EXHIBIT 2

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

Surface Methane Gas Monitoring at the Arecibo Municipal Solid Waste Landfill

Quarterly Event Report

Prepared by:
Landfill Technologies of Arecibo, LLC.

July to September 2021

Bo. Mamey, Carretera 189 km. 9.0, Gurabo, PR 00778 • PO Box 1322 Gurabo, Puerto Rico 00778 • Tel. (787) 273-7639 • Fax (787) 687-0337

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Appendix A: SEM 5000 – Portable Methane Detector: Surface Emission Monitor Specifications

Appendix B: Sampling Points Locations form Arecibo Municipal Landfill

Appendix C: Surface Emission Readings

Introduction

Landfill Technologies of Arecibo, LLC (LTA) has conducted on July, August, and September of 2021 the surface and perimeter methane gas monitoring event at the Arecibo Municipal Solid Waste Landfill as part of the operation of the Gas Collection and Control System (GCCS). This event is also performed as part of the state and federal agency's for environment requirements for solid waste landfills.

The surface methane gas monitoring was performed by Landfill Technologies of Arecibo, LLC (LTA) personnel during August 27th and 28th, 2021 according to the following rule of the "Enmiendas al Reglamento para el Control de la Contaminación Atmosférica de la Junta de Calidad Ambiental para cumplir con los requisitos para Planes Estatales de la Sección 111 (d) de la Ley Federal de Aire Limpio para Implantar las Guías de Emisiones para Sistemas de Relleno Sanitario", and 40 CFR 60.753(d). This monitoring consisted of obtaining readings with a Methane portable instrument (SEM 5000) surface detector, please refer to Appendix A for specifications of instrument from landfill surface, gas collection system and ambient monitoring.

Objectives

The objective of this event (the surface methane gas monitoring) is to ensure that the concentration of methane (CH_4) generated by the landfill does not exceed the lower explosive limit (LEL) of methane at the facility. The LEL for this monitoring is 500 ppm (parts per million) or 25%. If the personnel of LTA detect any release that exceeds the LEL it will require notification to the owner or operator and an expansion of the monitoring program to determine the vertical and horizontal extent of the release.

Description

The surface methane operational standards consist of monitoring the surface emissions of methane along the entire perimeter of the collection area and along a serpentine patter 30 meter apart (or site specific established spacing) for each collection area using a portable surface detector (SEM 5000 – Appendix A).

Sampling Locations and Results

Landfill Technologies of Arecibo, LLC has created samplings locations at the Arecibo Municipal Solid Waste Landfill site where the surface emission readings have been collected. LTA presents the sampling locations at Appendix B. These readings were collected with the portable surface detector (SEM 5000) and are presented in Appendix C.

Conclusions and Recommendations

The surface emissions readings were performed for July, August, and September of 2021 monitoring event from the Arecibo Municipal Solid Waste Landfill. This monitoring is part of conclusions quarterly monitoring program aimed to detect abnormal gas release at the landfill. During this event of monitoring the active area (area where the waste was deposited) was located at the top of the landfill, near to points: 16 to 25 and 40 to 50. The LTA personnel inspect the area and there were no cracks that present a hazard to the surface.

The results of the surface emission monitoring for July, August, and September of 2021 events by LTA personnel indicates that during that period no sampling point monitored exceed the LEL for methane which means that the landfill location does not represent a high risk of explosiveness.

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

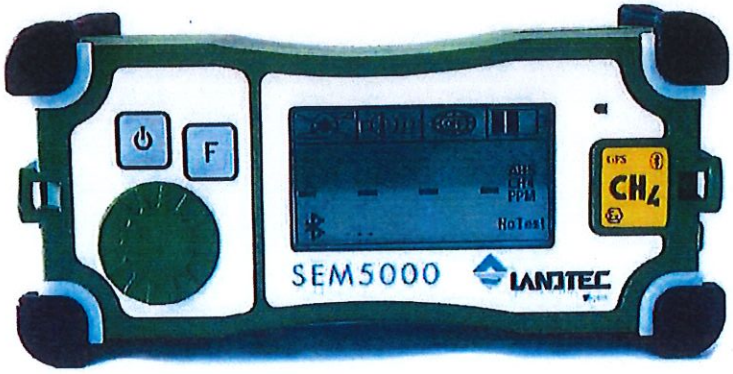
APPENDIX A

Portable Methane Detector – SEM 5000
Surface Emission Monitor Specifications

THE EASY WAY TO MONITOR SURFACE EMISSIONS

SEM5000

PORTABLE METHANE DETECTOR



The SEM5000 Portable Methane Detector is the ideal instrument for landfill surface emissions monitoring, reporting and detecting potential leaks at wellheads and surface penetrations. Thanks to our patented laser technology, the SEM5000 is selective, specifically to methane and is able to detect methane emissions from 0.5ppm to 100% concentration. The SEM5000 is ATEX Zone 1 certified and meets all Method 21 requirements, making it the perfect tool for regulatory compliance.

The hot swap battery saves time and allows you to keep working. The SEM5000 works as long as you do.

The SEM5000 is ATEX certified and meets Method 21 requirements for regulatory compliance.

Our proprietary SEMsoft software is easy to use and offers multiple reporting functions.

The QED Online Weather Tool provides accurate reporting of weather conditions for your scan events.

QED™

QED Environmental Systems Inc.
2355 Bishop Circle West Dexter, MI 48130,USA

INFO@QEDENV.COM
WWW.LANDTECNA.COM

800.624.2026
734.995.2547

FEATURES

Specific to Methane
Wide Measurement Range (0 ppm to 100% volume)
Rapid Response (Less than 2.5 seconds)
Integral GPS and Bluetooth
GPS Accuracy: 2-4 Meters
Meets EPA Method 21 Requirements
ATEX Certified – Zone 1
Laser Technology
Lightweight
Ergonomic
Selector Dial Interface
Proprietary Software
Hot Swap Battery
Expanded Memory
Biennial Calibration

BENEFITS

No Cross-Gas or False Readings
Accurate Measurement
More Efficient
No Additional Devices Required
Accurate Reporting
Maintains Compliance
Intrinsically Safe
Highly Accurate, No Flame, No Hydrogen
Weighs Half as Much as Competing Technologies
Hands-Free Operation
Easy to Use
Multiple Reporting Functions
More Efficient
Holds up to 480 Hours of Scan Data
Saves Money

TECHNICAL SPECIFICATION

Target Gas	Methane (CH4)
Detection Method	Tunable Diode Laser Absorbtion Spectroscopy
Measurement Range	0.5ppm to 100% volume
Instrument Resolution	0.1ppm (0 - 100ppm) 1ppm (100 - 1,000ppm) 5ppm (1,000 - 5,000ppm) 10ppm (5,000 - 10,000ppm)
Pump Flow Rate	0.6 to 1 l/min
Sampling Probe Outside Diameter	4mm
Intrinsic Safety	ATEX Zone 1 Ex II 2 G Ex ib op is IIB T3 Gb Tamb: -30°C to +50°C
Response Time	T90 = 2.5 seconds T90 = 3.5 seconds (w/probe)
GPS Accuracy	2 to 4 meters
Power Supply	Lithium Ion Rechargeable Battery Pack (3.7V - 4000mA/h)
Battery Autonomy	10 hours at 68°F (with backlight activated). 8 hours at extreme temperatures
Battery Charge Duration	8 to 10 hours to full charge
Temperature Range	-13°F to 122°F
Warm Up Time	30 to 60 seconds
Weight	3.5 lbs
Enclosure Protection Level	IP65 / NEMA4
Factory Calibration Requirement	2 years
Field Calibration	Daily (meets Method 21; sections 7.0, 8.0)

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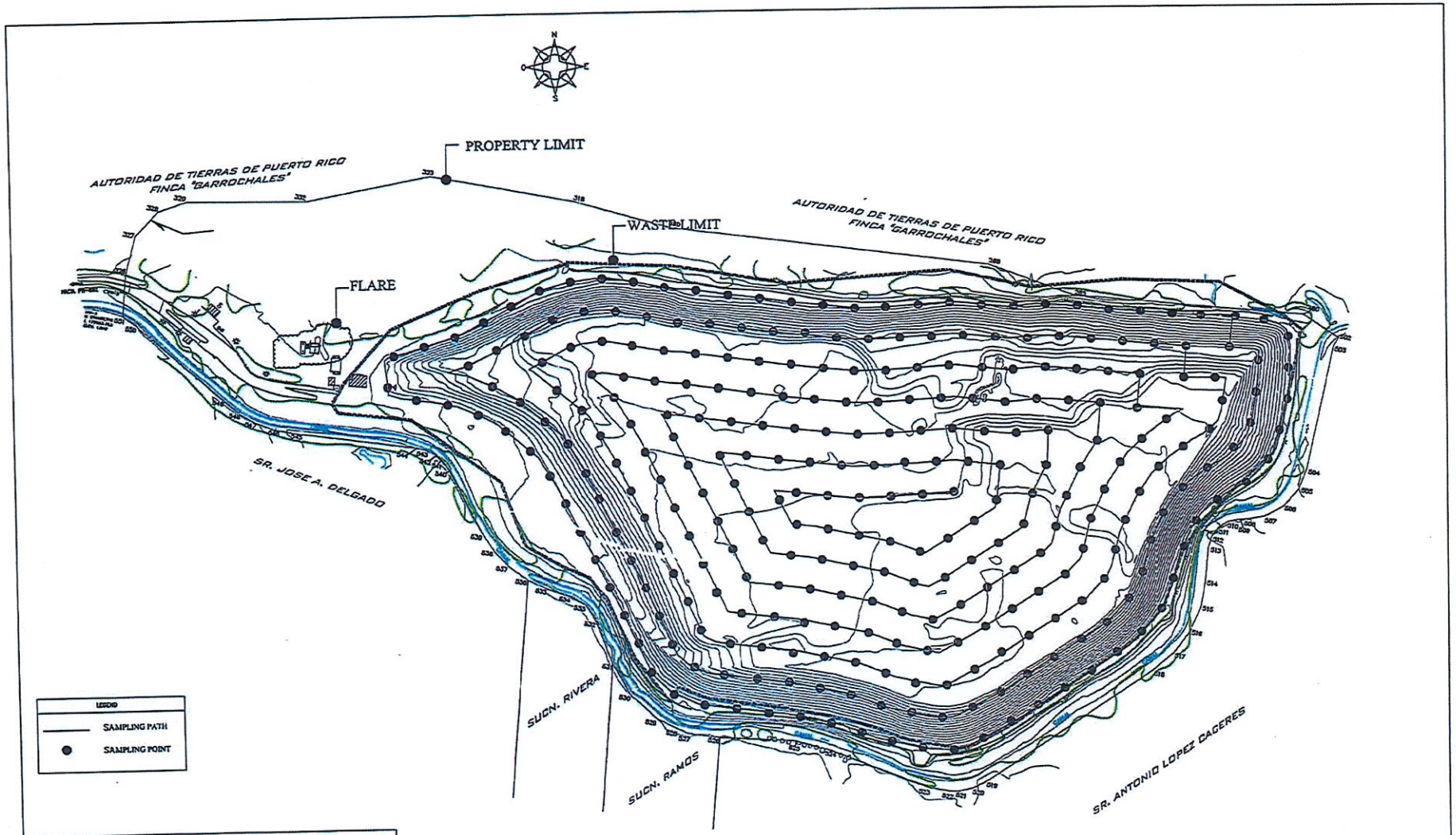
LANDFILL TECHNOLOGIES OF ARECIBO, LLC

APPENDIX B

Sampling Points Locations from Arecibo Municipal Landfill

Bo. Mamey, Carretera 189 km. 9.0, Gurabo, PR 00778 • PO Box 1322 Gurabo, Puerto Rico 00778 • Tel. (787) 273-7639 • Fax (787) 687-0337



NOTES:

1. SEM PATH SHOWN IS FOR FINAL GRADES. SEM CONDUCTED WHILE THE LANDFILL IS AT INTERIM GRADES MAY VARY FROM THE PATH SHOWN. RECORDS OF THE PATH FOLLOWED WILL BE MAINTAINED BY THE FACILITY.

2. SEM PATH WILL BE SPACED 30 M APART IN ACCORDANCE WITH NSPS RULES.

REVISION	DATE	BY	#

ARECIBO MUNICIPAL SOLID WASTE LANDFILL
ARECIBO, P.R

LANDFILL TECHNOLOGIES OF ARECIBO CORP.
Land-Tech

SURFACE EMISSIONS MONITORING
SAMPLING PATH

DRAWING: S-100
SCALE:
DATE: 01/2010

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

APPENDIX C

Surface Emission Readings

Bo. Mamey, Carretera 189 km. 9.0, Gurabo, PR 00778 • PO Box 1322 Gurabo, Puerto Rico 00778 • Tel. (787) 273-7639 • Fax (787) 687-0337

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
Upwind	8/27/2021	14	PPM
Downwind	8/27/2021	11	PPM
1	8/27/2021	1.7	PPM
2	8/27/2021	25	PPM
3	8/27/2021	28.8	PPM
4	8/27/2021	32.9	PPM
5	8/27/2021	36.2	PPM
6	8/27/2021	51.2	PPM
7	8/27/2021	57.1	PPM
8	8/27/2021	24.5	PPM
9	8/27/2021	3.3	PPM
10	8/27/2021	7.4	PPM
11	8/27/2021	3	PPM
12	8/27/2021	13.8	PPM
13	8/27/2021	44.8	PPM
14	8/27/2021	17.6	PPM
15	8/27/2021	82.6	PPM
16	8/27/2021	140.7	PPM
17	8/27/2021	68.4	PPM
18	8/27/2021	228.2	PPM
19	8/27/2021	150	PPM
20	8/27/2021	70.1	PPM
21	8/27/2021	106.6	PPM
22	8/27/2021	99.9	PPM
23	8/27/2021	185.7	PPM
24	8/27/2021	63.9	PPM
25	8/27/2021	59	PPM
26	8/27/2021	65.7	PPM
27	8/27/2021	48	PPM
28	8/27/2021	28.6	PPM
29	8/27/2021	53.9	PPM
30	8/27/2021	59.6	PPM
31	8/27/2021	68.9	PPM
32	8/27/2021	87.6	PPM
33	8/27/2021	96.6	PPM
34	8/27/2021	123.4	PPM
35	8/27/2021	57.2	PPM
36	8/27/2021	42.5	PPM
37	8/27/2021	141.1	PPM
38	8/27/2021	131.1	PPM
39	8/27/2021	43.4	PPM
40	8/27/2021	321.9	PPM
41	8/27/2021	209.6	PPM
42	8/27/2021	215	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
43	8/27/2021	171.5	PPM
44	8/27/2021	229.6	PPM
45	8/27/2021	233.8	PPM
46	8/27/2021	192.3	PPM
47	8/27/2021	292.3	PPM
48	8/27/2021	132.4	PPM
49	8/27/2021	81	PPM
50	8/27/2021	109.3	PPM
51	8/27/2021	74.9	PPM
52	8/27/2021	158.2	PPM
53	8/27/2021	366.6	PPM
54	8/27/2021	114	PPM
55	8/27/2021	90.5	PPM
56	8/27/2021	167.8	PPM
57	8/27/2021	116.6	PPM
58	8/27/2021	88.5	PPM
59	8/27/2021	326.3	PPM
60	8/27/2021	360.1	PPM
61	8/27/2021	287.4	PPM
62	8/27/2021	245.3	PPM
63	8/27/2021	160.7	PPM
64	8/27/2021	64.7	PPM
65	8/27/2021	53.4	PPM
66	8/27/2021	97.2	PPM
67	8/27/2021	95.1	PPM
68	8/27/2021	82.3	PPM
69	8/27/2021	163.7	PPM
70	8/27/2021	156.7	PPM
71	8/27/2021	109.2	PPM
72	8/27/2021	105	PPM
73	8/27/2021	97.5	PPM
74	8/27/2021	174.6	PPM
75	8/27/2021	152.6	PPM
76	8/27/2021	81.1	PPM
77	8/27/2021	59.4	PPM
78	8/27/2021	134.9	PPM
79	8/27/2021	53.1	PPM
80	8/27/2021	108.6	PPM
81	8/27/2021	50.1	PPM
82	8/27/2021	78.3	PPM
83	8/27/2021	72.1	PPM
84	8/27/2021	89.4	PPM
85	8/27/2021	192	PPM
86	8/27/2021	173.8	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
87	8/27/2021	29.7	PPM
88	8/27/2021	29.4	PPM
89	8/27/2021	32.5	PPM
90	8/27/2021	18.8	PPM
91	8/27/2021	33.1	PPM
92	8/27/2021	29.0	PPM
93	8/27/2021	33.6	PPM
94	8/27/2021	45.2	PPM
95	8/27/2021	35	PPM
96	8/27/2021	101.5	PPM
97	8/27/2021	81.5	PPM
98	8/27/2021	58	PPM
99	8/27/2021	39.2	PPM
100	8/27/2021	51	PPM
101	8/27/2021	19.8	PPM
102	8/27/2021	28.5	PPM
103	8/27/2021	43.1	PPM
104	8/27/2021	21.9	PPM
105	8/27/2021	148.2	PPM
106	8/27/2021	85.2	PPM
107	8/27/2021	54.5	PPM
108	8/27/2021	39.2	PPM
109	8/27/2021	57.9	PPM
110	8/27/2021	49.9	PPM
111	8/27/2021	52.4	PPM
112	8/27/2021	51.9	PPM
113	8/27/2021	38.6	PPM
114	8/27/2021	45.2	PPM
115	8/27/2021	42.9	PPM
116	8/27/2021	19.5	PPM
117	8/27/2021	36.5	PPM
118	8/27/2021	39.1	PPM
119	8/27/2021	34.7	PPM
120	8/27/2021	34.8	PPM
121	8/27/2021	48.3	PPM
122	8/28/2021	52.8	PPM
123	8/28/2021	54.5	PPM
124	8/28/2021	27.2	PPM
125	8/28/2021	52.5	PPM
126	8/28/2021	48.8	PPM
127	8/28/2021	45	PPM
128	8/28/2021	44.2	PPM
129	8/28/2021	49.4	PPM
130	8/28/2021	25.4	PPM

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LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
131	8/28/2021	50	PPM
132	8/28/2021	23.5	PPM
133	8/28/2021	19.3	PPM
134	8/28/2021	34.3	PPM
135	8/28/2021	27.4	PPM
136	8/28/2021	31.3	PPM
137	8/28/2021	56.6	PPM
138	8/28/2021	49.2	PPM
139	8/28/2021	38.7	PPM
140	8/28/2021	30.9	PPM
141	8/28/2021	71.3	PPM
142	8/28/2021	92.8	PPM
143	8/28/2021	26.7	PPM
144	8/28/2021	48.2	PPM
145	8/28/2021	39.3	PPM
146	8/28/2021	44	PPM
147	8/28/2021	20.9	PPM
148	8/28/2021	36.9	PPM
149	8/28/2021	54.6	PPM
150	8/28/2021	96.7	PPM
151	8/28/2021	112.8	PPM
152	8/28/2021	71.5	PPM
153	8/28/2021	72.3	PPM
154	8/28/2021	74.5	PPM
155	8/28/2021	35.4	PPM
156	8/28/2021	65.9	PPM
157	8/28/2021	65.4	PPM
158	8/28/2021	51.9	PPM
159	8/28/2021	38.4	PPM
160	8/28/2021	56.5	PPM
161	8/28/2021	66.2	PPM
162	8/28/2021	52.1	PPM
163	8/28/2021	62.2	PPM
164	8/28/2021	48.6	PPM
165	8/28/2021	45.5	PPM
166	8/28/2021	46.7	PPM
167	8/28/2021	7.9	PPM
168	8/28/2021	56.7	PPM
169	8/28/2021	56.4	PPM
170	8/28/2021	26.4	PPM
171	8/28/2021	48.3	PPM
172	8/28/2021	48.0	PPM
173	8/28/2021	23.7	PPM
174	8/28/2021	23.4	PPM

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LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
175	8/28/2021	27.6	PPM
176	8/28/2021	51.6	PPM
177	8/28/2021	33.4	PPM
178	8/28/2021	78.8	PPM
179	8/28/2021	27.8	PPM
180	8/28/2021	52.7	PPM
181	8/28/2021	54.1	PPM
182	8/28/2021	45.5	PPM
183	8/28/2021	33.7	PPM
184	8/28/2021	44.9	PPM
185	8/28/2021	52.6	PPM
186	8/28/2021	54.3	PPM
187	8/28/2021	26.9	PPM
188	8/28/2021	51.5	PPM
189	8/28/2021	51.5	PPM
190	8/28/2021	52.9	PPM
191	8/28/2021	40.5	PPM
192	8/28/2021	47.5	PPM
193	8/28/2021	58.3	PPM
194	8/28/2021	49.6	PPM
195	8/28/2021	67.4	PPM
196	8/28/2021	92.1	PPM
197	8/28/2021	76.4	PPM
198	8/28/2021	77.7	PPM
199	8/28/2021	91.8	PPM
200	8/28/2021	79.6	PPM
201	8/28/2021	76.7	PPM
202	8/28/2021	39.7	PPM
203	8/28/2021	73	PPM
204	8/28/2021	86.4	PPM
205	8/28/2021	21.9	PPM
206	8/28/2021	37.4	PPM
207	8/28/2021	28	PPM
208	8/28/2021	20	PPM
209	8/28/2021	19.6	PPM
210	8/28/2021	27.1	PPM
211	8/28/2021	17.9	PPM
212	8/28/2021	22.2	PPM
213	8/28/2021	57.3	PPM
214	8/28/2021	60.1	PPM
215	8/28/2021	62.9	PPM
216	8/28/2021	31.2	PPM
217	8/28/2021	56.8	PPM
218	8/28/2021	28.9	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
219	8/28/2021	16.1	PPM
220	8/28/2021	14.1	PPM
221	8/28/2021	24.3	PPM
222	8/28/2021	28.3	PPM
223	8/28/2021	33	PPM
224	8/28/2021	5.9	PPM
225	8/28/2021	25.9	PPM
226	8/28/2021	26.7	PPM
227	8/28/2021	29.8	PPM
228	8/28/2021	33.8	PPM
229	8/28/2021	6.7	PPM
230	8/28/2021	22.5	PPM
231	8/28/2021	13.5	PPM
232	8/28/2021	3.8	PPM
233	8/28/2021	19	PPM
234	8/28/2021	25.1	PPM
235	8/28/2021	43.9	PPM
236	8/28/2021	12.8	PPM
237	8/28/2021	6	PPM
238	8/28/2021	33.7	PPM
239	8/28/2021	26.8	PPM
240	8/28/2021	28.9	PPM
241	8/28/2021	27.7	PPM
242	8/28/2021	18.5	PPM
243	8/28/2021	31.4	PPM
244	8/28/2021	31.5	PPM
245	8/28/2021	20.7	PPM
246	8/28/2021	19.0	PPM
247	8/28/2021	31.4	PPM
248	8/28/2021	33.3	PPM
249	8/28/2021	34.3	PPM
250	8/28/2021	5.6	PPM
251	8/28/2021	25.7	PPM
252	8/28/2021	30.2	PPM
253	8/28/2021	33.3	PPM
254	8/28/2021	30.6	PPM
255	8/28/2021	5.2	PPM
256	8/28/2021	9.1	PPM
257	8/28/2021	2.5	PPM
258	8/28/2021	16.2	PPM
259	8/28/2021	27.3	PPM
260	8/28/2021	51.4	PPM
261	8/28/2021	2.5	PPM
262	8/28/2021	15.8	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
AUGUST 2021

Point ID	Date	Concentration	Concentration Unit
263	8/28/2021	7	PPM
264	8/28/2021	4.6	PPM
265	8/28/2021	21.4	PPM
266	8/28/2021	21.9	PPM
267	8/28/2021	18.7	PPM
268	8/28/2021	18.4	PPM
269	8/28/2021	3.3	PPM
270	8/28/2021	9.6	PPM
271	8/28/2021	18.1	PPM
272	8/28/2021	1.2	PPM
273	8/28/2021	70.2	PPM
274	8/28/2021	35.8	PPM
275	8/28/2021	19.4	PPM
276	8/28/2021	9.9	PPM
277	8/28/2021	21	PPM
278	8/28/2021	16.8	PPM
279	8/28/2021	19	PPM
280	8/28/2021	19.1	PPM
281	8/28/2021	11.9	PPM
282	8/28/2021	17.3	PPM
283	8/28/2021	17.1	PPM
284	8/28/2021	18.2	PPM
285	8/28/2021	19.6	PPM
286	8/28/2021	3.5	PPM
287	8/28/2021	14.4	PPM
288	8/28/2021	17.7	PPM
289	8/28/2021	18.1	PPM
290	8/28/2021	18.2	PPM
291	8/28/2021	3.2	PPM
292	8/28/2021	15.5	PPM
293	8/28/2021	16.3	PPM
294	8/28/2021	17	PPM
295	8/28/2021	13.1	PPM
296	8/28/2021	13.2	PPM
297	8/28/2021	11.7	PPM
298	8/28/2021	8.4	PPM
299	8/28/2021	7.6	PPM
300	8/28/2021	3.5	PPM
301	8/28/2021	1.5	PPM
302	8/28/2021	2	PPM
303	8/28/2021	2.2	PPM
304	8/28/2021	2.2	PPM

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Surface Methane Gas Monitoring at the Arecibo Municipal Solid Waste Landfill

Quarterly Event Report

Prepared by:
Landfill Technologies of Arecibo, LLC.

October to December 2021

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Conclusions and Recommendations 4

Appendixes 5

Appendix A: SEM 5000 – Portable Methane Detector: Surface Emission Monitor Specifications

Appendix B: Sampling Points Locations form Arecibo Municipal Landfill

Appendix C: Surface Emission Readings

Introduction

Landfill Technologies of Arecibo, LLC (LTA) has conducted on October, November, and December of 2021 the surface and perimeter methane gas monitoring event at the Arecibo Municipal Solid Waste Landfill as part of the operation of the Gas Collection and Control System (GCCS). This event is also performed as part of the state and federal agency's for environment requirements for solid waste landfills.

The surface methane gas monitoring was performed by Landfill Technologies of Arecibo, LLC (LTA) personnel during November 4th and 5th, 2021 according to the following rule of the "Enmiendas al Reglamento para el Control de la Contaminación Atmosférica de la Junta de Calidad Ambiental para cumplir con los requisitos para Planes Estatales de la Sección 111 (d) de la Ley Federal de Aire Limpio para Implantar las Guías de Emisiones para Sistemas de Relleno Sanitario", and 40 CFR 60.753(d). This monitoring consisted of obtaining readings with a Methane portable instrument (SEM 5000) surface detector, please refer to Appendix A for specifications of instrument from landfill surface, gas collection system and ambient monitoring.

Objectives

The objective of this event (the surface methane gas monitoring) is to ensure that the concentration of methane (CH_4) generated by the landfill does not exceed the lower explosive limit (LEL) of methane at the facility. The LEL for this monitoring is 500 ppm (parts per million) or 25%. If the personnel of LTA detect any release that exceeds the LEL it will require notification to the owner or operator and an expansion of the monitoring program to determine the vertical and horizontal extent of the release.

Description

The surface methane operational standards consist of monitoring the surface emissions of methane along the entire perimeter of the collection area and along a serpentine patter 30 meter apart (or site specific established spacing) for each collection area using a portable surface detector (SEM 5000 – Appendix A).

Sampling Locations and Results

Landfill Technologies of Arecibo, LLC has created sampling's locations at the Arecibo Municipal Solid Waste Landfill site where the surface emission readings have been collected. LTA presents the sampling locations at Appendix B. These readings were collected with the portable surface detector (SEM 5000) and are presented in Appendix C.

Conclusions and Recommendations

The surface emissions readings were performed for October, November, and December of 2021 monitoring event from the Arecibo Municipal Solid Waste Landfill. This monitoring is part of conclusions quarterly monitoring program aimed to detect abnormal gas release at the landfill. During this event of monitoring the active area (area where the waste was deposited) was located at the top of the landfill toward to the South side. The LTA personnel inspect the area and there were no cracks that present a hazard to the surface.

The results of the surface emission monitoring for October, November, and December of 2021 events by LTA personnel indicates that during that period no sampling point monitored exceed the LEL for methane which means that the landfill location does not represent a high risk of explosiveness.

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

APPENDIX A

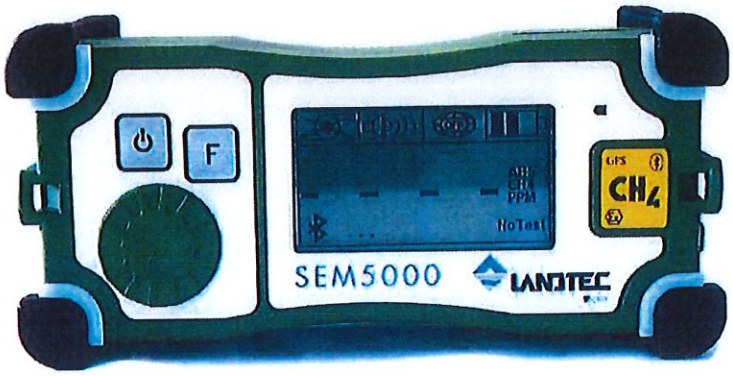
Portable Methane Detector – SEM 5000
Surface Emission Monitor Specifications

Bo. Mamey, Carretera 189 km. 9.0, Gurabo, PR 00778 • PO Box 1322 Gurabo, Puerto Rico 00778 • Tel. (787) 273-7639 • Fax (787) 687-0337

THE EASY WAY TO MONITOR SURFACE EMISSIONS

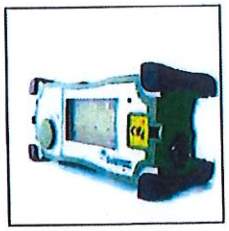
SEM5000

PORTABLE METHANE DETECTOR



The SEM5000 Portable Methane Detector is the ideal instrument for landfill surface emissions monitoring, reporting and detecting potential leaks at wellheads and surface penetrations. Thanks to our patented laser technology, the SEM5000 is selective, specifically to methane and is able to detect methane emissions from 0.5ppm to 100% concentration. The SEM5000 is ATEX Zone 1 certified and meets all Method 21 requirements, making it the perfect tool for regulatory compliance.

The hot swap battery saves time and allows you to keep working. The SEM5000 works as long as you do.



The SEM5000 is ATEX certified and meets Method 21 requirements for regulatory compliance.

Our proprietary SEMsoft software is easy to use and offers multiple reporting functions.

The QED Online Weather Tool provides accurate reporting of weather conditions for your scan events.

QED™

QED Environmental Systems Inc.
2355 Bishop Circle West Dexter, MI 48130,USA

INFO@QEDENV.COM
WWW.LANDTECNA.COM

800.624.2026
734.995.2547

FEATURES

Specific to Methane
Wide Measurement Range (0 ppm to 100% volume)
Rapid Response (Less than 2.5 seconds)
Integral GPS and Bluetooth
GPS Accuracy: 2-4 Meters
Meets EPA Method 21 Requirements
ATEX Certified – Zone 1
Laser Technology
Lightweight
Ergonomic
Selector Dial Interface
Proprietary Software
Hot Swap Battery
Expanded Memory
Biennial Calibration

BENEFITS

No Cross-Gas or False Readings
Accurate Measurement
More Efficient
No Additional Devices Required
Accurate Reporting
Maintains Compliance
Intrinsically Safe
Highly Accurate, No Flame, No Hydrogen
Weighs Half as Much as Competing Technologies
Hands-Free Operation
Easy to Use
Multiple Reporting Functions
More Efficient
Holds up to 480 Hours of Scan Data
Saves Money

TECHNICAL SPECIFICATION

Target Gas	Methane (CH4)
Detection Method	Tunable Diode Laser Absorbtion Spectroscopy
Measurement Range	0.5ppm to 100% volume
Instrument Resolution	0.1ppm (0 - 100ppm) 1ppm (100 - 1,000ppm) 5ppm (1,000 - 5,000ppm) 10ppm (5,000 - 10,000ppm)
Pump Flow Rate	0.6 to 1 l/min
Sampling Probe Outside Diameter	4mm
Intrinsic Safety	ATEX Zone 1 Ex II 2 G Ex ib op is IIB T3 Gb Tamb: -30°C to +50°C
Response Time	T90 = 2.5 seconds T90 = 3.5 seconds (w/probe)
GPS Accuracy	2 to 4 meters
Power Supply	Lithium Ion Rechargeable Battery Pack (3.7V - 4000mA/h)
Battery Autonomy	10 hours at 68°F (with backlight activated). 8 hours at extreme temperatures
Battery Charge Duration	8 to 10 hours to full charge
Temperature Range	-13°F to 122°F
Warm Up Time	30 to 60 seconds
Weight	3.5 lbs.
Enclosure Protection Level	IP65 / NEMA4
Factory Calibration Requirement	2 years
Field Calibration	Daily (meets Method 21; sections 7.0, 8.0)

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

APPENDIX B

Sampling Points Locations from Arecibo Municipal Landfill

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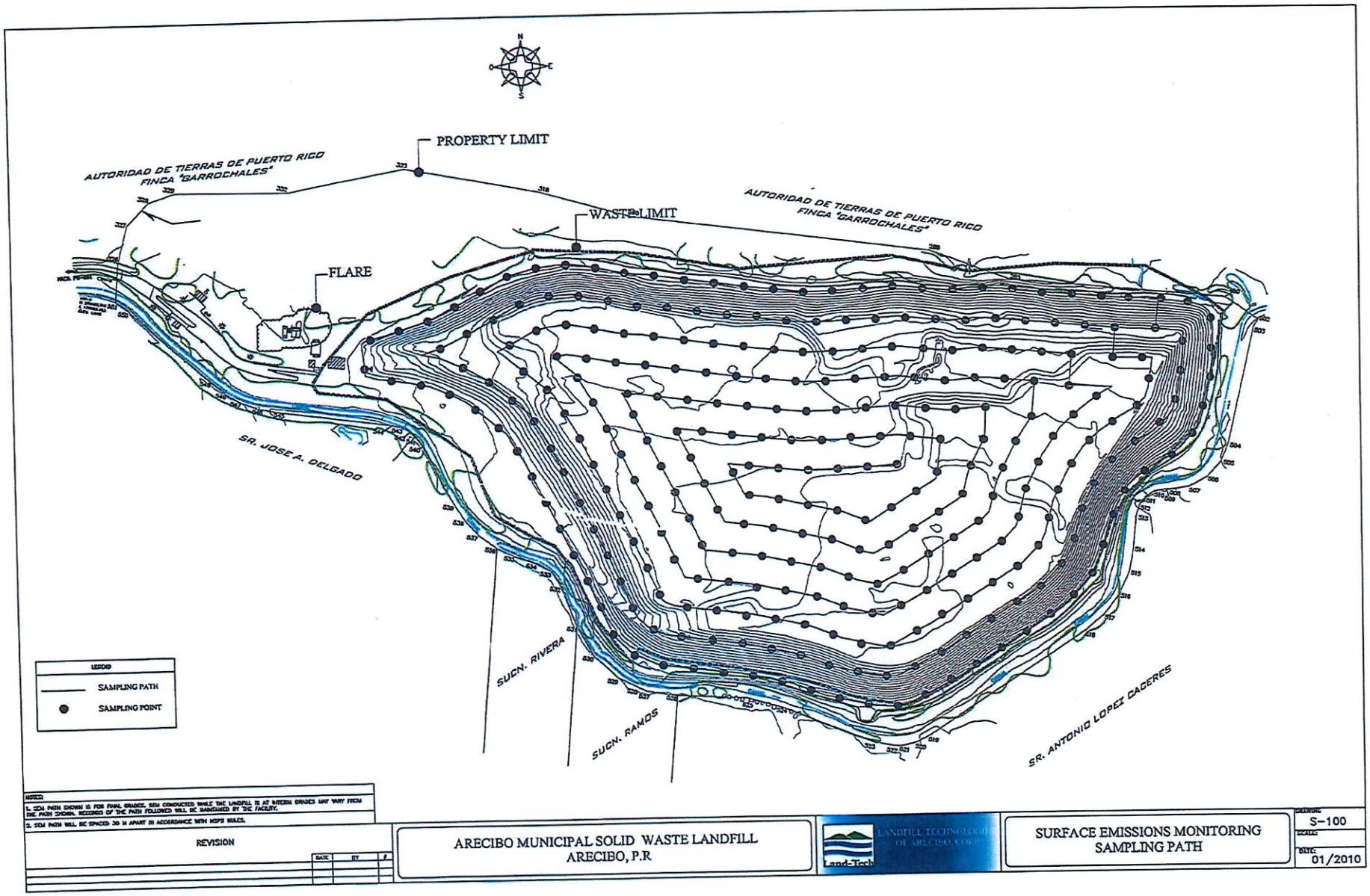

NOTES:

1. SEM PATH SHOWN IS FOR FINAL GRADES. SEM CONDUCTED WHILE THE LANDFILL IS AT INTERIM GRADES MAY VARY FROM THE PATH SHOWN. RECORDS OF THE PATH FOLLOWED WILL BE MAINTAINED BY THE FACILITY.
2. SEM PATH WILL BE SPACED 30 ft APART IN ACCORDANCE WITH NSPS RULES.

REVISION	DATE	BY	#

ARECIBO MUNICIPAL SOLID WASTE LANDFILL
ARECIBO, P.R

LANDFILL TECHNOLOGIES OF ARECIBO, CORP.
Land-Tech

SURFACE EMISSIONS MONITORING
SAMPLING PATH

DRAWING: S-100
SCALE:
DATE: 01/2010

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LANDFILL TECHNOLOGIES OF ARECIBO, LLC

APPENDIX C

Surface Emission Readings

Bo. Mamey, Carretera 189 km. 9.0, Gurabo, PR 00778 • PO Box 1322 Gurabo, Puerto Rico 00778 • Tel. (787) 273-7639 • Fax (787) 687-0337

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
Upwind	11/4/2021	9.9	PPM
Downwind	11/4/2021	12	PPM
1	11/4/2021	1.5	PPM
2	11/4/2021	1.5	PPM
3	11/4/2021	9.4	PPM
4	11/4/2021	11.6	PPM
5	11/4/2021	24.2	PPM
6	11/4/2021	20.6	PPM
7	11/4/2021	22.1	PPM
8	11/4/2021	43.0	PPM
9	11/4/2021	32.2	PPM
10	11/4/2021	33.6	PPM
11	11/4/2021	30.6	PPM
12	11/4/2021	15.9	PPM
13	11/4/2021	8.2	PPM
14	11/4/2021	4.3	PPM
15	11/4/2021	1.8	PPM
16	11/4/2021	2.5	PPM
17	11/4/2021	5.0	PPM
18	11/4/2021	61.2	PPM
19	11/4/2021	60.5	PPM
20	11/4/2021	59.6	PPM
21	11/4/2021	26.7	PPM
22	11/4/2021	9.2	PPM
23	11/4/2021	60.5	PPM
24	11/4/2021	49.4	PPM
25	11/4/2021	21.4	PPM
26	11/4/2021	28.5	PPM
27	11/4/2021	4.4	PPM
28	11/4/2021	15.7	PPM
29	11/4/2021	13.3	PPM
30	11/4/2021	15.7	PPM
31	11/4/2021	11.4	PPM
32	11/4/2021	15.8	PPM
33	11/4/2021	11.6	PPM
34	11/4/2021	8.8	PPM
35	11/4/2021	8.5	PPM
36	11/4/2021	16.9	PPM
37	11/4/2021	16.1	PPM
38	11/4/2021	66.2	PPM
39	11/4/2021	48.9	PPM
40	11/4/2021	6.4	PPM
41	11/4/2021	40.7	PPM
42	11/4/2021	33.2	PPM
43	11/4/2021	66.1	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
44	11/4/2021	17.7	PPM
45	11/4/2021	207.3	PPM
46	11/4/2021	177.5	PPM
47	11/4/2021	60.0	PPM
48	11/4/2021	146.2	PPM
49	11/4/2021	155.2	PPM
50	11/4/2021	13.8	PPM
51	11/4/2021	4.7	PPM
52	11/4/2021	5.1	PPM
53	11/4/2021	203.2	PPM
54	11/4/2021	158.3	PPM
55	11/4/2021	24.8	PPM
56	11/4/2021	69.2	PPM
57	11/4/2021	190.4	PPM
58	11/4/2021	31.2	PPM
59	11/4/2021	70.1	PPM
60	11/4/2021	106.6	PPM
61	11/4/2021	30.9	PPM
62	11/4/2021	69.0	PPM
63	11/4/2021	20.4	PPM
64	11/4/2021	41.2	PPM
65	11/4/2021	105.7	PPM
66	11/4/2021	62.0	PPM
67	11/4/2021	22.8	PPM
68	11/4/2021	21.4	PPM
69	11/4/2021	23.9	PPM
70	11/4/2021	17.4	PPM
71	11/4/2021	23.7	PPM
72	11/4/2021	42.9	PPM
73	11/4/2021	40.4	PPM
74	11/4/2021	101.9	PPM
75	11/4/2021	149.0	PPM
76	11/4/2021	193.2	PPM
77	11/4/2021	256.6	PPM
78	11/4/2021	135.5	PPM
79	11/4/2021	74.6	PPM
80	11/4/2021	198.0	PPM
81	11/4/2021	90.7	PPM
82	11/4/2021	86.3	PPM
83	11/5/2021	169.7	PPM
84	11/5/2021	126.4	PPM
85	11/5/2021	130.1	PPM
86	11/5/2021	193.8	PPM
87	11/5/2021	98.0	PPM
88	11/5/2021	172.3	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
89	11/5/2021	73.2	PPM
90	11/5/2021	285.6	PPM
91	11/5/2021	232.9	PPM
92	11/5/2021	81.5	PPM
93	11/5/2021	129.7	PPM
94	11/5/2021	79.1	PPM
95	11/5/2021	90.4	PPM
96	11/5/2021	16.9	PPM
97	11/5/2021	39.4	PPM
98	11/5/2021	114.3	PPM
99	11/5/2021	227.4	PPM
100	11/5/2021	282.8	PPM
101	11/5/2021	87.0	PPM
102	11/5/2021	97.2	PPM
103	11/5/2021	46.6	PPM
104	11/5/2021	82.3	PPM
105	11/5/2021	129.8	PPM
106	11/5/2021	185.5	PPM
107	11/5/2021	90.8	PPM
108	11/5/2021	165.6	PPM
109	11/5/2021	166.2	PPM
110	11/5/2021	122.1	PPM
111	11/5/2021	38.9	PPM
112	11/5/2021	99.8	PPM
113	11/5/2021	51.8	PPM
114	11/5/2021	237.1	PPM
115	11/5/2021	245.9	PPM
116	11/5/2021	229.4	PPM
117	11/5/2021	284.1	PPM
118	11/5/2021	175.9	PPM
119	11/5/2021	34.4	PPM
120	11/5/2021	148.7	PPM
121	11/5/2021	52.7	PPM
122	11/5/2021	128.5	PPM
123	11/5/2021	113.1	PPM
124	11/5/2021	97.0	PPM
125	11/5/2021	61.7	PPM
126	11/5/2021	59.3	PPM
127	11/5/2021	76.1	PPM
128	11/5/2021	50.6	PPM
129	11/5/2021	47.1	PPM
130	11/5/2021	26.8	PPM
131	11/5/2021	28.8	PPM
132	11/5/2021	48.6	PPM
133	11/5/2021	39.0	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
134	11/5/2021	22.8	PPM
135	11/5/2021	37.9	PPM
136	11/5/2021	62.3	PPM
137	11/5/2021	69.9	PPM
138	11/5/2021	78.8	PPM
139	11/5/2021	29.3	PPM
140	11/5/2021	57.1	PPM
141	11/5/2021	73.6	PPM
142	11/5/2021	115.6	PPM
143	11/5/2021	97.7	PPM
144	11/5/2021	78.0	PPM
145	11/5/2021	166.4	PPM
146	11/5/2021	149.8	PPM
147	11/5/2021	74.9	PPM
148	11/5/2021	35.2	PPM
149	11/5/2021	51.8	PPM
150	11/5/2021	72.6	PPM
151	11/5/2021	126.6	PPM
152	11/5/2021	55.9	PPM
153	11/5/2021	82.0	PPM
154	11/5/2021	72.3	PPM
155	11/5/2021	77.8	PPM
156	11/5/2021	92.0	PPM
157	11/5/2021	115.2	PPM
158	11/5/2021	76.0	PPM
159	11/5/2021	42.9	PPM
160	11/5/2021	50.7	PPM
161	11/5/2021	47.5	PPM
162	11/5/2021	44.7	PPM
163	11/5/2021	43.3	PPM
164	11/5/2021	63.0	PPM
165	11/5/2021	75.1	PPM
166	11/5/2021	111.5	PPM
167	11/5/2021	66.4	PPM
168	11/5/2021	108.8	PPM
169	11/5/2021	157.2	PPM
170	11/5/2021	42.1	PPM
171	11/5/2021	62.5	PPM
172	11/5/2021	49.2	PPM
173	11/5/2021	31.9	PPM
174	11/5/2021	25.8	PPM
175	11/5/2021	43.2	PPM
176	11/5/2021	43.5	PPM
177	11/5/2021	46.2	PPM
178	11/5/2021	7.1	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
179	11/5/2021	31.6	PPM
180	11/5/2021	42.9	PPM
181	11/5/2021	50.9	PPM
182	11/5/2021	54.9	PPM
183	11/5/2021	9.4	PPM
184	11/5/2021	32.0	PPM
185	11/5/2021	18.9	PPM
186	11/5/2021	5.0	PPM
187	11/5/2021	54.1	PPM
188	11/5/2021	59.0	PPM
189	11/5/2021	10.7	PPM
190	11/5/2021	29.8	PPM
191	11/5/2021	55.6	PPM
192	11/5/2021	3.4	PPM
193	11/5/2021	167.0	PPM
194	11/5/2021	76.9	PPM
195	11/5/2021	38.3	PPM
196	11/5/2021	20.9	PPM
197	11/5/2021	46.8	PPM
198	11/5/2021	38.9	PPM
199	11/5/2021	44.5	PPM
200	11/5/2021	45.3	PPM
201	11/5/2021	28.4	PPM
202	11/5/2021	46.7	PPM
203	11/5/2021	95.1	PPM
204	11/5/2021	18.2	PPM
205	11/5/2021	7.8	PPM
206	11/5/2021	43.9	PPM
207	11/5/2021	32.5	PPM
208	11/5/2021	32.5	PPM
209	11/5/2021	48.8	PPM
210	11/5/2021	27.5	PPM
211	11/5/2021	37.7	PPM
212	11/5/2021	37.1	PPM
213	11/5/2021	24.7	PPM
214	11/5/2021	22.8	PPM
215	11/5/2021	30.2	PPM
216	11/5/2021	29.3	PPM
217	11/5/2021	30.6	PPM
218	11/5/2021	34.1	PPM
219	11/5/2021	52.7	PPM
220	11/5/2021	28.6	PPM
221	11/5/2021	26.5	PPM
222	11/5/2021	73.3	PPM
223	11/5/2021	100.9	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
224	11/5/2021	108.0	PPM
225	11/5/2021	54.7	PPM
226	11/5/2021	99.7	PPM
227	11/5/2021	61.1	PPM
228	11/5/2021	73.4	PPM
229	11/5/2021	13.5	PPM
230	11/5/2021	64.3	PPM
231	11/5/2021	71.0	PPM
232	11/5/2021	162.6	PPM
233	11/5/2021	102.2	PPM
234	11/5/2021	32.2	PPM
235	11/5/2021	11.3	PPM
236	11/5/2021	2.9	PPM
237	11/5/2021	23.6	PPM
238	11/5/2021	41.4	PPM
239	11/5/2021	77.7	PPM
240	11/5/2021	3.7	PPM
241	11/5/2021	26.8	PPM
242	11/5/2021	13.5	PPM
243	11/5/2021	8.7	PPM
244	11/5/2021	40.3	PPM
245	11/5/2021	40.8	PPM
246	11/5/2021	25.4	PPM
247	11/5/2021	38.9	PPM
248	11/5/2021	39.9	PPM
249	11/5/2021	40.5	PPM
250	11/5/2021	38.4	PPM
251	11/5/2021	6.5	PPM
252	11/5/2021	29.5	PPM
253	11/5/2021	32.3	PPM
254	11/5/2021	35.4	PPM
255	11/5/2021	36.9	PPM
256	11/5/2021	6.6	PPM
257	11/5/2021	34.8	PPM
258	11/5/2021	37.0	PPM
259	11/5/2021	35.5	PPM
260	11/5/2021	30.8	PPM
261	11/5/2021	54.4	PPM
262	11/5/2021	67.4	PPM
263	11/5/2021	73.7	PPM
264	11/5/2021	95.9	PPM
265	11/5/2021	88.4	PPM
266	11/5/2021	96.5	PPM
267	11/5/2021	75.6	PPM
268	11/5/2021	10.3	PPM

Appendix C

LANDFILL TECHNOLOGIES OF ARECIBO LLC
SURFACE EMISSION MONITORING – ARECIBO LANDFILL
NOVEMBER 2021

Point ID	Date	Concentration	Concentration Unit
269	11/5/2021	44.2	PPM
270	11/5/2021	42.6	PPM
271	11/5/2021	21.3	PPM
272	11/5/2021	34.7	PPM
273	11/5/2021	34.7	PPM
274	11/5/2021	22.2	PPM
275	11/5/2021	36.0	PPM
276	11/5/2021	37.1	PPM
277	11/5/2021	37.9	PPM
278	11/5/2021	65.0	PPM
279	11/5/2021	69.9	PPM
280	11/5/2021	35.0	PPM
281	11/5/2021	52.2	PPM
282	11/5/2021	49.4	PPM
283	11/5/2021	24.4	PPM
284	11/5/2021	24.7	PPM
285	11/5/2021	29.3	PPM
286	11/5/2021	51.8	PPM
287	11/5/2021	32.2	PPM
288	11/5/2021	75.9	PPM
289	11/5/2021	71.8	PPM
290	11/5/2021	66.7	PPM
291	11/5/2021	78.2	PPM
292	11/5/2021	52.0	PPM
293	11/5/2021	47.3	PPM
294	11/5/2021	34.8	PPM
295	11/5/2021	16.1	PPM
296	11/5/2021	26.2	PPM
297	11/5/2021	27.3	PPM
298	11/5/2021	51.7	PPM
299	11/5/2021	25.2	PPM
300	11/5/2021	8.4	PPM
301	11/5/2021	11.2	PPM
302	11/5/2021	6.4	PPM
303	11/5/2021	11.9	PPM
304	11/5/2021	5.2	PPM