

Johnson, Sabrina O

From: Patrick Kardish <PKardish@jonesedmunds.com>
Sent: Friday, November 9, 2018 3:53 PM
To: Morgan, Steve
Cc: Henry.Norris@citrusbocc.com; Ray.Oates@citrusbocc.com; Troy Hays
Subject: 2018.11.9_RPT_Citrus_WACS 39859_18Q4 Gas Mon
Attachments: 2018.11.9_RPT_Citrus_WACS 39859_18Q4 Gas Mon.pdf

Good Afternoon Steve,

Attached is the Fourth Quarter 2018 Landfill Gas Monitoring Report for the Citrus County Central Landfill (WACS 39859).

Please let us know if you have any problems opening the attachment or have questions or comments concerning the report.

Thank you,

Patrick Kardish
Environmental Data Analyst



p. 352.377.5821 x. 1411

JONESEDMUNDS.COM

730 NE Waldo Road, Gainesville, FL 32641



The information contained in this message including any attachment is confidential. It is intended for the private use of the intended addressee only. If you are not the intended addressee, please immediately notify the sender by reply email and destroy the original transmission and any attachment. Email transmission of information cannot be guaranteed to be free of error or other defect. If verification is required, request a hard-copy version. The sender disclaims liability for any defects in this message caused by email transmission including a virus. It is the responsibility of the recipient to ensure that this message is virus free.

November 9, 2018

Mr. Steve Morgan
Solid Waste Section
Department of Environmental Protection
13051 N Telecom Pkwy
Temple Terrace, FL 33637-0926

RE: Citrus County Central Landfill
Landfill Gas Monitoring Results – Fourth Quarter 2018
FDEP Permit No.: 21375-025-SO-01
Jones Edmunds Project Number: 03860-069-01

Dear Mr. Morgan:

Enclosed are the Fourth Quarter 2018 landfill gas monitoring results for the Citrus County Central Landfill conducted on October 30 and 31, 2018. The calibration log is also enclosed with this letter.

There were no detections of Methane in any of the landfill gas monitoring probes at any depths or in any of the on-site structures. However, elevated levels of carbon dioxide and decreased levels of oxygen were detected in most of the landfill gas monitoring probes. Based on these sampling results from the probes at varying depths, Methane does not exceed 100% of the LEL at the compliance boundary and the site is in compliance with the landfill gas migration rule.

The County continues to measure landfill gas concentration in the groundwater monitoring wells. Methane was at or above 100% of the LEL in groundwater monitoring wells MW-3, MW-5, MW-6, MW-7, MW-16, MW-17, MW-20, MW-21, and MW-22.

The results from the measurements conducted in the new landfill gas monitoring probes along with the existing probes retrofitted with tubing installed to varying depths indicate that the site is in compliance with the landfill gas migration rules. If you have any questions regarding this information, please contact me at (352) 377-5821.

Sincerely,



Troy D. Hays, PG
Sr. Manager/Vice President
730 NE Waldo Road
Gainesville, FL 32618

\\Gnvmain\envserv\EnvDocs\Citrus County\Gas Mon\2018\18Q4\18Q4_Citrus_Gas Mon_Letter.docx

xc: Ray Oates, Citrus County

LANDFILL GAS MONITORING RESULTS CITRUS COUNTY CENTRAL LANDFILL

Fourth Quarter 2018

General Data

Date:	10/30/2018 & 10/31/2018	Sampler:	Steve Messick
Time:	14:13 on 10/30/2018 & 12:17 on 10/31/2018	Sky Conditions:	Clear on 10/30/2018 & 10/31/2018
Air Temperature (deg C):	30° on 10/30/2018 & 28° on 10/31/2018	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Methane		Station Type
						Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	
GP-1	10/31/2018	12:47	20	17.7	2.6	0.0	-	Gas Well
GP-1	10/31/2018	12:45	40	16.9	3.0	0.0	-	Gas Well
GP-2	10/31/2018	12:31	20	18.3	1.8	0.0	-	Gas Well
GP-2	10/31/2018	12:29	40	16.6	4.2	0.0	-	Gas Well
GP-3	10/31/2018	12:19	20	19.8	1.2	0.0	-	Gas Well
GP-3	10/31/2018	12:17	40	19.6	1.2	0.0	-	Gas Well
GP-4	10/30/2018	14:46	20	17.9	3.2	0.0	-	Gas Well
GP-4	10/30/2018	14:44	40	17.2	3.8	0.0	-	Gas Well
GP-5	10/30/2018	14:39	20	17.4	3.2	0.0	-	Gas Well
GP-5	10/30/2018	14:38	40	17.4	3.6	0.0	-	Gas Well
GP-6	10/30/2018	14:34	20	18.2	2.8	0.0	-	Gas Well
GP-6	10/30/2018	14:32	40	18.5	2.6	0.0	-	Gas Well
GP-7	10/30/2018	14:28	20	18.9	2.0	0.0	-	Gas Well
GP-7	10/30/2018	14:26	40	19.1	2.0	0.0	-	Gas Well
GP-8	10/30/2018	14:22	20	17.9	2.0	0.0	-	Gas Well
GP-8	10/30/2018	14:20	40	17.1	2.0	0.0	-	Gas Well
GP-9	10/30/2018	14:15	20	19.0	1.8	0.0	-	Gas Well
GP-9	10/30/2018	14:13	40	19.0	1.8	0.0	-	Gas Well
GP-10	10/30/2018	14:09	20	12.4	7.2	0.0	-	Gas Well
GP-10	10/30/2018	14:07	40	12.6	7.4	0.0	-	Gas Well
GP-11	10/30/2018	14:03	20	18.7	1.4	0.0	-	Gas Well
GP-11	10/30/2018	14:01	40	17.0	1.6	0.0	-	Gas Well
GP-12	10/30/2018	13:57	25	19.1	1.4	0.0	-	Gas Well
GP-12	10/30/2018	13:55	50	19.1	1.6	0.0	-	Gas Well
GP-12	10/30/2018	13:53	75	19.4	1.4	0.0	-	Gas Well
GP-13	10/30/2018	13:49	25	17.8	1.6	0.0	-	Gas Well
GP-13	10/30/2018	13:47	50	17.7	1.8	0.0	-	Gas Well
GP-13	10/30/2018	13:45	75	18.3	1.4	0.0	-	Gas Well
GP-14	10/30/2018	13:41	25	19.1	1.0	0.0	-	Gas Well
GP-14	10/30/2018	13:39	50	19.1	1.0	0.0	-	Gas Well

LANDFILL GAS MONITORING RESULTS CITRUS COUNTY CENTRAL LANDFILL

General Data

Fourth Quarter 2018

Date:	10/30/2018 & 10/31/2018	Sampler:	Steve Messick
Time:	14:13 on 10/30/2018 & 12:17 on 10/31/2018	Sky Conditions:	Clear on 10/30/2018 & 10/31/2018
Air Temperature (deg C):	30° on 10/30/2018 & 28° on 10/31/2018	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Methane		Station Type
						Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	
GP-14	10/30/2018	13:37	75	19.5	0.8	0.0	-	Gas Well
GP-15	10/30/2018	13:29	25	19.8	1.2	0.0	-	Gas Well
GP-15	10/30/2018	13:27	50	19.8	1.2	0.0	-	Gas Well
GP-15	10/30/2018	13:25	75	20.3	0.8	0.0	-	Gas Well
GP-16	10/30/2018	13:22	25	19.0	1.2	0.0	-	Gas Well
GP-16	10/30/2018	13:20	50	19.0	1.2	0.0	-	Gas Well
GP-16	10/30/2018	13:18	75	19.2	1.2	0.0	-	Gas Well
GP-17	10/30/2018	13:16	25	14.8	4.2	0.0	-	Gas Well
GP-17	10/30/2018	13:14	50	14.7	4.2	0.0	-	Gas Well
GP-17	10/30/2018	13:12	75	15.8	3.6	0.0	-	Gas Well
GP-18	10/30/2018	13:06	25	19.4	1.0	0.0	-	Gas Well
GP-18	10/30/2018	13:04	50	19.4	1.2	0.0	-	Gas Well
GP-18	10/30/2018	13:02	75	19.8	0.8	0.0	-	Gas Well
GP-19	10/30/2018	12:54	25	20.0	1.0	0.0	-	Gas Well
GP-19	10/30/2018	12:52	50	20.0	1.0	0.0	-	Gas Well
GP-19	10/30/2018	12:50	75	20.3	0.8	0.0	-	Gas Well
GP-20	10/30/2018	13:23	105	18.4	1.4	0.0	-	Gas Well
GP-21	10/31/2018	13:09	115	18.9	0.0	0.0	-	Gas Well
GP-22	10/31/2018	12:50	70	16.5	0.0	0.0	-	Gas Well
GP-23	10/31/2018	12:53	100	8.9	2.4	0.0	-	Gas Well
GP-24	10/31/2018	12:33	70	16.8	0.0	0.0	-	Gas Well
GP-25	10/31/2018	12:35	100	18.6	0.0	0.0	-	Gas Well
GP-26	10/31/2018	12:21	70	16.0	3.0	0.0	-	Gas Well
GP-27	10/31/2018	12:23	100	16.2	2.6	0.0	-	Gas Well
GP-28	10/30/2018	14:51	70	18.3	2.2	0.0	-	Gas Well
GP-29	10/30/2018	14:48	100	20.9	0.0	0.0	-	Gas Well
GP-30	10/30/2018	13:32	105	19.0	1.0	0.0	-	Gas Well
Admin Building	10/31/2018	9:46	-	20.9	0.0	0.0	-	Structure
Mod Bldg	10/31/2018	9:53	-	20.9	0.0	0.0	-	Structure
Shop	10/31/2018	9:50	-	20.9	0.0	0.0	-	Structure

LANDFILL GAS MONITORING RESULTS CITRUS COUNTY CENTRAL LANDFILL

Fourth Quarter 2018

General Data

Date:	10/30/2018 & 10/31/2018	Sampler:	Steve Messick
Time:	14:13 on 10/30/2018 & 12:17 on 10/31/2018	Sky Conditions:	Clear on 10/30/2018 & 10/31/2018
Air Temperature (deg C):	30° on 10/30/2018 & 28° on 10/31/2018	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Methane		Station Type
						Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	
Scale House	10/31/2018	10:02	-	20.9	0.0	0.0	-	Structure
Firing Range	10/30/2018	16:14	-	20.9	0.0	0.0	-	7 Structures
Haz Waste Drop off Center	10/31/2018	10:19	-	20.9	0.0	0.0	-	4 Structures

LANDFILL GAS MONITORING RESULTS CITRUS COUNTY CENTRAL LANDFILL

Fourth Quarter 2018

General Data

Date:	10/30/2018 & 10/31/2018	Sampler:	Steve Messick
Time:	12:30 on 10/30/2018 & 10:00 on 10/31/2018	Sky Conditions:	Clear on 10/30/2018 & 10/31/2018
Air Temperature (deg C):	28° on 10/30/2018 & 23° on 10/31/2018	Measuring Device:	Eagle RK1 (SN E084039)

Sampling Data

Station I.D.	Date Sampled	Time Sampled	O2 %Volume	CO2 %Volume	Methane		Station Type
					Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	
MW-1R	10/31/2018	12:42	18.3	2.8	0.0	-	Groundwater Well
MW-2	10/30/2018	12:45	20.9	0.2	0.0	-	Groundwater Well
MW-3	10/31/2018	10:13	4.9	33.0	-	38.0	Groundwater Well
MW-5	10/31/2018	10:43	6.0	19.2	-	5.0	Groundwater Well
MW-6	10/31/2018	10:36	4.7	25.2	-	19.5	Groundwater Well
MW-7	10/31/2018	10:09	3.9	34.8	-	39.0	Groundwater Well
MW-8R	10/30/2018	16:25	11.7	11.6	49.0	-	Groundwater Well
MW-9	10/31/2018	11:49	4.5	6.6	22.0	-	Groundwater Well
MW-10	10/31/2018	11:18	11.8	14.0	0.0	-	Groundwater Well
MW-11	10/30/2018	15:44	18.2	1.4	0.0	-	Groundwater Well
MW-12	10/30/2018	15:33	9.7	8.6	0.0	-	Groundwater Well
MW-13	10/30/2018	15:22	6.8	13.8	90.0	-	Groundwater Well
MW-14	10/30/2018	15:13	8.6	14.0	24.0	-	Groundwater Well
MW-15	10/30/2018	15:06	5.8	14.8	94.0	-	Groundwater Well
MW-16	10/31/2018	10:23	4.5	29.8	-	45.0	Groundwater Well
MW-17	10/30/2018	14:57	9.6	9.8	0.0	-	Groundwater Well
MW-18	10/31/2018	11:11	11.8	9.6	0.0	-	Groundwater Well
MW-18D	10/31/2018	11:08	11.8	8.2	0.0	-	Groundwater Well
MW-19	10/31/2018	11:26	11.5	11.6	0.0	-	Groundwater Well
MW-19D	10/31/2018	11:31	18.3	2.0	0.0	-	Groundwater Well
MW-20	10/31/2018	10:29	4.0	26.0	-	46.5	Groundwater Well
MW-21	10/31/2018	10:50	2.9	23.0	-	5.5	Groundwater Well
MW-22	10/31/2018	10:58	2.5	21.0	-	5.5	Groundwater Well
MW-AA	10/30/2018	15:28	17.2	2.8	0.0	-	Groundwater Well
MW-B	10/30/2018	16:04	8.7	6.0	53.0	-	Groundwater Well
MW-E	10/30/2018	15:55	20.9	0.0	0.0	-	Groundwater Well
PZ-1	10/31/2018	11:43	4.8	6.6	22.0	-	Groundwater Well
PZ-2	10/31/2018	11:02	9.7	6.0	0.0	-	Groundwater Well

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

SITE NAME Citrus County Central LF DATE 10/30 & 31/18
INSTRUMENT (MAKE/MODEL#) Eagle Multi-Gas Detector INSTRUMENT # GNV 80023*
Instrument Calibration Date 11/11/16 Reference Meter Book Eagle Meter Book 1

PARAMETER: [check only one]

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☐ TURBIDITY ☐ RESIDUAL CI ☐ DO ☒ OTHER LANDFILL GAS

STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]

Standard A 15.33 % Methane (Volume), 15.04 % CO₂ (Volume), Balance Nitrogen

Standard Source Airgas Lot # 122-40110286-1

Standard B Zero Air (0 % Methane) (0% CO₂) (21.0 % O₂)

Standard Source Airgas Lot # 55-400483127-1

Standard C % LEL Methane, % CO₂ (Volume), 0% O₂ (Volume), Bal Nitrogen

Standard Source _____ Lot # _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	CH ₄ STD VALUE (% Vol)	CO ₂ STD VALUE (% Vol)	O ₂ STD VALUE (% Vol)	INSTRUMENT RESPONSE (%) DEVIATION (LIMITS +/- 5%)						CALIB- RATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
						CH ₄		CO ₂		O ₂				
						RES	DEV	RES	DEV	RES	DEV			
18/10/30	1219	A	15.33	15.04	—	15.0	<3	15.0	<1	—	—	Yes	Init.	sm
	1223	B	—	—	21.0	—	—	—	—	20.9	<1	Yes	Init.	sm
	1634	A	15.33	15.04	—	15.2	<1	15.4	<3	—	—	Yes	Cont.	sm
	1636	B	—	—	21.0	—	—	—	—	20.9	<1	Yes	Cont.	sm
18/10/31	0939	A	15.33	15.04	—	15.0	<3	15.0	<1	—	—	Yes	Init.	sm
	0944	B	—	—	21.0	—	—	—	—	21.0	Ø	Yes	Init.	sm
	1303	A	15.33	15.04	—	15.0	<3	15.2	<2	—	—	Yes	Cont.	sm
	1306	B	—	—	21.0	—	—	—	—	20.9	<1	Yes	Cont.	sm

* Eagle SN E084039