

Smith, George

From: Bayne, Bradley J <Bradley.Bayne@atkinsglobal.com>
Sent: Monday, November 14, 2016 3:49 PM
To: SWD_Waste (Shared Mailbox)
Cc: Morris, John R.; Tafuni, Steven; Anthony Detweiler; Lynette Falkowski; Mopps, Charles L; Cronyn, Edward
Subject: 0810055-012-AV / Manatee County -Lena Road Landfill Monthly Report_October 2016
Attachments: 0810055-012-AV_Manatee County-Lena Road Landfill Monthly Report_DEP-October 2016.pdf

Mr. Morris,

Attached is the Manatee County Lena Road Landfill Monthly Report (for October 2016) which includes the following:

- Monthly Water Balance Report (Exhibit A)
- Monthly Leachate Tracking Summary – 2016 (Exhibit B)
- Monthly Leachate Readings
- Monthly Rainfall
- Monthly Groundwater Gradient Report

If you should have any questions concerning this report, please call me at 813-281-8377.

Thanks,

Brad Bayne, P.G.

Senior Scientist II, GeoSciences Group

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November 14, 2016

Mr. John Morris, P.G.
Florida Department of Environmental Protection
Southwest District Office - Solid Waste Section
13051 N. Telecom Parkway
Temple Terrace, Florida 33637-0926

**Re: Manatee County Lena Road Landfill
Monthly Report –October 2016**

Dear Mr. Morris:

This letter includes the following monthly reports: Monthly Water Balance Report (Exhibit A), Monthly Leachate Tracking Summary - 2016 (Exhibit B), Monthly Leachate Meter Readings, Monthly Rainfall, Monthly Groundwater Gradient Report. On June 4, 2016, the County began placing waste into Stage II of the landfill. From June to August, the meter for Stage II (Meter #4) was being tested, adjusted, and calibrated by the County for use in measuring the flow of leachate from Stage II. Meter #4 came on-line in late August 2016. Meter #4 data, which provide the leachate flow data for Stage II, has been included with the other leachate meter data calculations in the Exhibit A and Exhibit B spreadsheets.

If you should have any questions concerning this report, please call me at 813/281-8377.

Sincerely,



Bradley Bayne, P.G.
Senior Geologist
Florida PG #1733

Attachments

cc: C. Mike Gore, Manatee County Utilities Department Director
Bryan White, Manatee County Landfill Superintendent
Anthony Detweiler, Manatee County Landfill Operations Supervisor
File – 100047674-01.01

EXHIBIT A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY LENA ROAD LANDFILL MONTHLY WATER BALANCE REPORT October-16

A	B	C	D	E	F	G	H	I
DATE	LEACHATE STAGE I Lift Station 1 (gallons)	LEACHATE STAGE I Lift Station 2 (gallons)	LEACHATE STAGE I TOTAL (gallons)	LEACHATE STAGE II TOTAL (gallons)	LEACHATE STAGE III TOTAL (gallons)	TOTAL LEACHATE PUMPED (gallons)	RAINFALL (inches)	RAINFALL (gallons)
01-Oct-16	0	0	0	0	0	0	1.12	8,698,620
02-Oct-16	0	0	0	0	0	0	1.90	14,756,587
03-Oct-16	79,147	14,289	93,436	737,796	134,922	966,154	0.58	4,504,642
04-Oct-16	36,082	6,403	42,485	291,192	64,950	398,627	0.94	7,300,627
05-Oct-16	27,964	129	28,093	269,440	55,170	352,703	0.00	0
06-Oct-16	28,854	6,879	35,733	299,704	56,264	391,701	0.15	1,164,994
07-Oct-16	37,504	6,000	43,504	312,824	61,200	417,528	0.70	5,436,637
08-Oct-16	0	0	0	0	0	0	0.00	0
09-Oct-16	0	0	0	0	0	0	0.00	0
10-Oct-16	79,538	7,854	87,392	901,476	135,980	1,124,848	0.00	0
11-Oct-16	23,762	134	23,896	275,180	40,242	339,318	0.00	0
12-Oct-16	26,234	7,069	33,303	255,120	40,495	328,918	0.00	0
13-Oct-16	28,824	138	28,962	267,884	40,799	337,645	0.00	0
14-Oct-16	27,656	7,278	34,934	274,980	40,585	350,499	0.00	0
15-Oct-16	0	0	0	0	0	0	0.00	0
16-Oct-16	0	0	0	0	0	0	0.00	0
17-Oct-16	80,434	7,310	87,744	724,744	109,895	922,383	0.00	0
18-Oct-16	26,440	7,426	33,866	232,200	29,851	295,917	0.00	0
19-Oct-16	25,276	125	25,401	230,488	34,891	290,780	0.00	0
20-Oct-16	26,008	124	26,132	223,032	34,902	284,066	0.00	0
21-Oct-16	29,103	7,334	36,437	200,356	29,902	266,695	0.00	0
22-Oct-16	0	0	0	0	0	0	0.00	0
23-Oct-16	0	0	0	0	0	0	0.00	0
24-Oct-16	64,846	7,790	72,636	677,249	85,848	835,733	0.00	0
25-Oct-16	22,586	7,205	29,791	211,659	29,389	270,839	0.00	0
26-Oct-16	22,543	96	22,639	202,688	29,930	255,257	0.00	0
27-Oct-16	23,684	7,084	30,768	220,792	25,251	276,811	0.00	0
28-Oct-16	24,290	101	24,391	201,000	29,433	254,824	0.00	0
29-Oct-16	0	0	0	0	0	0	0.00	0
30-Oct-16	0	0	0	0	0	0	0.00	0
31-Oct-16	76,178	7,717	83,895	630,944	89,575	804,414	0.00	0
TOTAL	816,953	108,485	925,438	7,640,748	1,199,474	9,765,660	5.39	41,862,106
Leachate Pumped as Percentage of Rainfall			6.2%	44.2%	12.4%			

Column Notes:

- A - Date of reading.
 B - Leachate pumped (gallons) from Stage I by lift station 1.
 C - Leachate pumped (gallons) from Stage I by lift station 2.
 D - Total Stage I leachate pumpage (B+C).
 E - Leachate pumped (gallons) from Stage II.
 F - Leachate pumped (gallons) from Stage III.
 G - Total leachate pumped to WWTP storage tank (D+E+F).
 H - Rainfall (inches) recorded on this date.
 I - Rainfall (gallons) calculated based on open area (H x Area x 27,156 gal/acre-in).

Comments

	Stage I (acres)	Stage II (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	102.0	113.0	66.0	281.0
Interm. Cover	0.0	5.0	--	5.0
Closed	30.0	0.0	--	30.0
TOTAL	132.0	118.0	66.0	316.0
Open Area	102.0	118.0	66.0	286.0

"0" = no data recorded

EXHIBIT B

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY LENA ROAD LANDFILL

MONTHLY LEACHATE TRACKING SUMMARY -- 2016

MONTH	B STAGE I LEACHATE (gallons)	C STAGE II LEACHATE* (gallons)	D STAGE III LEACHATE (gallons)	E TOTAL LEACHATE (gallons)	F RAINFALL (inches)	G RAINFALL ** (gallons)	H STAGE I LEACHATE/ RAINFALL (%)	I STAGE II LEACHATE/ RAINFALL (%)	J STAGE III LEACHATE /RAINFALL (%)
JANUARY	785,550	0	0	785,550	5.67	25,867,748	8.5%	0.0%	0.0%
FEBRUARY	961,680	0	0	961,680	1.67	7,618,986	35.4%	0.0%	0.0%
MARCH	581,148	0	168,250	749,398	1.58	7,208,297	22.6%	0.0%	10.1%
APRIL	576,293	0	509,075	1,085,368	2.56	11,679,265	13.8%	0.0%	18.9%
MAY	718,675	0	798,107	1,516,782	8.81	40,193,097	5.0%	0.0%	8.6%
JUNE	747,181	0	1,003,510	1,750,691	12.15	55,430,888	3.8%	0.0%	7.8%
JULY	669,228	0	769,741	1,438,969	8.66	39,508,765	4.7%	0.0%	8.4%
AUGUST	982,090	0	1,399,591	2,381,681	18.22	83,123,522	3.3%	0.0%	7.3%
SEPTEMBER	969,849	8,969,404	1,393,236	11,332,489	8.76	68,035,631	4.0%	32.0%	8.9%
OCTOBER	925,438	7,640,748	1,199,474	9,765,660	5.39	41,862,106	6.2%	44.2%	12.4%
NOVEMBER									
DECEMBER									
TOTAL	7,917,132	16,610,152	7,240,984	31,768,268	73.47	380,528,305	5.8%	10.6%	8.2%

Notes:

1. (B) Total leachate pumped from Stage I.
2. (C) Total leachate pumped from Stage II.
3. (D) Total leachate pumped from Stage III.
4. (E) Total leachate (Column B+C+D) pumped to the WWTP storage tank.
5. (F) Total rainfall in inches.
6. (G) Total rainfall in gallons (Stage I, II, and III Open Area of 286-acres x Rainfall) ** = includes Stage II rainfall after August
7. (H) Stage I leachate pumped as a percentage of rainfall.
8. (I) Stage II leachate pumped as a percentage of rainfall.
9. (J) Stage III leachate pumped as a percentage of rainfall.

Landfill Stage Land Areas

	Stage I (acres)	Stage II (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	102.0	113.0	66.0	281.0
Intermed. Cover	0.0	5.0	--	5.0
Closed	30.0	0.0	--	30.0
TOTAL	132.0	118.0	66.0	316.0
Open Area	102.0	118.0	66.0	286.0

LEACHATE METER READINGS

DATE	LEACHATE				STORMWATER		COMMENTS	NAME (Initials)
	METERS				S.G.			
	#1	#2	#3	#4	#1	#2		
10/1/16								
10/2/16								
10/3/16	4362021	575505	6176532	80470060	34.65	32.56	OK	RB
10/4/16	4396103	581908	6241482	80761272	34.61	32.50	OK	RB
10/5/16	4426067	582037	6296652	81030112	34.64	32.48	OK	RB
10/6/16	4454921	586916	6352916	81330416	34.44	32.42	OK	RB
10/7/16	4492425	594916	6414116	81633410	34.31	32.40	OK	RB
10/8/16								
10/9/16								
10/10/16	4571963	602770	6550096	82540716	34.12	32.36	OK	RB
10/11/16	4595725	602904	6590338	82819896	34.07	32.36	OK	RB
10/12/16	4621959	609973	6630633	83078016	34.04	32.36	OK	RB
10/13/16	4650763	610111	66711632	83348900	34.00	32.35	OK	RB
10/14/16	4678439	617389	6712217	83617880	33.96	32.33	OK	RB
10/15/16								
10/16/16								
10/17/16	4758673	624699	6822112	84348624	33.95	32.29	OK	RB
10/18/16	4785313	632125	6851963	84574824	33.93	32.27	OK	RB
10/19/16	4810569	632250	6881684	84805302	33.91	32.25	OK	RB
10/20/16	4836597	632374	6921766	85026344	33.89	32.25	OK	RB
10/21/16	4865700	639708	6951656	85226700	33.88	32.23	OK	RB
10/22/16							OK	DRS
10/23/16								
10/24/16	4930546	647498	7037506	85965944	33.80	32.26	OK	DRS
10/25/16	4953132	654703	7066895	86117608	33.79	32.18	OK	MB
10/26/16	4975675	654799	7096825	86320296	33.80	32.18	OK	MB
10/27/16	4999359	661882.5	7122076	86541088	33.70	32.15	OK	DW
10/28/16	5023648	661984	7151509	86742088	33.60	32.10	OK	DW
10/29/16								
10/30/16								
10/31/16	5099826.5	669701.25	7241067.5	87373032	33.70	32.0	OK	DW

Landfill

LANDFILL SHEET			LAKE LEVEL DATA IN FEET NGVD	
2016 Oct	RAIN FALL	LEACHATE MGD	SOUTH (86 ACRE)	EAST (63 ACRE)
1	1.12	0.072	49.50	38.50
2	1.90	0.077	49.60	38.70
3	0.58	0.082	49.60	38.70
4	0.94	0.087	49.80	36.30
5	0.00	0.089	49.80	38.80
6	0.15	0.094	49.80	38.80
7	0.70	0.090	49.70	38.80
8	0.00	0.085	47.70	38.90
9	0.00	0.082	49.90	38.90
10	0.00	0.081	50.00	38.90
11	0.00	0.080	50.20	38.90
12	0.00	0.079	50.30	39.00
13	0.00	0.074	50.40	39.00
14	0.00	0.075	50.60	39.00
15	0.00	0.072	50.60	39.00
16	0.00	0.073	50.80	39.00
17	0.00	0.070	50.80	39.00
18	0.00	0.070	50.40	39.00
19	0.00	0.066	50.30	38.80
20	0.00	0.068	50.50	38.80
21	0.00	0.066	50.50	38.80
22	0.00	0.063	50.40	38.80
23	0.00	0.059	50.30	38.80
24	0.00	0.061	50.20	38.80
25	0.00	0.060	50.10	38.80
26	0.00	0.059	49.80	38.80
27	0.00	0.061	49.60	38.80
28	0.00	0.058	49.50	38.80
29	0.00	0.060	49.60	38.70
30	0.00	0.056	49.50	38.70
31	0.00	0.058	49.50	38.70
TOTAL	5.39	2.227		
AVG		0.072		
MIN				
MAX	1.90	0.094		

Fax # 9-708-5668

FIGURE L-7

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year: OCTOBER 2016

Piezometers Inside Slurry Wall				Groundwater Monitoring Wells Outside Slurry Wall		
Piezometer	Riser Elevation	Leachate Elevation	Gradient Flow	Monitoring Well	Riser Elevation	Groundwater Elevation
P-1	42.68	NA	NA	GW-1	38.68	NA
P-2	42.32	NA	NA	GW-2	40.92	NA
P-3	40.36	25.93	inward	GW-3	39.40	33.57
P-4	40.78	23.75	inward	GW-4	40.53	32.74
P-5	40.73	23.80	inward	GW-5	39.90	32.30
P-6	40.74	23.67	inward	GW-6	38.95	31.78
P-7	40.60	23.68	inward	GW-7	39.49	31.07
P-8	40.21	23.61	inward	GW-8	39.75	29.95
P-9	39.97	23.78	inward	GW-9	39.65	29.76
P-10	39.86	22.69	inward	GW-10	38.34	29.63
P-11	40.52	24.04	inward	GW-11	38.26	31.77
P-12	43.28	30.01	inward	GW-12	42.09	32.35
P-13	44.78	30.60	inward	GW-13	44.79	33.95
P-14	45.09	30.17	inward	GW-14	39.63	34.40
P-15	45.57	30.96	inward	GW-15	42.33	35.06
P-16	44.67	31.05	inward	GW-16	44.41	36.12
P-17	44.28	30.10	inward	GW-17	42.19	34.04
P-18	43.16	24.42	inward	GW-18	41.76	32.84
P-19	42.91	23.13	inward	GW-19	41.20	33.11
P-20	42.54	26.08	inward	GW-20	41.00	31.60
P-21	42.23	25.20	inward	GW-21	40.94	29.31
P-22	42.06	24.04	inward	GW-22	41.53	28.76
P-23	42.08	22.50	inward	GW-23	40.91	32.18
P-24	42.03	20.15	inward	GW-24	41.37	31.90
P-25	42.16	18.80	inward	GW-25	41.11	31.99
P-26	42.50	19.11	inward	GW-26	41.44	32.93
P-27R	42.73	19.60	inward	GW-27R	40.90	33.05

Comments:

NA = Not Applicable - wells and piezometers abandoned in March 2016

Wells (GW-18 through GW-27R) and piezometers (P-18 through P-27R) installed in April 2016

Date Data Collected: OCTOBER 19, 2016

Form Revised December 6, 2004