		*pH = 7.07
AES-MW2-081517	8-15-17	1140		Water	NO		X	X	X		pH = 6.83
AES-MW3-081517	8-15-17	1440		Water			X	X	X		pH = 7.10
AES-FB-081517	8-15-17	1455		Water			X	X	X		
AES-MW4-081617	8-16-17	1041		Water			X	X	X		pH = 7.08
AES-MW4-Dup-081617	8-16-17	1110		Water			X	X	X		
AES-MW4-MS-081617	8-16-17	1135		Water		X	X	X	X		
AES-MW4-MSD-081617	8-16-17	1200		Water		X	X	X	X		
AES-MW5-081617	8-16-17	1415		Water			X	X	X		pH = 6.61
AES-FB-081617	8-16-17	1440		Water			X	X	X		
											*Sample pH (Field)

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 08/16/17 - 15:15	Company DNA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 8/17/17 847	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.5°C, 25.2°C - IR2

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142056-1
SDG Number: AES Puerto Rico, LP

Login Number: 142056
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	1.5°C IR-2 Wet chem & Metals cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142056-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
9/21/2017 2:21:47 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Method Summary 3
Sample Summary 4
Client Sample Results 5
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 19
Receipt Checklists 20
Certification Summary 21

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142056-1	AES-MW1-081517	Water	08/15/17 10:25	08/17/17 08:47
400-142056-2	AES-MW2-081517	Water	08/15/17 11:40	08/17/17 08:47
400-142056-3	AES-MW3-081517	Water	08/15/17 14:40	08/17/17 08:47
400-142056-4	AES-FB-081517	Water	08/15/17 14:55	08/17/17 08:47
400-142056-5	AES-MW4-081617	Water	08/16/17 10:41	08/17/17 08:47
400-142056-6	AES-MW4-DUP-081617	Water	08/16/17 11:10	08/17/17 08:47
400-142056-7	AES-MW5-081617	Water	08/16/17 14:15	08/17/17 08:47
400-142056-8	AES-FB-081617	Water	08/16/17 14:40	08/17/17 08:47

Client Sample ID: AES-MW1-081517

Date Collected: 08/15/17 10:25
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.205**		0.0802	0.0823	1.00	0.0695	pCi/L	08/23/17 09:21	09/14/17 05:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*08/23/17 09:21*	*09/14/17 05:59*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.144	U	0.227	0.227	1.00	0.382	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*80.4*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.349	U	0.240	0.242	5.00	0.382	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-MW2-081517

Date Collected: 08/15/17 11:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0688	U	0.0538	0.0542	1.00	0.0738	pCi/L	08/23/17 09:21	09/14/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:00*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.545**		0.273	0.277	1.00	0.399	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*76.3*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.614**		0.278	0.283	5.00	0.399	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-MW3-081517

Date Collected: 08/15/17 14:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.142**		0.0623	0.0636	1.00	0.0527	pCi/L	08/23/17 09:21	09/14/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:00*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.276	U	0.230	0.231	1.00	0.364	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*74.8*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.417**		0.238	0.240	5.00	0.364	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-FB-081517

Date Collected: 08/15/17 14:55
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0417	U	0.0459	0.0461	1.00	0.0725	pCi/L	08/23/17 09:21	09/14/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:00*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.179	U	0.201	0.202	1.00	0.330	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*80.0*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.221	U	0.206	0.207	5.00	0.330	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-MW4-081617

Date Collected: 08/16/17 10:41
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.112**		0.0608	0.0617	1.00	0.0668	pCi/L	08/23/17 09:21	09/14/17 06:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:00*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.255	U	0.253	0.254	1.00	0.410	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*77.4*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.367	U	0.260	0.261	5.00	0.410	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-MW4-DUP-081617

Date Collected: 08/16/17 11:10
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0938	U	0.0677	0.0682	1.00	0.0965	pCi/L	08/23/17 09:21	09/14/17 06:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:01*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.507**		0.245	0.249	1.00	0.354	pCi/L	08/23/17 09:57	08/30/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.6*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*
Y Carrier	*81.9*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.600**		0.254	0.258	5.00	0.354	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-MW5-081617

Date Collected: 08/16/17 14:15
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.156		0.0705	0.0719	1.00	0.0736	pCi/L	08/23/17 09:21	09/14/17 06:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:01*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.420		0.251	0.254	1.00	0.379	pCi/L	08/23/17 09:57	08/30/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*
Y Carrier	*76.6*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.576		0.261	0.264	5.00	0.379	pCi/L		09/20/17 14:16	1

Client Sample ID: AES-FB-081617

Date Collected: 08/16/17 14:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0360	U	0.0444	0.0445	1.00	0.0727	pCi/L	08/23/17 09:21	09/14/17 06:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*08/23/17 09:21*	*09/14/17 06:01*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.121	U	0.208	0.208	1.00	0.352	pCi/L	08/23/17 09:57	08/30/17 13:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*
Y Carrier	*81.1*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:49*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.157	U	0.213	0.213	5.00	0.352	pCi/L		09/20/17 14:16	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-081517
Lab Sample ID: 400-142056-1
Date Collected: 08/15/17 10:25
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 05:59	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-MW2-081517
Lab Sample ID: 400-142056-2
Date Collected: 08/15/17 11:40
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-MW3-081517
Lab Sample ID: 400-142056-3
Date Collected: 08/15/17 14:40
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-FB-081517
Lab Sample ID: 400-142056-4
Date Collected: 08/15/17 14:55
Matrix: Water
Date Received: 08/17/17 08:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-081617
Date Collected: 08/16/17 10:41
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:00	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:48	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-081617
Date Collected: 08/16/17 11:10
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-MW5-081617
Date Collected: 08/16/17 14:15
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Client Sample ID: AES-FB-081617
Date Collected: 08/16/17 14:40
Date Received: 08/17/17 08:47

Lab Sample ID: 400-142056-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			323601	08/23/17 09:21	LDE	TAL SL
Total/NA	Analysis	9315		1	327140	09/14/17 06:01	RTM	TAL SL
Total/NA	Prep	PrecSep_0			323610	08/23/17 09:57	LDE	TAL SL
Total/NA	Analysis	9320		1	325013	08/30/17 13:49	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328124	09/20/17 14:16	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

QC Association Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Rad

Prep Batch: 323601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	PrecSep-21	
400-142056-2	AES-MW2-081517	Total/NA	Water	PrecSep-21	
400-142056-3	AES-MW3-081517	Total/NA	Water	PrecSep-21	
400-142056-4	AES-FB-081517	Total/NA	Water	PrecSep-21	
400-142056-5	AES-MW4-081617	Total/NA	Water	PrecSep-21	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	PrecSep-21	
400-142056-7	AES-MW5-081617	Total/NA	Water	PrecSep-21	
400-142056-8	AES-FB-081617	Total/NA	Water	PrecSep-21	
MB 160-323601/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-323601/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	PrecSep-21	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	PrecSep-21	

Prep Batch: 323610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142056-1	AES-MW1-081517	Total/NA	Water	PrecSep_0	
400-142056-2	AES-MW2-081517	Total/NA	Water	PrecSep_0	
400-142056-3	AES-MW3-081517	Total/NA	Water	PrecSep_0	
400-142056-4	AES-FB-081517	Total/NA	Water	PrecSep_0	
400-142056-5	AES-MW4-081617	Total/NA	Water	PrecSep_0	
400-142056-6	AES-MW4-DUP-081617	Total/NA	Water	PrecSep_0	
400-142056-7	AES-MW5-081617	Total/NA	Water	PrecSep_0	
400-142056-8	AES-FB-081617	Total/NA	Water	PrecSep_0	
MB 160-323610/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-323610/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-142056-5 MS	AES-MW4-081617	Total/NA	Water	PrecSep_0	
400-142056-5 MSD	AES-MW4-081617	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-323601/1-A
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323601

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1422		0.0749	0.0760	1.00	0.0838	pCi/L	08/23/17 09:21	09/14/17 05:59	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*40 - 110*	*08/23/17 09:21*	*09/14/17 05:59*	*1*

Lab Sample ID: LCS 160-323601/2-A
Matrix: Water
Analysis Batch: 327140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323601

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.958		1.03	1.00	0.0859	pCi/L	104	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 327140

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 323601

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.112		9.60	9.281		0.967	1.00	0.0817	pCi/L	95	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.7*		*40 - 110*

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 327140

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 323601

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.112		9.60	8.705		0.915	1.00	0.0748	pCi/L	90	75 - 138	0.31	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-323610/1-A
Matrix: Water
Analysis Batch: 325013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 323610

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4907		0.275	0.278	1.00	0.409	pCi/L	08/23/17 09:57	08/30/17 13:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*
Y Carrier	*84.9*		*40 - 110*	*08/23/17 09:57*	*08/30/17 13:48*	*1*

Lab Sample ID: LCS 160-323610/2-A
Matrix: Water
Analysis Batch: 325013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 323610

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			13.0	14.84		1.59	1.00	0.307	pCi/L	114	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*79.3*		*40 - 110*

Lab Sample ID: 400-142056-5 MS
Matrix: Water
Analysis Batch: 325013

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 323610

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.255	U	13.0	14.06		1.52	1.00	0.328	pCi/L	106	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.7*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Lab Sample ID: 400-142056-5 MSD
Matrix: Water
Analysis Batch: 325013

Client Sample ID: AES-MW4-081617
Prep Type: Total/NA
Prep Batch: 323610

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.255	U	13.0	14.92		1.60	1.00	0.334	pCi/L	113	45 - 150	0.27	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*
Y Carrier	*80.7*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

400-142056 COC

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	ier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Guaynabo	TAT Requested (days): REGULAR TAT		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
State, Zip: PR, 00969-5375			
Phone: 787-209-6386(Tel)	PO #:		
Email: dna.environment1@gmail.com	WO #:		
Project Name: CCR App.III/IV GW Monitoring	Project #: 40008317		
Site: AES PUERTO RICO, LP	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-081517	8-15-17	1025	G	Water	NO		X	X	X		(*) pH = 7.07
AES-MW2-081517	8-15-17	1140		Water	NO		X	X	X		pH = 6.83
AES-MW3-081517	8-15-17	1440		Water			X	X	X		pH = 7.10
AES-FB-081517	8-15-17	1455		Water			X	X	X		
AES-MW4-081617	8-16-17	1041		Water			X	X	X		pH = 7.08
AES-MW4-Dup-081617	8-16-17	1110		Water			X	X	X		
AES-MW4-MS-081617	8-16-17	1135		Water		X	X	X	X		
AES-MW4-MSD-081617	8-16-17	1200		Water		X	X	X	X		
AES-MW5-081617	8-16-17	1415		Water			X	X	X		pH = 6.61
AES-FB-081617	8-16-17	1440		Water			X	X	X		
											(*) sample pH (Field)

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	08/16/17 - 15:15	DNA			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 8/17/17 847	Company TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.5°C, 25.2°C - IR2

9/21/2017

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142056-2
SDG Number: AES Puerto Rico, LP

Login Number: 142056
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	25.2°C IR-2 Rad cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142056-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142335-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:22:06 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 17
Chronicle 18
QC Association 22
QC Sample Results 26
Chain of Custody 33
Receipt Checklists 34
Certification Summary 35

Job ID: 400-142335-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-142335-1

Comments
Revised Report (Rev. 2) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 1)- The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The serial dilution performed for the following sample associated with batch 366042 was outside control limits: (400-142335-B-6-D SD).

Method(s) 6020: The post digestion spike % recovery for Boron and Lithium associated with batch 366042 was outside of control limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082217 (400-142335-1), AES-MW3-082217 (400-142335-3), AES-MW5-082217 (400-142335-4), AES-MW4-082317 (400-142335-6) and AES-MW4-DUP-082317 (400-142335-7). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 365647 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

General Chemistry
Method(s) SM 4500 Cl- E: The following sample was diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082217 (400-142335-1). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 366232 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW3-082217 (400-142335-3), AES-MW5-082217 (400-142335-4), AES-MW4-082317 (400-142335-6), AES-MW4-082317 (400-142335-6[MS]), AES-MW4-082317 (400-142335-6[MSD]) and AES-MW4-DUP-082317 (400-142335-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 366101 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082217 (400-142335-1), AES-MW3-082217 (400-142335-3), AES-MW5-082217 (400-142335-4), AES-MW4-082317 (400-142335-6), AES-MW4-082317 (400-142335-6[MS]), AES-MW4-082317 (400-142335-6[MSD]) and AES-MW4-DUP-082317 (400-142335-7). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082217 — Lab Sample ID: 400-142335-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.25		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium - DL	150		1.3	0.63	mg/L	25		6020	Total Recoverable
Barium - RA	0.058		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.00068	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum - RA	0.0023	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium - RA	0.0065		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	1400		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	220		10	3.0	mg/L	5		SM 4500 Cl- E	Total/NA
Fluoride	0.55		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	400		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.74				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-082217 — Lab Sample ID: 400-142335-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.16		0.050	0.021	mg/L	5		6020	Total Recoverable
Barium - RA	0.11		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium - RA	89		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum - RA	0.0010	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium - RA	0.00061	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	450		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	37		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.40		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	10		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.54				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-082217 — Lab Sample ID: 400-142335-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.83		0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium	0.0075		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.13		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	340		1.3	0.63	mg/L	25		6020	Total Recoverable
Arsenic - RA	0.0021		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium - RA	0.37		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.0023	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-082217 (Continued) — Lab Sample ID: 400-142335-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum - RA	0.20		0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	8600		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	3600		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	2.2		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	1500		300	84	mg/L	60		SM 4500 SO4 E	Total/NA
Field pH	6.78				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-082217 — Lab Sample ID: 400-142335-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.39		0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium	0.0044	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.014		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	800		5.0	2.5	mg/L	100		6020	Total Recoverable
Arsenic - RA	0.0018		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium - RA	0.039		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.0036		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum - RA	0.0080	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	11000		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	3700		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.46		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2500		450	130	mg/L	90		SM 4500 SO4 E	Total/NA
Field pH	6.49				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-082217 — Lab Sample ID: 400-142335-5

No Detections.

Client Sample ID: AES-MW4-082317 — Lab Sample ID: 400-142335-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0060		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.8		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	620		2.5	1.3	mg/L	50		6020	Total Recoverable
Arsenic - RA	0.0026		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium - RA	0.057		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium - RA	0.88		0.0050	0.0011	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-082317 (Continued) — Lab Sample ID: 400-142335-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum - RA	0.44		0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	42000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	9800		400	120	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	0.65		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000	F1	2500	700	mg/L	500		SM 4500 SO4 E	Total/NA
Field pH	7.09				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-082317 — Lab Sample ID: 400-142335-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.38		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0065		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.7		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	590		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	1.1		0.050	0.011	mg/L	50		6020	Total Recoverable
Arsenic - RA	0.0025		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium - RA	0.058		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt - RA	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	42000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	9900		400	120	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	0.65		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000		2500	700	mg/L	500		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-FB-082317 — Lab Sample ID: 400-142335-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.036	J	0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium	0.0025	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.00028	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142335-1	AES-MW1-082217	Water	08/22/17 10:05	08/24/17 08:28
400-142335-2	AES-MW2-082217	Water	08/22/17 11:30	08/24/17 08:28
400-142335-3	AES-MW3-082217	Water	08/22/17 14:00	08/24/17 08:28
400-142335-4	AES-MW5-082217	Water	08/22/17 15:35	08/24/17 08:28
400-142335-5	AES-FB-082217	Water	08/22/17 16:15	08/24/17 08:28
400-142335-6	AES-MW4-082317	Water	08/23/17 10:40	08/24/17 08:28
400-142335-7	AES-MW4-DUP-082317	Water	08/23/17 11:25	08/24/17 08:28
400-142335-8	AES-FB-082317	Water	08/23/17 12:45	08/24/17 08:28

Client Sample ID: AES-MW1-082217

Date Collected: 08/22/17 10:05
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 21:42	5
Boron	**0.25**		0.050	0.021	mg/L		08/26/17 12:01	08/28/17 21:42	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 21:42	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**150**		1.3	0.63	mg/L		08/26/17 12:01	08/29/17 21:33	25

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 21:24	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 21:24	5
Barium	**0.058**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 21:24	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 21:24	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 21:24	5
Cobalt	**0.00068**	**J**	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 21:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 21:24	5
Molybdenum	**0.0023**	**J**	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 21:24	5
Selenium	**0.0065**		0.0013	0.00024	mg/L		08/26/17 12:01	08/29/17 21:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 21:24	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		5.0	3.4	mg/L			08/26/17 16:39	1
Chloride	**220**		10	3.0	mg/L			08/30/17 08:51	5
Fluoride	**0.55**		0.10	0.032	mg/L			09/07/17 09:53	1
Sulfate	**400**		100	28	mg/L			08/29/17 13:52	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.74**				SU			08/22/17 08:05	1

Client Sample ID: AES-MW2-082217

Date Collected: 08/22/17 11:30
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 21:47	5
Boron	**0.16**		0.050	0.021	mg/L		08/26/17 12:01	08/28/17 21:47	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 21:47	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 21:38	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 21:38	5
Barium	**0.11**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 21:38	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 21:38	5
Calcium	**89**		0.25	0.13	mg/L		08/26/17 12:01	08/29/17 21:38	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 21:38	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 21:38	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 21:38	5
Molybdenum	**0.0010**	**J**	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 21:38	5
Selenium	**0.00061**	**J**	0.0013	0.00024	mg/L		08/26/17 12:01	08/29/17 21:38	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 21:38	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**450**		5.0	3.4	mg/L			08/26/17 16:39	1
Chloride	**37**		2.0	0.60	mg/L			08/30/17 08:30	1
Fluoride	**0.40**		0.10	0.032	mg/L			09/07/17 09:55	1
Sulfate	**10**		5.0	1.4	mg/L			08/29/17 12:12	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.54**				SU			08/22/17 09:30	1

Client Sample ID: AES-MW3-082217

Date Collected: 08/22/17 14:00
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 21:51	5
Boron	**0.83**		0.050	0.021	mg/L		08/26/17 12:01	08/28/17 21:51	5
Lithium	**0.0075**		0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 21:51	5
Selenium	**0.13**		0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 21:51	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**340**		1.3	0.63	mg/L		08/26/17 12:01	08/29/17 21:51	25

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 21:42	5
Arsenic	**0.0021**		0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 21:42	5
Barium	**0.37**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 21:42	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 21:42	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 21:42	5
Cobalt	**0.0023**	**J**	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 21:42	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 21:42	5
Molybdenum	**0.20**		0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 21:42	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 21:42	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**8600**		50	34	mg/L			08/26/17 16:39	1
Chloride	**3600**		180	54	mg/L			08/30/17 10:35	90
Fluoride	**2.2**		0.10	0.032	mg/L			09/07/17 09:56	1
Sulfate	**1500**		300	84	mg/L			08/29/17 13:52	60

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.78**				SU			08/22/17 12:00	1

Client Sample ID: AES-MW5-082217

Date Collected: 08/22/17 15:35
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 22:14	5
Boron	**0.39**		0.050	0.021	mg/L		08/26/17 12:01	08/28/17 22:14	5
Lithium	**0.0044**	**J**	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 22:14	5
Selenium	**0.014**		0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 22:14	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**800**		5.0	2.5	mg/L		08/26/17 12:01	08/29/17 22:05	100

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 21:56	5
Arsenic	**0.0018**		0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 21:56	5
Barium	**0.039**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 21:56	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 21:56	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 21:56	5
Cobalt	**0.0036**		0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 21:56	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 21:56	5
Molybdenum	**0.0080**	**J**	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 21:56	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 21:56	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**11000**		50	34	mg/L			08/26/17 16:39	1
Chloride	**3700**		180	54	mg/L			08/30/17 10:35	90
Fluoride	**0.46**		0.10	0.032	mg/L			09/07/17 09:58	1
Sulfate	**2500**		450	130	mg/L			08/29/17 14:14	90

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.49**				SU			08/22/17 13:35	1

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-082217
Date Collected: 08/22/17 16:15
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-5
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 20:16	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 20:16	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 20:16	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 22:18	5
Boron	0.021	U	0.050	0.021	mg/L		08/26/17 12:01	08/28/17 22:18	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 20:16	5
Calcium	0.13	U	0.25	0.13	mg/L		08/26/17 12:01	08/29/17 20:16	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 20:16	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 20:16	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 22:18	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 20:16	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 22:18	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 20:16	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/30/17 12:32	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/26/17 16:39	1
Chloride	0.60	U	2.0	0.60	mg/L			08/30/17 10:13	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/07/17 10:02	1
Sulfate	1.4	U	5.0	1.4	mg/L			08/29/17 12:13	1

Client Sample ID: AES-MW4-082317

Date Collected: 08/23/17 10:40
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 22:23	5
Selenium	**0.0060**		0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 22:23	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.8**		0.50	0.21	mg/L		08/26/17 12:01	08/29/17 22:18	50
Calcium	**620**		2.5	1.3	mg/L		08/26/17 12:01	08/29/17 22:18	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 22:09	5
Arsenic	**0.0026**		0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 22:09	5
Barium	**0.057**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 22:09	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 22:09	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 22:09	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 22:09	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 22:09	5
Lithium	**0.88**		0.0050	0.0011	mg/L		08/26/17 12:01	08/29/17 22:09	5
Molybdenum	**0.44**		0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 22:09	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 22:09	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U F1	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42000**		130	85	mg/L			08/26/17 16:39	1
Chloride	**9800**		400	120	mg/L			08/30/17 10:55	200
Fluoride	**0.65**		0.10	0.032	mg/L			09/07/17 09:47	1
Sulfate	**15000**	**F1**	2500	700	mg/L			08/29/17 12:54	500

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.09**				SU			08/23/17 08:40	1

Client Sample ID: AES-MW4-DUP-082317

Date Collected: 08/23/17 11:25
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 22:45	5
Molybdenum	**0.38**		0.015	0.00085	mg/L		08/26/17 12:01	08/28/17 22:45	5
Selenium	**0.0065**		0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 22:45	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.7**		0.50	0.21	mg/L		08/26/17 12:01	08/29/17 22:54	50
Calcium	**590**		2.5	1.3	mg/L		08/26/17 12:01	08/29/17 22:54	50
Lithium	**1.1**		0.050	0.011	mg/L		08/26/17 12:01	08/29/17 22:54	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 22:23	5
Arsenic	**0.0025**		0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 22:23	5
Barium	**0.058**		0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 22:23	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 22:23	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 22:23	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 22:23	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 22:23	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 22:23	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42000**		130	85	mg/L			08/26/17 17:15	1
Chloride	**9900**		400	120	mg/L			08/30/17 10:56	200
Fluoride	**0.65**		0.10	0.032	mg/L			09/07/17 10:04	1
Sulfate	**15000**		2500	700	mg/L			08/29/17 12:57	500

Client Sample ID: AES-FB-082317

Date Collected: 08/23/17 12:45
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/28/17 22:50	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/26/17 12:01	08/28/17 22:50	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 22:50	5
Boron	**0.036**	**J**	0.050	0.021	mg/L		08/26/17 12:01	08/28/17 22:50	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/28/17 22:50	5
Lithium	**0.0025**	**J**	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 22:50	5
Selenium	**0.00028**	**J**	0.0013	0.00024	mg/L		08/26/17 12:01	08/28/17 22:50	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/28/17 22:50	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 20:07	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 20:07	5
Calcium	0.13	U	0.25	0.13	mg/L		08/26/17 12:01	08/29/17 20:07	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 20:07	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 20:07	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 20:07	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/26/17 17:15	1
Chloride	0.60	U	2.0	0.60	mg/L			08/30/17 10:13	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/07/17 10:06	1
Sulfate	1.4	U	5.0	1.4	mg/L			08/29/17 12:14	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082217

Lab Sample ID: 400-142335-1
Matrix: Water
Date Collected: 08/22/17 10:05
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 21:42	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 21:24	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366202	08/29/17 21:33	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:01	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		5	366174	08/30/17 08:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 09:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	366101	08/29/17 13:52	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/22/17 08:05	BWS	TAL PEN

Client Sample ID: AES-MW2-082217

Lab Sample ID: 400-142335-2
Matrix: Water
Date Collected: 08/22/17 11:30
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 21:47	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 21:38	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:03	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	366174	08/30/17 08:30	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 09:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	366101	08/29/17 12:12	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/22/17 09:30	BWS	TAL PEN

Client Sample ID: AES-MW3-082217

Lab Sample ID: 400-142335-3
Matrix: Water
Date Collected: 08/22/17 14:00
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 21:51	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 21:42	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	366202	08/29/17 21:51	DRE	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-082217

Date Collected: 08/22/17 14:00
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:05	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	366232	08/30/17 10:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 09:56	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		60	366101	08/29/17 13:52	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/22/17 12:00	BWS	TAL PEN

Client Sample ID: AES-MW5-082217

Date Collected: 08/22/17 15:35
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 22:14	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 21:56	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	366202	08/29/17 22:05	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:06	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	366232	08/30/17 10:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 09:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		90	366101	08/29/17 14:14	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/22/17 13:35	BWS	TAL PEN

Client Sample ID: AES-FB-082217

Date Collected: 08/22/17 16:15
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 22:18	DRE	TAL PEN
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366202	08/29/17 20:16	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366374	08/30/17 12:32	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:08	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	366232	08/30/17 10:13	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-082217

Lab Sample ID: 400-142335-5
Date Collected: 08/22/17 16:15
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 10:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	366101	08/29/17 12:13	RRC	TAL PEN

Client Sample ID: AES-MW4-082317

Lab Sample ID: 400-142335-6
Date Collected: 08/23/17 10:40
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 22:23	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 22:09	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	366202	08/29/17 22:18	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:42	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365803	08/26/17 16:39	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	366232	08/30/17 10:55	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 09:47	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		500	366101	08/29/17 12:54	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/23/17 08:40	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-082317

Lab Sample ID: 400-142335-7
Date Collected: 08/23/17 11:25
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 22:45	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 22:23	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	366202	08/29/17 22:54	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:49	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365804	08/26/17 17:15	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	366232	08/30/17 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 10:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		500	366101	08/29/17 12:57	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-082317

Date Collected: 08/23/17 12:45
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	366042	08/28/17 22:50	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		365798	08/26/17 12:01	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	366202	08/29/17 20:07	DRE	TAL PEN
Total/NA	Prep	7470A			365647	08/25/17 09:44	JAP	TAL PEN
Total/NA	Analysis	7470A		1	365961	08/28/17 14:50	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	365804	08/26/17 17:15	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	366232	08/30/17 10:13	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367078	09/07/17 10:06	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	366101	08/29/17 12:14	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 365647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	7470A	
400-142335-2	AES-MW2-082217	Total/NA	Water	7470A	
400-142335-3	AES-MW3-082217	Total/NA	Water	7470A	
400-142335-4	AES-MW5-082217	Total/NA	Water	7470A	
400-142335-5	AES-FB-082217	Total/NA	Water	7470A	
400-142335-6	AES-MW4-082317	Total/NA	Water	7470A	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	7470A	
400-142335-8	AES-FB-082317	Total/NA	Water	7470A	
MB 400-365647/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-365647/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	7470A	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	7470A	

Prep Batch: 365798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1 - RA	AES-MW1-082217	Total Recoverable	Water	3005A	
400-142335-1 - DL	AES-MW1-082217	Total Recoverable	Water	3005A	
400-142335-1	AES-MW1-082217	Total Recoverable	Water	3005A	
400-142335-2	AES-MW2-082217	Total Recoverable	Water	3005A	
400-142335-2 - RA	AES-MW2-082217	Total Recoverable	Water	3005A	
400-142335-3	AES-MW3-082217	Total Recoverable	Water	3005A	
400-142335-3 - DL	AES-MW3-082217	Total Recoverable	Water	3005A	
400-142335-3 - RA	AES-MW3-082217	Total Recoverable	Water	3005A	
400-142335-4 - RA	AES-MW5-082217	Total Recoverable	Water	3005A	
400-142335-4 - DL	AES-MW5-082217	Total Recoverable	Water	3005A	
400-142335-4	AES-MW5-082217	Total Recoverable	Water	3005A	
400-142335-5	AES-FB-082217	Total Recoverable	Water	3005A	
400-142335-5 - RA	AES-FB-082217	Total Recoverable	Water	3005A	
400-142335-6 - DL	AES-MW4-082317	Total Recoverable	Water	3005A	
400-142335-6	AES-MW4-082317	Total Recoverable	Water	3005A	
400-142335-6 - RA	AES-MW4-082317	Total Recoverable	Water	3005A	
400-142335-7	AES-MW4-DUP-082317	Total Recoverable	Water	3005A	
400-142335-7 - DL	AES-MW4-DUP-082317	Total Recoverable	Water	3005A	
400-142335-7 - RA	AES-MW4-DUP-082317	Total Recoverable	Water	3005A	
400-142335-8	AES-FB-082317	Total Recoverable	Water	3005A	
400-142335-8 - RA	AES-FB-082317	Total Recoverable	Water	3005A	
MB 400-365798/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-365798/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-142335-6 MS	AES-MW4-082317	Total Recoverable	Water	3005A	
400-142335-6 MSD	AES-MW4-082317	Total Recoverable	Water	3005A	

Analysis Batch: 365961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	7470A	365647
400-142335-2	AES-MW2-082217	Total/NA	Water	7470A	365647
400-142335-3	AES-MW3-082217	Total/NA	Water	7470A	365647
400-142335-4	AES-MW5-082217	Total/NA	Water	7470A	365647
400-142335-5	AES-FB-082217	Total/NA	Water	7470A	365647
400-142335-6	AES-MW4-082317	Total/NA	Water	7470A	365647
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	7470A	365647
400-142335-8	AES-FB-082317	Total/NA	Water	7470A	365647

Metals (Continued)

Analysis Batch: 365961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-365647/14-A	Method Blank	Total/NA	Water	7470A	365647
LCS 400-365647/15-A	Lab Control Sample	Total/NA	Water	7470A	365647
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	7470A	365647
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	7470A	365647

Analysis Batch: 366042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total Recoverable	Water	6020	365798
400-142335-2	AES-MW2-082217	Total Recoverable	Water	6020	365798
400-142335-3	AES-MW3-082217	Total Recoverable	Water	6020	365798
400-142335-4	AES-MW5-082217	Total Recoverable	Water	6020	365798
400-142335-5	AES-FB-082217	Total Recoverable	Water	6020	365798
400-142335-6	AES-MW4-082317	Total Recoverable	Water	6020	365798
400-142335-7	AES-MW4-DUP-082317	Total Recoverable	Water	6020	365798
400-142335-8	AES-FB-082317	Total Recoverable	Water	6020	365798
MB 400-365798/1-A ^5	Method Blank	Total Recoverable	Water	6020	365798
LCS 400-365798/2-A	Lab Control Sample	Total Recoverable	Water	6020	365798
400-142335-6 MS	AES-MW4-082317	Total Recoverable	Water	6020	365798
400-142335-6 MSD	AES-MW4-082317	Total Recoverable	Water	6020	365798

Analysis Batch: 366202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1 - RA	AES-MW1-082217	Total Recoverable	Water	6020	365798
400-142335-1 - DL	AES-MW1-082217	Total Recoverable	Water	6020	365798
400-142335-2 - RA	AES-MW2-082217	Total Recoverable	Water	6020	365798
400-142335-3 - RA	AES-MW3-082217	Total Recoverable	Water	6020	365798
400-142335-3 - DL	AES-MW3-082217	Total Recoverable	Water	6020	365798
400-142335-4 - RA	AES-MW5-082217	Total Recoverable	Water	6020	365798
400-142335-4 - DL	AES-MW5-082217	Total Recoverable	Water	6020	365798
400-142335-5	AES-FB-082217	Total Recoverable	Water	6020	365798
400-142335-6 - RA	AES-MW4-082317	Total Recoverable	Water	6020	365798
400-142335-6 - DL	AES-MW4-082317	Total Recoverable	Water	6020	365798
400-142335-7 - RA	AES-MW4-DUP-082317	Total Recoverable	Water	6020	365798
400-142335-7 - DL	AES-MW4-DUP-082317	Total Recoverable	Water	6020	365798
400-142335-8 - RA	AES-FB-082317	Total Recoverable	Water	6020	365798
MB 400-365798/1-A ^5	Method Blank	Total Recoverable	Water	6020	365798
LCS 400-365798/2-A	Lab Control Sample	Total Recoverable	Water	6020	365798

Analysis Batch: 366374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-5 - RA	AES-FB-082217	Total Recoverable	Water	6020	365798

General Chemistry

Analysis Batch: 365803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	SM 2540C	
400-142335-2	AES-MW2-082217	Total/NA	Water	SM 2540C	
400-142335-3	AES-MW3-082217	Total/NA	Water	SM 2540C	
400-142335-4	AES-MW5-082217	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 365803 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-5	AES-FB-082217	Total/NA	Water	SM 2540C	
400-142335-6	AES-MW4-082317	Total/NA	Water	SM 2540C	
MB 400-365803/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-365803/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-142335-1 DU	AES-MW1-082217	Total/NA	Water	SM 2540C	

Analysis Batch: 365804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	SM 2540C	
400-142335-8	AES-FB-082317	Total/NA	Water	SM 2540C	
MB 400-365804/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-365804/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-142259-G-17 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 366101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	SM 4500 SO4 E	
400-142335-2	AES-MW2-082217	Total/NA	Water	SM 4500 SO4 E	
400-142335-3	AES-MW3-082217	Total/NA	Water	SM 4500 SO4 E	
400-142335-4	AES-MW5-082217	Total/NA	Water	SM 4500 SO4 E	
400-142335-5	AES-FB-082217	Total/NA	Water	SM 4500 SO4 E	
400-142335-6	AES-MW4-082317	Total/NA	Water	SM 4500 SO4 E	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	SM 4500 SO4 E	
400-142335-8	AES-FB-082317	Total/NA	Water	SM 4500 SO4 E	
MB 400-366101/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-366101/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-366101/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	SM 4500 SO4 E	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 366174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	SM 4500 Cl- E	
400-142335-2	AES-MW2-082217	Total/NA	Water	SM 4500 Cl- E	
MB 400-366174/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-366174/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-366174/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-142280-A-9 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-142280-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 366232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-3	AES-MW3-082217	Total/NA	Water	SM 4500 Cl- E	
400-142335-4	AES-MW5-082217	Total/NA	Water	SM 4500 Cl- E	
400-142335-5	AES-FB-082217	Total/NA	Water	SM 4500 Cl- E	
400-142335-6	AES-MW4-082317	Total/NA	Water	SM 4500 Cl- E	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	SM 4500 Cl- E	
400-142335-8	AES-FB-082317	Total/NA	Water	SM 4500 Cl- E	
MB 400-366232/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-366232/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-366232/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 366232 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	SM 4500 Cl- E	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 367078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	SM 4500 F C	
400-142335-2	AES-MW2-082217	Total/NA	Water	SM 4500 F C	
400-142335-3	AES-MW3-082217	Total/NA	Water	SM 4500 F C	
400-142335-4	AES-MW5-082217	Total/NA	Water	SM 4500 F C	
400-142335-5	AES-FB-082217	Total/NA	Water	SM 4500 F C	
400-142335-6	AES-MW4-082317	Total/NA	Water	SM 4500 F C	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	SM 4500 F C	
400-142335-8	AES-FB-082317	Total/NA	Water	SM 4500 F C	
MB 400-367078/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-367078/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	SM 4500 F C	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	SM 4500 F C	
400-142111-C-1 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 368562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	Field Sampling	
400-142335-2	AES-MW2-082217	Total/NA	Water	Field Sampling	
400-142335-3	AES-MW3-082217	Total/NA	Water	Field Sampling	
400-142335-4	AES-MW5-082217	Total/NA	Water	Field Sampling	
400-142335-6	AES-MW4-082317	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-365798/1-A ^5
Matrix: Water
Analysis Batch: 366042

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/28/17 21:15	5
Boron	0.021	U	0.050	0.021	mg/L		08/26/17 12:01	08/28/17 21:15	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/26/17 12:01	08/28/17 21:15	5

Lab Sample ID: MB 400-365798/1-A ^5
Matrix: Water
Analysis Batch: 366202

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		08/26/17 12:01	08/29/17 14:24	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		08/26/17 12:01	08/29/17 14:24	5
Barium	0.00049	U	0.0025	0.00049	mg/L		08/26/17 12:01	08/29/17 14:24	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 14:24	5
Boron	0.021	U	0.050	0.021	mg/L		08/26/17 12:01	08/29/17 14:24	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		08/26/17 12:01	08/29/17 14:24	5
Calcium	0.13	U	0.25	0.13	mg/L		08/26/17 12:01	08/29/17 14:24	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		08/26/17 12:01	08/29/17 14:24	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		08/26/17 12:01	08/29/17 14:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		08/26/17 12:01	08/29/17 14:24	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		08/26/17 12:01	08/29/17 14:24	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		08/26/17 12:01	08/29/17 14:24	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		08/26/17 12:01	08/29/17 14:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		08/26/17 12:01	08/29/17 14:24	5

Lab Sample ID: LCS 400-365798/2-A
Matrix: Water
Analysis Batch: 366042

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	0.0500	0.0509		mg/L		102	80 - 120
Boron	0.100	0.106		mg/L		106	80 - 120
Lithium	0.0500	0.0574		mg/L		115	80 - 120
Selenium	0.0500	0.0526		mg/L		105	80 - 120

Lab Sample ID: LCS 400-365798/2-A
Matrix: Water
Analysis Batch: 366202

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0533		mg/L		107	80 - 120
Arsenic	0.0500	0.0528		mg/L		106	80 - 120
Barium	0.0500	0.0532		mg/L		106	80 - 120
Beryllium	0.0500	0.0525		mg/L		105	80 - 120
Boron	0.100	0.103		mg/L		103	80 - 120
Cadmium	0.0500	0.0524		mg/L		105	80 - 120
Calcium	5.00	5.05		mg/L		101	80 - 120
Chromium	0.0500	0.0525		mg/L		105	80 - 120
Cobalt	0.0500	0.0525		mg/L		105	80 - 120
Lead	0.0500	0.0518		mg/L		104	80 - 120

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 400-365798/2-A
Matrix: Water
Analysis Batch: 366202

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0500	0.0541		mg/L		108	80 - 120
Molybdenum	0.100	0.103		mg/L		103	80 - 120
Selenium	0.0500	0.0508		mg/L		102	80 - 120
Thallium	0.0100	0.0103		mg/L		103	80 - 120

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 366042

Client Sample ID: AES-MW4-082317
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	J	0.0500	0.0592		mg/L		118	75 - 125
Arsenic	0.0029		0.0500	0.0558		mg/L		106	75 - 125
Barium	0.053		0.0500	0.112		mg/L		118	75 - 125
Beryllium	0.00034	U	0.0500	0.0474		mg/L		95	75 - 125
Boron	4.7	E	0.100	4.30	E 4	mg/L		-366	75 - 125
Cadmium	0.00034	U	0.0500	0.0406		mg/L		81	75 - 125
Calcium	640	E	5.00	674	E 4	mg/L		700	75 - 125
Chromium	0.0011	U	0.0500	0.0512		mg/L		102	75 - 125
Cobalt	0.0017	J	0.0500	0.0490		mg/L		95	75 - 125
Lead	0.00035	U	0.0500	0.0417		mg/L		83	75 - 125
Lithium	1.2	E	0.0500	1.18	E 4	mg/L		-32	75 - 125
Molybdenum	0.40		0.100	0.485	4	mg/L		85	75 - 125
Selenium	0.0060		0.0500	0.0671		mg/L		122	75 - 125
Thallium	0.000085	U	0.0100	0.00832		mg/L		83	75 - 125

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 366042

Client Sample ID: AES-MW4-082317
Prep Type: Total Recoverable
Prep Batch: 365798

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	J	0.0500	0.0576		mg/L		115	75 - 125	3	20
Arsenic	0.0029		0.0500	0.0543		mg/L		103	75 - 125	3	20
Barium	0.053		0.0500	0.110		mg/L		113	75 - 125	2	20
Beryllium	0.00034	U	0.0500	0.0496		mg/L		99	75 - 125	5	20
Boron	4.7	E	0.100	4.35	E 4	mg/L		-317	75 - 125	1	20
Cadmium	0.00034	U	0.0500	0.0398		mg/L		80	75 - 125	2	20
Calcium	640	E	5.00	677	E 4	mg/L		761	75 - 125	0	20
Chromium	0.0011	U	0.0500	0.0508		mg/L		102	75 - 125	1	20
Cobalt	0.0017	J	0.0500	0.0485		mg/L		94	75 - 125	1	20
Lead	0.00035	U	0.0500	0.0404		mg/L		81	75 - 125	3	20
Lithium	1.2	E	0.0500	1.20	E 4	mg/L		-5	75 - 125	1	20
Molybdenum	0.40		0.100	0.463	4	mg/L		62	75 - 125	5	20
Selenium	0.0060		0.0500	0.0661		mg/L		120	75 - 125	1	20
Thallium	0.000085	U	0.0100	0.00771		mg/L		77	75 - 125	8	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-365647/14-A
Matrix: Water
Analysis Batch: 365961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 365647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		08/25/17 09:44	08/28/17 13:58	1

Lab Sample ID: LCS 400-365647/15-A
Matrix: Water
Analysis Batch: 365961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 365647

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000959		mg/L		95	80 - 120

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 365961

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 365647

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U F1	0.00201	0.00107	F1	mg/L		53	80 - 120

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 365961

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 365647

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U F1	0.00201	0.000976	F1	mg/L		48	80 - 120	10	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-365803/1
Matrix: Water
Analysis Batch: 365803

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/26/17 16:39	1

Lab Sample ID: LCS 400-365803/2
Matrix: Water
Analysis Batch: 365803

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	268		mg/L		91	78 - 122

Lab Sample ID: 400-142335-1 DU
Matrix: Water
Analysis Batch: 365803

Client Sample ID: AES-MW1-082217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1400		1400		mg/L		0	5

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 400-365804/1
Matrix: Water
Analysis Batch: 365804

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			08/26/17 17:15	1

Lab Sample ID: LCS 400-365804/2
Matrix: Water
Analysis Batch: 365804

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	266		mg/L		91	78 - 122

Lab Sample ID: 400-142259-G-17 DU
Matrix: Water
Analysis Batch: 365804

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	60		60.0		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-366174/6
Matrix: Water
Analysis Batch: 366174

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/30/17 07:13	1

Lab Sample ID: LCS 400-366174/7
Matrix: Water
Analysis Batch: 366174

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.5		mg/L		98	90 - 110

Lab Sample ID: MRL 400-366174/3
Matrix: Water
Analysis Batch: 366174

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.04		mg/L		102	50 - 150

Lab Sample ID: 400-142280-A-9 MS
Matrix: Water
Analysis Batch: 366174

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
Chloride	4.1		10.0	15.1		mg/L		109	73 - 120

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-142280-A-9 MSD
Matrix: Water
Analysis Batch: 366174

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
Chloride	4.1		10.0	15.0		mg/L		108	73 - 120	0	8

Lab Sample ID: MB 400-366232/6
Matrix: Water
Analysis Batch: 366232

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			08/30/17 09:48	1

Lab Sample ID: LCS 400-366232/7
Matrix: Water
Analysis Batch: 366232

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.6		mg/L		99	90 - 110

Lab Sample ID: MRL 400-366232/3
Matrix: Water
Analysis Batch: 366232

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.05		mg/L		102	50 - 150

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 366232

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	9800		2000	9740	4	mg/L		-2	73 - 120

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 366232

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9800		2000	9750	4	mg/L		-2	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-367078/3
Matrix: Water
Analysis Batch: 367078

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			09/07/17 09:24	1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 400-367078/9
Matrix: Water
Analysis Batch: 367078

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			4.00	4.26		mg/L		107	90 - 110		

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 367078

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	0.65		1.00	1.78		mg/L		113	75 - 125		

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 367078

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.65		1.00	1.81		mg/L		116	75 - 125	2	4

Lab Sample ID: 400-142111-C-1 DU
Matrix: Water
Analysis Batch: 367078

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fluoride	0.90			0.900		mg/L				0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-366101/6
Matrix: Water
Analysis Batch: 366101

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			08/29/17 11:05	1

Lab Sample ID: LCS 400-366101/7
Matrix: Water
Analysis Batch: 366101

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			15.0	14.4		mg/L		96	90 - 110		

Lab Sample ID: MRL 400-366101/3
Matrix: Water
Analysis Batch: 366101

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			5.00	4.69	J	mg/L		94	50 - 150		

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 366101

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	15000	F1	5000	14600	F1	mg/L		-11	77 - 128		

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 366101

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	15000	F1	5000	14400	F1	mg/L		-17	77 - 128	2	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-142335 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): REGULAR TAT
State, Zip: PR, 00969-5375	PO #:
Phone: 787-209-6386	WO #:
Email: alberto.melendez@dnaenv.com	Project #: 40008317
Project Name: CCR App.III/IV Groundwater Monitoring	SSOW#:
Site: AES Puerto Rico, Guayama, PR	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226; 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-082217	8-22-17	1005	G	Water	N		X	X	X	3	*pH = 6.74
AES-MW2-082217		1130		Water			X	X	X	3	pH = 6.54
AES-MW3-082217		1400		Water			X	X	X	3	pH = 6.78
AES-MW5-082217		1535		Water			X	X	X	3	pH = 6.49
AES-FB-082217		1615		Water			X	X	X	3	
AES-MW4-082317	8-23-17	1040		Water			X	X	X	3	pH = 7.09
AES-MW4-DUP-082317		1125		Water			X	X	X	3	
AES-MW4-MS-082317		1150		Water		Y	X	X	X	3	
AES-MW4-MSD-082317		1220		Water		Y	X	X	X	3	
AES-FB-082317		1245		Water	N		X	X	X	3	
											* FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		08/23/17 14:25	DNA		8/24/17 0828	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.0°C, 18.7°C IR7

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142335-1
SDG Number: AES Puerto Rico, LP

Login Number: 142335
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	0.0°C Wet chem & Metals Cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142335-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
9/21/2017 6:03:46 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Method Summary 3
Sample Summary 4
Client Sample Results 5
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 20
Receipt Checklists 21
Certification Summary 22

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142335-1	AES-MW1-082217	Water	08/22/17 10:05	08/24/17 08:28
400-142335-2	AES-MW2-082217	Water	08/22/17 11:30	08/24/17 08:28
400-142335-3	AES-MW3-082217	Water	08/22/17 14:00	08/24/17 08:28
400-142335-4	AES-MW5-082217	Water	08/22/17 15:35	08/24/17 08:28
400-142335-5	AES-FB-082217	Water	08/22/17 16:15	08/24/17 08:28
400-142335-6	AES-MW4-082317	Water	08/23/17 10:40	08/24/17 08:28
400-142335-7	AES-MW4-DUP-082317	Water	08/23/17 11:25	08/24/17 08:28
400-142335-8	AES-FB-082317	Water	08/23/17 12:45	08/24/17 08:28

Client Sample ID: AES-MW1-082217

Date Collected: 08/22/17 10:05
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.270**		0.0963	0.0993	1.00	0.0991	pCi/L	08/29/17 12:01	09/20/17 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*08/29/17 12:01*	*09/20/17 08:42*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U	0.220	0.222	1.00	0.351	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*82.6*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.533**		0.241	0.243	5.00	0.351	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-MW2-082217

Date Collected: 08/22/17 11:30
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0379	U	0.0521	0.0522	1.00	0.0879	pCi/L	08/29/17 12:01	09/20/17 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/29/17 12:01*	*09/20/17 08:42*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0782	U	0.220	0.220	1.00	0.406	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*80.0*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0403	U	0.226	0.226	5.00	0.406	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-MW3-082217

Date Collected: 08/22/17 14:00
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.212**		0.0924	0.0943	1.00	0.104	pCi/L	08/29/17 12:01	09/20/17 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*08/29/17 12:01*	*09/20/17 08:42*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0187	U	0.265	0.265	1.00	0.469	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*74.8*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.231	U	0.281	0.281	5.00	0.469	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-MW5-082217

Date Collected: 08/22/17 15:35
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.102**		0.0600	0.0607	1.00	0.0714	pCi/L	08/29/17 12:01	09/20/17 11:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:01*	*09/20/17 11:07*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.289	U	0.250	0.251	1.00	0.400	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*79.6*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.391	U	0.257	0.258	5.00	0.400	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-FB-082217

Date Collected: 08/22/17 16:15
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0509	U	0.0541	0.0543	1.00	0.0857	pCi/L	08/29/17 12:01	09/20/17 11:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/29/17 12:01*	*09/20/17 11:07*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.104	U	0.208	0.208	1.00	0.355	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*80.0*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.155	U	0.215	0.215	5.00	0.355	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-MW4-082317

Date Collected: 08/23/17 10:40
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0545	U	0.0520	0.0522	1.00	0.0784	pCi/L	08/29/17 12:01	09/20/17 11:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:01*	*09/20/17 11:07*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.136	U	0.216	0.216	1.00	0.409	pCi/L	08/29/17 12:41	09/06/17 14:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*
Y Carrier	*80.4*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:11*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0815	U	0.222	0.223	5.00	0.409	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-MW4-DUP-082317

Date Collected: 08/23/17 11:25
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.0942**		0.0526	0.0533	1.00	0.0534	pCi/L	08/29/17 12:01	09/20/17 11:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:01*	*09/20/17 11:08*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.347	U	0.245	0.247	1.00	0.381	pCi/L	08/29/17 12:41	09/06/17 14:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:12*	*1*
Y Carrier	*79.6*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:12*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.441**		0.250	0.252	5.00	0.381	pCi/L		09/21/17 17:31	1

Client Sample ID: AES-FB-082317

Date Collected: 08/23/17 12:45
Date Received: 08/24/17 08:28

Lab Sample ID: 400-142335-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0252	U	0.0378	0.0379	1.00	0.0653	pCi/L	08/29/17 12:01	09/20/17 11:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:01*	*09/20/17 11:08*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.266	U	0.207	0.208	1.00	0.324	pCi/L	08/29/17 12:41	09/06/17 14:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:12*	*1*
Y Carrier	*81.5*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:12*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.292	U	0.210	0.212	5.00	0.324	pCi/L		09/21/17 17:31	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082217
Lab Sample ID: 400-142335-1
Date Collected: 08/22/17 10:05
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328089	09/20/17 08:42	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-MW2-082217
Lab Sample ID: 400-142335-2
Date Collected: 08/22/17 11:30
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328089	09/20/17 08:42	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-MW3-082217
Lab Sample ID: 400-142335-3
Date Collected: 08/22/17 14:00
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328089	09/20/17 08:42	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-MW5-082217
Lab Sample ID: 400-142335-4
Date Collected: 08/22/17 15:35
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328088	09/20/17 11:07	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-082217

Lab Sample ID: 400-142335-5
Date Collected: 08/22/17 16:15
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328088	09/20/17 11:07	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-MW4-082317

Lab Sample ID: 400-142335-6
Date Collected: 08/23/17 10:40
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328088	09/20/17 11:07	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:11	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-082317

Lab Sample ID: 400-142335-7
Date Collected: 08/23/17 11:25
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328088	09/20/17 11:08	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:12	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Client Sample ID: AES-FB-082317

Lab Sample ID: 400-142335-8
Date Collected: 08/23/17 12:45
Matrix: Water
Date Received: 08/24/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			324946	08/29/17 12:01	LDE	TAL SL
Total/NA	Analysis	9315		1	328088	09/20/17 11:08	ALD	TAL SL
Total/NA	Prep	PrecSep_0			324961	08/29/17 12:41	LDE	TAL SL
Total/NA	Analysis	9320		1	325782	09/06/17 14:12	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	328342	09/21/17 17:31	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 324946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	PrecSep-21	
400-142335-2	AES-MW2-082217	Total/NA	Water	PrecSep-21	
400-142335-3	AES-MW3-082217	Total/NA	Water	PrecSep-21	
400-142335-4	AES-MW5-082217	Total/NA	Water	PrecSep-21	
400-142335-5	AES-FB-082217	Total/NA	Water	PrecSep-21	
400-142335-6	AES-MW4-082317	Total/NA	Water	PrecSep-21	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	PrecSep-21	
400-142335-8	AES-FB-082317	Total/NA	Water	PrecSep-21	
MB 160-324946/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-324946/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	PrecSep-21	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	PrecSep-21	

Prep Batch: 324961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142335-1	AES-MW1-082217	Total/NA	Water	PrecSep_0	
400-142335-2	AES-MW2-082217	Total/NA	Water	PrecSep_0	
400-142335-3	AES-MW3-082217	Total/NA	Water	PrecSep_0	
400-142335-4	AES-MW5-082217	Total/NA	Water	PrecSep_0	
400-142335-5	AES-FB-082217	Total/NA	Water	PrecSep_0	
400-142335-6	AES-MW4-082317	Total/NA	Water	PrecSep_0	
400-142335-7	AES-MW4-DUP-082317	Total/NA	Water	PrecSep_0	
400-142335-8	AES-FB-082317	Total/NA	Water	PrecSep_0	
MB 160-324961/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-324961/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-142335-6 MS	AES-MW4-082317	Total/NA	Water	PrecSep_0	
400-142335-6 MSD	AES-MW4-082317	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-324946/1-A
Matrix: Water
Analysis Batch: 328089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324946

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07383	U	0.0597	0.0601	1.00	0.0861	pCi/L	08/29/17 12:01	09/20/17 08:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*08/29/17 12:01*	*09/20/17 08:42*	*1*

Lab Sample ID: LCS 160-324946/2-A
Matrix: Water
Analysis Batch: 328089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324946

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.846		1.02	1.00	0.0709	pCi/L	103	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 328088

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 324946

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0545	U	9.60	10.52		1.08	1.00	0.0672	pCi/L	109	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 328088

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 324946

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0545	U	9.61	10.08		1.04	1.00	0.0702	pCi/L	104	75 - 138	0.21	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-324961/1-A
Matrix: Water
Analysis Batch: 325782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 324961

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09882	U	0.218	0.218	1.00	0.374	pCi/L	08/29/17 12:41	09/06/17 14:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:10*	*1*
Y Carrier	*79.3*		*40 - 110*	*08/29/17 12:41*	*09/06/17 14:10*	*1*

Lab Sample ID: LCS 160-324961/2-A
Matrix: Water
Analysis Batch: 325782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 324961

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	15.22		1.62	1.00	0.377	pCi/L	118	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

Lab Sample ID: 400-142335-6 MS
Matrix: Water
Analysis Batch: 325782

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 324961

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	-0.136	U	12.9	13.81		1.48	1.00	0.325	pCi/L	107	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: 400-142335-6 MSD
Matrix: Water
Analysis Batch: 325782

Client Sample ID: AES-MW4-082317
Prep Type: Total/NA
Prep Batch: 324961

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	-0.136	U	13.0	14.76		1.58	1.00	0.365	pCi/L	114	45 - 150	0.31	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*103*		*40 - 110*
Y Carrier	*83.7*		*40 - 110*

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-142424-A-1 DU
Matrix: Water
Analysis Batch: 328342

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	2.02			1.398		0.340	5.00	0.361	pCi/L			0.72	

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-142335 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:
Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:			
City: Guaynabo	TAT Requested (days): REGULAR TAT			
State, Zip: PR, 00969-5375	PO #:			
Phone: 787-209-6386	WO #:			
Email: alberto.melendez@dnaenv.com	Project #: 40008317			
Project Name: CCR App.III/IV Groundwater Monitoring	SSOW#:			
Site: AES Puerto Rico, Guayama, PR				

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-082217	8-22-17	1005	G	Water	N		X	X	X	3	*pH = 6.74
AES-MW2-082217		1130		Water			X	X	X	3	pH = 6.54
AES-MW3-082217		1400		Water			X	X	X	3	pH = 6.78
AES-MW5-082217		1535		Water			X	X	X	3	pH = 6.49
AES-FB-082217		1615		Water			X	X	X	3	
AES-MW4-082317	8-23-17	1040		Water			X	X	X	3	pH = 7.09
AES-MW4-DUP-082317		1125		Water			X	X	X	3	
AES-MW4-MS-082317		1150		Water		Y	X	X	X	3	
AES-MW4-MSD-082317		1220		Water		Y	X	X	X	3	
AES-FB-082317		1245		Water	N		X	X	X	3	
											* FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		08/23/17 14:25	DNA		8/24/17 0828	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.0°C, 18.7°C IR7

Page 20 of 23

9/21/2017

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142335-2
SDG Number: AES Puerto Rico, LP

Login Number: 142335
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	18.7°C Rads Cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142335-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-17 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142626-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:24:03 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

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.

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 8
Sample Summary 9
Client Sample Results 10
Definitions 18
Chronicle 19
QC Association 23
QC Sample Results 27
Chain of Custody 34
Receipt Checklists 35
Certification Summary 36

Job ID: 400-142626-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-142626-1

Comments
Revised Report (Rev. 2) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 1)- The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 367262 and analytical batch 368677 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The post digestion spike % recovery for Boron, Beryllium, and Lithium associated with batch 368677 was outside of control limits.

Method(s) 6020: The serial dilution performed for the following sample associated with batch 368677 was outside control limits: (400-142626-B-6-A SD)

Method(s) 6020: The method blank for preparation batch 367262 and analytical batch 368828 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082917 (400-142626-1), AES-MW3-082917 (400-142626-3), AES-MW5-082917 (400-142626-4), AES-MW4-083017 (400-142626-6) and AES-MW4-DUP-083017 (400-142626-7). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 367298 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

General Chemistry
Method(s) SM 4500 F C: The method blank for analytical batch 367655 contained Fluoride above the method detection limit (MDL) but at the reporting limit (RL). This target analyte concentration was less than the project-specific action limit; therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 367128 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082917 (400-142626-1), AES-MW3-082917 (400-142626-3), AES-MW5-082917 (400-142626-4), AES-MW4-083017 (400-142626-6), AES-MW4-083017 (400-142626-6[MS]), AES-MW4-083017 (400-142626-6[MSD]), (400-142502-A-12), (400-142502-A-12 MS), (400-142502-A-12 MSD), (400-142502-A-15), (400-142502-A-15 MS) and (400-142502-A-15 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 367593 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 367463 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS)

Job ID: 400-142626-1 (Continued)

Laboratory: TestAmerica Pensacola (Continued)

recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-082917 (400-142626-1), AES-MW3-082917 (400-142626-3), AES-MW5-082917 (400-142626-4), AES-MW4-083017 (400-142626-6), AES-MW4-083017 (400-142626-6[MS]), AES-MW4-083017 (400-142626-6[MSD]), AES-MW4-DUP-083017 (400-142626-7), (400-142502-A-12), (400-142502-A-12 MS) and (400-142502-A-12 MSD). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082917 — Lab Sample ID: 400-142626-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.055		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.00062	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Calcium - DL	160		1.3	0.63	mg/L	25		6020	Total Recoverable
Boron - RA	0.25	B	0.050	0.021	mg/L	5		6020	Total Recoverable
Selenium - RA	0.0057		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	1400		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	240		20	6.0	mg/L	10		SM 4500 Cl- E	Total/NA
Fluoride	0.58	B	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	390		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.92				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-082917 — Lab Sample ID: 400-142626-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.11		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron - RA	0.17	B	0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium - RA	100		0.25	0.13	mg/L	5		6020	Total Recoverable
Selenium - RA	0.00044	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	470		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	37		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.42	B	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.68				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-082917 — Lab Sample ID: 400-142626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.25		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0022	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.22		0.015	0.00085	mg/L	5		6020	Total Recoverable
Calcium - DL	390		1.3	0.63	mg/L	25		6020	Total Recoverable
Boron - RA	0.90	B	0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium - RA	0.0075		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium - RA	0.14		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	8300		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3700		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	2.3	B	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW3-082917 (Continued) — Lab Sample ID: 400-142626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1700		250	70	mg/L	50		SM 4500 SO4 E	Total/NA
Field pH	7.01				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-082917 — Lab Sample ID: 400-142626-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0021		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.036		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0033		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0057	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Calcium - DL	930		5.0	2.5	mg/L	100		6020	Total Recoverable
Boron - RA	0.39	B	0.050	0.021	mg/L	5		6020	Total Recoverable
Lithium - RA	0.0039	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Selenium - RA	0.0099		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	9800		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3700		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.48		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2600		450	130	mg/L	90		SM 4500 SO4 E	Total/NA
Field pH	6.79				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-082917 — Lab Sample ID: 400-142626-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	0.72	J	2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	3.4	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-MW4-083017 — Lab Sample ID: 400-142626-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0027		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.055		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.40		0.015	0.00085	mg/L	5		6020	Total Recoverable
Boron - DL	3.6	B	0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	670		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	0.90		0.050	0.011	mg/L	50		6020	Total Recoverable
Selenium - RA	0.0058		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	42000		130	85	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW4-083017 (Continued) — Lab Sample ID: 400-142626-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11000	F1	600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.68		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16000	F1	3500	980	mg/L	700		SM 4500 SO4 E	Total/NA
Field pH	7.14				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-083017 — Lab Sample ID: 400-142626-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.054		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0016	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.42		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0054		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.6	B	0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	670		2.5	1.3	mg/L	50		6020	Total Recoverable
Lithium - DL	0.98		0.050	0.011	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	11000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.66		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-FB-083017 — Lab Sample ID: 400-142626-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.4	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142626-1	AES-MW1-082917	Water	08/29/17 10:15	08/31/17 09:25
400-142626-2	AES-MW2-082917	Water	08/29/17 12:45	08/31/17 09:25
400-142626-3	AES-MW3-082917	Water	08/29/17 14:25	08/31/17 09:25
400-142626-4	AES-MW5-082917	Water	08/29/17 15:55	08/31/17 09:25
400-142626-5	AES-FB-082917	Water	08/29/17 16:25	08/31/17 09:25
400-142626-6	AES-MW4-083017	Water	08/30/17 11:10	08/31/17 09:25
400-142626-7	AES-MW4-DUP-083017	Water	08/30/17 11:45	08/31/17 09:25
400-142626-8	AES-FB-083017	Water	08/30/17 13:16	08/31/17 09:25

Client Sample ID: AES-MW1-082917

Date Collected: 08/29/17 10:15
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:08	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:08	5
Barium	**0.055**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:08	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:08	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:08	5
Cobalt	**0.00062**	**J**	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:08	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:08	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:08	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:08	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**160**		1.3	0.63	mg/L		09/08/17 11:40	09/20/17 15:24	25

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 15:20	5
Boron	**0.25**	**B**	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 15:20	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 15:20	5
Selenium	**0.0057**		0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 15:20	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		5.0	3.4	mg/L			09/03/17 13:36	1
Chloride	**240**		20	6.0	mg/L			09/07/17 13:03	10
Fluoride	**0.58**	**B**	0.10	0.032	mg/L			09/12/17 10:51	1
Sulfate	**390**		100	28	mg/L			09/11/17 09:56	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.92**				SU			08/29/17 08:15	1

Client Sample ID: AES-MW2-082917

Date Collected: 08/29/17 12:45
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:12	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:12	5
Barium	**0.11**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:12	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:12	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:12	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:12	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:12	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:12	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:12	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 14:57	5
Boron	**0.17**	**B**	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 14:57	5
Calcium	**100**		0.25	0.13	mg/L		09/08/17 11:40	09/20/17 14:57	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 14:57	5
Selenium	**0.00044**	**J**	0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 14:57	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**470**		5.0	3.4	mg/L			09/03/17 13:36	1
Chloride	**37**		2.0	0.60	mg/L			09/07/17 12:13	1
Fluoride	**0.42**	**B**	0.10	0.032	mg/L			09/12/17 10:53	1
Sulfate	**16**		5.0	1.4	mg/L			09/11/17 08:41	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.68**				SU			08/29/17 10:45	1

Client Sample ID: AES-MW3-082917

Date Collected: 08/29/17 14:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:16	5
Arsenic	**0.0024**		0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:16	5
Barium	**0.25**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:16	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:16	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:16	5
Cobalt	**0.0022**	**J**	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:16	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:16	5
Molybdenum	**0.22**		0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:16	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:16	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**390**		1.3	0.63	mg/L		09/08/17 11:40	09/20/17 15:33	25

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 15:28	5
Boron	**0.90**	**B**	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 15:28	5
Lithium	**0.0075**		0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 15:28	5
Selenium	**0.14**		0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 15:28	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**8300**		25	17	mg/L			09/03/17 13:36	1
Chloride	**3700**		180	54	mg/L			09/12/17 08:47	90
Fluoride	**2.3**	**B**	0.10	0.032	mg/L			09/12/17 10:55	1
Sulfate	**1700**		250	70	mg/L			09/11/17 09:52	50

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.01**				SU			08/29/17 12:25	1

Client Sample ID: AES-MW5-082917

Date Collected: 08/29/17 15:55
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:21	5
Arsenic	**0.0021**		0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:21	5
Barium	**0.036**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:21	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:21	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:21	5
Cobalt	**0.0033**		0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:21	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:21	5
Molybdenum	**0.0057**	**J**	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:21	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:21	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**930**		5.0	2.5	mg/L		09/08/17 11:40	09/20/17 15:46	100

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 15:38	5
Boron	**0.39**	**B**	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 15:38	5
Lithium	**0.0039**	**J**	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 15:38	5
Selenium	**0.0099**		0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 15:38	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9800**		25	17	mg/L			09/03/17 13:36	1
Chloride	**3700**		180	54	mg/L			09/12/17 08:47	90
Fluoride	**0.48**		0.10	0.032	mg/L			09/13/17 10:00	1
Sulfate	**2600**		450	130	mg/L			09/11/17 10:15	90

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.79**				SU			08/29/17 13:55	1

Client Sample ID: AES-FB-082917

Date Collected: 08/29/17 16:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:25	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:25	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:25	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:25	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:25	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:25	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:25	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:25	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:25	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 14:53	5
Boron	0.021	U	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 14:53	5
Calcium	0.13	U	0.25	0.13	mg/L		09/08/17 11:40	09/20/17 14:53	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 14:53	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 14:53	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/03/17 13:36	1
Chloride	**0.72**	**J**	2.0	0.60	mg/L			09/12/17 08:05	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/13/17 10:09	1
Sulfate	**3.4**	**J**	5.0	1.4	mg/L			09/11/17 08:41	1

Client Sample ID: AES-MW4-083017

Date Collected: 08/30/17 11:10
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 18:30	5
Arsenic	**0.0027**		0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 18:30	5
Barium	**0.055**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 18:30	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 18:30	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 18:30	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 18:30	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 18:30	5
Molybdenum	**0.40**		0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 18:30	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 18:30	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.6**	**B**	0.50	0.21	mg/L		09/08/17 11:40	09/20/17 16:00	50
Calcium	**670**		2.5	1.3	mg/L		09/08/17 11:40	09/20/17 16:00	50
Lithium	**0.90**		0.050	0.011	mg/L		09/08/17 11:40	09/20/17 16:00	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U F1	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 15:51	5
Selenium	**0.0058**		0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 15:51	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U F1 F2	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42000**		130	85	mg/L			09/05/17 09:44	1
Chloride	**11000**	**F1**	600	180	mg/L			09/12/17 08:47	300
Fluoride	**0.68**		0.10	0.032	mg/L			09/13/17 09:52	1
Sulfate	**16000**	**F1**	3500	980	mg/L			09/11/17 09:56	700

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.14**				SU			08/30/17 09:10	1

Client Sample ID: AES-MW4-DUP-083017

Date Collected: 08/30/17 11:45
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 19:11	5
Arsenic	**0.0024**		0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 19:11	5
Barium	**0.054**		0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 19:11	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 19:11	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 19:11	5
Cobalt	**0.0016**	**J**	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 19:11	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 19:11	5
Molybdenum	**0.42**		0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 19:11	5
Selenium	**0.0054**		0.0013	0.00024	mg/L		09/08/17 11:40	09/19/17 19:11	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 19:11	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.6**	**B**	0.50	0.21	mg/L		09/08/17 11:40	09/20/17 16:14	50
Calcium	**670**		2.5	1.3	mg/L		09/08/17 11:40	09/20/17 16:14	50
Lithium	**0.98**		0.050	0.011	mg/L		09/08/17 11:40	09/20/17 16:14	50

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 16:05	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			09/05/17 09:44	1
Chloride	**11000**		600	180	mg/L			09/12/17 08:51	300
Fluoride	**0.66**		0.10	0.032	mg/L			09/13/17 09:58	1
Sulfate	**16000**		3500	980	mg/L			09/11/17 10:00	700

Client Sample ID: AES-FB-083017

Date Collected: 08/30/17 13:16
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 19:15	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 19:15	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 19:15	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 19:15	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 19:15	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 19:15	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 19:15	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 19:15	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		09/08/17 11:40	09/19/17 19:15	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 19:15	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 14:48	5
Boron	0.021	U	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 14:48	5
Calcium	0.13	U	0.25	0.13	mg/L		09/08/17 11:40	09/20/17 14:48	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 14:48	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/05/17 09:44	1
Chloride	0.60	U	2.0	0.60	mg/L			09/12/17 08:05	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/13/17 10:12	1
Sulfate	**1.4**	**J**	5.0	1.4	mg/L			09/11/17 08:41	1

Definitions/Glossary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082917

Lab Sample ID: 400-142626-1
Matrix: Water
Date Collected: 08/29/17 10:15
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:08	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 15:20	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	368828	09/20/17 15:24	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:48	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366695	09/03/17 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		10	367128	09/07/17 13:03	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367655	09/12/17 10:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	367463	09/11/17 09:56	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/29/17 08:15	BWS	TAL PEN

Client Sample ID: AES-MW2-082917

Lab Sample ID: 400-142626-2
Matrix: Water
Date Collected: 08/29/17 12:45
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:12	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 14:57	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:49	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366695	09/03/17 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	367128	09/07/17 12:13	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367655	09/12/17 10:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	367463	09/11/17 08:41	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/29/17 10:45	BWS	TAL PEN

Client Sample ID: AES-MW3-082917

Lab Sample ID: 400-142626-3
Matrix: Water
Date Collected: 08/29/17 14:25
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:16	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 15:28	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	368828	09/20/17 15:33	DRE	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-082917
Date Collected: 08/29/17 14:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:51	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366695	09/03/17 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	367593	09/12/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367655	09/12/17 10:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		50	367463	09/11/17 09:52	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/29/17 12:25	BWS	TAL PEN

Client Sample ID: AES-MW5-082917
Date Collected: 08/29/17 15:55
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:21	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 15:38	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	368828	09/20/17 15:46	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:53	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366695	09/03/17 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	367593	09/12/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367785	09/13/17 10:00	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		90	367463	09/11/17 10:15	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/29/17 13:55	BWS	TAL PEN

Client Sample ID: AES-FB-082917
Date Collected: 08/29/17 16:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:25	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 14:53	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:54	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366695	09/03/17 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	367593	09/12/17 08:05	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367785	09/13/17 10:09	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	367463	09/11/17 08:41	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-083017

Lab Sample ID: 400-142626-6

Date Collected: 08/30/17 11:10

Matrix: Water

Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 18:30	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 15:51	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	368828	09/20/17 16:00	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 13:56	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366755	09/05/17 09:44	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	367593	09/12/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367785	09/13/17 09:52	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	367463	09/11/17 09:56	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	368562	08/30/17 09:10	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-083017

Lab Sample ID: 400-142626-7

Date Collected: 08/30/17 11:45

Matrix: Water

Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 19:11	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 16:05	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	368828	09/20/17 16:14	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN
Total/NA	Analysis	7470A		1	367552	09/11/17 14:13	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366755	09/05/17 09:44	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	367593	09/12/17 08:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367785	09/13/17 09:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	367463	09/11/17 10:00	RRC	TAL PEN

Client Sample ID: AES-FB-083017

Lab Sample ID: 400-142626-8

Date Collected: 08/30/17 13:16

Matrix: Water

Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	368677	09/19/17 19:15	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		367262	09/08/17 11:40	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	368828	09/20/17 14:48	DRE	TAL PEN
Total/NA	Prep	7470A			367298	09/08/17 13:57	JAP	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-083017
Date Collected: 08/30/17 13:16
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	367552	09/11/17 14:15	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	366755	09/05/17 09:44	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	367593	09/12/17 08:05	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	367785	09/13/17 10:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	367463	09/11/17 08:41	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 367262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total Recoverable	Water	3005A	
400-142626-1 - RA	AES-MW1-082917	Total Recoverable	Water	3005A	
400-142626-1 - DL	AES-MW1-082917	Total Recoverable	Water	3005A	
400-142626-2 - RA	AES-MW2-082917	Total Recoverable	Water	3005A	
400-142626-2	AES-MW2-082917	Total Recoverable	Water	3005A	
400-142626-3	AES-MW3-082917	Total Recoverable	Water	3005A	
400-142626-3 - RA	AES-MW3-082917	Total Recoverable	Water	3005A	
400-142626-3 - DL	AES-MW3-082917	Total Recoverable	Water	3005A	
400-142626-4	AES-MW5-082917	Total Recoverable	Water	3005A	
400-142626-4 - RA	AES-MW5-082917	Total Recoverable	Water	3005A	
400-142626-4 - DL	AES-MW5-082917	Total Recoverable	Water	3005A	
400-142626-5	AES-FB-082917	Total Recoverable	Water	3005A	
400-142626-5 - RA	AES-FB-082917	Total Recoverable	Water	3005A	
400-142626-6	AES-MW4-083017	Total Recoverable	Water	3005A	
400-142626-6 - RA	AES-MW4-083017	Total Recoverable	Water	3005A	
400-142626-6 - DL	AES-MW4-083017	Total Recoverable	Water	3005A	
400-142626-7 - RA	AES-MW4-DUP-083017	Total Recoverable	Water	3005A	
400-142626-7	AES-MW4-DUP-083017	Total Recoverable	Water	3005A	
400-142626-7 - DL	AES-MW4-DUP-083017	Total Recoverable	Water	3005A	
400-142626-8 - RA	AES-FB-083017	Total Recoverable	Water	3005A	
400-142626-8	AES-FB-083017	Total Recoverable	Water	3005A	
MB 400-367262/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
MB 400-367262/1-A ^5 - RA	Method Blank	Total Recoverable	Water	3005A	
LCS 400-367262/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 400-367262/2-A - RA	Lab Control Sample	Total Recoverable	Water	3005A	
400-142626-6 MS	AES-MW4-083017	Total Recoverable	Water	3005A	
400-142626-6 MSD	AES-MW4-083017	Total Recoverable	Water	3005A	

Prep Batch: 367298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	7470A	
400-142626-2	AES-MW2-082917	Total/NA	Water	7470A	
400-142626-3	AES-MW3-082917	Total/NA	Water	7470A	
400-142626-4	AES-MW5-082917	Total/NA	Water	7470A	
400-142626-5	AES-FB-082917	Total/NA	Water	7470A	
400-142626-6	AES-MW4-083017	Total/NA	Water	7470A	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	7470A	
400-142626-8	AES-FB-083017	Total/NA	Water	7470A	
MB 400-367298/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-367298/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	7470A	
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	7470A	

Analysis Batch: 367552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	7470A	367298
400-142626-2	AES-MW2-082917	Total/NA	Water	7470A	367298
400-142626-3	AES-MW3-082917	Total/NA	Water	7470A	367298
400-142626-4	AES-MW5-082917	Total/NA	Water	7470A	367298
400-142626-5	AES-FB-082917	Total/NA	Water	7470A	367298
400-142626-6	AES-MW4-083017	Total/NA	Water	7470A	367298

Metals (Continued)

Analysis Batch: 367552 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	7470A	367298
400-142626-8	AES-FB-083017	Total/NA	Water	7470A	367298
MB 400-367298/14-A	Method Blank	Total/NA	Water	7470A	367298
LCS 400-367298/15-A	Lab Control Sample	Total/NA	Water	7470A	367298
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	7470A	367298
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	7470A	367298

Analysis Batch: 368677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total Recoverable	Water	6020	367262
400-142626-2	AES-MW2-082917	Total Recoverable	Water	6020	367262
400-142626-3	AES-MW3-082917	Total Recoverable	Water	6020	367262
400-142626-4	AES-MW5-082917	Total Recoverable	Water	6020	367262
400-142626-5	AES-FB-082917	Total Recoverable	Water	6020	367262
400-142626-6	AES-MW4-083017	Total Recoverable	Water	6020	367262
400-142626-7	AES-MW4-DUP-083017	Total Recoverable	Water	6020	367262
400-142626-8	AES-FB-083017	Total Recoverable	Water	6020	367262
MB 400-367262/1-A ^5	Method Blank	Total Recoverable	Water	6020	367262
LCS 400-367262/2-A	Lab Control Sample	Total Recoverable	Water	6020	367262
400-142626-6 MS	AES-MW4-083017	Total Recoverable	Water	6020	367262
400-142626-6 MSD	AES-MW4-083017	Total Recoverable	Water	6020	367262

Analysis Batch: 368828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1 - RA	AES-MW1-082917	Total Recoverable	Water	6020	367262
400-142626-1 - DL	AES-MW1-082917	Total Recoverable	Water	6020	367262
400-142626-2 - RA	AES-MW2-082917	Total Recoverable	Water	6020	367262
400-142626-3 - RA	AES-MW3-082917	Total Recoverable	Water	6020	367262
400-142626-3 - DL	AES-MW3-082917	Total Recoverable	Water	6020	367262
400-142626-4 - RA	AES-MW5-082917	Total Recoverable	Water	6020	367262
400-142626-4 - DL	AES-MW5-082917	Total Recoverable	Water	6020	367262
400-142626-5 - RA	AES-FB-082917	Total Recoverable	Water	6020	367262
400-142626-6 - RA	AES-MW4-083017	Total Recoverable	Water	6020	367262
400-142626-6 - DL	AES-MW4-083017	Total Recoverable	Water	6020	367262
400-142626-7 - RA	AES-MW4-DUP-083017	Total Recoverable	Water	6020	367262
400-142626-7 - DL	AES-MW4-DUP-083017	Total Recoverable	Water	6020	367262
400-142626-8 - RA	AES-FB-083017	Total Recoverable	Water	6020	367262
MB 400-367262/1-A ^5 - RA	Method Blank	Total Recoverable	Water	6020	367262
LCS 400-367262/2-A - RA	Lab Control Sample	Total Recoverable	Water	6020	367262

General Chemistry

Analysis Batch: 366695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	SM 2540C	
400-142626-2	AES-MW2-082917	Total/NA	Water	SM 2540C	
400-142626-3	AES-MW3-082917	Total/NA	Water	SM 2540C	
400-142626-4	AES-MW5-082917	Total/NA	Water	SM 2540C	
400-142626-5	AES-FB-082917	Total/NA	Water	SM 2540C	
MB 400-366695/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 366695 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-366695/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-142388-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
400-142388-B-3 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 366755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-6	AES-MW4-083017	Total/NA	Water	SM 2540C	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	SM 2540C	
400-142626-8	AES-FB-083017	Total/NA	Water	SM 2540C	
MB 400-366755/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-366755/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-142576-D-3 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 367128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	SM 4500 Cl- E	
400-142626-2	AES-MW2-082917	Total/NA	Water	SM 4500 Cl- E	
MB 400-367128/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-367128/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-367128/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-142502-A-15 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-142502-A-15 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 367463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	SM 4500 SO4 E	
400-142626-2	AES-MW2-082917	Total/NA	Water	SM 4500 SO4 E	
400-142626-3	AES-MW3-082917	Total/NA	Water	SM 4500 SO4 E	
400-142626-4	AES-MW5-082917	Total/NA	Water	SM 4500 SO4 E	
400-142626-5	AES-FB-082917	Total/NA	Water	SM 4500 SO4 E	
400-142626-6	AES-MW4-083017	Total/NA	Water	SM 4500 SO4 E	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	SM 4500 SO4 E	
400-142626-8	AES-FB-083017	Total/NA	Water	SM 4500 SO4 E	
MB 400-367463/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-367463/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-367463/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	SM 4500 SO4 E	
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 367593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-3	AES-MW3-082917	Total/NA	Water	SM 4500 Cl- E	
400-142626-4	AES-MW5-082917	Total/NA	Water	SM 4500 Cl- E	
400-142626-5	AES-FB-082917	Total/NA	Water	SM 4500 Cl- E	
400-142626-6	AES-MW4-083017	Total/NA	Water	SM 4500 Cl- E	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	SM 4500 Cl- E	
400-142626-8	AES-FB-083017	Total/NA	Water	SM 4500 Cl- E	
MB 400-367593/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-367593/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-367593/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 367593 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 367655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	SM 4500 F C	
400-142626-2	AES-MW2-082917	Total/NA	Water	SM 4500 F C	
400-142626-3	AES-MW3-082917	Total/NA	Water	SM 4500 F C	
MB 400-367655/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-367655/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-142502-A-12 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-142502-A-12 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 367785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-4	AES-MW5-082917	Total/NA	Water	SM 4500 F C	
400-142626-5	AES-FB-082917	Total/NA	Water	SM 4500 F C	
400-142626-6	AES-MW4-083017	Total/NA	Water	SM 4500 F C	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	SM 4500 F C	
400-142626-8	AES-FB-083017	Total/NA	Water	SM 4500 F C	
MB 400-367785/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-367785/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	SM 4500 F C	
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	SM 4500 F C	
400-142913-A-4 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 368562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	Field Sampling	
400-142626-2	AES-MW2-082917	Total/NA	Water	Field Sampling	
400-142626-3	AES-MW3-082917	Total/NA	Water	Field Sampling	
400-142626-4	AES-MW5-082917	Total/NA	Water	Field Sampling	
400-142626-6	AES-MW4-083017	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-367262/1-A ^5
Matrix: Water
Analysis Batch: 368677

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/19/17 17:36	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/19/17 17:36	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/08/17 11:40	09/19/17 17:36	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 17:36	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/19/17 17:36	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/19/17 17:36	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/08/17 11:40	09/19/17 17:36	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/19/17 17:36	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/19/17 17:36	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/19/17 17:36	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		09/08/17 11:40	09/19/17 17:36	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/19/17 17:36	5

Lab Sample ID: LCS 400-367262/2-A
Matrix: Water
Analysis Batch: 368677

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0500		mg/L		100	80 - 120
Arsenic	0.0500	0.0523		mg/L		105	80 - 120
Barium	0.0500	0.0499		mg/L		100	80 - 120
Beryllium	0.0500	0.0495		mg/L		99	80 - 120
Cadmium	0.0500	0.0481		mg/L		96	80 - 120
Chromium	0.0500	0.0502		mg/L		100	80 - 120
Cobalt	0.0500	0.0524		mg/L		105	80 - 120
Lead	0.0500	0.0481		mg/L		96	80 - 120
Lithium	0.0500	0.0477		mg/L		95	80 - 120
Molybdenum	0.0500	0.0474		mg/L		95	80 - 120
Selenium	0.0500	0.0526		mg/L		105	80 - 120
Thallium	0.0100	0.00985		mg/L		99	80 - 120

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 368677

Client Sample ID: AES-MW4-083017
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0512		mg/L		102	75 - 125
Arsenic	0.0027		0.0500	0.0598		mg/L		114	75 - 125
Barium	0.055		0.0500	0.111		mg/L		110	75 - 125
Beryllium	0.00034	U ^ F1	0.0500	0.0728	F1 ^	mg/L		146	75 - 125
Boron	4.4	E ^ *	0.100	5.61	E 4 ^	mg/L		1169	75 - 125
Cadmium	0.00034	U	0.0500	0.0459		mg/L		92	75 - 125
Calcium	630	E ^	5.00	654	E 4 ^	mg/L		379	75 - 125
Chromium	0.0011	U	0.0500	0.0519		mg/L		104	75 - 125
Cobalt	0.0017	J	0.0500	0.0509		mg/L		98	75 - 125
Lead	0.00035	U	0.0500	0.0421		mg/L		84	75 - 125
Lithium	1.2	E	0.0500	1.48	E 4	mg/L		629	75 - 125
Molybdenum	0.40		0.0500	0.479	4	mg/L		151	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 368677

Client Sample ID: AES-MW4-083017
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.0033		0.0500	0.0666	F1	mg/L		127	75 - 125
Thallium	0.000085	U	0.0100	0.00840		mg/L		84	75 - 125

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 368677

Client Sample ID: AES-MW4-083017
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0512		mg/L		102	75 - 125	0	20
Arsenic	0.0027		0.0500	0.0527		mg/L		100	75 - 125	13	20
Barium	0.055		0.0500	0.105		mg/L		98	75 - 125	6	20
Beryllium	0.00034	U ^ F1	0.0500	0.0694	F1 ^	mg/L		139	75 - 125	5	20
Boron	4.4	E ^ *	0.100	5.29	E 4	mg/L		840	75 - 125	6	20
Cadmium	0.00034	U	0.0500	0.0476		mg/L		95	75 - 125	4	20
Calcium	630	E ^	5.00	639	E 4 ^	mg/L		95	75 - 125	2	20
Chromium	0.0011	U	0.0500	0.0456		mg/L		91	75 - 125	13	20
Cobalt	0.0017	J	0.0500	0.0455		mg/L		88	75 - 125	11	20
Lead	0.00035	U	0.0500	0.0416		mg/L		83	75 - 125	1	20
Lithium	1.2	E	0.0500	1.47	E 4	mg/L		594	75 - 125	1	20
Molybdenum	0.40		0.0500	0.467	4	mg/L		127	75 - 125	3	20
Selenium	0.0033		0.0500	0.0594		mg/L		112	75 - 125	12	20
Thallium	0.000085	U	0.0100	0.00834		mg/L		83	75 - 125	1	20

Method: 6020 - Metals (ICP/MS) - RA

Lab Sample ID: MB 400-367262/1-A ^5
Matrix: Water
Analysis Batch: 368828

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony - RA	0.0010	U	0.0025	0.0010	mg/L		09/08/17 11:40	09/20/17 14:35	5
Arsenic - RA	0.00046	U	0.0013	0.00046	mg/L		09/08/17 11:40	09/20/17 14:35	5
Barium - RA	0.00049	U	0.0025	0.00049	mg/L		09/08/17 11:40	09/20/17 14:35	5
Beryllium - RA	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 14:35	5
Boron - RA	0.0230	J	0.050	0.021	mg/L		09/08/17 11:40	09/20/17 14:35	5
Cadmium - RA	0.00034	U	0.0025	0.00034	mg/L		09/08/17 11:40	09/20/17 14:35	5
Calcium - RA	0.13	U	0.25	0.13	mg/L		09/08/17 11:40	09/20/17 14:35	5
Chromium - RA	0.0011	U	0.0025	0.0011	mg/L		09/08/17 11:40	09/20/17 14:35	5
Cobalt - RA	0.00040	U	0.0025	0.00040	mg/L		09/08/17 11:40	09/20/17 14:35	5
Lead - RA	0.00035	U	0.0013	0.00035	mg/L		09/08/17 11:40	09/20/17 14:35	5
Lithium - RA	0.0011	U	0.0050	0.0011	mg/L		09/08/17 11:40	09/20/17 14:35	5
Molybdenum - RA	0.00085	U	0.015	0.00085	mg/L		09/08/17 11:40	09/20/17 14:35	5
Selenium - RA	0.00024	U	0.0013	0.00024	mg/L		09/08/17 11:40	09/20/17 14:35	5
Thallium - RA	0.000085	U	0.00050	0.000085	mg/L		09/08/17 11:40	09/20/17 14:35	5

Method: 6020 - Metals (ICP/MS) - RA (Continued)

Lab Sample ID: LCS 400-367262/2-A
Matrix: Water
Analysis Batch: 368828

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 367262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony - RA	0.0500	0.0513		mg/L		103	80 - 120
Arsenic - RA	0.0500	0.0527		mg/L		105	80 - 120
Barium - RA	0.0500	0.0495		mg/L		99	80 - 120
Beryllium - RA	0.0500	0.0507		mg/L		101	80 - 120
Boron - RA	0.100	0.106		mg/L		106	80 - 120
Cadmium - RA	0.0500	0.0519		mg/L		104	80 - 120
Calcium - RA	5.00	5.01		mg/L		100	80 - 120
Chromium - RA	0.0500	0.0499		mg/L		100	80 - 120
Cobalt - RA	0.0500	0.0533		mg/L		107	80 - 120
Lead - RA	0.0500	0.0495		mg/L		99	80 - 120
Lithium - RA	0.0500	0.0538		mg/L		108	80 - 120
Molybdenum - RA	0.0500	0.0508		mg/L		102	80 - 120
Selenium - RA	0.0500	0.0518		mg/L		104	80 - 120
Thallium - RA	0.0100	0.0106		mg/L		106	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-367298/14-A
Matrix: Water
Analysis Batch: 367552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 367298

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/08/17 13:57	09/11/17 13:44	1

Lab Sample ID: LCS 400-367298/15-A
Matrix: Water
Analysis Batch: 367552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 367298

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000886		mg/L		88	80 - 120

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 367552

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 367298

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U F1 F2	0.00201	0.000847	F1	mg/L		42	80 - 120

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 367552

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 367298

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U F1 F2	0.00201	0.00105	F1 F2	mg/L		52	80 - 120	21	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-366695/1
Matrix: Water
Analysis Batch: 366695

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/03/17 13:36	1

Lab Sample ID: LCS 400-366695/2
Matrix: Water
Analysis Batch: 366695

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	290		mg/L		99	78 - 122

Lab Sample ID: 400-142388-B-1 DU
Matrix: Water
Analysis Batch: 366695

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	250		254		mg/L		0	5

Lab Sample ID: 400-142388-B-3 DU
Matrix: Water
Analysis Batch: 366695

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	380		378		mg/L		0.5	5

Lab Sample ID: MB 400-366755/1
Matrix: Water
Analysis Batch: 366755

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/05/17 09:44	1

Lab Sample ID: LCS 400-366755/2
Matrix: Water
Analysis Batch: 366755

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	274		mg/L		94	78 - 122

Lab Sample ID: 400-142576-D-3 DU
Matrix: Water
Analysis Batch: 366755

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	10		10.0		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-367128/6
Matrix: Water
Analysis Batch: 367128

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			09/07/17 11:22	1

Lab Sample ID: LCS 400-367128/7
Matrix: Water
Analysis Batch: 367128

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.5		mg/L		102	90 - 110

Lab Sample ID: MRL 400-367128/3
Matrix: Water
Analysis Batch: 367128

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.94	J	mg/L		97	50 - 150

Lab Sample ID: 400-142502-A-15 MS
Matrix: Water
Analysis Batch: 367128

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
Chloride	100	F1	50.0	108	F1	mg/L		8	73 - 120

Lab Sample ID: 400-142502-A-15 MSD
Matrix: Water
Analysis Batch: 367128

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
Chloride	100	F1	50.0	110	F1	mg/L		11	73 - 120	2	8

Lab Sample ID: MB 400-367593/6
Matrix: Water
Analysis Batch: 367593

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			09/12/17 07:48	1

Lab Sample ID: LCS 400-367593/7
Matrix: Water
Analysis Batch: 367593

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.9		mg/L		100	90 - 110

Lab Sample ID: MRL 400-367593/3
Matrix: Water
Analysis Batch: 367593

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.10		mg/L		105	50 - 150

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 367593

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	11000	F1	3000	10300	F1	mg/L		-18	73 - 120		

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 367593

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	11000	F1	3000	10300	F1	mg/L		-18	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-367655/3
Matrix: Water
Analysis Batch: 367655

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.100		0.10	0.032	mg/L			09/12/17 10:26	1

Lab Sample ID: LCS 400-367655/4
Matrix: Water
Analysis Batch: 367655

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			4.00	3.94		mg/L		99	90 - 110		

Lab Sample ID: 400-142502-A-12 MS
Matrix: Water
Analysis Batch: 367655

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		
Fluoride	0.18	B	1.00	1.29		mg/L		111	75 - 125		

Lab Sample ID: 400-142502-A-12 MSD
Matrix: Water
Analysis Batch: 367655

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
Fluoride	0.18	B	1.00	1.29		mg/L		111	75 - 125	0	4

Lab Sample ID: MB 400-367785/3
Matrix: Water
Analysis Batch: 367785

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			09/13/17 09:44	1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 400-367785/4
Matrix: Water
Analysis Batch: 367785

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.10		mg/L		103	90 - 110

Lab Sample ID: 400-142913-A-4 DU
Matrix: Water
Analysis Batch: 367785

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.88		0.880		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-367463/6
Matrix: Water
Analysis Batch: 367463

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			09/11/17 07:58	1

Lab Sample ID: LCS 400-367463/7
Matrix: Water
Analysis Batch: 367463

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.2		mg/L		95	90 - 110

Lab Sample ID: MRL 400-367463/3
Matrix: Water
Analysis Batch: 367463

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.72	J	mg/L		94	50 - 150

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 367463

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	16000	F1	7000	15500	F1	mg/L		-7	77 - 128

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 367463

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	16000	F1	7000	16000	F1	mg/L		-1	77 - 128	3	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:	Analysis Requested		
City: Guaynabo	TAT Requested (days): REGULAR TAT (10-day)			
State, Zip: PR, 00969-5375	PO #:			
Phone: 787-209-6386(Tel)	WO #:			
Email: dna.environment1@gmail.com	Project #: 40008317			
Project Name: CCR App.III/IV GW Monitoring	SSOW#:			
Site: AES PUERTO RICO, GUAYAMA, PR				

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

400-142626 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-082917	8-29-17	1015	G	Water	N		X	X	X	3	pH = 6.92
AES-MW2-082917		1245		Water			X	X	X	3	pH 6.68
AES-MW3-082917		1425		Water			X	X	X	3	pH = 7.01
AES-MW5-082917		1555		Water			X	X	X	3	pH = 6.79
AES-FB-082917		1625		Water			X	X	X	3	
AES-MW4-083017	8-30-17	1110		Water			X	X	X	3	pH = 7.14
AES-MW4-Dup-083017		1145		Water			X	X	X	3	
AES-MW4-MS-083017		1215		Water		Y	X	X	X	3	
AES-MW4-MSD-083017		1245		Water		Y	X	X	X	3	
AES-FB-083017		1316		Water			X	X	X	3	
											⊕ FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8/30/17 14:55	DNA		8/31/17 925	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0°C, 29.5°C IR-2

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142626-1
SDG Number: AES Puerto Rico, LP

Login Number: 142626
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C Wet chem & Metals cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-142626-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
9/29/2017 7:03:27 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Method Summary 4
Sample Summary 5
Client Sample Results 6
Definitions 14
Chronicle 15
QC Association 17
QC Sample Results 18
Chain of Custody 20
Receipt Checklists 21
Certification Summary 22

Job ID: 400-142626-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-142626-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-325812. The following samples formed a precipitate when Ba Carrier was added: AES-MW4-083017 (400-142626-6), AES-MW4-083017 (400-142626-6[MS]), AES-MW4-083017 (400-142626-6[MSD]) and AES-MW4-DUP-083017 (400-142626-7).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-325778. The following samples formed a precipitate when Ba Carrier was added: AES-MW4-083017 (400-142626-6), AES-MW4-083017 (400-142626-6[MS]), AES-MW4-083017 (400-142626-6[MSD]) and AES-MW4-DUP-083017 (400-142626-7).

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-142626-1	AES-MW1-082917	Water	08/29/17 10:15	08/31/17 09:25
400-142626-2	AES-MW2-082917	Water	08/29/17 12:45	08/31/17 09:25
400-142626-3	AES-MW3-082917	Water	08/29/17 14:25	08/31/17 09:25
400-142626-4	AES-MW5-082917	Water	08/29/17 15:55	08/31/17 09:25
400-142626-5	AES-FB-082917	Water	08/29/17 16:25	08/31/17 09:25
400-142626-6	AES-MW4-083017	Water	08/30/17 11:10	08/31/17 09:25
400-142626-7	AES-MW4-DUP-083017	Water	08/30/17 11:45	08/31/17 09:25
400-142626-8	AES-FB-083017	Water	08/30/17 13:16	08/31/17 09:25

Client Sample ID: AES-MW1-082917

Date Collected: 08/29/17 10:15
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0441	U	0.0517	0.0519	1.00	0.0835	pCi/L	09/06/17 07:29	09/28/17 14:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:39*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.576**		0.258	0.263	1.00	0.370	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.5*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*87.5*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.620**		0.263	0.268	5.00	0.370	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-MW2-082917

Date Collected: 08/29/17 12:45
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.113		0.0680	0.0688	1.00	0.0864	pCi/L	09/06/17 07:29	09/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0676	U	0.201	0.201	1.00	0.349	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*87.9*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.181	U	0.212	0.212	5.00	0.349	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-MW3-082917

Date Collected: 08/29/17 14:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.0888**		0.0577	0.0583	1.00	0.0720	pCi/L	09/06/17 07:29	09/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.285	U	0.214	0.216	1.00	0.336	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*88.6*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.374**		0.222	0.223	5.00	0.336	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-MW5-082917

Date Collected: 08/29/17 15:55
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.217		0.0921	0.0941	1.00	0.104	pCi/L	09/06/17 07:29	09/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.384		0.219	0.222	1.00	0.326	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*89.3*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.601		0.238	0.241	5.00	0.326	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-FB-082917

Date Collected: 08/29/17 16:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0244	U	0.0485	0.0486	1.00	0.0881	pCi/L	09/06/17 07:29	09/28/17 14:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.116	U	0.208	0.209	1.00	0.354	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*89.3*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.140	U	0.214	0.214	5.00	0.354	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-MW4-083017

Date Collected: 08/30/17 11:10
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0536	U	0.0493	0.0495	1.00	0.0731	pCi/L	09/06/17 07:29	09/28/17 16:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*09/06/17 07:29*	*09/28/17 16:25*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.403**		0.228	0.231	1.00	0.342	pCi/L	09/06/17 08:35	09/12/17 13:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.1*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*
Y Carrier	*89.7*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.457**		0.233	0.236	5.00	0.342	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-MW4-DUP-083017

Lab Sample ID: 400-142626-7

Date Collected: 08/30/17 11:45

Matrix: Water

Date Received: 08/31/17 09:25

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0426	U	0.0467	0.0469	1.00	0.0739	pCi/L	09/06/17 07:29	09/28/17 16:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*09/06/17 07:29*	*09/28/17 16:25*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.103	U	0.215	0.215	1.00	0.367	pCi/L	09/06/17 08:35	09/12/17 13:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:47*	*1*
Y Carrier	*85.2*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:47*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.146	U	0.220	0.220	5.00	0.367	pCi/L		09/29/17 13:09	1

Client Sample ID: AES-FB-083017

Date Collected: 08/30/17 13:16
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0115	U	0.0374	0.0374	1.00	0.0738	pCi/L	09/06/17 07:29	09/28/17 16:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*09/06/17 07:29*	*09/28/17 16:25*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.230	U	0.217	0.218	1.00	0.349	pCi/L	09/06/17 08:35	09/12/17 13:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.4*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:47*	*1*
Y Carrier	*83.4*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:47*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.242	U	0.220	0.221	5.00	0.349	pCi/L		09/29/17 13:09	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-082917
Lab Sample ID: 400-142626-1
Date Collected: 08/29/17 10:15
Matrix: Water
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329488	09/28/17 14:39	CDR	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-MW2-082917
Lab Sample ID: 400-142626-2
Date Collected: 08/29/17 12:45
Matrix: Water
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329488	09/28/17 14:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-MW3-082917
Lab Sample ID: 400-142626-3
Date Collected: 08/29/17 14:25
Matrix: Water
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329488	09/28/17 14:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-MW5-082917
Lab Sample ID: 400-142626-4
Date Collected: 08/29/17 15:55
Matrix: Water
Date Received: 08/31/17 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329488	09/28/17 14:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-082917

Date Collected: 08/29/17 16:25
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329488	09/28/17 14:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-MW4-083017

Date Collected: 08/30/17 11:10
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329341	09/28/17 16:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:46	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-MW4-DUP-083017

Date Collected: 08/30/17 11:45
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329341	09/28/17 16:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:47	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Client Sample ID: AES-FB-083017

Date Collected: 08/30/17 13:16
Date Received: 08/31/17 09:25

Lab Sample ID: 400-142626-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			325778	09/06/17 07:29	MBC	TAL SL
Total/NA	Analysis	9315		1	329341	09/28/17 16:25	RTM	TAL SL
Total/NA	Prep	PrecSep_0			325812	09/06/17 08:35	LDE	TAL SL
Total/NA	Analysis	9320		1	326689	09/12/17 13:47	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	329732	09/29/17 13:09	CAH	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 325778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	PrecSep-21	
400-142626-2	AES-MW2-082917	Total/NA	Water	PrecSep-21	
400-142626-3	AES-MW3-082917	Total/NA	Water	PrecSep-21	
400-142626-4	AES-MW5-082917	Total/NA	Water	PrecSep-21	
400-142626-5	AES-FB-082917	Total/NA	Water	PrecSep-21	
400-142626-6	AES-MW4-083017	Total/NA	Water	PrecSep-21	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	PrecSep-21	
400-142626-8	AES-FB-083017	Total/NA	Water	PrecSep-21	
MB 160-325778/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-325778/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	PrecSep-21	
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	PrecSep-21	

Prep Batch: 325812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-142626-1	AES-MW1-082917	Total/NA	Water	PrecSep_0	
400-142626-2	AES-MW2-082917	Total/NA	Water	PrecSep_0	
400-142626-3	AES-MW3-082917	Total/NA	Water	PrecSep_0	
400-142626-4	AES-MW5-082917	Total/NA	Water	PrecSep_0	
400-142626-5	AES-FB-082917	Total/NA	Water	PrecSep_0	
400-142626-6	AES-MW4-083017	Total/NA	Water	PrecSep_0	
400-142626-7	AES-MW4-DUP-083017	Total/NA	Water	PrecSep_0	
400-142626-8	AES-FB-083017	Total/NA	Water	PrecSep_0	
MB 160-325812/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-325812/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-142626-6 MS	AES-MW4-083017	Total/NA	Water	PrecSep_0	
400-142626-6 MSD	AES-MW4-083017	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-325778/1-A
Matrix: Water
Analysis Batch: 329341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 325778

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.004170	U	0.0329	0.0329	1.00	0.0695	pCi/L	09/06/17 07:29	09/28/17 14:25	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*09/06/17 07:29*	*09/28/17 14:25*	*1*

Lab Sample ID: LCS 160-325778/2-A
Matrix: Water
Analysis Batch: 329341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 325778

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	9.205		0.953	1.00	0.0624	pCi/L	96	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 329341

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 325778

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0536	U	9.61	8.786		0.917	1.00	0.0940	pCi/L	91	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 329341

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 325778

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0536	U	9.61	7.710		0.824	1.00	0.0760	pCi/L	80	75 - 138	0.62	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.4*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-325812/1-A
Matrix: Water
Analysis Batch: 326688

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 325812

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1965	U	0.222	0.222	1.00	0.364	pCi/L	09/06/17 08:35	09/12/17 13:43	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:43*	*1*
Y Carrier	*87.9*		*40 - 110*	*09/06/17 08:35*	*09/12/17 13:43*	*1*

Lab Sample ID: LCS 160-325812/2-A
Matrix: Water
Analysis Batch: 326688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 325812

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	13.96		1.49	1.00	0.353	pCi/L	108	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Lab Sample ID: 400-142626-6 MS
Matrix: Water
Analysis Batch: 326689

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 325812

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.403		12.9	12.63		1.37	1.00	0.312	pCi/L	95	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: 400-142626-6 MSD
Matrix: Water
Analysis Batch: 326689

Client Sample ID: AES-MW4-083017
Prep Type: Total/NA
Prep Batch: 325812

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.403		12.9	14.46		1.58	1.00	0.410	pCi/L	109	45 - 150	0.62	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*94.4*		*40 - 110*
Y Carrier	*79.3*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:
Address: 35 Calle Juan C Borbon Ste 67-227	Due Date Requested:	Analysis Requested		
City: Guaynabo	TAT Requested (days): REGULAR TAT (10-day)			
State, Zip: PR, 00969-5375	PO #:			
Phone: 787-209-6386(Tel)	WO #:			
Email: dna.environment1@gmail.com	Project #: 40008317			
Project Name: CCR App.III/IV GW Monitoring	SSOW#:			
Site: AES PUERTO RICO, GUAYAMA, PR				

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

400-142626 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, SM4500_H+, pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-082917	8-29-17	1015	G	Water	N		X	X	X	3	⊕ pH = 6.92
AES-MW2-082917		1245		Water			X	X	X	3	pH 6.68
AES-MW3-082917		1425		Water			X	X	X	3	pH = 7.01
AES-MW5-082917		1555		Water			X	X	X	3	pH = 6.79
AES-FB-082917		1625		Water			X	X	X	3	
AES-MW4-083017	8-30-17	1110		Water			X	X	X	3	pH = 7.14
AES-MW4-Dup-083017		1145		Water			X	X	X	3	
AES-MW4-MS-083017		1215		Water		Y	X	X	X	3	
AES-MW4-MSD-083017		1245		Water		Y	X	X	X	3	
AES-FB-083017		1316		Water			X	X	X	3	
											⊕ FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 8/30/17 14:55	Company: DNA	Received by:
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Date/Time:	Company
8/31/17 925	
Date/Time:	Company
Date/Time:	Company

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No		0.0°C, 29.5°C IR-2

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-142626-2
SDG Number: AES Puerto Rico, LP

Login Number: 142626
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	28.5°C Rads cooler
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-142626-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-17 *
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-143316-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:27:19 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 17
Chronicle 18
QC Association 21
QC Sample Results 25
Chain of Custody 33
Receipt Checklists 34
Certification Summary 35

Job ID: 400-143316-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-143316-1

Comments
Revised Report (Rev. 2) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 1) - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The post digestion spike % recovery for Calcium associated with batch 369709 was outside of control limits.

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 369406 and analytical batch 369709 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-091217 (400-143316-1), AES-MW3-091217 (400-143316-3), AES-MW5-091217 (400-143316-4), AES-MW4-091317 (400-143316-6) and AES-MW4-DUP-091317 (400-143316-7). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 368589 and analytical batch 368950 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

General Chemistry
Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 368859 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-091217 (400-143316-1), AES-MW3-091217 (400-143316-3), AES-MW3-091217 (400-143316-3[MS]), AES-MW3-091217 (400-143316-3[MSD]), AES-MW5-091217 (400-143316-4), AES-MW4-091317 (400-143316-6) and AES-MW4-DUP-091317 (400-143316-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 368904 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-091217 (400-143316-1), AES-MW3-091217 (400-143316-3), AES-MW3-091217 (400-143316-3[MS]), AES-MW3-091217 (400-143316-3[MSD]), AES-MW5-091217 (400-143316-4), AES-MW4-091317 (400-143316-6) and AES-MW4-DUP-091317 (400-143316-7). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-091217 — Lab Sample ID: 400-143316-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00046	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.057		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.26		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00075	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0018	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0057		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	160		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1400		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	220		10	3.0	mg/L	5		SM 4500 Cl- E	Total/NA
Fluoride	0.47		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	410		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	6.90				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-091217 — Lab Sample ID: 400-143316-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.11		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.17		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	94		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.00094	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00046	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	480		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	36		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.35		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	9.8		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.65				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-091217 — Lab Sample ID: 400-143316-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0012	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0029		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.23		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.90		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0025		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0056	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-091217 (Continued) — Lab Sample ID: 400-143316-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.28	F1	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.18	F1	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	370		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	9900		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3900		180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	1.9		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2300	F1	400	110	mg/L	80		SM 4500 SO4 E	Total/NA
Field pH	7.03				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-091217 — Lab Sample ID: 400-143316-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0041		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.038		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.37		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0033		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0014	J B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0048	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0053		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	830		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	9700		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3400		140	42	mg/L	70		SM 4500 Cl- E	Total/NA
Fluoride	0.29		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2600		400	110	mg/L	80		SM 4500 SO4 E	Total/NA
Field pH	6.76				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-091217 — Lab Sample ID: 400-143316-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00026	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable

Client Sample ID: AES-MW4-091317 — Lab Sample ID: 400-143316-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0035		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.056		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.75	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-091317 (Continued) — Lab Sample ID: 400-143316-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.41		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.013		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.2		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	600		2.5	1.3	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	42000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	10000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.53		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	17000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA
Field pH	7.12				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-091317 — Lab Sample ID: 400-143316-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0038		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.056		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.86	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.42		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.014		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.4		0.50	0.21	mg/L	50		6020	Total Recoverable
Calcium - DL	610		2.5	1.3	mg/L	50		6020	Total Recoverable
Total Dissolved Solids	43000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	10000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.63		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	17000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-FB-091317 — Lab Sample ID: 400-143316-8

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-143316-1	AES-MW1-091217	Water	09/12/17 10:25	09/14/17 08:38
400-143316-2	AES-MW2-091217	Water	09/12/17 11:30	09/14/17 08:38
400-143316-3	AES-MW3-091217	Water	09/12/17 13:55	09/14/17 08:38
400-143316-4	AES-MW5-091217	Water	09/12/17 16:25	09/14/17 08:38
400-143316-5	AES-FB-091217	Water	09/12/17 16:50	09/14/17 08:38
400-143316-6	AES-MW4-091317	Water	09/13/17 11:35	09/14/17 08:38
400-143316-7	AES-MW4-DUP-091317	Water	09/13/17 12:05	09/14/17 08:38
400-143316-8	AES-FB-091317	Water	09/13/17 12:35	09/14/17 08:38

Client Sample ID: AES-MW1-091217

Date Collected: 09/12/17 10:25
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 14:14	5
Arsenic	**0.00046**	**J**	0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 14:14	5
Barium	**0.057**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 14:14	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:14	5
Boron	**0.26**		0.050	0.021	mg/L		09/25/17 13:22	09/26/17 14:14	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:14	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 14:14	5
Cobalt	**0.00075**	**J**	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 14:14	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 14:14	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 14:14	5
Molybdenum	**0.0018**	**J**	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 14:14	5
Selenium	**0.0057**		0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 14:14	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 14:14	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**160**		1.3	0.63	mg/L		09/25/17 13:22	09/26/17 14:19	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:03	09/21/17 13:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1400**		5.0	3.4	mg/L			09/18/17 13:47	1
Chloride	**220**		10	3.0	mg/L			09/20/17 12:36	5
Fluoride	**0.47**		0.10	0.032	mg/L			09/28/17 16:22	1
Sulfate	**410**		100	28	mg/L			09/19/17 14:34	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.90**				SU			09/12/17 08:25	1

Client Sample ID: AES-MW2-091217

Date Collected: 09/12/17 11:30
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 14:23	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 14:23	5
Barium	**0.11**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 14:23	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:23	5
Boron	**0.17**		0.050	0.021	mg/L		09/25/17 13:22	09/26/17 14:23	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:23	5
Calcium	**94**		0.25	0.13	mg/L		09/25/17 13:22	09/26/17 14:23	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 14:23	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 14:23	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 14:23	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 14:23	5
Molybdenum	**0.00094**	**J**	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 14:23	5
Selenium	**0.00046**	**J**	0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 14:23	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 14:23	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:03	09/21/17 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**480**		5.0	3.4	mg/L			09/18/17 13:47	1
Chloride	**36**		2.0	0.60	mg/L			09/20/17 12:11	1
Fluoride	**0.35**		0.10	0.032	mg/L			09/28/17 16:24	1
Sulfate	**9.8**		5.0	1.4	mg/L			09/21/17 10:26	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.65**				SU			09/12/17 09:30	1

Client Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-091217
Date Collected: 09/12/17 13:55
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-3
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0012**	**J**	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 15:01	5
Arsenic	**0.0029**		0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 15:01	5
Barium	**0.23**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 15:01	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:01	5
Boron	**0.90**		0.050	0.021	mg/L		09/25/17 13:22	09/26/17 15:01	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:01	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 15:01	5
Cobalt	**0.0025**		0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 15:01	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 15:01	5
Lithium	**0.0056**	**B**	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 15:01	5
Molybdenum	**0.28**	**F1**	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 15:01	5
Selenium	**0.18**	**F1**	0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 15:01	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 15:01	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**370**		1.3	0.63	mg/L		09/25/17 13:22	09/26/17 15:20	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U F1 F2	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9900**		25	17	mg/L			09/18/17 13:47	1
Chloride	**3900**		180	54	mg/L			09/21/17 09:40	90
Fluoride	**1.9**		0.10	0.032	mg/L			09/28/17 16:13	1
Sulfate	**2300**	**F1**	400	110	mg/L			09/21/17 11:19	80

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.03**				SU			09/12/17 11:55	1

Client Sample ID: AES-MW5-091217

Date Collected: 09/12/17 16:25
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 15:24	5
Arsenic	**0.0041**		0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 15:24	5
Barium	**0.038**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 15:24	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:24	5
Boron	**0.37**		0.050	0.021	mg/L		09/25/17 13:22	09/26/17 15:24	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:24	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 15:24	5
Cobalt	**0.0033**		0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 15:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 15:24	5
Lithium	**0.0014**	**J B**	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 15:24	5
Molybdenum	**0.0048**	**J**	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 15:24	5
Selenium	**0.0053**		0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 15:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 15:24	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**830**		5.0	2.5	mg/L		09/25/17 13:22	09/26/17 15:33	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9700**		25	17	mg/L			09/18/17 13:47	1
Chloride	**3400**		140	42	mg/L			09/21/17 09:15	70
Fluoride	**0.29**		0.10	0.032	mg/L			09/28/17 16:28	1
Sulfate	**2600**		400	110	mg/L			09/21/17 11:19	80

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.76**				SU			09/12/17 14:25	1

Client Sample ID: AES-FB-091217

Date Collected: 09/12/17 16:50
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 14:01	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 14:01	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 14:01	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:01	5
Boron	0.021	U	0.050	0.021	mg/L		09/25/17 13:22	09/26/17 14:01	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:01	5
Calcium	0.13	U	0.25	0.13	mg/L		09/25/17 13:22	09/26/17 14:01	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 14:01	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 14:01	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 14:01	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 14:01	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 14:01	5
Selenium	**0.00026**	**J**	0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 14:01	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 14:01	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/18/17 13:47	1
Chloride	0.60	U	2.0	0.60	mg/L			09/21/17 08:30	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/28/17 16:31	1
Sulfate	1.4	U	5.0	1.4	mg/L			09/21/17 10:26	1

Client Sample ID: AES-MW4-091317

Date Collected: 09/13/17 11:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 16:00	5
Arsenic	**0.0035**		0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 16:00	5
Barium	**0.056**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 16:00	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 16:00	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 16:00	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 16:00	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 16:00	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 16:00	5
Lithium	**0.75**	**B**	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 16:00	5
Molybdenum	**0.41**		0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 16:00	5
Selenium	**0.013**		0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 16:00	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 16:00	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.2**		0.50	0.21	mg/L		09/25/17 13:22	09/26/17 16:14	50
Calcium	**600**		2.5	1.3	mg/L		09/25/17 13:22	09/26/17 16:14	50

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42000**		130	85	mg/L			09/18/17 13:47	1
Chloride	**10000**		600	180	mg/L			09/21/17 08:33	300
Fluoride	**0.53**		0.10	0.032	mg/L			09/28/17 16:33	1
Sulfate	**17000**		3500	980	mg/L			09/21/17 10:32	700

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.12**				SU			09/13/17 09:35	1

Client Sample ID: AES-MW4-DUP-091317

Date Collected: 09/13/17 12:05
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 15:38	5
Arsenic	**0.0038**		0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 15:38	5
Barium	**0.056**		0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 15:38	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:38	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 15:38	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 15:38	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 15:38	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 15:38	5
Lithium	**0.86**	**B**	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 15:38	5
Molybdenum	**0.42**		0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 15:38	5
Selenium	**0.014**		0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 15:38	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 15:38	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.4**		0.50	0.21	mg/L		09/25/17 13:22	09/26/17 15:51	50
Calcium	**610**		2.5	1.3	mg/L		09/25/17 13:22	09/26/17 15:51	50

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**43000**		130	85	mg/L			09/20/17 14:08	1
Chloride	**10000**		600	180	mg/L			09/21/17 08:33	300
Fluoride	**0.63**		0.10	0.032	mg/L			09/29/17 15:17	1
Sulfate	**17000**		3500	980	mg/L			09/21/17 10:32	700

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-091317
Date Collected: 09/13/17 12:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-8
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 14:05	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 14:05	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 14:05	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:05	5
Boron	0.021	U	0.050	0.021	mg/L		09/25/17 13:22	09/26/17 14:05	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 14:05	5
Calcium	0.13	U	0.25	0.13	mg/L		09/25/17 13:22	09/26/17 14:05	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 14:05	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 14:05	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 14:05	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 14:05	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 14:05	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 14:05	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 14:05	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 13:47	09/21/17 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/20/17 14:08	1
Chloride	0.60	U	2.0	0.60	mg/L			09/21/17 08:30	1
Fluoride	0.032	U	0.10	0.032	mg/L			09/29/17 15:19	1
Sulfate	1.4	U	5.0	1.4	mg/L			09/21/17 10:47	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Client Sample ID: AES-MW1-091217

Lab Sample ID: 400-143316-1

Date Collected: 09/12/17 10:25

Matrix: Water

Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 14:14	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	369709	09/26/17 14:19	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:03	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 13:35	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		5	368721	09/20/17 12:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	368615	09/19/17 14:34	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	369816	09/12/17 08:25	BWS	TAL PEN

Client Sample ID: AES-MW2-091217

Lab Sample ID: 400-143316-2

Date Collected: 09/12/17 11:30

Matrix: Water

Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 14:23	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:03	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 13:37	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	368721	09/20/17 12:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	368904	09/21/17 10:26	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	369816	09/12/17 09:30	BWS	TAL PEN

Client Sample ID: AES-MW3-091217

Lab Sample ID: 400-143316-3

Date Collected: 09/12/17 13:55

Matrix: Water

Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 15:01	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	369709	09/26/17 15:20	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 13:48	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	368859	09/21/17 09:40	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:13	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		80	368904	09/21/17 11:19	RRC	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	369816	09/12/17 11:55	BWS	TAL PEN

Client Sample ID: AES-MW5-091217
Lab Sample ID: 400-143316-4
Date Collected: 09/12/17 16:25
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 15:24	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	369709	09/26/17 15:33	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 14:04	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		70	368859	09/21/17 09:15	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		80	368904	09/21/17 11:19	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	369816	09/12/17 14:25	BWS	TAL PEN

Client Sample ID: AES-FB-091217
Lab Sample ID: 400-143316-5
Date Collected: 09/12/17 16:50
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 14:01	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 14:06	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	368859	09/21/17 08:30	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	368904	09/21/17 10:26	RRC	TAL PEN

Client Sample ID: AES-MW4-091317
Lab Sample ID: 400-143316-6
Date Collected: 09/13/17 11:35
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 16:00	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	369709	09/26/17 16:14	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 14:08	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368397	09/18/17 13:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	368859	09/21/17 08:33	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-091317

Lab Sample ID: 400-143316-6
Matrix: Water
Date Collected: 09/13/17 11:35
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	369984	09/28/17 16:33	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	368904	09/21/17 10:32	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	369816	09/13/17 09:35	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-091317

Lab Sample ID: 400-143316-7
Matrix: Water
Date Collected: 09/13/17 12:05
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 15:38	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	50	369709	09/26/17 15:51	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 14:09	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368722	09/20/17 14:08	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	368859	09/21/17 08:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	370140	09/29/17 15:17	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	368904	09/21/17 10:32	RRC	TAL PEN

Client Sample ID: AES-FB-091317

Lab Sample ID: 400-143316-8
Matrix: Water
Date Collected: 09/13/17 12:35
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			369406	09/25/17 13:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	369709	09/26/17 14:05	DRE	TAL PEN
Total/NA	Prep	7470A			368589	09/19/17 13:47	JAP	TAL PEN
Total/NA	Analysis	7470A		1	368950	09/21/17 14:11	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	368722	09/20/17 14:08	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	368859	09/21/17 08:30	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	370140	09/29/17 15:19	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	368904	09/21/17 10:47	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 368589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	7470A	
400-143316-2	AES-MW2-091217	Total/NA	Water	7470A	
400-143316-3	AES-MW3-091217	Total/NA	Water	7470A	
400-143316-4	AES-MW5-091217	Total/NA	Water	7470A	
400-143316-5	AES-FB-091217	Total/NA	Water	7470A	
400-143316-6	AES-MW4-091317	Total/NA	Water	7470A	
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	7470A	
400-143316-8	AES-FB-091317	Total/NA	Water	7470A	
MB 400-368589/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-368589/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	7470A	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	7470A	

Analysis Batch: 368950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	7470A	368589
400-143316-2	AES-MW2-091217	Total/NA	Water	7470A	368589
400-143316-3	AES-MW3-091217	Total/NA	Water	7470A	368589
400-143316-4	AES-MW5-091217	Total/NA	Water	7470A	368589
400-143316-5	AES-FB-091217	Total/NA	Water	7470A	368589
400-143316-6	AES-MW4-091317	Total/NA	Water	7470A	368589
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	7470A	368589
400-143316-8	AES-FB-091317	Total/NA	Water	7470A	368589
MB 400-368589/14-A	Method Blank	Total/NA	Water	7470A	368589
LCS 400-368589/15-A	Lab Control Sample	Total/NA	Water	7470A	368589
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	7470A	368589
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	7470A	368589

Prep Batch: 369406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1 - DL	AES-MW1-091217	Total Recoverable	Water	3005A	
400-143316-1	AES-MW1-091217	Total Recoverable	Water	3005A	
400-143316-2	AES-MW2-091217	Total Recoverable	Water	3005A	
400-143316-3	AES-MW3-091217	Total Recoverable	Water	3005A	
400-143316-3 - DL	AES-MW3-091217	Total Recoverable	Water	3005A	
400-143316-4 - DL	AES-MW5-091217	Total Recoverable	Water	3005A	
400-143316-4	AES-MW5-091217	Total Recoverable	Water	3005A	
400-143316-5	AES-FB-091217	Total Recoverable	Water	3005A	
400-143316-6 - DL	AES-MW4-091317	Total Recoverable	Water	3005A	
400-143316-6	AES-MW4-091317	Total Recoverable	Water	3005A	
400-143316-7	AES-MW4-DUP-091317	Total Recoverable	Water	3005A	
400-143316-7 - DL	AES-MW4-DUP-091317	Total Recoverable	Water	3005A	
400-143316-8	AES-FB-091317	Total Recoverable	Water	3005A	
MB 400-369406/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-369406/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-143316-3 MS	AES-MW3-091217	Total Recoverable	Water	3005A	
400-143316-3 MSD	AES-MW3-091217	Total Recoverable	Water	3005A	

Analysis Batch: 369709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total Recoverable	Water	6020	369406

Metals (Continued)

Analysis Batch: 369709 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1 - DL	AES-MW1-091217	Total Recoverable	Water	6020	369406
400-143316-2	AES-MW2-091217	Total Recoverable	Water	6020	369406
400-143316-3	AES-MW3-091217	Total Recoverable	Water	6020	369406
400-143316-3 - DL	AES-MW3-091217	Total Recoverable	Water	6020	369406
400-143316-4	AES-MW5-091217	Total Recoverable	Water	6020	369406
400-143316-4 - DL	AES-MW5-091217	Total Recoverable	Water	6020	369406
400-143316-5	AES-FB-091217	Total Recoverable	Water	6020	369406
400-143316-6	AES-MW4-091317	Total Recoverable	Water	6020	369406
400-143316-6 - DL	AES-MW4-091317	Total Recoverable	Water	6020	369406
400-143316-7	AES-MW4-DUP-091317	Total Recoverable	Water	6020	369406
400-143316-7 - DL	AES-MW4-DUP-091317	Total Recoverable	Water	6020	369406
400-143316-8	AES-FB-091317	Total Recoverable	Water	6020	369406
MB 400-369406/1-A ^5	Method Blank	Total Recoverable	Water	6020	369406
LCS 400-369406/2-A	Lab Control Sample	Total Recoverable	Water	6020	369406
400-143316-3 MS	AES-MW3-091217	Total Recoverable	Water	6020	369406
400-143316-3 MSD	AES-MW3-091217	Total Recoverable	Water	6020	369406

General Chemistry

Analysis Batch: 368397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	SM 2540C	
400-143316-2	AES-MW2-091217	Total/NA	Water	SM 2540C	
400-143316-3	AES-MW3-091217	Total/NA	Water	SM 2540C	
400-143316-4	AES-MW5-091217	Total/NA	Water	SM 2540C	
400-143316-5	AES-FB-091217	Total/NA	Water	SM 2540C	
400-143316-6	AES-MW4-091317	Total/NA	Water	SM 2540C	
MB 400-368397/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-368397/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-143316-1 DU	AES-MW1-091217	Total/NA	Water	SM 2540C	
400-143316-2 DU	AES-MW2-091217	Total/NA	Water	SM 2540C	

Analysis Batch: 368615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	SM 4500 SO4 E	
MB 400-368615/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-368615/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-368615/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-143177-A-19 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-143177-A-19 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 368721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	SM 4500 Cl- E	
400-143316-2	AES-MW2-091217	Total/NA	Water	SM 4500 Cl- E	
MB 400-368721/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-368721/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-368721/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-143177-A-19 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-143177-A-19 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 368722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	SM 2540C	
400-143316-8	AES-FB-091317	Total/NA	Water	SM 2540C	
MB 400-368722/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-368722/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-143243-A-29 DU	Duplicate	Total/NA	Water	SM 2540C	
400-143378-J-5 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 368859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-3	AES-MW3-091217	Total/NA	Water	SM 4500 Cl- E	
400-143316-4	AES-MW5-091217	Total/NA	Water	SM 4500 Cl- E	
400-143316-5	AES-FB-091217	Total/NA	Water	SM 4500 Cl- E	
400-143316-6	AES-MW4-091317	Total/NA	Water	SM 4500 Cl- E	
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	SM 4500 Cl- E	
400-143316-8	AES-FB-091317	Total/NA	Water	SM 4500 Cl- E	
MB 400-368859/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-368859/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-368859/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	SM 4500 Cl- E	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 368904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-2	AES-MW2-091217	Total/NA	Water	SM 4500 SO4 E	
400-143316-3	AES-MW3-091217	Total/NA	Water	SM 4500 SO4 E	
400-143316-4	AES-MW5-091217	Total/NA	Water	SM 4500 SO4 E	
400-143316-5	AES-FB-091217	Total/NA	Water	SM 4500 SO4 E	
400-143316-6	AES-MW4-091317	Total/NA	Water	SM 4500 SO4 E	
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	SM 4500 SO4 E	
400-143316-8	AES-FB-091317	Total/NA	Water	SM 4500 SO4 E	
MB 400-368904/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-368904/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-368904/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	SM 4500 SO4 E	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 369984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	SM 4500 F C	
400-143316-2	AES-MW2-091217	Total/NA	Water	SM 4500 F C	
400-143316-3	AES-MW3-091217	Total/NA	Water	SM 4500 F C	
400-143316-4	AES-MW5-091217	Total/NA	Water	SM 4500 F C	
400-143316-5	AES-FB-091217	Total/NA	Water	SM 4500 F C	
400-143316-6	AES-MW4-091317	Total/NA	Water	SM 4500 F C	
MB 400-369984/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-369984/6	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	SM 4500 F C	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	SM 4500 F C	

General Chemistry (Continued)

Analysis Batch: 370140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	SM 4500 F C	
400-143316-8	AES-FB-091317	Total/NA	Water	SM 4500 F C	
MB 400-370140/1	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-370140/2	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-143535-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-143535-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-143536-A-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 369816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	Field Sampling	
400-143316-2	AES-MW2-091217	Total/NA	Water	Field Sampling	
400-143316-3	AES-MW3-091217	Total/NA	Water	Field Sampling	
400-143316-4	AES-MW5-091217	Total/NA	Water	Field Sampling	
400-143316-6	AES-MW4-091317	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-369406/1-A ^5
Matrix: Water
Analysis Batch: 369709

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 369406

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		09/25/17 13:22	09/26/17 12:49	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		09/25/17 13:22	09/26/17 12:49	5
Barium	0.00049	U	0.0025	0.00049	mg/L		09/25/17 13:22	09/26/17 12:49	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 12:49	5
Boron	0.021	U	0.050	0.021	mg/L		09/25/17 13:22	09/26/17 12:49	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		09/25/17 13:22	09/26/17 12:49	5
Calcium	0.13	U	0.25	0.13	mg/L		09/25/17 13:22	09/26/17 12:49	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		09/25/17 13:22	09/26/17 12:49	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		09/25/17 13:22	09/26/17 12:49	5
Lead	0.00035	U	0.0013	0.00035	mg/L		09/25/17 13:22	09/26/17 12:49	5
Lithium	0.00140	J	0.0050	0.0011	mg/L		09/25/17 13:22	09/26/17 12:49	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		09/25/17 13:22	09/26/17 12:49	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		09/25/17 13:22	09/26/17 12:49	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		09/25/17 13:22	09/26/17 12:49	5

Lab Sample ID: LCS 400-369406/2-A
Matrix: Water
Analysis Batch: 369709

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 369406

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0517		mg/L		103	80 - 120
Arsenic	0.0500	0.0522		mg/L		104	80 - 120
Barium	0.0500	0.0517		mg/L		103	80 - 120
Beryllium	0.0500	0.0481		mg/L		96	80 - 120
Boron	0.100	0.0999		mg/L		100	80 - 120
Cadmium	0.0500	0.0516		mg/L		103	80 - 120
Calcium	5.00	4.73		mg/L		95	80 - 120
Chromium	0.0500	0.0510		mg/L		102	80 - 120
Cobalt	0.0500	0.0514		mg/L		103	80 - 120
Lead	0.0500	0.0512		mg/L		102	80 - 120
Lithium	0.0500	0.0535		mg/L		107	80 - 120
Molybdenum	0.100	0.102		mg/L		102	80 - 120
Selenium	0.0500	0.0509		mg/L		102	80 - 120
Thallium	0.0100	0.0103		mg/L		103	80 - 120

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 369709

Client Sample ID: AES-MW3-091217
Prep Type: Total Recoverable
Prep Batch: 369406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0012	J	0.0500	0.0509		mg/L		99	75 - 125
Arsenic	0.0029		0.0500	0.0558		mg/L		106	75 - 125
Barium	0.23		0.0500	0.249	4	mg/L		48	75 - 125
Beryllium	0.00034	U	0.0500	0.0504		mg/L		101	75 - 125
Boron	0.90		0.100	0.977	4	mg/L		78	75 - 125
Cadmium	0.00034	U	0.0500	0.0484		mg/L		97	75 - 125
Calcium	360	E	5.00	336	E 4	mg/L		-400	75 - 125
Chromium	0.0011	U	0.0500	0.0515		mg/L		103	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 369709

Client Sample ID: AES-MW3-091217
Prep Type: Total Recoverable
Prep Batch: 369406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0025		0.0500	0.0513		mg/L		98	75 - 125
Lead	0.00035	U	0.0500	0.0435		mg/L		87	75 - 125
Lithium	0.0056	B	0.0500	0.0514		mg/L		92	75 - 125
Molybdenum	0.28	F1	0.100	0.336	F1	mg/L		57	75 - 125
Selenium	0.18	F1	0.0500	0.196	F1	mg/L		24	75 - 125
Thallium	0.000085	U	0.0100	0.00889		mg/L		89	75 - 125

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 369709

Client Sample ID: AES-MW3-091217
Prep Type: Total Recoverable
Prep Batch: 369406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0012	J	0.0500	0.0513		mg/L		100	75 - 125	1	20
Arsenic	0.0029		0.0500	0.0569		mg/L		108	75 - 125	2	20
Barium	0.23		0.0500	0.252	4	mg/L		54	75 - 125	1	20
Beryllium	0.00034	U	0.0500	0.0508		mg/L		102	75 - 125	1	20
Boron	0.90		0.100	1.03	4	mg/L		136	75 - 125	6	20
Cadmium	0.00034	U	0.0500	0.0482		mg/L		96	75 - 125	0	20
Calcium	360	E	5.00	341	E 4	mg/L		-304	75 - 125	1	20
Chromium	0.0011	U	0.0500	0.0513		mg/L		103	75 - 125	0	20
Cobalt	0.0025		0.0500	0.0523		mg/L		100	75 - 125	2	20
Lead	0.00035	U	0.0500	0.0444		mg/L		89	75 - 125	2	20
Lithium	0.0056	B	0.0500	0.0534		mg/L		96	75 - 125	4	20
Molybdenum	0.28	F1	0.100	0.340	F1	mg/L		61	75 - 125	1	20
Selenium	0.18	F1	0.0500	0.201	F1	mg/L		34	75 - 125	2	20
Thallium	0.000085	U	0.0100	0.00892		mg/L		89	75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-368589/14-A
Matrix: Water
Analysis Batch: 368950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 368589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		09/19/17 12:58	09/21/17 13:21	1

Lab Sample ID: LCS 400-368589/15-A
Matrix: Water
Analysis Batch: 368950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 368589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000867		mg/L		86	80 - 120

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 368950

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA
Prep Batch: 368589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U F1 F2	0.00201	0.000572	F1	mg/L		28	80 - 120

Lab Sample ID: 400-143316-3 MSD — **Client Sample ID: AES-MW3-091217**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368950 — **Prep Batch: 368589**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U F1 F2	0.00201	0.000442	F1 F2	mg/L		22	80 - 120	26	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-368397/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368397

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/18/17 13:47	1

Lab Sample ID: LCS 400-368397/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	296		mg/L		101	78 - 122

Lab Sample ID: 400-143316-1 DU — **Client Sample ID: AES-MW1-091217**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368397

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1400		1450		mg/L		0	5

Lab Sample ID: 400-143316-2 DU — **Client Sample ID: AES-MW2-091217**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368397

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	480		484		mg/L		0	5

Lab Sample ID: MB 400-368722/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			09/20/17 14:08	1

Lab Sample ID: LCS 400-368722/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	280		mg/L		96	78 - 122

Lab Sample ID: 400-143243-A-29 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 368722

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	140		136		mg/L		1	5

Lab Sample ID: 400-143378-J-5 DU
Matrix: Water
Analysis Batch: 368722

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	810			810		mg/L				0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-368721/6
Matrix: Water
Analysis Batch: 368721

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			09/20/17 09:43	1

Lab Sample ID: LCS 400-368721/7
Matrix: Water
Analysis Batch: 368721

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			30.0	30.4		mg/L		101	90 - 110		

Lab Sample ID: MRL 400-368721/3
Matrix: Water
Analysis Batch: 368721

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			2.00	2.23		mg/L		112	50 - 150		

Lab Sample ID: 400-143177-A-19 MS
Matrix: Water
Analysis Batch: 368721

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		
Chloride	2.8		10.0	13.8		mg/L		110	73 - 120		

Lab Sample ID: 400-143177-A-19 MSD
Matrix: Water
Analysis Batch: 368721

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
Chloride	2.8		10.0	13.8		mg/L		110	73 - 120	0	8

Lab Sample ID: MB 400-368859/6
Matrix: Water
Analysis Batch: 368859

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			09/21/17 08:00	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 400-368859/7
Matrix: Water
Analysis Batch: 368859

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			30.0	29.7		mg/L		99	90 - 110		

Lab Sample ID: MRL 400-368859/3
Matrix: Water
Analysis Batch: 368859

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			2.00	2.25		mg/L		113	50 - 150		

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 368859

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	3900		900	3740	4	mg/L		-23	73 - 120		

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 368859

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3900		900	3830	4	mg/L		-13	73 - 120	2	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-369984/3
Matrix: Water
Analysis Batch: 369984

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			09/28/17 15:26	1

Lab Sample ID: LCS 400-369984/6
Matrix: Water
Analysis Batch: 369984

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			4.00	3.79		mg/L		95	90 - 110		

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 369984

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	1.9		1.00	2.78		mg/L		90	75 - 125		

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 369984

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.9		1.00	2.78		mg/L		90	75 - 125	0	4

Lab Sample ID: MB 400-370140/1
Matrix: Water
Analysis Batch: 370140

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			09/29/17 15:03	1

Lab Sample ID: LCS 400-370140/2
Matrix: Water
Analysis Batch: 370140

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.67		mg/L		92	90 - 110

Lab Sample ID: 400-143535-A-1 MS
Matrix: Water
Analysis Batch: 370140

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
Fluoride	0.032	U	1.00	0.964		mg/L		96	75 - 125

Lab Sample ID: 400-143535-A-1 MSD
Matrix: Water
Analysis Batch: 370140

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
Fluoride	0.032	U	1.00	1.00		mg/L		100	75 - 125	4	4

Lab Sample ID: 400-143536-A-3 DU
Matrix: Water
Analysis Batch: 370140

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.037	J	0.0370	J	mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-368615/6
Matrix: Water
Analysis Batch: 368615

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			09/19/17 13:47	1

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: LCS 400-368615/7
Matrix: Water
Analysis Batch: 368615

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.3		mg/L		102	90 - 110

Lab Sample ID: MRL 400-368615/3
Matrix: Water
Analysis Batch: 368615

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.86	J	mg/L		97	50 - 150

Lab Sample ID: 400-143177-A-19 MS
Matrix: Water
Analysis Batch: 368615

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
Sulfate	5.9		10.0	16.9		mg/L		110	77 - 128

Lab Sample ID: 400-143177-A-19 MSD
Matrix: Water
Analysis Batch: 368615

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
Sulfate	5.9		10.0	16.7		mg/L		108	77 - 128	1	5

Lab Sample ID: MB 400-368904/6
Matrix: Water
Analysis Batch: 368904

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			09/21/17 10:04	1

Lab Sample ID: LCS 400-368904/7
Matrix: Water
Analysis Batch: 368904

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.3		mg/L		102	90 - 110

Lab Sample ID: MRL 400-368904/3
Matrix: Water
Analysis Batch: 368904

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.90	J	mg/L		98	50 - 150

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 368904

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2300	F1	800	2220	F1	mg/L		-11	77 - 128

QC Sample Results

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 368904

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2300	F1	800	2200	F1	mg/L		-15	77 - 128	1	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-143316 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): REGULAR TAT (10 days)
State, Zip: PR, 00969-5375	
Phone: 787-209-6386	PO #:
Email: alberto.melendez@dnaenv.com	WO #:
Project Name: CCR App.III/IV Groundwater Monitoring	Project #: 40008317
Site: AES Puerto Rico, Guayama, PR	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	N	D		
AES-MW1-091217	9-12-17	1025	G	Water	N		X	X	X	3	(*) pH = 6.90
AES-MW2-091217		1130		Water			X	X	X	3	pH = 6.65
AES-MW3-091217		1355		Water			X	X	X	3	pH = 7.03
AES-MW3-MS-091217		1420		Water		Y	X	X	X	3	
AES-MW3-MSD-091217		1445		Water		Y	X	X	X	3	
AES-MW5-091217		1625		Water			X	X	X	3	pH = 6.76
AES-FB-091217		1650		Water			X	X	X	3	
AES-MW4-091317	9-13-17	1135		Water			X	X	X	3	pH = 7.12
AES-MW4-DUP-091317		1205		Water			X	X	X	3	
AES-FB-091317		1235		Water			X	X	X	3	
											(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify): LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	9/13/17 14:5	DNA		9/14/17 0838	TA PGV
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 4.1°C, 14.5°C IR2

1/30/2018 (Rev. 2)

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-143316-1
SDG Number: AES Puerto Rico, LP

Login Number: 143316
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.1°C Wet Chem & Metals Cooler IR-2
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-143316-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
10/18/2017 4:03:17 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Method Summary 4
Sample Summary 5
Client Sample Results 6
Definitions 14
Chronicle 15
QC Association 17
QC Sample Results 18
Chain of Custody 21
Receipt Checklists 22
Certification Summary 23

Case Narrative

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Job ID: 400-143316-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-143316-2

RAD
Method(s) 903.0, 9315: Radium-226 Prep Batch 160-328166. The radium-226 matrix spike (MS) recovery (74%) is outside the lower control limit of 75% (400-143316-3 MS). The associated laboratory control sample (LCS) recovery is within acceptance limits. The data have been qualified and reported. AES-MW1-091217 (400-143316-1), AES-MW2-091217 (400-143316-2), AES-MW3-091217 (400-143316-3), AES-MW3-091217 (400-143316-3[MS]), AES-MW3-091217 (400-143316-3[MSD]), AES-MW5-091217 (400-143316-4), AES-FB-091217 (400-143316-5), AES-MW4-091317 (400-143316-6), AES-MW4-DUP-091317 (400-143316-7), AES-FB-091317 (400-143316-8), (LCS 160-328166/2-A), (MB 160-328166/1-A), (180-70348-A-1-C) and (180-70348-C-1-A DU)

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-143316-1	AES-MW1-091217	Water	09/12/17 10:25	09/14/17 08:38
400-143316-2	AES-MW2-091217	Water	09/12/17 11:30	09/14/17 08:38
400-143316-3	AES-MW3-091217	Water	09/12/17 13:55	09/14/17 08:38
400-143316-4	AES-MW5-091217	Water	09/12/17 16:25	09/14/17 08:38
400-143316-5	AES-FB-091217	Water	09/12/17 16:50	09/14/17 08:38
400-143316-6	AES-MW4-091317	Water	09/13/17 11:35	09/14/17 08:38
400-143316-7	AES-MW4-DUP-091317	Water	09/13/17 12:05	09/14/17 08:38
400-143316-8	AES-FB-091317	Water	09/13/17 12:35	09/14/17 08:38

Client Sample ID: AES-MW1-091217

Date Collected: 09/12/17 10:25
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0493	U	0.0434	0.0437	1.00	0.0611	pCi/L	09/21/17 08:14	10/13/17 06:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.283	U	0.228	0.230	1.00	0.361	pCi/L	09/21/17 09:39	09/28/17 14:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*
Y Carrier	*84.9*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.333	U	0.232	0.234	5.00	0.361	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-MW2-091217

Date Collected: 09/12/17 11:30
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0376	U	0.0363	0.0365	1.00	0.0517	pCi/L	09/21/17 08:14	10/13/17 06:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.159	U	0.217	0.218	1.00	0.362	pCi/L	09/21/17 09:39	09/28/17 14:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*
Y Carrier	*83.4*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.196	U	0.220	0.221	5.00	0.362	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-MW3-091217

Date Collected: 09/12/17 13:55
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0546	U	0.0439	0.0442	1.00	0.0588	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.408	U	0.290	0.293	1.00	0.458	pCi/L	09/21/17 09:39	09/28/17 14:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*
Y Carrier	*79.6*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.462**		0.293	0.296	5.00	0.458	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-MW5-091217

Date Collected: 09/12/17 16:25
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0588	U	0.0494	0.0497	1.00	0.0660	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.168	U	0.244	0.245	1.00	0.409	pCi/L	09/21/17 09:39	09/28/17 14:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.8*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:04*	*1*
Y Carrier	*81.5*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:04*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.227	U	0.249	0.250	5.00	0.409	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-FB-091217

Date Collected: 09/12/17 16:50
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00949	U	0.0302	0.0302	1.00	0.0633	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.334	U	0.257	0.258	1.00	0.404	pCi/L	09/21/17 09:39	09/28/17 14:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*
Y Carrier	*81.1*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.344	U	0.259	0.260	5.00	0.404	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-MW4-091317

Date Collected: 09/13/17 11:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.0901**		0.0620	0.0625	1.00	0.0840	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.271	U	0.221	0.222	1.00	0.351	pCi/L	09/21/17 09:39	09/28/17 14:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*
Y Carrier	*84.9*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.361**		0.230	0.231	5.00	0.351	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-MW4-DUP-091317

Date Collected: 09/13/17 12:05
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.116		0.0654	0.0662	1.00	0.0717	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.541		0.274	0.278	1.00	0.403	pCi/L	09/21/17 09:39	09/28/17 14:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*
Y Carrier	*78.5*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.656		0.282	0.286	5.00	0.403	pCi/L		10/17/17 18:07	1

Client Sample ID: AES-FB-091317

Date Collected: 09/13/17 12:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0495	U	0.0436	0.0438	1.00	0.0574	pCi/L	09/21/17 08:14	10/13/17 06:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.350	U	0.271	0.273	1.00	0.429	pCi/L	09/21/17 09:39	09/28/17 14:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.0*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*
Y Carrier	*82.2*		*40 - 110*	*09/21/17 09:39*	*09/28/17 14:05*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.399	U	0.274	0.276	5.00	0.429	pCi/L		10/17/17 18:07	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-091217
Lab Sample ID: 400-143316-1
Date Collected: 09/12/17 10:25
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:03	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329343	09/28/17 14:03	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-MW2-091217
Lab Sample ID: 400-143316-2
Date Collected: 09/12/17 11:30
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:03	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329343	09/28/17 14:03	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-MW3-091217
Lab Sample ID: 400-143316-3
Date Collected: 09/12/17 13:55
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329343	09/28/17 14:03	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-MW5-091217
Lab Sample ID: 400-143316-4
Date Collected: 09/12/17 16:25
Matrix: Water
Date Received: 09/14/17 08:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329342	09/28/17 14:04	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-091217
Date Collected: 09/12/17 16:50
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329342	09/28/17 14:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-MW4-091317
Date Collected: 09/13/17 11:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329342	09/28/17 14:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-091317
Date Collected: 09/13/17 12:05
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329342	09/28/17 14:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Client Sample ID: AES-FB-091317
Date Collected: 09/13/17 12:35
Date Received: 09/14/17 08:38

Lab Sample ID: 400-143316-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			328166	09/21/17 08:14	LDE	TAL SL
Total/NA	Analysis	9315		1	331651	10/13/17 06:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			328180	09/21/17 09:39	LDE	TAL SL
Total/NA	Analysis	9320		1	329342	09/28/17 14:05	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	332279	10/17/17 18:07	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

QC Association Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Rad

Prep Batch: 328166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	PrecSep-21	
400-143316-2	AES-MW2-091217	Total/NA	Water	PrecSep-21	
400-143316-3	AES-MW3-091217	Total/NA	Water	PrecSep-21	
400-143316-4	AES-MW5-091217	Total/NA	Water	PrecSep-21	
400-143316-5	AES-FB-091217	Total/NA	Water	PrecSep-21	
400-143316-6	AES-MW4-091317	Total/NA	Water	PrecSep-21	
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	PrecSep-21	
400-143316-8	AES-FB-091317	Total/NA	Water	PrecSep-21	
MB 160-328166/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-328166/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	PrecSep-21	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	PrecSep-21	
180-70348-C-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 328180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-143316-1	AES-MW1-091217	Total/NA	Water	PrecSep_0	
400-143316-2	AES-MW2-091217	Total/NA	Water	PrecSep_0	
400-143316-3	AES-MW3-091217	Total/NA	Water	PrecSep_0	
400-143316-4	AES-MW5-091217	Total/NA	Water	PrecSep_0	
400-143316-5	AES-FB-091217	Total/NA	Water	PrecSep_0	
400-143316-6	AES-MW4-091317	Total/NA	Water	PrecSep_0	
400-143316-7	AES-MW4-DUP-091317	Total/NA	Water	PrecSep_0	
400-143316-8	AES-FB-091317	Total/NA	Water	PrecSep_0	
MB 160-328180/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-328180/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-143316-3 MS	AES-MW3-091217	Total/NA	Water	PrecSep_0	
400-143316-3 MSD	AES-MW3-091217	Total/NA	Water	PrecSep_0	
180-70348-C-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-328166/1-A
Matrix: Water
Analysis Batch: 331649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328166

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02732	U	0.0369	0.0370	1.00	0.0619	pCi/L	09/21/17 08:14	10/13/17 06:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*09/21/17 08:14*	*10/13/17 06:00*	*1*

Lab Sample ID: LCS 160-328166/2-A
Matrix: Water
Analysis Batch: 331649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328166

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			9.60	7.426		0.790	1.00	0.0772	pCi/L	77	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 331809

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA
Prep Batch: 328166

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0546	U	9.60	7.168	F1	0.769	1.00	0.0659	pCi/L	74	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*96.5*		*40 - 110*

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 331651

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA
Prep Batch: 328166

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0546	U	9.61	7.567		0.805	1.00	0.0594	pCi/L	78	75 - 138	0.25	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*99.1*		*40 - 110*

Lab Sample ID: 180-70348-C-1-A DU
Matrix: Water
Analysis Batch: 331649

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 328166

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.269			0.1657		0.0704	1.00	0.0641	pCi/L			0.63	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 180-70348-C-1-A DU
Matrix: Water
Analysis Batch: 331649

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 328166

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	97.9		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-328180/1-A
Matrix: Water
Analysis Batch: 329343

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328180

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5256		0.224	0.229	1.00	0.311	pCi/L	09/21/17 09:39	09/28/17 14:00	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110	09/21/17 09:39	09/28/17 14:00	1
Y Carrier	81.9		40 - 110	09/21/17 09:39	09/28/17 14:00	1

Lab Sample ID: LCS 160-328180/2-A
Matrix: Water
Analysis Batch: 329343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328180

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.9	13.21		1.42	1.00	0.306	pCi/L	103	56 - 140		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	83.7		40 - 110

Lab Sample ID: 400-143316-3 MS
Matrix: Water
Analysis Batch: 329343

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA
Prep Batch: 328180

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.408	U	12.8	14.97		1.63	1.00	0.444	pCi/L	113	45 - 150		

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	96.5		40 - 110
Y Carrier	77.0		40 - 110

Lab Sample ID: 400-143316-3 MSD
Matrix: Water
Analysis Batch: 329343

Client Sample ID: AES-MW3-091217
Prep Type: Total/NA
Prep Batch: 328180

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.408	U	12.9	14.41		1.56	1.00	0.366	pCi/L	109	45 - 150	0.18	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	81.5		40 - 110

Lab Sample ID: 180-70348-C-1-B DU
Matrix: Water
Analysis Batch: 329343

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 328180

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.175	U		0.6219		0.258	1.00	0.342	pCi/L			0.94	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	97.9		40 - 110
Y Carrier	79.6		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-70348-A-1 DU
Matrix: Water
Analysis Batch: 332279

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	0.444			0.7876		0.267	5.00	0.342	pCi/L			0.68	

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

400-143316 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:	
City: Guaynabo	TAT Requested (days): REGULAR TAT (10 days)	
State, Zip: PR, 00969-5375		
Phone: 787-209-6386	PO #:	
Email: alberto.melendez@dnaenv.com	WO #:	
Project Name: CCR App.III/IV Groundwater Monitoring	Project #: 40008317	
Site: AES Puerto Rico, Guayama, PR	SSOW#:	

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-091217	9-12-17	1025	G	Water	N		X	X	X	3	(*) pH = 6.90
AES-MW2-091217		1130		Water			X	X	X	3	pH = 6.65
AES-MW3-091217		1355		Water			X	X	X	3	pH = 7.03
AES-MW3-MS-091217		1420		Water		Y	X	X	X	3	
AES-MW3-MSD-091217		1445		Water		Y	X	X	X	3	
AES-MW5-091217		1625		Water			X	X	X	3	pH = 6.76
AES-FB-091217		1650		Water			X	X	X	3	
AES-MW4-091317	9-13-17	1135		Water			X	X	X	3	pH = 7.12
AES-MW4-Dup-091317		1205		Water			X	X	X	3	
AES-FB-091317		1235		Water			X	X	X	3	
											(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify): LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by:	9/13/17 14:5	DNA	Received by:	9/14/17 0838	TA PGV
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 4.1°C, 14.5°C IR2

10/18/2017

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-143316-2
SDG Number: AES Puerto Rico, LP

Login Number: 143316
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	14.5°C Rad cooler, IR-2
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-143316-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	10-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18
North Dakota	State Program	8	R207	06-30-18

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

Laboratory: TestAmerica St. Louis (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
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144271-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 2

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:29:17 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 8
Sample Summary 9
Client Sample Results 10
Definitions 18
Chronicle 19
QC Association 22
QC Sample Results 26
Chain of Custody 34
Receipt Checklists 35
Certification Summary 36

Job ID: 400-144271-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-144271-1

Comments
Revised Report (Rev. 2) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 1) - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The continuing calibration verification (CCV) associated with batch 371739 recovered above the upper control limit for Lithium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: AES-MW2-100317 (400-144271-2), AES-FB-100317 (400-144271-5), AES-FB-100417 (400-144271-8), (MB 400-371070/1-A ^5) and (400-144271-B-2-A SD).

Method(s) 6020: The laboratory control sample (LCS) for preparation batch 371070 and analytical batch 371739 recovered outside control limits for the following analytes: Lithium. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 6020: The matrix spike duplicate (MSD) recoveries for preparation batch 371070 and analytical batch 371739 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100317 (400-144271-1), AES-MW3-100317 (400-144271-3), AES-MW4-100417 (400-144271-6) and AES-MW4-DUP-100417 (400-144271-7). Elevated reporting limits (RLs) are provided.

General Chemistry
Method(s) SM 4500 F C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 372422 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100317 (400-144271-1), AES-MW1-100317 (400-144271-1[MS]), AES-MW1-100317 (400-144271-1[MSD]), AES-MW3-100317 (400-144271-3), AES-MW5-100317 (400-144271-4), AES-MW4-100417 (400-144271-6) and AES-MW4-DUP-100417 (400-144271-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 371840 were outside control limits. Sample matrix interference and/or spike dilution are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-100317 (400-144271-1), AES-MW1-100317 (400-144271-1[MS]), AES-MW1-100317 (400-144271-1[MSD]), AES-MW3-100317 (400-144271-3), AES-MW5-100317 (400-144271-4), AES-MW4-100417 (400-144271-6) and AES-MW4-DUP-100417 (400-144271-7). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-100317 — Lab Sample ID: 400-144271-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00087	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.056		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.26		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00087	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0019	J B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0027	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0055		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	160		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1500		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	220	F1	80	24	mg/L	40		SM 4500 Cl- E	Total/NA
Fluoride	0.61		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	390		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.05				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-100317 — Lab Sample ID: 400-144271-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00046	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.093		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.17		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	92		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.0013	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0012	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	490		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	36		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.43		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	14		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.81				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-100317 — Lab Sample ID: 400-144271-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0017	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0036		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.19		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.2		0.050	0.021	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW3-100317 (Continued) — Lab Sample ID: 400-144271-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00063	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Chromium	0.031		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0040		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.034	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.53		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.57		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	390		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	15000		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	5600		300	90	mg/L	150		SM 4500 Cl- E	Total/NA
Fluoride	1.8		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	4400		1500	420	mg/L	300		SM 4500 SO4 E	Total/NA
Field pH	7.52				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-100317 — Lab Sample ID: 400-144271-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0060		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.034		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.39		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0030		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0061	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0053	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0034		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	790		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	9000		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3600		300	90	mg/L	150		SM 4500 Cl- E	Total/NA
Fluoride	0.52		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2200		1500	420	mg/L	300		SM 4500 SO4 E	Total/NA
Field pH	6.91				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-100317 — Lab Sample ID: 400-144271-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0011	J * B ^	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0011	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00049	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-100417 — Lab Sample ID: 400-144271-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0019	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0059		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.059		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00034	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.77	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.44		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.011		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.5		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	620		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	10000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.64		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA
Field pH	7.27				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-100417 — Lab Sample ID: 400-144271-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0056		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.065		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.82	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.46		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0095		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.9		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	640		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	10000		600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.63		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-FB-100417 — Lab Sample ID: 400-144271-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.0016	J * B ^	0.0050	0.0011	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-100417 (Continued)

Lab Sample ID: 400-144271-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00026	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144271-1	AES-MW1-100317	Water	10/03/17 10:10	10/06/17 08:28
400-144271-2	AES-MW2-100317	Water	10/03/17 12:20	10/06/17 08:28
400-144271-3	AES-MW3-100317	Water	10/03/17 14:50	10/06/17 08:28
400-144271-4	AES-MW5-100317	Water	10/03/17 16:30	10/06/17 08:28
400-144271-5	AES-FB-100317	Water	10/03/17 17:00	10/06/17 08:28
400-144271-6	AES-MW4-100417	Water	10/04/17 10:35	10/06/17 08:28
400-144271-7	AES-MW4-DUP-100417	Water	10/04/17 11:15	10/06/17 08:28
400-144271-8	AES-FB-100417	Water	10/04/17 12:00	10/06/17 08:28

Client Sample ID: AES-MW1-100317
Date Collected: 10/03/17 10:10
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-1
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/17/17 22:36	5
Arsenic	**0.00087**	**J**	0.0013	0.00046	mg/L		10/08/17 12:23	10/17/17 22:36	5
Barium	**0.056**		0.0025	0.00049	mg/L		10/08/17 12:23	10/17/17 22:36	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 22:36	5
Boron	**0.26**		0.050	0.021	mg/L		10/08/17 12:23	10/17/17 22:36	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 22:36	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/17/17 22:36	5
Cobalt	**0.00087**	**J**	0.0025	0.00040	mg/L		10/08/17 12:23	10/17/17 22:36	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/17/17 22:36	5
Lithium	**0.0019**	**J B**	0.0050	0.0011	mg/L		10/08/17 12:23	10/17/17 22:36	5
Molybdenum	**0.0027**	**J**	0.015	0.00085	mg/L		10/08/17 12:23	10/17/17 22:36	5
Selenium	**0.0055**		0.0013	0.00024	mg/L		10/08/17 12:23	10/17/17 22:36	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/17/17 22:36	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**160**		1.3	0.63	mg/L		10/08/17 12:23	10/17/17 22:49	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1500**		5.0	3.4	mg/L			10/09/17 12:27	1
Chloride	**220**	**F1**	80	24	mg/L			10/13/17 14:29	40
Fluoride	**0.61**		0.10	0.032	mg/L			10/12/17 12:57	1
Sulfate	**390**		100	28	mg/L			10/14/17 09:07	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.05**				SU			10/03/17 08:10	1

Client Sample ID: AES-MW2-100317

Date Collected: 10/03/17 12:20
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/12/17 18:00	5
Arsenic	**0.00046**	**J**	0.0013	0.00046	mg/L		10/08/17 12:23	10/12/17 18:00	5
Barium	**0.093**		0.0025	0.00049	mg/L		10/08/17 12:23	10/12/17 18:00	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 18:00	5
Boron	**0.17**		0.050	0.021	mg/L		10/08/17 12:23	10/12/17 18:00	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 18:00	5
Calcium	**92**		0.25	0.13	mg/L		10/08/17 12:23	10/12/17 18:00	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/12/17 18:00	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/08/17 12:23	10/12/17 18:00	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/12/17 18:00	5
Lithium	0.0011	U * ^	0.0050	0.0011	mg/L		10/08/17 12:23	10/12/17 18:00	5
Molybdenum	**0.0013**	**J**	0.015	0.00085	mg/L		10/08/17 12:23	10/12/17 18:00	5
Selenium	**0.0012**	**J**	0.0013	0.00024	mg/L		10/08/17 12:23	10/12/17 18:00	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/12/17 18:00	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**490**		5.0	3.4	mg/L			10/09/17 12:27	1
Chloride	**36**		2.0	0.60	mg/L			10/13/17 13:38	1
Fluoride	**0.43**		0.10	0.032	mg/L			10/17/17 13:25	1
Sulfate	**14**		5.0	1.4	mg/L			10/14/17 08:17	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.81**				SU			10/03/17 10:20	1

Client Sample ID: AES-MW3-100317

Date Collected: 10/03/17 14:50
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0017	J	0.0025	0.0010	mg/L		10/08/17 12:23	10/17/17 23:21	5
Arsenic	0.0036		0.0013	0.00046	mg/L		10/08/17 12:23	10/17/17 23:21	5
Barium	0.19		0.0025	0.00049	mg/L		10/08/17 12:23	10/17/17 23:21	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 23:21	5
Boron	1.2		0.050	0.021	mg/L		10/08/17 12:23	10/17/17 23:21	5
Cadmium	0.00063	J	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 23:21	5
Chromium	0.031		0.0025	0.0011	mg/L		10/08/17 12:23	10/17/17 23:21	5
Cobalt	0.0040		0.0025	0.00040	mg/L		10/08/17 12:23	10/17/17 23:21	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/17/17 23:21	5
Lithium	0.034	B	0.0050	0.0011	mg/L		10/08/17 12:23	10/17/17 23:21	5
Molybdenum	0.53		0.015	0.00085	mg/L		10/08/17 12:23	10/17/17 23:21	5
Selenium	0.57		0.0013	0.00024	mg/L		10/08/17 12:23	10/17/17 23:21	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/17/17 23:21	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390		1.3	0.63	mg/L		10/08/17 12:23	10/17/17 23:25	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15000		50	34	mg/L			10/09/17 12:27	1
Chloride	5600		300	90	mg/L			10/13/17 15:58	150
Fluoride	1.8		0.10	0.032	mg/L			10/17/17 13:27	1
Sulfate	4400		1500	420	mg/L			10/14/17 10:03	300

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.52				SU			10/03/17 12:50	1

Client Sample ID: AES-MW5-100317

Date Collected: 10/03/17 16:30
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/17/17 23:30	5
Arsenic	**0.0060**		0.0013	0.00046	mg/L		10/08/17 12:23	10/17/17 23:30	5
Barium	**0.034**		0.0025	0.00049	mg/L		10/08/17 12:23	10/17/17 23:30	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 23:30	5
Boron	**0.39**		0.050	0.021	mg/L		10/08/17 12:23	10/17/17 23:30	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 23:30	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/17/17 23:30	5
Cobalt	**0.0030**		0.0025	0.00040	mg/L		10/08/17 12:23	10/17/17 23:30	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/17/17 23:30	5
Lithium	**0.0061**	**B**	0.0050	0.0011	mg/L		10/08/17 12:23	10/17/17 23:30	5
Molybdenum	**0.0053**	**J**	0.015	0.00085	mg/L		10/08/17 12:23	10/17/17 23:30	5
Selenium	**0.0034**		0.0013	0.00024	mg/L		10/08/17 12:23	10/17/17 23:30	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/17/17 23:30	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**790**		5.0	2.5	mg/L		10/08/17 12:23	10/17/17 23:39	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9000**		25	17	mg/L			10/09/17 12:27	1
Chloride	**3600**		300	90	mg/L			10/13/17 16:00	150
Fluoride	**0.52**		0.10	0.032	mg/L			10/17/17 13:29	1
Sulfate	**2200**		1500	420	mg/L			10/14/17 10:03	300

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.91**				SU			10/03/17 14:30	1

Client Sample ID: AES-FB-100317

Date Collected: 10/03/17 17:00
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/12/17 17:51	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/08/17 12:23	10/12/17 17:51	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/08/17 12:23	10/12/17 17:51	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:51	5
Boron	0.021	U	0.050	0.021	mg/L		10/08/17 12:23	10/12/17 17:51	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:51	5
Calcium	0.13	U	0.25	0.13	mg/L		10/08/17 12:23	10/12/17 17:51	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/12/17 17:51	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/08/17 12:23	10/12/17 17:51	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/12/17 17:51	5
Lithium	**0.0011**	**J * B ^**	0.0050	0.0011	mg/L		10/08/17 12:23	10/12/17 17:51	5
Molybdenum	**0.0011**	**J**	0.015	0.00085	mg/L		10/08/17 12:23	10/12/17 17:51	5
Selenium	**0.00049**	**J**	0.0013	0.00024	mg/L		10/08/17 12:23	10/12/17 17:51	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/12/17 17:51	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/09/17 12:27	1
Chloride	0.60	U	2.0	0.60	mg/L			10/13/17 13:38	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/17/17 13:32	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/14/17 08:20	1

Client Sample ID: AES-MW4-100417

Date Collected: 10/04/17 10:35
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0019**	**J**	0.0025	0.0010	mg/L		10/08/17 12:23	10/18/17 00:06	5
Arsenic	**0.0059**		0.0013	0.00046	mg/L		10/08/17 12:23	10/18/17 00:06	5
Barium	**0.059**		0.0025	0.00049	mg/L		10/08/17 12:23	10/18/17 00:06	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/18/17 00:06	5
Cadmium	**0.00034**	**J**	0.0025	0.00034	mg/L		10/08/17 12:23	10/18/17 00:06	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/18/17 00:06	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		10/08/17 12:23	10/18/17 00:06	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/18/17 00:06	5
Lithium	**0.77**	**B**	0.0050	0.0011	mg/L		10/08/17 12:23	10/18/17 00:06	5
Molybdenum	**0.44**		0.015	0.00085	mg/L		10/08/17 12:23	10/18/17 00:06	5
Selenium	**0.011**		0.0013	0.00024	mg/L		10/08/17 12:23	10/18/17 00:06	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/18/17 00:06	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.5**		1.0	0.42	mg/L		10/08/17 12:23	10/18/17 00:24	100
Calcium	**620**		5.0	2.5	mg/L		10/08/17 12:23	10/18/17 00:24	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			10/10/17 12:24	1
Chloride	**10000**		600	180	mg/L			10/13/17 16:00	300
Fluoride	**0.64**		0.10	0.032	mg/L			10/24/17 09:24	1
Sulfate	**15000**		3500	980	mg/L			10/14/17 09:12	700

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.27**				SU			10/04/17 08:35	1

Client Sample ID: AES-MW4-DUP-100417

Date Collected: 10/04/17 11:15
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/18/17 00:28	5
Arsenic	**0.0056**		0.0013	0.00046	mg/L		10/08/17 12:23	10/18/17 00:28	5
Barium	**0.065**		0.0025	0.00049	mg/L		10/08/17 12:23	10/18/17 00:28	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/18/17 00:28	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/18/17 00:28	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/12/17 21:41	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		10/08/17 12:23	10/18/17 00:28	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/18/17 00:28	5
Lithium	**0.82**	**B**	0.0050	0.0011	mg/L		10/08/17 12:23	10/18/17 00:28	5
Molybdenum	**0.46**		0.015	0.00085	mg/L		10/08/17 12:23	10/18/17 00:28	5
Selenium	**0.0095**		0.0013	0.00024	mg/L		10/08/17 12:23	10/18/17 00:28	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/18/17 00:28	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.9**		1.0	0.42	mg/L		10/08/17 12:23	10/18/17 00:46	100
Calcium	**640**		5.0	2.5	mg/L		10/08/17 12:23	10/18/17 00:46	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			10/10/17 12:24	1
Chloride	**10000**		600	180	mg/L			10/13/17 16:00	300
Fluoride	**0.63**		0.10	0.032	mg/L			10/24/17 09:26	1
Sulfate	**15000**		3500	980	mg/L			10/14/17 09:12	700

Client Sample ID: AES-FB-100417

Date Collected: 10/04/17 12:00
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/12/17 17:55	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/08/17 12:23	10/12/17 17:55	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/08/17 12:23	10/12/17 17:55	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:55	5
Boron	0.021	U	0.050	0.021	mg/L		10/08/17 12:23	10/12/17 17:55	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:55	5
Calcium	0.13	U	0.25	0.13	mg/L		10/08/17 12:23	10/12/17 17:55	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/12/17 17:55	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/08/17 12:23	10/12/17 17:55	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/12/17 17:55	5
Lithium	**0.0016**	**J * B ^**	0.0050	0.0011	mg/L		10/08/17 12:23	10/12/17 17:55	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/08/17 12:23	10/12/17 17:55	5
Selenium	**0.00026**	**J**	0.0013	0.00024	mg/L		10/08/17 12:23	10/12/17 17:55	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/12/17 17:55	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:35	10/11/17 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/10/17 12:24	1
Chloride	0.60	U	2.0	0.60	mg/L			10/13/17 13:43	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/18/17 14:20	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/14/17 09:03	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-100317
Date Collected: 10/03/17 10:10
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	372305	10/17/17 22:36	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	372305	10/17/17 22:49	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:00	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371093	10/09/17 12:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		40	371840	10/13/17 14:29	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	371646	10/12/17 12:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	371884	10/14/17 09:07	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	371817	10/03/17 08:10	BWS	TAL PEN

Client Sample ID: AES-MW2-100317
Date Collected: 10/03/17 12:20
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	371739	10/12/17 18:00	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:07	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371093	10/09/17 12:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	371840	10/13/17 13:38	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372206	10/17/17 13:25	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	371884	10/14/17 08:17	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	371817	10/03/17 10:20	BWS	TAL PEN

Client Sample ID: AES-MW3-100317
Date Collected: 10/03/17 14:50
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	372305	10/17/17 23:21	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	372305	10/17/17 23:25	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:08	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371093	10/09/17 12:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		150	371840	10/13/17 15:58	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372206	10/17/17 13:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		300	371884	10/14/17 10:03	JLB	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	371817	10/03/17 12:50	BWS	TAL PEN

Client Sample ID: AES-MW5-100317
Date Collected: 10/03/17 16:30
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	372305	10/17/17 23:30	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	372305	10/17/17 23:39	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:10	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371093	10/09/17 12:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		150	371840	10/13/17 16:00	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372206	10/17/17 13:29	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		300	371884	10/14/17 10:03	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	371817	10/03/17 14:30	BWS	TAL PEN

Client Sample ID: AES-FB-100317
Date Collected: 10/03/17 17:00
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	371739	10/12/17 17:51	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:12	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371093	10/09/17 12:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	371840	10/13/17 13:38	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372206	10/17/17 13:32	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	371884	10/14/17 08:20	JLB	TAL PEN

Client Sample ID: AES-MW4-100417
Date Collected: 10/04/17 10:35
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	372305	10/18/17 00:06	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	372305	10/18/17 00:24	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:30	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371285	10/10/17 12:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	371840	10/13/17 16:00	JLB	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-100417

Lab Sample ID: 400-144271-6
Matrix: Water
Date Collected: 10/04/17 10:35
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	372994	10/24/17 09:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	371884	10/14/17 09:12	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	371817	10/04/17 08:35	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-100417

Lab Sample ID: 400-144271-7
Matrix: Water
Date Collected: 10/04/17 11:15
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	371739	10/12/17 21:41	DRE	TAL PEN
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	372305	10/18/17 00:28	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	372305	10/18/17 00:46	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:32	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371285	10/10/17 12:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	371840	10/13/17 16:00	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372994	10/24/17 09:26	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	371884	10/14/17 09:12	JLB	TAL PEN

Client Sample ID: AES-FB-100417

Lab Sample ID: 400-144271-8
Matrix: Water
Date Collected: 10/04/17 12:00
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			371070	10/08/17 12:23	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	371739	10/12/17 17:55	DRE	TAL PEN
Total/NA	Prep	7470A			371257	10/10/17 09:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	371483	10/11/17 10:34	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	371285	10/10/17 12:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	371840	10/13/17 13:43	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	372422	10/18/17 14:20	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	371884	10/14/17 09:03	JLB	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 371070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1 - DL	AES-MW1-100317	Total Recoverable	Water	3005A	
400-144271-1	AES-MW1-100317	Total Recoverable	Water	3005A	
400-144271-2	AES-MW2-100317	Total Recoverable	Water	3005A	
400-144271-3	AES-MW3-100317	Total Recoverable	Water	3005A	
400-144271-3 - DL	AES-MW3-100317	Total Recoverable	Water	3005A	
400-144271-4	AES-MW5-100317	Total Recoverable	Water	3005A	
400-144271-4 - DL	AES-MW5-100317	Total Recoverable	Water	3005A	
400-144271-5	AES-FB-100317	Total Recoverable	Water	3005A	
400-144271-6	AES-MW4-100417	Total Recoverable	Water	3005A	
400-144271-6 - DL	AES-MW4-100417	Total Recoverable	Water	3005A	
400-144271-7 - DL	AES-MW4-DUP-100417	Total Recoverable	Water	3005A	
400-144271-7	AES-MW4-DUP-100417	Total Recoverable	Water	3005A	
400-144271-8	AES-FB-100417	Total Recoverable	Water	3005A	
MB 400-371070/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-371070/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-144271-1 MS	AES-MW1-100317	Total Recoverable	Water	3005A	
400-144271-1 MSD	AES-MW1-100317	Total Recoverable	Water	3005A	

Prep Batch: 371257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	7470A	
400-144271-2	AES-MW2-100317	Total/NA	Water	7470A	
400-144271-3	AES-MW3-100317	Total/NA	Water	7470A	
400-144271-4	AES-MW5-100317	Total/NA	Water	7470A	
400-144271-5	AES-FB-100317	Total/NA	Water	7470A	
400-144271-6	AES-MW4-100417	Total/NA	Water	7470A	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	7470A	
400-144271-8	AES-FB-100417	Total/NA	Water	7470A	
MB 400-371257/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-371257/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	7470A	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	7470A	

Analysis Batch: 371483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	7470A	371257
400-144271-2	AES-MW2-100317	Total/NA	Water	7470A	371257
400-144271-3	AES-MW3-100317	Total/NA	Water	7470A	371257
400-144271-4	AES-MW5-100317	Total/NA	Water	7470A	371257
400-144271-5	AES-FB-100317	Total/NA	Water	7470A	371257
400-144271-6	AES-MW4-100417	Total/NA	Water	7470A	371257
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	7470A	371257
400-144271-8	AES-FB-100417	Total/NA	Water	7470A	371257
MB 400-371257/14-A	Method Blank	Total/NA	Water	7470A	371257
LCS 400-371257/15-A	Lab Control Sample	Total/NA	Water	7470A	371257
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	7470A	371257
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	7470A	371257

Analysis Batch: 371739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-2	AES-MW2-100317	Total Recoverable	Water	6020	371070

Metals (Continued)

Analysis Batch: 371739 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-5	AES-FB-100317	Total Recoverable	Water	6020	371070
400-144271-7	AES-MW4-DUP-100417	Total Recoverable	Water	6020	371070
400-144271-8	AES-FB-100417	Total Recoverable	Water	6020	371070
MB 400-371070/1-A ^5	Method Blank	Total Recoverable	Water	6020	371070
LCS 400-371070/2-A	Lab Control Sample	Total Recoverable	Water	6020	371070

Analysis Batch: 372305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total Recoverable	Water	6020	371070
400-144271-1 - DL	AES-MW1-100317	Total Recoverable	Water	6020	371070
400-144271-3	AES-MW3-100317	Total Recoverable	Water	6020	371070
400-144271-3 - DL	AES-MW3-100317	Total Recoverable	Water	6020	371070
400-144271-4	AES-MW5-100317	Total Recoverable	Water	6020	371070
400-144271-4 - DL	AES-MW5-100317	Total Recoverable	Water	6020	371070
400-144271-6	AES-MW4-100417	Total Recoverable	Water	6020	371070
400-144271-6 - DL	AES-MW4-100417	Total Recoverable	Water	6020	371070
400-144271-7	AES-MW4-DUP-100417	Total Recoverable	Water	6020	371070
400-144271-7 - DL	AES-MW4-DUP-100417	Total Recoverable	Water	6020	371070
MB 400-371070/1-A ^5	Method Blank	Total Recoverable	Water	6020	371070
LCS 400-371070/2-A	Lab Control Sample	Total Recoverable	Water	6020	371070
400-144271-1 MS	AES-MW1-100317	Total Recoverable	Water	6020	371070
400-144271-1 MSD	AES-MW1-100317	Total Recoverable	Water	6020	371070

General Chemistry

Analysis Batch: 371093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	SM 2540C	
400-144271-2	AES-MW2-100317	Total/NA	Water	SM 2540C	
400-144271-3	AES-MW3-100317	Total/NA	Water	SM 2540C	
400-144271-4	AES-MW5-100317	Total/NA	Water	SM 2540C	
400-144271-5	AES-FB-100317	Total/NA	Water	SM 2540C	
MB 400-371093/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-371093/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-144243-A-8 DU	Duplicate	Total/NA	Water	SM 2540C	
400-144243-A-9 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 371285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-6	AES-MW4-100417	Total/NA	Water	SM 2540C	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	SM 2540C	
400-144271-8	AES-FB-100417	Total/NA	Water	SM 2540C	
MB 400-371285/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-371285/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-144243-A-21 DU	Duplicate	Total/NA	Water	SM 2540C	
400-144243-A-26 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 371646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	SM 4500 F C	

General Chemistry (Continued)

Analysis Batch: 371646 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-371646/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-371646/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	SM 4500 F C	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	SM 4500 F C	
400-144251-A-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 371840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-2	AES-MW2-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-3	AES-MW3-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-4	AES-MW5-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-5	AES-FB-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-6	AES-MW4-100417	Total/NA	Water	SM 4500 Cl- E	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	SM 4500 Cl- E	
400-144271-8	AES-FB-100417	Total/NA	Water	SM 4500 Cl- E	
MB 400-371840/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-371840/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-371840/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-144167-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-144167-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	SM 4500 Cl- E	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 371884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-2	AES-MW2-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-3	AES-MW3-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-4	AES-MW5-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-5	AES-FB-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-6	AES-MW4-100417	Total/NA	Water	SM 4500 SO4 E	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	SM 4500 SO4 E	
400-144271-8	AES-FB-100417	Total/NA	Water	SM 4500 SO4 E	
MB 400-371884/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-371884/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-371884/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	SM 4500 SO4 E	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 372206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-2	AES-MW2-100317	Total/NA	Water	SM 4500 F C	
400-144271-3	AES-MW3-100317	Total/NA	Water	SM 4500 F C	
400-144271-4	AES-MW5-100317	Total/NA	Water	SM 4500 F C	
400-144271-5	AES-FB-100317	Total/NA	Water	SM 4500 F C	
MB 400-372206/2	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-372206/3	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-83190-C-7 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-83190-C-7 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
660-83190-D-4 DU	Duplicate	Total/NA	Water	SM 4500 F C	

QC Association Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Analysis Batch: 372422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-8	AES-FB-100417	Total/NA	Water	SM 4500 F C	
MB 400-372422/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-372422/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-83166-K-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-83166-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-144160-A-9 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 372994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-6	AES-MW4-100417	Total/NA	Water	SM 4500 F C	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	SM 4500 F C	
MB 400-372994/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-372994/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-144507-A-2 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-144507-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-144507-A-4 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 371817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	Field Sampling	
400-144271-2	AES-MW2-100317	Total/NA	Water	Field Sampling	
400-144271-3	AES-MW3-100317	Total/NA	Water	Field Sampling	
400-144271-4	AES-MW5-100317	Total/NA	Water	Field Sampling	
400-144271-6	AES-MW4-100417	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-371070/1-A ^5
Matrix: Water
Analysis Batch: 371739

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/12/17 17:37	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/08/17 12:23	10/12/17 17:37	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/08/17 12:23	10/12/17 17:37	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:37	5
Boron	0.021	U	0.050	0.021	mg/L		10/08/17 12:23	10/12/17 17:37	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/12/17 17:37	5
Calcium	0.13	U	0.25	0.13	mg/L		10/08/17 12:23	10/12/17 17:37	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/12/17 17:37	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/08/17 12:23	10/12/17 17:37	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/12/17 17:37	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/08/17 12:23	10/12/17 17:37	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/08/17 12:23	10/12/17 17:37	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/12/17 17:37	5

Lab Sample ID: MB 400-371070/1-A ^5
Matrix: Water
Analysis Batch: 372305

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/08/17 12:23	10/17/17 22:22	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/08/17 12:23	10/17/17 22:22	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/08/17 12:23	10/17/17 22:22	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 22:22	5
Boron	0.021	U	0.050	0.021	mg/L		10/08/17 12:23	10/17/17 22:22	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/08/17 12:23	10/17/17 22:22	5
Calcium	0.13	U	0.25	0.13	mg/L		10/08/17 12:23	10/17/17 22:22	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/08/17 12:23	10/17/17 22:22	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/08/17 12:23	10/17/17 22:22	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/08/17 12:23	10/17/17 22:22	5
Lithium	0.00131	J	0.0050	0.0011	mg/L		10/08/17 12:23	10/17/17 22:22	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/08/17 12:23	10/17/17 22:22	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/08/17 12:23	10/17/17 22:22	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/08/17 12:23	10/17/17 22:22	5

Lab Sample ID: LCS 400-371070/2-A
Matrix: Water
Analysis Batch: 371739

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0518		mg/L		104	80 - 120
Arsenic	0.0500	0.0531		mg/L		106	80 - 120
Barium	0.0500	0.0501		mg/L		100	80 - 120
Beryllium	0.0500	0.0521		mg/L		104	80 - 120
Boron	0.100	0.104		mg/L		104	80 - 120
Cadmium	0.0500	0.0528		mg/L		106	80 - 120
Calcium	5.00	5.35		mg/L		107	80 - 120
Chromium	0.0500	0.0531		mg/L		106	80 - 120
Cobalt	0.0500	0.0530		mg/L		106	80 - 120

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 400-371070/2-A
Matrix: Water
Analysis Batch: 371739

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.0500	0.0512		mg/L		102	80 - 120
Lithium	0.0500	0.0656	* ^	mg/L		131	80 - 120
Molybdenum	0.100	0.105		mg/L		105	80 - 120
Selenium	0.0500	0.0522		mg/L		104	80 - 120
Thallium	0.0100	0.0105		mg/L		105	80 - 120

Lab Sample ID: LCS 400-371070/2-A
Matrix: Water
Analysis Batch: 372305

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0508		mg/L		102	80 - 120
Arsenic	0.0500	0.0512		mg/L		102	80 - 120
Barium	0.0500	0.0482		mg/L		96	80 - 120
Beryllium	0.0500	0.0543		mg/L		109	80 - 120
Boron	0.100	0.103		mg/L		103	80 - 120
Cadmium	0.0500	0.0512		mg/L		102	80 - 120
Calcium	5.00	5.24		mg/L		105	80 - 120
Chromium	0.0500	0.0513		mg/L		103	80 - 120
Cobalt	0.0500	0.0504		mg/L		101	80 - 120
Lead	0.0500	0.0487		mg/L		97	80 - 120
Lithium	0.0500	0.0548		mg/L		110	80 - 120
Molybdenum	0.100	0.101		mg/L		101	80 - 120
Selenium	0.0500	0.0511		mg/L		102	80 - 120
Thallium	0.0100	0.0103		mg/L		103	80 - 120

Lab Sample ID: 400-144271-1 MS
Matrix: Water
Analysis Batch: 372305

Client Sample ID: AES-MW1-100317
Prep Type: Total Recoverable
Prep Batch: 371070

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0510		mg/L		102	75 - 125
Arsenic	0.00087	J	0.0500	0.0564		mg/L		111	75 - 125
Barium	0.056		0.0500	0.105		mg/L		97	75 - 125
Beryllium	0.00034	U	0.0500	0.0549		mg/L		110	75 - 125
Boron	0.26		0.100	0.361		mg/L		100	75 - 125
Cadmium	0.00034	U	0.0500	0.0506		mg/L		101	75 - 125
Calcium	160	E	5.00	160	E 4	mg/L		99	75 - 125
Chromium	0.0011	U	0.0500	0.0503		mg/L		101	75 - 125
Cobalt	0.00087	J	0.0500	0.0501		mg/L		99	75 - 125
Lead	0.00035	U	0.0500	0.0474		mg/L		95	75 - 125
Lithium	0.0019	J B	0.0500	0.0565		mg/L		109	75 - 125
Molybdenum	0.0027	J	0.100	0.102		mg/L		99	75 - 125
Selenium	0.0055		0.0500	0.0567		mg/L		102	75 - 125
Thallium	0.000085	U	0.0100	0.00990		mg/L		99	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-144271-1 MSD — **Client Sample ID: AES-MW1-100317**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 372305 — **Prep Batch: 371070**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0506		mg/L		101	75 - 125	1	20
Arsenic	0.00087	J	0.0500	0.0565		mg/L		111	75 - 125	0	20
Barium	0.056		0.0500	0.104		mg/L		96	75 - 125	0	20
Beryllium	0.00034	U	0.0500	0.0548		mg/L		110	75 - 125	0	20
Boron	0.26		0.100	0.373		mg/L		112	75 - 125	3	20
Cadmium	0.00034	U	0.0500	0.0503		mg/L		101	75 - 125	1	20
Calcium	160	E	5.00	159	E 4	mg/L		84	75 - 125	0	20
Chromium	0.0011	U	0.0500	0.0511		mg/L		102	75 - 125	2	20
Cobalt	0.00087	J	0.0500	0.0503		mg/L		99	75 - 125	0	20
Lead	0.00035	U	0.0500	0.0475		mg/L		95	75 - 125	0	20
Lithium	0.0019	J B	0.0500	0.0566		mg/L		109	75 - 125	0	20
Molybdenum	0.0027	J	0.100	0.103		mg/L		100	75 - 125	2	20
Selenium	0.0055		0.0500	0.0564		mg/L		102	75 - 125	0	20
Thallium	0.000085	U	0.0100	0.0100		mg/L		100	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-371257/14-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 371483 — **Prep Batch: 371257**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/10/17 09:09	10/11/17 09:56	1

Lab Sample ID: LCS 400-371257/15-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 371483 — **Prep Batch: 371257**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.00104		mg/L		104	80 - 120

Lab Sample ID: 400-144271-1 MS — **Client Sample ID: AES-MW1-100317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 371483 — **Prep Batch: 371257**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U	0.00201	0.00179		mg/L		89	80 - 120

Lab Sample ID: 400-144271-1 MSD — **Client Sample ID: AES-MW1-100317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 371483 — **Prep Batch: 371257**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U	0.00201	0.00174		mg/L		86	80 - 120	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-371093/1
Matrix: Water
Analysis Batch: 371093

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/09/17 12:27	1

Lab Sample ID: LCS 400-371093/2
Matrix: Water
Analysis Batch: 371093

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	286		mg/L		98	78 - 122

Lab Sample ID: 400-144243-A-8 DU
Matrix: Water
Analysis Batch: 371093

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	26		26.0		mg/L		0	5

Lab Sample ID: 400-144243-A-9 DU
Matrix: Water
Analysis Batch: 371093

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	170		172		mg/L		0	5

Lab Sample ID: MB 400-371285/1
Matrix: Water
Analysis Batch: 371285

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/10/17 12:24	1

Lab Sample ID: LCS 400-371285/2
Matrix: Water
Analysis Batch: 371285

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	284		mg/L		97	78 - 122

Lab Sample ID: 400-144243-A-21 DU
Matrix: Water
Analysis Batch: 371285

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	60		60.0		mg/L		0	5

Lab Sample ID: 400-144243-A-26 DU
Matrix: Water
Analysis Batch: 371285

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	86		86.0		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-371840/6
Matrix: Water
Analysis Batch: 371840

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			10/13/17 13:35	1

Lab Sample ID: LCS 400-371840/7
Matrix: Water
Analysis Batch: 371840

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			30.0	29.4		mg/L		98	90 - 110		

Lab Sample ID: MRL 400-371840/3
Matrix: Water
Analysis Batch: 371840

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			2.00	1.94	J	mg/L		97	50 - 150		

Lab Sample ID: 400-144167-A-1 MS
Matrix: Water
Analysis Batch: 371840

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		
Chloride	8.9		10.0	18.8		mg/L		99	73 - 120		

Lab Sample ID: 400-144167-A-1 MSD
Matrix: Water
Analysis Batch: 371840

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
Chloride	8.9		10.0	18.7		mg/L		98	73 - 120	0	8

Lab Sample ID: 400-144271-1 MS
Matrix: Water
Analysis Batch: 371840

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	220	F1	400	230	F1	mg/L		2	73 - 120		

Lab Sample ID: 400-144271-1 MSD
Matrix: Water
Analysis Batch: 371840

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	220	F1	400	229	F1	mg/L		2	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-371646/3
Matrix: Water
Analysis Batch: 371646

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/12/17 12:47	1

Lab Sample ID: LCS 400-371646/4
Matrix: Water
Analysis Batch: 371646

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.98		mg/L		100	90 - 110

Lab Sample ID: 400-144251-A-3 DU
Matrix: Water
Analysis Batch: 371646

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.62		0.620		mg/L		0	4

Lab Sample ID: MB 400-372206/2
Matrix: Water
Analysis Batch: 372206

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/17/17 13:09	1

Lab Sample ID: LCS 400-372206/3
Matrix: Water
Analysis Batch: 372206

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.13		mg/L		103	90 - 110

Lab Sample ID: 660-83190-D-4 DU
Matrix: Water
Analysis Batch: 372206

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	1.2		1.19		mg/L		0	4

Lab Sample ID: MB 400-372422/3
Matrix: Water
Analysis Batch: 372422

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/18/17 13:18	1

Lab Sample ID: LCS 400-372422/4
Matrix: Water
Analysis Batch: 372422

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.22		mg/L		106	90 - 110

Lab Sample ID: 660-83166-K-1 MS
Matrix: Water
Analysis Batch: 372422

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		
Fluoride	1.2	F1	1.00	1.89	F1	mg/L		68	75 - 125		

Lab Sample ID: 660-83166-K-1 MSD
Matrix: Water
Analysis Batch: 372422

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
Fluoride	1.2	F1	1.00	1.89	F1	mg/L		68	75 - 125	0	4

Lab Sample ID: 400-144160-A-9 DU
Matrix: Water
Analysis Batch: 372422

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.032	U	0.032	U	mg/L		NC	4

Lab Sample ID: MB 400-372994/3
Matrix: Water
Analysis Batch: 372994

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/24/17 08:56	1

Lab Sample ID: LCS 400-372994/4
Matrix: Water
Analysis Batch: 372994

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	4.00	3.68		mg/L		92	90 - 110		

Lab Sample ID: 400-144507-A-2 MS
Matrix: Water
Analysis Batch: 372994

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		
Fluoride	0.032	U	1.00	0.980		mg/L		98	75 - 125		

Lab Sample ID: 400-144507-A-2 MSD
Matrix: Water
Analysis Batch: 372994

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
Fluoride	0.032	U	1.00	1.00		mg/L		100	75 - 125	2	4

Lab Sample ID: 400-144507-A-4 DU
Matrix: Water
Analysis Batch: 372994

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.24		0.240		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-371884/6
Matrix: Water
Analysis Batch: 371884

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			10/14/17 07:57	1

Lab Sample ID: LCS 400-371884/7
Matrix: Water
Analysis Batch: 371884

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			15.0	14.8		mg/L		99	90 - 110		

Lab Sample ID: MRL 400-371884/3
Matrix: Water
Analysis Batch: 371884

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			5.00	5.13		mg/L		103	50 - 150		

Lab Sample ID: 400-144271-1 MS
Matrix: Water
Analysis Batch: 371884

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	390		200	589		mg/L		100	77 - 128		

Lab Sample ID: 400-144271-1 MSD
Matrix: Water
Analysis Batch: 371884

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	390		200	568		mg/L		89	77 - 128	4	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): 10 days (REGULAR TAT)
State, Zip: PR, 00969-5375	
Phone: 787-209-6386	PO #:
Email: alberto.melendez@dnaenv.com	WO #:
Project Name: CCR App.III/IV Groundwater Monitoring	Project #: 40008317
Site: AES Puerto Rico, Guayama, PR	SSOW#:

Analysis Requested

400-144271 COC

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH; SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride; 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-100317	10-3-17	1010	G	Water	N		X	X	X	3	(*) pH = 7.05
AES-MW1-MS-100317		1040		Water		Y	X	X	X	3	
AES-MW1-MSD-100317		1105		Water		Y	X	X	X	3	
AES-MW2-100317		1220		Water			X	X	X	3	pH = 6.81
AES-MW3-100317		1450		Water			X	X	X	3	pH = 7.52
AES-MW5-100317		1630		Water			X	X	X	3	pH = 6.91
AES-FB-100317		1700		Water			X	X	X	3	
AES-MW4-100417	10-4-17	1035		Water			X	X	X	3	pH = 7.27
AES-MW4-Dup-100417		1115		Water			X	X	X	3	
AES-FB-100417		1200		Water			X	X	X	3	
											(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Rafael Diaz	10/6/17 14:00	DNA		10/6/17 8:28	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.0°C, 26.9°C IR7

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144271-1
SDG Number: AES Puerto Rico, LP

Login Number: 144271
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C Wet chem & Metals Cooler, IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144271-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Cheyenne Whitmire

Authorized for release by:
11/6/2017 5:41:09 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Method Summary 3
Sample Summary 4
Client Sample Results 5
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 19
Receipt Checklists 20
Certification Summary 21

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144271-1	AES-MW1-100317	Water	10/03/17 10:10	10/06/17 08:28
400-144271-2	AES-MW2-100317	Water	10/03/17 12:20	10/06/17 08:28
400-144271-3	AES-MW3-100317	Water	10/03/17 14:50	10/06/17 08:28
400-144271-4	AES-MW5-100317	Water	10/03/17 16:30	10/06/17 08:28
400-144271-5	AES-FB-100317	Water	10/03/17 17:00	10/06/17 08:28
400-144271-6	AES-MW4-100417	Water	10/04/17 10:35	10/06/17 08:28
400-144271-7	AES-MW4-DUP-100417	Water	10/04/17 11:15	10/06/17 08:28
400-144271-8	AES-FB-100417	Water	10/04/17 12:00	10/06/17 08:28

Client Sample ID: AES-MW1-100317

Date Collected: 10/03/17 10:10
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0636		0.0459	0.0463	1.00	0.0559	pCi/L	10/10/17 10:45	11/01/17 06:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:15*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.167	U	0.223	0.223	1.00	0.371	pCi/L	10/10/17 10:58	10/20/17 09:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.2*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*
Y Carrier	*81.9*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.230	U	0.228	0.228	5.00	0.371	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-MW2-100317

Date Collected: 10/03/17 12:20
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.173		0.0793	0.0808	1.00	0.0876	pCi/L	10/10/17 10:45	11/01/17 06:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:16*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.501		0.259	0.263	1.00	0.387	pCi/L	10/10/17 10:58	10/20/17 09:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*
Y Carrier	*81.5*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.675		0.271	0.275	5.00	0.387	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-MW3-100317

Date Collected: 10/03/17 14:50
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.290		0.0944	0.0979	1.00	0.0581	pCi/L	10/10/17 10:45	11/01/17 06:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:16*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.778		0.273	0.283	1.00	0.377	pCi/L	10/10/17 10:58	10/20/17 09:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:47*	*1*
Y Carrier	*81.1*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:47*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.289	0.299	5.00	0.377	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-MW5-100317

Date Collected: 10/03/17 16:30
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0258	U	0.0491	0.0492	1.00	0.0888	pCi/L	10/10/17 10:45	11/01/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.419**		0.252	0.255	1.00	0.384	pCi/L	10/10/17 10:58	10/20/17 09:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.2*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:47*	*1*
Y Carrier	*79.6*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:47*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.445**		0.257	0.260	5.00	0.384	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-FB-100317

Date Collected: 10/03/17 17:00
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0422	U	0.0503	0.0505	1.00	0.0816	pCi/L	10/10/17 10:45	11/01/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.781**		0.259	0.269	1.00	0.340	pCi/L	10/10/17 10:58	10/20/17 09:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*
Y Carrier	*78.5*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.823**		0.264	0.274	5.00	0.340	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-MW4-100417

Date Collected: 10/04/17 10:35
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.130		0.0728	0.0738	1.00	0.0856	pCi/L	10/10/17 10:45	11/01/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.569		0.251	0.256	1.00	0.359	pCi/L	10/10/17 10:58	10/20/17 09:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*
Y Carrier	*80.0*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.699		0.261	0.266	5.00	0.359	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-MW4-DUP-100417

Date Collected: 10/04/17 11:15
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.115		0.0688	0.0695	1.00	0.0833	pCi/L	10/10/17 10:45	11/01/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.413		0.245	0.248	1.00	0.372	pCi/L	10/10/17 10:58	10/20/17 09:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.5*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*
Y Carrier	*81.1*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.528		0.254	0.258	5.00	0.372	pCi/L		11/06/17 09:01	1

Client Sample ID: AES-FB-100417

Date Collected: 10/04/17 12:00
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0153	U	0.0428	0.0428	1.00	0.0830	pCi/L	10/10/17 10:45	11/01/17 06:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:22*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.272	U	0.212	0.213	1.00	0.333	pCi/L	10/10/17 10:58	10/20/17 09:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*
Y Carrier	*82.6*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:48*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.287	U	0.216	0.217	5.00	0.333	pCi/L		11/06/17 09:05	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-100317
Date Collected: 10/03/17 10:10
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335197	11/01/17 06:15	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:46	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-MW2-100317
Date Collected: 10/03/17 12:20
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335197	11/01/17 06:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:46	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-MW3-100317
Date Collected: 10/03/17 14:50
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335197	11/01/17 06:16	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:47	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-MW5-100317
Date Collected: 10/03/17 16:30
Date Received: 10/06/17 08:28

Lab Sample ID: 400-144271-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335198	11/01/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:47	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-100317

Lab Sample ID: 400-144271-5
Date Collected: 10/03/17 17:00
Matrix: Water
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335198	11/01/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:48	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-MW4-100417

Lab Sample ID: 400-144271-6
Date Collected: 10/04/17 10:35
Matrix: Water
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335198	11/01/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:48	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-MW4-DUP-100417

Lab Sample ID: 400-144271-7
Date Collected: 10/04/17 11:15
Matrix: Water
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335198	11/01/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:48	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:01	EAW	TAL SL

Client Sample ID: AES-FB-100417

Lab Sample ID: 400-144271-8
Date Collected: 10/04/17 12:00
Matrix: Water
Date Received: 10/06/17 08:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			331157	10/10/17 10:45	LDE	TAL SL
Total/NA	Analysis	9315		1	335198	11/01/17 06:22	RTM	TAL SL
Total/NA	Prep	PrecSep_0			331161	10/10/17 10:58	LDE	TAL SL
Total/NA	Analysis	9320		1	332858	10/20/17 09:48	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	335780	11/06/17 09:05	EAW	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 331157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	PrecSep-21	
400-144271-2	AES-MW2-100317	Total/NA	Water	PrecSep-21	
400-144271-3	AES-MW3-100317	Total/NA	Water	PrecSep-21	
400-144271-4	AES-MW5-100317	Total/NA	Water	PrecSep-21	
400-144271-5	AES-FB-100317	Total/NA	Water	PrecSep-21	
400-144271-6	AES-MW4-100417	Total/NA	Water	PrecSep-21	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	PrecSep-21	
400-144271-8	AES-FB-100417	Total/NA	Water	PrecSep-21	
MB 160-331157/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-331157/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	PrecSep-21	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	PrecSep-21	

Prep Batch: 331161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144271-1	AES-MW1-100317	Total/NA	Water	PrecSep_0	
400-144271-2	AES-MW2-100317	Total/NA	Water	PrecSep_0	
400-144271-3	AES-MW3-100317	Total/NA	Water	PrecSep_0	
400-144271-4	AES-MW5-100317	Total/NA	Water	PrecSep_0	
400-144271-5	AES-FB-100317	Total/NA	Water	PrecSep_0	
400-144271-6	AES-MW4-100417	Total/NA	Water	PrecSep_0	
400-144271-7	AES-MW4-DUP-100417	Total/NA	Water	PrecSep_0	
400-144271-8	AES-FB-100417	Total/NA	Water	PrecSep_0	
MB 160-331161/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-331161/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-144271-1 MS	AES-MW1-100317	Total/NA	Water	PrecSep_0	
400-144271-1 MSD	AES-MW1-100317	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-331157/1-A
Matrix: Water
Analysis Batch: 335197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 331157

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.008478	U	0.0185	0.0185	1.00	0.0567	pCi/L	10/10/17 10:45	11/01/17 06:15	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*10/10/17 10:45*	*11/01/17 06:15*	*1*

Lab Sample ID: LCS 160-331157/2-A
Matrix: Water
Analysis Batch: 335197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 331157

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.4	8.097		0.858	1.00	0.0622	pCi/L	71	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*100*		*40 - 110*

Lab Sample ID: 400-144271-1 MS
Matrix: Water
Analysis Batch: 335197

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA
Prep Batch: 331157

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0636		11.4	9.513		0.985	1.00	0.0613	pCi/L	83	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.7*		*40 - 110*

Lab Sample ID: 400-144271-1 MSD
Matrix: Water
Analysis Batch: 335197

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA
Prep Batch: 331157

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0636		11.4	10.32		1.06	1.00	0.0684	pCi/L	90	75 - 138	0.39	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-331161/1-A
Matrix: Water
Analysis Batch: 332858

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 331161

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.6744		0.237	0.245	1.00	0.315	pCi/L	10/10/17 10:58	10/20/17 09:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*
Y Carrier	*78.5*		*40 - 110*	*10/10/17 10:58*	*10/20/17 09:46*	*1*

Lab Sample ID: LCS 160-331161/2-A
Matrix: Water
Analysis Batch: 332858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 331161

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.8	14.76		1.57	1.00	0.382	pCi/L	116	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*100*		*40 - 110*
Y Carrier	*80.4*		*40 - 110*

Lab Sample ID: 400-144271-1 MS
Matrix: Water
Analysis Batch: 332858

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA
Prep Batch: 331161

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.167	U	12.8	14.50		1.55	1.00	0.363	pCi/L	112	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*99.7*		*40 - 110*
Y Carrier	*81.5*		*40 - 110*

Lab Sample ID: 400-144271-1 MSD
Matrix: Water
Analysis Batch: 332858

Client Sample ID: AES-MW1-100317
Prep Type: Total/NA
Prep Batch: 331161

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.167	U	12.8	14.87		1.58	1.00	0.397	pCi/L	115	45 - 150	0.12	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*81.9*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RAFAEL DIAZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): 10 days (REGULAR TAT)
State, Zip: PR, 00969-5375	
Phone: 787-209-6386	PO #:
Email: alberto.melendez@dnaenv.com	WO #:
Project Name: CCR App.III/IV Groundwater Monitoring	Project #: 40008317
Site: AES Puerto Rico, Guayama, PR	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

400-144271 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH; SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride; 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-100317	10-3-17	1010	G	Water	N		X	X	X	3	(*) pH = 7.05
AES-MW1-MS-100317		1040		Water		Y	X	X	X	3	
AES-MW1-MSD-100317		1105		Water		Y	X	X	X	3	
AES-MW2-100317		1220		Water			X	X	X	3	pH = 6.81
AES-MW3-100317		1450		Water			X	X	X	3	pH = 7.52
AES-MW5-100317		1630		Water			X	X	X	3	pH = 6.91
AES-FB-100317		1700		Water			X	X	X	3	
AES-MW4-100417	10-4-17	1035		Water			X	X	X	3	pH = 7.27
AES-MW4-Dup-100417		1115		Water			X	X	X	3	
AES-FB-100417		1200		Water			X	X	X	3	
											(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Rafael Diaz	10/6/17 14:00	DNA		10/6/17 828	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0°C, 26.9°C IR7

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144271-2
SDG Number: AES Puerto Rico, LP

Login Number: 144271
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	26.9°C Rads Cooler, IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17 *
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	12-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144271-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144674-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 4

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/30/2018 3:34:58 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 9
Sample Summary 10
Client Sample Results 11
Definitions 19
Chronicle 20
QC Association 23
QC Sample Results 27
Chain of Custody 34
Receipt Checklists 35
Certification Summary 36

Job ID: 400-144674-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-144674-1

Comments
Revised Report (Rev. 4) - The Login Sample Receipt Checklist has been revised to properly list the receipt temperature of the cooler containing the bottles for the wet chemistry and metals tests included in this report.

Revised Report (Rev. 3) - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Revised Report (Rev. 2) - The Case Narrative has been revised to include additional details on shipping delays..

Revised Report (Rev. 1) - The Case Narrative has been revised to include additional details on shipping delays..

Metals
Method(s) 6020: The post digestion spike % recovery for Calcium associated with batch 373007 was outside of control limits.

Method(s) 6020: The method blank for preparation batch 372678 and analytical batch 373007 contained Arsenic above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101117 (400-144674-1), AES-MW3-101117 (400-144674-3), AES-MW5-101117 (400-144674-4), AES-MW4-101217 (400-144674-6) and AES-MW4-DUP-101217 (400-144674-7). Elevated reporting limits (RLs) are provided.

General Chemistry
Method(s) SM 4500 F C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 373975 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The method blank for analytical batch 373241 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 373241 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101117 (400-144674-1), AES-MW1-101117 (400-144674-1[MS]), AES-MW1-101117 (400-144674-1[MSD]), AES-MW3-101117 (400-144674-3), AES-MW5-101117 (400-144674-4), AES-MW4-101217 (400-144674-6) and AES-MW4-DUP-101217 (400-144674-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101117 (400-144674-1), AES-MW1-101117 (400-144674-1[MS]), AES-MW1-101117 (400-144674-1[MSD]), AES-MW3-101117 (400-144674-3), AES-MW5-101117 (400-144674-4), AES-MW4-101217 (400-144674-6) and AES-MW4-DUP-101217 (400-144674-7). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 373081 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Comments
The cooler was shipped from Puerto Rico on Thursday, October 12th for priority overnight delivery on Friday, October 13th. Client had marked the airbill for Saturday delivery. Due to shipping delays caused by the destruction from Hurricane Maria, the cooler did not arrive at

Job ID: 400-144674-1 (Continued)

Laboratory: TestAmerica Pensacola (Continued)

the laboratory until Monday, October 16th. The cooler temperature was 9.2°C when it arrived and still contained ice.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-101117 — Lab Sample ID: 400-144674-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00047	J B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.063		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.27		0.050	0.021	mg/L	5		6020	Total Recoverable
Chromium	0.0023	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0011	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0028	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0044		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	170		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1500		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	260	F1 B	20	6.0	mg/L	10		SM 4500 Cl- E	Total/NA
Fluoride	0.58		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	390	F1	100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.32				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-101117 — Lab Sample ID: 400-144674-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00094	J B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.10		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.16		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	99		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.0013	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0011	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	510		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	41	B	2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.41		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.88				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW3-101117 — Lab Sample ID: 400-144674-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0017	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0031	B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.22		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.2		0.050	0.021	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-101117 (Continued) — Lab Sample ID: 400-144674-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00054	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0032		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.012		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.40		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.38		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	420		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	9900		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	5300	B	400	120	mg/L	200		SM 4500 Cl- E	Total/NA
Fluoride	1.9		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	3000		450	130	mg/L	90		SM 4500 SO4 E	Total/NA
Field pH	7.34				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-101117 — Lab Sample ID: 400-144674-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0065	B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.034		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.44		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0032		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0043	J	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0054	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0038		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	840		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	11000		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3700	B	180	54	mg/L	90		SM 4500 Cl- E	Total/NA
Fluoride	0.49		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2100		400	110	mg/L	80		SM 4500 SO4 E	Total/NA
Field pH	7.02				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-FB-101117 — Lab Sample ID: 400-144674-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00049	J B	0.0013	0.00046	mg/L	5		6020	Total Recoverable

Client Sample ID: AES-MW4-101217 — Lab Sample ID: 400-144674-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0022	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-101217 (Continued) — Lab Sample ID: 400-144674-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0033	B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.047		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Chromium	0.0035		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lead	0.00047	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Lithium	0.74		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.44		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0067		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.4		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	610		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	40000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	11000	B	600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.67		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	14000		3000	840	mg/L	600		SM 4500 SO4 E	Total/NA
Field pH	7.37				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-101217 — Lab Sample ID: 400-144674-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0026		0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0038	B	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.052		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Chromium	0.0033		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0017	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lead	0.00047	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Lithium	0.73		0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.51		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0073		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.5		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	590		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	40000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	11000	B	600	180	mg/L	300		SM 4500 Cl- E	Total/NA
Fluoride	0.65		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	14000		3000	840	mg/L	600		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-101217

Lab Sample ID: 400-144674-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00050	J B	0.0013	0.00046	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144674-1	AES-MW1-101117	Water	10/11/17 09:45	10/16/17 08:27
400-144674-2	AES-MW2-101117	Water	10/11/17 12:08	10/16/17 08:27
400-144674-3	AES-MW3-101117	Water	10/11/17 14:05	10/16/17 08:27
400-144674-4	AES-MW5-101117	Water	10/11/17 15:27	10/16/17 08:27
400-144674-5	AES-FB-101117	Water	10/11/17 16:10	10/16/17 08:27
400-144674-6	AES-MW4-101217	Water	10/12/17 09:40	10/16/17 08:27
400-144674-7	AES-MW4-DUP-101217	Water	10/12/17 10:10	10/16/17 08:27
400-144674-8	AES-FB-101217	Water	10/12/17 10:40	10/16/17 08:27

Client Sample ID: AES-MW1-101117

Date Collected: 10/11/17 09:45
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 17:21	5
Arsenic	**0.00047**	**J B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 17:21	5
Barium	**0.063**		0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 17:21	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:21	5
Boron	**0.27**		0.050	0.021	mg/L		10/20/17 13:09	10/23/17 17:21	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:21	5
Chromium	**0.0023**	**J**	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 17:21	5
Cobalt	**0.0011**	**J**	0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 17:21	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 17:21	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 17:21	5
Molybdenum	**0.0028**	**J**	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 17:21	5
Selenium	**0.0044**		0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 17:21	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 17:21	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**170**		1.3	0.63	mg/L		10/20/17 13:09	10/23/17 17:35	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1500**		5.0	3.4	mg/L			10/18/17 14:24	1
Chloride	**260**	**F1 B**	20	6.0	mg/L			10/25/17 11:24	10
Fluoride	**0.58**		0.10	0.032	mg/L			10/30/17 14:45	1
Sulfate	**390**	**F1**	100	28	mg/L			10/24/17 13:51	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.32**				SU			10/11/17 07:45	1

Client Sample ID: AES-MW2-101117

Date Collected: 10/11/17 12:08
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 17:48	5
Arsenic	**0.00094**	**J B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 17:48	5
Barium	**0.10**		0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 17:48	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:48	5
Boron	**0.16**		0.050	0.021	mg/L		10/20/17 13:09	10/23/17 17:48	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:48	5
Calcium	**99**		0.25	0.13	mg/L		10/20/17 13:09	10/23/17 17:48	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 17:48	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 17:48	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 17:48	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 17:48	5
Molybdenum	**0.0013**	**J**	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 17:48	5
Selenium	**0.0011**	**J**	0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 17:48	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 17:48	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**510**		5.0	3.4	mg/L			10/18/17 14:24	1
Chloride	**41**	**B**	2.0	0.60	mg/L			10/25/17 10:50	1
Fluoride	**0.41**		0.10	0.032	mg/L			10/30/17 14:08	1
Sulfate	**15**		5.0	1.4	mg/L			10/24/17 12:58	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.88**				SU			10/11/17 10:08	1

Client Sample ID: AES-MW3-101117

Date Collected: 10/11/17 14:05
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0017	J	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 18:24	5
Arsenic	0.0031	B	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 18:24	5
Barium	0.22		0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 18:24	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 18:24	5
Boron	1.2		0.050	0.021	mg/L		10/20/17 13:09	10/23/17 18:24	5
Cadmium	0.00054	J	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 18:24	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 18:24	5
Cobalt	0.0032		0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 18:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 18:24	5
Lithium	0.012		0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 18:24	5
Molybdenum	0.40		0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 18:24	5
Selenium	0.38		0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 18:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 18:24	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	420		1.3	0.63	mg/L		10/20/17 13:09	10/23/17 18:29	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9900		50	34	mg/L			10/18/17 14:24	1
Chloride	5300	B	400	120	mg/L			10/25/17 13:01	200
Fluoride	1.9		0.10	0.032	mg/L			10/30/17 14:10	1
Sulfate	3000		450	130	mg/L			10/24/17 14:33	90

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.34				SU			10/11/17 12:05	1

Client Sample ID: AES-MW5-101117

Date Collected: 10/11/17 15:27
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 18:33	5
Arsenic	**0.0065**	**B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 18:33	5
Barium	**0.034**		0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 18:33	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 18:33	5
Boron	**0.44**		0.050	0.021	mg/L		10/20/17 13:09	10/23/17 18:33	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 18:33	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 18:33	5
Cobalt	**0.0032**		0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 18:33	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 18:33	5
Lithium	**0.0043**	**J**	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 18:33	5
Molybdenum	**0.0054**	**J**	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 18:33	5
Selenium	**0.0038**		0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 18:33	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 18:33	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**840**		5.0	2.5	mg/L		10/20/17 13:09	10/23/17 18:47	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**11000**		25	17	mg/L			10/18/17 14:24	1
Chloride	**3700**	**B**	180	54	mg/L			10/25/17 12:16	90
Fluoride	**0.49**		0.10	0.032	mg/L			10/30/17 14:12	1
Sulfate	**2100**		400	110	mg/L			10/24/17 14:13	80

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.02**				SU			10/11/17 13:27	1

Client Sample ID: AES-FB-101117

Date Collected: 10/11/17 16:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 17:39	5
Arsenic	**0.00049**	**J B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 17:39	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 17:39	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:39	5
Boron	0.021	U	0.050	0.021	mg/L		10/20/17 13:09	10/23/17 17:39	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:39	5
Calcium	0.13	U	0.25	0.13	mg/L		10/20/17 13:09	10/23/17 17:39	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 17:39	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 17:39	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 17:39	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 17:39	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 17:39	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 17:39	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 17:39	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/18/17 14:24	1
Chloride	0.60	U	2.0	0.60	mg/L			10/25/17 10:50	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/30/17 14:15	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/24/17 13:00	1

Client Sample ID: AES-MW4-101217

Date Collected: 10/12/17 09:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0022**	**J**	0.0025	0.0010	mg/L		10/20/17 13:09	10/24/17 23:53	5
Arsenic	**0.0033**	**B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/24/17 23:53	5
Barium	**0.047**		0.0025	0.00049	mg/L		10/20/17 13:09	10/24/17 23:53	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/24/17 23:53	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/24/17 23:53	5
Chromium	**0.0035**		0.0025	0.0011	mg/L		10/20/17 13:09	10/24/17 23:53	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		10/20/17 13:09	10/24/17 23:53	5
Lead	**0.00047**	**J**	0.0013	0.00035	mg/L		10/20/17 13:09	10/24/17 23:53	5
Lithium	**0.74**		0.0050	0.0011	mg/L		10/20/17 13:09	10/24/17 23:53	5
Molybdenum	**0.44**		0.015	0.00085	mg/L		10/20/17 13:09	10/24/17 23:53	5
Selenium	**0.0067**		0.0013	0.00024	mg/L		10/20/17 13:09	10/24/17 23:53	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/24/17 23:53	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.4**		1.0	0.42	mg/L		10/20/17 13:09	10/25/17 00:47	100
Calcium	**610**		5.0	2.5	mg/L		10/20/17 13:09	10/25/17 00:47	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**40000**		130	85	mg/L			10/19/17 10:57	1
Chloride	**11000**	**B**	600	180	mg/L			10/25/17 11:27	300
Fluoride	**0.67**		0.10	0.032	mg/L			10/30/17 15:27	1
Sulfate	**14000**		3000	840	mg/L			10/24/17 13:23	600

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.37**				SU			10/12/17 07:40	1

Client Sample ID: AES-MW4-DUP-101217

Date Collected: 10/12/17 10:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-7

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0026**		0.0025	0.0010	mg/L		10/20/17 13:09	10/25/17 00:29	5
Arsenic	**0.0038**	**B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/25/17 00:29	5
Barium	**0.052**		0.0025	0.00049	mg/L		10/20/17 13:09	10/25/17 00:29	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/25/17 00:29	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/25/17 00:29	5
Chromium	**0.0033**		0.0025	0.0011	mg/L		10/20/17 13:09	10/25/17 00:29	5
Cobalt	**0.0017**	**J**	0.0025	0.00040	mg/L		10/20/17 13:09	10/25/17 00:29	5
Lead	**0.00047**	**J**	0.0013	0.00035	mg/L		10/20/17 13:09	10/25/17 00:29	5
Lithium	**0.73**		0.0050	0.0011	mg/L		10/20/17 13:09	10/25/17 00:29	5
Molybdenum	**0.51**		0.015	0.00085	mg/L		10/20/17 13:09	10/25/17 00:29	5
Selenium	**0.0073**		0.0013	0.00024	mg/L		10/20/17 13:09	10/25/17 00:29	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/25/17 00:29	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.5**		1.0	0.42	mg/L		10/20/17 13:09	10/25/17 01:14	100
Calcium	**590**		5.0	2.5	mg/L		10/20/17 13:09	10/25/17 01:14	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**40000**		130	85	mg/L			10/19/17 10:57	1
Chloride	**11000**	**B**	600	180	mg/L			10/25/17 11:27	300
Fluoride	**0.65**		0.10	0.032	mg/L			10/30/17 15:29	1
Sulfate	**14000**		3000	840	mg/L			10/24/17 13:23	600

Client Sample ID: AES-FB-101217

Date Collected: 10/12/17 10:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-8

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 17:44	5
Arsenic	**0.00050**	**J B**	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 17:44	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 17:44	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:44	5
Boron	0.021	U	0.050	0.021	mg/L		10/20/17 13:09	10/23/17 17:44	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 17:44	5
Calcium	0.13	U	0.25	0.13	mg/L		10/20/17 13:09	10/23/17 17:44	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 17:44	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 17:44	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 17:44	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 17:44	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 17:44	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 17:44	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 17:44	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 10:38	10/20/17 12:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/19/17 10:57	1
Chloride	0.60	U	2.0	0.60	mg/L			10/25/17 10:50	1
Fluoride	0.032	U	0.10	0.032	mg/L			10/30/17 16:00	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/24/17 13:17	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Client Sample ID: AES-MW1-101117

Lab Sample ID: 400-144674-1

Date Collected: 10/11/17 09:45

Matrix: Water

Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 17:21	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	373007	10/23/17 17:35	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:26	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372344	10/18/17 14:24	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		10	373241	10/25/17 11:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373952	10/30/17 14:45	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	373081	10/24/17 13:51	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	372125	10/11/17 07:45	BWS	TAL PEN

Client Sample ID: AES-MW2-101117

Lab Sample ID: 400-144674-2

Date Collected: 10/11/17 12:08

Matrix: Water

Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 17:48	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:32	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372344	10/18/17 14:24	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	373241	10/25/17 10:50	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373938	10/30/17 14:08	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	373081	10/24/17 12:58	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	372125	10/11/17 10:08	BWS	TAL PEN

Client Sample ID: AES-MW3-101117

Lab Sample ID: 400-144674-3

Date Collected: 10/11/17 14:05

Matrix: Water

Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 18:24	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	373007	10/23/17 18:29	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:33	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372344	10/18/17 14:24	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		200	373241	10/25/17 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373938	10/30/17 14:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		90	373081	10/24/17 14:33	RRC	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	372125	10/11/17 12:05	BWS	TAL PEN

Client Sample ID: AES-MW5-101117
Lab Sample ID: 400-144674-4
Date Collected: 10/11/17 15:27
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 18:33	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373007	10/23/17 18:47	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:35	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372344	10/18/17 14:24	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		90	373241	10/25/17 12:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373938	10/30/17 14:12	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		80	373081	10/24/17 14:13	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	372125	10/11/17 13:27	BWS	TAL PEN

Client Sample ID: AES-FB-101117
Lab Sample ID: 400-144674-5
Date Collected: 10/11/17 16:10
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 17:39	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:37	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372344	10/18/17 14:24	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	373241	10/25/17 10:50	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373938	10/30/17 14:15	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	373081	10/24/17 13:00	RRC	TAL PEN

Client Sample ID: AES-MW4-101217
Lab Sample ID: 400-144674-6
Date Collected: 10/12/17 09:40
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373182	10/24/17 23:53	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373182	10/25/17 00:47	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:38	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372501	10/19/17 10:57	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	373241	10/25/17 11:27	RRC	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-101217

Lab Sample ID: 400-144674-6
Matrix: Water
Date Collected: 10/12/17 09:40
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 F C		1	373952	10/30/17 15:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	373081	10/24/17 13:23	RRC	TAL PEN
Total/NA	Analysis	Field Sampling		1	372125	10/12/17 07:40	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-101217

Lab Sample ID: 400-144674-7
Matrix: Water
Date Collected: 10/12/17 10:10
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373182	10/25/17 00:29	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373182	10/25/17 01:14	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:40	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372501	10/19/17 10:57	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		300	373241	10/25/17 11:27	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373952	10/30/17 15:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		600	373081	10/24/17 13:23	RRC	TAL PEN

Client Sample ID: AES-FB-101217

Lab Sample ID: 400-144674-8
Matrix: Water
Date Collected: 10/12/17 10:40
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372678	10/20/17 13:09	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373007	10/23/17 17:44	DRE	TAL PEN
Total/NA	Prep	7470A			372297	10/18/17 10:38	JAP	TAL PEN
Total/NA	Analysis	7470A		1	372687	10/20/17 12:42	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372501	10/19/17 10:57	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	373241	10/25/17 10:50	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	373975	10/30/17 16:00	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	373081	10/24/17 13:17	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 372297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	7470A	
400-144674-2	AES-MW2-101117	Total/NA	Water	7470A	
400-144674-3	AES-MW3-101117	Total/NA	Water	7470A	
400-144674-4	AES-MW5-101117	Total/NA	Water	7470A	
400-144674-5	AES-FB-101117	Total/NA	Water	7470A	
400-144674-6	AES-MW4-101217	Total/NA	Water	7470A	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	7470A	
400-144674-8	AES-FB-101217	Total/NA	Water	7470A	
MB 400-372297/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-372297/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	7470A	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	7470A	

Prep Batch: 372678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total Recoverable	Water	3005A	
400-144674-1 - DL	AES-MW1-101117	Total Recoverable	Water	3005A	
400-144674-2	AES-MW2-101117	Total Recoverable	Water	3005A	
400-144674-3 - DL	AES-MW3-101117	Total Recoverable	Water	3005A	
400-144674-3	AES-MW3-101117	Total Recoverable	Water	3005A	
400-144674-4	AES-MW5-101117	Total Recoverable	Water	3005A	
400-144674-4 - DL	AES-MW5-101117	Total Recoverable	Water	3005A	
400-144674-5	AES-FB-101117	Total Recoverable	Water	3005A	
400-144674-6 - DL	AES-MW4-101217	Total Recoverable	Water	3005A	
400-144674-6	AES-MW4-101217	Total Recoverable	Water	3005A	
400-144674-7	AES-MW4-DUP-101217	Total Recoverable	Water	3005A	
400-144674-7 - DL	AES-MW4-DUP-101217	Total Recoverable	Water	3005A	
400-144674-8	AES-FB-101217	Total Recoverable	Water	3005A	
MB 400-372678/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-372678/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-144674-1 MS	AES-MW1-101117	Total Recoverable	Water	3005A	
400-144674-1 MSD	AES-MW1-101117	Total Recoverable	Water	3005A	

Analysis Batch: 372687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	7470A	372297
400-144674-2	AES-MW2-101117	Total/NA	Water	7470A	372297
400-144674-3	AES-MW3-101117	Total/NA	Water	7470A	372297
400-144674-4	AES-MW5-101117	Total/NA	Water	7470A	372297
400-144674-5	AES-FB-101117	Total/NA	Water	7470A	372297
400-144674-6	AES-MW4-101217	Total/NA	Water	7470A	372297
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	7470A	372297
400-144674-8	AES-FB-101217	Total/NA	Water	7470A	372297
MB 400-372297/14-A	Method Blank	Total/NA	Water	7470A	372297
LCS 400-372297/15-A	Lab Control Sample	Total/NA	Water	7470A	372297
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	7470A	372297
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	7470A	372297

Analysis Batch: 373007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total Recoverable	Water	6020	372678

Metals (Continued)

Analysis Batch: 373007 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1 - DL	AES-MW1-101117	Total Recoverable	Water	6020	372678
400-144674-2	AES-MW2-101117	Total Recoverable	Water	6020	372678
400-144674-3	AES-MW3-101117	Total Recoverable	Water	6020	372678
400-144674-3 - DL	AES-MW3-101117	Total Recoverable	Water	6020	372678
400-144674-4	AES-MW5-101117	Total Recoverable	Water	6020	372678
400-144674-4 - DL	AES-MW5-101117	Total Recoverable	Water	6020	372678
400-144674-5	AES-FB-101117	Total Recoverable	Water	6020	372678
400-144674-8	AES-FB-101217	Total Recoverable	Water	6020	372678
MB 400-372678/1-A ^5	Method Blank	Total Recoverable	Water	6020	372678
LCS 400-372678/2-A	Lab Control Sample	Total Recoverable	Water	6020	372678
400-144674-1 MS	AES-MW1-101117	Total Recoverable	Water	6020	372678
400-144674-1 MSD	AES-MW1-101117	Total Recoverable	Water	6020	372678

Analysis Batch: 373182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-6	AES-MW4-101217	Total Recoverable	Water	6020	372678
400-144674-6 - DL	AES-MW4-101217	Total Recoverable	Water	6020	372678
400-144674-7	AES-MW4-DUP-101217	Total Recoverable	Water	6020	372678
400-144674-7 - DL	AES-MW4-DUP-101217	Total Recoverable	Water	6020	372678

General Chemistry

Analysis Batch: 372344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	SM 2540C	
400-144674-2	AES-MW2-101117	Total/NA	Water	SM 2540C	
400-144674-3	AES-MW3-101117	Total/NA	Water	SM 2540C	
400-144674-4	AES-MW5-101117	Total/NA	Water	SM 2540C	
400-144674-5	AES-FB-101117	Total/NA	Water	SM 2540C	
MB 400-372344/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-372344/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-144556-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
400-144556-A-11 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 372501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-6	AES-MW4-101217	Total/NA	Water	SM 2540C	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	SM 2540C	
400-144674-8	AES-FB-101217	Total/NA	Water	SM 2540C	
MB 400-372501/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-372501/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-144630-A-9 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 373081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	SM 4500 SO4 E	
400-144674-2	AES-MW2-101117	Total/NA	Water	SM 4500 SO4 E	
400-144674-3	AES-MW3-101117	Total/NA	Water	SM 4500 SO4 E	
400-144674-4	AES-MW5-101117	Total/NA	Water	SM 4500 SO4 E	
400-144674-5	AES-FB-101117	Total/NA	Water	SM 4500 SO4 E	

General Chemistry (Continued)

Analysis Batch: 373081 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-6	AES-MW4-101217	Total/NA	Water	SM 4500 SO4 E	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	SM 4500 SO4 E	
400-144674-8	AES-FB-101217	Total/NA	Water	SM 4500 SO4 E	
MB 400-373081/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-373081/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-373081/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	SM 4500 SO4 E	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 373241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-2	AES-MW2-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-3	AES-MW3-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-4	AES-MW5-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-5	AES-FB-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-6	AES-MW4-101217	Total/NA	Water	SM 4500 Cl- E	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	SM 4500 Cl- E	
400-144674-8	AES-FB-101217	Total/NA	Water	SM 4500 Cl- E	
MB 400-373241/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-373241/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-373241/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	SM 4500 Cl- E	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 373938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-2	AES-MW2-101117	Total/NA	Water	SM 4500 F C	
400-144674-3	AES-MW3-101117	Total/NA	Water	SM 4500 F C	
400-144674-4	AES-MW5-101117	Total/NA	Water	SM 4500 F C	
400-144674-5	AES-FB-101117	Total/NA	Water	SM 4500 F C	
MB 400-373938/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-373938/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-83271-C-13 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-83271-C-13 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
660-83312-C-9 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 373952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	SM 4500 F C	
400-144674-6	AES-MW4-101217	Total/NA	Water	SM 4500 F C	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	SM 4500 F C	
MB 400-373952/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-373952/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	SM 4500 F C	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	SM 4500 F C	
660-83348-D-5 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 373975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-8	AES-FB-101217	Total/NA	Water	SM 4500 F C	

General Chemistry (Continued)

Analysis Batch: 373975 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-373975/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-373975/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-83348-C-3 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-83348-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-144729-A-11 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 372125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	Field Sampling	
400-144674-2	AES-MW2-101117	Total/NA	Water	Field Sampling	
400-144674-3	AES-MW3-101117	Total/NA	Water	Field Sampling	
400-144674-4	AES-MW5-101117	Total/NA	Water	Field Sampling	
400-144674-6	AES-MW4-101217	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-372678/1-A ^5
Matrix: Water
Analysis Batch: 373007

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 372678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/20/17 13:09	10/23/17 14:28	5
Arsenic	0.000910	J	0.0013	0.00046	mg/L		10/20/17 13:09	10/23/17 14:28	5
Barium	0.00049	U	0.0025	0.00049	mg/L		10/20/17 13:09	10/23/17 14:28	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 14:28	5
Boron	0.021	U	0.050	0.021	mg/L		10/20/17 13:09	10/23/17 14:28	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/20/17 13:09	10/23/17 14:28	5
Calcium	0.13	U	0.25	0.13	mg/L		10/20/17 13:09	10/23/17 14:28	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/20/17 13:09	10/23/17 14:28	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/20/17 13:09	10/23/17 14:28	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/20/17 13:09	10/23/17 14:28	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/20/17 13:09	10/23/17 14:28	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/20/17 13:09	10/23/17 14:28	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/20/17 13:09	10/23/17 14:28	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/20/17 13:09	10/23/17 14:28	5

Lab Sample ID: LCS 400-372678/2-A
Matrix: Water
Analysis Batch: 373007

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 372678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0501		mg/L		100	80 - 120
Arsenic	0.0500	0.0520		mg/L		104	80 - 120
Barium	0.0500	0.0494		mg/L		99	80 - 120
Beryllium	0.0500	0.0494		mg/L		99	80 - 120
Boron	0.100	0.109		mg/L		109	80 - 120
Cadmium	0.0500	0.0536		mg/L		107	80 - 120
Calcium	5.00	5.23		mg/L		105	80 - 120
Chromium	0.0500	0.0534		mg/L		107	80 - 120
Cobalt	0.0500	0.0524		mg/L		105	80 - 120
Lead	0.0500	0.0496		mg/L		99	80 - 120
Lithium	0.0500	0.0550		mg/L		110	80 - 120
Molybdenum	0.100	0.110		mg/L		110	80 - 120
Selenium	0.0500	0.0533		mg/L		107	80 - 120
Thallium	0.0100	0.0106		mg/L		106	80 - 120

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 373007

Client Sample ID: AES-MW1-101117
Prep Type: Total Recoverable
Prep Batch: 372678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0510		mg/L		102	75 - 125
Arsenic	0.00047	J B	0.0500	0.0550		mg/L		109	75 - 125
Barium	0.063		0.0500	0.113		mg/L		99	75 - 125
Beryllium	0.00034	U	0.0500	0.0507		mg/L		101	75 - 125
Boron	0.27		0.100	0.380		mg/L		111	75 - 125
Cadmium	0.00034	U	0.0500	0.0533		mg/L		107	75 - 125
Calcium	170	E	5.00	169	E 4	mg/L		-98	75 - 125
Chromium	0.0023	J	0.0500	0.0551		mg/L		106	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 373007

Client Sample ID: AES-MW1-101117
Prep Type: Total Recoverable
Prep Batch: 372678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0011	J	0.0500	0.0533		mg/L		104	75 - 125
Lead	0.00035	U	0.0500	0.0571		mg/L		114	75 - 125
Lithium	0.0011	U	0.0500	0.0563		mg/L		113	75 - 125
Molybdenum	0.0028	J	0.100	0.114		mg/L		111	75 - 125
Selenium	0.0044		0.0500	0.0580		mg/L		107	75 - 125
Thallium	0.000085	U	0.0100	0.0103		mg/L		103	75 - 125

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 373007

Client Sample ID: AES-MW1-101117
Prep Type: Total Recoverable
Prep Batch: 372678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0512		mg/L		102	75 - 125	0	20
Arsenic	0.00047	J B	0.0500	0.0560		mg/L		111	75 - 125	2	20
Barium	0.063		0.0500	0.112		mg/L		97	75 - 125	1	20
Beryllium	0.00034	U	0.0500	0.0502		mg/L		100	75 - 125	1	20
Boron	0.27		0.100	0.385		mg/L		116	75 - 125	1	20
Cadmium	0.00034	U	0.0500	0.0535		mg/L		107	75 - 125	0	20
Calcium	170	E	5.00	172	E 4	mg/L		-41	75 - 125	2	20
Chromium	0.0023	J	0.0500	0.0548		mg/L		105	75 - 125	0	20
Cobalt	0.0011	J	0.0500	0.0537		mg/L		105	75 - 125	1	20
Lead	0.00035	U	0.0500	0.0523		mg/L		105	75 - 125	9	20
Lithium	0.0011	U	0.0500	0.0566		mg/L		113	75 - 125	0	20
Molybdenum	0.0028	J	0.100	0.115		mg/L		112	75 - 125	1	20
Selenium	0.0044		0.0500	0.0584		mg/L		108	75 - 125	1	20
Thallium	0.000085	U	0.0100	0.0103		mg/L		103	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-372297/14-A
Matrix: Water
Analysis Batch: 372687

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372297

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/18/17 09:37	10/20/17 10:52	1

Lab Sample ID: LCS 400-372297/15-A
Matrix: Water
Analysis Batch: 372687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000934		mg/L		93	80 - 120

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 372687

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA
Prep Batch: 372297

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U	0.00201	0.00168		mg/L		83	80 - 120

Lab Sample ID: 400-144674-1 MSD — **Client Sample ID: AES-MW1-101117**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372687 — **Prep Batch: 372297**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U	0.00201	0.00162		mg/L		80	80 - 120	4	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-372344/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372344

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/18/17 14:24	1

Lab Sample ID: LCS 400-372344/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372344

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	280		mg/L		96	78 - 122

Lab Sample ID: 400-144556-A-3 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372344

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	30		30.0		mg/L		0	5

Lab Sample ID: 400-144556-A-11 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372344

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	88		88.0		mg/L		0	5

Lab Sample ID: MB 400-372501/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372501

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/19/17 10:57	1

Lab Sample ID: LCS 400-372501/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	268		mg/L		91	78 - 122

Lab Sample ID: 400-144630-A-9 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372501

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	470		472		mg/L		0.4	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-373241/6
Matrix: Water
Analysis Batch: 373241

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.615	J	2.0	0.60	mg/L			10/25/17 10:08	1

Lab Sample ID: LCS 400-373241/7
Matrix: Water
Analysis Batch: 373241

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.5		mg/L		108	90 - 110

Lab Sample ID: MRL 400-373241/3
Matrix: Water
Analysis Batch: 373241

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.31		mg/L		116	50 - 150

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 373241

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	260	F1 B	100	263	F1	mg/L		-0.6	73 - 120

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 373241

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	260	F1 B	100	263	F1	mg/L		-0.5	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-373938/3
Matrix: Water
Analysis Batch: 373938

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/30/17 13:23	1

Lab Sample ID: LCS 400-373938/4
Matrix: Water
Analysis Batch: 373938

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.82		mg/L		96	90 - 110

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 660-83271-C-13 MS
Matrix: Water
Analysis Batch: 373938

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
Fluoride	0.13		1.00	1.14		mg/L		101	75 - 125

Lab Sample ID: 660-83271-C-13 MSD
Matrix: Water
Analysis Batch: 373938

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
Fluoride	0.13		1.00	1.12		mg/L		99	75 - 125	2	4

Lab Sample ID: 660-83312-C-9 DU
Matrix: Water
Analysis Batch: 373938

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.36		0.360		mg/L		0	4

Lab Sample ID: MB 400-373952/3
Matrix: Water
Analysis Batch: 373952

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/30/17 14:36	1

Lab Sample ID: LCS 400-373952/4
Matrix: Water
Analysis Batch: 373952

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.82		mg/L		96	90 - 110

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 373952

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.58		1.00	1.65		mg/L		107	75 - 125

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 373952

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.58		1.00	1.62		mg/L		104	75 - 125	2	4

Lab Sample ID: 660-83348-D-5 DU
Matrix: Water
Analysis Batch: 373952

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	1.1		1.12		mg/L		0	4

Lab Sample ID: MB 400-373975/3
Matrix: Water
Analysis Batch: 373975

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			10/30/17 15:44	1

Lab Sample ID: LCS 400-373975/4
Matrix: Water
Analysis Batch: 373975

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride			4.00	3.75		mg/L		94	90 - 110		

Lab Sample ID: 660-83348-C-3 MS
Matrix: Water
Analysis Batch: 373975

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		
Fluoride	0.18	F1	1.00	0.720	F1	mg/L		54	75 - 125		

Lab Sample ID: 660-83348-C-3 MSD
Matrix: Water
Analysis Batch: 373975

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
Fluoride	0.18	F1	1.00	0.710	F1	mg/L		53	75 - 125	1	4

Lab Sample ID: 400-144729-A-11 DU
Matrix: Water
Analysis Batch: 373975

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fluoride	0.032	U		0.032	U	mg/L				NC	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-373081/6
Matrix: Water
Analysis Batch: 373081

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			10/24/17 12:39	1

Lab Sample ID: LCS 400-373081/7
Matrix: Water
Analysis Batch: 373081

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			15.0	13.8		mg/L		92	90 - 110		

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: MRL 400-373081/3
Matrix: Water
Analysis Batch: 373081

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			5.00	4.09	J	mg/L		82	50 - 150		

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 373081

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	390	F1	200	382	F1	mg/L		-4	77 - 128		

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 373081

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	390	F1	200	380	F1	mg/L		-5	77 - 128	1	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)
State, Zip: PR, 00969-5375	PO #:
Phone: 787-209-6386	WO #:
Email: alberto.melendez@dnaenv.com	Project #: 40008317
Project Name: CCR App.III/IV Groundwater Monitoring	SSOW#:
Site: AES Puerto Rico, Guayama, PR	

Analysis Requested

400-144674 COC

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
Preservation Code:							D	N	D		
AES-MW1-101117	10-11-17	0945	G	Water	N		X	X	X	3	pH= 7.32
AES-MW1-MS-101117		1023		Water		Y	X	X	X	3	
AES-MW1-MSD-101117		1047		Water		Y	X	X	X	3	
AES-MW2-101117		1208		Water			X	X	X	3	pH= 6.88
AES-MW3-101117		1405		Water			X	X	X	3	pH= 7.34
AES-MW5-101117		1527		Water			X	X	X	3	pH= 7.02
AES-FB-101117		1610		Water			X	X	X	3	
AES-MW4-101217	10-12-17	0940		Water			X	X	X	3	pH= 7.37
AES-MW4-DUP-101217		1010		Water			X	X	X	3	
AES-FB-101217		1040		Water			X	X	X	3	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/12/17 / 11:35	DNA		10-16-17 0827	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 9.2C IR7 TP 2x 6C IR7 TP

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144674-1
SDG Number: AES Puerto Rico, LP

Login Number: 144674
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	False	Cooler shipment delayed
Cooler Temperature is recorded.	True	9.2°C Wet Chem & Metals Cooler, IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144674-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
11/16/2017 2:57:38 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Method Summary 3
Sample Summary 4
Client Sample Results 5
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 19
Receipt Checklists 20
Certification Summary 21

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144674-1	AES-MW1-101117	Water	10/11/17 09:45	10/16/17 08:27
400-144674-2	AES-MW2-101117	Water	10/11/17 12:08	10/16/17 08:27
400-144674-3	AES-MW3-101117	Water	10/11/17 14:05	10/16/17 08:27
400-144674-4	AES-MW5-101117	Water	10/11/17 15:27	10/16/17 08:27
400-144674-5	AES-FB-101117	Water	10/11/17 16:10	10/16/17 08:27
400-144674-6	AES-MW4-101217	Water	10/12/17 09:40	10/16/17 08:27
400-144674-7	AES-MW4-DUP-101217	Water	10/12/17 10:10	10/16/17 08:27
400-144674-8	AES-FB-101217	Water	10/12/17 10:40	10/16/17 08:27

Client Sample ID: AES-MW1-101117

Date Collected: 10/11/17 09:45
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0155	U	0.0296	0.0297	1.00	0.0553	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.347	U	0.253	0.255	1.00	0.399	pCi/L	10/19/17 12:26	10/26/17 12:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.5*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*
Y Carrier	*78.9*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.362	U	0.255	0.257	5.00	0.399	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-MW2-101117

Date Collected: 10/11/17 12:08
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0502	U	0.0450	0.0452	1.00	0.0647	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.263	U	0.215	0.216	1.00	0.341	pCi/L	10/19/17 12:26	10/26/17 12:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*
Y Carrier	*78.9*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.313	U	0.220	0.221	5.00	0.341	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-MW3-101117

Date Collected: 10/11/17 14:05
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.167**		0.0710	0.0726	1.00	0.0658	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.262	U	0.192	0.194	1.00	0.299	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*78.1*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.429**		0.205	0.207	5.00	0.299	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-MW5-101117

Date Collected: 10/11/17 15:27
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00826	U	0.0349	0.0349	1.00	0.0737	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.291	U	0.216	0.218	1.00	0.339	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*79.3*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.300	U	0.219	0.221	5.00	0.339	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-FB-101117

Date Collected: 10/11/17 16:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0232	U	0.0322	0.0322	1.00	0.0540	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.252	U	0.193	0.195	1.00	0.302	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*79.6*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.275	U	0.196	0.198	5.00	0.302	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-MW4-101217

Date Collected: 10/12/17 09:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0743	U	0.0556	0.0560	1.00	0.0782	pCi/L	10/19/17 11:04	11/10/17 11:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:51*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.176	U	0.222	0.223	1.00	0.368	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.9*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*77.0*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.251	U	0.229	0.230	5.00	0.368	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-MW4-DUP-101217

Date Collected: 10/12/17 10:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.155		0.0701	0.0715	1.00	0.0732	pCi/L	10/19/17 11:04	11/10/17 11:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:51*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0806	U	0.176	0.176	1.00	0.303	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.9*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*78.9*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.236	U	0.189	0.190	5.00	0.303	pCi/L		11/13/17 12:04	1

Client Sample ID: AES-FB-101217

Date Collected: 10/12/17 10:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-8

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0280	U	0.0435	0.0436	1.00	0.0755	pCi/L	10/19/17 11:04	11/10/17 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.418**		0.232	0.235	1.00	0.350	pCi/L	10/19/17 12:26	10/26/17 12:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*
Y Carrier	*80.7*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.446**		0.236	0.239	5.00	0.350	pCi/L		11/13/17 12:04	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-101117
Lab Sample ID: 400-144674-1
Date Collected: 10/11/17 09:45
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336597	11/10/17 11:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:38	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-MW2-101117
Lab Sample ID: 400-144674-2
Date Collected: 10/11/17 12:08
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336597	11/10/17 11:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:38	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-MW3-101117
Lab Sample ID: 400-144674-3
Date Collected: 10/11/17 14:05
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336597	11/10/17 11:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-MW5-101117
Lab Sample ID: 400-144674-4
Date Collected: 10/11/17 15:27
Matrix: Water
Date Received: 10/16/17 08:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336597	11/10/17 11:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-101117
Date Collected: 10/11/17 16:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336597	11/10/17 11:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-MW4-101217
Date Collected: 10/12/17 09:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336596	11/10/17 11:51	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-MW4-DUP-101217
Date Collected: 10/12/17 10:10
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336596	11/10/17 11:51	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Client Sample ID: AES-FB-101217
Date Collected: 10/12/17 10:40
Date Received: 10/16/17 08:27

Lab Sample ID: 400-144674-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			332663	10/19/17 11:04	LDE	TAL SL
Total/NA	Analysis	9315		1	336596	11/10/17 11:52	RTM	TAL SL
Total/NA	Prep	PrecSep_0			332680	10/19/17 12:26	LDE	TAL SL
Total/NA	Analysis	9320		1	333994	10/26/17 12:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	336893	11/13/17 12:04	RTM	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Rad

Prep Batch: 332663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	PrecSep-21	
400-144674-2	AES-MW2-101117	Total/NA	Water	PrecSep-21	
400-144674-3	AES-MW3-101117	Total/NA	Water	PrecSep-21	
400-144674-4	AES-MW5-101117	Total/NA	Water	PrecSep-21	
400-144674-5	AES-FB-101117	Total/NA	Water	PrecSep-21	
400-144674-6	AES-MW4-101217	Total/NA	Water	PrecSep-21	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	PrecSep-21	
400-144674-8	AES-FB-101217	Total/NA	Water	PrecSep-21	
MB 160-332663/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-332663/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	PrecSep-21	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	PrecSep-21	

Prep Batch: 332680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144674-1	AES-MW1-101117	Total/NA	Water	PrecSep_0	
400-144674-2	AES-MW2-101117	Total/NA	Water	PrecSep_0	
400-144674-3	AES-MW3-101117	Total/NA	Water	PrecSep_0	
400-144674-4	AES-MW5-101117	Total/NA	Water	PrecSep_0	
400-144674-5	AES-FB-101117	Total/NA	Water	PrecSep_0	
400-144674-6	AES-MW4-101217	Total/NA	Water	PrecSep_0	
400-144674-7	AES-MW4-DUP-101217	Total/NA	Water	PrecSep_0	
400-144674-8	AES-FB-101217	Total/NA	Water	PrecSep_0	
MB 160-332680/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-332680/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-144674-1 MS	AES-MW1-101117	Total/NA	Water	PrecSep_0	
400-144674-1 MSD	AES-MW1-101117	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-332663/1-A
Matrix: Water
Analysis Batch: 336597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 332663

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01051	U	0.0286	0.0286	1.00	0.0573	pCi/L	10/19/17 11:04	11/10/17 11:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/19/17 11:04*	*11/10/17 11:48*	*1*

Lab Sample ID: LCS 160-332663/2-A
Matrix: Water
Analysis Batch: 336597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 332663

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.8	9.979		1.02	1.00	0.0612	pCi/L	85	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 336597

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA
Prep Batch: 332663

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0155	U	11.8	10.54		1.08	1.00	0.0586	pCi/L	89	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 336597

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA
Prep Batch: 332663

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0155	U	11.8	9.938		1.02	1.00	0.0635	pCi/L	84	75 - 138	0.29	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-332680/1-A
Matrix: Water
Analysis Batch: 333994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 332680

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2430	U	0.213	0.214	1.00	0.341	pCi/L	10/19/17 12:26	10/26/17 12:38	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*
Y Carrier	*78.1*		*40 - 110*	*10/19/17 12:26*	*10/26/17 12:38*	*1*

Lab Sample ID: LCS 160-332680/2-A
Matrix: Water
Analysis Batch: 333994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 332680

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.7	15.66		1.64	1.00	0.324	pCi/L	123	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*101*		*40 - 110*
Y Carrier	*78.5*		*40 - 110*

Lab Sample ID: 400-144674-1 MS
Matrix: Water
Analysis Batch: 333994

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA
Prep Batch: 332680

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.347	U	12.7	16.46		1.72	1.00	0.342	pCi/L	127	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*
Y Carrier	*80.7*		*40 - 110*

Lab Sample ID: 400-144674-1 MSD
Matrix: Water
Analysis Batch: 333994

Client Sample ID: AES-MW1-101117
Prep Type: Total/NA
Prep Batch: 332680

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.347	U	12.7	16.19		1.69	1.00	0.319	pCi/L	124	45 - 150	0.08	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*95.3*		*40 - 110*
Y Carrier	*80.7*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)
State, Zip: PR, 00969-5375	
Phone: 787-209-6386	PO #:
Email: alberto.melendez@dnaenv.com	WO #:
Project Name: CCR App.III/IV Groundwater Monitoring	Project #: 40008317
Site: AES Puerto Rico, Guayama, PR	SSOW#:

Analysis Requested

400-144674 COC

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-101117	10-11-17	0945	G	Water	N		X	X	X	3	pH= 7.32
AES-MW1-MS-101117		1023		Water		Y	X	X	X	3	
AES-MW1-MSD-101117		1047		Water		Y	X	X	X	3	
AES-MW2-101117		1208		Water			X	X	X	3	pH= 6.88
AES-MW3-101117		1405		Water			X	X	X	3	pH= 7.34
AES-MW5-101117		1527		Water			X	X	X	3	pH= 7.02
AES-FB-101117		1610		Water			X	X	X	3	
AES-MW4-101217	10-12-17	0940		Water			X	X	X	3	pH= 7.37
AES-MW4-DUP-101217		1010		Water			X	X	X	3	
AES-FB-101217		1040		Water			X	X	X	3	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	10/12/17 / 11:35	DNA		10-16-17 0827	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 9.2 C IR7 TP 4x.6 C IR7 TP

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144674-2
SDG Number: AES Puerto Rico, LP

Login Number: 144674
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.6°C Rads Cooler, IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17 *
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	12-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144674-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144837-1
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring
Revision: 1

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Authorized for release by:
1/29/2018 3:10:35 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Links

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 8
Sample Summary 9
Client Sample Results 10
Definitions 17
Chronicle 18
QC Association 21
QC Sample Results 24
Chain of Custody 29
Receipt Checklists 30
Certification Summary 31

Job ID: 400-144837-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-144837-1

Comments
Revised Report - The MDL for Lithium has been revised by lowering its value to that supported by the 2017 annual MDL study with an effective date of May 19, 2017. The Reporting Limits for Beryllium, Cadmium, Lithium, and Molybdenum have been revised to accurately reflect standard reporting limits based on TestAmerica's documented MDL and routine calibration data for these elements.

Metals
Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101717 (400-144837-1), AES-MW5-101717 (400-144837-3), AES-MW4-101717 (400-144837-4), AES-MW4-DUP-101717 (400-144837-5) and AES-MW3-101717 (400-144837-6). Elevated reporting limits (RLs) are provided.

Method(s) 6020: The method blank for preparation batch 372814 and analytical batch 373392 contained Barium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 6020: The serial dilution performed for the following sample associated with batch 373392 was outside control limits for Barium: (400-144837-B-2-B SD)

Method(s) 6020: The continuing calibration blank (CCB) for analytical batch 373392 contained Barium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

General Chemistry
Method(s) SM 4500 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101717 (400-144837-1), AES-MW1-101717 (400-144837-1[MS]), AES-MW1-101717 (400-144837-1[MSD]), AES-MW5-101717 (400-144837-3), AES-MW4-101717 (400-144837-4), AES-MW4-DUP-101717 (400-144837-5) and AES-MW3-101717 (400-144837-6). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 374065 were outside control limits. Sample matrix interference and/or dilution of spikes are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AES-MW1-101717 (400-144837-1), AES-MW1-101717 (400-144837-1[MS]), AES-MW1-101717 (400-144837-1[MSD]), AES-MW5-101717 (400-144837-3), AES-MW4-101717 (400-144837-4), AES-MW4-DUP-101717 (400-144837-5), AES-MW3-101717 (400-144837-6) and (400-144723-A-159). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 374149 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-101717 — Lab Sample ID: 400-144837-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00069	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.060	B	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.26		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00097	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0013	J B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0020	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0074		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	150		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	1600		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	270	F1	30	9.0	mg/L	15		SM 4500 Cl- E	Total/NA
Fluoride	0.55		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	410		100	28	mg/L	20		SM 4500 SO4 E	Total/NA
Field pH	7.15				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW2-101717 — Lab Sample ID: 400-144837-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0014		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.089	B	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.17		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	99		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0039		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Lithium	0.0021	J B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0023	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0034		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	560		5.0	3.4	mg/L	1		SM 2540C	Total/NA
Chloride	45		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.36		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	28		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA
Field pH	6.86				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW5-101717 — Lab Sample ID: 400-144837-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0049		0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0060		0.0013	0.00046	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: AES-MW5-101717 (Continued) — Lab Sample ID: 400-144837-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.030	B	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.42		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0029		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0067	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.0076	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0049		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	750		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	9500		25	17	mg/L	1		SM 2540C	Total/NA
Chloride	3500		200	60	mg/L	100		SM 4500 Cl- E	Total/NA
Fluoride	0.47		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2000		300	84	mg/L	60		SM 4500 SO4 E	Total/NA
Field pH	6.86				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-101717 — Lab Sample ID: 400-144837-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.0012	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0055		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.040	B ^	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Chromium	0.0012	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lead	0.00036	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Lithium	0.69	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.53		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.010		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.1		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	580		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	11000		1400	420	mg/L	700		SM 4500 Cl- E	Total/NA
Fluoride	0.65		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	14000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA
Field pH	7.39				SU	1		Field Sampling	Total/NA

Client Sample ID: AES-MW4-DUP-101717 — Lab Sample ID: 400-144837-5

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-DUP-101717 (Continued) — Lab Sample ID: 400-144837-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0062		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.040	B ^	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00037	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Chromium	0.0012	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.74	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.54		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0092		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	3.3		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	580		5.0	2.5	mg/L	100		6020	Total Recoverable
Lead - RA	0.00035	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	41000		130	85	mg/L	1		SM 2540C	Total/NA
Chloride	12000		1400	420	mg/L	700		SM 4500 Cl- E	Total/NA
Fluoride	0.64		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	15000		3500	980	mg/L	700		SM 4500 SO4 E	Total/NA

Client Sample ID: AES-MW3-101717 — Lab Sample ID: 400-144837-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0032		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.21	B	0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.2		0.050	0.021	mg/L	5		6020	Total Recoverable
Chromium	0.0024	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0028		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.010	B	0.0050	0.0011	mg/L	5		6020	Total Recoverable
Molybdenum	0.37		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.33		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	380		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	13000		50	34	mg/L	1		SM 2540C	Total/NA
Chloride	4500		200	60	mg/L	100		SM 4500 Cl- E	Total/NA
Fluoride	1.8		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2600		380	110	mg/L	75		SM 4500 SO4 E	Total/NA
Field pH	7.45				SU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-101717 **Lab Sample ID: 400-144837-7**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN
Field Sampling	Field Sampling	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144837-1	AES-MW1-101717	Water	10/17/17 08:33	10/19/17 08:20
400-144837-2	AES-MW2-101717	Water	10/17/17 09:17	10/19/17 08:20
400-144837-3	AES-MW5-101717	Water	10/17/17 11:10	10/19/17 08:20
400-144837-4	AES-MW4-101717	Water	10/17/17 12:17	10/19/17 08:20
400-144837-5	AES-MW4-DUP-101717	Water	10/17/17 12:57	10/19/17 08:20
400-144837-6	AES-MW3-101717	Water	10/17/17 13:15	10/19/17 08:20
400-144837-7	AES-FB-101717	Water	10/17/17 13:50	10/19/17 08:20

Client Sample ID: AES-MW1-101717

Date Collected: 10/17/17 08:33
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-1

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 14:06	5
Arsenic	**0.00069**	**J**	0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 14:06	5
Barium	**0.060**	**B**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 14:06	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:06	5
Boron	**0.26**		0.050	0.021	mg/L		10/22/17 12:22	10/25/17 14:06	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:06	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 14:06	5
Cobalt	**0.00097**	**J**	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 14:06	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 14:06	5
Lithium	**0.0013**	**J B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 14:06	5
Molybdenum	**0.0020**	**J**	0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 14:06	5
Selenium	**0.0074**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 14:06	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 14:06	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**150**		1.3	0.63	mg/L		10/22/17 12:22	10/25/17 14:20	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1600**		5.0	3.4	mg/L			10/21/17 17:05	1
Chloride	**270**	**F1**	30	9.0	mg/L			10/31/17 10:12	15
Fluoride	**0.55**		0.10	0.032	mg/L			11/02/17 10:11	1
Sulfate	**410**		100	28	mg/L			10/31/17 14:50	20

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.15**				SU			10/17/17 06:33	1

Client Sample ID: AES-MW2-101717

Date Collected: 10/17/17 09:17
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-2

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 14:33	5
Arsenic	**0.0014**		0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 14:33	5
Barium	**0.089**	**B**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 14:33	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:33	5
Boron	**0.17**		0.050	0.021	mg/L		10/22/17 12:22	10/25/17 14:33	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:33	5
Calcium	**99**		0.25	0.13	mg/L		10/22/17 12:22	10/25/17 14:33	5
Chromium	**0.0039**		0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 14:33	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 14:33	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 14:33	5
Lithium	**0.0021**	**J B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 14:33	5
Molybdenum	**0.0023**	**J**	0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 14:33	5
Selenium	**0.0034**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 14:33	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 14:33	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**560**		5.0	3.4	mg/L			10/21/17 17:05	1
Chloride	**45**		2.0	0.60	mg/L			10/31/17 09:42	1
Fluoride	**0.36**		0.10	0.032	mg/L			11/02/17 10:41	1
Sulfate	**28**		5.0	1.4	mg/L			10/31/17 13:59	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.86**				SU			10/17/17 07:17	1

Client Sample ID: AES-MW5-101717

Date Collected: 10/17/17 11:10
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-3

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0049**		0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 15:09	5
Arsenic	**0.0060**		0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 15:09	5
Barium	**0.030**	**B**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 15:09	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 15:09	5
Boron	**0.42**		0.050	0.021	mg/L		10/22/17 12:22	10/25/17 15:09	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 15:09	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 15:09	5
Cobalt	**0.0029**		0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 15:09	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 15:09	5
Lithium	**0.0067**	**B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 15:09	5
Molybdenum	**0.0076**	**J**	0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 15:09	5
Selenium	**0.0049**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 15:09	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 15:09	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**750**		5.0	2.5	mg/L		10/22/17 12:22	10/25/17 15:19	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9500**		25	17	mg/L			10/21/17 17:05	1
Chloride	**3500**		200	60	mg/L			10/31/17 10:41	100
Fluoride	**0.47**		0.10	0.032	mg/L			11/02/17 10:45	1
Sulfate	**2000**		300	84	mg/L			10/31/17 15:16	60

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**6.86**				SU			10/17/17 09:10	1

Client Sample ID: AES-MW4-101717

Date Collected: 10/17/17 12:17
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-4

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0012**	**J**	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 16:19	5
Arsenic	**0.0055**		0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 16:19	5
Barium	**0.040**	**B ^**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 16:19	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 16:19	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 16:19	5
Chromium	**0.0012**	**J**	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 16:19	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 16:19	5
Lead	**0.00036**	**J**	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 16:19	5
Lithium	**0.69**	**B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 16:19	5
Molybdenum	**0.53**		0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 16:19	5
Selenium	**0.010**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 16:19	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 16:19	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.1**		1.0	0.42	mg/L		10/22/17 12:22	10/25/17 17:22	100
Calcium	**580**		5.0	2.5	mg/L		10/22/17 12:22	10/25/17 17:22	100

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			10/21/17 17:05	1
Chloride	**11000**		1400	420	mg/L			10/31/17 11:31	700
Fluoride	**0.65**		0.10	0.032	mg/L			11/02/17 10:46	1
Sulfate	**14000**		3500	980	mg/L			10/31/17 15:43	700

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.39**				SU			10/17/17 10:17	1

Client Sample ID: AES-MW4-DUP-101717

Date Collected: 10/17/17 12:57
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-5

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 16:44	5
Arsenic	**0.0062**		0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 16:44	5
Barium	**0.040**	**B ^**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 16:44	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 16:44	5
Cadmium	**0.00037**	**J**	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 16:44	5
Chromium	**0.0012**	**J**	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 16:44	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 16:44	5
Lithium	**0.74**	**B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 16:44	5
Molybdenum	**0.54**		0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 16:44	5
Selenium	**0.0092**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 16:44	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**3.3**		1.0	0.42	mg/L		10/22/17 12:22	10/25/17 17:31	100
Calcium	**580**		5.0	2.5	mg/L		10/22/17 12:22	10/25/17 17:31	100

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00035**	**J**	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 20:13	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 20:13	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**41000**		130	85	mg/L			10/21/17 17:05	1
Chloride	**12000**		1400	420	mg/L			10/31/17 11:31	700
Fluoride	**0.64**		0.10	0.032	mg/L			11/02/17 10:49	1
Sulfate	**15000**		3500	980	mg/L			10/31/17 15:43	700

Client Sample ID: AES-MW3-101717

Date Collected: 10/17/17 13:15
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-6

Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 14:24	5
Arsenic	**0.0032**		0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 14:24	5
Barium	**0.21**	**B**	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 14:24	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:24	5
Boron	**1.2**		0.050	0.021	mg/L		10/22/17 12:22	10/25/17 14:24	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:24	5
Chromium	**0.0024**	**J**	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 14:24	5
Cobalt	**0.0028**		0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 14:24	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 14:24	5
Lithium	**0.010**	**B**	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 14:24	5
Molybdenum	**0.37**		0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 14:24	5
Selenium	**0.33**		0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 14:24	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 14:24	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**380**		1.3	0.63	mg/L		10/22/17 12:22	10/25/17 14:29	25

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**13000**		50	34	mg/L			10/21/17 17:05	1
Chloride	**4500**		200	60	mg/L			10/31/17 10:41	100
Fluoride	**1.8**		0.10	0.032	mg/L			11/02/17 10:51	1
Sulfate	**2600**		380	110	mg/L			10/31/17 15:29	75

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	**7.45**				SU			10/17/17 11:15	1

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-FB-101717
Date Collected: 10/17/17 13:50
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-7
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 14:02	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 14:02	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:02	5
Boron	0.021	U	0.050	0.021	mg/L		10/22/17 12:22	10/25/17 14:02	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 14:02	5
Calcium	0.13	U	0.25	0.13	mg/L		10/22/17 12:22	10/25/17 14:02	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 14:02	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 14:02	5
Lithium	0.0011	U	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 14:02	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 14:02	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.00049	U	0.0025	0.00049	mg/L		10/22/17 12:22	10/26/17 14:40	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/22/17 12:22	10/26/17 14:40	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/22/17 12:22	10/26/17 14:40	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/22/17 12:22	10/26/17 14:40	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 13:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/21/17 17:05	1
Chloride	0.60	U	2.0	0.60	mg/L			10/31/17 09:42	1
Fluoride	0.032	U	0.10	0.032	mg/L			11/02/17 10:54	1
Sulfate	1.4	U	5.0	1.4	mg/L			10/31/17 13:59	1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Client Sample ID: AES-MW1-101717

Lab Sample ID: 400-144837-1
Matrix: Water
Date Collected: 10/17/17 08:33
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 14:06	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	373392	10/25/17 14:20	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:01	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		15	374065	10/31/17 10:12	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	374149	10/31/17 14:50	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	374030	10/17/17 06:33	BWS	TAL PEN

Client Sample ID: AES-MW2-101717

Lab Sample ID: 400-144837-2
Matrix: Water
Date Collected: 10/17/17 09:17
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 14:33	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:07	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	374065	10/31/17 09:42	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:41	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	374149	10/31/17 13:59	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	374030	10/17/17 07:17	BWS	TAL PEN

Client Sample ID: AES-MW5-101717

Lab Sample ID: 400-144837-3
Matrix: Water
Date Collected: 10/17/17 11:10
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 15:09	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373392	10/25/17 15:19	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:09	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		100	374065	10/31/17 10:41	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:45	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		60	374149	10/31/17 15:16	JLB	TAL PEN

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Field Sampling		1	374030	10/17/17 09:10	BWS	TAL PEN

Client Sample ID: AES-MW4-101717
Lab Sample ID: 400-144837-4
Date Collected: 10/17/17 12:17
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 16:19	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373392	10/25/17 17:22	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:11	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		700	374065	10/31/17 11:31	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	374149	10/31/17 15:43	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	374030	10/17/17 10:17	BWS	TAL PEN

Client Sample ID: AES-MW4-DUP-101717
Lab Sample ID: 400-144837-5
Date Collected: 10/17/17 12:57
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 16:44	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	100	373392	10/25/17 17:31	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	373392	10/25/17 20:13	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:13	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		700	374065	10/31/17 11:31	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:49	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		700	374149	10/31/17 15:43	JLB	TAL PEN

Client Sample ID: AES-MW3-101717
Lab Sample ID: 400-144837-6
Date Collected: 10/17/17 13:15
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 14:24	DRE	TAL PEN
Total Recoverable	Prep	3005A	DL		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	DL	25	373392	10/25/17 14:29	DRE	TAL PEN

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW3-101717

Date Collected: 10/17/17 13:15
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:25	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		100	374065	10/31/17 10:41	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		75	374149	10/31/17 15:29	JLB	TAL PEN
Total/NA	Analysis	Field Sampling		1	374030	10/17/17 11:15	BWS	TAL PEN

Client Sample ID: AES-FB-101717

Date Collected: 10/17/17 13:50
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020		5	373392	10/25/17 14:02	DRE	TAL PEN
Total Recoverable	Prep	3005A	RA		372814	10/22/17 12:22	DN1	TAL PEN
Total Recoverable	Analysis	6020	RA	5	373558	10/26/17 14:40	DRE	TAL PEN
Total/NA	Prep	7470A			372650	10/25/17 12:26	JAP	TAL PEN
Total/NA	Analysis	7470A		1	373446	10/26/17 13:27	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	372779	10/21/17 17:05	TET	TAL PEN
Total/NA	Analysis	SM 4500 Cl- E		1	374065	10/31/17 09:42	JLB	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	374406	11/02/17 10:54	RRC	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	374149	10/31/17 13:59	JLB	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Metals

Prep Batch: 372650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	7470A	
400-144837-2	AES-MW2-101717	Total/NA	Water	7470A	
400-144837-3	AES-MW5-101717	Total/NA	Water	7470A	
400-144837-4	AES-MW4-101717	Total/NA	Water	7470A	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	7470A	
400-144837-6	AES-MW3-101717	Total/NA	Water	7470A	
400-144837-7	AES-FB-101717	Total/NA	Water	7470A	
MB 400-372650/14-A	Method Blank	Total/NA	Water	7470A	
LCS 400-372650/15-A	Lab Control Sample	Total/NA	Water	7470A	
400-144837-1 MS	AES-MW1-101717	Total/NA	Water	7470A	
400-144837-1 MSD	AES-MW1-101717	Total/NA	Water	7470A	

Prep Batch: 372814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total Recoverable	Water	3005A	
400-144837-1 - DL	AES-MW1-101717	Total Recoverable	Water	3005A	
400-144837-2	AES-MW2-101717	Total Recoverable	Water	3005A	
400-144837-3	AES-MW5-101717	Total Recoverable	Water	3005A	
400-144837-3 - DL	AES-MW5-101717	Total Recoverable	Water	3005A	
400-144837-4 - DL	AES-MW4-101717	Total Recoverable	Water	3005A	
400-144837-4	AES-MW4-101717	Total Recoverable	Water	3005A	
400-144837-5	AES-MW4-DUP-101717	Total Recoverable	Water	3005A	
400-144837-5 - RA	AES-MW4-DUP-101717	Total Recoverable	Water	3005A	
400-144837-5 - DL	AES-MW4-DUP-101717	Total Recoverable	Water	3005A	
400-144837-6	AES-MW3-101717	Total Recoverable	Water	3005A	
400-144837-6 - DL	AES-MW3-101717	Total Recoverable	Water	3005A	
400-144837-7 - RA	AES-FB-101717	Total Recoverable	Water	3005A	
400-144837-7	AES-FB-101717	Total Recoverable	Water	3005A	
MB 400-372814/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-372814/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-144837-1 MS	AES-MW1-101717	Total Recoverable	Water	3005A	
400-144837-1 MSD	AES-MW1-101717	Total Recoverable	Water	3005A	

Analysis Batch: 373392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total Recoverable	Water	6020	372814
400-144837-1 - DL	AES-MW1-101717	Total Recoverable	Water	6020	372814
400-144837-2	AES-MW2-101717	Total Recoverable	Water	6020	372814
400-144837-3	AES-MW5-101717	Total Recoverable	Water	6020	372814
400-144837-3 - DL	AES-MW5-101717	Total Recoverable	Water	6020	372814
400-144837-4	AES-MW4-101717	Total Recoverable	Water	6020	372814
400-144837-4 - DL	AES-MW4-101717	Total Recoverable	Water	6020	372814
400-144837-5	AES-MW4-DUP-101717	Total Recoverable	Water	6020	372814
400-144837-5 - DL	AES-MW4-DUP-101717	Total Recoverable	Water	6020	372814
400-144837-5 - RA	AES-MW4-DUP-101717	Total Recoverable	Water	6020	372814
400-144837-6	AES-MW3-101717	Total Recoverable	Water	6020	372814
400-144837-6 - DL	AES-MW3-101717	Total Recoverable	Water	6020	372814
400-144837-7	AES-FB-101717	Total Recoverable	Water	6020	372814
MB 400-372814/1-A ^5	Method Blank	Total Recoverable	Water	6020	372814
LCS 400-372814/2-A	Lab Control Sample	Total Recoverable	Water	6020	372814
400-144837-1 MS	AES-MW1-101717	Total Recoverable	Water	6020	372814

Metals (Continued)

Analysis Batch: 373392 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1 MSD	AES-MW1-101717	Total Recoverable	Water	6020	372814

Analysis Batch: 373446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	7470A	372650
400-144837-2	AES-MW2-101717	Total/NA	Water	7470A	372650
400-144837-3	AES-MW5-101717	Total/NA	Water	7470A	372650
400-144837-4	AES-MW4-101717	Total/NA	Water	7470A	372650
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	7470A	372650
400-144837-6	AES-MW3-101717	Total/NA	Water	7470A	372650
400-144837-7	AES-FB-101717	Total/NA	Water	7470A	372650
MB 400-372650/14-A	Method Blank	Total/NA	Water	7470A	372650
LCS 400-372650/15-A	Lab Control Sample	Total/NA	Water	7470A	372650
400-144837-1 MS	AES-MW1-101717	Total/NA	Water	7470A	372650
400-144837-1 MSD	AES-MW1-101717	Total/NA	Water	7470A	372650

Analysis Batch: 373558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-7 - RA	AES-FB-101717	Total Recoverable	Water	6020	372814

General Chemistry

Analysis Batch: 372779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	SM 2540C	
400-144837-2	AES-MW2-101717	Total/NA	Water	SM 2540C	
400-144837-3	AES-MW5-101717	Total/NA	Water	SM 2540C	
400-144837-4	AES-MW4-101717	Total/NA	Water	SM 2540C	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	SM 2540C	
400-144837-6	AES-MW3-101717	Total/NA	Water	SM 2540C	
400-144837-7	AES-FB-101717	Total/NA	Water	SM 2540C	
MB 400-372779/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-372779/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-144837-1 DU	AES-MW1-101717	Total/NA	Water	SM 2540C	

Analysis Batch: 374065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-2	AES-MW2-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-3	AES-MW5-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-4	AES-MW4-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-6	AES-MW3-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-7	AES-FB-101717	Total/NA	Water	SM 4500 Cl- E	
MB 400-374065/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-374065/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-374065/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-144837-1 MS	AES-MW1-101717	Total/NA	Water	SM 4500 Cl- E	
400-144837-1 MSD	AES-MW1-101717	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 374149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-2	AES-MW2-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-3	AES-MW5-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-4	AES-MW4-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-6	AES-MW3-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-7	AES-FB-101717	Total/NA	Water	SM 4500 SO4 E	
MB 400-374149/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-374149/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-374149/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-144837-1 MS	AES-MW1-101717	Total/NA	Water	SM 4500 SO4 E	
400-144837-1 MSD	AES-MW1-101717	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 374406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	SM 4500 F C	
400-144837-2	AES-MW2-101717	Total/NA	Water	SM 4500 F C	
400-144837-3	AES-MW5-101717	Total/NA	Water	SM 4500 F C	
400-144837-4	AES-MW4-101717	Total/NA	Water	SM 4500 F C	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	SM 4500 F C	
400-144837-6	AES-MW3-101717	Total/NA	Water	SM 4500 F C	
400-144837-7	AES-FB-101717	Total/NA	Water	SM 4500 F C	
MB 400-374406/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-374406/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-144837-1 MS	AES-MW1-101717	Total/NA	Water	SM 4500 F C	
400-144837-1 MSD	AES-MW1-101717	Total/NA	Water	SM 4500 F C	
400-144837-2 DU	AES-MW2-101717	Total/NA	Water	SM 4500 F C	

Field Service / Mobile Lab

Analysis Batch: 374030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	Field Sampling	
400-144837-2	AES-MW2-101717	Total/NA	Water	Field Sampling	
400-144837-3	AES-MW5-101717	Total/NA	Water	Field Sampling	
400-144837-4	AES-MW4-101717	Total/NA	Water	Field Sampling	
400-144837-6	AES-MW3-101717	Total/NA	Water	Field Sampling	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-372814/1-A ^5
Matrix: Water
Analysis Batch: 373392

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 372814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0010	U	0.0025	0.0010	mg/L		10/22/17 12:22	10/25/17 13:48	5
Arsenic	0.00046	U	0.0013	0.00046	mg/L		10/22/17 12:22	10/25/17 13:48	5
Barium	0.000625	J	0.0025	0.00049	mg/L		10/22/17 12:22	10/25/17 13:48	5
Beryllium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 13:48	5
Boron	0.021	U	0.050	0.021	mg/L		10/22/17 12:22	10/25/17 13:48	5
Cadmium	0.00034	U	0.0025	0.00034	mg/L		10/22/17 12:22	10/25/17 13:48	5
Calcium	0.13	U	0.25	0.13	mg/L		10/22/17 12:22	10/25/17 13:48	5
Chromium	0.0011	U	0.0025	0.0011	mg/L		10/22/17 12:22	10/25/17 13:48	5
Cobalt	0.00040	U	0.0025	0.00040	mg/L		10/22/17 12:22	10/25/17 13:48	5
Lead	0.00035	U	0.0013	0.00035	mg/L		10/22/17 12:22	10/25/17 13:48	5
Lithium	0.00119	J	0.0050	0.0011	mg/L		10/22/17 12:22	10/25/17 13:48	5
Molybdenum	0.00085	U	0.015	0.00085	mg/L		10/22/17 12:22	10/25/17 13:48	5
Selenium	0.00024	U	0.0013	0.00024	mg/L		10/22/17 12:22	10/25/17 13:48	5
Thallium	0.000085	U	0.00050	0.000085	mg/L		10/22/17 12:22	10/25/17 13:48	5

Lab Sample ID: LCS 400-372814/2-A
Matrix: Water
Analysis Batch: 373392

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 372814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0540		mg/L		108	80 - 120
Arsenic	0.0500	0.0535		mg/L		107	80 - 120
Barium	0.0500	0.0480		mg/L		96	80 - 120
Beryllium	0.0500	0.0523		mg/L		105	80 - 120
Boron	0.100	0.101		mg/L		101	80 - 120
Cadmium	0.0500	0.0532		mg/L		106	80 - 120
Calcium	5.00	5.13		mg/L		103	80 - 120
Chromium	0.0500	0.0507		mg/L		101	80 - 120
Cobalt	0.0500	0.0503		mg/L		101	80 - 120
Lead	0.0500	0.0512		mg/L		102	80 - 120
Lithium	0.0500	0.0536		mg/L		107	80 - 120
Molybdenum	0.100	0.104		mg/L		104	80 - 120
Selenium	0.0500	0.0516		mg/L		103	80 - 120
Thallium	0.0100	0.0104		mg/L		104	80 - 120

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 373392

Client Sample ID: AES-MW1-101717
Prep Type: Total Recoverable
Prep Batch: 372814

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0010	U	0.0500	0.0558		mg/L		112	75 - 125
Arsenic	0.00069	J	0.0500	0.0543		mg/L		107	75 - 125
Barium	0.060	B	0.0500	0.111		mg/L		101	75 - 125
Beryllium	0.00034	U	0.0500	0.0529		mg/L		106	75 - 125
Boron	0.26		0.100	0.357		mg/L		94	75 - 125
Cadmium	0.00034	U	0.0500	0.0513		mg/L		103	75 - 125
Calcium	160	E	5.00	158	E 4	mg/L		-1	75 - 125
Chromium	0.0011	U	0.0500	0.0492		mg/L		98	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 373392

Client Sample ID: AES-MW1-101717
Prep Type: Total Recoverable
Prep Batch: 372814

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.00097	J	0.0500	0.0486		mg/L		95	75 - 125
Lead	0.00035	U	0.0500	0.0498		mg/L		100	75 - 125
Lithium	0.0013	J B	0.0500	0.0535		mg/L		104	75 - 125
Molybdenum	0.0020	J	0.100	0.100		mg/L		98	75 - 125
Selenium	0.0074		0.0500	0.0594		mg/L		104	75 - 125
Thallium	0.000085	U	0.0100	0.0101		mg/L		101	75 - 125

Lab Sample ID: 400-144837-1 MSD
Matrix: Water
Analysis Batch: 373392

Client Sample ID: AES-MW1-101717
Prep Type: Total Recoverable
Prep Batch: 372814

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.0010	U	0.0500	0.0555		mg/L		111	75 - 125	1	20
Arsenic	0.00069	J	0.0500	0.0562		mg/L		111	75 - 125	3	20
Barium	0.060	B	0.0500	0.110		mg/L		98	75 - 125	1	20
Beryllium	0.00034	U	0.0500	0.0548		mg/L		110	75 - 125	4	20
Boron	0.26		0.100	0.379		mg/L		115	75 - 125	6	20
Cadmium	0.00034	U	0.0500	0.0504		mg/L		101	75 - 125	2	20
Calcium	160	E	5.00	159	E 4	mg/L		27	75 - 125	1	20
Chromium	0.0011	U	0.0500	0.0493		mg/L		99	75 - 125	0	20
Cobalt	0.00097	J	0.0500	0.0494		mg/L		97	75 - 125	2	20
Lead	0.00035	U	0.0500	0.0483		mg/L		97	75 - 125	3	20
Lithium	0.0013	J B	0.0500	0.0542		mg/L		106	75 - 125	1	20
Molybdenum	0.0020	J	0.100	0.104		mg/L		102	75 - 125	4	20
Selenium	0.0074		0.0500	0.0594		mg/L		104	75 - 125	0	20
Thallium	0.000085	U	0.0100	0.0101		mg/L		101	75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-372650/14-A
Matrix: Water
Analysis Batch: 373446

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372650

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000070	U	0.00020	0.000070	mg/L		10/25/17 12:26	10/26/17 12:57	1

Lab Sample ID: LCS 400-372650/15-A
Matrix: Water
Analysis Batch: 373446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372650

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000978		mg/L		97	80 - 120

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 373446

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA
Prep Batch: 372650

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000070	U	0.00201	0.00183		mg/L		91	80 - 120

Lab Sample ID: 400-144837-1 MSD — **Client Sample ID: AES-MW1-101717**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373446 — **Prep Batch: 372650**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000070	U	0.00201	0.00186		mg/L		93	80 - 120	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-372779/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372779

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3.4	U	5.0	3.4	mg/L			10/21/17 17:05	1

Lab Sample ID: LCS 400-372779/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372779

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	304		mg/L		104	78 - 122

Lab Sample ID: 400-144837-1 DU — **Client Sample ID: AES-MW1-101717**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372779

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1600		1570		mg/L		0	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-374065/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.60	U	2.0	0.60	mg/L			10/31/17 09:17	1

Lab Sample ID: LCS 400-374065/7 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.7		mg/L		102	90 - 110

Lab Sample ID: MRL 400-374065/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374065

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.11		mg/L		105	50 - 150

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 374065

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	270	F1	150	268	F1	mg/L		1	73 - 120

Lab Sample ID: 400-144837-1 MSD
Matrix: Water
Analysis Batch: 374065

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	270	F1	150	263	F1	mg/L		-2	73 - 120	2	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-374406/3
Matrix: Water
Analysis Batch: 374406

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.032	U	0.10	0.032	mg/L			11/02/17 10:03	1

Lab Sample ID: LCS 400-374406/4
Matrix: Water
Analysis Batch: 374406

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.75		mg/L		94	90 - 110

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 374406

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.55		1.00	1.59		mg/L		104	75 - 125

Lab Sample ID: 400-144837-1 MSD
Matrix: Water
Analysis Batch: 374406

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.55		1.00	1.59		mg/L		104	75 - 125	0	4

Lab Sample ID: 400-144837-2 DU
Matrix: Water
Analysis Batch: 374406

Client Sample ID: AES-MW2-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.36		0.360		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-374149/6
Matrix: Water
Analysis Batch: 374149

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	U	5.0	1.4	mg/L			10/31/17 13:43	1

Lab Sample ID: LCS 400-374149/7
Matrix: Water
Analysis Batch: 374149

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	13.7		mg/L		92	90 - 110

Lab Sample ID: MRL 400-374149/3
Matrix: Water
Analysis Batch: 374149

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.91	J	mg/L		78	50 - 150

Lab Sample ID: 400-144837-1 MS
Matrix: Water
Analysis Batch: 374149

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	410		200	586		mg/L		90	77 - 128

Lab Sample ID: 400-144837-1 MSD
Matrix: Water
Analysis Batch: 374149

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	410		200	571		mg/L		82	77 - 128	3	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386 → 2ND SAMPLER: ALBERTO MELENDEZ	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC				Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: PR, 00969-5375	PO #:		
Phone: 787-209-6386	WO #:		Other:
Email: alberto.melendez@dnaenv.com	Project #: 40008317		
Project Name: CCR App.III/IV Groundwater Monitoring	SSOW#:		
Site: AES Puerto Rico, Guayama, PR			

400-144837 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra226, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-101717	10-17-17	0833	G	Water	N		X	X	X	3	(*) pH = 7.15
AES-MW1-MS-101717		0920		Water		Y	X	X	X	3	
AES-MW1-MSD-101717		0955		Water		Y	X	X	X	3	
AES-MW2-101717		0917		Water			X	X	X	3	pH = 6.86
AES-MW5-101717		1110		Water			X	X	X	3	pH = 6.86
AES-MW4-101717		1217		Water			X	X	X	3	pH = 7.39
AES-MW4-DUP-101717		1257		Water			X	X	X	3	
AES-MW3-101717		1315		Water			X	X	X	3	pH = 7.45
AES-FB-101717		1350		Water			X	X	X	3	
				Water							(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10-17-2017 / 1430	DNA		10-17-2017 / 1430	DNA
2		10-18-2017 / 0930	DNA		10/19/17 / 820	TA
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.0°C, 24.0°C IR8

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144837-1
SDG Number: AES Puerto Rico, LP

Login Number: 144837
List Number: 1
Creator: Hughes, Nicholas T

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	0.0°C Wet chem & Metals cooler, IR8
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-1
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-144837-2
TestAmerica Sample Delivery Group: AES Puerto Rico, LP
Client Project/Site: CCR App.III/IV GW Monitoring

For:
DNA-Environment, LLC
35 Calle Juan C Borbon
Ste 67-227
Guaynabo, Puerto Rico 00969-5375

Attn: Alberto Melendez

Cheyenne Whitmire

Authorized for release by:
11/20/2017 4:47:01 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Method Summary 4
Sample Summary 5
Client Sample Results 6
Definitions 13
Chronicle 14
QC Association 16
QC Sample Results 17
Chain of Custody 19
Receipt Checklists 20
Certification Summary 21

Case Narrative

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Job ID: 400-144837-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-144837-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-334014. The following samples were reduced due to limited volume: AES-MW1-101717 (400-144837-1), AES-MW1-101717 (400-144837-1[MS]), AES-MW1-101717 (400-144837-1[MSD]), AES-MW2-101717 (400-144837-2), AES-MW5-101717 (400-144837-3), AES-MW4-101717 (400-144837-4), AES-MW4-DUP-101717 (400-144837-5), AES-MW3-101717 (400-144837-6) and AES-FB-101717 (400-144837-7).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-334010. The following samples were reduced due to limited volume: AES-MW1-101717 (400-144837-1), AES-MW1-101717 (400-144837-1[MS]), AES-MW1-101717 (400-144837-1[MSD]), AES-MW2-101717 (400-144837-2), AES-MW5-101717 (400-144837-3), AES-MW4-101717 (400-144837-4), AES-MW4-DUP-101717 (400-144837-5), AES-MW3-101717 (400-144837-6) and AES-FB-101717 (400-144837-7).

Method Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-144837-1	AES-MW1-101717	Water	10/17/17 08:33	10/19/17 08:20
400-144837-2	AES-MW2-101717	Water	10/17/17 09:17	10/19/17 08:20
400-144837-3	AES-MW5-101717	Water	10/17/17 11:10	10/19/17 08:20
400-144837-4	AES-MW4-101717	Water	10/17/17 12:17	10/19/17 08:20
400-144837-5	AES-MW4-DUP-101717	Water	10/17/17 12:57	10/19/17 08:20
400-144837-6	AES-MW3-101717	Water	10/17/17 13:15	10/19/17 08:20
400-144837-7	AES-FB-101717	Water	10/17/17 13:50	10/19/17 08:20

Client Sample ID: AES-MW1-101717

Lab Sample ID: 400-144837-1

Date Collected: 10/17/17 08:33

Matrix: Water

Date Received: 10/19/17 08:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0150	U	0.0618	0.0618	1.00	0.122	pCi/L	10/26/17 08:27	11/17/17 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.304	U	0.308	0.310	1.00	0.502	pCi/L	10/26/17 08:55	11/08/17 14:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.6*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:01*	*1*
Y Carrier	*88.6*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:01*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.319	U	0.314	0.316	5.00	0.502	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-MW2-101717

Date Collected: 10/17/17 09:17
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-2

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.112	U	0.0850	0.0856	1.00	0.120	pCi/L	10/26/17 08:27	11/17/17 07:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:57*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.328	U	0.282	0.284	1.00	0.451	pCi/L	10/26/17 08:55	11/08/17 14:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*
Y Carrier	*87.9*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.439	U	0.295	0.297	5.00	0.451	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-MW5-101717

Date Collected: 10/17/17 11:10
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0775	U	0.0704	0.0707	1.00	0.104	pCi/L	10/26/17 08:27	11/17/17 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.204	U	0.233	0.234	1.00	0.383	pCi/L	10/26/17 08:55	11/08/17 14:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*
Y Carrier	*91.6*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.282	U	0.243	0.244	5.00	0.383	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-MW4-101717

Date Collected: 10/17/17 12:17
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-4

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0582	U	0.0634	0.0636	1.00	0.0993	pCi/L	10/26/17 08:27	11/17/17 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.173	U	0.268	0.269	1.00	0.452	pCi/L	10/26/17 08:55	11/08/17 14:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:02*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.231	U	0.275	0.276	5.00	0.452	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-MW4-DUP-101717

Date Collected: 10/17/17 12:57
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0828	U	0.0782	0.0785	1.00	0.121	pCi/L	10/26/17 08:27	11/17/17 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.283	U	0.336	0.337	1.00	0.554	pCi/L	10/26/17 08:55	11/08/17 14:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:10*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:10*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.366	U	0.345	0.346	5.00	0.554	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-MW3-101717

Date Collected: 10/17/17 13:15
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0332	U	0.0632	0.0632	1.00	0.114	pCi/L	10/26/17 08:27	11/17/17 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.504	U	0.332	0.335	1.00	0.514	pCi/L	10/26/17 08:55	11/08/17 14:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.1*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:03*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.537**		0.338	0.341	5.00	0.514	pCi/L		11/20/17 14:28	1

Client Sample ID: AES-FB-101717

Date Collected: 10/17/17 13:50
Date Received: 10/19/17 08:20

Lab Sample ID: 400-144837-7

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0240	U	0.0560	0.0561	1.00	0.105	pCi/L	10/26/17 08:27	11/17/17 07:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0944	U	0.225	0.225	1.00	0.389	pCi/L	10/26/17 08:55	11/08/17 14:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*106*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:03*	*1*
Y Carrier	*86.7*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.118	U	0.232	0.232	5.00	0.389	pCi/L		11/20/17 14:28	1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW1-101717
Lab Sample ID: 400-144837-1
Date Collected: 10/17/17 08:33
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:01	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Client Sample ID: AES-MW2-101717
Lab Sample ID: 400-144837-2
Date Collected: 10/17/17 09:17
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:57	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:02	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Client Sample ID: AES-MW5-101717
Lab Sample ID: 400-144837-3
Date Collected: 10/17/17 11:10
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:02	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Client Sample ID: AES-MW4-101717
Lab Sample ID: 400-144837-4
Date Collected: 10/17/17 12:17
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:02	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Lab Chronicle

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Client Sample ID: AES-MW4-DUP-101717

Lab Sample ID: 400-144837-5

Date Collected: 10/17/17 12:57
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336270	11/08/17 14:10	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Client Sample ID: AES-MW3-101717

Lab Sample ID: 400-144837-6

Date Collected: 10/17/17 13:15
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:03	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Client Sample ID: AES-FB-101717

Lab Sample ID: 400-144837-7

Date Collected: 10/17/17 13:50
Matrix: Water
Date Received: 10/19/17 08:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			334010	10/26/17 08:27	LDE	TAL SL
Total/NA	Analysis	9315		1	337732	11/17/17 07:58	RTM	TAL SL
Total/NA	Prep	PrecSep_0			334014	10/26/17 08:55	LDE	TAL SL
Total/NA	Analysis	9320		1	336177	11/08/17 14:03	ALD	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	338144	11/20/17 14:28	EAW	TAL SL

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

QC Association Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Rad

Prep Batch: 334010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	PrecSep-21	
400-144837-2	AES-MW2-101717	Total/NA	Water	PrecSep-21	
400-144837-3	AES-MW5-101717	Total/NA	Water	PrecSep-21	
400-144837-4	AES-MW4-101717	Total/NA	Water	PrecSep-21	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	PrecSep-21	
400-144837-6	AES-MW3-101717	Total/NA	Water	PrecSep-21	
400-144837-7	AES-FB-101717	Total/NA	Water	PrecSep-21	
MB 160-334010/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-334010/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-144837-1MS	AES-MW1-101717	Total/NA	Water	PrecSep-21	
400-144837-1MSD	AES-MW1-101717	Total/NA	Water	PrecSep-21	

Prep Batch: 334014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-144837-1	AES-MW1-101717	Total/NA	Water	PrecSep_0	
400-144837-2	AES-MW2-101717	Total/NA	Water	PrecSep_0	
400-144837-3	AES-MW5-101717	Total/NA	Water	PrecSep_0	
400-144837-4	AES-MW4-101717	Total/NA	Water	PrecSep_0	
400-144837-5	AES-MW4-DUP-101717	Total/NA	Water	PrecSep_0	
400-144837-6	AES-MW3-101717	Total/NA	Water	PrecSep_0	
400-144837-7	AES-FB-101717	Total/NA	Water	PrecSep_0	
MB 160-334014/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-334014/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-144837-1MS	AES-MW1-101717	Total/NA	Water	PrecSep_0	
400-144837-1MSD	AES-MW1-101717	Total/NA	Water	PrecSep_0	

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-334010/1-A
Matrix: Water
Analysis Batch: 337732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 334010

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01131	U	0.0512	0.0513	1.00	0.104	pCi/L	10/26/17 08:27	11/17/17 07:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/26/17 08:27*	*11/17/17 07:57*	*1*

Lab Sample ID: LCS 160-334010/2-A
Matrix: Water
Analysis Batch: 337732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334010

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.7	13.45		1.40	1.00	0.110	pCi/L	85	68 - 137		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*

Lab Sample ID: 400-144837-1MS
Matrix: Water
Analysis Batch: 337732

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA
Prep Batch: 334010

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226	0.0150	U	15.8	13.44		1.41	1.00	0.127	pCi/L	85	75 - 138		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*95.6*		*40 - 110*

Lab Sample ID: 400-144837-1MSD
Matrix: Water
Analysis Batch: 337732

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA
Prep Batch: 334010

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.0150	U	15.7	13.81		1.43	1.00	0.106	pCi/L	88	75 - 138	0.13	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-334014/1-A
Matrix: Water
Analysis Batch: 336177

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 334014

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1790	U	0.291	0.291	1.00	0.489	pCi/L	10/26/17 08:55	11/08/17 14:01	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:01*	*1*
Y Carrier	*90.1*		*40 - 110*	*10/26/17 08:55*	*11/08/17 14:01*	*1*

Lab Sample ID: LCS 160-334014/2-A
Matrix: Water
Analysis Batch: 336177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334014

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			11.8	11.32		1.30	1.00	0.452	pCi/L	96	56 - 140		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*104*		*40 - 110*
Y Carrier	*88.2*		*40 - 110*

Lab Sample ID: 400-144837-1MS
Matrix: Water
Analysis Batch: 336177

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA
Prep Batch: 334014

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228	0.304	U	11.8	12.12		1.39	1.00	0.461	pCi/L	100	45 - 150		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Ba Carrier	*95.6*		*40 - 110*
Y Carrier	*88.2*		*40 - 110*

Lab Sample ID: 400-144837-1MSD
Matrix: Water
Analysis Batch: 336177

Client Sample ID: AES-MW1-101717
Prep Type: Total/NA
Prep Batch: 334014

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.304	U	11.8	11.67		1.36	1.00	0.501	pCi/L	97	45 - 150	0.16	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Ba Carrier	*97.6*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: WILLIAM RODRIGUEZ	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No: 400-67383-27434.1
Client Contact: Alberto Melendez	Phone: 787-209-6386	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: DNA-Environment, LLC	↳ 2ND SAMPLER: ALBERTO MELENDEZ			Job #:

Address: 35 Calle Juan C Borbon, STE 67-227	Due Date Requested:
City: Guaynabo	TAT Requested (days): 10 DAYS (REGULAR TAT)
State, Zip: PR, 00969-5375	PO #:
Phone: 787-209-6386	WO #:
Email: alberto.melendez@dnaenv.com	Project #: 40008317
Project Name: CCR App.III/IV Groundwater Monitoring	SSOW#:
Site: AES Puerto Rico, Guayama, PR	

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

400-144837 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra226, Radium-226 & Radium-228	SM4500_Cl_E-Chloride, Field pH, SM4500_SO4_E-Sulfate, 4500_F_C - Fluoride, 2540C - TDS	6020-Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Li,Mo,Se,Tl, 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	D		
AES-MW1-101717	10-17-17	0833	G	Water	N		X	X	X	3	(*) pH = 7.15
AES-MW1-MS-101717		0920		Water		Y	X	X	X	3	
AES-MW1-MSD-101717		0955		Water		Y	X	X	X	3	
AES-MW2-101717		0917		Water			X	X	X	3	pH = 6.86
AES-MW5-101717		1110		Water			X	X	X	3	pH = 6.86
AES-MW4-101717		1217		Water			X	X	X	3	pH = 7.39
AES-MW4-DUP-101717		1257		Water			X	X	X	3	
AES-MW3-101717		1315		Water			X	X	X	3	pH = 7.45
AES-FB-101717		1350		Water			X	X	X	3	
				Water							(*) FIELD pH

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10-17-2017 / 1430	DNA		10-17-2017 / 1430	DNA
2	Relinquished by:	Date/Time: 10-18-2017 / 0930	Company DNA	Received by:	Date/Time: 10/19/17 820	Company TA
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0°C, 24.0°C IR8

11/20/2017

Login Sample Receipt Checklist

Client: DNA-Environment, LLC

Job Number: 400-144837-2
SDG Number: AES Puerto Rico, LP

Login Number: 144837
List Number: 1
Creator: Hughes, Nicholas T

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	24.0°C Rads cooler, IR8
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica Pensacola

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
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18
California	State Program	9	2886	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Illinois	NELAP	5	200023	11-30-17 *
Iowa	State Program	7	373	02-01-18
Kansas	NELAP	7	E-10236	12-31-17 *
Kentucky (DW)	State Program	4	90125	12-31-17
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA170011	12-31-17
Maryland	State Program	3	310	09-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

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

Accreditation/Certification Summary

Client: DNA-Environment, LLC
Project/Site: CCR App.III/IV GW Monitoring

TestAmerica Job ID: 400-144837-2
SDG: AES Puerto Rico, LP

Laboratory: TestAmerica St. Louis (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
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-21-18
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18

APPENDIX B
Field Data Sheets

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 08/08/17
FIELD PERSONNEL: William Rodriguez, Rafael Diaz, Alberto Melendez
WEATHER: Nublado

MONITORING WELL: MW-1
LOCATION: Guayama
WELL DEPTH: ___
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 15.79 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH (pH units) CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY (mS/cm) CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL (mv) CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN (mg/l) CHANGE*	TURBIDITY (NTU) READING	TURBIDITY (NTU) CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE (degrees C) CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
9:47	/		6.99	NA	4.277	NA	200.2	NA	.70	NA	3.62	NA	30.13	NA	ND/min	15.85
9:52			7.49	.50	4.302	.025	179.2	21.	.59	.11	0.0	3.62	30.11	.02	150	15.86
9:57			7.92	.43	4.324	.02	162.4	16.8	.55	.04	0.14	.14	30.11	0.0	150	15.86
10:02			8.34	.42	4.357	.03	147.0	15.4	.47	.08	0.0	-.14	30.11	0.-	150	15.86
10:07			8.67	.33	4.366	.01	134.2	12.8	.44	.03	0.0	0	30.17	.06	150	15.86
10:12			8.96	.	4.363	.00	122.4		.41	.03	1.60		30.19		150	15.86
10:17			9.20		4.368	.00	112.5		.41	.0	1.21		30.17		150	15.86
10:22			9.54		4.365		110.0		.40		.84		30.25		150	15.86

COMMENTS:

Nivel inicial: 15.79 Sample Time 10:25 PH: 9.58

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/8/17
FIELD PERSONNEL: William Rodriguez, Rafael Diaz, Alberto Melendez
WEATHER: Cloudy

MONITORING WELL: MW-2
WELL DEPTH: 22.30
SCREENED/OPEN INTERVAL: ___
LOCATION: Guayama
WELL DIAMETER: ___ Inches

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: 19 ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 15.41 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
11:25			9.48	NA	1.782	NA	100.0	NA	1.29	NA	606	NA	32.09	NA	150	15.43
11:30			9.58	.10	1.734	.04	92.9	7.1	.90	.39	3.25	2.81	32.05	-.04	150	15.41
11:35			9.66	.08	1.718	.02	89.8	3.1	.84	.06	1.52	1.73	32.25	.20	150	15.43
11:40			9.70	.04	1.701	.017	87.3	2.5	.75	.09	1.13	.39	32.22	.03	150	15.43
11:45			9.76	.06	1.696	.005	84.0	3.3	.71	.04	1.01	.12	32.15	.07	150	15.43
11:50			9.76	—	1.694	.002	81.4	2.6	.66	.05	.79	.21	32.18	.03	150	

COMMENTS:

Inicio 11:16 Sample Time: 11:55 pH 9.77

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/8/17
FIELD PERSONNEL: W. Rodriguez/R. Diaz/A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-3
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: Guayama
WELL DIAMETER: 2" Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.75 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:17			8.54	NA	31.93	NA	135.4	NA	.75	NA	20.55	NA	31.83	NA	150	13.96
13:22			9.34	.80	33.91	+ 1.98	106.5	28.9	.49	.26	17.49	3.06	32.09	-.26	150	13.99
13:27			9.82	.48	32.51	1.40	87.8	18.7	.31	.18	14.30	3.19	32.05	.04	150	13.99
13:32			10.18	.36	30.54	1.97	73.4	14.4	.25	.06	11.65	2.65	31.96	.09	150	13.99
13:37			10.47	.29	28.23	2.31	61.3	12.1	.21	.04	8.53	3.12	31.98	.02	150	13.99
13.42			10.69	.22	26.38	1.43	52.1	9.2	.18	.03	6.64	1.89	32.07	.09	150	13.99
13.47			10:88	.19	24.73	1.65	44.4	7.7	.17	.01	4.33	2.31	32.09	.02	150	13.99
13:52			11.01	.13	23.73	1.00	38.3	6.1	.16	.01	3.76	.57	32.23	.16	150	13.99
13:57			11:16	.15	23.35	.38	31.9	6.4	.15	.01	.98	2.78	32.29	.06	150	13.99
14.02			11.28	.12	22.72	.63	26.4	5.5	.14	.01	2.95	1.97	32.10	.19	150	13.99
14.07			11:34	.06	22.37	.35	24.2	2.2	.14	.00	2.77	.22	32.00	.10	150	13.99

COMMENTS:

Start: 13:15

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 2 OF 2

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/8/17
FIELD PERSONNEL: W. Rodríguez / B. Díaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-3
WELL DEPTH: _____
SCREENED/OPEN INTERVAL: _____
LOCATION: Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm):
BACKGROUND: _____
BENEATH OUTER CAP: _____
BENEATH INNER CAP: _____
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : _____ ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
14:07			11.34	NA	22.37	NA	24.2	NA	.14	NA	2.77	NA	32.00	NA	150	13.99
14:12			11.43	.09	22.03	.34	21.2	3.0	.14	0.00	1.41	1.36	31.81	.19	150	13.99
14:17			11.51	.08	21.76	.27	17.8	3.4	.13	.01	3.52	2.11	32.03	.21	150	13.99
14:22			11.51	.00	21.51	.25	17.0	.8	.12	.01	1.89	1.63	32.17	.15	150	13.99
14:27																

COMMENTS:

Sample Time: 14:27 pH: 11.51

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/8/17
FIELD PERSONNEL: W. Rodriguez / B. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH: 27.75'
SCREENED/OPEN INTERVAL: ___
LOCATION: Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.40 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
15:00			9.68	NA	93.86	NA	93.8	NA	.87	NA	4.80	NA	34.06	NA	170	13.54
15:05			10.49	.81	94.48	.62	59.0	34.8	.42	.45	5.17	.37	34.11	.05	150	13.60
15:10			10.87	.38	94.53	.05	42.7	6.3	.28	.14	6.29	1.12	34.15	.03	150	13.63
15:15			11.08	.21	94.56	.03	32.0	10.7	.19	.09	4.30	1.99	34.16	.01	150	13.65
15:20			11.21	.13	94.59	.03	26.1	5.9	.16	.03	5.20	.90	34.17	.01	150	13.66
15:25			11.41	.20	95.78	1.19	16.6	9.5	.12	.04	4.66	.54	34.48	.31	150	13.66
15:30			11.67	.26	96.35	.57	6.9	9.7	.12	0.0	1.63	3.03	34.52	.04	150.	13.66
15:35			11.76	.09	96.43	.08	3.1	3.8	.10	.02	1.58	.05	34.49	.03	150	13.69
15:40			11.78	.02	96.49	.06	1.6	1.5	.09	.01	1.94	.36	34.52	.03	150	13.70
15.45			11.80	.08	96.51	.02	-2.1	3.7	.09	.00	.95	.99	34.51	.01	150	13.71
15.50			11.92	.06	96.55	.04	-4.6	2.5	.08	.01	0.00		34.44	.07	150	13.72

COMMENTS:

Sample 15:55 Dup Sample: 16:14 MS Sample: 16:32 MSD Sample: 16:53

FB-080817 / 17:08

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 2

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/9/17
FIELD PERSONNEL: W. Rodriguez / R. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-5
WELL DEPTH: 25.82
SCREENED/OPEN INTERVAL:
LOCATION: Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.34 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:48			6.86	NA	28.11	NA	137.4	NA	1.03	NA	13.52	NA	30.03	NA	129	14.51
9:53			7.76	.90	29.30	1.19	105.7	31.7	0.70	.33	10.00	3.52	30.18	.15	129	14.54
9:58			8.11	.35	29.30	0.00	92.1	13.6	.45	.25	8.58	1.42	30.19	.01	129	14.55
10:03			8.43	.32	29.22	.08	79.3	12.8	.35	.10	6.68	1.90	30.24	.05	129	14.56
10:08			8.75	.32	29.09	.13	66.8	12.5	.31	.04	6.90	.22	30.33	.09	129	14.58
10:13			9.00	.25	28.85	.24	56.9	9.9	.25	.06	4.98	1.92	30.31	.02	129	14.58
10:18			9.16	.16	28.68	.17	50.6	6.3	.22	.03	4.89	.09	30.37	.06	129	14.58
~~10:37~~ 10:23			7.58		27.79		49.8		.58		3.83		30.30		150	14:55
~~10:42~~ 10:28			7.87	.29	27.77	.02	37.5	12.3	.41	.17	3.58	.45	30.36	.06	150	14:55
~~10:47~~ 10:33			8.21	.34	27.70	.07	22.6	14.9	.27	.14	3.22	.36	30.44	.08	150	14:55
~~10:52~~ 10:38			8.37	.16	27.62	.08	16.3	6.3	.24	.03	1.21	2.01	30.49	.05	150	14.55

COMMENTS: Re calibrated pH with pH 7 & pH 10 Buffers. @ 10:20A

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/9/17
FIELD PERSONNEL: W. Rodriguez / A. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-5
WELL DEPTH: 25.82
SCREENED/OPEN INTERVAL:
LOCATION: Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.34 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:52			8.37	NA	27.62	NA	16.3	NA	.24	NA	1.21	NA	30.49	NA	150	
10:57			8.36	.01	27.59	.03	15.4	0.9	.21	.03	.22	.77 ~~[illegible]~~	30.59	.10	150	14.54
11:02			8.48	.12	27.57	.02	9.7	5.7	.20	.01	1.49 AR	1.27	30.57	.02	150	14.54
11:07			8.50	.02	27.52	.05	8.6	1.1	.17	.03	1.18	.31	30.58	.01	150	14.54
11:12			8.41	.09	27.49	.03	11.7	3.1	.17	.00	.72	.46	30.59	.01	150	14.54

COMMENTS:

Sample Time : 11:24

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

FIELD INSTRUMENT AND CALIBRATION DATA

SITE: 8/08/17 AES, Gueyama
DATE: 8/08/17
FIELD PERSONNEL: B. Diaz / W. Rodriguez
START TIME: _____ STOP TIME: _____

	METER	PROBE
DO		
PH		
SPEC. COND.	.746	
ORP		
TURBIDITY		

DISSOLVED OXYGEN Standard | TURBIDITY Reading | ORP

Water Temp. —
Baro. Pres. 30.27
Saturation —
Init. Mtr. Rd. 92.8
Mtr. reset to 101.0
O_2 Satur. % —

D.I. Water _____

Standard Temp. 28.16
Standard Conc. 240
Initial Reading 202.6
Meter reset to 2403

SPECIFIC CONDUCTANCE

	Conc.	Initial Reading	Meter Reset to	Temperature	Lot # and Exp. Date
Standard#1	1.413	.746	1.413	26.53	
Standard#2					
Standard#3					
Standard#4					

pH CALIBRATION

Buffer	Temp.	Initial Reading	mV	Meter Reset To	Lot # and Exp. Date
4	27.09	4.17		4.04	
7	26.56	7.18		7.00	
10	27.43	9.48		9.95	

ORP
240 28.16 202.6
2403

Date of Calibration: 8/9/17 Technician: William Rodriguez / Rafael D. 42

Instrument Serial Number: 07F10215 Software Revision: _____ Cable Model Number: 13H14

Temperature Reading 26.61 Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane blue Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.550	1.412 mS/cm
ORP	307.2	239.9
DO	107.3 %	101.1 %

True Barometric Pressure at time of calibration 30.31 in Hg

	Pre Cal		
pH 7	6.80	pH mV value 7.03	Range 0 mV ± 50 mV
pH 4	3.56	pH mV value 4.00	Range +165 to +180 from 7 buffer mV value
pH 10	9.90	pH mV value 10.01	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) N/A NH4 mV value N/A Range: 0 mV +/- 20 mV (new sensor only)
2nd point (100 mg/L) N/A NH4 mV value N/A Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) N/A NO3 mV value N/A Range: 200 mV +/- 20 mV (new sensor only)
2nd point (100 mg/L) N/A NO3 mV value N/A Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) N/A Cl mV value N/A Range: 225 mV +/- 20 mV (new sensor only)
2nd point (1000mg/L) N/A Cl mV value N/A Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Meter Reading after sampling
pH 4 → 3.06 w/pH 4 Buffer
pH 7 → 6.54 w/pH 7 Buffer
pH 10 → 10.05 w/pH 10 Buffer
Conductivity 1.308 mS/cm w/1413 Buffer
ORP 222.2 mV w/240 mV Buffer
Turbidity 1.94 w/20 NTU Buffer
10.79/10 NTU Buffer

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/15/17
FIELD PERSONNEL: W. Rodriguez / R. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-1
WELL DEPTH: 25.15
SCREENED/OPEN INTERVAL:
LOCATION: Guayama-AES
WELL DIAMETER: 2" Inches

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 15.95 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:00			7.10	NA	4.338	NA	132.4	NA	1.21	NA	4.19	NA	30.90	NA	107	15.98
10:05			7.07	.03	4.340	.002	108.9	23.5	.95	.26	3.65	.54	30.89	.01	107	15.98
10:10			7.08	.01	4.350	.01	97.9	11	.69	.26	3.08	.57	30.90	.01	107	15.98
10:15			7.07	.01	4.357	.007	91.9	6	.54	.15	2.66	.42	30.86	.04	107	15.98
10:20			7.08	.01	4.351	.006	88.6	3.3	.44	.10	2.98	.32	30.88		107	15.98

COMMENTS:

12:30/150 Sample 10:25 pH 7.07

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/15/17
FIELD PERSONNEL: R. Díaz / W. Rodríguez / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-2
WELL DEPTH: 22.30
SCREENED/OPEN INTERVAL:
LOCATION: AES Guayama
WELL DIAMETER: 2" Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 15.54 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
11:10			6.73	NA	1.759	NA	92.4	NA	1.67	NA	6.03	NA	32.67	NA	107	15.56
11:15			6.91	.18	1.749	.010	82.7	9.7	.86	.81	5.78	.25	32.81	.14	107	15.56
11:20			6.89	.02	1.706	.043	78.8	3.9	.71	.15	4.22	1.56	32.83	.02	107	15.56
11:25			6.82	.07	1.695	.011	76.7	2.1	.67	.04	3.45	.77	32.82	.01	107	15.56
11:30			6.81	.01	1.685	.01	74.4	2.3	.64	.03	2.88	.57	32.82	.0	107	15.56
11:35			6.83	.02	1.683	.002	72.8	1.6	.67	.03	3.06	.18	32.86	.04	107	15.56

COMMENTS:

Sample @ 11:40 pH 6.83

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/15/17
FIELD PERSONNEL: W. Rodriguez / R. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-3
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: AES-Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.95 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:25			7.16	NA	38.99	NA	90.6	NA	1.78	NA	28.35	NA	31.63	NA	117	14.13
13:30			7.21	.05	38.61	.38	63.7	26.9	.62	1.16	22.97	5.38	32.06	.43	117	14.17
13:35			7.21	.00	37.51	1.10	52.7	11.0	.41	.21	25.27	2.30	32.26	.20	117	14.17
13:40			7.19	.02	36.16	1.35	37.4	15.3	.34	.07	24.88	.39	32.17	.09	117	14.17
13:45			7.17	.02	34.41	1.75	30.7	6.7	.31	.03	21.82	3.06	31.97	.20	117	14.17
13:50			7.16	.01	33.30	1.11	26.1	4.6	.28	.03	19.71	2.11	31.99	.02	117	14.19
13:55			7.15	.01	31.73	1.57	19.7	6.4	.27	.01	17.11	2.60	32.00	.01	117	14.19
14.00			7.14	.01	30.23	1.5	9.0	10.7	.25	.02	14.00	3.11	31.94	.02	117	14.19
14.05			7.13	.01	29.28	.95	6.3	2.7	.25	.00	11.71	2.29	31.97	.01	117	14.20
14.10			7.13	.00	28.42	.86	2.4	3.9	.25	.00	9.89	1.88	31.95	.02	117	14.20
14.15			7.12	.01	27.75	.67	-2.4	4.8	.25	.00	8.16	1.73	31.86	.09	117	14.20

COMMENTS:

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/15/17
FIELD PERSONNEL:
WEATHER Sunny

MONITORING WELL: MW-3
LOCATION: AES Guayama
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.95 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
14:15			7.12	NA	27.75	NA	-2.4	NA	.25	NA	8.16	NA	31.86	NA	117	14.20
14:20			7.11	.01	27.13	.62	-5.0	2.6	.26	.01	6.74	1.42	31.74	.12	117	14.21
14:25			7.11	.00	26.63	.50	-11.9	6.9	.35	.06	6.40	.34	31.63	.11	117	14.21
14:30			7.11	.00	26.24	.39	-10.1	1.8	.29	.06	5.83	.57	31.53	.10	117	14.22
14:35			7.10	.01	25.80	.44	-11.3	1.2	.26	.03	5.91	.08	31.50	.03	117	14.22

COMMENTS:

Sample @ 14:40 pH 7.10

14:55 FB-081517

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 2/16/17
FIELD PERSONNEL: R. Diaz / W. Rodriguez / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-11
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: AES Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.41 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:36			6.85	NA	94.78	NA	-8.6	NA	.42	NA	41.87	NA	34.38	NA	150	13.63
9:41			6.87	.02	94.90	.12	-20.1	11.5	.38	.04	37.69	4.18	34.52	.14	129	13.65
9:46			6.84	.03	94.95	.05	-29.6	9.5	.21	.17	35.92	1.77	34.59	.07	129	13.64
9:51			6.84	.00	94.93	.02	-32.8	3.2	.18	.03	23.98	11.94	34.71	.12	129	13.65
9:56			6.83	.01	94.97	.04	-38.6	5.8	.16	.02	28.84	4.86	34.83	.13	129	13.66
10:01			6.84	.01	95.00	.03	-41.1	2.5	.14	.02	32.30	3.46	34.86	.03	129	13.66
10:06			6.99	.15	96.4	1.4	-68.9	27.8	.12	.02	12.21	19.99	35.04	.18	129	13.67
10:11			6.99	.00	96.48	.08	-75.9	7.0	.19	.07	6.69	5.34	34.97	.07	129	13.67
10:16			7.00	.01	96.56	.08	-75.5	.4	.17	.02	5.34	1.35	35.08	.11	129	13.67
10:21			7.02	.02	96.77	.21	-79.9	4.4	.15	.02	4.29	1.05	34.91	.17	129	13.67
10:26			7.04	.02	96.73	.02	-78.2	1.7	.16	.01	3.59	.70	34.93	.02	129	13.67

COMMENTS:

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/16/17
FIELD PERSONNEL: R. Díaz / W. Rodríguez / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-4
LOCATION: AES-Guayama
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.41 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:26			7.04	NA	96.73	NA	-78.2	NA	.14	NA	3.59	NA	34.93	NA	129	13.67
10:31			7.06	.02	96.76	.03	-76.5	1.7	.14	.02	5.A	1.60	35.10	.17	129	13.67
10:36			7.08	.02	96.74	.02	-78.1	1.6	.16	.02	3.71	1.51	35.18	.07	129	13.67
10:41			Sample													

COMMENTS: Dup Sample 11:10 MS Sample: 11:35 MSD Sample: 12:00

Sample: 10:41 pH: 7.08

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/16/17
FIELD PERSONNEL: R. Diaz / W. Robertson / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-5
LOCATION: AES-Guayama
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.55 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:18			6.66	NA	32.94	NA	22.5	NA	.87	NA	17.19	NA	30.17	NA	150	14.74
13:23			6.68	.02	32.14	.20	14.6	7.9	.61	.26	12.08	7.11	30.70	.53	150	14.70
13:28			6.67	.01	32.57	.17	4.8	9.8	.46	.15	8.80	3.28	31.13	.43	150	14.70
13:33			6.67	.00	32.39	.22	-3.0	7.8	.40	.06	7.57	1.23	31.35	.22	150	14.70
13:38			6.66	.01	32.19	.20	-10.3	7.3	.40	.00	6.82	.75	31.55	.20	150	14.70
13:43			6.65	.01	32.03	.16	-16.4	4.1	.37	.03	7.99	1.17	31.59	.04	150	14.70
13:48			6.64	.01	31.78	.25	-21.7	5.3	.37	.00	6.49	1.5	31.74	.15	150	14.71
13:53			6.63	.01	31.65	.13	-24.9	3.2	.37	.00	5.27	1.22	31.48	.26	150	14.71
13:58			6.62	.01	31.49	.16	-24.0	.9	.37	.00	5.84	.57	31.30	.18	150	14.71
14:03			6.62	.00	31.24	.25	-25.4	1.4	.39	.02	5.81	.03	31.21	.09	150	14.71
14:08			6.61	.01	31.03	.21	-25.5	0.1	.42	.03	4.60	.21	31.13	.08	150	14.72

COMMENTS:

Sample @ 14:15 pH 6.61 FB: 14:40

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 8/15/17 Technician: R. Dyer

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading 30.88 Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? (Y) N Color of Membrane Blue Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.434	1.413
ORP	225.8	240.0
DO	113.9	101.2

True Barometric Pressure at time of calibration 30.28

	Pre Cal		
pH 7	6.67	pH mV value_____	Range 0 mV ± 50 mV
pH 4	4.42	pH mV value_____	Range +165 to +180 from 7 buffer mV value
pH 10	10.01	pH mV value_____	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Date of Calibration: 8/16/17 Technician: B. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane Blue Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.405	1.413
ORP	238.5	240.0
DO	103.2	100.8

True Barometric Pressure at time of calibration 763.6 mm/Hg

	Pre Cal		
pH 7	7.38	pH mV value -23.1	Range 0 mV ± 50 mV
pH 4	3.82	pH mV value_____	Range +165 to +180 from 7 buffer mV value
pH 10	10.01	pH mV value_____	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/22/17
FIELD PERSONNEL: R. Diaz / A. Muñoz / A. Hernandez
WEATHER: Sunny

MONITORING WELL: MW-1
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: AES-Guayama
WELL DIAMETER: 2" Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 15.65 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH (pH units) CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY (mS/cm) CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL (mv) CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN (mg/l) CHANGE*	TURBIDITY (NTU) READING	TURBIDITY (NTU) CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE (degrees C) CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
9:25			6.57	NA	4.121	NA	183.2	NA	.54	NA	3.62	NA	30.14	NA	118	15.67
9:30			6.62	.05	4.157	.036	67.8	115.4	.54	.0	3.04	.58	30.15	-.01	118	15.67
9:35			6.66	.05	4.178	.021	13.9	53.9	.42	.12	2.06	.98	30.15	.00	118	15.67
9:40			6.68	.02	4.192	.014	-19.5	33.4	.34	.08	1.50	.56	30.16	.01	118	15.67
9:45			6.70	.02	4.205	.013	-43.1	23.6	.34	.00	1.30	.20	30.19	.03	118	15.67
9:50			6.71	.01	4.217	.012	-52.1	.90	.34	.00	.07	.23	30.21	.02	118	15.67
9:55			6.73	.02	4.13	.004	-61.6	8.5	.35	.01	.50	.43	30.20	.01	118	15.67
10:00			6.74	.01	4.221	.008	-63.4	1.8	.37	.02	1.01	.51	30.23	.03	118	15.67

AES-MW1-082217

COMMENTS:

Sample 10:05 pH 6.74

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/22/17
FIELD PERSONNEL: B. Diaz / A. Nunez / A. Helander
WEATHER: Sunny

MONITORING WELL: MW-2
WELL DEPTH:
LOCATION: AES Guayama
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 15.21 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:52			6.67	NA	1.704	NA	-32.2	NA	.92	NA	6.51	NA	32.43	NA	118	15.22
10:57			6.61	.06	1.667	.037	-64.8	32.6	.66	.26	1.66	4.85	32.54	.11	118	15.22
11:02			6.58	.03	1.656	.011	-71.2	6.4	.71	.05	1.35	.31	32.50	.04	118	15.23
11:07			6.56	.02	1.646	.010	-75.2	6.0	.78	.07	.93	.42	32.33	.17	118	15.23
11:12			6.55	.01	1.643	.003	-74.3	0.9	.82	.04	1.07	.14	32.45	.12	118	15.22
11:17			6.54	.01	1.642	.001	-75.5	1.2	.88	.06	.33	.74	32.50	.05	118	15.22
11:22			6.54	.00	1.640	.002	-75.9	.4	.91	.03	0.0	.33	32.52	.12	118	15.22
11:27			6.55	.01	1.638	.002	-79.1	3.2	.87	.04	.36	.36	32.55	.07	118	15.22

COMMENTS: AES-MW2-082217

Sample@ 11:30 pH 6.54

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: ~~8/22/17~~ 8/22/17
FIELD PERSONNEL: B. Díaz / A. Muñoz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-3
LOCATION:
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.53 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:03			6.87	NA	39.97	NA	-78.5	NA	.56	NA	40.69	NA	31.60	NA	118	13.76
13:08			6.87	0.0	~~38.97~~ 39.97	1.0	-94.2	15.7	.44	.12	34.74	5.95	31.81	.21	118	13.77
13:13			6.86	.01	31.93	7.04	-99.7	15.5	.39	.05	28.50	~~4.69~~ 6.24	31.93	.12	118	13.76
13:18			6.85	.01	35.77	3.84	-101.9	2.2	.34	.05	23.85	4.65	31.99	.06	118	13.78
13:23			6.84	.01	~~33~~.97	1.80	-107.4	5.5	.31	.03	~~17.98~~ 17.87	5.98	32.04	.05	118	13.79
13:28			6.82	.02	~~32~~.04	1.93	-109.0	1.6	.30	.01	14.63	3.24	31.84	.20	118	13.79
13:33			6.82	.00	31.20	.84	-106.6	2.4	.29	.01	9.43	5.20	31.82	.02	118	13.79
13:38			6.80	.02	30.12	1.08	-107.0	1.4	.28	.01	8.20	1.23	31.83	.01	118	13.80
13:43			6.80	.00	29.02	1.10	-105.9	1.9	.28	.00	7.49	.71	31.81	.02	118	13.79
13:48			6.79	.01	28.42	.60	-108.6	.3	.27	.01	6.23	1.26	31.81	.00	118	13.79
13:53			6.78	.01	27.70	.72	-110.1	1.5	.27	.00	4.84	.39	31.78	.03	118	13.79

COMMENTS: A

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/22/17
FIELD PERSONNEL: R. Diaz / A. Nunez / A. Helander
WEATHER: Sunny

MONITORING WELL: MW-3
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.53 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:53			6.78	NA	27.70	NA	-110.1	NA	.27	NA	4.84	NA	31.78	NA	118	13.79
13:58			6.78	.00	27.22	.48	-108.6	1.5	.28	.01	2.44	2.40	31.82	.04	118	13.79
14:00			6.78	.00	26.90	.32	-106.9	1.5	.27	.01	2.36	.08	31.91	.03	118	13.79

COMMENTS:

Sample @ 14:00 pH 6.78 AES-MW3-082217

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/22/17
FIELD PERSONNEL: B. Diaz / A. Nunez / A. Holanda
WEATHER: Sunny

MONITORING WELL: MW-5
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.57 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
14:51			6.53	NA	30.32	NA	-75.9	NA	1.20	NA	13.98	NA	30.72	NA	118	13.79
14:56			6.51	.02	30.44	.12	-75.3	.6	.59	.61	11.86	2.12	30.98	.26	118	13.76
15:01			6.48	.03	30.46	.02	-85.4	10.1	.47	.12	10.25	1.61	31.00	.02	118	13.76
15:06			6.48	.00	30.51	.05	-96.4	11.0	.42	.05	5.09	5.16	30.97	.03	118	13.77
15:11			6.48	.00	30.41	.10	-94.7	1.7	.40	.02	3.27	1.86	30.99	.02	118	13.77
15:16			6.49	.01	30.29	.12	-86.3	8.4	.38	.02	2.69	.58	30.98	.01	118	13.77
15:21			6.49	.00	30.19	.10	-90.0	3.7	.39	.01	2.38	.31	30.84	.14	118	13.75
15:26			6.49	.00	29.94	.25	-102.8	12.8	.37	.02	2.40	.02	30.74	.10	118	13.75
15:31			6.49	.00	29.70	.24	-100.8	2.0	.39	.02	2.50	.10	30.73	.01	118	13.75
15:35			6.49	.00	29.62	.08	-96.9	3.9	.39	.00	2.03	.47	30.74	.01	118	13.75

COMMENTS:

Sample @ 15:35 pH 6.49 AES-MW5-082217

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 2

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/23/17
FIELD PERSONNEL: R. Diaz / A. Munoz
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH:
LOCATION:
WELL DIAMETER: Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.97 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:32			6.90	NA	93.36	NA	-35.2	NA	.39	NA	30.32	NA	33.36	NA	103	13.17
9:37			6.86	.04	93.57	.21	-60.2	25.0	.31	.08	30.30	.02	33.39	.03	103	13.17
9:42			6.87	.01	93.60	.03	-65.4	5.4	.23	.08	29.30	1.0	33.51	.12	118	13.20
9.47			6.87	.00	93.66	.06	-68.9	3.3	.20	.03	25.15	4.15	33.59	.08	118	13.21
9:52			6.87	.00	93.70	.04	-73.1	4.2	.20	.03	25.49	.34	33.68	.09	118	13.22
9:57			6.88	.01	93.73	.03	-79.1	6.0	.17	.03	21.51	3.98	33.75	.07	118	13.23
10:02			6.94	.06	94.35	.63	-86.5	17.4	.15	.02	17.15	4.36	33.88	.13	118	13.23
10:07			6.98	.06	94.75	.40	-103.9	7.4	.16	.01	6.77	10.38	33.94	.06	118	13.23
10:12			7.02	.04	95.03	.28	-109.9	6.0	.16	.01	5.07	1.7	34.05	.11	118	13.23
10:17			7.02	.00	95.21	.18	-113.6	13.7	.14	.02	4.26	.81	34.19	.14	118	13.24
10:22			7.05	.03	95.31	.10	-115.7	2.1	.14	.00	4.00	.26	34.18	.01	118	13.26

COMMENTS:

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/23/17
FIELD PERSONNEL: R. Diaz / A. Nunez / A. Molender
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.97 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
10:22			7.05	NA	95.31	NA	-115.7	NA	.14	NA	4.00	NA	34.18	NA	118	13.26
10:27 RD			7.08	.03	95.42	.11	-119.3	3.6	.13	.01	2.44	1.56	34.21	.03	118	13.26
10:32			7.09	.01	95.47	.05	-121.1	1.8	.13	.00	2.08	.36	34.23	.02	118	13.26

COMMENTS: AES-MW4 082317@10:40 / AES-MW4-DUP 082317@11:25 / AES-MW4-MS-082317@11:50
Sample @ 10:40 pH 7.09
AES-MW4-MSD-082317@ 12:20

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 8/22/17 Technician: R. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y (N)

DO membrane changed? Y (N) Color of Membrane Blue Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.462	1.413
ORP	249.4	240.0
DO	95.8	101.2

True Barometric Pressure at time of calibration 30.26

	Pre Cal		
pH 7	7.06	pH mV value 7.00	Range 0 mV ± 50 mV
pH 4	3.96	pH mV value 4.00	Range +165 to +180 from 7 buffer mV value
pH 10	9.98	pH mV value 10.00	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Date of Calibration: 8/23/17 Technician: B. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane Blue Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.387	1.413
ORP	239.9	240
DO	100.9	101.1

True Barometric Pressure at time of calibration _____

	Pre Cal		
pH 7	6.99	pH mV value 7.00	Range 0 mV ± 50 mV
pH 4	4.00	pH mV value 4.00	Range +165 to +180 from 7 buffer mV value
pH 10	10.02	pH mV value 10.00	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/25/17
FIELD PERSONNEL: R. Diaz / J. Morales / A. Melendez
WEATHER Cloudy

MONITORING WELL: MW-1
LOCATION: AES-Guayama
WELL DEPTH: ___
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 15.39 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:34			6.81	NA	4.416	NA	205.4	NA	.63	NA	5.23	NA	30.23	NA	118	15.42
9:39			6.85	.04	4.369	.47	79.0	126.4	.43	.20	3.46	1.77	30.19	.04	118	15.43
9:44			6.88	.03	4.348	.21	33.1	45.9	.35	.08	2.49	.97	30.05	.14	118	15.43
9:49			6.86	.02	4.333	.01	19.3	13.8	.29	.06	1.24	1.25	30.04	.01	118	15.43
9:54			6.86	.00	4.329	.00	8.4	10.9	.28	.01	1.39	.15	28.10	.84	119	15.43
9:59			6.88	.02	4.329	.00	2.2	6.2	.28	.00	3.26	1.87	29.29	.19	118	15.43
10:04			6.91	.03	4.325	.004	-10.1	12.1	.29	.01	1.00	2.26	28.72	.43	118	15.42
10:09			6.92	.01	4.333	.008	-19.0	8.9	.33	.04	1.06	.06	29.79	.07	118	
10:14																

COMMENTS:

Sample @ 10:15 AES-MW1-082917 pH 6.92

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/29/17
FIELD PERSONNEL: R. Diaz / Y. Morales / A. Melendez
WEATHER: Cloudy

MONITORING WELL: MW-2
LOCATION: ___
WELL DEPTH: ___
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm):
BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.98 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
12:16			6.70	NA	1.74	NA	16.9	NA	1.08	NA	2.29	NA	31.63	NA	115	14.97
12:21			6.69	.01	1.73	.01	-26.9	43.8	.68	.40	1.81	.48	31.82	.19	115	14.96
12:26			6.69	.00	1.706	.024	-38.6	11.7	.66	.02	1.70	.11	31.95	.13	115	14.98
12:31			6.69	.00	1.691	.01	-40.9	2.3	.64	.02	1.35	.35	31.93	.02	115	14.98
12:36			6.69	.00	1.681	.01	-43.8	2.9	.64	0	.54	.81	31.94	.01	115	14.98
12:41			6.68	.01	1.679	.002	-45.7	1.9	.68	.04	.86	.32	31.92	.02	115	14.98
~~12:46~~																

COMMENTS:

Sample @ 12:45 pH. 6.68 AES-MW2-082917

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/29/17
FIELD PERSONNEL: B. Diaz / Y. Morales / A. Melendez
WEATHER Cloudy

MONITORING WELL: MW-3
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.59 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:35			7.13	NA	42.53	NA	-28.1	NA	.50	NA	21.31	NA	31.65	NA	118	13.65
13:40			7.13	0.-	41.06	1.59	-46.3	16.2	.34	.16	19.13	2.18	31.90	.15	118	13.62
13:45			7.10	.03	39.00	2.06	-68.7	22.4	.25	.09	14.58	4.55	31.90	0	118	13.64
13:50			7.08	.02	36.94	2.060	-78.3	9.6	.25	.00	13.16	1.42	31.93	.03	118	13.66
13:55			7.06	.02	34.42	2.52	-87.0	8.7	.22	.03	10.03	3.13	32.01	.08	118	13.67
14:00			7.04	.02	32.98	1.46	-92.1	5.1	.21	.01	8.62	1.41	32.10	.09	118	13.67
14:05			7.03	.01	31.60	1.38	-101.5	9.4	.23	.02	7.20	1.42	32.09	.01	118	13.66
14:10			7.02	.01	30.53	1.13	-104.5	3.0	.21	.02	6.11	1.11	32.18	.09	118	13.65
14:15			7.01	.01	29.74	.79	-107.6	3.1	.22	.01	5.00	1.11	32.13	.05	118	13.62
14:20			7.01	.00	29.82	.92	-108.2	.6	.21	.01	4.72	.28	32.26	.13	118	13.66
14:25																

COMMENTS:

Sample @ 14:25 pH=7.01 AES-MW3-082917

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/29/17
FIELD PERSONNEL: R. Diaz / Y. Morales / A. Holander
WEATHER: Cloudy

MONITORING WELL: MW-5
LOCATION: ___
WELL DEPTH: ___
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.32 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
15:11			6.89	NA	29.92	NA	-73.5	NA	.83	NA	11.80	NA	31.18	NA	115	13.47
15:16			6.86	.03	29.89	.03	-96.5	23.0	.49	.34	10.16	1.76	31.08	.10	115	13.48
15:21			6.84	.02	29.86	.03	-113.2	16.7	.41	.08	7.82	2.24	31.05	.03	115	13.48
15:26			6.82	.02	29.76	.10	-122.1	8.9	.37	.04	5.79	2.13	30.97	.08	115	13.49
15:31			6.82	00	29.64	.12	-122.7	.6	.34	.03	4.80	.99	31.02	.05	115	13.51
15:36			6.81	.01	29.49	.15	-132.3	9.6	.33	.01	4.03	.77	30.95	.07	115	13.50
15:41			6.80	.01	29.31	.18	+29.6	2.9	.31	.02	3.44	.59	31.04	.09	115	13.51
15:46			6.79	.01	29.12	.19	-137.2	7.8	.32	.01	3.09	.35	30.88	.16	115	13.50
15:51			6.79	.00	28.93		-136.5	0.7	.31	.01	2.79	.30	30.88	.00	115	13.50

COMMENTS:

Sample @ 15:55 pH: 6.79 AES-MW5-082917

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 8/30/17
FIELD PERSONNEL: R. Diaz / Y. Morales / A. Molander
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH: ___
SCREENED/OPEN INTERVAL: ___
LOCATION: ___
WELL DIAMETER: 2" Inches

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.11 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
10:23			7.02	NA	92.12	NA	-50.3	NA	.34	NA	17.44	NA	36.28	NA	140	13.33
10:28			6.98	.04	92.19	.07	-54.9	4.6	.24	.10	10.31	7.13	34.44	.16	140	13.34
10:33			6.98	.00	92.37	.38	-58.8	3.9	.18	.06	10.57	.26	34.53	.09	140	13.36
10:38			6.96	.02	92.39	.02	-64.1	6.3	.15	.03	8.38	2.19	34.53	—	140	13.38
10:43			7.05	.09	92.98	.59	-75.5	11.4	.15	—	5.32	3.06	34.72	.19	140	13.38 BTOC
10:48			7.09	.04	93.53	.55	-83.3	7.8	.15	—	1.50	3.82	34.89	.17	140	13.41
10:53			7.12	.03	93.86	.33	-88.1	4.8	.13	.02	.99	.51	35.02	.13	140	13.41
10:58			7.13	.01	94.03	.17	-91.7	3.6	.13	—	.87	.12	34.87	.15	140	13.41
11:03			7.14	.01	94.08	.05	-93.4	1.7	.12	.01	.26	.61	35.02	.15	140	13.42

COMMENTS: AES-MW4-083017@11:10 AES-MW4-DUP-083017@11:45
AES-MW4-MS-083017@12:15 AES-MW4-MSD-083017@12:45
Sample@11:10 pH=7.14 AES-FB-083017@13:16

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 5/25/17 Technician: R. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? (Y) N

DO membrane changed? Y (N) Color of Membrane Blue. Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.412	1.413
ORP	247.8	240.0
DO	103.0	101.1

True Barometric Pressure at time of calibration 30.28 in/Hg

	Pre Cal		
pH 7	6.87	pH mV value_____	Range 0 mV ± 50 mV
pH 4	3.98	pH mV value_____	Range +165 to +180 from 7 buffer mV value
pH 10	9.92	pH mV value_____	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium

1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate

1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride

1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Date of Calibration: 8/30/17 Technician: R. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane Blue. Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.431	1.413
ORP	233.8	240
DO	100.9	101.2

True Barometric Pressure at time of calibration 30.28 in/Hg

	Pre Cal		
pH 7	7.07	pH mV value -22.0	Range 0 mV ± 50 mV
pH 4	4.10	pH mV value 121.6	Range +165 to +180 from 7 buffer mV value
pH 10	10.14	pH mV value -172.3	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 9/12/17
FIELD PERSONNEL: B. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-1
LOCATION: AES-Guayama
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.91 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:43			6.82	NA	4.424	NA	124.3	NA	.60	NA	9.64	NA	30.48	NA	145	14.95
9:48			6.83	.01	4.402	.022	66.5		.52	.08	3.57	6.07	30.52	.04	145	14.95
9:53			6.84	.01	4.363	.039	31.2	35.3	.32	.20	2.06	1.51	30.54	.02	145	14.95
9:58			6.86	.02	4.352	.011	-4.0	35.2	.27	.05	1.04	1.02	30.62	.08	145	14.95
10:03			6.87	.01	4.369	.017	-23.1	19.1	.26	.01	.58	.46	30.57	.05	145	14.95
10:08			6.88	.01	4.373	.004	-30.5	7.4	.27	.01	.00	.58	30.70	.13	145	14.95
10:13			6.89	.01	4.365	.08	-40.7	10.2	.24	.03	.16	.16	30.66	.04	145	14.95
10:18			6.90	.01	4.366	.00	-48.7	8.0	.25	.01	.09	.07	30.71	.05	145	14.95

COMMENTS: Sample @ 10:25 AES-MW1-091217
10:25 AES pH = 6.90

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: ~~9/12/17~~ 9/12/17
FIELD PERSONNEL: R. Diaz / A Melendez
WEATHER: Sunny

MONITORING WELL: MW-2
LOCATION: AES Guayama
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 14.56 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
11:05			6.75	NA	1.726	NA	-38.2	NA	.98	NA	2.58	NA	32.89	NA	117	14.57
11:10			6.71	.04	1.705	.021	-46.3	8.1	.67	.31	1.24	1.34	32.87	.02	117	14.57
11:15			6.68	.03	1.696	.009	-51.2	4.9	.58	.09	.81	.43	32.85	.02	117	14.57
11:20			6.66	.02	1.690	.006	-59.0	7.8	.57	.01	.58	.23	32.78	.07	117	14.58
11:25			6.65	.01	1.685	.005	-63.6	4.6	.57	.00	.25	.33	32.84	.06	117	14.57
11:30																

COMMENTS: Sample @ 11:30 AES-MW2-091217
PH = 6.65

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 6/12/17
FIELD PERSONNEL: R. Diaz / A. Helander
WEATHER: Sunny

MONITORING WELL: MW-3
LOCATION: AES Guayama
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.64 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:17			7.14	NA	49.15	NA	-57.6	NA	.67	NA	8.07	NA	32.17	NA	125	13.93
13:22			7.17	.03	47.67	1.48	-66.8	9.2	.43	.24	7.98	.09	32.20	.03	125	13.93
13:27			7.15	.02	44.59	3.08	-85.1	18.3	.33	.10	9.05	1.07	32.25	.05	125	13.93
13:32			7.13	.02	42.58	2.01	-85.5	.4	.29	.04	7.01	2.06	32.21	.04	125	13.93
13:37			7.10	.03	39.52	3.06	-90.7	5.2	.26	.03	4.02	2.99	32.15	.06	125	13.94
13:42			7.07	.03	36.71	2.81	-96.8	6.1	.25	.01	3.82	.20	32.14	.01	125	13.94
13:47			7.05	.02	34.66	2.05	-98.0	1.2	.24	.01	2.90	.92	32.16	.02	125	13.94
13:52			7.03	.02	33.20	1.46	-100.7	2.7	.24	.00	2.08	.82	32.16	.00	125	13.94
13:57																
14:02																
14:07																

COMMENTS: Sample @ 13:55 MS @ 14:20 MSD @ 14:45
pH = 7.03

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 9/12/17
FIELD PERSONNEL: B. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-5
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.82 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
15:37			6.90	NA	28.65	NA	-109.1	NA	.91	NA	8.46	NA	31.19	NA	120	13.95
15:42			6.84	.06	28.56	.13	-117.2	8.1	.48	.43	5.99	2.47	31.43	.24	120	13.95
15:47			6.81	.03	28.44	.10	-122.2	5.0	.39	.09	4.80	1.19 AD	31.46	.03	120	13.95
15:52			6.78	.03	28.38	.08	-127.9	5.7	.33	.06	4.76	.04	31.51	.05	120	13.95
15:57			6.77	.01	28.28	.10	-133.9	6.0	.32	.01	3.87	.96	31.38	.13	120	13.95
16:02			6.76	.01	28.16	.08	-141.1	7.2	.29	.03	3.56	.26	31.24	.14	120	13.96
16:07			6.75	.01	28.09	.07	-147.5	6.4	.33	.04	3.19	.37	31.26	.02	120	13.96
16:12			6.75	.00	27.99	.10	-147.6	.10	.30	.03	3.11	.08	31.19	.07	120	13.96
16:17			6.76	.01	27.89	.10	-142.6	5.0	.31	.01	2.80	.31	31.17	.02	120	13.96
16:22																

COMMENTS: Sample @ 16:25 AES-MW5-091217
pH = 6.76

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 9/13/17
FIELD PERSONNEL: R. Diaz / A Melendez
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.08 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:49			7.06	NA	91.28	NA	-50.9	NA	.44	NA	12.84	NA	33.69	NA	150	13.32
10:54			7.05	.01	91.48	.20	-54.9	4.0	.33	.11	7.32	5.54	33.86	.17	117	13.32
10:59			7.05	0	91.55	.07	-59.04	5.05	.23	.10	4.56	2.76	34.04	.18	117	13.32
11:04			7.04	.01	91.60	.05	-60.0	.06	.22	.01	3.26	.90	34.13	.09	117	13.34
11:09			7.04	0	91.59	.01	-61.0	1.-	.19	.03	3.75	.49	34.26	.13	117	13.35
11:14			7.04	0	91.80	.21	-66.2	5.2	.18	.01	5.46	1.71	34.40	.14	117	13.36
11:19			7.09	.05	92.94	1.14	-75.3	9.1	.15	.04	1.66	3.70	34.56	.16	117	13.37
11:24			7.11	.02	93.24	.28	-78.5	3.2	.21	.06	.96	.70	34.73	.17	117	13.37
11:29			7.12	.01	93.40	.16	-78.6	.1	.18	.03	1.57	.61	34.63	.10	117	13.38
11:34																
11:39																

COMMENTS: Sample @ 11:35 Dup Sample @ 12:05
pH: 7.12 FB @ 12:35

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 9/12/17 Technician: Z. Diaz

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane B/w Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.380	1.413
ORP	239.1	240.0
DO	100.3	100.4

True Barometric Pressure at time of calibration _____

	Pre Cal		
pH 7	6.92	pH mV value -20.4	Range 0 mV ± 50 mV
pH 4	3.98	pH mV value 128.5	Range +165 to +180 from 7 buffer mV value
pH 10	10.02	pH mV value -170.6	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Date of Calibration: 9/13/17 Technician: R. Dix

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane Blue. Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.446	1.413
ORP	236.9	240.0
DO	103.8	100.8

True Barometric Pressure at time of calibration 30.21 in. Hg

	Pre Cal		
pH 7	7.06	pH mV value -24.1	Range 0 mV ± 50 mV
pH 4	4.07	pH mV value 121.2	Range +165 to +180 from 7 buffer mV value
pH 10	10.00	pH mV value -169.8	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium

1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate

1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride

1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/03/17
FIELD PERSONNEL: K. Diaz / A. Molander
WEATHER: Sunny

MONITORING WELL: MW-1
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.25 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:20			6.92	NA	4.330	NA	198.3	NA	.62	NA	11.34	NA	30.10	NA	118	12.28
9:25			6.93	.01	4.315	.015	135.4	62.9	.47	.15	7.25	4.09	30.14	.04	118	12.28
9:30			6.95	.02	4.301	.014	90.6	44.8	.31	.16	3.52	3.73	30.16	.02	118	12.28
9:35			6.97	.02	4.311	.010	62.4	28.2	.27	.04	1.72	1.80	30.20	.04	118	12.28
9:40			6.99	.02	4.327	.016	38.6	23.8	.26	.01	1.30	.42	30.28	.08	118	12.28
9:45			7.01	.02	4.338	.011	22.2	16.4	.22	.04	1.01	.29	30.28	0	118	12.28
9:50			7.02	.01	4.341	.003	10.3	11.9	.23	.01	.69	.32	30.32	.04	118	12.28
9:55			7.04	.02	4.346	.005	1.2	9.1	.21	.02	.68	.01	30.36	.04	118	12.28
10:00			7.04	0	4.354	.008	-9.2	10.4	.20	.01	.29	.39	30.29	.07	118	12.28
10:05			7.05	.01	4.359	.005	-16.3	7.1	.21	.01	.36	.07	30.29	0	118	12.28

COMMENTS: Sample @ 10:10 pH: 7.05
MS @ 10:40
MSD @ 11:05

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/03/17
FIELD PERSONNEL: R. Diaz / A Melendez
WEATHER

MONITORING WELL: MW-2
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION:
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 11.92 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
11:50			6.90	NA	1.790	NA	-22.6	NA	.93	NA	3.77	NA	32.57	NA	118	11.92
11:55			6.86	.04	1.759	.031	-28.0	5.4	.71	.22	2.92	.85	32.59	.02	118	11.92
12:00			6.82	.04	1.733	.026	-33.5	5.5	.57	.14	2.47	.45	32.38	.21	118	11.92
12:05			6.82	ϕ	1.724	.009	-34.3	0.8	.56	.01	2.01	.46	32.50	.12	118	11.92
12:10			6.81	.01	1.722	.002	-32.6	1.7	.52	.04	1.89	.12	32.59	.09	118	11.92
12:15			6.81	ϕ	1.722	ϕ	-41.4	8.8	.51	.01	1.44	.45	32.51	.08	118	11.92
12:20																

COMMENTS: Sample 12:20 pH = 6.81

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
DATE: 10/03/17
WEATHER: Cloudy
PROJECT NAME: CCR Groundwater Monitoring
FIELD PERSONNEL: R. Diaz / A. Molander

MONITORING WELL: MW-3
LOCATION: AES-Guayama
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.12 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
14:06			8.75	NA	47.48	NA	-96.0	NA	.59	NA	7.52	NA	32.18	NA	120	13.52
14:11			8.59	.16	50.73	3.35	-103.2	7.2	.40	.19	4.18	3.34	32.22	.04	120	13.52
14:16			7.70	.89	68.26	17.53	-106.7	3.5	.22	.18	11.32	7.14	32.39	.17	120	13.52
14:21			7.60	.10	65.47	2.79	-108.3	1.6	.20	.02	13.45	2.13	32.37	.02	120	13.51
14:26			7.56	.04	62.20	3.27	-113.8	5.5	.19	.01	11.57	1.88	32.36	.01	120	13.51
14:31			7.53	.03	58.23	3.97	-115.9	2.1	.18	.01	11.12	.65	32.30	.04	120	13.51
14:36			7.51	.02	54.77	3.56	-119.9	4.0	.18	0	8.55	2.57	32.04	.26	120	13.52
14:41			7.49	.02	51.25	3.52	-122.1	3.2	.18	0	5.58	2.97	31.95	.09	120	13.51
14:46			7.52	.03	48.82	2.43	-123.8	1.7	.16	.02	4.20	1.38	31.87	.08	120	13.51
14:51																

COMMENTS: Sample @ 14:50 pH: 7.52

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/03/17
FIELD PERSONNEL: R. Diaz / A. Helander
WEATHER Sunny

MONITORING WELL: MW-5
LOCATION: AES Guayama
WELL DEPTH:
WELL DIAMETER: 3 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 13.25 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
15:41			7.00	NA	27.99	NA	-88.8	NA	.88	NA	6.16	NA	30.74	NA	120	13.38
15:46			6.97	.03	27.80	0.19	-93.8	5.0	.49	.39	2.47	3.69	30.70	.04	120	13.39
15:51			6.94	.03	27.62	0.18	-96.6	2.8	.37	.12	1.02	1.45	30.62	.08	120	13.39
15:56			6.93	.01	27.39	0.23	-100.3	3.7	.32	.05	1.81	.79	30.41	.21	120	13.40
16:01			6.92	.01	27.26	.13	-101.7	1.4	.30	.02	2.55	.74	30.20	.21	120	13.40
16:06			6.92	∅	27.19	.07	-103.2	1.5	.30	∅	3.53	.98	30.00	.20	120	13.40
16:11			6.92	∅	27.07	.12	-97.1	6.1	.28	.02	2.66	.87	29.96	.04	120	13.40
16:16			6.91	.01	27.01	.06	-97.8	.7	.28	∅	2.96	.3	30.00	.04	120	13.40
16:21			6.90	.01	26.94	.05	-96.9	0.9	.28	∅	2.09	.87	30.08	.08	120	13.40
16:26			6.91	.01	26.91	.03	-99.1	2.2	.26	.02	2.17	.08	30.07	.01	120	13.40

COMMENTS: Sample @ 16:30 pH 6.91

FB - 17:00

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/04/17
FIELD PERSONNEL: R. Diaz / A. Melendez
WEATHER: Sunny

MONITORING WELL: MW-4
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: AES-Guayama
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.23 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
9:41			7.20	NA	92.93	NA	-62.5	NA	.57	NA	13.69	NA	34.62	NA	115	12.41
9:46			7.15	.05	92.86	.07	-69.2	6.7	.30	.27	7.49	6.20	34.45	.17	115	12.41
9:51			7.11	.04	92.92	.06	-70.6	1.4	.25	.05	7.62	0.13	34.55	.10	115	12.42
9:56			7.11	0	92.85	.07	-75.6	5.0	.19	.06	6.45	1.17	34.74	.19	115	12.43
10:01			7.10	.01	93.05	.20	-73.9	1.7	.17	.02	6.38	.07	34.68	.06	115	12.43
10:06			7.16	.01	92.96	.09	-76.9	3.0	.17	0	6.86	.48	34.87	.19	115	12.43
10:11			7.13	.03	92.93	.03	-79.8	2.9	.15	.03	7.28	.32	34.93	.06	115	12.45
10:16			7.16	.03	93.00	.07	-83.6	3.8	.12	.03	8.41	1.13	34.80	.13	115	12.46
10:21			7.22	.06	93.76	.76	-91.7	7.1	.14	.02	4.16	4.25	35.01	.21	115	12.47
10:26			7.25	.03	94.29	.53	-95.4	3.7	.12	.02	1.73	2.43	35.19	.18	115	12.47
10:31			7.27	.02	94.34	.05	-96.7	1.3	.12	0	1.20	.53	35.46	.27	115	12.47

COMMENTS: Sample@ 10:35 pH= 7.27

Dup Sample@ 10:15 FB@ 12:00

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 10/03/17 Technician: _____

Instrument Serial Number: _____ Software Revision: _____ Cable Model Number: _____

Temperature Reading 29.34 Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane Yellow. Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.395	1.413
ORP	245.9	240.0
DO	101.0	100.9

True Barometric Pressure at time of calibration 30.11 in Hg

	Pre Cal		
pH 7	6.82	pH mV value -15.6	Range 0 mV ± 50 mV
pH 4	4.21	pH mV value 119.3	Range +165 to +180 from 7 buffer mV value
pH 10	10.07	pH mV value -152.9	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

Date of Calibration: 10/04/17 Technician: R. DK2

Instrument Serial Number:_____ Software Revision:_____ Cable Model Number:_____

Temperature Reading_____ Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? (Y) N

DO membrane changed? Y (N) Color of Membrane Blue. Color notated in Sensor menu? (Y) N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.405	1.413
ORP	235.2	240.0
DO	97.2	100.9

True Barometric Pressure at time of calibration 30.17 in. Hg

	Pre Cal		
pH 7	7.07	pH mV value_____	Range 0 mV ± 50 mV
pH 4	4.05	pH mV value_____	Range +165 to +180 from 7 buffer mV value
pH 10	10.25	pH mV value_____	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
DATE: 10/11/17
WEATHER: Soliado

PROJECT NAME: CCR Groundwater Monitoring
FIELD PERSONNEL: William Rodriguez / Alberto Melendez

MONITORING WELL: MW-1
LOCATION:
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 9.47 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
9:00			7.16	NA	4.251	NA	100.9	NA	0.83	NA	0.00	NA	30.56	NA	100	9.49
9:05			7.24		4.267		44.1		0.53		2.68		30.48		100	9.49
9:10			7.28		4.278		29.1		0.42		5.07		30.57		100	9.49
9:15			7.30		4.301		14.7		0.34		4.14		30.49		100	9.48
9:20			7.31		4.310		5.0		0.29		2.04		30.54		100	9.48
9:25			7.32		4.314		-2.9		0.27		0.89		30.60		100	9.48
9:30			7.33		4.334		-9.3		0.27		1.00		30.30		100	9.48
9:35			7.32		4.330		-14.0		0.25		0.54		30.25		100	9.48
9:40			7.32		4.341		-17.6		0.26		0.12		30.45		100	9.48

COMMENTS: 8:55 se comienza bombeo / Sample @ 9:45 PH 7.32
MS @ 10:23
MSD @ 10:47

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
DATE: 10/11/17
WEATHER: Soleado

PROJECT NAME: CCR Groundwater Monitoring
FIELD PERSONNEL: William Rodriguez/Alberto Melendez

MONITORING WELL: MW-2
LOCATION:
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm):
BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:

PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 9.76 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
11:28			7.08	NA	1.788	NA	-27.9	NA	1.43	NA	0.00	NA	32.68	NA	120	9.76
11:33			7.02		1.771		-32.8		1.00		0.00		32.65		120	9.76
11:38			6.96		1.764		-36.6		0.83		0.00		32.70		120	9.76
11:43			6.93		1.755		-42.4		0.81		0.00		32.61		120	9.76
11:48			6.92		1.753		-49.0		0.74		0.00		32.59		120	9.76
11:53			6.91		1.752		-55.4		0.77		0.00		32.63		120	9.76
11:58			6.89		1.751		-60.1		0.79		0.00		32.73		120	9.76
12:03			6.89		1.749		-65.8		0.74		0.00		32.72		120	9.76
12:08			6.88		1.747		-68.8		0.71		0.00		32.74		120	9.76

COMMENTS: Samplings @ 12:08 PH 6.88

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/11/17
FIELD PERSONNEL: William Rodriguez / Alberto Melendez
WEATHER: Soleado

MONITORING WELL: MW-3
LOCATION:
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.55 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
13:10			7.64	NA	62.01	NA	-46.9	NA	0.44	NA	9.33	NA	32.11	NA	100	12.86
13:15			7.61		59.46		-77.2		0.36		9.07		32.18		100	12.82
13:20			7.56		55.76		-90.0		0.32		6.37		32.24		100	12.83
13:25			7.52		52.96		-95.8		0.29		4.51		32.11		100	12.82
13:30			7.48		50.27		-96.9		0.27		4.48		32.02		100	12.81
13:35			7.45		47.43		-98.8		0.25		3.11		31.63		100	12.84
13:40			7.41		44.58		-99.0		0.25		1.34		31.28		100	12.84
13:45			Began rainning hard. Continued purging													
13:58			7.35		40.66		-98.0		0.22		0.87		29.41		100	12.82
14:05			7.34		39.25		-98.4		0.22		0.52		29.12		100	12.82

COMMENTS: Sampling @ 14:05 PH 7.34

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/11/17
FIELD PERSONNEL: William Rodriguez / Alberto Melendez
WEATHER

MONITORING WELL: MW-5
LOCATION:
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: 12.70 ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : _____ ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
14:57			6.97	NA	27.20	NA	-29.9	NA	1.26	NA	1.38	NA	28.68	NA	100	12.78
15:02			6.99		27.07		-49.6		0.70		1.21		28.87		100	12.76
15:07			7.00		~~26.93~~ 28.94		-62.6		0.55		0.00		28.94		100	12.77
15:12			7.01		26.84		-71.0		0.48		0.00		29.00		100	12.77
15:17			7.02		26.79		-76.1		0.41		0.00		29.05		100	12.77
15:22			7.02		26.76		-78.5		0.39		0.00		29.01		100	12.77
15:27			7.02		26.71		-80.1		0.40				28.99		100	12.78

COMMENTS: Sampling @ 15:27 PH 7.02

AES-FB 10/11/17 @ 16:10

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF ___

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: oct/12/17
FIELD PERSONNEL: William Rodriguez / Alberto Melendez
WEATHER Soleado

MONITORING WELL: MW-4
LOCATION: ___
WELL DEPTH: ___
WELL DIAMETER: ___ Inches
SCREENED/OPEN INTERVAL: ___

PID/FID READINGS (ppm): BACKGROUND: ___
BENEATH OUTER CAP: ___
BENEATH INNER CAP: ___
PUMP INTAKE DEPTH: ___ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION: 11.90 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:50			7.24	NA	90.18	NA	-45.4	NA	0.62	NA	52.50	NA	32.30	NA	118	12.07
8:55			7.27		90.16		-57.5		0.44		26.65		32.28		118	12.07
9:00			7.28		90.06		-60.7		0.36		21.91		32.48		118	12.08
9:05			7.28		90.14		-60.6		0.27		17.38		32.64		118	12.09
9:10			7.28		90.14		-61.1		0.26		13.28		32.83		118	12.09
9:15			7.28		90.22		-62.4		0.22		11.53		33.01		118	12.09
9:20			7.29		90.26		-67.6		0.20		9.99		33.11		118	12.09
9:25			7.29		90.35		-69.2		0.19		10.01		33.17		118	12.09
9:30			7.31		90.41		-72.9		0.17		8.84		33.37		118	12.09
9:35			7.37		91.20		-81.8		0.16		2.85		33.73		118	12.09

COMMENTS: Sampling @ 9:40 PH 7.37
AES-MW4Dup-101217 @ 10:10
AES-FB101217 @ 10:40

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

8.19

Date of Calibration: 8/11/17 Technician: William Rodriguez

Instrument Serial Number: 07F101215 Software Revision: _____ Cable Model Number: 600336 - 4.4 (18M14)

Temperature Reading 26.10 °C Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane _____. Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.419	1.414
ORP	251.4	240.0
DO	9.003 mg/L	9.00 mg/L

True Barometric Pressure at time of calibration _____

	Pre Cal		
pH 7	6.94	pH mV value 7.02	Range 0 mV ± 50 mV
pH 4	4.50	pH mV value 4.00	Range +165 to +180 from 7 buffer mV value
pH 10	9.87	pH mV value 9.98	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value _____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L) _____ NH4 mV value _____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value _____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L) _____ NO3 mV value _____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L) _____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

7:39

Date of Calibration: oct/12/17 Technician: William Rodriguez

Instrument Serial Number: 07F101815 Software Revision: _____ Cable Model Number: 600336-7.4 (12M/4)

Temperature Reading 26.95 Temperature Accurate: Y N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y N Color of Membrane _____. Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.494	1.416
ORP	244.2	239.9
DO	8.97	9.01

True Barometric Pressure at time of calibration _____

	Pre Cal			
pH 7	4.98	pH mV value	4.00	Range 0 mV ± 50 mV
pH 4	6.97	pH mV value	7.00	Range +165 to +180 from 7 buffer mV value
pH 10	9.89	pH mV value	9.95	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
- 1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
- 1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)
- 2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
- 1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)
- 2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/17/17
FIELD PERSONNEL: W. Rodz / H. Rodz / A. Melendez
WEATHER Nublado

MONITORING WELL: MW-1
LOCATION: AES
WELL DEPTH:
WELL DIAMETER: 2" Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 7.23 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
7:58			7.00	NA	4.186	NA	276.7	NA	0.88	NA	3.25	NA	29.57	NA	118 ML/min	7.26
8:03			7.17		4.154		129.0		0.81		4.82		29.77		118	7.26
8:08			7.17		4.238		48.2		0.62		6.63		29.77		118	7.26
8:13			7.16		4.257		20.5		0.50		8.30		29.77		118	7.26
8:18			7.15		4.265		7.2		0.46		6.51		29.76		118	7.26
8:23			7.15		4.264		-1.1		0.42		5.55		29.76		118	7.27'
8:28			7.15		4.265		-7.2		0.40		5.09		29.87 mv		118	7.27'
8:33			7.15		4.265		-12.1		0.40		4.21		29.87		118	7.27'

COMMENTS:
Hora de la muestra 8:33 PH 7.15
MS - 9:20 MSD 9:55

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/17/17
FIELD PERSONNEL: W. Rodz. / H. Rodz. / A. Melendez
WEATHER Nublado

MONITORING WELL: MW-2
LOCATION: AES
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 8.12' ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
8:47			7.02	NA	1.857	NA	222.0	NA	1.27	NA	1.23	NA	31.73	NA	120	8.12
8:52			6.96		1.786		40.1		0.84		0.63		31.35		120	8.13
8:57			6.92		1.777		0.0		0.77		0.63		31.28		120	8.13
9:02			6.89		1.767		-15.9		0.75		0.33		31.15		120	8.13
9:07			6.89		1.764		-24.5		0.68		0.05		31.26		120	8.12
9:12			6.87		1.759		-29.5		0.71		0.00		31.22		120	8.12
9:17			6.86		1.755		-35.7		0.65		0.08		31.01		120	8.12

COMMENTS:
muestra MW-2 Hora: 9:17 pH. 6.86

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/17/17
FIELD PERSONNEL: W. Rodz / H. Rodz / A. Melendez
WEATHER: Nublado

MONITORING WELL: MW-3
WELL DEPTH:
SCREENED/OPEN INTERVAL:
LOCATION: AES
WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 11.73 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	REDOX POTENTIAL (mv) READING	REDOX POTENTIAL CHANGE*	DISSOLVED OXYGEN (mg/l) READING	DISSOLVED OXYGEN CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
12:35			7.59	NA	44.03	NA	-60.4	NA	0.88	NA	9.48	NA	31.95	NA	~~145~~ 130	12.12
12:40			7.52		42.93		-68.3		0.47		8.47		32.08		130	12.11
12:45			7.46		44.03		-75.8		0.33		8.93		32.09		130	12.10
12:50			7.46		43.29		-79.3		0.27		10.29		32.17		130	12.12
12:55			7.46		41.83		-82.9		0.23		8.74		32.43		130	12.09
13:00			7.46		40.51		-85.1		0.21		7.51		32.61		130	12.09
13:05			7.48		38.28		-88.0		0.19		6.07		~~32.67~~		130	12.09
13:10			7.46		37.15		-89.7		0.18		5.91		32.63		130	12.10
13:15			7.45		35.74		-91.2		0.18		4.38		32.70		130	12.10

COMMENTS: Muestra 13:15 pH 7.45 AES-FB-101717 @ 1350
MW-3

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/17/17
FIELD PERSONNEL: W. Rodz / H. Rodz / A. Melendez
WEATHER: Nublado

MONITORING WELL: MW-4
LOCATION: AES
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 11.38 ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
11:27			7.31	NA	87.79	NA	-63.8	NA	0.57	NA	26.77	NA	34.00	NA	117	11.58
11:32			7.31		88.02		-71.5		0.31		20.38		33.48		117	11.56
11:37			7.32		87.82		-74.7		0.20		11.02		33.21		117	11.57
11:42			7.33		87.84		-76.3		0.16		12.00		33.31		117	11.58
11:47			7.33		87.94		-76.7		0.13		8.91		33.38		117	11.59
11:52			7.33		87.91		-77.9		0.12		11.99		33.26		117	11.59
11:57			7.33		87.82		-77.8		0.11		11.57		3331		117	11.60
12:02			7.33		87.81		-79.6		0.10		10.24		33.65		117	11.61
12:07			7.37		88.44		-97.1		0.09		36.52		33.91		117	11.62
12:12			7.39		88.35		-102.4		0.11		4.38		33.85		117	11.62
12:17			7.39		88.31		-103.1		0.11		4.85		33.96		117	11.61

COMMENTS:
Hora muestra MW-4 12:17 pH 7.39
AES MW24 DUP - 101717 12:57

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

LOW FLOW SAMPLING DATA SHEET

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico
PROJECT NAME: CCR Groundwater Monitoring
DATE: 10/17/17
FIELD PERSONNEL:
WEATHER Muskito

MONITORING WELL: MW-5
LOCATION: AES
WELL DEPTH:
WELL DIAMETER: 2 Inches
SCREENED/OPEN INTERVAL:

PID/FID READINGS (ppm): BACKGROUND:
BENEATH OUTER CAP:
BENEATH INNER CAP:
PUMP INTAKE DEPTH: _____ ft below TOC
DEPTH TO WATER BEFORE PUMP INSTALLATION : 12.35' ft below TOC

TIME	PURGING	SAMPLING	pH (pH units)		SPECIFIC CONDUCTIVITY (mS/cm)		REDOX POTENTIAL (mv)		DISSOLVED OXYGEN (mg/l)		TURBIDITY (NTU)		TEMPERATURE (degrees C)		PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
			READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*		
10:35			6.58	NA	25.21	NA	-53.9	NA	0.75	NA	1.59	NA	30.74	NA	125	12.38
10:40			6.86		25.44		-66.7		0.48		0.00		30.41		125	12.38
10:45			6.85		25.24		-69.6		0.39		0.13		30.39		125	12.38
10:50			6.85		25.20		-72.8		0.35		0.08		30.67		125	12.38
10:55			6.86		25.16		-77.8		0.31		0.00		30.74		125	12.38
11:00			6.87		25.09		-80.9		0.30		0.00		30.80		125	12.39
11:05			6.86		25.08		-83.9		0.28		0.00		30.75		125	12.38
11:10			6.86		25.03		-84.2		0.27		0.00		30.75		125	12.38

COMMENTS:
Muestra MW-5. Hora 11:10 PH-6.86

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity

Date of Calibration: 10/17/2017 Technician: William Rodriguez

Instrument Serial Number: 07F101215 Software Revision: _____ Cable Model Number: 600336-45 (13M)

Temperature Reading 25.41 Temperature Accurate: (Y) N

DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N

DO membrane changed? Y (N) Color of Membrane _____. Color notated in Sensor menu? Y N

Record the following calibration values:

	Pre Cal	After Cal
Conductivity	1.539	1.421
ORP	253.5	240.0
DO	16.4 9.03	107.4% 9.00 mg/L

True Barometric Pressure at time of calibration _____

	Pre Cal		
pH 7	7.72	pH mV value 7.00	Range 0 mV ± 50 mV
pH 4	7.05	pH mV value 7.00	Range +165 to +180 from 7 buffer mV value
pH 10	9.94	pH mV value 9.99	Range -165 to -180 from 7 buffer mV value

NOTE: See pH Cal tips section for additional information. Span between pH 4 and 7 and 7 and 10 mV values should be ≈ 165 to 180 mV. 177 is the ideal distance or 59 mV per pH unit.

Ammonium
1st point (1 mg/L) _____ NH4 mV value_____ Range: 0 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NH4 mV value_____ Range: 90 to 130 mV > 1 mg/L mV value

Nitrate
1st point (1 mg/L) _____ NO3 mV value_____ Range: 200 mV +/- 20 mV (new sensor only)

2nd point (100 mg/L)_____ NO3 mV value_____ Range: 90 to 130 mV < 1 mg/L mV value

Chloride
1st point (10 mg/L) _____ Cl mV value _____ Range: 225 mV +/- 20 mV (new sensor only)

2nd point (1000mg/L)_____ Cl mV value _____ Range: 80 to 130 < 10 mg/L mV value

Record the following diagnostic numbers **after** calibration, by viewing the .glp file and reading the values for the day's calibration

Conductivity Cal Cell Constant _____ Range 5.0 +/- 1.0 acceptable

DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)

pH Slope _____ (≈ 55 to 60 mV/pH, 59 ideal)

pH Slope % of ideal _____

APPENDIX C
Statistical Analysis Reports

APPENDIX A

2017 STATISTICAL ANALYSIS REPORT

DNA-ENVIRONMENT, LLC
35 Calle Juan C. Borbon
STE 67-227
Guaynabo, PR 00969-5375

STATISTICAL ANALYSIS REPORT
AES PUERTO RICO LP, GUAYAMA, PUERTO RICO

AES Puerto Rico LP ("AES-PR") operates a 454 MW coal-fired power plant located in the municipality of Guayama in the south coast of Puerto Rico (*See* **Figure 1**). The power plant uses bituminous coal for energy production, and generates coal combustion residuals (CCR) that are converted to a manufactured aggregate known as Agremax. The manufactured aggregate is stored in a temporary Agremax stockpile storage area that is located near the southern property boundary.

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule that establishes national minimum criteria for existing CCR landfills, surface impoundments, and lateral extensions of those units (the "CCR Rule").[1] The CCR Rule establishes a multi-phase approach for the monitoring of groundwater and provides the criteria for groundwater sampling and analysis, confirmation of the source (or sources of impacts found) and whether any further assessment monitoring or corrective measures are warranted. *See* 40 CFR Parts 257.90 through 257.98. As an initial step, the CCR Rule requires that a groundwater-monitoring program be developed and implemented – starting with a "detection-monitoring phase." By implementing this program phase, groundwater-sampling data are collected from background monitoring wells to establish background concentration levels for constituents listed in the CCR Rule. *See* 40 CFR Appendix III to Part 257 – Constituents for Detection Monitoring, and 40 CFR Appendix IV to Part 257 – Constituents for Assessment Monitoring. Groundwater data are also collected from compliance monitoring wells for analysis of the same constituents and the results are compared to the background data using a statistical analysis approach.

The Statistical Analysis Report describes the procedures and findings of statistical evaluation performed on the analytical results generated from eight groundwater-monitoring events. These sampling events were completed by October 17, 2017 as part of the initial phase of detection monitoring.

[1] The AESPR temporary storage of its inventory of manufactured aggregate (or Agremax) is not a CCR unit subject to the CCR Rule. Nonetheless, as a conservative measure, AESPR has taken steps to satisfy the CCR Rule and has voluntarily prepared and published certain documents including the 2017 Annual Groundwater Monitoring Report. The undertaking of these steps shall not be interpreted or construed in any way as an admission that AESPR's operations or facility are subject to or covered by the CCR Rule, and AESPR expressly reserves any rights and defenses available to it in connection with this and any related matters.

Sampling and analysis were performed in accordance with the procedures described in the document entitled *Groundwater Monitoring System & Sampling and Analysis Program, AES Puerto Rico LP, Guayama, Puerto Rico* prepared by DNA-Environment LLC and dated August 2017 (the "Groundwater Monitoring Plan"). All groundwater and quality control samples were shipped via overnight carrier to TestAmerica Inc. (Pensacola, FL) to be analyzed for the list of constituents in Appendix III and Appendix IV. Samples were shipped following chain of custody protocols.

The TestAmerica's laboratory reports certified by a Puerto Rico Licensed Chemist are the datasets used for statistical evaluation pertaining to the initial phase of detection monitoring.

Selection of appropriate and representative background data was conducted in accordance with the CCR Rule. The design, construction, installation and rationale for the placement of background and compliance monitoring wells are described in detail in the Groundwater Monitoring Plan and summarized in **Table 1**. The locations of the background ("upgradient") and compliance wells ("downgradient") are shown in **Figure 2**.

Statistical Evaluation

Statistical evaluation was performed following the procedures described in the Groundwater Monitoring Plan. The statistical methods employed are in accordance with the CCR Rule and USEPA guidance document entitled *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance* (USEPA 2009).

Graphical displays and statistical tests were performed using the Sanitas™ Statistical Software (Sanitas Technologies, Alamosa, CO). The ProUCL statistical program (USEPA 2013) was used to complement the analyses performed with the *Sanitas™* software.

The datasets for background and compliance wells were examined using various graphical displays and statistical testing procedures in order to identify the underlying sampling distribution and prepare the data for further statistical analysis. Statistical evaluation of the constituents listed in Appendix III (See **Table 2**) was performed by comparing each constituent/compliance-well pair to the corresponding constituent background value determined from observed concentrations in upgradient monitoring wells (i.e., interwell statistical comparisons).

Evaluation of Background Levels

Given that two monitoring wells (MW-1 and MW-2) were available to compute background values for CCR Rule constituents, the datasets from these wells were compared to determine if the observed values could be combined so as to obtain one dataset representing a site-wide background level for each constituent. In order to combine values from background wells, the statistical assumption that observed values are drawn from the same underlying population must be met. Therefore, the sampling distribution of background values for each constituent should not exhibit spatial variability between background wells. Generally, the constituents

listed in Appendix III tend to be sensitive to localized geochemistry and therefore often reflect spatial variability among background monitoring wells.

Among others, the following procedures were performed on the background datasets obtained from MW-1 and MW-2 in order to identify or test for the following:

- Outlier values -

  Side-by-side box plots of background data were constructed for each constituent/well pair to visually identify if outliers were present in the datasets from MW-1 and MW-2. The Dixon statistical test and/or Tukey's Outlier Screening test were performed to further confirm the presence or absence of outlier values in the background datasets.

- Temporal trends –

  The Mann-Kendall statistical test was performed to identify if temporal trends were present in the background datasets.

- Normality or other distribution –

  Goodness-of-fit (GOF) tests were conducted to evaluate the underlying population distribution of the data (i.e., normal, lognormal, gamma, or other). The Shapiro-Wilks method was performed to test for normality. Whenever possible, data was transformed to normal using the "ladder of powers" (*See* below).

- Equality of variance –

  The Levene's Equality of Variance method was performed to test for variance homogeneity between the MW-1 and MW-2 datasets.

The datasets for background and compliance wells were handled as follows:

- Performing parametric or nonparametric statistical methods -

  Whenever possible, non-normally distributed data were transformed to normally distributed data using the "ladder of powers" (i.e., $x^{1/2}$, x^2, $x^{1/3}$, x^3, etc.). Subsequent statistical evaluation of constituents in Appendix III was analyzed using the appropriate parametric test (for normally distributed or normally-transformed data). Otherwise, the corresponding nonparametric test was performed.

<u>Evaluation of Appendix III Constituents for Detection Monitoring</u>

Analytical results for the constituents listed in Appendix III were statistically evaluated using the prediction interval method. The prediction interval procedure has been indicated by the USEPA as a valid statistical method under 40 CFR Part 257.93(f) (1) through (5). Background levels for each constituent listed in Appendix III were computed as upper prediction limits (UPL),

considering one future observation and a 95% confidence coefficient. For each constituent, the individual concentration from each monitoring event and compliance well was compared to the corresponding background UPL to determine if a statistically significant increase (SSI) over background could be identified.

Given that the observed values in background wells MW-1 and MW-2 exhibited spatial variability of Appendix III constituents (as determined from the statistical evaluation discussed above), separate UPL values for background were calculated. Statistical results for the constituents listed in Appendix III are presented in **Attachment A**, where individual observations from each compliance well (MW-3, MW-4 and MW-5) were compared against the corresponding UPL value. The included graphs show comparisons between compliance wells and the UPL value computed from background well MW-1. However, statistical evaluations were also performed by computing the UPL value from background well MW-2, and from the combined data from MW-1 and MW-2. The three tables in **Attachment A** correspond to UPL values computed from MW-1, MW-2, and combined observations (MW-1 and MW-2), respectively. Compliance wells exhibiting a SSI from the background UPL are listed in the top left corner of the included graphs and shown in bold phase in the summary tables.

Per provisions in the CCR Rule, an evaluation of potential alternate sources for the observed statistical results is presently being conducted as provided by the CCR Rule, including considerations of the Site's location near the shoreline and in the vicinity of adjacent and nearby industrial sites undergoing cleanup under USEPA direction. *See* **Figure 1**.

The CCR Rule does not require statistical analysis for the Appendix IV list of constituents at the detection monitoring evaluation stage. The statistical procedures during assessment monitoring ultimately require comparison of compliance well data to a Groundwater Protection Standard (GWPS). Said analysis often requires additional sampling and statistical analysis efforts.

REFERENCES

DNA-Environment, LLC. August 2017. *Groundwater Monitoring System & Sampling and Analysis Program, AES Puerto Rico LP, Guayama, Puerto Rico*

USEPA (United States Environmental Protection Agency). 2009. *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidanc*e. Washington, DC: EPA. EPA 530/R-09-007.

USEPA (United States Environmental Protection Agency). 2013. *ProUCL 5.0 Software and User Guide*. http://www.epa.gov/osp/hstl/tsc/software.htm.

TABLES

Table 1. Design, Construction and Installation of Monitoring Wells

Well ID	Well Placement	Coordinates[1]		TOC[2] Elevation (ft)	Screen Interval (ft bgs[3])	Well Diameter/ Screen Slot Size	Rationale for Placement
		Northing	Easting				
MW-1	Upgradient	212731.35	230013.63	22.90	12.9 – 22.9	2-in PVC/ 0.010-in	Located to the north of the Agremax Storage Area to obtain representative samples of background groundwater in the uppermost aquifer not impacted by potential migration from the Agremax stockpile.
MW-2	Upgradient	212639.32	230127.80	23.10	9.9 – 19.9	2-in PVC/ 0.010-in	Located to the northeast of the Agremax Storage Area to monitor the quality of groundwater, in the uppermost aquifer, migrating towards the Agremax Storage Area and potentially impacted by existing contamination from the Chevron Phillips Chemical Puerto Rico Core facility, adjoining property to the east.
MW-3	Downgradient	212188.69	229867.35	16.04	13.8 – 23.8	2-in PVC/ 0.010-in	Located to the south-southwest of the Agremax Storage Area and stormwater control system. This well was installed in the uppermost aquifer to detect potential impacts to the quality of groundwater passing the downgradient boundary of the Agremax Storage Area and stormwater control system, in the south-southwest direction.
MW-4	Downgradient	212186.07	229968.59	17.85	15 – 25	2-in PVC/ 0.010-in	Located to the south of the Agremax Storage Area and contiguous stormwater concrete ditch. This well was installed in the uppermost aquifer to detect potential impacts to the quality of groundwater passing the downgradient boundary of the Agremax Storage Area, southward.
MW-5	Downgradient	212202.55	230090.65	16.47	13.4 – 23.4	2-in PVC/ 0.010-in	Located to the south-southeast of the Agremax Storage Area and contiguous stormwater concrete ditch. This well was installed in the uppermost aquifer to detect potential impacts to the quality of groundwater passing the downgradient boundary of the Agremax Storage Area, in the south-southeast direction.

Notes: [1] Puerto Rico State Plane Coordinate System, NAD 83, Lambert Projection (meters) [2] TOC – Top of Casing [3] bgs – below ground surface

Table 2. Constituents for Detection Monitoring Under the CCR Rule

Constituent	MCL (mg/L)
Appendix III to Part 257 – Constituents for Detection Monitoring	
Boron	--
Calcium	--
Chloride	--
Fluoride	4.0
pH	--
Sulfate	--
Total Dissolved Solids (TDS)	--

Notes: MCL - Maximum Contaminant Level, USEPA National Primary Drinking Water Regulations
mg/L - Milligram per Liter
-- - Indicates that the constituent does not have an established MCL value.

FIGURES



Figure 1

Site Location Map

AES Puerto Rico, LP
Guayama, Puerto Rico

Legend

AES Puerto Rico
Approximate Property Boundary

N

0 250 500 750 1000 1250 ft

DNA-ENVIRONMENT, LLC



Figure 2

Groundwater Monitoring System

AES Puerto Rico, LP
Guayama, Puerto Rico

N

0 200 400 600 ft

DNA-ENVIRONMENT, LLC

ATTACHMENT A

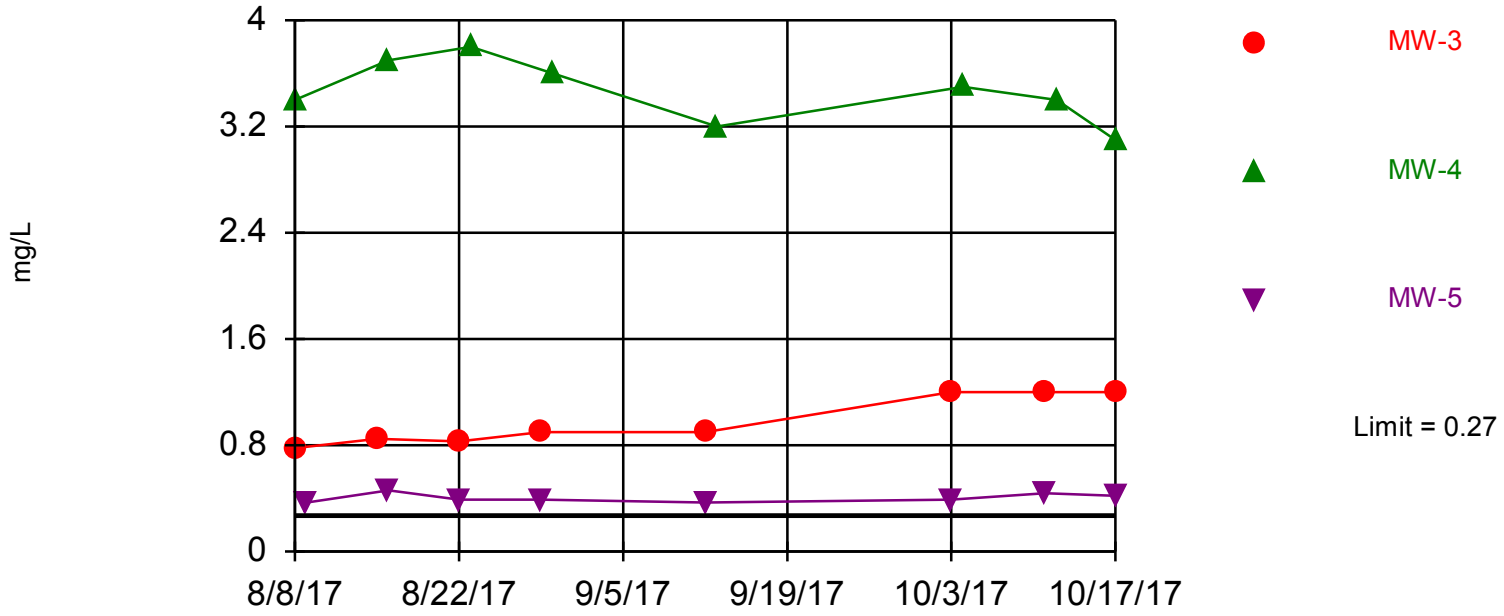
STATISTICAL RESULTS FOR CONSTITUENTS LISTED IN APPRENDIX III TO PART 257

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3, MW-4, MW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Annual per-constituent alpha = 0.1077. Individual comparison alpha = 0.01882 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Boron Analysis Run 1/12/2018 9:31 AM

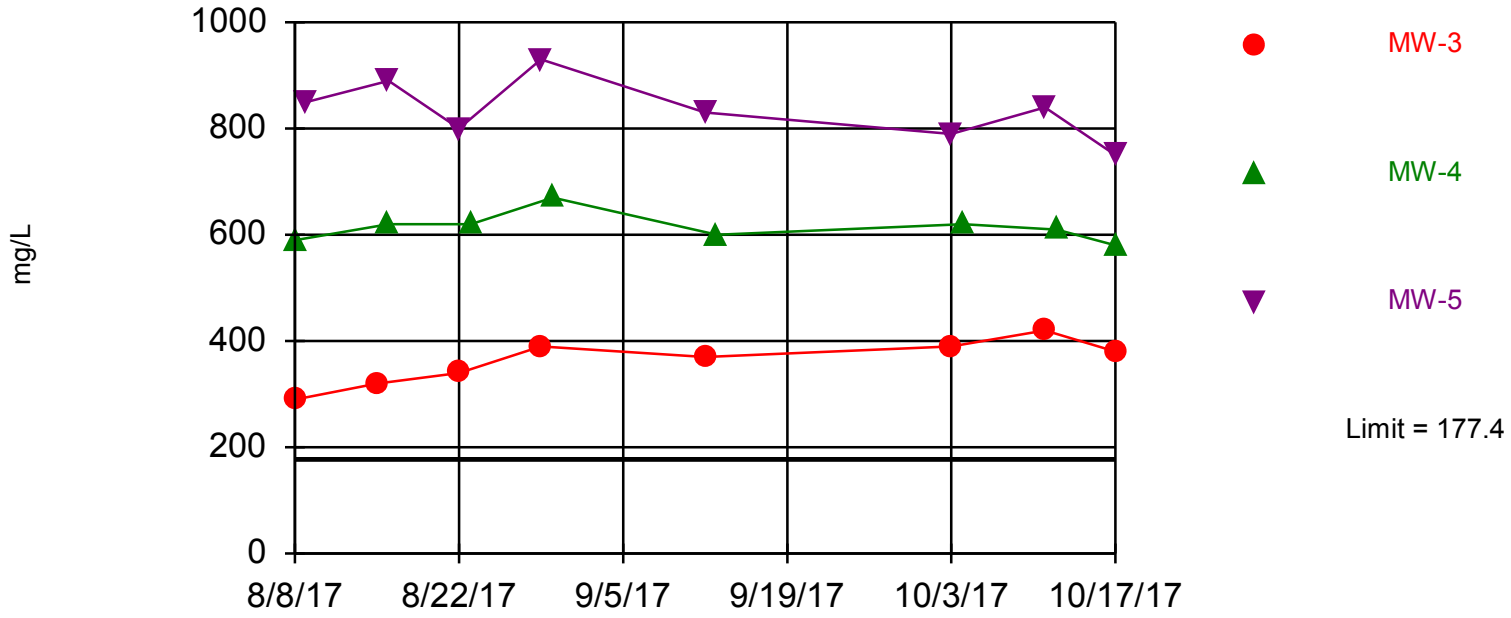
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3, MW-4, MW-5

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=155, Std. Dev.=9.258, n=8. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9302, critical = 0.851. Kappa = 2.416 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 1/12/2018 9:31 AM

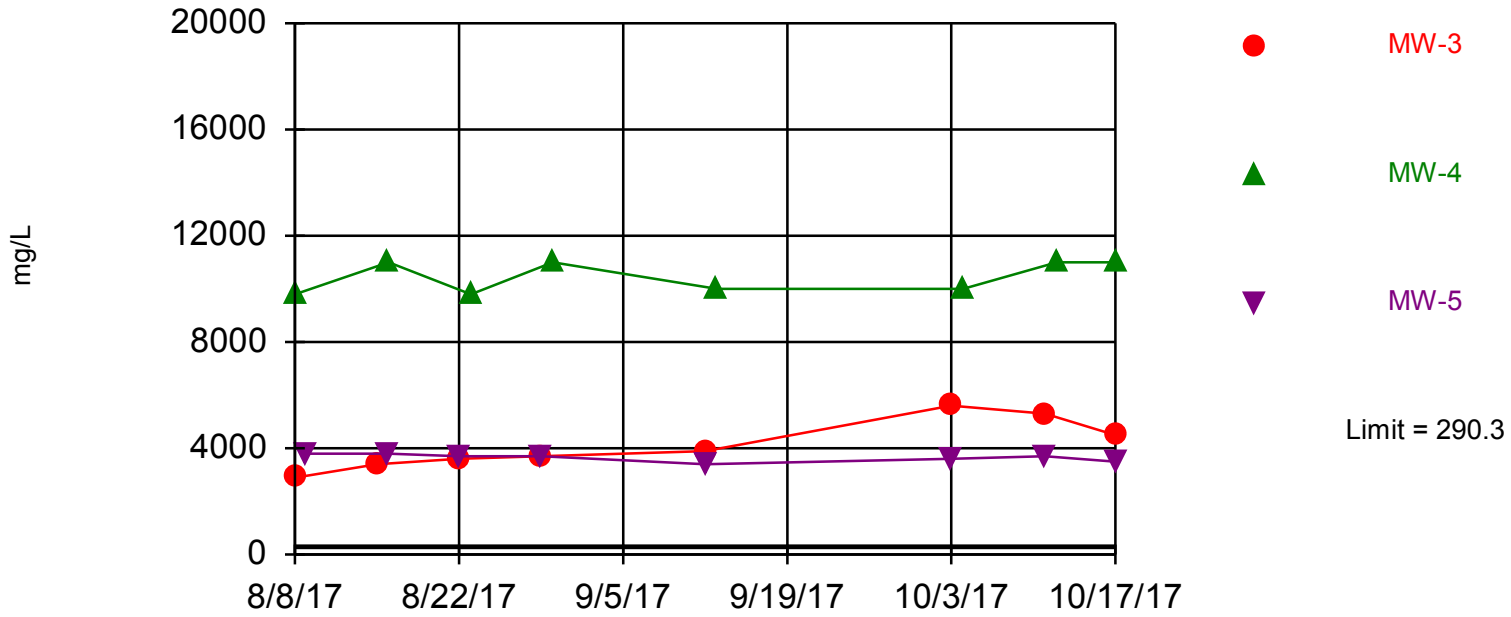
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3, MW-4, MW-5

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=241.3, Std. Dev.=20.31, n=8. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8619, critical = 0.851. Kappa = 2.416 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Chloride Analysis Run 1/12/2018 9:31 AM

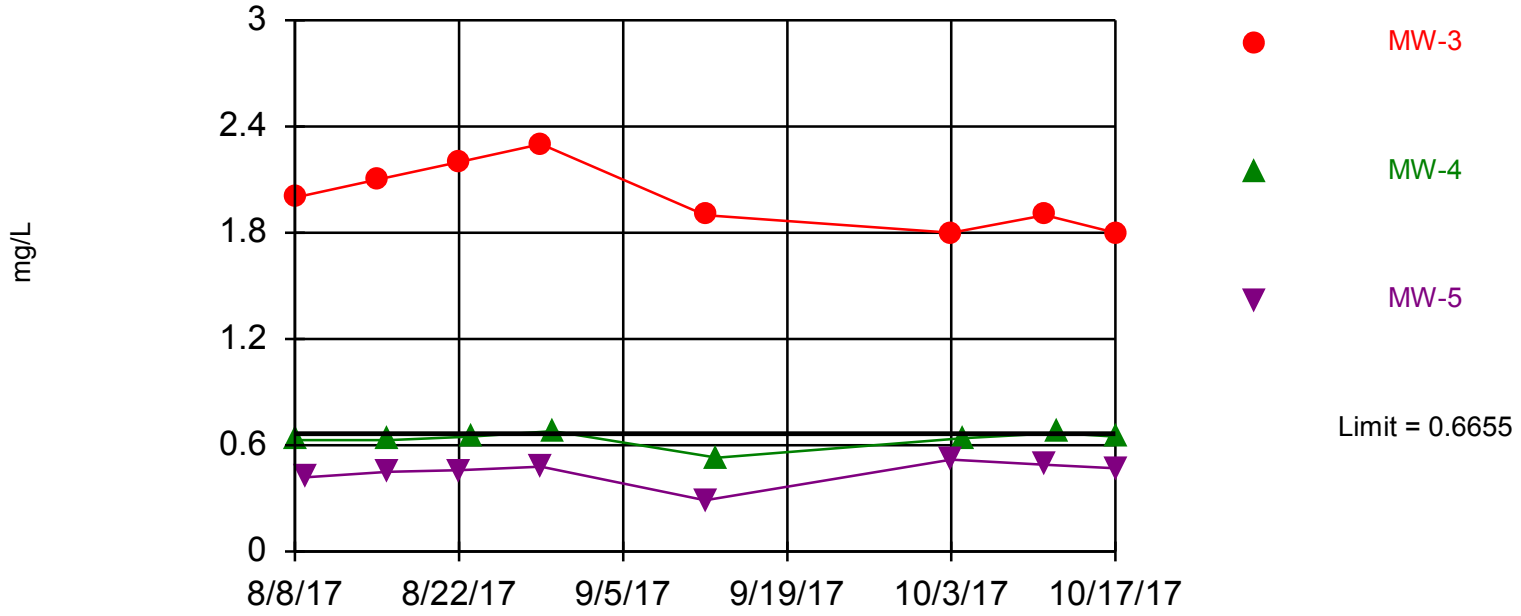
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.5425, Std. Dev.=0.05092, n=8. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9062, critical = 0.851. Kappa = 2.416 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Fluoride Analysis Run 1/12/2018 9:31 AM

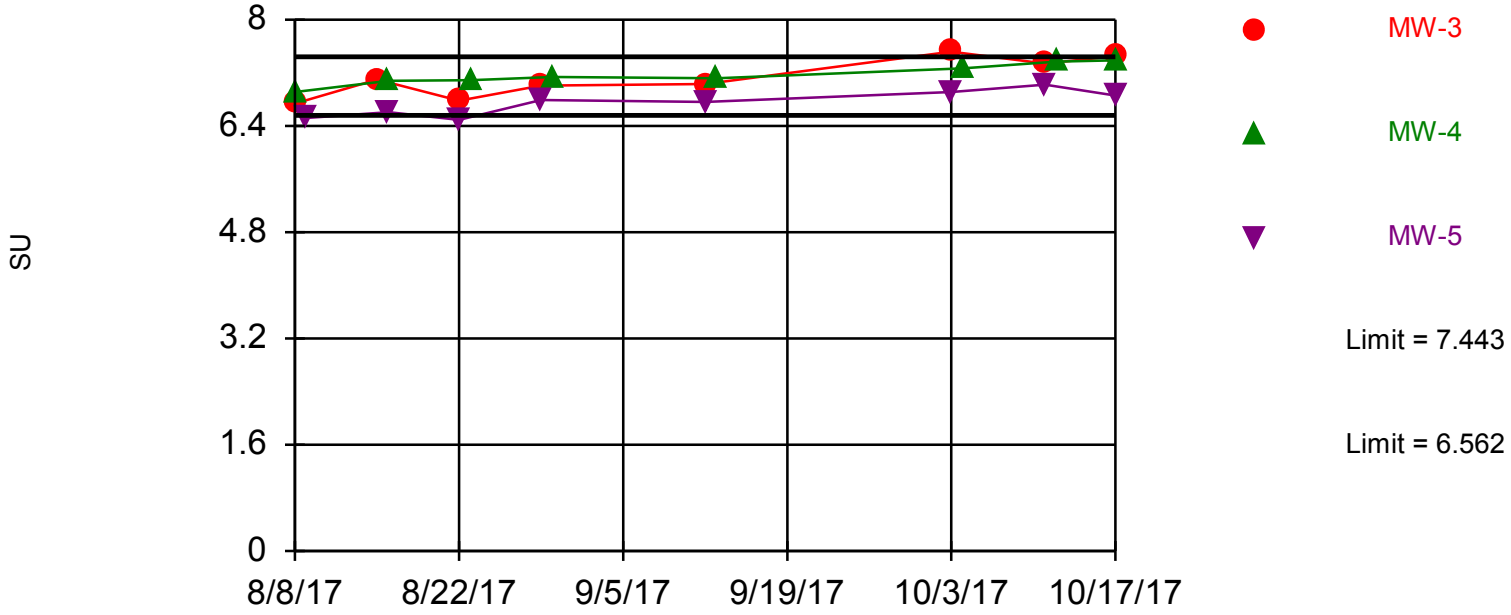
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limits: MW-3

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.003, Std. Dev.=0.1825, n=8. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.974, critical = 0.851. Kappa = 2.416 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 3 points to limit.

Constituent: pH Analysis Run 1/12/2018 9:31 AM

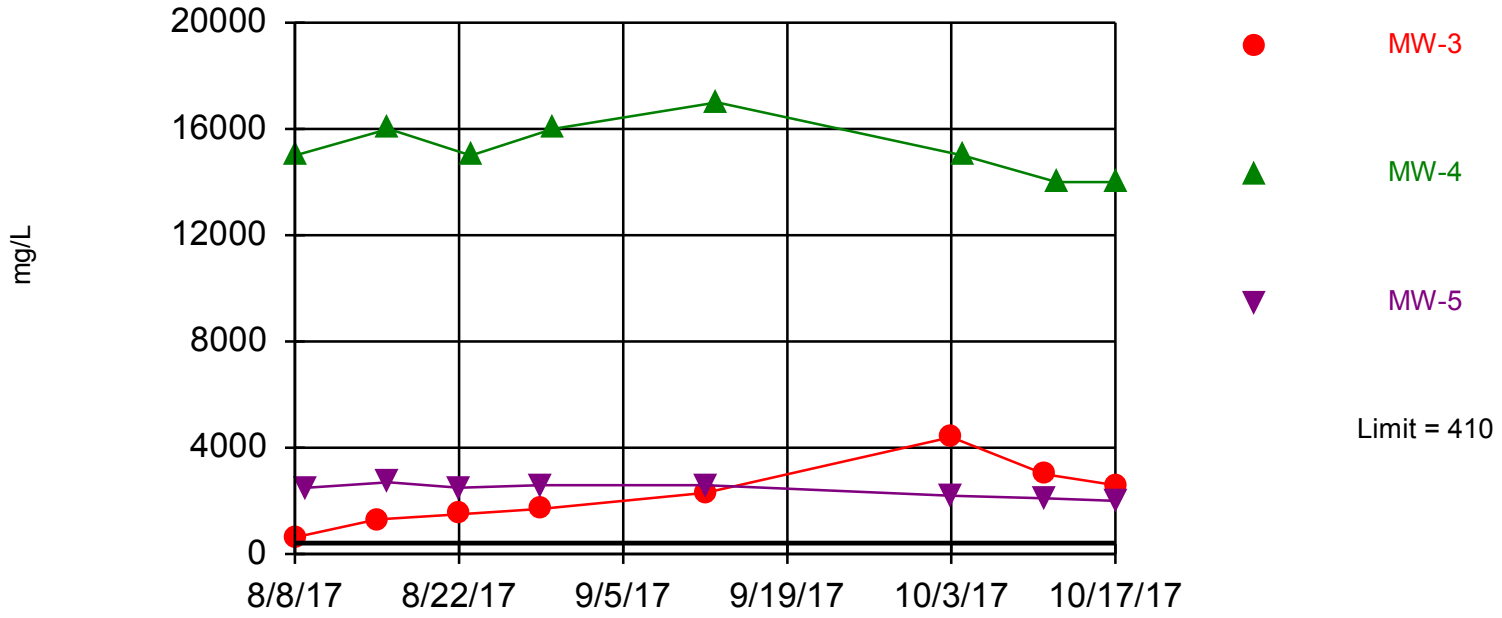
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3, MW-4, MW-5

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.1 alpha level. Limit is highest of 8 background values. Annual per-constituent alpha = 0.1077. Individual comparison alpha = 0.01882 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Sulfate Analysis Run 1/12/2018 9:31 AM

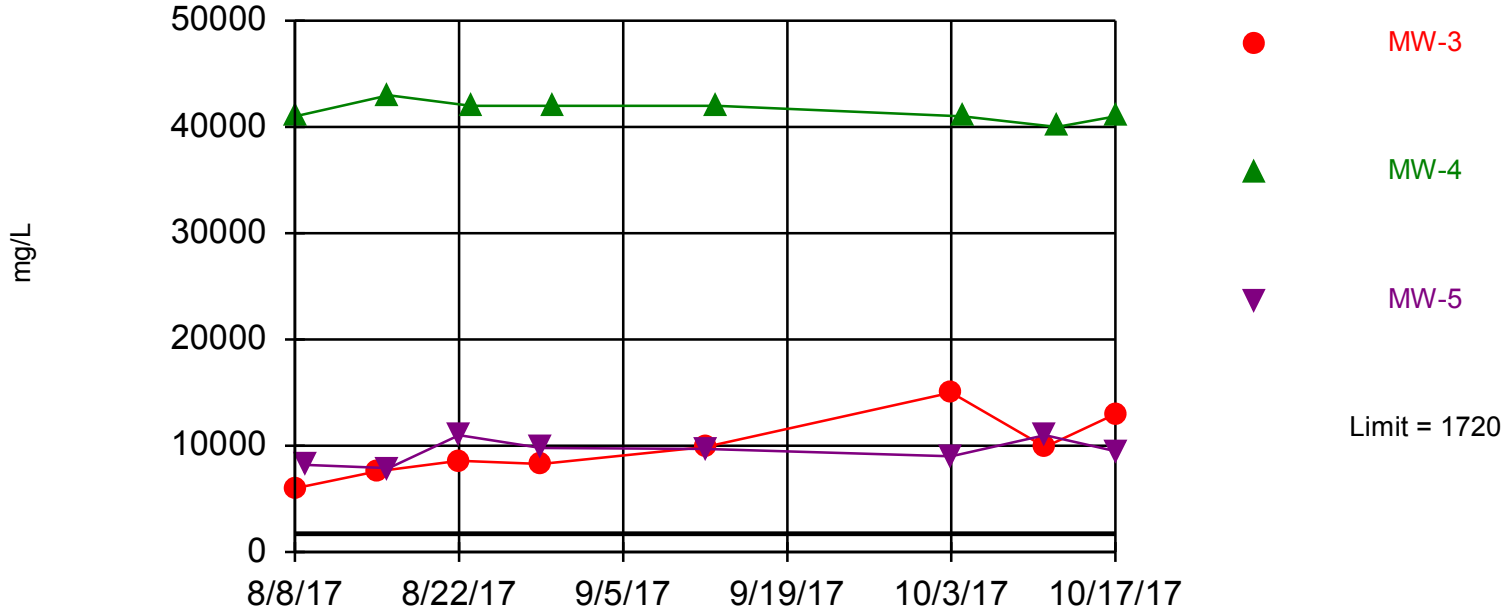
AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Sanitas™ v.9.5.32 Software licensed to DNA-Environment, LLC. UG

Exceeds Limit: MW-3, MW-4, MW-5

Prediction Limit

Interwell Parametric



Background Data Summary (based on square transformation): Mean=2013750, Std. Dev.=390528, n=8. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.862, critical = 0.851. Kappa = 2.416 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/12/2018 9:31 AM

AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES

Prediction Limit

AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES Printed 1/12/2018, 1:34 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-3**	**0.27**	**n/a**	**10/17/2017**	**1.2**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Boron (mg/L)	**MW-4**	**0.27**	**n/a**	**10/17/2017**	**3.1**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Boron (mg/L)	**MW-5**	**0.27**	**n/a**	**10/17/2017**	**0.42**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Calcium (mg/L)	**MW-3**	**177.4**	**n/a**	**10/17/2017**	**380**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**MW-4**	**177.4**	**n/a**	**10/17/2017**	**580**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**MW-5**	**177.4**	**n/a**	**10/17/2017**	**750**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**MW-3**	**290.3**	**n/a**	**10/17/2017**	**4500**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**MW-4**	**290.3**	**n/a**	**10/17/2017**	**11000**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**MW-5**	**290.3**	**n/a**	**10/17/2017**	**3500**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	**MW-3**	**0.6655**	**n/a**	**10/17/2017**	**1.8**	**Yes**	**8**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	MW-4	0.6655	n/a	10/17/2017	0.65	No	8	0	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	0.6655	n/a	10/17/2017	0.47	No	8	0	No	0.002505	Param Inter 1 of 2
pH (SU)	**MW-3**	**7.443**	**6.562**	**10/17/2017**	**7.45**	**Yes**	**8**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
pH (SU)	MW-4	7.443	6.562	10/17/2017	7.39	No	8	0	No	0.001253	Param Inter 1 of 2
pH (SU)	MW-5	7.443	6.562	10/17/2017	6.86	No	8	0	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	**MW-3**	**410**	**n/a**	**10/17/2017**	**2600**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Sulfate (mg/L)	**MW-4**	**410**	**n/a**	**10/17/2017**	**14000**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Sulfate (mg/L)	**MW-5**	**410**	**n/a**	**10/17/2017**	**2000**	**Yes**	**8**	**0**	**n/a**	**0.01882**	**NP Inter (normality) ...**
Total Dissolved Solids (mg/L)	**MW-3**	**1720**	**n/a**	**10/17/2017**	**13000**	**Yes**	**8**	**0**	**x^2**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**MW-4**	**1720**	**n/a**	**10/17/2017**	**41000**	**Yes**	**8**	**0**	**x^2**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**MW-5**	**1720**	**n/a**	**10/17/2017**	**9500**	**Yes**	**8**	**0**	**x^2**	**0.002505**	**Param Inter 1 of 2**

Note: Prediction Limits based on observations from Background Well MW-1

Prediction Limit

AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES Printed 1/12/2018, 5:43 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-3	0.17	n/a	10/17/2017	1.2	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Boron (mg/L)	MW-4	0.17	n/a	10/17/2017	3.1	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Boron (mg/L)	MW-5	0.17	n/a	10/17/2017	0.42	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Calcium (mg/L)	MW-3	106.1	n/a	10/17/2017	380	Yes	8	0	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-4	106.1	n/a	10/17/2017	580	Yes	8	0	No	0.002505	Param Inter 1 of 2
Calcium (mg/L)	MW-5	106.1	n/a	10/17/2017	750	Yes	8	0	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	MW-3	45	n/a	10/17/2017	4500	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Chloride (mg/L)	MW-4	45	n/a	10/17/2017	11000	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Chloride (mg/L)	MW-5	45	n/a	10/17/2017	3500	Yes	8	0	n/a	0.01882	NP Inter (normality) ...
Fluoride (mg/L)	MW-3	0.4648	n/a	10/17/2017	1.8	Yes	8	0	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-4	0.4648	n/a	10/17/2017	0.65	Yes	8	0	No	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	0.4648	n/a	10/17/2017	0.47	Yes	8	0	No	0.002505	Param Inter 1 of 2
pH (SU)	MW-3	7.282	6.443	10/17/2017	7.45	Yes	16	0	No	0.001253	Param Inter 1 of 2
pH (SU)	MW-4	7.282	6.443	10/17/2017	7.39	Yes	16	0	No	0.001253	Param Inter 1 of 2
pH (SU)	MW-5	7.282	6.443	10/17/2017	6.86	No	16	0	No	0.001253	Param Inter 1 of 2
Sulfate (mg/L)	MW-3	31.79	n/a	10/17/2017	2600	Yes	8	0	sqrt(x)	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	MW-4	31.79	n/a	10/17/2017	14000	Yes	8	0	sqrt(x)	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	MW-5	31.79	n/a	10/17/2017	2000	Yes	8	0	sqrt(x)	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-3	570.9	n/a	10/17/2017	13000	Yes	8	0	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-4	570.9	n/a	10/17/2017	41000	Yes	8	0	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-5	570.9	n/a	10/17/2017	9500	Yes	8	0	No	0.002505	Param Inter 1 of 2

Note: Prediction Limits based on observations from Background Well MW-2

Prediction Limit

AES Puerto Rico Client: AES Puerto Rico, LP Data: 2017_DMP_AES Printed 1/12/2018, 5:20 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-3**	**0.27**	**n/a**	**10/17/2017**	**1.2**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Boron (mg/L)	**MW-4**	**0.27**	**n/a**	**10/17/2017**	**3.1**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Boron (mg/L)	**MW-5**	**0.27**	**n/a**	**10/17/2017**	**0.42**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Calcium (mg/L)	**MW-3**	**170**	**n/a**	**10/17/2017**	**380**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Calcium (mg/L)	**MW-4**	**170**	**n/a**	**10/17/2017**	**580**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Calcium (mg/L)	**MW-5**	**170**	**n/a**	**10/17/2017**	**750**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Chloride (mg/L)	**MW-3**	**270**	**n/a**	**10/17/2017**	**4500**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Chloride (mg/L)	**MW-4**	**270**	**n/a**	**10/17/2017**	**11000**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Chloride (mg/L)	**MW-5**	**270**	**n/a**	**10/17/2017**	**3500**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Field pH (SU)	**MW-3**	**7.282**	**6.443**	**10/17/2017**	**7.45**	**Yes**	**16**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
Field pH (SU)	**MW-4**	**7.282**	**6.443**	**10/17/2017**	**7.39**	**Yes**	**16**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
Field pH (SU)	MW-5	7.282	6.443	10/17/2017	6.86	No	16	0	No	0.001253	Param Inter 1 of 2
Fluoride (mg/L)	**MW-3**	**0.6393**	**n/a**	**10/17/2017**	**1.8**	**Yes**	**16**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	**MW-4**	**0.6393**	**n/a**	**10/17/2017**	**0.65**	**Yes**	**16**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	MW-5	0.6393	n/a	10/17/2017	0.47	No	16	0	No	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	**MW-3**	**410**	**n/a**	**10/17/2017**	**2600**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Sulfate (mg/L)	**MW-4**	**410**	**n/a**	**10/17/2017**	**14000**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Sulfate (mg/L)	**MW-5**	**410**	**n/a**	**10/17/2017**	**2000**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Total Dissolved Solids (mg/L)	**MW-3**	**1600**	**n/a**	**10/17/2017**	**13000**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Total Dissolved Solids (mg/L)	**MW-4**	**1600**	**n/a**	**10/17/2017**	**41000**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**
Total Dissolved Solids (mg/L)	**MW-5**	**1600**	**n/a**	**10/17/2017**	**9500**	**Yes**	**16**	**0**	**n/a**	**0.006129**	**NP Inter (normality) ...**

Note: Prediction Limits based on combined observations from Background Wells MW-1 and MW-2

APPENDIX D
Monitoring Well Installation Forms

Originally provided in the Groundwater Monitoring System & Sampling and Analysis Program, AES Puerto Rico – Agremax™ Staging Area, Guayama, Puerto Rico (2017).

APPENDIX C

SOIL BORING AND WELL CONSTRUCTION LOGS

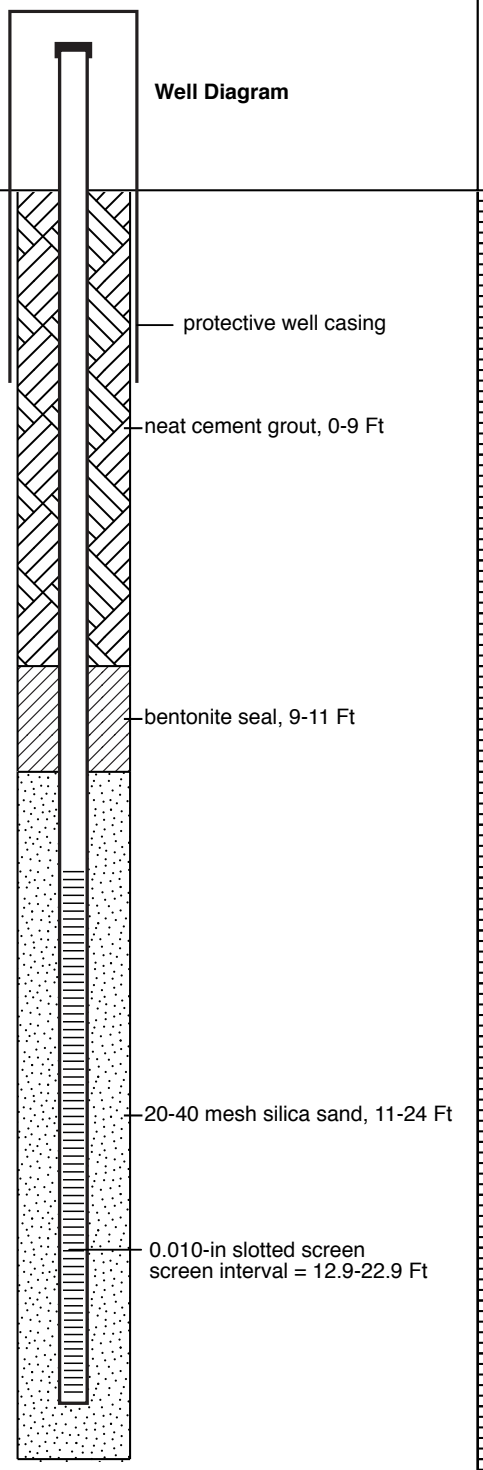
GROUNDWATER LOG MW-1

PROJECT NUMBER: DNA-170154	**DRILLING DATE:** July 20, 2017	**COORDINATES:** y = 222731.35, x = 230013.63
PROJECT NAME: CCR Groundwater Monitoring	**WELL COMPLETION DATE:** July 20, 2017	**COORD SYS:** NAD 83, PR State Plane, Lambert (m)
CLIENT: AES Puerto Rico, LP	**WELL DIAMETER:** 2-in	**GROUND ELEVATION:** 20.67 ft
ADDRESS: Guayama, Puerto Rico	**WELL CASING:** PVC	**WELL ELEVATION AT TOC:** 22.90 ft
DRILLERS: GeoEnviroTech, Inc. (Guaynabo, PR)	**SCREEN:** PVC Factory Slotted (0.010-in)	**WELL DEPTH FROM GROUND:** 22.92 ft

COMMENTS Upgradient Well
Borehole was drilled using 8.25-in o.d. hollow stem augers.

LOGGED BY Hardy Rodriguez
CHECKED BY Juan D. Negron, PG

% Recovery	Depth (Ft)	Graphic Log	Lithological Description
	1–8		Fine to medium sand with some angular rock fragments, yellowish brown (10 YR 5/6), loose hardness, non plasticity, high estimated K, no odor, fill material.
	8–13		Clayey sand, dark brown (10 YR 4/4), medium dense hardness, low plasticity, moderate estimated K, no odor, alluvial deposits.
	13–16		Fine to medium sand, dark brown (10 YR 4/4), loose hardness, non plasticity, high estimated K, no odor, wet at 14 feet, alluvial deposits.
	16–17		Clayey sand, dark brown (10 YR 4/4), medium dense hardness, low plasticity, moderate estimated K, no odor, moist, alluvial deposits.
	17–23		Sandy clay, moist, olive brown (2.5 YR 4/3), medium dense hardness, high plasticity, low estimated K, no odor, alluvial deposits.
	23–25		Clay, dark yellowish brown (10 YR 4/4), stiff hardness, high plasticity, low estimated K, no odor, alluvial deposits.
	25–26		Termination Depth at: 25 Ft. Remarks: Water level while drilling = 14 Ft. below ground surface.



Depth (Ft): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

GROUNDWATER LOG MW-2

PROJECT NUMBER: DNA-170154	**DRILLING DATE:** July 20, 2017	**COORDINATES:** y = 212639.32, x = 230127.80
PROJECT NAME: CCR Groundwater Monitoring	**WELL COMPLETION DATE:** July 20, 2017	**COORD SYS:** NAD 83, PR State Plane, Lambert (m)
CLIENT: AES Puerto Rico, LP	**WELL DIAMETER:** 2-in	**GROUND ELEVATION:** 20.73 ft
ADDRESS: Guayama, Puerto Rico	**WELL CASING:** PVC	**WELL ELEVATION AT TOC:** 23.10 ft
DRILLERS: GeoEnviroTech, Inc. (Guaynabo, PR)	**SCREEN:** PVC Factory Slotted (0.010-in)	**WELL DEPTH FROM GROUND:** 19.94 ft

COMMENTS Upgradient Well
Borehole was drilled using 8.25-in o.d. hollow stem augers.

LOGGED BY Hardy Rodriguez
CHECKED BY Juan D. Negron, PG

% Recovery	Depth (Ft)	Graphic Log	Lithological Description	Well Diagram	Depth (Ft)
	0–4		Fine to medium sand with some angular rock fragments, yellowish brown (10YR 5/6), loose hardness, non plasticity, high estimated K, no odor, fill material.	protective well casing	
	4–5		Silty sand, very dark brown (10YR 2/2), dense hardness, low plasticity, moderate estimated k., no odor, alluvial deposits.	neat cement grout, 0-8 Ft	
	5–13		Medium to coarse sand with gravel, dark brown (10YR 3/3), loose hardness, non plasticity, high estimated K, no odor,wet at 13 feet, alluvial deposits.	bentonite seal, 8-10 Ft	
	13–14		Sandy clay, moist, brown (7.5 YR 4/3), medium stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.		
	14–19		Medium to coarse sand with gravel, dark brown (10YR 3/3), loose hardness, non plasticity, high estimated K, no odor,wet at 13 feet, alluvial deposits.	20-40 mesh silica sand screen interval 9.9-19.9 Ft	
	19–25		Clay, yellowish brown (10YR 5/6), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.		
	25		Termination Depth at: 25 Ft. Remarks: Water level while drilling = 13 Ft. below ground surface.		

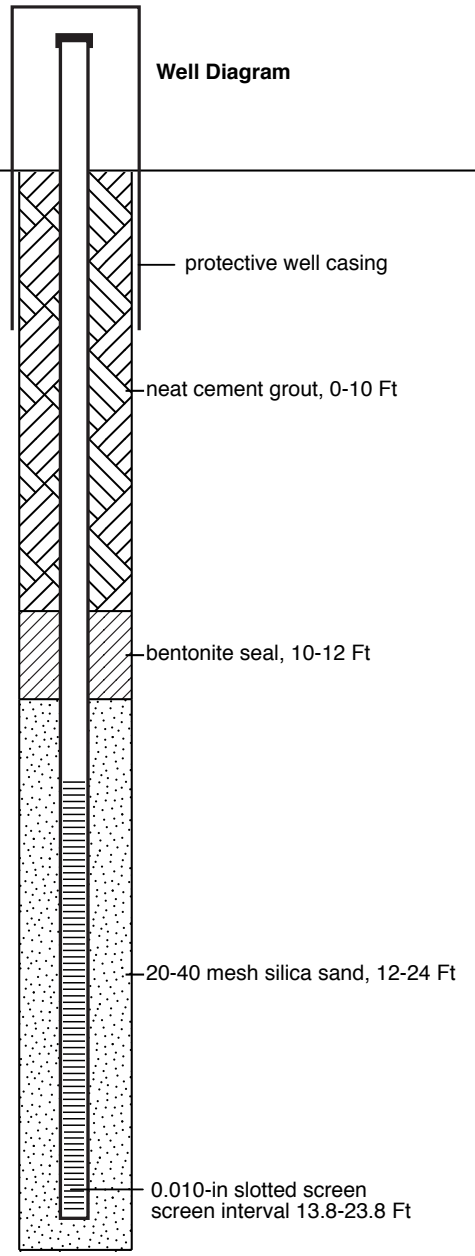
GROUNDWATER LOG MW-3

PROJECT NUMBER: DNA-170154	**DRILLING DATE:** July 21, 2017	**COORDINATES:** y = 212188.69, x = 229867.35
PROJECT NAME: CCR Groundwater Monitoring	**WELL COMPLETION DATE:** July 21, 2017	**COORD SYS:** NAD 83, PR State Plane, Lambert (m)
CLIENT: AES Puerto Rico, LP	**WELL DIAMETER:** 2-in	**GROUND ELEVATION:** 13.62 ft
ADDRESS: Guayama, Puerto Rico	**WELL CASING:** PVC	**WELL ELEVATION AT TOC:** 16.04 ft
DRILLERS: GeoEnviroTech, Inc. (Guaynabo, PR)	**SCREEN:** PVC Factory Slotted (0.010-in)	**WELL DEPTH FROM GROUND:** 23.77 ft

COMMENTS Downgradient Well
Borehole was drilled using 8.25-in o.d. hollow stem augers.

LOGGED BY Hardy Rodriguez
CHECKED BY Juan D. Negron, PG

% Recovery	Depth (Ft)	Graphic Log	Lithological Description
	0 – 10		Fine to medium sand with some angular rock fragments, yellowish brown (10YR 5/6), medium dense hardness, non plasticity, high estimated K, no odor, fill material.
	8 – 10		Clayey sand with some angular to sub-angular rock fragments, dark yellowish brown (10YR 4/4), medium dense hardness, medium plasticity, moderate estimated K., no odor, fill material.
	10 – 16		Clayey silt, moist, very dark gray (10 YR 3/1), soft hardness, high plasticity, low estimated K., vague odor, alluvial deposits.
	16 – 20		Sandy clay, moist, very dark gray (10 YR 3/1), soft hardness, high plasticity, low estimated K., vague swamp odor, swamp deposits.
	20 – 24		Fine sand with some feldspars, moist, very dark gray (10 YR 3/1), loose hardness, non plasticity, high estimated K, vague hydrocarbon odor, alluvial beach deposits.
	24 – 30		Clay, very dark gray (10 YR 3/1) to dark yellowish brown (10YR 4/4) color transition, stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	30		Termination Depth at: 30 Ft. Remarks: Water level while drilling = 14 Ft. below ground surface.



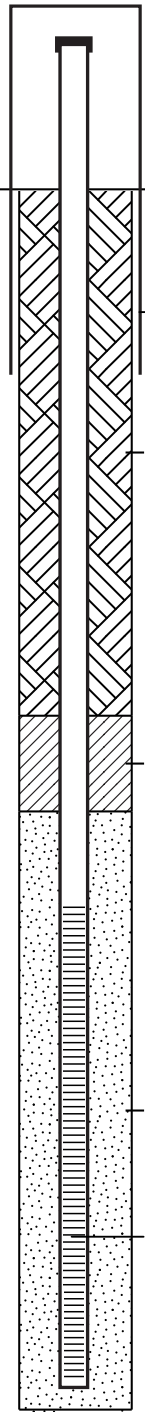
GROUNDWATER LOG MW-4

PROJECT NUMBER: DNA-170154	**DRILLING DATE:** July 21, 2017	**COORDINATES:** y = 212186.07, x = 229968.59
PROJECT NAME: CCR Groundwater Monitoring	**WELL COMPLETION DATE:** July 21, 2017	**COORD SYS:** NAD 83, PR State Plane, Lambert (m)
CLIENT: AES Puerto Rico, LP	**WELL DIAMETER:** 2-in	**GROUND ELEVATION:** 15.19 ft
ADDRESS: Guayama, Puerto Rico	**WELL CASING:** PVC	**WELL ELEVATION AT TOC:** 17.85 ft
DRILLERS: GeoEnviroTech, Inc. (Guaynabo, PR)	**SCREEN:** PVC Factory Slotted (0.010-in)	**WELL DEPTH FROM GROUND:** 25.09 ft

COMMENTS Downgradient Well.
Borehole was drilled using 8.25-in o.d. hollow stem augers.

LOGGED BY Hardy Rodriguez
CHECKED BY Juan D. Negron, PG

% Recovery	Depth (Ft)	Graphic Log	Lithological Description
	0		Fine to medium sand with some angular rock fragments, yellowish brown (10YR 5/6), medium dense hardness, non plasticity, high estimated K, no odor, fill material.
	4		Clayey sand with angular to sub-angular rock fragments, yellowish brown (10YR 5/6), medium dense hardness, medium plasticity, moderate estimated K., no odor, fill material.
	10		Sandy clay, dark brown (7.5 YR 3/3), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	12		Sandy clay, moist, very dark brown (10YR 2/2), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	14		Medium to coarse sand with some sub-angular rock fragments, moist, dark brown (10YR 3/3), loose hardness, non plasticity, high estimated K, no odor, alluvial deposits.
	16		Sandy clay, moist, very dark gray (10 YR 3/1), soft hardness, high plasticity, low estimated K., vague swamp odor, swamp deposits.
	18		Fine sand with some feldspars, moist, very dark gray (10 YR 3/1), loose hardness, non plasticity, high estimated K, vague hydrocarbon odor, alluvial beach deposits.
	20		Sandy clay, dark olive brown (2.5 YR 3/3), medium stiff hardness, medium plasticity, moderate estimated K., no odor, alluvial deposits.
	22		Clay, yellowish brown (10YR 5/6), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	24		Termination Depth at: 28 Ft. Remarks: Water level while drilling = 15 Ft. below ground surface.
	26		
	28		



Well Diagram

GROUNDWATER LOG MW-5

PROJECT NUMBER: DNA-170154	**DRILLING DATE:** July 19, 2017	**COORDINATES:** y = 212186.07, x = 229968.59
PROJECT NAME: CCR Groundwater Monitoring	**WELL COMPLETION DATE:** July 19, 2017	**COORD SYS:** NAD 83, PR State Plane, Lambert (m)
CLIENT: AES Puerto Rico, LP	**WELL DIAMETER:** 2-in	**GROUND ELEVATION:** 14.04 ft
ADDRESS: Guayama, Puerto Rico	**WELL CASING:** PVC	**WELL ELEVATION AT TOC:** 16.47 ft
DRILLERS: GeoEnviroTech, Inc. (Guaynabo, PR)	**SCREEN:** PVC Factory Slotted (0.010-in)	**WELL DEPTH FROM GROUND:** 23.39 ft

COMMENTS Downgradient Well.
Borehole was drilled using 8.25-in o.d. hollow stem augers.

LOGGED BY Hardy Rodriguez
CHECKED BY Juan D. Negron

% Recovery	Depth (Ft)	Graphic Log	Lithological Description
	0		Fine to medium sand with some angular rock fragments, yellowish brown (10YR 5/6), loose hardness, non plasticity, high estimated K, no odor, fill material.
	12		Sandy clay, dark brown (10YR 4/4), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	14		Sandy clay, wet at 13 feet, very dark graysh brown (10YR 3/2), medium stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	16		Sandy clay, moist, very dark gray (10YR 2/2), soft hardness, high plasticity, low estimated K., vague swamp odor, swamp deposits.
	24		Clay, yellowish brown (10YR 5/6), stiff hardness, high plasticity, low estimated K., no odor, alluvial deposits.
	28		Termination Depth at: 28 Ft. Remarks: Water level while drilling = 13 Ft. below ground surface.

