
November 15, 2024

An Annual Groundwater Monitoring and Corrective Action Report (Annual Report) documenting the activities completed in 2022 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, 2023, 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 2022 Annual Report. AES Puerto Rico is providing the 2022 Well Purging and Sampling and Field Data Sheets in the following pages.

LOW FLOW SAMPLING DATA SHEET

SITE:	AES Puerto Rico, LP in Guayama, Puerto Rico	PROJECT NAME:	CCR Groundwater Monitoring
DATE:	4/11/22	FIELD PERSONNEL:	A. Melendez / I. Padilla / V. Perez / R. Slat
WEATHER	Sunny		

MONITORING WELL:	MW-1	WELL DEPTH:	26.15	SCREENED/OPEN INTERVAL:	10
LOCATION:	AES	WELL DIAMETER:	2	Inches	

PID/FID READINGS (ppm):	BACKGROUND:	NA	PUMP INTAKE DEPTH: 22.5	ft below TOC
	BENEATH OUTER CAP:	NA	DEPTH TO WATER BEFORE PUMP INSTALLATION: 18.00	
	BENEATH INNER CAP:	NA	ft below TOC	

TIME	PURGING	SAMPLING	pH (pH units)		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*		
8:40			7.06	NA	1.41	NA	88.7	NA	.63	NA	1.35	NA	29.4	NA	104	18.05
8:45			7.07		1.41		70.9		.49		.98		29.6		104	18.03
8:50			7.05		1.42		61.6		.54		1.57		29.7		104	18.03
8:55			7.06		1.43		54.0		.49		2.02		29.6		104	18.03
9:00			7.01		1.42		49.8		.46		1.70		29.8		104	18.03
9:05			7.02		1.42		48.1		.45		2.70		29.7		104	18.03

COMMENTS:

Sample pH: 7.02

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 2

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico PROJECT NAME: CCR Groundwater Monitoring
 DATE: 4/11/22 FIELD PERSONNEL: A. Melendez, J. Cardona, V. Perez, R. Diaz
 WEATHER: Sunny

MONITORING WELL: MW-2 WELL DEPTH: 22.90 SCREENED/OPEN INTERVAL: 10'
 LOCATION: AES WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: 20 ft below TOC
 BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 12.69 ft below TOC
 BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
9:30			6.85	NA	.94	NA	92.6	NA	1.55	NA	20.36	NA	30.9	NA	98	18.60
9:35			6.74		.93		86.7		1.14		22.53		30.9		88	19.23
9:40			6.81		.92		85.4		1.28		42.55		30.9		88	19.67
9:45			6.79		.92		86.0		1.17		75.58		31.0		88	20.22
9:50			6.65		.93		85.2		1.05		140.1		30.7		88	20.51
9:55			6.80		.92		84.1		1.11		140.2		31.0		88	20.62
10:00			6.83		.92		87.2		1.17		89.00		30.9		88	21.38
10:05			6.77		.92		93.9		2.17		89.72		30.8		88	21.42
10:10			6.80		.92		99.3		2.58		46.29		30.6		88	21.42
10:15			6.83		.92		100.8		2.65		36.37		30.8		88	21.42
10:20			6.81		.91		100.8		2.64		40.00		30.7		88	21.42

COMMENTS: Sample pH: 6.91 (see next page)

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 2 OF 2

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico PROJECT NAME: CCR Groundwater Monitoring
 DATE: 4/11/22 FIELD PERSONNEL: V. Perez / A. Melendez / I. Cardona / R. Saez
 WEATHER: Sunny

MONITORING WELL: MW-2 WELL DEPTH: 22.90 SCREENED/OPEN INTERVAL: 10'
 LOCATION: AES WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: 20' ft below TOC
 BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 17.69 ft below TOC
 BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
10:25			6.83	NA	.92	NA	98.5	NA	2.46	NA	44.46	NA	30.8	NA	88	21.42
10:30			6.82		.91		96.4		1.96		49.40		31.0		88	21.61
10:35			6.85		.89		68.5		.60		198.3		30.9		72	21.82
10:40			6.85		.89		70.5		.90		111.3		31.0		72	22.00
10:45			6.85		.89		77.3		1.13		82.95		30.9		72	22.21
10:50			6.83		.89		80.3		1.42		128.6		31.1		72	22.42
10:55			6.80		.88		93.0		2.38				30.9		72	22.43
11:00			Stopped Purging to allow well volume recovery													
13:22			7.03		1.17		353.9		.93		25.31		31.0		88	19.69
13:27			6.99		1.01		362.7		.79		27.27		31.0		88	19.09
13:32			6.91		0.93		364.1		.86		44.02		31.0		88	19.52

COMMENTS: Sample pH (see page 1) AM
pH: 6.91

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature;
 ± 10 mv for Redox Potential; and $\pm 10\%$ 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: 4/11/22 FIELD PERSONNEL: A. Melander / I. Cardona / V. Perez / R. Diaz
 WEATHER: Sunny

MONITORING WELL: MW-3 WELL DEPTH: 27.02 SCREENED/OPEN INTERVAL: 10'
 LOCATION: AES WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: 23 ft below TOC
 BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 17.88 ft below TOC
 BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
11:41			6.78	NA	12.45	NA	503.1	NA	.90	NA	20.36	NA	30.6	NA	100.	18.00
11:46			6.76		12.46		520.7		.75		8.66		30.5		100.	18.02
11:51			6.77		12.48		506.1		.68		6.48		30.5		100.	18.02
11:56			6.82		12.46		504.7		.68		6.71		30.6		100	18.02
12:01			6.75		12.43		500.8		.66		5.64		30.6		100	18.02
12:06			6.78		12.28		494.3		.62		4.43		30.6		100	18.02
12:11			6.80		11.98		480.9		.62		3.97		30.5		100	18.02
12:16			6.78		11.49		443.9		.67		4.31		30.5		100	18.02
12:21			6.75		11.11		407.0		.67		4.14		30.5		100	18.02
12:26																

COMMENTS:

Sample pH: 6.75

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE:	AES Puerto Rico, LP in Guayama, Puerto Rico	PROJECT NAME:	CCR Groundwater Monitoring
DATE:	4/11/22	FIELD PERSONNEL:	AMelander / I Cardona / U. Perez / R. S. J. C.
WEATHER:	Sunny		

MONITORING WELL:	Hw-4	WELL DEPTH:	28.60	SCREENED/OPEN INTERVAL:	10'
LOCATION:	AES	WELL DIAMETER:	2	Inches	

PID/FID READINGS (ppm):	BACKGROUND:	NA	PUMP INTAKE DEPTH:	22	ft below TOC
	BENEATH OUTER CAP:	NA	DEPTH TO WATER BEFORE PUMP INSTALLATION:	16.83	ft below TOC
	BENEATH INNER CAP:	NA			

TIME	PURGING	SAMPLING	pH (pH units)		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*		
1401			6.95	NA	35.21	NA	-70.4	NA	.29	NA	54.12	NA	32.4	NA	110	17.06
1406			6.92		35.20		-76.1		.20		39.21		32.5		110	17.10
1411			6.94		35.18		-79.6		.17		29.29		32.5		110	17.14
14.16			6.94		35.19		-82.5		.15		23.48		32.5		110	17.18
14.21			6.94		35.19		-85.7		.13		17.02		32.4		110	17.16
14.26			6.93		35.24		-84.4		.10		19.22		32.6		110	17.03
14.31			6.95		35.14		-79.5		.16		15.80		32.2		110	17.09
14.36			6.95		35.18		-83.5		.14		12.72		32.3		110	17.12
14.41																

COMMENTS:

Sample pH: 6.95

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE: AES Puerto Rico, LP in Guayama, Puerto Rico PROJECT NAME: CCR Groundwater Monitoring
 DATE: 4/11/02 FIELD PERSONNEL: A. Maldonado / I. Cardona / V. Perez / R. Diaz
 WEATHER: Sunny

MONITORING WELL: MW-5 WELL DEPTH: 27.20' SCREENED/OPEN INTERVAL: 10'
 LOCATION: AES WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: 22 ft below TOC
 BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 16.76 ft below TOC
 BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
1622			6.08	NA	13.82	NA	126.3	NA	1.27	NA	46.84	NA	29.4	NA	92	16.87
1627			6.33		13.63		128.2		1.03		46.63		29.3		92	16.89
1632			6.42		13.57		117.0		.82		46.75		29.1		88	16.87
1637			6.35		13.54		115.8		.87		42.14		29.0		88	16.88
1642			6.35		13.53		113.6		.84		40.44		29.2		88	16.87
1647			6.42		13.52		82.7		.81		33.82		29.1		88	16.87
1652			6.37		13.50		69.1		.96		26.52		29.0		88	16.88
1657			6.53		13.49		64.5		.95		22.76		29.1		88	16.87
1702			6.42		13.48		62.0		.87		21.05		28.9		88	16.88
1707			6.39		13.47		59.3		.97		22.26		29.0		88	16.87
1712			6.42		13.46		56.3		.92		16.43		29.0		88	16.87

COMMENTS:

Sample pH: 6.42

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

Date of Calibration: 4/11/22 Technician: R Diaz
Instrument Serial Number: _____ Software Revision: _____ Cable Model Number: _____
Temperature Reading 27.9°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 Yellow Color notated in Sensor menu? Y (N)

Record the following calibration values:

	Pre Cal	After Cal	
Conductivity	<u>1418</u>	<u>1413</u>	
ORP	<u>187.0</u>	<u>200.0</u>	
DO	<u>86.1</u>	<u>100.3</u>	True Barometric Pressure at time of calibration <u>29.98</u>

	Pre Cal	
pH 7	<u>6.96</u>	pH mV value <u>-3.6</u> Range 0 mV \pm 50 mV
pH 4	<u>4.12</u>	pH mV value <u>152.1</u> Range +165 to +180 from 7 buffer mV value
pH 10	<u>9.90</u>	pH mV value <u>-165.4</u> 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 \approx 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 \pm 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 \pm 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 \pm 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 \pm 1.0 acceptable
DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)
pH Slope _____ (\approx 55 to 60 mV/pH, 59 ideal)
pH Slope % of ideal _____

*Turbidity Meter Calibrated for
1000/10/.02 NTU*

LOW FLOW SAMPLING DATA SHEET

SITE:	AES Puerto Rico, LP in Guayama, Puerto Rico	PROJECT NAME:	CCR Groundwater Monitoring
DATE:	10-11-2022	FIELD PERSONNEL:	A. Melander / V. Perez / R. Diaz
WEATHER:	Cloudy / Rain		
MONITORING WELL:	MW-1	WELL DEPTH:	26.03
LOCATION:		WELL DIAMETER:	2" Inches
		SCREENED/OPEN INTERVAL:	10'
PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: ft below TOC BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 16.16' ft below TOC BENEATH INNER CAP: NA			

TIME	PURGING	SAMPLING	pH (pH units)		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*		
8:20				NA		NA		NA		NA		NA		NA	98	
8:21			5.91		1.92		193.6		4.07		34.71		29.0		98	
8:26			6.39		1.89		169.1		1.20		31.69		29.4			16.19
8:31			6.72		1.89		146.9		1.19		30.31		29.4			16.19
8:36			7.01		1.89		122.6		1.25		27.22		29.5			16.19
8:41			7.04		1.89		113.8		1.14		22.08		29.5			16.19
8:46			7.14		1.89		102.6		1.17		16.05		29.6			16.19
8:51			7.24		1.89		95.5		1.19		14.66		29.5			16.19
8:56			7.27		1.88		89.6		1.17		12.26		29.6			16.19

COMMENTS:

pH @ 7.27

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE: AES, Puerto Rico, LP in Guayama, Puerto Rico PROJECT NAME: CCR Groundwater Monitoring
 DATE: 10/11/22 FIELD PERSONNEL: A. Maldonado / V. Perez / R. Diaz
 WEATHER: _____

MONITORING WELL: MW-2 WELL DEPTH: 22.98 SCREENED/OPEN INTERVAL: _____
 LOCATION: AES WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm): BACKGROUND: NA PUMP INTAKE DEPTH: _____ ft below TOC
 BENEATH OUTER CAP: NA DEPTH TO WATER BEFORE PUMP INSTALLATION: 15.4 ft below TOC
 BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
				NA		NA		NA		NA		NA		NA	122	
929			7.12		1.01		115.6		1.22		81.26		30.9		122	15.42
934			7.20		.96		86.5		.24		137.8		31.2		122	15.43
939			7.23		.92		74.7		.20		132.8		31.2		96	15.42
944			7.22		.91		69.2		.23		97.42		31.3		96	15.42
949			7.25		.92		63.7		.24		58.15		31.4		96	15.42
954			7.27		.92		59.0		.24		39.25		31.5		96	15.42
959			7.29		.94		54.5		.24		25.94		31.5		96	15.42
1004			7.33		.96		49.9		.25		17.20		31.5		96	15.42
1009			7.35		.97		45.8		.26		11.98		31.6		96	15.42
1014																

COMMENTS: pH @ 7.35

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Conductivity and Temperature;
 ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE: AES, Puerto Rico, LP in Guayama, Puerto Rico

PROJECT NAME: CCR Groundwater Monitoring

DATE: 10/11/22

FIELD PERSONNEL: A. Melander / V. Perez / B. Diaz

WEATHER: _____

MONITORING WELL: MW-3

WELL DEPTH: 27.05

SCREENED/OPEN INTERVAL: _____

LOCATION: _____

WELL DIAMETER: 2 Inches

PID/FID READINGS (ppm):

BACKGROUND: NA

PUMP INTAKE DEPTH: _____ ft below TOC

BENEATH OUTER CAP: NA

DEPTH TO WATER BEFORE PUMP INSTALLATION: 13.73 ft below TOC

BENEATH INNER CAP: NA

TIME	PURGING	SAMPLING	pH (pH units)		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*		
1104			6.94	NA	12.24	NA	137.2	NA	.79	NA	18.24	NA	31.0	NA	90	13.87
1109			7.15		14.14		86.1		.68		15.97		31.0		90	13.88
1114			7.37		15.06		58.3		.77		12.06		31.0		90	13.88
1119			7.69		15.12		8.2		.52		9.34		30.9		90	13.88
1124			7.78		14.97		-8.0		.41		7.51		31.0		90	13.88
1129			7.83		14.75		-18.3		.47		6.66		30.9		90	13.88
1134			7.98		14.50		-32.5		.36		4.83		30.9		90	13.88
1139			8.14		14.31		-40.4		.42		4.26		30.9		90	13.88
1144			8.17 8.16		14.08		-46.0		.33		3.62		30.9		90	13.88
1149			8.16		13.80		-48.9		.32		2.69		31.0		90	13.8
1154																

COMMENTS:

PH @ 8.16

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; $\pm 3\%$ for Conductivity and Temperature; ± 10 mv for Redox Potential; and $\pm 10\%$ for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE: <u>AES Puerto Rico, LP in Guayama, Puerto Rico</u> DATE: <u>10/11/22</u> WEATHER: _____	PROJECT NAME: <u>CCR Groundwater Monitoring</u> FIELD PERSONNEL: <u>A. Melander, V. Perez, R. Diaz</u>	
MONITORING WELL: <u>MW-4</u> WELL DEPTH: <u>28.59'</u> LOCATION: _____ WELL DIAMETER: <u>2</u> Inches		SCREENED/OPEN INTERVAL: <u>10'</u>
PID/FID READINGS (ppm): BACKGROUND: <u>NA</u> PUMP INTAKE DEPTH: _____ ft below TOC BENEATH OUTER CAP: <u>NA</u> DEPTH TO WATER BEFORE PUMP INSTALLATION: <u>13.81</u> ft below TOC BENEATH INNER CAP: <u>NA</u>		

TIME	PURGING	SAMPLING	pH (pH units)		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*		
1251			7.98	NA	19.77	NA	24.3	NA	.31	NA	7.61	NA	31.8	NA	86	14.01
1256			8.21		19.99		2.6		.22		10.64		32.0		86	14.07
1301			8.17		20.81		-2.9		.19		6.39		31.8		86	14.13
1306			8.12		21.20		-7.0		.23		5.44		32.0		86	14.19
1311			8.18		21.75		-15.7		.22		4.08		32.1		86	14.23
1316			8.50		21.81		-35.9		.21		4.88		31.9		86	14.27
1321			8.53		21.96		-39.4		.20		4.84		32.0		86	14.30
1326			8.53		22.03		-42.7		0.24		5.81		31.9		86	14.32
1331																

COMMENTS: Sample pH = 8.53

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity.

LOW FLOW SAMPLING DATA SHEET

DNA-ENVIRONMENT, LLC

SHEET 1 OF 1

SITE: <u>AES Puerto Rico, LP in Guayama, Puerto Rico</u>	PROJECT NAME: <u>CCR Groundwater Monitoring</u>
DATE: <u>10/11/22</u>	FIELD PERSONNEL: <u>A. Melendez / V. Perez / R. Diaz</u>
WEATHER _____	

MONITORING WELL: <u>MW-5</u>	WELL DEPTH: <u>27.20</u>	SCREENED/OPEN INTERVAL: _____
LOCATION: <u>AES</u>	WELL DIAMETER: <u>2</u> Inches	

PID/FID READINGS (ppm):	PUMP INTAKE DEPTH: _____ ft below TOC
BACKGROUND: <u>NA</u>	DEPTH TO WATER BEFORE PUMP INSTALLATION: <u>13.59</u> ft below TOC
BENEATH OUTER CAP: <u>NA</u>	
BENEATH INNER CAP: <u>NA</u>	

TIME	PURGING	SAMPLING	pH (pH units)		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*		
				NA		NA		NA		NA		NA		NA		
1415			7.71		13.39		2.8		1.47		50.58		30.8		104	13.76
1420			8.21		13.21		-21.0		.25		33.45		30.8		104	13.76
1425			8.52		13.05		-35.0		.21		29.76		30.7		104	13.76
1430			8.59		12.87		-41.3		.19		24.33		30.7		104	13.76
1435			8.63		12.72		-45.3		.18		20.71		30.9		104	13.76
1440			8.44		12.60		-43.4		.18		20.03		31.0		104	13.77
1445			8.19		12.48		-39.2		.18		15.83		31.0		104	13.76
1450			8.27		12.40		-42.4		.19		10.66		31.0		104	13.76
1455			8.28		12.32		-44.7		.21		11.55		31.1		104	13.77

COMMENTS:
Sample pH @ 8.28

*INDICATOR PARAMETERS HAVE STABILIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity.

Date of Calibration: 10/11/22 Technician: R. Diaz
 Instrument Serial Number: _____ Software Revision: _____ Cable Model Number: _____
 Temperature Reading 25.6°C Temperature Accurate: Y N
 DO Sensor in use: Polarographic Galvanic Sensor notated in Sensor menu? Y N
 DO membrane changed? Y ☒ Color of Membrane yellow Color notated in Sensor menu? ☒ N

Record the following calibration values:

	Pre Cal	After Cal	
Conductivity	<u>1426</u>	<u>1413</u>	
ORP	<u>211.2</u>	<u>200</u>	
DO	<u>93.0</u>	<u>100.6</u>	True Barometric Pressure at time of calibration <u>763.8 mm/Hg</u>

	Pre Cal		
pH 7	<u>6.84</u>	pH mV value <u>5.7</u>	Range 0 mV \pm 50 mV
pH 4	<u>4.04</u>	pH mV value <u>117.8</u>	Range +165 to +180 from 7 buffer mV value
pH 10	<u>9.30</u>	pH mV value <u>-119.3</u>	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 \approx 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 \pm 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 \pm 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 \pm 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 \pm 1.0 acceptable
 DO Sensor Value (uA) _____ (Membrane dependent, see DO Cal Tips)
 pH Slope _____ (\approx 55 to 60 mV/pH, 59 ideal)
 pH Slope % of ideal _____