Smith, George

From: Ray Oates <ray.oates@citrusbocc.com>
Sent: Wednesday, July 19, 2017 3:56 PM
To: SWD_Waste
Cc: Henry C. Norris
Subject: Citrus County Central Landfill Op Permit# 21375-025-SO-018-01
Attachments: GCCS gas monitoring 6.7.17.pdf

Attached please find our June 2017 Landfill Gas Wellfield Monitoring Report.

Ray Oates, PG
Solid Waste Compliance Manager
Citrus County Division of Solid Waste Management
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JONES EDMUNDS

July 18, 2017

Henry Norris, Jr.
Director
Division of Solid Waste Management
Citrus County Central Landfill
230 W. Gulf to Lake Hwy
Lecanto, Florida 34460

Re: Citrus County Central Landfill
Gas Collection and Control System
FDEP Title V Air Operations Permit No.: 0170366-006-AV
June 2017 Wellfield Monitoring
Jones Edmunds Project No.: 03860-058-01

Dear Mr. Norris:

Sullivan Environmental conducted the monthly landfill gas wellfield monitoring event on June 7, 2017. The monitoring event included taking landfill gas readings at each well, inspecting each wellhead, taking landfill gas readings at the flare station, and measuring liquid levels in the gas collection wells. This letter report summarizes the monitoring event and presents our findings and recommendations.

Citrus County elected to install an active gas collection and control system (GCCS) before reaching regulatory thresholds as defined in NSPS 40 CFR Part 60, Subpart WWW. In accordance with the site's Title V Air Operations Permit, the GCCS is not subject to the operational standards of Subpart WWW; however, the wellfield is monitored monthly and maintained in an effort to control landfill gas emissions.

The landfill gas wells were monitored with a GEM™2000 instrument. This instrument samples and analyzes methane, carbon dioxide, and oxygen content of landfill gas; and reports balance gases, pressure, and flow rate. The wellfield data is provided in Table 1.

In addition to any outstanding maintenance work from previous monitoring events, current wellfield observations and recommendations for this month are provided in Table 2 and summarized below:

- Wells that require new Kanaflex: no additional
- Wells that require new wellhead valve: no additional
- Wells that are possibly pinched or broken: no additional
- Wells that are partially blocked with liquid: EW-07 (header)
- Wells with low methane gas content: RW-02, RW-03, RW-04, RW-06, RW-07
- Wells with low vacuum: EW-07, RW-02, RW-03, RW-04, RW-06, RW-07

The average oxygen, balance gas and methane concentrations for this monitoring event are 4.3%, 21% and 41.8%, respectively. Several of the RW wells (at the leachate cleanouts) had low methane readings and high balance gas and oxygen readings. This is a strong indication of water in the pipes. Looking at the data from just the vertical gas wells (EW wells) the average oxygen, balance gas and methane concentrations were 0.1%, 3% and 54%, respectively. The vertical well data shows good gas quality (high methane content) and low oxygen concentration. The gas expansion project will include additional vertical wells to augment the system to collect more gas and decrease fugitive emissions. We will continue to monitor and maintain the GCCS to optimize gas flow and gas quality and to minimize oxygen intrusion.

Staff have noted that the flare attempts to relight often without any obvious cause. This has been a typical occurrence over the years at the flare. In April 2017 the flare's UV sensor was replaced; this alleviated but did not rectify the problem. During this monitoring event, Mr. Moore with Sullivan Environmental spent time at the flare quick panel and spoke over the phone with a CB&I technician regarding the flare's set points. Mr. Moore modified the set point from 20 to 30 seconds. In addition, discussions with the technician, revealed an option to disable the UV sensor and use just the thermocouple as the means for startup and shutdown. This flare has both a thermocouple and UV sensor installed for flame detection. Both devices are not required. Jones Edmunds will discuss the "disabling" option with Sullivan Environmental to determine if it is a viable option for this site. The daily field notes for this monitoring event are provided as Attachment 1.

If you have any questions or would like to discuss any of the observation or recommendations, please contact me at (352) 377-5821 or at csawyer@jonesedmunds.com.

Sincerely,

Carol Sawyer

Carol G. Sawyer, PE
Project Manager

M:\03860-CitrusCounty\058-01 LF Gas Routine and Non-Routine Monitoring and Maintenance\Task 1 - Monthly Monitoring\2017.06\LTR-HNorris-June2017.Wellfield.Report.docx

Enclosures

Attachment 1. Sullivan Environmental, Inc. Daily Field Logs

Attachment 1

Sullivan Environmental, Inc.

Daily Field Logs

Table 1
Citrus County Central Landfill
Active Gas Collection and Control System - Monitoring Log
June 7, 2017
Facility ID: 0170366

Device ID	Date/Time	CH4 %	CO2 %	O2 %	Balance %	Init. Temperature degF	Adj. Temperature degF	Init. Static Pressure in H2O	Adj. Static Pressure in H2O	Init. Differential Pressure in H2O	Adj. Differential Pressure in H2O	Comments
01CALGAS	6/7/2017 12:11	50.2	35.1	0	14.7	73	75	0	0	0.005	0.003	
02CALGAS	6/7/2017 12:15	0	0.1	3.9	96	75	75	0	0	0.005	0.001	
FLAREIN1	6/7/2017 12:24	53.5	40.2	0.3	5.99	92	92	-58.3	-57.5	<<<	<<<	
FLAREOUT	6/7/2017 12:28	52.1	41.6	0.3	6	106	106	0.6	0.1	-0.062	-0.347	
CCLFEW01	6/7/2017 14:16	50.8	40.6	0.3	8.3	92	93	-41.5	-42	0.135	0.088	
CCLFEW02	6/7/2017 14:22	41.5	37.8	0.4	20.3	113	113	-38.5	-38.9	0.652	0.618	
CCLFEW03	6/7/2017 14:27	54.9	43.7	0	1.39	118	120	-42.4	-43	0.287	0.2	Open Slightly
CCLFEW04	6/7/2017 13:39	55.2	44.7	0	0.09	90	91	-42.1	-42.3	1.373	1.364	
CCLFEW05	6/7/2017 13:26	56.2	43.7	0	0.09	97	98	-5.5	-5.6	0.032	0.028	Fully Open
CCLFEW06	6/7/2017 13:14	56	43.9	0	0.09	100	101	-40.9	-42.2	0.053	0.056	Open Slightly
CCLFEW07	6/7/2017 13:00	54.8	45.1	0	0.1	112	113	3.1	3.2	0.52	0.492	Fully Open; Header Fully Blocked
CCLFE08R	6/7/2017 13:09	55.4	44.5	0	0.09	95	96	-42.3	-42.3	0.17	0.281	
CCLFE09R	6/7/2017 13:17	55.6	44.2	0.1	0.1	88	88	-40.4	-40.7	0.007	0.039	
CCLFE10R	6/7/2017 13:32	55.6	44.3	0	0.1	77	76	0	-2.8	0.029	0.016	Open Slightly
CCLFEW11	6/7/2017 13:43	56	43.9	0	0.09	103	103	-42.6	-43.1	-0.054	-0.127	
CCLFRW02	6/7/2017 13:50	34.3	25.7	6.8	33.19	80	79	0.2	-0.6	0.001	-0.007	Open Slightly
CCLFRW03	6/7/2017 13:53	0	0.2	18.6	81.2	80	80	0	0	-0.038	-0.046	Close Slightly; Fully Closed
CCLFRW04	6/7/2017 14:02	3.1	3.1	16.9	76.9	84	84	-0.1	0	0.018	0.008	Close Slightly; Fully Closed
CCLFRW05	6/7/2017 12:48	60.3	36.1	0.8	2.8	73	73	-3.7	-4.1	0.027	0.016	Open Slightly
CCLFRW06	6/7/2017 12:52	6.4	5.1	16.1	72.4	75	75	0	0	-0.01	-0.013	
CCLFRW07	6/7/2017 14:39	0	0.4	18.2	81.39	85	85	0	0	0	-0.002	Fully Closed
CCLFRW09	6/7/2017 14:59	56.7	43.2	0	0.09	91	94	2.8	-2.4	0	0.015	Open Slightly
FLAREIN1	6/7/2017 15:07	49.9	40.9	0.5	8.69	95	95	-58.4	-59	<<<	<<<	

Table 2

Citrus County Central Landfill
Facility ID: 0170366
Active Gas Collection and Control System
Liquid Level and Wellfield Observations

June 2017

WELL ID	DATE	DTL	DTB	HEIGHT OF STICKUP (ft)	LIQUID IN WELL (ft)	WELL DEPTH* (ft)	Notes
CCLFEW01	6/7/2017	59.8	87.6	4.2	27.8	90	
CCLFEW02	6/7/2017	41.9	90	3.11	48.1	90	
CCLFEW03	6/7/2017	54.2	95.6	4	41.4	90	Opened valve slightly
CCLFEW04	6/7/2017	23.2	27.2	4	4	70	
CCLFEW05	6/7/2017	39.8	46.9	3.7	7.1	81	Valve fully open
CCLFEW06	6/7/2017	54.3	66.11	2.6	11.81	50	Opened valve slightly
CCLFEW07	6/7/2017	25.5	26.3	4.5	0.8	73	Valve fully open / No vacuum at well
CCLFW08R	6/7/2017	20	20.5	4.1	0.5	70	
CCLFW09R	6/7/2017	18.2	18.5	4	0.3	70	
CCLFW10R	6/7/2017	15.7	15.7	4.8	0	70	Opened valve slightly / Touchy valve
CCLFEW11	6/7/2017	17.5	18	3.11	0.5	66	
CCLFRW02	6/7/2017	NA	NA	NA	NA		Opened valve slightly / Touchy valve
CCLFRW03	6/7/2017	NA	NA	NA	NA		Valve fully Closed
CCLFRW04	6/7/2017	NA	NA	NA	NA		Closed valve slightly / Fully Closed
CCLFRW05	6/7/2017	NA	NA	NA	NA		Opened valve slightly / Touchy valve
CCLFRW06	6/7/2017	NA	NA	NA	NA		
CCLFRW07	6/7/2017	NA	NA	NA	NA		Valve fully closed
CCLFRW09	6/7/2017	NA	NA	NA	NA		Opened valve slightly

*** Taken from 8/24/2010 construction completion records**

DTL = depth to liquid (feet)
DTB = depth to bottom (feet)
Readings and observations by Sullivan Environmental.

SULLIVAN ENVIRONMENTAL, INC.

DAILY FIELD LOG

DATE: **6/7/2017**
PROJECT SITE: **Citrus County Landfill**

EQUIPMENT USED:

GEM 2000

TASK DESCRIPTION:
Monitored wellfield and measured liquid levels in wells.

Worked on flare panel to troubleshoot a "hot start" problem.
Ron: Spoke with CB&I tech, Tom. Went onto the quick panel and went to the pilot relight screen. Changed the flare test setpoint from 20 to 30 seconds. Later as I was reading the wells I heard the "hot start" sequence initiate. The set point can be set for quite a bit longer than 30 seconds. Tom called back and said that through the screen we could disable the fire eye which would leave the shutdown and restart up to the thermocouple. Another option is to have CB&I come out and rewrite part of the logic and add a button that could enable and disable the actual "hot start" function.

PERSONNEL ONSITE:

Ron Moore - Sr. Technician