From: Patrick Kardish
To: SWD Waste

Cc: Tafuni, Steven; Black, Alexis; Henry, Norris@citrusbocc.com; Troy Hays; Elizabeth Kennelley;

Dan.Sherlock@citrusbocc.com

Subject: Emailing:2020.04.22_RPT_Citrus Co LF_WACS 39859_20Q2 LFG

Date: Monday, April 27, 2020 5:16:21 PM

Attachments: image001.jpg
image003.png

image003.png image004.png

2020.04.22 RPT Citrus Co LF WACS 39859 2002 LFG.pdf

Good Evening,

Attached is the Second Quarter 2020 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







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April 25, 2020

Ms. Alexis Black 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 - Second Quarter 2020

FDEP Permit No.: 21375-025-SO-01

Jones Edmunds Project Number: 13370-001-01

Dear Ms. Black:

Enclosed are the Second Quarter 2020 landfill gas monitoring results for the Citrus County Central Landfill conducted on March 31, 2020. An early sampling date compared to past Second Quarter events was conducted due to the covid-19 pandemic. 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 depth or in any of the on-site structures. 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 Methane concentrations in the groundwater monitoring wells. Methane was at or above 100% of the LEL in groundwater monitoring wells MW-3, MW-6, MW-15, MW-16, MW-19D, MW-20, and MW-21.

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

M:\EnvDocs\Citrus County\Gas Mon\2020\20Q2\20Q2_Citrus_Gas Mon_Letter.docx

xc: Henry Norris, Citrus County

Dan Sherlock, Citrus County Traci Schoenrock, Citrus County

General Data

Gas Monitoring Probes (Wells) and Structures Second Quarter 2020

Date:	3/31/2020	Sampler:	Steve Messick
Time:	8:50 AM & 2:00 PM	Sky Conditions:	Hazy Sky & Cloudy wind 5-20 mph W/SW
Air Temperature (deg C):	24 & 28	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
GP-1	3/31/2020	15:32	20	8.3	2.6	0.0	-	Gas Well
GP-1	3/31/2020	15:33	40	17.6	3.4	0.0	-	Gas Well
GP-2	3/31/2020	14:13	20	18.1	3.2	0.0	-	Gas Well
GP-2	3/31/2020	14:14	40	14.4	6.8	0.0	-	Gas Well
GP-3	3/31/2020	14:07	20	18.3	2.0	0.0	=	Gas Well
GP-3	3/31/2020	14:09	40	18.4	2.0	0.0	-	Gas Well
GP-4	3/31/2020	10:31	20	18.1	3.6	0.0	-	Gas Well
GP-4	3/31/2020	10:32	40	17.2	4.4	0.0	-	Gas Well
GP-5	3/31/2020	10:26	20	17.6	4.2	0.0	-	Gas Well
GP-5	3/31/2020	10:28	40	17.3	4.6	0.0	-	Gas Well
GP-6	3/31/2020	10:22	20	18.3	3.0	0.0	-	Gas Well
GP-6	3/31/2020	10:23	40	18.2	3.2	0.0	-	Gas Well
GP-7	3/31/2020	10:16	20	18.8	2.4	0.0	-	Gas Well
GP-7	3/31/2020	10:17	40	18.6	2.4	0.0	-	Gas Well
GP-8	3/31/2020	10:11	20	18.1	2.2	0.0	-	Gas Well
GP-8	3/31/2020	10:12	40	17.2	2.8	0.0	-	Gas Well
GP-9	3/31/2020	10:07	20	19.1	2.0	0.0	-	Gas Well
GP-9	3/31/2020	10:08	40	18.8	2.2	0.0	-	Gas Well
GP-10	3/31/2020	10:02	20	14.6	6.8	0.0	-	Gas Well
GP-10	3/31/2020	10:03	40	13.7	7.8	0.0	-	Gas Well
GP-11	3/31/2020	9:57	20	19.0	1.4	0.0	-	Gas Well
GP-11	3/31/2020	9:58	40	16.6	2.4	0.0	-	Gas Well
GP-12	3/31/2020	9:49	25	19.3	1.8	0.0	-	Gas Well
GP-12	3/31/2020	9:50	50	19.3	1.8	0.0	-	Gas Well
GP-12	3/31/2020	9:52	75	19.2	1.8	0.0	-	Gas Well
GP-13	3/31/2020	9:43	25	17.5	2.4	0.0	-	Gas Well
GP-13	3/31/2020	9:44	50	17.1	2.4	0.0	-	Gas Well
GP-13	3/31/2020	9:45	75	17.0	2.4	0.0	-	Gas Well
GP-14	3/31/2020	9:37	25	19.2	1.2	0.0	-	Gas Well
GP-14	3/31/2020	9:38	50	19.1	1.2	0.0	-	Gas Well
GP-14	3/31/2020	9:39	75	19.0	1.2	0.0	-	Gas Well
GP-15	3/31/2020	9:27	25	20.1	0.4	0.0	-	Gas Well
GP-15	3/31/2020	9:28	50	20.1	0.4	0.0	-	Gas Well
GP-15	3/31/2020	9:29	75	20.1	1.2	0.0	-	Gas Well
GP-16	3/31/2020	9:21	25	19.3	1.6	0.0	-	Gas Well
GP-16	3/31/2020	9:22	50	19.2	1.6	0.0	-	Gas Well
GP-16	3/31/2020	9:23	75	19.1	1.6	0.0	-	Gas Well

General Data

Gas Monitoring Probes (Wells) and Structures Second Quarter 2020

Date:	3/31/2020	Sampler:	Steve Messick
Time:	8:50 AM & 2:00 PM	Sky Conditions:	Hazy Sky & Cloudy wind 5-20 mph W/SW
Air Temperature (deg C):	24 & 28	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

						Methane		
Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
GP-17	3/31/2020	9:11	25	16.1	4.4	0.0	-	Gas Well
GP-17	3/31/2020	9:12	50	15.6	4.8	0.0	-	Gas Well
GP-17	3/31/2020	9:13	75	15.6	4.4	0.0	-	Gas Well
GP-18	3/31/2020	9:01	25	19.6	1.2	0.0	-	Gas Well
GP-18	3/31/2020	9:02	50	19.2	1.4	0.0	-	Gas Well
GP-18	3/31/2020	9:03	75	19.2	1.4	0.0	-	Gas Well
GP-19	3/31/2020	8:54	25	20.4	1.2	0.0	-	Gas Well
GP-19	3/31/2020	8:55	50	20.2	1.2	0.0	-	Gas Well
GP-19	3/31/2020	8:56	75	20.1	1.2	0.0	-	Gas Well
GP-20	3/31/2020	9:18	105	18.5	1.8	0.0	-	Gas Well
GP-21	3/31/2020	9:05	115	5.7	0.4	0.0	-	Gas Well
GP-22	3/31/2020	15:35	70	15.8	0.0	0.0	-	Gas Well
GP-23	3/31/2020	15:28	100	8.8	3.2	0.0	-	Gas Well
GP-24	3/31/2020	14:19	70	10.8	0.0	0.0	-	Gas Well
GP-25	3/31/2020	14:16	100	20.1	0.0	0.0	-	Gas Well
GP-26	3/31/2020	14:04	70	17.2	3.0	0.0	-	Gas Well
GP-27	3/31/2020	13:58	100	16.3	2.6	0.0	-	Gas Well
GP-28	3/31/2020	10:38	70	17.7	3.4	0.0	-	Gas Well
GP-29	3/31/2020	10:34	100	17.6	0.6	0.0	-	Gas Well
GP-30	3/31/2020	9:32	105	19.0	1.4	0.0	-	Gas Well
Admin Building	3/31/2020	12:20	-	20.9	0.0	0.0	-	Structure
Mod Bldg	3/31/2020	12:32	-	20.9	0.0	0.0	-	Structure
Shop	3/31/2020	12:30	-	20.9	0.0	0.0	-	Structure
Scale House	3/31/2020	12:25	-	20.9	0.0	0.0	-	Structure
Firing Range	3/31/2020	12:55	=	20.9	0.0	0.0	-	7 Structures
Haz Waste Drop-Off Center	3/31/2020	16:12	=	20.9	0.0	0.0	-	4 Structures
Equipment Container 1	3/31/2020	16:10	=	20.9	0.0	0.0	-	Structure
Storage Building	3/31/2020	12:34	-	20.9	0.0	0.0	-	Structure
Small Shed	3/31/2020	12:36	-	20.9	0.0	0.0	-	Structure

Groundwater Monitoring Wells and Piezometers Second Quarter 2020

General Data

Date:	3/31/2020	Sampler:	Steve Messick
Time:	8:45 AM & 2:00 PM	Sky Conditions:	Hazy Sky & Cloudy wind 5-20 mph W/SW
Air Temperature (deg C):	24 & 28	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

					Methane		
Station I.D.	Date Sampled	Time Sampled	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
MW-1R	3/31/2020	15:22	15.2	6.2	0.0	-	Groundwater Well
MW-2	3/31/2020	8:44	20.9	0.6	0.0	-	Groundwater Well
MW-3	3/31/2020	16:20	5.9	32.6	-	60.5	Groundwater Well
MW-5	3/31/2020	16:00	7.6	19.2	2.0	-	Groundwater Well
MW-6	3/31/2020	15:53	7.0	32.0	-	42.0	Groundwater Well
MW-7	3/31/2020	16:27	5.5	39.2	-	59.5	Groundwater Well
MW-8R	3/31/2020	13:15	14.6	11.4	0.0	-	Groundwater Well
MW-9	3/31/2020	13:30	8.1	10.6	0.0	-	Groundwater Well
MW-10	3/31/2020	14:52	12.7	17.2	0.0	-	Groundwater Well
MW-11	3/31/2020	10:58	13.3	4.0	0.0	-	Groundwater Well
MW-12	3/31/2020	11:12	6.1	8.6	72.0	-	Groundwater Well
MW-13	3/31/2020	11:25	9.3	10.6	0.0	-	Groundwater Well
MW-14	3/31/2020	11:33	6.4	10.2	0.0	-	Groundwater Well
MW-15	3/31/2020	11:41	5.3	18.8	-	5.0	Groundwater Well
MW-16	3/31/2020	16:07	6.9	31.0	-	57.5	Groundwater Well
MW-17	3/31/2020	11:50	5.4	18.8	99.0	-	Groundwater Well
MW-18	3/31/2020	14:59	12.4	16.8	0.0	-	Groundwater Well
MW-18D	3/31/2020	15:03	12.7	9.6	0.0	-	Groundwater Well
MW-19	3/31/2020	14:48	18.6	1.8	0.0	-	Groundwater Well
MW-19D	3/31/2020	14:42	5.8	20.0	-	5.0	Groundwater Well
MW-20	3/31/2020	15:43	5.4	34.4	-	45.5	Groundwater Well
MW-21	3/31/2020	14:35	5.5	20.4	-	5.5	Groundwater Well
MW-22	3/31/2020	14:27	8.2	7.8	0.0	-	Groundwater Well
MW-AA	3/31/2020	11:19	6.0	8.6	72.0	-	Groundwater Well
MW-B	3/31/2020	13:01	5.4	9.2	50.0	-	Groundwater Well
MW-E	3/31/2020	11:07	5.4	8.6	14.0	-	Groundwater Well
PZ-1	3/31/2020	12:44	5.5	13.8	50.0	-	Groundwater Well
PZ-2	3/31/2020	15:14	15.3	6.0	0.0	-	Groundwater Well

Field Data and Instrument Calibration Record

General Data

Gas Monitoring Probes (Wells) and Structures

Date:	3-31-25	>	Sampler:	Steve Messick
Time:	0850	1 1400	Sky Conditions: Mogning Ha	LY Afternoon Cloudy wind 5-20 MPH W/SW
Air Temperature (deg C):	24°C	28°C	Measuring Device:	Eagle RKI (SN E084039)
Sampling Data	Mogning	Afternoon		

		S	1				Methane	
Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Typ
GP-1	3-31-20	1532	20	8.3	2.6	X		Gas Well
GP-1		1533	40	17.6	3.4	Ø	~	Gas Well
GP-2		1413	20	18.1	3.2	Ø		Gas Well
GP-2		1414	40	14.4	6.8	Ø		Gas Well
GP-3		1407	20	18.3	2.0	Z		Gas Well
GP-3		1409	40	18.4	2.0	Ø		Gas Well
GP-4		1031	20	18.1	3.6	8		Gas Well
GP-4		1032	40	17.2	4.4	Ø		Gas Well
GP-5		1026	20	17.6	4.2	Ø		Gas Well
GP-5		1028	40	17.3	4.6	Ø.	_	Gas Well
GP-6		1022	20	18.3	3.0	Ø	-	Gas Well
GP-6		1023	40	18.2	3-2	Ø		Gas Well
GP-7		1016	20	18-8	2.4	Ø	*********	Gas Well
GP-7		1017	40	18 6	2.4	Ø		Gas Well
GP-8		1011	20	15.1	2.2	Ø		Gas Well
GP-8		1012	40	17.2	2.8	Ø	_	Gas Well
GP-9		1007	20	19.1	2.0	Ø	-	Gas Well
GP-9		1008	40	18.8	2-2	Ø		Gas Well
GP-10		1002	20	14.6	6.8	Ø		Gas Well
GP-10		1003	40	13.7	7.8	Ø	_	Gas Well
GP-11		0957	20	19.0	14	Ø		Gas Well
GP-11		0958	40 /	7716.6	2.4	Ø		Gas Well
GP-12		0949	25	19.3	1.8	8		Gas Well
GP-12		0950	50	19.3	1.8	Ø		Gas Well
GP-12		0952	75	19.2	1-8	NO.		Gas Well
GP-13		0943	25	17.5	2.4	0		Gas Well
GP-13		0944	50	171	24	Ø		Gas Well
GP-13		0945	75	17.0	24			Gas Well
GP-14		0937	25	19.2	1.2	Ø		Gas Well
GP-14		0938	50	19.1	1.2	Ø	_	Gas Well
GP-14		0739	75	19.0	1.2	Ø		Gas Well
GP-15		0927	25	20.1	0.4	8		Gas Well
GP-15		0928	50	20.1	0.4	Ø		Gas Well
GP-15		0929	75	20.1	1.2	Ø		Gas Well
GP-16		0921	25	19.3	1.6	Ø		Gas Well
GP-16		0922	50	19.2	1.6	Ø,		Gas Well
GP-16	V	0923	75	19.1	1.6	10		Gas Well

General Data

Gas Monitoring Probes (Wells) and Structures

Date:	3-31-20)	Sampler:	Store Messict
Time:	0850	11400	Sky Conditions: Hazy Sky	AFTERMOON Cloudy wind 5-20 MPH W/SW
Air Temperature (deg C):	24°C	28°C	Measuring Device:	Eagle RKI (SN E084039)
	M - 1	0.04		

Sampling Data MAAN. Va Itiftennoon Methane Peak Recorded Depth of Intake O2 %Volume CO2 %Volume Peak Recorded Concentration as % Volume Station Type Station I.D. Date Sampled Time Sampled Concentration as % LEL (Feet) 25 16.1 4.4 Ø Gas Well GP-17 3-31-20 0911 4.8 Gas Well GP-17 0912 50 15.6 Ø 15.6 0 Gas Well GP-17 0913 75 44 25 19.6 1.2 Ø Gas Well GP-18 0001 19.2 1.4 Gas Well 0907 50 00 GP-18 GP-18 0903 75 19.2 1.4 X Gas Well 20.4 Ø GP-19 0854 25 1.2 Gas Well 0855 50 20.2 1.2 D Gas Well GP-19 1.2 Ø 75 GP-19 0856 20.1 Gas Well 1.8 18.5 Ø Gas Well 105 GP-20 0918 GP-21 0905 115 5.7 0.4 0 Gas Well 0.0 0 Gas Well GP-22 1535 70 15.8 0 1528 100 8.8 3.2 Gas Well GP-23 70 0.0 Gas Well GP-24 1419 10.8 0 100 0 Gas Well 20.1 0.0 GP-25 1416 Ø GP-26 1404 70 17.2 3.0 Gas Well 16.3 2.6 100 0 Gas Well GP-27 1358 3.4 1038 70 177 Ø Gas Well **GP-28** 100 25 Gas Well GP-29 1034 17.6 0.6 GP-30 0932 105 19.0 14 0 Gas Well 0,0 D Admin Building 1220 _ 20.9 Structure 8 1232 0.0 20 Structure Mod Bldg 20.9 0 1230 0.0 Structure Shop Ø 20. 0.0 Structure Scale House 1225 1255 20.9 0.0 0 7 Structures Firing Range 20 1612 Haz Waste Drop-Off Center 20.9 0.0 4 Structures Equipment Container 1610 . 20 0,0 Structure ___ 1234 20.9 0.0 0 Storage Building Structure 11 11 Small Shed 1236 20 OX 0.0 -

Groundwater Monitoring Wells and Piezometers

General Data

Date:	3-31-20		Sampler:		Stevenessick	
Time:	0845	1400	Sky Conditions:	HOZY SKY - AS	Fternoon -> Cloudy	Wind 5-20 MPH W/SW
Air Temperature (deg C):	24°C	28°C	Measuring Device		Eagle RKI (SN E084039)	<i>*</i>
	Mogning	Afternoon				
Sampling Data	9					

		- 12			Met	hane	
Station I.D.	Date Sampled	Time Sampled	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
MW-1R	3-31-21	1522	15.2	6.2	8		Groundwater Well
MW-2		0844	20.9	0.6	D		Groundwater Well
MW-3		1620	5.9	32.6		60.5	Groundwater Well
MW-5		1600	7.6	19.2	2	~	Groundwater Well
MW-6		1553	7.0	32,0	~	42.0	Groundwater Well
MW-7		1627	5.5	39. 2	_	59.5	Groundwater Well
MW-8R		1315	14.6	11.4	8		Groundwater Well
MW-9		1330	8.1	10.6	B		Groundwater Well
MW-10		1452	12.7	17.2	Ð		Groundwater Well
MW-11		1058	13.3	40	0		Groundwater Well
MW-12		1112	6.1	8.6	72	_	Groundwater Well
MW-13		1125	9.3	10.6	Ø	-	Groundwater Well
MW-14		1/33	6.4	10.2	Ø		Groundwater Well
MW-15		1/41	5.3	18.8		5.0	Groundwater Well
MW-16		1607	6.9	31.0		57.5	Groundwater Well
MW-17		1150	5-4	18.8	99		Groundwater Well
MW-18		1459	12.4	16.8	8		Groundwater Well
MW-18D		1503	12.7	7.6	X		Groundwater Well
MW-19		1448	18.6	18	Ø		Groundwater Well
MW-19D		1442	5.8	20.0		5.0	Groundwater Well
MW-20		1543	5.4	344		45.5	Groundwater Well
MW-21		1435	5.5	20.4		5.5	Groundwater Well
MW-22		1427	8.2	7.8	R		Groundwater Well
MW-AA		1/19	6.0	8.6	72		Groundwater Well
MW-B		1301	5.4	9.2	50		Groundwater Well
MW-E		1107	5.4	8.6	14	_	Groundwater Well
PZ-1		1244	5.5	13.8	50	_	Groundwater Well
PZ-2	X	1514	15.3	6.0	8		Groundwater Well

I lowered 4- 95 feet of 14" tubing down into the well to get reading close to water column

DEP-SOP-001/01 FT 1600 Field Measurement of Landfill Gas

Page _/	of	1_
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Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

SITE NAME Citrus County								
PARAMETER: [check only one]								
☐ TEMPERATURE ☐ CO	NDUCTIVITY SALI	NITY 🔲 pH	ORP					
☐ TURBIDITY ☐ RE	SIDUAL CI DO	X 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 15.09 % Met	ARDS: [Specify the type(s) of standards used for calibration, the origin of the standards the standard							
Standard SourceA	irgas	Lot # 122-4014	99459-1					
Standard B Zero Air (0 % Methane) (0% CO ₂) (21.0 % O ₂)								
Standard Source Airgas Lot # 55-400483/27-/								
Standard C % LEL N								
Standard Source Lot #								
	MOTRIMA	ENT DECRONOR (%)						

									Oι # _	_				
DATE (yy/mm/dd)	TIME (hr:min)	STD (A,	CH₄ STD	E VALUE	O ₂ STD VALUE (% Vol)	INSTRUMENT RESPONSE (%) DEVIATION (LIMITS +/- 5%)				CALIB-	TYPE			
		(C, B, C)	VALUE (% Vol)			CH₄		CO ₂		O ₂		RATED (YES, NO)	(INIT, CONT)	SAMPLER INITIALS
						RES	DEV	RES	DEV	RES	DEV	NO)		
20/03/31	0829	A	15.09	14.8)		15.0	</td <td>14.8</td> <td><1</td> <td></td> <td></td> <td>Yes</td> <td>Init.</td> <td>Sm</td>	14.8	<1			Yes	Init.	Sm
1	0833	B		_	21.0	_	_	_	_	20.9	<1	Yes	Inct.	Smy
	1155	A	15-09	14.81		15.0	<1	15.0	<2	_	_	Ye5	Cont.	Sm
	1158	B		_	21.0	-			_	20.9	<1	Yes	Cont.	Som
	1640	A	15.09	14.8))	15.5	<3	14.8	<1	_	_	Yes	Cont.	Sm
Y	1643	B	_	-	21.0	-	_	_	ت	20.9	<1	Yes	Cont.	Sm
													30.8	

^{*} Eagle SN E084039