

SCS FIELD SERVICES



Caja del Rio Landfill GCCS Operations, Monitoring, and Maintenance Summary Report For October 2013

Presented to:

Santa Fe Solid Waste Management Agency



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Caja del Rio Landfill GCCS Operations, Monitoring, and Maintenance Summary Report for October 2013

ROUTINE OPERATIONS, MONITORING, AND MAINTENANCE (OM&M) SERVICES

Routine OM&M services for the Caja del Rio Landfill (Site) were provided as indicated below for October 2013.

Summary of Wellfield Monitoring Results

Wellfield monitoring services were provided on October 4, and 18, 2013. The following observations were made concerning readings taken at the landfill gas (LFG) extraction wells:

- By the conclusion of the October 2013 monitoring event, all of the extraction wells met the New Source Performance Standards (NSPS) parameters for pressure (i.e., must be <0.0 inch H₂O), temperature (i.e., must be <131° F), and oxygen concentration (i.e., must be <5 percent by volume).
- In general, LFG quality at the wells during the October 2013 monitoring period was fair to good. Methane concentrations ranged from approximately 23.2 percent (EW3B-2) to approximately 52.8 percent (EW1-1). Oxygen concentrations prior to and after the wellfield adjustments ranged from 0.0 to 0.1.
- During this monitoring period, greenhouse gases were measured with a Landtec continuous gas analyzer.
- A table summarizing the results of the wellfield monitoring event is enclosed in Appendix A.

Summary of Blower/Flare Station Monitoring Results

The following observations are made concerning readings taken at the blower/flare station:

- Routine blower/flare station (BFS) monitoring was performed during the October 4, 2013 monitoring event. Methane concentrations prior to and after this monitoring event were 44.5 percent and 44.8 percent, respectively. Oxygen concentrations prior to and after the wellfield adjustments were 0.2 and 0.1 percent, respectively.

- The flow rate for the GCCS prior to and after the October 4, 2013 wellfield adjustments were 160 and 157 scfm, respectively. Vacuum pressure at the blower during this monitoring event was -14.70 and -14.60 inches of water, respectively.
- Routine blower/flare station (BFS) monitoring was performed during the October 18, 2013 monitoring event. Methane concentrations prior to and after this monitoring event were 45.0 percent and 44.3 percent, respectively. Oxygen concentrations prior to and after the wellfield adjustments were 0.4 and 0.2, respectively.
- The flow rate for the GCCS prior to and after the October 18, 2013 wellfield adjustments was 160 and 150 scfm, respectively. Vacuum pressure at the blower during this monitoring event was from -14.60 and -14.70 inches of water, respectively.
- At the conclusion of the October 18, 2013 monitoring event, Blower 103 had 2,620 hours of operation and Blower 104 had approximately 1,952 hours of operation. Blower 103 was operating the system during the October 18, 2013 monitoring event.
- Enclosed with this report are the blower flare stations monitoring forms for the October 2013 monitoring events.
- During the October 2013 monitoring period, the GCCS was operated on a timer. In general, the GCCS operated Monday, Wednesday, Friday and Sunday from approximately 9:00 am to 2:00 pm. The GCCS was operational approximately ten percent (11%) from the period of October 2 through October 31, 2013.
- Enclosed with this report are copies of the startup, shutdown, and malfunction forms, which can be found in Appendix C.

NON-ROUTINE SERVICES PERFORMED

Blower 104 was serviced to determine the reason for the high vibration shutdowns. In addition, Blower 103 was serviced at this time also. The specialty contractor Machine Dynamics found both blowers to be well aligned and both hardly had any vibration in either blower.

RECOMMENDED NON-ROUTINE SERVICES

SCS recommends that the blower's electric connections be tested to determine the reason for the high vibration shutdowns.

Appendix A

**Wellfield Monitoring Results
For October 2013**

Summary of Wellfield Data

October 2013

Caja del Rio Landfill

Sampling Location ID	Date	Time (24-hr clock)	CH4 (% vol)	CO2 (% vol)	O2 (% vol)	Bal (% vol)	Init Temp (°F)	Adj Temp (°F)	Init Flow (in of H ₂ O)	Adj Flow (in of H ₂ O)	Init Static Press (in of H ₂ O)	Adj Static Press (in of H ₂ O)	Init Diff Press (in of H ₂ O)	Adj Diff Press (in of H ₂ O)	System Pressure (in of H ₂ O)	Comments
Calibration	10/04/13	11:59	50.0	35.1	0.0	14.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Calibration	10/18/13	12:39	49.5	35.0	0.0	15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Blower Inlet	10/04/13	12:09	44.5	41.6	0.2	13.7	70	70	160	160	-14.7	-14.6	NA	NA	NA	
Blower Inlet	10/04/13	13:57	44.8	40.9	0.1	14.2	80	80	157	157	-14.6	-14.6	NA	NA	NA	
Blower Inlet	10/18/13	13:36	45.0	42.8	0.4	11.8	66	66	160	160	-14.7	-14.7	NA	NA	NA	
Blower Inlet	10/18/13	16:59	44.3	41.5	0.2	14.0	66	66	150	150	-14.7	-14.7	NA	NA	NA	
EW1-1	10/04/13	13:32	46.9	39.2	0.0	13.9	78	78	4.0	3.0	-1.2	-1.1	2.18	1.52	-13.28	Flow Decreased
EW1-1	10/18/13	15:59	52.8	40.0	0.1	7.1	82	82	5.0	5.0	-0.5	-0.5	0.47	0.47	-13.32	
EW1-2	10/04/13	13:36	47.1	39.4	0.0	13.5	71	71	4.0	3.0	-9.3	-9.3	1.63	1.56	-12.86	Flow Decreased
EW1-2	10/18/13	14:42	47.2	40.3	0.0	12.5	72	72	37.3	37.5	-9.3	-9.3	1.56	1.58	-0.09	
EW2A-1	10/04/13	13:29	45.3	40.1	0.0	14.6	76	76	9.0	9.0	-3.6	-3.6	8.86	8.90	-13.00	Flow Decreased
EW2A-1	10/18/13	16:05	44.8	40.6	0.1	14.5	78	78	9.6	9.2	-3.6	-3.6	9.15	8.48	-13.13	
EW2A-2	10/04/13	12:44	47.0	46.5	0.0	6.5	70	70	4.0	4.0	-0.7	-0.6	2.44	2.43	-13.12	
EW2A-2	10/18/13	14:37	45.9	48.5	0.0	5.6	72	72	4.8	4.9	-0.6	-0.6	2.40	2.40	-13.21	
EW2A-3	10/04/13	12:48	48.7	43.5	0.0	7.8	78	77	9.0	9.0	-3.2	-3.2	9.20	9.16	-13.01	Flow Decreased
EW2A-3	10/18/13	16:18	47.3	42.0	0.0	10.7	76	76	9.6	9.6	-3.4	-3.4	9.08	9.14	-13.29	Surging
EW2A-4	10/04/13	13:24	42.9	40.7	0.0	16.4	78	78	4.0	4.0	-0.3	-0.4	2.14	1.88	-13.36	Flow Decreased
EW2A-4	10/18/13	16:09	42.1	41.3	0.0	16.6	78	78	4.6	4.6	-0.5	-0.5	NR	2.17	-13.45	
EW2A-5	10/04/13	12:52	49.9	46.8	0.0	3.3	74	74	10.0	10.0	-0.8	-0.8	10.56	10.53	-13.11	
EW2A-5	10/18/13	16:22	49.3	47.5	0.0	3.2	72	72	10.0	10.0	-0.8	-0.9	10.04	10.04	-13.28	
EW2B-1	10/04/13	12:40	39.0	44.4	0.0	16.6	66	66	5.0	5.0	-0.3	-0.2	2.86	2.86	-13.12	
EW2B-1	10/18/13	14:33	36.9	47.8	0.0	15.3	68	68	5.1	4.6	-0.2	-0.3	2.73	2.23	-13.19	Dec. Flow/Vac.
EW3A-1	10/04/13	12:35	39.4	44.6	0.0	16.0	73	74	7.0	6.0	-0.6	-0.5	5.18	3.81	-13.57	Flow Decreased
EW3A-1	10/18/13	16:27	37.9	45.5	0.0	16.6	76	76	6.2	5.4	-0.5	-0.5	3.99	3.06	-13.56	Dec. Flow/Vac.
EW3A-2	10/04/13	13:17	45.8	42.7	0.0	11.5	80	79	6.0	5.0	-0.7	-0.5	3.67	2.69	-13.64	Flow Decreased
EW3A-2	10/18/13	16:13	45.9	43.5	0.0	10.6	76	76	5.1	5.1	-0.6	-0.7	2.57	2.58	-13.58	
EW3B-1	10/04/13	12:26	32.7	46.9	0.0	20.4	75	75	4.0	4.0	-0.3	-0.3	1.80	1.77	-13.11	
EW3B-1	10/18/13	14:22	30.6	47.6	0.1	21.7	78	78	4.0	3.6	-0.4	-0.3	1.77	1.39	-12.93	Dec. Flow/Vac.

Summary of Wellfield Data

October 2013

Caja del Rio Landfill

Sampling Location ID	Date	Time (24-hr clock)	CH4 (% vol)	CO2 (% vol)	O2 (% vol)	Bal (% vol)	Init Temp (°F)	Adj Temp (°F)	Init Flow (in of H ₂ O)	Adj Flow (in of H ₂ O)	Init Static Press (in of H ₂ O)	Adj Static Press (in of H ₂ O)	Init Diff Press (in of H ₂ O)	Adj Diff Press (in of H ₂ O)	System Pressure (in of H ₂ O)	Comments
EW3B-2	10/04/13	12:29	26.5	44.1	0.0	29.4	72	72	2.0	2.0	-0.2	-0.2	0.89	0.87	-13.07	
EW3B-2	10/18/13	14:28	23.2	45.2	0.0	31.6	72	72	2.6	2.4	-0.4	-0.4	0.72	0.62	-13.24	Dec. Flow/Vac.
EW4A-1	10/04/13	13:49	43.5	50.2	0.0	6.3	77	77	6.0	6.0	-0.3	-0.3	4.71	4.70	-13.67	
EW4A-1	10/18/13	16:33	41.6	48.5	0.0	9.9	78	78	6.6	5.8	-0.5	-0.5	4.57	3.52	-13.72	Dec. Flow/Vac.
EW5A-2	10/04/13	12:20	47.1	52.1	0.0	0.8	77	77	6.0	6.0	-0.5	-0.5	3.75	3.80	-14.10	
EW5A-2	10/18/13	13:48	48.8	45.4	0.1	5.7	92	92	9.9	9.9	-0.4	-0.4	10.04	10.04	-14.20	
EW6A-1	10/04/13	12:16	50.1	44.6	0.1	5.2	93	93	10.0	10.0	-0.3	-0.4	10.71	10.73	-14.24	
EW6A-1	10/18/13	13:52	46.6	52.9	0.0	0.5	77	77	6.0	6.0	-0.6	-0.6	3.79	3.79	-14.10	

Indicates landfill gas extraction well reading that does not conform with NSPS reporting requirements of pressure <0.0 inches, temperature <131°F, or O₂<5%.

Indicates landfill gas extraction well with at least one reading that does not conform with NSPS reporting requirements at the end of the monitoring event.

NR - not recorded

NA - not applicable

Appendix B
Blower/Flare Station Reports
For
October 2013 Monitoring Events



**CAJA DEL RIO LANDFILL
BLOWER FLARE STATION SEMI-MONTHLY CHECKLIST
Santa Fe Solid Waste Management Agency**

DATE: 10/18/2013	TECHNICIAN: Mike Ferryman
TEMPERATURE: 53	WEATHER: Clear
JOB: 07209113.00	PRESSURE: 29.95 DIR.: Falling
WIND SPEED: 12	WIND DIRECTION: Southwest
ARRIVAL TIME: 12:20:00 PM	DEPARTURE TIME: 05:10:00 PM

FLARE STACK TEMP. (°F) 1,278		BLOWER IN USE 103			
	SUCTION PRESSURE (in H ₂ O)	DISCHARGE PRESSURE (in H ₂ O)	BLOWER HOURS	BLOWER INLET TEMP. (°F)	BLOWER OUTLET TEMP. (°F)
BLOWER 103	-15.00	2.25	2,620	66	79
BLOWER 104			1,952		

AIR COMPRESSOR PRES. (PSI): 150.0 SHUTDOWN VALVE PRES. (PSI): 145.0
 PROPANE TANK (% full): 75 BURNER TIP PRES. (in. WC):
 BY-PASS VALVE (% OPEN): 0 FLAME ARRESTOR DELTA PRES. (in. WC) 0.40
 KNOCKOUT POT PRES PRES. (in. WC) -0.20

FLARE STATION GAS INLET COMPOSITION (Pre-Wellfield Balancing)

PRESSURE (In H₂O): -14.60 TEMP (°F): 1,278 CH₄ (% vol.): 45.0
 CO₂ (% vol.): 42.8 O₂ (% vol.): 0.4 BALANCE GAS (% vol.): 11.9
 FLARE STATION FLOW RATE (SCFM): 160
 FLARE STATION TOTAL FLOW: 21,697,558
 YOKAGAMA RECORDING: Yes

FLARE STATION GAS INLET COMPOSITION (Post-Wellfield Balancing)

PRESSURE (In H₂O) -14.70 TEMP (°F): 1,262 CH₄ (% vol.): 44.3
 CO₂ (% vol.): 41.5 O₂ (% vol.): 0.2 BALANCE GAS (% vol.): 14.0
 FLARE STATION FLOW RATE (SCFM): 150
 CONDENSATE SUMP PUMP COUNTER:
 VALVE #1: 2,608 VALVE #2: 7,747 VALVE #3: 221

Caja del Rio

10/18/2013

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HEADER LINE COMMENT: NA

SITE COMMENTS: NA

BLOWER COMMENT: NA

FLARE COMMENT: NA

CONDENSATE COMMENT: NA

Appendix C

Startup, Shutdown, and Malfunction Forms For October 2013

SSM CHECKLIST FORM
CAJA DEL RIO LANDFILL
Landfill Gas Collection and Control System

This form is used to document actions taken during a planned startup, shutdown, or malfunction of any portion of the gas collection and control system. If any of the steps taken are not consistent with the SSM Plan, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.

1. Type of Event (check all that apply) Startup Shutdown Malfunction

2. Beginning of Event: Date: 10/14/13 Time: 1415

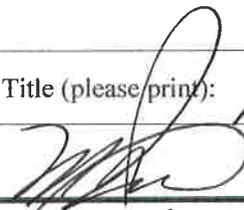
3. End of Event: Date: 10/16/13 Time: 925

4. Duration of Event (hours): 4/3

5. Description of Affected Equipment:
GCES

6. Cause/Reason for Startup/Shutdown/Malfunction:
Low gas flows

7. Name and Title (please print): M. Pincus, PSM

8. Signature:  9. Date: 11/18/13

10. Did the actual steps taken vary from the procedure specified in the SSM Plan? YES NO
If response is "Yes," proceed to box 11 below and complete an SSM Plan Departure Report Form. If "No," stop.

11. Did this event result in an exceedance of any applicable emission limitation? YES NO
If response is "Yes," proceed to box 12 below. If "No," stop.

12. Describe the emission standard that was exceeded below.

This form is intended to satisfy the recordkeeping requirements of 40 CFR 63.6(e)(iii) and (iv) and 63.10(b)(2).

