

Hsu, Benjamin

From: Pelley, Cindy <PelleyCA@HillsboroughCounty.ORG>
Sent: Friday, January 13, 2017 3:45 PM
To: SWD_Waste (Shared Mailbox)
Cc: Morgan, Steve; Ruiz, Larry; Cope, Ronald; Byer, Kimberly; bclark@scsengineers.com; Madden, Melissa
Subject: WACS ID 41193 - Qtr 4 2016 Water Balance & Waste Tire Report for Southeast County Landfill
Attachments: 4Q2016 Water Balance.pdf; Annual Fire Inspection 2016.pdf; 2016 Annual Waste Tire Rpt.pdf; 4Q2016 Waste Tire Rpt.pdf; Phase II Water Level Table.xlsx

Mr. Morgan:

The Quarterly Water Balance and Waste Tire Reports for the Southeast County Landfill are attached (WACS ID 41193). Also attached is the Annual Tire Report, Fire Inspection and the Phase II Piezometer readings.

Please advise should you have any questions concerning the information provided.

Thank you,

Cindy A. Pelley

General Manager II

Solid Waste Management Division
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Hillsborough County Florida

PUBLIC WORKS

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January 13, 2017

Mr. Steve Morgan
Solid Waste Section
Florida Department of Environmental Protection, Southwest District
13051 N. Telecom Pkwy
Temple Terrace, Florida 33637

RE: Southeast County Landfill – Leachate Data Quarterly Report

Dear Mr. Morgan:

In accordance with Specific Condition No. C.12.d of Permit No. 35435-023-SO/01, the Solid Waste Management Division (SWMD) is submitting the Quarterly Leachate Water Balance summary for the Southeast County Landfill for the quarter ending December 31, 2016.

The data is being submitted as separate monthly reports for October, November, and December 2016. The attached reports include the leachate level in Pump Station B (PS-B).

Please advise should you have any questions concerning the attached submittal.

Sincerely,

Larry E. Ruiz, SC
Manager Landfill Operations
Solid Waste Management Division

LER/cp
Attachment
xc: Bruce Clark, SCS
Ron Cope, EPC

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DATE: November 7, 2016

TO: Larry E. Ruiz, Manager Landfill Operations, Solid Waste Management Division

FROM: Cindy A. Pelley, Landfill Supervisor, Solid Waste Management Division

SUBJECT: Leachate Water Balance Report Forms for October 2016
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Division (SWMD) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2016 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

TABLE 1

Day (Column I)

Column I presents the calendar days for the month.

Rainfall (Column II)

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 3.48 inches of rainfall at the Southeast County Landfill (SCLF).

Depth in Pond A (Column III)

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month the daily average depth of effluent stored in Pond A was 2.7 feet.

Depth in Pond B (Column IV)

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month the daily average depth of effluent stored in Pond B was 3.1 feet.

Estimated Depth at Pump Station B Sump (PS-B) (Column V)

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 13.4 inches.

Leachate Pumped to MLPS from Phases I-VI (Column VI)

Column VI presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The average daily amount of leachate pumped from PS-A was 99,925 gallons. A total of 3,097,682 gallons of leachate was pumped this month.

Leachate Pumped from Sections 7-8 LDS (Column VII)

Column VII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. On August 31, the LDS pump went down and a temporary pump was installed. We had anticipated installing the new pump in mid-October however the new pump was not sized appropriately. Another pump will be ordered. This month the LDS was pumped manually and we estimate that a total of 1,200 gallons of leachate was removed from the leak detection system of Sections 7-8.

Leachate Pumped to MLPS from Sections 7-8 (Column VIII)

Column VIII presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). On October 17th a new replacement pump was installed at this pump station. This month a total of 282,434 gallons was removed.

Leachate Pumped to LTRF from the MLPS (Column IX)

Column IX presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 3,380,116 gallons of leachate was pumped to the LTRF.

Leachate Pumped to LTRF from Section 9 (Column X)

Column X presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 148,897 gallons of leachate was pumped this month.

Leachate Pumped from Section 9 LDS (Column XI)

Column XI presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total 322 gallons of leachate was removed from the leak detection system.

Leachate in 575,000-Gallon Tank (Column XII)

Column XII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 370,000 gallons of leachate was stored in the tank.

Effluent in 575,000-Gallon Tank (Column XIII)

Column XIII presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 405,800 gallons of effluent was stored in the tank.

Leachate Treated at LTRF (Column XIV)

Column XIV presents the daily amount of leachate, in gallons, treated at the LTRF. This month a total of 880,300 gallons of leachate was treated at the plant.

Total Leachate Hauled (Column XV)

Column XV presents the daily amount of leachate, in gallons, hauled off site. This month a total of 2,507,491 gallons of leachate was hauled off site.

Leachate Dust Control Sprayed (Column XVI)

Column XVI presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month leachate was not used for dust control.

Pond A Storage (Column XVII)

Column XVII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month a daily average of 94,800 gallons of effluent was stored in Pond A.

Pond B Storage (Column XVIII)

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month a daily average of 183,200 gallons of effluent was stored in Pond B.

Effluent Sprayed at Pond B (Column XIX)

Column XIX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIII. This month 480,725 gallons of effluent was sprayed in Pond B.

Effluent Irrigation (Column XX)

Column XX presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month a total of 979,296 gallons of effluent was used for spray irrigation.

Effluent Dust Control Sprayed (Column XXI)

Column XXI presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

Total Effluent Hauled (Column XXII)

Column XXII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month 153,720 gallons of effluent was hauled off site.

Total Evaporation (Column XXIII)

Column XXIII presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. Total evaporation estimated for this month was 807,600 gallons.

TABLE 2

Table 2 presents data assembled from daily logs compiled by the SWMD staff.

TABLE 3

Leachate Balance Summary

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 3,540,248 gallons. Total outflow quantity from the LTRF was 3,387,791 gallons. The change in storage for the month increased by 152,457 gallons.

Please advise should you have any questions concerning the information provided.

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM
OCTOBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to MLPS from Phases I-VI (gal.)	Leachate Pumped from Sections 7-8 LDS (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 LDS (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)	
1	1.50	3.2	3.5	12.1	104,277	NR	5,500	109,777	4,571	202	345,000	473,000	23,800	105,847	0	118,000	223,000	0	50,294	0	0	40,200	
2	0.75	3.1	3.6	14.7	101,873	NR	7,999	109,872	4,889	0	393,000	475,000	23,800	0	0	113,000	234,000	0	0	0	0	0	
3	0.55	3.0	3.7	17.2	101,873	NR	7,999	109,872	4,889	0	441,000	477,000	23,800	71,037	0	108,000	245,000	0	0	0	21,958	0	
4	0.00	3.0	3.7	10.4	105,434	NR	11,500	116,934	5,675	118	461,000	466,000	25,500	129,084	0	108,000	245,000	0	0	0	44,192	0	
5	0.01	3.0	3.8	11.0	106,526	NR	8,276	114,802	5,702	0	422,000	453,000	22,300	136,691	0	108,000	256,000	0	0	0	36,571	0	
6	0.34	2.8	3.8	12.5	106,800	NR	0	106,800	6,031	0	379,000	427,000	20,300	129,494	0	98,000	256,000	0	0	0	36,557	0	
7	0.33	2.8	3.8	15.8	109,033	NR	23,360	132,393	7,297	0	345,000	417,000	25,800	136,499	0	98,000	256,000	0	0	0	0	0	
8	0.00	2.8	3.8	15.5	107,507	NR	11,606	119,113	10,360	0	331,000	437,000	25,700	82,926	0	98,000	256,000	0	0	0	7,139	0	
9	0.00	3.0	3.8	13.9	101,580	NR	14,473	116,053	4,765	0	374,000	445,000	25,700	0	0	108,000	256,000	0	0	0	0	0	
10	0.00	3.2	3.8	12.2	101,580	NR	14,473	116,053	4,765	0	417,000	453,000	25,700	123,817	0	118,000	256,000	0	0	0	0	0	
11	0.00	3.2	3.8	10.9	95,900	NR	10,527	106,427	167	0	374,000	475,000	26,200	86,746	0	118,000	256,000	49,048	47,305	0	0	40,300	
12	0.00	3.4	3.6	16.3	107,468	NR	11,967	119,435	5,564	0	372,000	453,000	25,700	114,296	0	129,000	234,000	0	54,674	0	0	43,700	
13	0.00	3.3	3.3	11.5	94,332	NR	2,268	96,600	5,868	2	336,000	458,000	25,200	128,658	0	123,000	202,000	0	36,122	0	0	28,900	
14	0.00	3.4	3.4	16.4	99,459	NR	16,902	116,361	7,972	0	305,000	432,000	22,000	84,748	0	129,000	213,000	61,392	59,628	0	7,303	50,800	
15	0.00	2.3	3.7	19.0	98,542	NR	1,018	99,560	375	0	295,000	405,000	24,500	89,110	0	74,000	245,000	30,427	45,672	0	0	38,100	
16	0.00	2.2	3.7	15.1	100,800	NR	382	101,181	6,489	0	335,000	409,000	24,500	0	0	70,000	234,000	0	0	0	0	0	
17	0.00	2.1	3.6	11.1	100,800	NR	382	101,181	6,489	0	374,000	413,000	24,500	78,790	0	65,000	234,000	0	59,257	0	0	47,400	
18	0.00	3.3	2.7	11.6	102,100	NR	26,094	128,194	1,413	0	389,000	437,000	27,900	49,188	0	123,000	143,000	87,393	67,417	0	0	58,300	
19	0.00	2.5	2.8	11.6	98,700	NR	12,834	111,534	4,264	0	405,000	408,000	31,900	128,742	0	83,000	152,000	0	48,093	0	0	38,500	
20	0.00	3.1	2.8	11.6	99,300	NR	9,322	108,622	6,070	0	362,000	379,000	31,400	106,958	0	113,000	152,000	0	54,266	0	0	43,400	
21	0.00	3.1	2.6	18.0	102,554	NR	9,932	112,486	2,692	0	331,000	358,000	32,000	84,784	0	113,000	133,000	0	30,618	0	0	24,500	
22	0.00	2.0	2.0	15.8	100,312	NR	7,667	107,979	4,219	0	324,000	336,000	29,800	89,854	0	61,000	80,000	0	43,742	0	0	35,000	
23	0.00	2.0	2.5	13.8	93,617	NR	7,839	101,456	5,452	0	363,000	355,000	29,800	0	0	61,000	115,000	0	0	0	0	0	
24	0.00	1.9	2.9	11.8	93,617	NR	7,839	101,456	5,452	0	403,000	374,000	29,800	42,152	0	57,000	162,000	36,129	63,252	0	0	52,400	
25	0.00	2.2	2.5	11.0	94,400	NR	7,835	102,235	69	0	403,000	350,000	35,800	79,687	0	70,000	124,000	0	32,569	0	0	26,100	
26	0.00	2.9	2.4	10.7	94,000	NR	7,723	101,723	4,902	0	398,000	331,000	31,600	79,636	0	103,000	115,000	37,128	74,043	0	0	61,100	
27	0.00	3.0	2.0	11.1	94,500	NR	2,667	97,167	6,183	0	379,000	317,000	37,500	87,590	0	108,000	80,000	71,872	42,826	0	0	37,900	
28	0.00	3.0	2.2	12.9	94,889	NR	11,326	106,215	195	0	360,000	302,000	37,100	94,110	0	108,000	97,000	22	50,509	0	0	40,400	
29	0.00	1.5	2.2	13.3	94,925	NR	7,571	102,496	6,976	0	324,000	331,000	36,900	87,411	0	40,000	97,000	73,597	63,118	0	0	54,200	
30	0.00	1.8	2.0	13.2	95,493	NR	7,578	103,071	4,572	0	352,000	355,000	36,900	0	0	52,000	72,000	0	0	0	0	0	
31	0.00	2.1	1.7	13.1	95,493	NR	7,578	103,071	4,572	0	379,000	379,000	36,900	79,636	0	65,000	57,000	33,717	55,891	0	0	46,400	
Total	3.48				3,097,682	1,200	282,434	3,380,116	148,897	322	370,000	405,800	880,300	2,507,491	0	94,800	183,200	480,725	979,296	0	153,720	807,600	
Daily Average		2.7	3.1	13.4	99,925	39	9,111	109,036	4,803	10	370,000	405,800											
Mo. Average															0				31,600		0	5,000	26,050

projects/balance/2016/10-16ba1.xls (ds 11/02/16)

Notes:

- NR = No Records, NA = Not Available.
- Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
- Daily average is calculated by dividing the total by the actual days measured in the month.
- Monthly average calculated by dividing the total by the number of days of the month.
- Column II, Trace is less than 0.01 inches and is not included in total.
- Columns III and IV, field measured at staff gauges.
- Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
- Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
- Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
- Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

**TABLE 2. FIELD DATA ENTRY FORM
OCTOBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Day	Rainfall (in.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)
																Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)	
1	1.50	2,253,395	12.1	3,505,862	1,382,432	5,829,974	2,021,702	NR	3.5	0.0	3.2	50,294	12.00	16.42	23,772	56,218	49,629	0	0	0	0
2	0.75	2,355,268	14.7	3,507,517	1,385,666	5,829,990	2,029,701	NR	3.6	0.0	3.1	0	13.67	16.50	23,772	0	0	0	0	0	0
3	0.55	2,457,140	17.2	3,509,171	1,388,900	5,830,005	2,037,700	NR	3.7	0.0	3.0	0	15.33	16.58	23,772	56,346	14,691	0	0	21,958	0
4	0.00	2,562,574	10.4	3,512,576	1,391,170	5,830,123	2,049,200	NR	3.7	0.0	3.0	0	16.00	16.17	25,513	86,472	42,612	0	0	44,192	0
5	0.01	2,669,100	11.0	3,513,819	1,395,629	5,830,127	2,057,476	NR	3.8	0.0	3.0	0	14.67	15.75	22,272	93,886	42,805	0	0	36,571	0
6	0.34	2,775,900	12.5	3,516,344	1,399,135	5,830,130	2,057,476	NR	3.8	0.0	2.8	0	13.17	14.83	20,281	86,765	42,729	0	0	36,557	0
7	0.33	2,884,933	15.8	3,519,516	1,403,260	5,830,134	2,080,836	NR	3.8	0.0	2.8	0	12.00	14.50	25,797	86,720	49,779	0	0	0	0
8	0.00	2,992,440	15.5	3,522,804	1,410,332	5,830,136	2,092,442	NR	3.8	0.0	2.8	0	11.50	15.17	25,706	42,169	40,757	0	0	7,139	0
9	0.00	3,094,020	13.9	3,523,412	1,414,490	5,830,136	2,106,915	NR	3.8	0.0	3.0	0	13.00	15.46	25,706	0	0	0	0	0	0
10	0.00	3,195,600	12.2	3,524,019	1,418,647	5,830,136	2,121,388	NR	3.8	0.0	3.2	0	14.50	15.75	25,705	79,790	44,027	0	0	0	0
11	0.00	3,291,500	10.9	3,524,019	1,418,814	5,830,136	2,131,915	NR	3.8	49048.0	3.2	47,305	13.00	16.50	26,213	86,746	0	0	0	0	0
12	0.00	3,398,968	16.3	3,524,610	1,423,787	5,830,136	2,143,882	NR	3.6	0.0	3.4	54,674	12.92	15.75	25,659	42,137	72,159	0	0	0	0
13	0.00	3,493,300	11.5	3,524,613	1,429,652	5,830,138	2,146,150	NR	3.3	0.0	3.3	36,122	11.67	15.92	25,226	42,102	86,556	0	0	0	0
14	0.00	3,592,759	16.4	3,529,573	1,432,664	5,830,138	2,163,052	NR	3.4	61392.0	3.4	59,628	10.58	15.00	22,016	49,216	35,532	0	0	7,303	0
15	0.00	3,691,301	19.0	3,529,946	1,432,666	5,830,138	2,164,070	NR	3.7	30427.0	2.3	45,672	10.25	14.08	24,460	42,192	46,918	0	0	0	0
16	0.00	3,792,101	15.1	3,529,947	1,439,154	5,830,139	2,164,452	NR	3.7	0.0	2.2	0	11.63	14.21	24,460	0	0	0	0	0	0
17	0.00	3,892,900	11.1	3,529,948	1,445,642	5,830,139	2,164,833	NR	3.6	0.0	2.1	59,257	13.00	14.33	24,461	35,058	43,732	0	0	0	0
18	0.00	3,995,000	11.6	3,529,958	1,447,045	5,830,139	2,190,927	NR	2.7	87393.0	3.3	67,417	13.50	15.17	27,852	49,188	0	0	0	0	0
19	0.00	4,093,700	11.6	3,529,961	1,451,306	5,830,139	2,203,761	NR	2.8	0.0	2.5	48,093	14.08	14.17	31,898	42,186	86,556	0	0	0	0
20	0.00	4,193,000	11.6	3,529,964	1,457,373	5,830,139	2,213,083	NR	2.8	0.0	3.1	54,266	12.58	13.17	31,363	42,116	64,842	0	0	0	0
21	0.00	4,295,554	18.0	3,531,134	1,458,895	5,830,139	2,223,015	NR	2.6	0.0	3.1	30,618	11.50	12.42	32,018	42,140	42,644	0	0	0	0
22	0.00	4,395,866	15.8	3,531,139	1,463,109	5,830,139	2,230,682	NR	2.0	0.0	2.0	43,742	11.25	11.67	29,756	42,172	47,682	0	0	0	0
23	0.00	4,489,483	13.8	3,531,143	1,468,557	5,830,139	2,238,521	NR	2.5	0.0	2.0	0	12.63	12.34	29,756	0	0	0	0	0	0
24	0.00	4,583,100	11.8	3,531,147	1,474,005	5,830,139	2,246,359	NR	2.9	36129.0	1.9	63,252	14.00	13.00	29,755	42,152	0	0	0	0	0
25	0.00	4,677,500	11.0	3,531,150	1,474,071	5,830,139	2,254,194	NR	2.5	0.0	2.2	32,569	14.00	12.17	35,793	79,687	0	0	0	0	0
26	0.00	4,771,500	10.7	3,531,431	1,478,692	5,830,139	2,261,917	NR	2.4	37128.0	2.9	74,043	13.83	11.50	31,638	79,636	0	0	0	0	0
27	0.00	4,866,000	11.1	3,531,436	1,484,870	5,830,139	2,264,584	NR	2.0	71872.0	3.0	42,826	13.17	11.00	37,508	87,590	0	0	0	0	0
28	0.00	4,960,889	12.9	3,531,453	1,485,048	5,830,139	2,275,910	NR	2.2	22.0	3.0	50,509	12.50	10.50	37,098	94,110	0	0	0	0	0
29	0.00	5,055,814	13.3	3,531,454	1,492,023	5,830,139	2,283,481	NR	2.2	73597.0	1.5	63,118	11.25	11.50	36,930	87,411	0	0	0	0	0
30	0.00	5,151,307	13.2	3,531,458	1,496,591	5,830,139	2,291,059	NR	2.0	0.0	1.8	0	12.21	12.34	36,930	0	0	0	0	0	0
31	0.00	5,246,800	13.1	3,531,461	1,501,159	5,830,139	2,298,636	NR	1.7	33717.0	2.1	55,891	13.17	13.17	36,930	79,636	0	0	0	0	0
Totals	3.48									480,725		979,296			880,016	1,653,841	853,650	0	0	153,720	0

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Notes:

- NR = No Records, NA = Not Available.
- Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
- Column IV includes quantities from leak detection system.
- Column B, trace is less than 0.01 inches.
- Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
- Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	5	0	0
Intermediate	134.4	19.3	15
Final	23	0	0
Not Opened	0	0	0

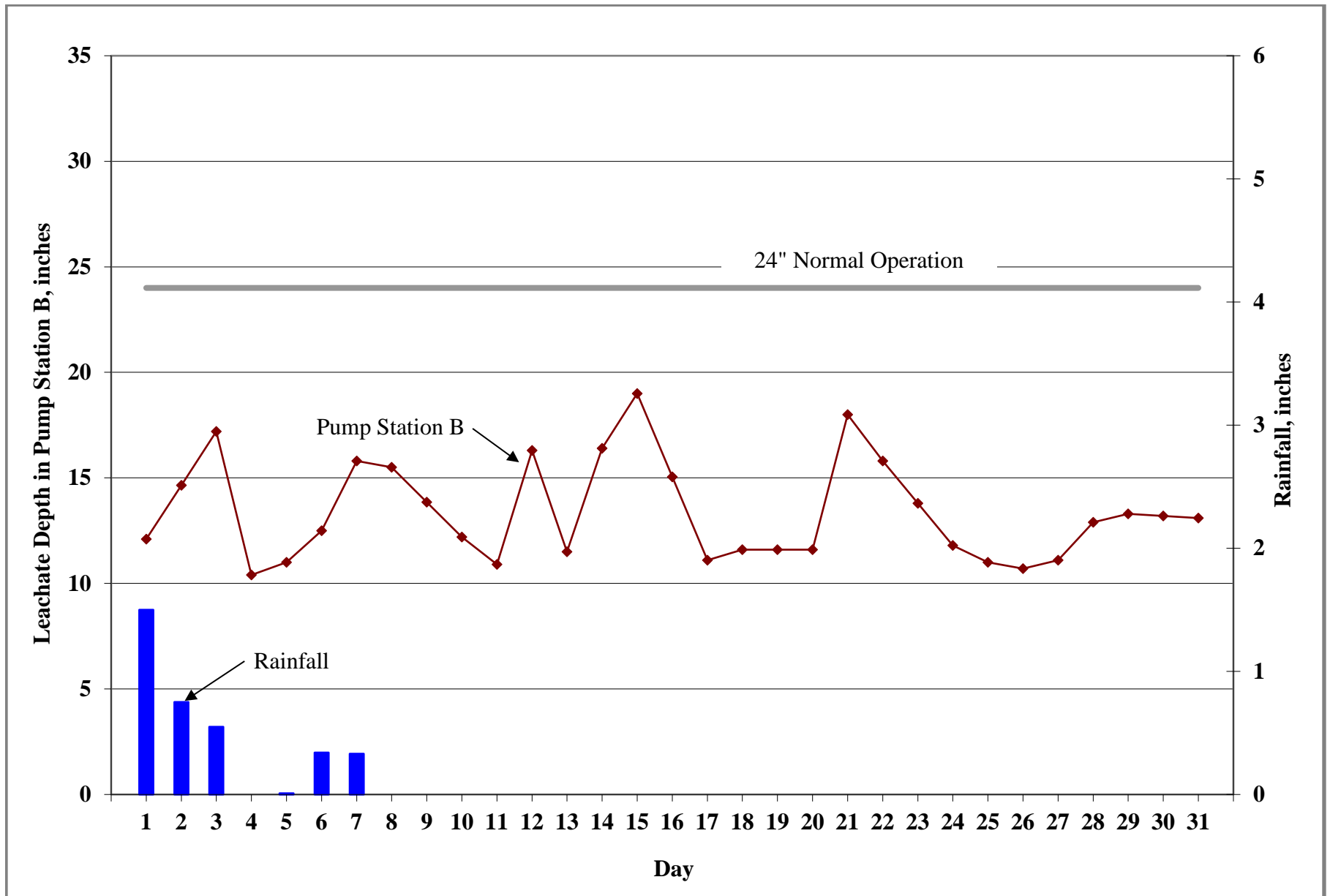


Figure 1. Leachate Levels in Pump Station B and Rainfall for October 2015.



Hillsborough County Florida

PUBLIC WORKS

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(813) 272-5912 | Fax: (813) 272-5811

DATE: December 15, 2016

TO: Larry E. Ruiz, Manager Landfill Operations, Solid Waste Management Division

FROM: Cindy A. Pelley, Landfill Supervisor, Solid Waste Management Division

SUBJECT: Leachate Water Balance Report Forms for November 2016 Southeast County Landfill, Hillsborough County, Florida

BOARD OF COUNTY COMMISSIONERS
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The Solid Waste Management Division (SWMD) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2016 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

TABLE 1

Day (Column I)

Column I presents the calendar days for the month.

Rainfall (Column II)

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was no rainfall recorded at the Southeast County Landfill (SCLF).

Depth in Pond A (Column III)

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month the daily average depth of effluent stored in Pond A was 2.4 feet.

Depth in Pond B (Column IV)

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month the daily average depth of effluent stored in Pond B was 2.0 feet.

Estimated Depth at Pump Station B Sump (PS-B) (Column V)

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 14.0 inches.

Leachate Pumped to MLPS from Phases I-VI (Column VI)

Column VI presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The average daily amount of leachate pumped from PS-A was 87,320 gallons. A total of 2,619,600 gallons of leachate was pumped this month.

Leachate Pumped from Sections 7-8 LDS (Column VII)

Column VII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. On November 14, the LDS pump was replaced, and was pumped manually for the month. We estimate that a total of 2,520 gallons of leachate was removed from the leak detection system of Sections 7-8 during the month of November.

Leachate Pumped to MLPS from Sections 7-8 (Column VIII)

Column VIII presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). This month a total of 170,313 gallons was removed.

Leachate Pumped to LTRF from the MLPS (Column IX)

Column IX presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 2,789,913 gallons of leachate was pumped to the LTRF.

Leachate Pumped to LTRF from Section 9 (Column X)

Column X presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 85,073 gallons of leachate was pumped this month.

Leachate Pumped from Section 9 LDS (Column XI)

Column XI presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total 37 gallons of leachate was removed from the leak detection system.

Leachate in 575,000-Gallon Tank (Column XII)

Column XII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 324,700 gallons of leachate was stored in the tank.

Effluent in 575,000-Gallon Tank (Column XIII)

Column XIII presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 273,500 gallons of effluent was stored in the tank.

Leachate Treated at LTRF (Column XIV)

Column XIV presents the daily amount of leachate, in gallons, treated at the LTRF. This month a total of 988,600 gallons of leachate was treated at the plant.

Total Leachate Hauled (Column XV)

Column XV presents the daily amount of leachate, in gallons, hauled off site. This month a total of 1,852,472 gallons of leachate was hauled off site.

Leachate Dust Control Sprayed (Column XVI)

Column XVI presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month 1,020 gallons of leachate was used for dust control.

Pond A Storage (Column XVII)

Column XVII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month a daily average of 80,400 gallons of effluent was stored in Pond A.

Pond B Storage (Column XVIII)

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month a daily average of 85,400 gallons of effluent was stored in Pond B.

Effluent Sprayed at Pond B (Column XIX)

Column XIX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIII. This month 130,165 gallons of effluent was sprayed in Pond B.

Effluent Irrigation (Column XX)

Column XX presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month a total of 795,902 gallons of effluent was used for spray irrigation.

Effluent Dust Control Sprayed (Column XXI)

Column XXI presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

Total Effluent Hauled (Column XXII)

Column XXII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month effluent was not hauled off site.

Total Evaporation (Column XXIII)

Column XXIII presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. Total evaporation estimated for this month was 644,100 gallons.

TABLE 2

Table 2 presents data assembled from daily logs compiled by the SWMD staff.

TABLE 3

Leachate Balance Summary

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 2,887,003 gallons. Total outflow quantity from the LTRF was 2,842,092 gallons. The change in storage for the month increased by 44,911 gallons.

Please advise should you have any questions concerning the information provided.

**TABLE I. LEACHATE WATER BALANCE REPORT FORM
NOVEMBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to MLPS from Phases I-VI (gal.)	Leachate Pumped from Sections 7-8 (LDS) (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 (LDS) (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)
1	0.00	2.6	1.0	11.1	93,600	84	7,379	100,979	226	0	367,000	367,000	38,000	79,688	0	88,000	19,000	20,409	38,395	0	0	31,700
2	0.00	1.9	1.4	10.9	90,700	84	7,658	98,358	3,095	0	355,000	365,000	33,000	90,781	0	57,000	38,000	0	0	0	0	0
3	0.00	3.3	1.8	20.3	90,191	84	5,074	95,265	2,464	0	324,000	286,000	37,500	84,760	0	123,000	64,000	0	51,535	0	0	41,200
4	0.00	2.4	2.2	13.5	90,017	84	7,704	97,721	4,063	0	295,000	278,000	33,700	84,729	0	79,000	97,000	0	55,754	0	0	44,600
5	0.00	2.4	2.1	10.5	92,693	84	2,662	95,355	4,536	0	278,000	235,000	33,200	49,719	0	79,000	88,000	0	27,742	0	0	22,200
6	0.00	2.3	2.1	10.7	91,700	84	3,561	95,261	4,992	0	319,000	262,000	33,200	0	0	74,000	88,000	0	0	0	0	0
7	0.00	2.2	2.1	10.9	91,700	84	3,561	95,261	4,992	0	360,000	288,000	33,200	70,168	0	70,000	88,000	0	55,776	0	0	44,600
8	0.00	3.3	1.3	11.0	86,600	84	12,960	99,560	275	0	358,000	266,000	30,300	70,210	0	123,000	33,000	0	40,257	0	0	32,200
9	0.00	2.5	1.9	11.0	91,700	84	7,557	99,257	2,007	0	345,000	250,000	34,000	98,935	0	83,000	72,000	0	18,842	0	0	15,100
10	0.00	2.2	2.2	11.6	91,500	84	7,676	99,176	2,901	0	317,000	233,000	32,900	91,789	0	70,000	97,000	0	0	0	0	0
11	0.00	1.4	2.3	18.3	86,022	84	5,051	91,073	4,426	0	295,000	259,000	31,600	91,871	0	36,000	106,000	0	0	0	0	0
12	0.00	2.1	2.0	15.7	90,011	84	133	90,144	6,487	0	266,000	283,000	31,600	49,678	0	65,000	80,000	0	0	0	0	0
13	0.00	2.5	1.9	13.4	88,634	84	9,299	97,933	1,027	0	306,000	297,000	31,600	0	0	83,000	72,000	0	0	0	0	0
14	0.00	2.9	1.8	11.1	88,634	84	9,299	97,933	1,027	0	345,000	312,000	31,600	35,075	0	103,000	64,000	0	60,230	0	0	48,200
15	0.00	2.3	2.0	11.1	87,200	84	5,201	92,401	7,040	0	386,000	288,000	30,000	49,176	0	74,000	80,000	0	31,229	0	0	25,000
16	0.00	1.8	2.6	21.7	66,300	84	4,992	71,292	1,050	37	367,000	266,000	36,100	94,399	0	52,000	133,000	0	0	0	0	0
17	0.00	3.4	2.0	22.0	80,100	84	5,084	85,184	2,534	0	319,000	245,000	36,400	87,691	0	129,000	80,000	109,587	65,189	0	0	57,600
18	0.00	2.2	2.6	18.7	79,999	84	7,724	87,723	5,742	0	295,000	228,000	30,000	90,920	0	70,000	133,000	0	0	0	0	0
19	0.00	2.2	2.6	15.7	103,596	84	5,162	108,758	0	0	276,000	261,000	40,000	49,708	0	70,000	133,000	169	67,593	0	0	54,100
20	0.00	1.7	2.6	16.5	45,629	84	4,985	50,614	3,856	0	260,000	277,000	40,000	0	0	48,000	133,000	0	0	0	0	0
21	0.00	1.2	2.6	17.3	45,629	84	4,985	50,614	3,856	0	245,000	293,000	40,000	35,046	0	32,000	133,000	0	39,682	0	0	31,700
22	0.00	2.8	2.1	11.4	119,140	84	5,039	124,179	0	0	293,000	281,000	34,200	56,224	1,020	98,000	88,000	0	75,043	0	0	60,900
23	0.00	3.1	1.8	11.5	99,480	84	5,148	104,628	4,741	0	307,000	250,000	28,500	98,837	0	113,000	64,000	0	0	0	0	0
24	0.00	3.1	1.9	13.0	90,226	84	5,000	95,226	2,303	0	324,000	248,000	28,600	0	0	113,000	72,000	0	0	0	0	0
25	0.00	3.1	2.0	14.4	90,226	84	5,000	95,226	2,303	0	341,000	247,000	28,600	49,560	0	113,000	80,000	0	67,583	0	0	54,100
26	0.00	1.8	2.0	11.9	90,641	84	5,031	95,672	0	0	338,000	274,000	28,600	91,903	0	52,000	80,000	0	45,956	0	0	36,800
27	0.00	2.0	2.0	12.5	89,968	84	6,241	96,209	2,394	0	360,000	278,000	28,600	0	0	61,000	80,000	0	0	0	0	0
28	0.00	2.1	2.0	13.1	89,968	84	6,241	96,209	2,394	0	381,000	283,000	28,600	72,093	0	65,000	80,000	0	0	0	0	0
29	0.00	2.0	2.3	14.3	88,163	84	4,818	92,981	1,364	0	374,000	259,000	29,600	85,837	0	61,000	106,000	0	0	0	0	0
30	0.00	3.4	2.0	13.6	89,635	84	90	89,725	2,981	0	345,000	245,000	35,400	93,675	0	129,000	80,000	0	55,096	0	0	44,100
Total	0.00				2,619,600	2,520	170,313	2,789,913	85,073	37			988,600	1,852,472	1,020							644,100
Daily Average		2.4	2.0	14.0	87,320	84	5,677	92,997	2,836	1	324,700	273,500				80,400	85,400		130,165	795,902	0	0
Mo. Average															0				26,500	0	0	21,470

projects/balance/2016/12-16bal.xls (Ds 12/01/16)

- Notes:
1. NR = No Records, NA = Not Available.
 2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
 3. Daily average is calculated by dividing the total by the actual days measured in the month.
 4. Monthly average calculated by dividing the total by the number of days of the month.
 5. Column II, Trace is less than 0.01 inches and is not included in total.
 6. Columns III and IV, field measured at staff gauges.
 7. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
 8. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
 9. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
 10. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

**TABLE 2. FIELD DATA ENTRY FORM
NOVEMBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A Day	B Rainfall (in.)	C Flow Meter Pump Sta. A (gal.)	D Reading PS-B (in.)	E Section 9 Pump 1 (gal.)	F Section 9 Pump 2 (gal.)	G Section 9 LDS (gal.)	H Sections 7-8 Pump (gal.)	I Sections 7-8 LDS (gal.)	J Pond B Depth (ft.)	K Pond B Effluent Sprayed (gal.)	L Pond A Depth (ft.)	M Effluent Spray Irrigation (gal.)	N Depth in 575K Tank Leachate (ft.)	O Depth in 575K Tank Effluent (ft.)	P Leachate Treated at LTRF (gal.)	Q Leachate Hauled		S Leachate Dust Control (Sprayed) (gal.)	T Effluent Hauled		V Effluent Dust Control (Sprayed) (gal.)	
																Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)		
1	0.00	5,340,400	11.1	3,531,513	1,501,333	5,830,139	2,306,015	156,100	1.0	20,409.0	2.6	38,395	12.75	12.75	38,008	79,688	0	0	0	0	0	
2	0.00	5,431,100	10.9	3,531,518	1,504,423	5,830,139	2,313,673	156,100	1.4	0.0	1.9	0	12.33	12.67	33,048	42,098	48,683	0	0	0	0	
3	0.00	5,521,291	20.3	3,531,519	1,506,886	5,830,139	2,318,747	156,100	1.8	0.0	3.3	51,535	11.25	9.92	37,525	42,108	42,652	0	0	0	0	
4	0.00	5,611,308	13.5	3,531,524	1,510,944	5,830,139	2,326,451	156,100	2.2	0.0	2.4	55,754	10.25	9.67	33,691	42,135	42,594	0	0	0	0	
5	0.00	5,704,001	10.5	3,531,528	1,515,476	5,830,139	2,329,113	156,100	2.1	0.0	2.4	27,742	9.67	8.17	33,155	0	49,719	0	0	0	0	
6	0.00	5,795,701	10.7	3,531,532	1,520,465	5,830,139	2,332,674	156,100	2.1	0.0	2.3	0	11.09	9.09	33,155	0	0	0	0	0	0	
7	0.00	5,887,400	10.9	3,531,535	1,525,453	5,830,139	2,336,235	156,100	2.1	0.0	2.2	55,776	12.50	10.00	33,154	70,168	0	0	0	0	0	
8	0.00	5,974,000	11.0	3,531,536	1,525,727	5,830,139	2,349,195	156,100	1.3	0.0	3.3	40,257	12.42	9.25	30,327	70,210	0	0	0	0	0	
9	0.00	6,065,700	11.0	3,531,541	1,527,729	5,830,139	2,356,752	156,100	1.9	0.0	2.5	18,842	12.00	8.67	34,028	49,159	49,776	0	0	0	0	
10	0.00	6,157,200	11.6	3,531,547	1,530,624	5,830,139	2,364,428	156,100	2.2	0.0	2.2	0	11.00	8.08	32,908	49,182	42,607	0	0	0	0	
11	0.00	6,243,222	18.3	3,531,547	1,535,050	5,830,139	2,369,479	156,100	2.3	0.0	1.4	0	10.25	9.00	31,624	49,337	42,534	0	0	0	0	
12	0.00	6,333,233	15.7	3,531,554	1,541,530	5,830,139	2,369,612	156,100	2.0	0.0	2.1	0	9.25	9.83	31,624	0	49,678	0	0	0	0	
13	0.00	6,421,867	13.4	3,531,559	1,542,553	5,830,139	2,378,911	156,100	1.9	0.0	2.5	0	10.63	10.33	31,625	0	0	0	0	0	0	
14	0.00	6,510,500	11.1	3,531,563	1,543,575	5,830,139	2,388,210	156,100	1.8	0.0	2.9	60,230	12.00	10.83	31,625	35,075	0	0	0	0	0	
15	0.00	6,597,700	11.1	3,531,567	1,550,611	5,830,139	2,393,411	156,100	2.0	0.0	2.3	31,229	13.42	10.00	29,989	49,176	0	0	0	0	0	
16	0.00	6,664,000	21.7	3,531,569	1,551,659	5,830,176	2,398,403	156,100	2.6	0.0	1.8	0	12.75	9.25	36,055	44,964	49,435	0	0	0	0	
17	0.00	6,744,100	22.0	3,531,573	1,554,189	5,830,176	2,403,487	156,100	2.0	109587.0	3.4	65,189	11.08	8.50	36,403	45,050	42,641	0	0	0	0	
18	0.00	6,824,099	18.7	3,531,578	1,559,926	5,830,176	2,411,211	156,100	2.6	0.0	2.2	0	10.25	7.92	30,035	42,063	48,857	0	0	0	0	
19	0.00	6,927,695	15.7	3,531,582	1,559,927	5,830,176	2,416,373	156,100	2.6	169.0	2.2	67,593	9.58	9.08	39,994	0	49,708	0	0	0	0	
20	0.00	6,973,324	16.5	3,531,587	1,563,778	5,830,180	2,421,358	156,100	2.6	0.0	1.7	0	9.04	9.63	39,994	0	0	0	0	0	0	
21	0.00	7,018,953	17.3	3,531,592	1,567,628	5,830,184	2,426,343	156,100	2.6	0.0	1.2	39,682	8.50	10.17	39,993	35,046	0	0	0	0	0	
22	0.00	7,138,093	11.4	3,531,594	1,567,688	5,830,184	2,431,382	156,100	2.1	0.0	2.8	75,043	10.17	9.75	34,225	56,224	0	1,020	0	0	0	
23	0.00	7,237,573	11.5	3,531,595	1,572,428	5,830,184	2,436,530	156,100	1.8	0.0	3.1	0	10.67	8.67	28,532	56,225	42,612	0	0	0	0	
24	0.00	7,327,799	13.0	3,531,599	1,574,727	5,830,184	2,441,530	156,100	1.9	0.0	3.1	0	11.25	8.63	28,617	0	0	0	0	0	0	
25	0.00	7,418,025	14.4	3,531,602	1,577,026	5,830,184	2,446,529	156,100	2.0	0.0	3.1	67,583	11.83	8.58	28,617	0	49,560	0	0	0	0	
26	0.00	7,508,666	11.9	3,531,608	1,577,031	5,830,184	2,451,560	156,100	2.0	0.0	1.8	45,956	11.75	9.50	28,618	42,122	49,781	0	0	0	0	
27	0.00	7,598,634	12.5	3,531,613	1,579,420	5,830,184	2,457,801	156,100	2.0	0.0	2.0	0	12.50	9.67	28,618	0	0	0	0	0	0	
28	0.00	7,688,602	13.1	3,531,617	1,581,809	5,830,184	2,464,041	156,100	2.0	0.0	2.1	0	13.25	9.83	28,618	28,076	44,017	0	0	0	0	
29	0.00	7,776,765	14.3	3,531,631	1,583,159	5,830,184	2,468,859	156,100	2.3	0.0	2.0	0	13.00	9.00	29,642	42,124	43,713	0	0	0	0	
30	0.00	7,866,400	13.6	3,531,634	1,586,137	5,830,184	2,468,949	156,100	2.0	0.0	3.4	55,096	12.00	8.50	35,406	0	93,675	0	0	0	0	
Totals	0.00											130,165		795,902		988,853	970,230	882,242	1,020	0	0	0

projects/balance/2016/12-16bal.xls (Ds 12/01/16)

Notes:

1. NR = No Records, NA = Not Available.
2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
3. Column IV includes quantities from leak detection system.
4. Column B, trace is less than 0.01 inches.
5. Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
6. Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	5	0	0
Intermediate	134.4	19.3	15
Final	23	0	0
Not Opened	0	0	0

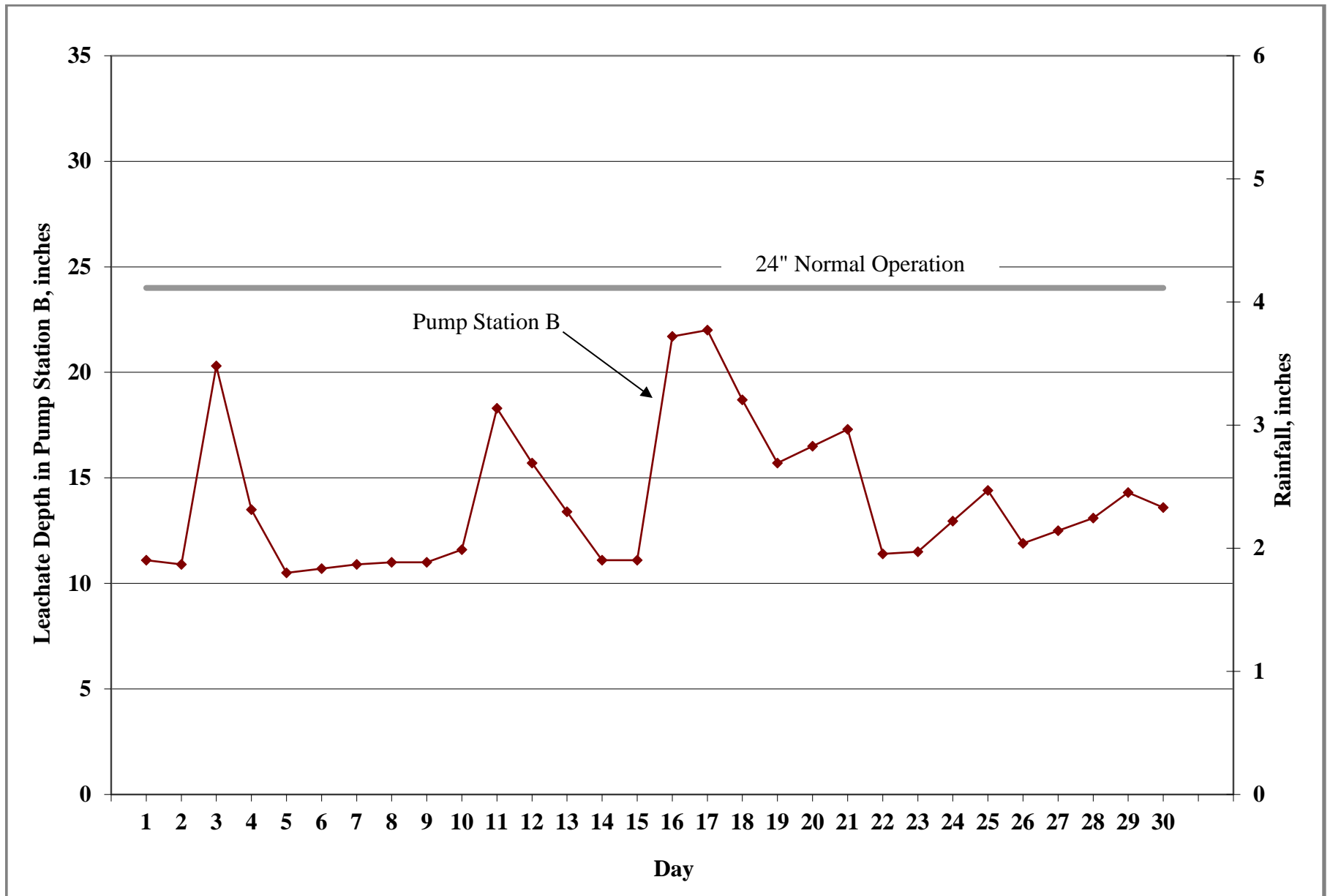


Figure 1. Leachate Levels in Pump Station B and Rainfall for November 2016.



Hillsborough County Florida

PUBLIC WORKS

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(813) 272-5912 | Fax: (813) 272-5811

DATE: January 6, 2017

TO: Larry E. Ruiz, Manager Landfill Operations, Solid Waste Management Division

FROM: Cindy A. Pelley, Landfill Supervisor, Solid Waste Management Division

SUBJECT: Leachate Water Balance Report Forms for December 2016 Southeast County Landfill, Hillsborough County, Florida

BOARD OF COUNTY COMMISSIONERS
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Lucia E. Garsys

The Solid Waste Management Division (SWMD) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2016 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

TABLE 1

Day (Column I)

Column I presents the calendar days for the month.

Rainfall (Column II)

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 0.34 inches of rainfall recorded at the Southeast County Landfill (SCLF).

Depth in Pond A (Column III)

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month the daily average depth of effluent stored in Pond A was 2.5 feet.

Depth in Pond B (Column IV)

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month the daily average depth of effluent stored in Pond B was 2.4 feet.

Estimated Depth at Pump Station B Sump (PS-B) (Column V)

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 10.6 inches.

Leachate Pumped to MLPS from Phases I-VI (Column VI)

Column VI presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The average daily amount of leachate pumped from PS-A was 78,992 gallons. A total of 2,448,760 gallons of leachate was pumped this month.

Leachate Pumped from Sections 7-8 LDS (Column VII)

Column VII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. The LDS pump was pumped manually for the month. We estimate that a total of 2,179 gallons of leachate was removed from the leak detection system of Sections 7-8 during the month of December.

Leachate Pumped to MLPS from Sections 7-8 (Column VIII)

Column VIII presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). This month a total of 144,804 gallons was removed.

Leachate Pumped to LTRF from the MLPS (Column IX)

Column IX presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 2,593,564 gallons of leachate was pumped to the LTRF.

Leachate Pumped to LTRF from Section 9 (Column X)

Column X presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 85,194 gallons of leachate was pumped this month.

Leachate Pumped from Section 9 LDS (Column XI)

Column XI presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total 98 gallons of leachate was removed from the leak detection system.

Leachate in 575,000-Gallon Tank (Column XII)

Column XII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 320,100 gallons of leachate was stored in the tank.

Effluent in 575,000-Gallon Tank (Column XIII)

Column XIII presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month an average of 225,300 gallons of effluent was stored in the tank.

Leachate Treated at LTRF (Column XIV)

Column XIV presents the daily amount of leachate, in gallons, treated at the LTRF. This month a total of 965,400 gallons of leachate was treated at the plant.

Total Leachate Hauled (Column XV)

Column XV presents the daily amount of leachate, in gallons, hauled off site. This month a total of 1,616,936 gallons of leachate was hauled off site.

Leachate Dust Control Sprayed (Column XVI)

Column XVI presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month 3,563 gallons of leachate was used for dust control.

Pond A Storage (Column XVII)

Column XVII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month a daily average of 86,400 gallons of effluent was stored in Pond A.

Pond B Storage (Column XVIII)

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month a daily average of 119,100 gallons of effluent was stored in Pond B.

Effluent Sprayed at Pond B (Column XIX)

Column XIX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIII. This month 68,095 gallons of effluent was sprayed in Pond B.

Effluent Irrigation (Column XX)

Column XX presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month a total of 789,205 gallons of effluent was used for spray irrigation.

Effluent Dust Control Sprayed (Column XXI)

Column XXI presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

Total Effluent Hauled (Column XXII)

Column XXII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month effluent was not hauled off site.

Total Evaporation (Column XXIII)

Column XXIII presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. Total evaporation estimated for this month was 637,600 gallons.

TABLE 2

Table 2 presents data assembled from daily logs compiled by the SWMD staff.

TABLE 3

Leachate Balance Summary

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 2,686,454 gallons. Total outflow quantity from the LTRF was 2,585,899 gallons. The change in storage for the month increased by 100,555 gallons.

Please advise should you have any questions concerning the information provided.

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM
DECEMBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to MLPS from Phases I-VI (gal.)	Leachate Pumped from Sections 7-8 LDS (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 LDS (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)	
1	0.00	3.0	2.1	12.8	88,700	70.3	1,101	89,801	2,702	0	300,000	230,000	37,100	85,872	0	108,000	88,000	0	18,910	0	0	15,100	
2	0.00	2.7	2.2	10.8	83,710	70.3	10,743	94,453	1,874	0	257,000	266,000	38,100	100,245	0	93,000	97,000	0	67,862	0	0	54,300	
3	0.00	2.3	2.6	13.8	79,634	70.3	4,843	84,477	3,213	0	228,000	199,000	36,200	43,589	0	74,000	133,000	0	79,538	0	0	63,600	
4	0.00	2.0	2.6	13.8	84,486	70.3	5,582	90,068	2,261	18	264,000	212,000	36,200	0	0	61,000	124,000	0	0	0	0	0	
5	0.00	1.7	2.5	13.7	84,486	70.3	5,582	90,068	2,261	18	300,000	225,000	36,200	48,141	0	48,000	124,000	0	0	0	0	0	
6	0.01	3.0	2.2	10.2	88,885	70.3	5,231	94,116	3,199	35	314,000	216,000	35,600	0	0	108,000	97,000	0	0	0	0	0	
7	0.00	3.2	2.1	10.2	84,300	70.3	4,394	88,694	1,804	15	362,000	247,000	35,600	82,591	0	118,000	88,000	0	36,099	0	0	28,900	
8	0.07	2.7	2.5	17.1	68,924	70.3	4,251	73,175	2,747	0	314,000	211,000	26,100	91,092	0	93,000	124,000	0	66,670	0	0	53,300	
9	0.01	1.4	3.8	13.1	83,638	70.3	5,139	88,777	2,675	0	288,000	211,000	34,000	49,710	0	36,000	256,000	0	0	0	0	0	
10	0.00	2.9	1.9	16.2	75,226	70.3	8,467	83,693	2,431	0	288,000	238,000	31,600	46,636	0	103,000	72,000	0	38,536	0	0	30,800	
11	0.00	2.4	2.3	11.3	80,906	70.3	5,071	85,977	10,390	0	317,000	233,000	31,600	0	0	79,000	106,000	0	0	0	0	0	
12	0.00	1.8	2.7	6.4	80,906	70.3	5,071	85,977	10,390	0	345,000	228,000	31,600	43,974	0	52,000	143,000	0	28,610	0	0	22,900	
13	0.00	2.7	2.3	6.4	83,400	70.3	5,149	88,549	14	0	355,000	238,000	29,500	43,714	0	93,000	106,000	19,010	53,987	0	0	44,100	
14	0.00	3.1	2.0	6.2	84,100	70.3	5,015	89,115	1,661	0	360,000	214,000	30,300	72,011	0	113,000	80,000	0	25,579	0	0	20,500	
15	0.00	2.8	1.8	5.6	82,500	70.3	4,903	87,403	1,819	0	341,000	240,000	31,100	86,581	0	98,000	64,000	0	52,000	0	0	41,600	
16	0.00	2.5	2.1	17.4	75,852	70.3	4,309	80,161	2,773	12	314,000	192,000	26,200	49,755	0	83,000	88,000	0	0	0	0	0	
17	0.00	2.5	2.3	12.2	75,922	70.3	4,224	80,146	2,685	0	319,000	216,000	31,100	46,777	0	83,000	106,000	0	66,989	0	0	53,600	
18	0.00	1.8	2.5	9.2	77,563	70.3	4,287	81,850	2,018	0	344,000	211,000	31,100	0	0	52,000	124,000	0	0	0	0	0	
19	0.00	1.0	2.7	6.1	77,563	70.3	4,287	81,850	2,018	0	369,000	206,000	31,100	36,360	0	24,000	143,000	0	0	0	0	0	
20	0.00	3.2	1.8	6.4	73,900	70.3	4,293	78,193	1,989	0	381,000	233,000	29,300	50,888	0	118,000	64,000	0	0	0	0	0	
21	0.00	3.2	2.2	6.0	78,000	70.3	4,503	82,503	2,090	0	369,000	230,000	27,100	93,344	3,563	118,000	97,000	0	0	0	0	2,900	
22	0.00	3.2	2.5	16.0	76,704	70.3	4,276	80,980	5,639	0	331,000	214,000	27,600	100,217	0	118,000	124,000	0	0	0	0	0	
23	0.00	3.2	2.5	14.0	74,602	70.3	4,197	78,799	1,960	0	288,000	245,000	32,700	43,914	0	118,000	124,000	0	69,506	0	0	55,600	
24	0.00	1.8	3.1	15.1	79,830	70.3	4,166	83,996	14	0	297,000	202,000	32,500	35,527	0	52,000	182,000	0	43,526	0	0	34,800	
25	0.00	1.4	3.0	10.6	73,432	70.3	3,995	77,427	1,228	0	326,000	227,000	32,500	0	0	36,000	172,000	0	0	0	0	0	
26	0.00	1.0	2.9	6.1	73,432	70.3	3,995	77,427	1,228	0	355,000	252,000	32,500	49,772	0	24,000	162,000	0	53,693	0	0	43,000	
27	0.00	2.3	2.7	6.1	74,000	70.3	3,951	77,951	2,719	0	350,000	199,000	29,100	43,930	0	74,000	143,000	49,085	0	0	0	2,500	
28	0.00	3.4	2.3	5.6	77,500	70.3	4,089	81,589	2,753	0	355,000	211,000	30,300	93,616	0	129,000	106,000	0	0	0	0	0	
29	0.25	3.4	2.3	5.4	80,500	70.3	4,184	84,684	1,040	0	312,000	242,000	24,300	86,330	0	129,000	106,000	0	0	0	0	0	
30	0.00	3.4	2.5	12.7	74,836	70.3	3,950	78,786	3,313	0	288,000	245,000	19,300	42,626	0	129,000	124,000	0	23,665	0	0	18,900	
31	0.00	3.1	2.5	11.0	71,324	70.3	1,558	72,882	2,288	0	293,000	252,000	27,900	49,724	0	113,000	124,000	0	64,035	0	0	51,200	
Total	0.34				2,448,760		2,179	144,804	2,593,564	85,194	98		965,400	1,616,936	3,563			68,095	789,205	0	0	637,600	
Daily Average		2.5	2.4	10.6	78,992		70	4,671	83,663	2,748	3	320,100	225,300			86,400	119,100						
Mo. Average															100				25,500		0	0	20,570

projects/balance/2016/12-16bal.xls (DS 12/31/16)

- Notes:
1. NR = No Records, NA = Not Available.
 2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
 3. Daily average is calculated by dividing the total by the actual days measured in the month.
 4. Monthly average calculated by dividing the total by the number of days of the month.
 5. Column II, Trace is less than 0.01 inches and is not included in total.
 6. Columns III and IV, field measured at staff gauges.
 7. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
 8. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
 9. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
 10. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

**TABLE 2. FIELD DATA ENTRY FORM
DECEMBER 2016
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
Day	Rainfall (in.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)	
																Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)		
1	0.00	7,955,100	12.8	3,531,635	1,588,838	5,830,186	2,470,050	156,100	2.1	0.0	3.0	18,910	10.42	8.00	37,084	0	85,872	0	0	0	0	
2	0.00	8,038,810	10.8	3,532,266	1,590,081	5,830,186	2,480,793	156,100	2.2	0.0	2.7	67,862	8.92	9.25	38,134	57,735	42,510	0	0	0	0	
3	0.00	8,118,444	13.8	3,532,832	1,592,728	5,830,188	2,485,636	156,100	2.6	0.0	2.3	79,538	7.92	6.92	36,183	0	43,589	0	0	0	0	
4	0.00	<i>8,202,930</i>	<i>13.8</i>	<i>3,532,882</i>	<i>1,594,939</i>	<i>5,830,206</i>	<i>2,491,218</i>	<i>156,100</i>	<i>2.6</i>	<i>0.0</i>	<i>2.0</i>	<i>0</i>	<i>9.17</i>	<i>7.38</i>	<i>36,183</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
5	0.00	8,287,415	13.7	3,532,932	1,597,149	5,830,224	2,496,800	156,100	2.5	0.0	1.7	0	10.42	7.83	36,183	0	48,141	0	0	0	0	
6	0.01	8,376,300	10.2	3,533,004	1,600,276	5,830,259	2,502,031	156,100	2.2	0.0	3.0	0	10.92	7.50	35,610	0	0	0	0	0	0	
7	0.00	8,460,600	10.2	3,533,332	1,601,752	5,830,274	2,506,425	156,100	2.1	0.0	3.2	36,099	12.58	8.58	35,611	0	82,591	0	0	0	0	
8	0.07	8,529,524	17.1	3,533,334	1,604,497	5,830,274	2,510,676	156,100	2.5	0.0	2.7	66,670	10.92	7.33	26,122	0	91,092	0	0	0	0	
9	0.01	8,613,162	13.1	3,533,338	1,607,168	5,830,274	2,515,815	156,100	3.8	0.0	1.4	0	10.00	7.33	34,037	0	49,710	0	0	0	0	
10	0.00	8,688,388	16.2	3,533,343	1,609,594	5,830,274	2,524,282	156,100	1.9	0.0	2.9	38,536	10.00	8.25	31,571	0	46,636	0	0	0	0	
11	0.00	<i>8,769,294</i>	<i>11.3</i>	<i>3,542,244</i>	<i>1,611,083</i>	<i>5,830,274</i>	<i>2,529,353</i>	<i>156,100</i>	<i>2.3</i>	<i>0.0</i>	<i>2.4</i>	<i>0</i>	<i>11.00</i>	<i>8.09</i>	<i>31,572</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
12	0.00	8,850,200	6.4	3,551,145	1,612,572	5,830,274	2,534,423	156,100	2.7	0.0	1.8	28,610	12.00	7.92	31,572	0	43,974	0	0	0	0	
13	0.00	8,933,600	6.4	3,551,153	1,612,578	5,830,274	2,539,572	156,100	2.3	19010.0	2.7	53,987	12.33	8.25	29,468	0	43,714	0	0	0	0	
14	0.00	9,017,700	6.2	3,551,153	1,614,239	5,830,274	2,544,587	156,100	2.0	0.0	3.1	25,579	12.50	7.42	30,258	0	72,011	0	0	0	0	
15	0.00	9,100,200	5.6	3,551,235	1,615,976	5,830,274	2,549,490	156,100	1.8	0.0	2.8	52,000	11.83	8.33	31,079	0	86,581	0	0	0	0	
16	0.00	9,176,052	17.4	3,551,240	1,618,744	5,830,286	2,553,799	156,100	2.1	0.0	2.5	0	10.92	6.67	26,163	0	49,755	0	0	0	0	
17	0.00	9,251,974	12.2	3,551,241	1,621,428	5,830,286	2,558,023	156,100	2.3	0.0	2.5	66,989	11.08	7.50	31,082	0	46,777	0	0	0	0	
18	0.00	<i>9,329,537</i>	<i>9.2</i>	<i>3,551,246</i>	<i>1,623,442</i>	<i>5,830,286</i>	<i>2,562,310</i>	<i>156,100</i>	<i>2.5</i>	<i>0.0</i>	<i>1.8</i>	<i>0</i>	<i>11.96</i>	<i>7.34</i>	<i>31,082</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
19	0.00	9,407,100	6.1	3,551,250	1,625,455	5,830,286	2,566,596	156,100	2.7	0.0	1.0	0	12.83	7.17	31,082	0	36,360	0	0	0	0	
20	0.00	9,481,000	6.4	3,551,751	1,626,943	5,830,286	2,570,889	156,100	1.8	0.0	3.2	0	13.25	8.08	29,284	0	50,888	0	0	0	0	
21	0.00	9,559,000	6.0	3,552,504	1,628,280	5,830,286	2,575,392	156,100	2.2	0.0	3.2	0	12.83	8.00	27,134	0	93,344	3,563	0	0	0	
22	0.00	9,635,704	16.0	3,552,510	1,633,913	5,830,287	2,579,668	156,100	2.5	0.0	3.2	0	11.50	7.42	27,581	0	100,217	0	0	0	0	
23	0.00	9,710,306	14.0	3,552,525	1,635,858	5,830,289	2,583,865	156,100	2.5	0.0	3.2	69,506	10.00	8.50	32,734	0	43,914	0	0	0	0	
24	0.00	9,790,136	15.1	3,552,530	1,635,867	5,830,289	2,588,031	156,100	3.1	0.0	1.8	43,526	10.33	7.00	32,533	0	35,527	0	0	0	0	
25	0.00	<i>9,863,568</i>	<i>10.6</i>	<i>3,552,532</i>	<i>1,637,093</i>	<i>5,830,289</i>	<i>2,592,026</i>	<i>156,100</i>	<i>3.0</i>	<i>0.0</i>	<i>1.4</i>	<i>0</i>	<i>11.33</i>	<i>7.88</i>	<i>32,533</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
26	0.00	9,937,000	6.1	3,552,534	1,638,318	5,830,289	2,596,021	156,100	2.9	0.0	1.0	53,693	12.33	8.75	32,534	0	49,772	0	0	0	0	
27	0.00	11,000	6.1	3,552,537	1,641,034	5,830,289	2,599,972	156,100	2.7	49085.0	2.3	0	12.17	6.92	29,072	0	43,930	0	0	0	0	
28	0.00	88,500	5.6	3,552,540	1,643,784	5,830,289	2,604,061	156,100	2.3	0.0	3.4	0	12.33	7.33	30,258	0	93,616	0	0	0	0	
29	0.25	169,000	5.4	3,552,542	1,644,822	5,830,289	2,608,245	156,100	2.3	0.0	3.4	0	10.83	8.42	24,299	0	86,330	0	0	0	0	
30	0.00	243,836	12.7	3,553,045	1,647,632	5,830,289	2,612,195	156,100	2.5	0.0	3.4	23,665	10.00	8.50	19,275	0	42,626	0	0	0	0	
31	0.00	315,160	11.0	3,553,048	1,649,917	5,830,289	2,613,753	156,100	2.5	0.0	3.1	64,035	10.17	8.75	27,905	0	49,724	0	0	0	0	
Totals	0.34											68,095		789,205		965,218	57,735	1,559,201	3,563	0	0	0

projects\balance\2016\12-16bal.xls (DS 12/31/16)

Notes:

- NR = No Records, NA = Not Available.
- Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
- Column IV includes quantities from leak detection system.
- Column B, trace is less than 0.01 inches.
- Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
- Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	5	0	0
Intermediate	134.4	19.3	15
Final	23	0	0
Not Opened	0	0	0

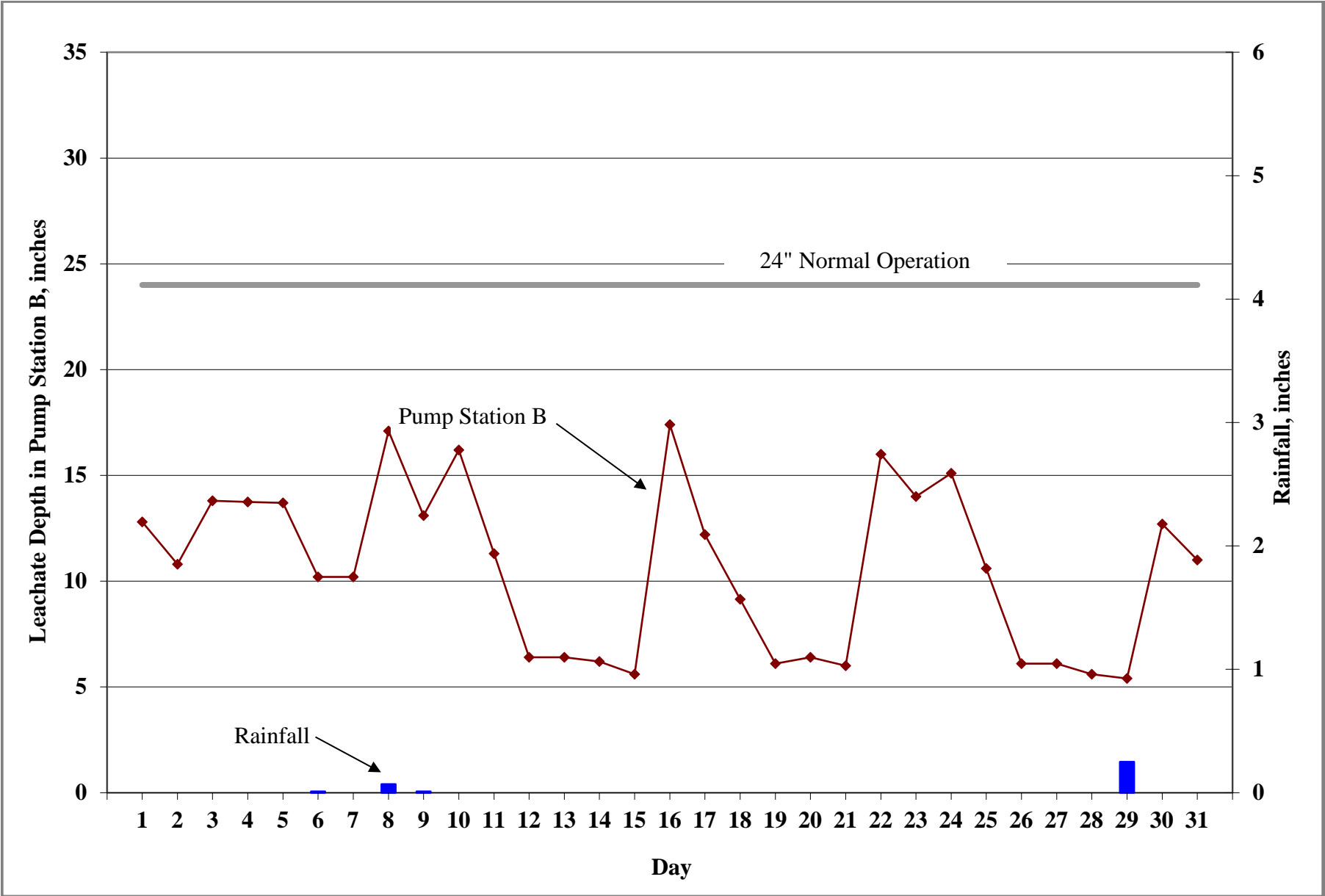


Figure 1. Leachate Levels in Pump Station B and Rainfall for December 2016.

**TABLE 3. LEACHATE BALANCE SUMMARY
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA
YEAR-2016**

Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Condensate from LFG System (gal.)	Leachate from Section 9 Pumped to LTRF (gal.)	Leachate from Section 7-8 Pumped to LTRF (gal.)	Leachate from Phases I-VI Pumped to LTRF (gal.)	Total Leachate Hauled from LTRF (gal.)	Leachate Dust Control (Sprayed) (gal.)	Leachate Treated at LTRF (gal.)	Total Effluent Hauled (gal.)	Effluent Dust Control (Sprayed) (gal.)	Effluent Irrigation (gal.)	Total Inflow to LTRF (gal.)	Total Outflow from LTRF (gal.)	Change in Storage ³ (gal.)
January	7.36	13,493	720	155,274	2,520,135	2,382,887	0	183,500	0	0	36,630	2,689,622	2,566,387	123,235
February	1.61	9,430	511	218,755	2,493,661	1,353,187	0	1,061,000	0	0	353,350	2,722,357	2,414,187	308,170
March	2.31	8,864	410	120,310	2,157,400	1,738,430	27,118	360,800	0	0	443,343	2,286,984	2,126,348	160,636
April	2.50	5,771	195	102,931	2,268,165	1,607,452	0	743,800	0	0	649,650	2,377,062	2,351,252	25,810
May	8.03	12,092	228	53,694	2,719,435	1,652,011	0	948,800	0	0	771,435	2,785,449	2,600,811	184,638
June	11.46	13,747	236	1	2,472,400	1,650,372	5,293	853,400	21,936	9,579	1,097,101	2,486,384	2,509,065	-22,681
July	5.55	9,860	0	0	2,930,831	1,956,329	10,698	1,020,000	0	0	1,045,869	2,940,691	2,987,027	-46,336
August	11.00	11,158	458,958	340,165	3,352,655	2,804,839	33,420	1,184,800	22,005	0	708,321	4,162,936	4,023,059	139,877
September	5.27	3,343	322,087	680,918	3,529,312	3,564,637	0	936,400	108,019	0	630,452	4,535,660	4,501,037	34,623
October	3.48	10,913	149,219	282,434	3,097,682	2,507,491	0	880,300	153,720	0	979,296	3,540,248	3,387,791	152,457
November	0.00	11,980	85,110	170,313	2,619,600	1,852,472	1,020	988,600	0	0	795,902	2,887,003	2,842,092	44,911
December	0.34	7,598	85,292	144,804	2,448,760	1,616,936	3,563	965,400	0	0	789,205	2,686,454	2,585,899	100,555
YTD Total	58.91	118,249	1,102,966	2,269,599	32,610,036	24,687,043	81,112	10,126,800	305,680	9,579	8,300,554	36,100,850	34,894,955	1,205,895

Note:

1. If the bypass at the effluent pond is ever used to pump effluent back to the LTRF, this table must be modified.
2. Leachate from the Hillsborough Heights and Taylor Road landfills is being hauled to the Faulkenburg Road Wastewater Treatment Facility.
3. Change in storage represents total inflow to LTRF minus total outflow from LTRF.