



Public Works

April 15, 2016

Board of County Commissioners

Kevin Beckner
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County Administrator

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Liana Lopez
Bonnie M. Wise

Interim Internal Auditor

Peggy Caskey

County Attorney

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Public Works

PO Box 1110
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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. 35435-022-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 March 31, 2015.

The data is being submitted as separate monthly reports for January, February, and March 2016. The attached reports include the leachate level in Pump Station B (PS-B). This quarter PS-B was above the normal operation level of 24-inches for most of the quarter due to a pump failure and the startup of the Leachate Treatment Facility following the permit required tank inspections and maintenance.

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: February 9, 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 January 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 7.36 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 0.4 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 effluent was not stored in Pond B.

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 above the normal operation level of 24 inches for the month due to pump maintenance, and the Leachate Treatment and Reclamation Facility (LTRF) being offline for maintenance activities for over a year. The LTRF came back online on January 25, 2016. The average recorded depth of leachate in the PS-B sump was 33.3 inches.

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

Column VII 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 81,295 gallons. A total of 2,520,135 gallons of leachate was pumped this month.

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

Column VIII 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. This month a total of 1,430 gallons of leachate was removed from the leak detection system of Sections 7-8.

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

Column IX 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 155,274 gallons of leachate was pumped from Sections 7-8.

Leachate Pumped to LTRF from the MLPS (Column X)

Column X presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 2,675,409 gallons of leachate was pumped to the LTRF.

Leachate Pumped to LTRF from Section 9 (Column XI)

Column XI 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 213 gallons of leachate was pumped this month.

Leachate Pumped from Section 9 LDS (Column XII)

Column XII 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 of 507 gallons of leachate was removed from the leak detection system.

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

Column XIII 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. The leachate tank was brought back into service on January 20, 2016. This month an average of 126,400 gallons of leachate was stored in the tank.

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

Column XIV 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. Leachate began being diverted back into the Leachate Tank on January 20, 2016, and the effluent tank began to be drained of leachate in preparation for the permit required tank inspection. This month an average of 325,400 gallons of leachate was stored in the tank.

Leachate Treated at LTRF (Column XV)

Column XV presents the daily amount of leachate, in gallons, treated at the LTRF. The LTRF came back online on January 25, 2016. This month a total of 183,500 gallons of leachate was treated at the plant.

Total Leachate Hauled (Column XVI)

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 2,382,887 gallons of leachate was hauled off site.

Leachate Dust Control Sprayed (Column XVII)

Column XVII 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 XVIII)

Column XVIII 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 12,800 gallons of effluent was stored in Pond A.

Pond B Storage (Column XIX)

Column XIX 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 effluent was not stored in Pond B.

Effluent Sprayed at Pond B (Column XX)

Column XX 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 XXIV. This month effluent was not sprayed in Pond B.

Effluent Irrigation (Column XXI)

Column XXI 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 36,630 gallons of effluent was used for spray irrigation.

Effluent Dust Control Sprayed (Column XXII)

Column XXII 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 XXIII)

Column XXIII 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 XXIV)

Column XXIV 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. There total evaporation estimated for this month was 29,300 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 2,689,622 gallons. Total outflow quantity from the LTRF was 2,566,387 gallons. The change in storage for the month increased by 123,235 gallons.

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

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

I	II	III	IV	V	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV
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	0.0	0.0	33.9	57,116	37	2,131	59,247	8	0	0	483,000	0	0	0	0	0	0	0	0	0	0
2	0.16	0.0	0.0	34.1	57,116	37	2,131	59,247	8	0	0	497,000	0	67,590	0	0	0	0	0	0	0	0
3	0.06	0.0	0.0	33.9	35,725	0	0	35,725	6	0	0	494,000	0	0	0	0	0	0	0	0	0	0
4	0.00	0.0	0.0	33.6	35,725	0	0	35,725	6	0	0	492,000	0	96,742	0	0	0	0	0	0	0	0
5	0.00	0.0	0.0	33.9	101,219	0	24	101,243	10	1	0	489,000	0	75,106	0	0	0	0	0	0	0	0
6	0.01	0.0	0.0	33.9	111,900	208	9,390	121,290	6	0	0	502,000	0	95,916	0	0	0	0	0	0	0	0
7	0.07	0.0	0.0	34.3	38,750	0	5,637	44,387	4	0	0	417,000	0	95,738	0	0	0	0	0	0	0	0
8	0.00	0.0	0.0	34.1	38,750	120	3,692	42,442	11	0	0	420,000	0	73,642	0	0	0	0	0	0	0	0
9	2.00	0.0	0.0	33.5	93,643	0	1,810	95,453	3	0	0	439,000	0	67,182	0	0	0	0	0	0	0	0
10	0.00	0.0	0.0	33.6	63,179	0	0	63,179	8	0	0	467,000	0	0	0	0	0	0	0	0	0	0
11	0.00	0.0	0.0	33.7	63,179	0	0	63,179	8	0	0	494,000	0	103,254	0	0	0	0	0	0	0	0
12	0.00	0.0	0.0	33.6	94,300	205	9,001	103,301	9	0	0	485,000	0	110,358	0	0	0	0	0	0	0	0
13	0.00	0.0	0.0	33.5	93,640	0	5,519	99,159	14	0	0	468,000	0	117,106	0	0	0	0	0	0	0	0
14	0.00	0.0	0.0	33.2	112,847	69	3,047	115,894	6	0	0	458,000	0	110,374	0	0	0	0	0	0	0	0
15	0.55	0.0	0.0	33.9	99,472	73	5,959	105,431	6	0	0	437,000	0	110,682	0	0	0	0	0	0	0	0
16	0.50	0.0	0.0	33.8	95,599	68	7,280	102,879	6	0	0	439,000	0	45,691	0	0	0	0	0	0	0	0
17	1.02	0.0	0.0	33.8	47,097	1	2,090	49,186	8	1	0	470,000	0	0	0	0	0	0	0	0	0	0
18	0.00	0.0	0.0	33.7	47,097	1	2,090	49,186	8	1	0	502,000	0	95,632	0	0	0	0	0	0	0	0
19	0.00	0.0	0.0	33.7	99,258	0	0	99,258	1	0	0	482,000	0	110,138	0	0	0	0	0	0	0	0
20	0.00	0.0	0.0	33.7	97,832	0	637	98,469	7	0	101,000	367,000	0	102,863	0	0	0	0	0	0	0	0
21	0.00	0.0	0.0	33.8	96,959	208	17,900	114,859	8	0	209,000	283,000	0	106,211	0	0	0	0	0	0	0	0
22	0.45	0.0	0.0	34.0	97,691	0	2,704	100,395	5	0	297,000	170,000	0	102,339	0	0	0	0	0	0	0	0
23	0.00	0.0	0.0	33.0	97,584	73	10,366	107,950	8	0	360,000	86,000	12,200	60,188	0	0	0	0	0	0	0	0
24	0.00	0.0	0.0	33.1	96,192	0	451	96,643	5	32	398,000	70,000	12,200	0	0	0	0	0	0	0	0	0
25	0.00	0.0	0.0	33.2	96,192	0	451	96,643	5	32	437,000	53,000	12,200	116,256	0	0	0	0	0	0	0	0
26	0.50	1.5	0.0	34.0	93,542	140	13,236	106,778	3	1	386,000	53,000	12,200	115,614	0	40,000	0	5,550	0	0	4,400	
27	0.87	1.4	0.0	33.7	93,202	45	5,678	98,880	7	152	394,000	26,000	9,800	101,390	0	36,000	0	0	0	0	0	0
28	1.17	2.1	0.0	33.7	92,617	21	5,979	98,596	7	26	367,000	26,000	35,100	108,110	0	65,000	0	0	0	0	0	0
29	0.00	2.7	0.0	33.7	90,732	67	10,406	101,138	5	201	336,000	7,000	31,800	115,048	0	93,000	0	0	0	0	0	0
30	0.00	3.2	0.0	34.0	96,269	0	14,751	111,020	12	60	300,000	7,000	29,000	79,717	0	118,000	0	31,080	0	0	24,900	
31	0.00	1.6	0.0	33.9	85,715	58	12,915	98,630	7	0	334,000	4,000	29,000	0	0	44,000	0	0	0	0	0	
Total	7.36				2,520,135	1,430	155,274	2,675,409	213	507			183,500	2,382,887	0			0	36,630	0	0	29,300
Daily Average		0.4	0.0	33.7	81,295	46	5,009	86,304	7	16	126,400	325,400				12,800	0					
Mo. Average															0				1,200	0	0	950

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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.
 - 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.
 - Column V, PPS-B sensor reading plus 9 inches.
 - 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
JANUARY 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.)	G Section 9 Pump 2 (gal.)	F 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	2,593,216	24.9	2,959,565	723,900	2,349,534	362,371	134,984	0.0	0.0	0.0	0	0.00	16.79	0	0	0	0	0	0	0	0
2	0.16	2,650,331	25.1	2,959,568	723,904	2,349,534	364,502	135,020	0.0	0.0	0.0	0	0.00	17.25	0	67,590	0	0	0	0	0	0
3	0.06	2,686,056	24.9	2,959,571	723,907	2,349,534	364,502	135,020	0.0	0.0	0.0	0	0.00	17.17	0	0	0	0	0	0	0	0
4	0.00	2,721,781	24.6	2,959,574	723,910	2,349,534	364,502	135,020	0.0	0.0	0.0	0	0.00	17.08	0	67,492	29,250	0	0	0	0	0
5	0.00	2,823,000	24.9	2,959,580	723,914	2,349,535	364,526	135,020	0.0	0.0	0.0	0	0.00	17.00	0	46,106	29,000	0	0	0	0	0
6	0.01	2,934,900	24.9	2,959,583	723,917	2,349,535	373,916	135,228	0.0	0.0	0.0	0	0.00	17.42	0	66,796	29,120	0	0	0	0	0
7	0.07	2,973,650	25.3	2,959,583	723,921	2,349,535	379,553	135,228	0.0	0.0	0.0	0	0.00	14.50	0	73,918	21,820	0	0	0	0	0
8	0.00	3,012,399	25.1	2,959,589	723,926	2,349,535	383,245	135,348	0.0	0.0	0.0	0	0.00	14.58	0	44,544	29,098	0	0	0	0	0
9	2.00	3,106,042	24.5	2,959,591	723,927	2,349,535	385,055	135,348	0.0	0.0	0.0	0	0.00	15.25	0	67,182	0	0	0	0	0	0
10	0.00	3,169,221	24.6	2,959,596	723,930	2,349,535	385,055	135,348	0.0	0.0	0.0	0	0.00	16.21	0	0	0	0	0	0	0	0
11	0.00	3,232,400	24.7	2,959,601	723,933	2,349,535	385,055	135,348	0.0	0.0	0.0	0	0.00	17.17	0	74,158	29,096	0	0	0	0	0
12	0.00	3,326,700	24.6	2,959,607	723,936	2,349,535	394,056	135,553	0.0	0.0	0.0	0	0.00	16.83	0	81,322	29,036	0	0	0	0	0
13	0.00	3,420,340	24.5	2,959,614	723,943	2,349,535	399,575	135,553	0.0	0.0	0.0	0	0.00	16.25	0	81,300	35,806	0	0	0	0	0
14	0.00	3,533,187	24.2	2,959,617	723,946	2,349,535	402,622	135,622	0.0	0.0	0.0	0	0.00	15.92	0	81,306	29,068	0	0	0	0	0
15	0.55	3,632,659	24.9	2,959,620	723,949	2,349,535	408,581	135,695	0.0	0.0	0.0	0	0.00	15.17	0	81,367	29,315	0	0	0	0	0
16	0.50	3,728,258	24.8	2,959,620	723,955	2,349,535	415,861	135,763	0.0	0.0	0.0	0	0.00	15.25	0	45,691	0	0	0	0	0	0
17	1.02	3,775,355	24.8	2,959,622	723,961	2,349,536	417,951	135,764	0.0	0.0	0.0	0	0.00	16.34	0	0	0	0	0	0	0	0
18	0.00	3,822,451	24.7	2,959,623	723,967	2,349,537	420,040	135,765	0.0	0.0	0.0	0	0.00	17.42	0	95,632	0	0	0	0	0	0
19	0.00	3,921,709	24.7	2,959,623	723,968	2,349,537	420,040	135,765	0.0	0.0	0.0	0	0.00	16.75	0	81,058	29,080	0	0	0	0	0
20	0.00	4,019,541	24.7	2,959,624	723,974	2,349,537	420,677	135,765	0.0	0.0	0.0	0	3.50	12.75	0	74,168	28,695	0	0	0	0	0
21	0.00	4,116,500	24.8	2,959,629	723,977	2,349,537	438,577	135,973	0.0	0.0	0.0	0	7.25	9.83	0	80,893	25,318	0	0	0	0	0
22	0.45	4,214,191	25.0	2,959,630	723,981	2,349,537	441,281	135,973	0.0	0.0	0.0	0	10.33	5.92	0	74,136	28,203	0	0	0	0	0
23	0.00	4,311,775	24.0	2,959,634	723,985	2,349,537	451,647	136,046	0.0	0.0	0.0	0	12.50	3.00	12,173	60,188	0	0	0	0	0	0
24	0.00	4,407,967	24.1	2,959,637	723,987	2,349,569	452,098	136,046	0.0	0.0	0.0	0	13.84	2.42	12,173	0	0	0	0	0	0	0
25	0.00	4,504,158	24.2	2,959,639	723,989	2,349,601	452,549	136,046	0.0	0.0	0.0	0	15.17	1.83	12,173	116,256	0	0	0	0	0	0
26	0.50	4,597,700	25.0	2,959,640	723,991	2,349,602	465,785	136,186	0.0	0.0	1.5	5,550	13.42	1.83	12,174	115,614	0	0	0	0	0	0
27	0.87	4,690,902	24.7	2,959,645	723,993	2,349,754	471,463	136,231	0.0	0.0	1.4	0	13.67	0.92	9,848	79,681	21,709	0	0	0	0	0
28	1.17	4,783,519	24.7	2,959,649	723,996	2,349,780	477,442	136,252	0.0	0.0	2.1	0	12.75	0.92	35,134	79,605	28,505	0	0	0	0	0
29	0.00	4,874,251	24.7	2,959,649	724,001	2,349,981	487,848	136,319	0.0	0.0	2.7	0	11.67	0.25	31,812	79,513	35,535	0	0	0	0	0
30	0.00	4,970,520	25.0	2,959,657	724,005	2,350,041	502,599	136,319	0.0	0.0	3.2	31,080	10.42	0.25	28,959	79,717	0	0	0	0	0	0
31	0.00	5,056,235	24.9	2,959,661	724,009	NR	515,514	136,377	0.0	0.0	1.6	0	11.59	0.13	28,959	0	0	0	0	0	0	0
Totals	7.36									0		36,630			183,405	1,895,233	487,654	0	0	0	0	0

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- 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

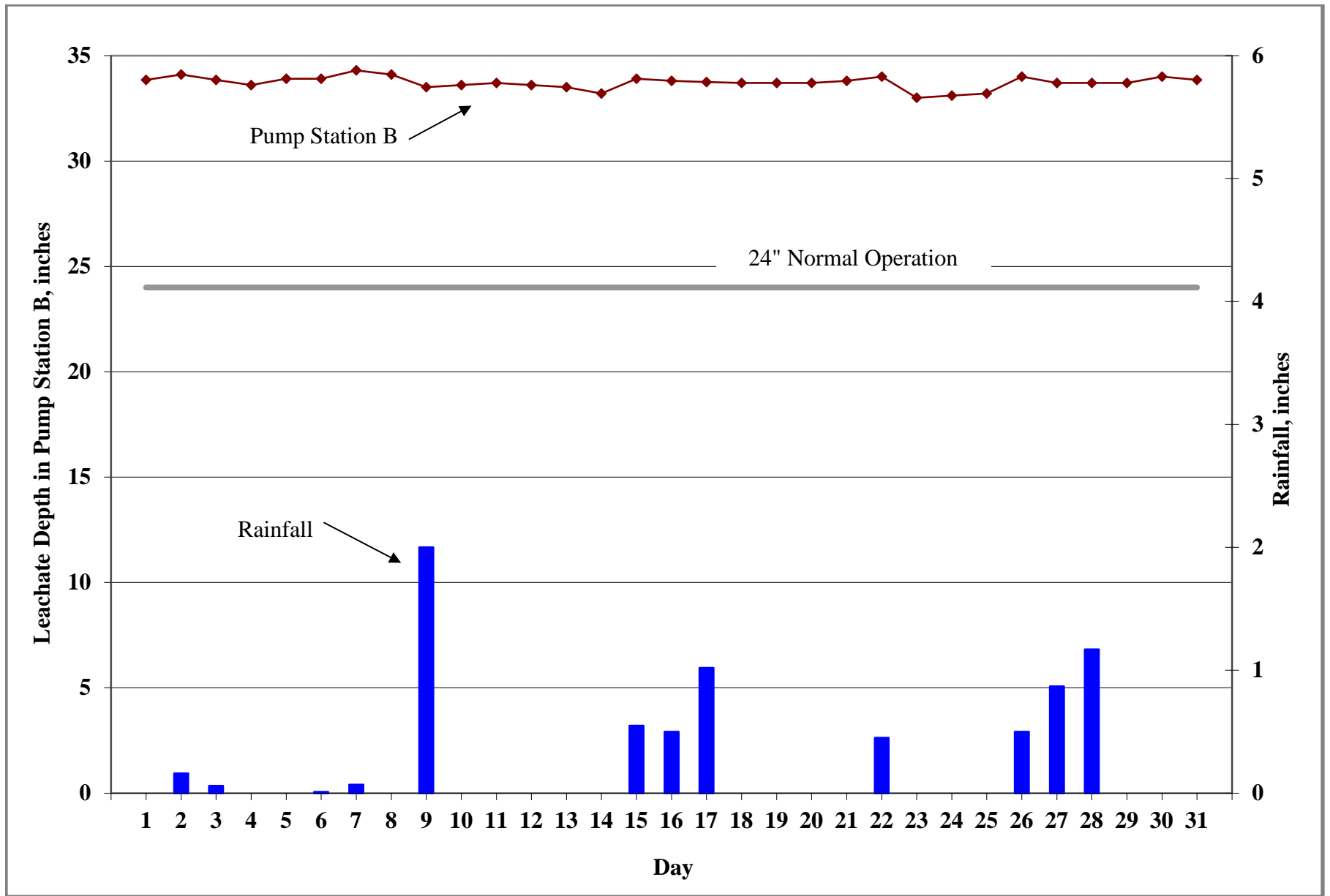


Figure 1. Leachate Levels in Pump Station B and Rainfall for January 2015.



Public Works

Board of County Commissioners

Kevin Beckner
Victor D. Crist
Ken Hagan
Al Higginbotham
Lesley "Les" Miller, Jr.
Sandra L. Murman
Stacy R. White

County Administrator Michael S. Merrill

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DATE: March 18, 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 February 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 1.61 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 2.9 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 of effluent stored in Pond B was 1.1 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 above the normal operation level of 24 inches for the month due to pump maintenance activities. The average recorded depth of leachate in the PS-B sump was 31.4 inches.

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

Column VII 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 80,441 gallons. A total of 2,493,661 gallons of leachate was pumped this month.

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

Column VIII 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. This month a total of 1,421 gallons of leachate was removed from the leak detection system of Sections 7-8.

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

Column IX 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 218,755 gallons of leachate was pumped from Sections 7-8.

Leachate Pumped to LTRF from the MLPS (Column X)

Column X presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 2,712,416 gallons of leachate was pumped to the LTRF.

Leachate Pumped to LTRF from Section 9 (Column XI)

Column XI 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 511 gallons of leachate was pumped this month.

Leachate Pumped from Section 9 LDS (Column XII)

Column XII 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 leachate was not removed from the leak detection system. The meter was out of service the first half of the month and was back online on February 16th.

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

Column XIII 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 258,500 gallons of leachate was stored in the tank.

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

Column XIV 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. Leachate began being diverted back into the Leachate Tank on January 20, 2016, and the effluent tank began to be drained of leachate in preparation for the permit required tank inspection. This month an average of 6,500 gallons of leachate was stored in the tank.

Leachate Treated at LTRF (Column XV)

Column XV presents the daily amount of leachate, in gallons, treated at the LTRF. This month a total of 1,061,000 gallons of leachate was treated at the plant.

Total Leachate Hauled (Column XVI)

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 1,353,187 gallons of leachate was hauled off site.

Leachate Dust Control Sprayed (Column XVII)

Column XVII 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 XVIII)

Column XVIII 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 107,900 gallons of effluent was stored in Pond A.

Pond B Storage (Column XIX)

Column XIX 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 29,000 gallons of effluent was stored in Pond B.

Effluent Sprayed at Pond B (Column XX)

Column XX 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 XXIV. This month effluent was not sprayed in Pond B.

Effluent Irrigation (Column XXI)

Column XXI 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 353,350 gallons of effluent was used for spray irrigation.

Effluent Dust Control Sprayed (Column XXII)

Column XXII 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 XXIII)

Column XXIII 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 XXIV)

Column XXIV 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. There total evaporation estimated for this month was 282,700 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 2,722,357 gallons. Total outflow quantity from the LTRF was 2,414,187 gallons. The change in storage for the month increased by 308,170 gallons.

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

**TABLE 2. FIELD DATA ENTRY FORM
FEBRUARY 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		R Leachate Dust Control (Sprayed) (gal.)	S Effluent Hauled		T Effluent Dust Control (Sprayed) (gal.)	
																Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)		
1	0.00	5,141,950	24.7	2,959,664	724,012	N/A	528,429	136,435	0.0	0.0	3.0	0	12.75	0.25	28,960	45,083	29,143	0	0	0	0	
2	0.00	5,230,500	24.4	2,959,682	724,045	N/A	540,444	136,451	0.7	0.0	3.5	7,400	11.58	0.25	44,518	45,093	29,280	0	0	0	0	
3	0.00	5,311,400	25.2	2,959,686	724,046	N/A	551,431	136,517	1.0	0.0	3.5	16,650	10.50	0.25	42,392	45,224	36,549	0	0	0	0	
4	0.20	5,398,900	24.7	2,959,686	724,050	N/A	561,887	136,517	1.1	0.0	3.5	35,520	9.50	0.25	42,889	45,431	29,412	0	0	0	0	
5	0.00	5,488,737	24.7	2,959,691	724,055	N/A	571,657	136,586	1.1	0.0	2.6	17,760	8.75	0.25	37,113	45,406	21,915	0	0	0	0	
6	0.35	5,520,789	24.5	2,959,691	724,058	N/A	580,612	136,634	1.1	0.0	2.4	0	7.00	0.25	30,374	45,326	0	0	0	0	0	
7	0.00	5,614,495	24.4	2,959,697	724,062	N/A	589,667	136,675	1.1	0.0	3.0	0	8.38	0.25	30,374	0	0	0	0	0	0	0
8	0.00	5,708,200	24.2	2,959,703	724,066	N/A	598,721	136,716	1.1	0.0	3.5	23,310	9.75	0.25	30,374	70,196	0	0	0	0	0	0
9	0.00	5,799,800	24.2	2,959,704	724,069	N/A	607,195	136,782	1.1	0.0	3.1	26,640	9.33	0.25	32,248	42,192	36,426	0	0	0	0	0
10	0.00	5,893,000	24.2	2,959,705	724,071	N/A	615,117	136,782	1.1	0.0	2.6	31,080	8.92	0.25	29,662	42,184	29,268	0	0	0	0	0
11	0.00	5,979,717	24.1	2,959,708	724,074	N/A	622,549	136,845	1.1	0.0	2.0	29,600	8.58	0.25	32,808	42,192	29,285	0	0	0	0	0
12	0.00	6,069,692	24.2	2,959,716	724,075	N/A	623,466	136,845	0.0	0.0	2.1	17,760	8.00	0.25	22,500	42,154	21,987	0	0	0	0	0
13	0.00	6,106,541	24.4	2,959,717	724,078	N/A	623,466	136,970	0.0	0.0	2.2	0	5.58	0.25	48,544	20,986	0	0	0	0	0	0
14	0.00	6,197,471	24.6	2,959,717	724,081	N/A	636,589	136,970	0.0	0.0	2.9	0	7.04	0.25	48,544	0	0	0	0	0	0	0
15	0.17	6,288,400	24.7	2,959,717	724,083	N/A	649,711	136,970	0.7	0.0	3.5	31,080	8.50	0.25	48,546	27,989	21,910	0	0	0	0	0
16	0.00	6,381,900	24.8	2,959,721	724,088	5,814,535	657,681	137,092	0.9	0.0	3.1	0	8.00	0.25	48,576	28,000	29,333	0	0	0	0	0
17	0.00	6,471,841	24.9	2,959,726	724,092	5,814,535	664,604	137,092	1.1	0.0	3.5	0	7.42	0.25	48,140	28,002	29,263	0	0	0	0	0
18	0.00	6,559,964	24.7	2,959,727	724,096	5,814,535	671,205	137,092	1.7	0.0	3.6	13,320	6.67	0.25	50,420	41,985	0	0	0	0	0	0
19	0.00	6,623,374	24.6	2,959,733	724,099	5,814,535	677,601	137,244	1.7	0.0	3.5	26,640	6.17	0.25	44,876	20,992	0	0	0	0	0	0
20	0.00	6,707,539	25.0	2,959,739	724,105	5,814,535	679,301	137,244	1.7	0.0	2.8	13,320	7.42	0.25	33,860	0	0	0	0	0	0	0
21	0.00	6,757,370	24.9	2,959,743	724,108	5,814,535	679,301	137,316	1.7	0.0	2.9	0	9.05	0.25	33,860	0	0	0	0	0	0	0
22	0.01	6,807,200	24.7	2,959,747	724,111	5,814,535	679,301	137,388	1.7	0.0	2.9	15,540	10.67	0.25	33,860	42,041	0	0	0	0	0	0
23	0.00	6,976,200	24.6	2,959,753	724,118	5,814,535	692,976	137,461	1.2	0.0	3.4	16,650	11.50	0.25	30,148	42,130	0	0	0	0	0	0
24	0.88	7,063,777	24.0	2,959,759	724,121	5,814,535	697,506	137,511	1.2	0.0	3.2	0	12.00	0.25	33,446	42,136	0	0	0	0	0	0
25	0.00	7,128,646	24.9	2,960,015	724,125	5,814,535	702,482	137,530	1.5	0.0	3.5	13,320	11.83	0.25	31,678	42,098	0	0	0	0	0	0
26	0.00	7,210,968	24.9	2,960,018	724,131	5,814,535	707,520	137,598	1.6	0.0	3.1	0	12.08	0.25	30,150	42,115	0	0	0	0	0	0
27	0.00	7,295,802	24.6	2,960,021	724,134	5,814,535	709,222	137,670	1.6	0.0	3.5	0	12.50	0.25	30,651	42,121	0	0	0	0	0	0
28	0.00	5,053,201	24.6	2,960,025	724,139	5,814,535	715,288	137,705	1.9	0.0	3.5	0	13.75	0.25	30,651	0	0	0	0	0	0	0
29	0.00	2,810,600	24.6	2,960,029	724,144	5,814,535	721,354	137,740	2.1	0.0	3.5	17,760	15.00	0.25	30,652	42,159	36,181					
Totals	1.61									0		353,350			1,060,814	973,235	379,952	0	0	0	0	0

projects/balance/2016/02-16bal.xls (ds 3/5/16)

- 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

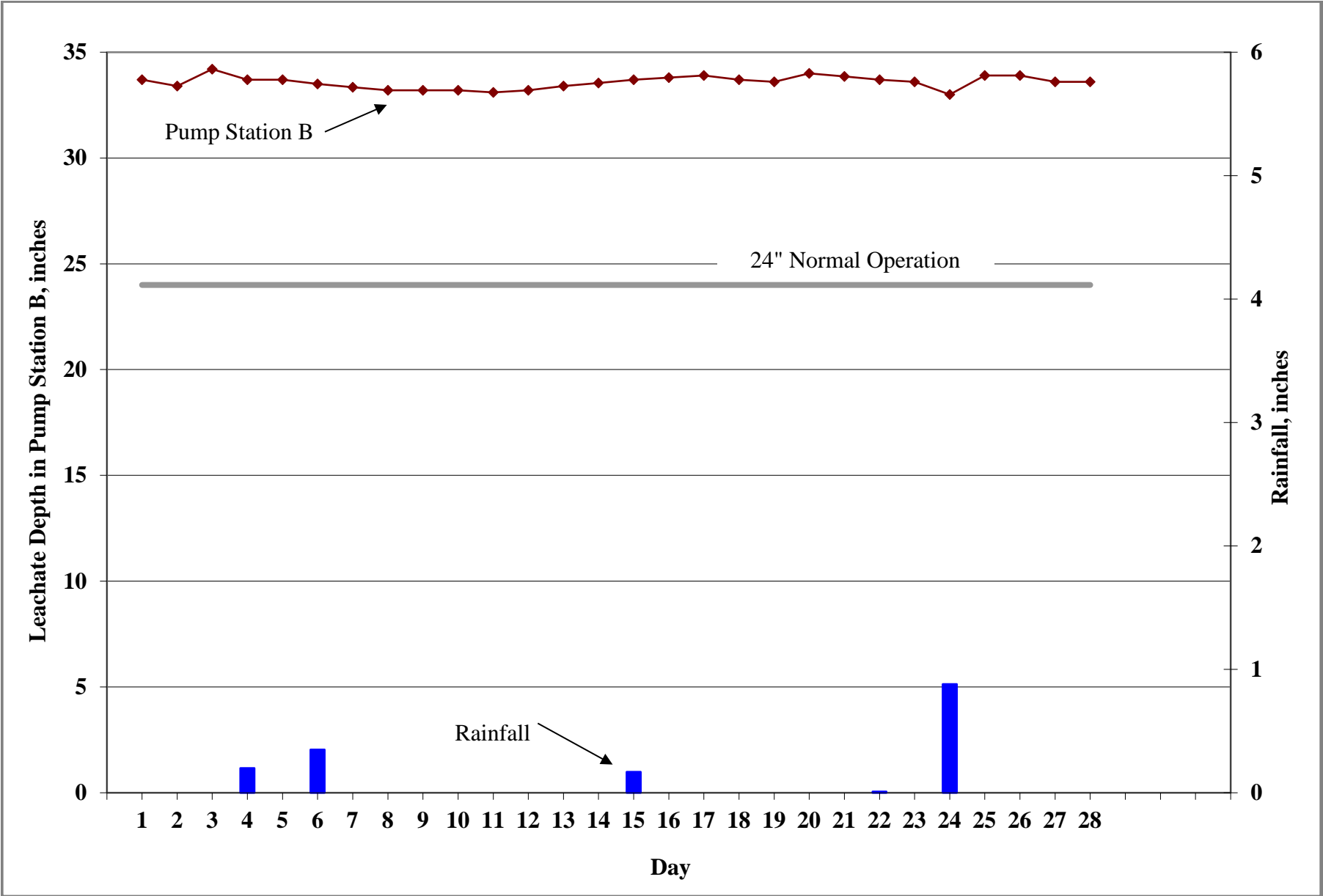


Figure 1. Leachate Levels in Pump Station B and Rainfall for February 2015.



Public Works

Board of County Commissioners

Kevin Beckner
Victor D. Crist
Ken Hagan
Al Higginbotham
Lesley "Les" Miller, Jr.
Sandra L. Murman
Stacy R. White

County Administrator Michael S. Merrill

County Administrator Executive Team Lucia E. Garsys Carl S. Harness Gregory S. Horwedel Ramin Kouzehkanani Liana Lopez Bonnie M. Wise

Interim Internal Auditor Peggy Caskey

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DATE: April 6, 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 March 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 2.31 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 1.7 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 of effluent stored in Pond B was 0.4 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 above the normal operation level of 24 inches for the month due to pump maintenance activities. The average recorded depth of leachate in the PS-B sump was 33.8 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 69,594 gallons. A total of 2,157,400 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. This month a total of 1,013 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). This month a total of 120,310 gallons of leachate was pumped from Sections 7-8.

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 2,277,710 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 408 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 of 2 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 455,600 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 21,900 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 360,800 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 1,738,430 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 27,118 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 51,500 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 13,800 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 XXIV. This month effluent was not 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 443,343 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. There total evaporation estimated for this month was 376,300 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 2,286,984 gallons. Total outflow quantity from the LTRF was 2,126,348 gallons. The change in storage for the month increased by 160,636 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM
MARCH 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	3.6	2.3	33.8	95,064	71	4,093	99,157	10	0	444,000	7,000	0	71,711	0	145,000	106,000	0	24,420	0	0	19,500	
2	0.00	2.5	2.3	33.5	94,900	71	4,453	99,353	62	0	466,000	0	0	42,179	0	83,000	106,000	0	0	0	0	0	
3	0.00	2.6	2.3	34.2	50,311	4	4,950	55,261	8	0	492,000	0	0	93,713	0	88,000	106,000	0	43,278	0	0	34,600	
4	0.00	3.5	1.5	33.6	61,229	21	5,592	66,821	143	2	494,000	0	0	107,453	0	140,000	44,000	0	69,090	0	0	55,300	
5	0.00	2.3	1.5	33.7	39,037	11	0	39,037	6	0	463,000	0	0	70,699	0	74,000	44,000	0	45,275	0	0	36,200	
6	0.00	2.5	1.0	33.9	35,730	89	6,236	41,965	7	0	479,000	0	0	0	0	83,000	19,000	0	0	0	0	0	
7	0.00	2.7	0.5	34.0	35,730	89	6,236	41,965	7	0	494,000	0	0	78,583	0	93,000	4,000	0	56,643	0	0	45,300	
8	0.00	1.9	0.2	33.7	70,300	73	6,330	76,630	9	0	492,000	0	0	64,496	0	57,000	0	0	54,929	0	0	43,900	
9	0.00	1.0	0.2	33.9	72,700	75	4,084	76,784	6	0	492,000	0	0	56,358	0	24,000	0	0	0	0	0	0	
10	0.00	1.0	0.2	34.0	30,072	67	3,758	33,830	15	0	432,000	0	0	64,105	0	24,000	0	0	14,688	0	0	11,800	
11	0.00	0.0	0.2	34.0	93,326	5	4,453	97,779	9	0	446,000	0	0	64,369	0	0	0	0	0	0	0	0	
12	0.00	0.0	0.2	34.2	80,937	72	4,315	85,252	9	0	425,000	0	0	35,126	0	0	0	0	0	0	0	0	
13	0.00	0.0	0.2	34.1	75,533	37	4,177	79,709	5	0	453,000	0	0	0	0	0	0	0	0	0	0	0	
14	0.43	0.0	0.2	33.9	75,533	37	4,177	79,709	5	0	482,000	0	0	57,410	0	0	0	0	0	0	0	0	
15	0.00	0.7	0.2	33.5	80,700	71	4,693	85,393	7	0	477,000	0	0	71,210	0	13,000	0	0	0	0	0	0	
16	0.00	1.4	0.2	33.7	77,800	76	3,093	80,893	3	0	453,000	0	28,300	78,661	2,558	36,000	0	0	0	0	0	2,000	
17	0.00	2.1	0.2	34.1	76,790	0	3,237	80,027	5	0	427,000	0	28,500	64,290	3,828	65,000	0	0	53,624	0	0	46,000	
18	0.00	1.3	0.0	34.1	71,126	69	4,520	75,646	4	0	417,000	0	28,800	56,817	2,966	36,000	0	0	0	0	0	2,400	
19	0.73	1.9	0.0	34.1	74,537	76	2,963	77,500	13	0	403,000	0	28,700	42,130	0	57,000	0	0	0	0	0	0	
20	0.00	2.5	0.0	33.9	74,424	0	3,576	77,999	8	0	428,000	0	28,700	0	0	83,000	0	0	0	0	0	0	
21	0.00	3.1	0.0	33.7	74,424	0	3,576	77,999	8	0	453,000	0	28,700	71,488	0	113,000	0	0	66,405	0	0	53,100	
22	0.00	1.8	0.0	34.1	74,300	0	2,957	77,257	6	0	427,000	14,000	27,600	78,750	2,750	52,000	0	0	14,991	0	0	14,200	
23	0.00	1.4	0.0	33.8	77,100	0	2,766	79,866	1	0	451,000	14,000	0	43,343	15,016	36,000	0	0	0	0	0	12,000	
24	0.23	1.4	0.0	33.8	73,600	0	1,390	74,990	4	0	468,000	14,000	0	49,197	0	36,000	0	0	0	0	0	0	
25	0.00	1.4	0.0	33.8	74,751	0	4,011	78,762	8	0	466,000	14,000	0	64,516	0	36,000	0	0	0	0	0	0	
26	0.47	1.4	0.0	33.5	74,163	0	0	74,163	6	0	446,000	38,000	25,800	42,193	0	36,000	0	0	0	0	0	0	
27	0.00	1.4	0.0	33.6	59,827	0	5,172	64,999	8	0	464,000	63,000	25,800	0	0	36,000	0	0	0	0	0	0	
28	0.00	1.4	0.0	33.7	59,827	0	5,172	64,999	8	0	482,000	89,000	25,800	57,471	0	36,000	0	0	0	0	0	0	
29	0.45	1.4	0.0	33.7	73,433	0	2,569	76,002	7	0	456,000	115,000	27,600	63,779	0	36,000	0	0	0	0	0	0	
30	0.00	1.5	0.0	33.6	76,100	0	2,875	78,975	9	0	441,000	144,000	30,400	77,766	0	40,000	0	0	0	0	0	0	
31	0.00	1.5	0.0	33.5	74,100	0	4,889	78,989	5	0	410,000	168,000	26,100	70,617	0	40,000	0	0	0	0	0	0	
Total	2.31				2,157,400	1,013	120,310	2,277,710	408	2			360,800	1,738,430	27,118				443,343	0	0	376,300	
Daily Average		1.7	0.4	33.8	69,594	33	3,881	73,475	13	0	455,600	21,900				51,500	13,800		14,300	0	0	12,140	
Mo. Average															900								

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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.
 - 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.
 - Column V, PPS-B sensor reading plus 9 inches.
 - Columns VII & VIII, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
 - Column XII and XIII, calculated from depth in 575,000 gal. tanks.
 - Columns VI-XI, XIV-XVI, and XIX-XXII, quantities from flow meters.
 - Column XXII includes 80% of the daily values from Columns XVI, XX, and XXI plus 5% of the daily values from column XIX.

**TABLE 2. FIELD DATA ENTRY FORM
MARCH 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		R Leachate Dust Control (Sprayed) (gal.)	S Effluent Hauled		T Effluent Dust Control (Sprayed) (gal.)	U Effluent Dust Control (Sprayed) (gal.)	V Effluent Dust Control (Sprayed) (gal.)
																Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)			
1	0.00	2,905,664	24.8	2,960,033	724,150	5,814,535	725,447	137,811	2.3	0.0	3.6	24,420	15.42	0.25	0	42,234	29,477	0	0	0	0	0	0
2	0.00	3,000,564	24.5	2,960,092	724,153	5,814,535	729,900	137,882	2.3	0.0	2.5	0	16.17	0.00	0	42,179	0	0	0	0	0	0	0
3	0.00	3,050,875	25.2	2,960,094	724,159	5,814,535	734,850	137,886	2.3	0.0	2.6	43,278	17.08	0.00	0	35,153	58,560	0	0	0	0	0	0
4	0.00	3,112,104	24.6	2,960,129	724,267	5,814,537	740,442	137,907	1.5	0.0	3.5	69,090	17.17	0.00	0	42,213	65,240	0	0	0	0	0	0
5	0.00	3,151,141	24.7	2,960,132	724,270	5,814,537	740,029	137,918	1.5	0.0	2.3	45,275	16.08	0.00	0	42,209	28,490	0	0	0	0	0	0
6	0.00	3,186,871	24.9	2,960,135	724,274	5,814,537	746,265	138,007	1.0	0.0	2.5	0	16.63	0.00	0	0	0	0	0	0	0	0	0
7	0.00	3,222,600	25.0	2,960,138	724,277	5,814,537	752,500	138,096	0.5	0.0	2.7	56,643	17.17	0.00	0	42,247	36,336	0	0	0	0	0	0
8	0.00	3,292,900	24.7	2,960,144	724,280	5,814,537	758,830	138,169	0.2	0.0	1.9	54,929	17.08	0.00	0	35,204	29,292	0	0	0	0	0	0
9	0.00	3,365,600	24.9	2,960,147	724,283	5,814,537	762,914	138,244	0.2	0.0	1.0	0	17.08	0.00	0	49,223	7,135	0	0	0	0	0	0
10	0.00	3,395,672	25.0	2,960,156	724,289	5,814,537	766,672	138,311	0.2	0.0	1.0	14,688	15.00	0.00	0	42,120	21,985	0	0	0	0	0	0
11	0.00	3,488,998	25.0	2,960,164	724,290	5,814,537	771,125	138,316	0.2	0.0	0.0	0	15.50	0.00	0	35,146	29,223	0	0	0	0	0	0
12	0.00	3,569,935	25.2	2,960,171	724,292	5,814,537	775,440	138,388	0.2	0.0	0.0	0	14.75	0.00	0	35,126	0	0	0	0	0	0	0
13	0.00	3,645,468	25.1	2,960,175	724,294	5,814,537	779,617	138,425	0.2	0.0	0.0	0	15.75	0.00	0	0	0	0	0	0	0	0	0
14	0.43	3,721,000	24.9	2,960,178	724,295	5,814,537	783,793	138,461	0.2	0.0	0.0	0	16.75	0.00	0	28,124	29,286	0	0	0	0	0	0
15	0.00	3,801,700	24.5	2,960,181	724,299	5,814,537	788,486	138,532	0.2	0.0	0.7	0	16.58	0.00	0	49,204	22,006	0	0	0	0	0	0
16	0.00	3,879,500	24.7	2,960,184	724,299	5,814,537	791,579	138,608	0.2	0.0	1.4	0	15.75	0.00	28,325	42,180	36,481	2,558	0	0	0	0	0
17	0.00	3,956,290	25.1	2,960,187	724,301	5,814,537	794,816	138,608	0.2	0.0	2.1	53,624	14.83	0.00	28,476	35,119	29,171	3,828	0	0	0	0	0
18	0.00	4,027,416	25.1	2,960,190	724,302	5,814,537	799,336	138,677	0.0	0.0	1.3	0	14.50	0.00	28,752	35,080	21,737	2,966	0	0	0	0	0
19	0.73	4,101,953	25.1	2,960,196	724,309	5,814,537	802,299	138,753	0.0	0.0	1.9	0	14.00	0.00	28,734	42,130	0	0	0	0	0	0	0
20	0.00	4,176,377	24.9	2,960,201	724,312	5,814,537	805,875	138,753	0.0	0.0	2.5	0	14.88	0.00	28,734	0	0	0	0	0	0	0	0
21	0.00	4,250,800	24.7	2,960,205	724,315	5,814,537	809,450	138,753	0.0	0.0	3.1	66,405	15.75	0.00	28,736	42,214	29,274	0	0	0	0	0	0
22	0.00	4,325,100	25.1	2,960,209	724,317	5,814,537	812,407	138,753	0.0	0.0	1.8	14,991	14.83	0.50	27,552	42,102	36,648	2,750	0	0	0	0	0
23	0.00	4,402,200	24.8	2,960,209	724,318	5,814,537	815,173	138,753	0.0	0.0	1.4	0	15.67	0.50	42	14,071	29,272	15,016	0	0	0	0	0
24	0.23	4,475,800	24.8	2,960,211	724,320	5,814,537	816,563	138,753	0.0	0.0	1.4	0	16.25	0.50	44	49,197	0	0	0	0	0	0	0
25	0.00	4,550,551	24.8	2,960,217	724,322	5,814,537	820,574	138,753	0.0	0.0	1.4	0	16.17	0.50	0	35,150	29,366	0	0	0	0	0	0
26	0.47	4,624,714	24.5	2,960,221	724,324	5,814,537	820,574	138,750	0.0	0.0	1.4	0	15.50	1.33	25,809	42,193	0	0	0	0	0	0	0
27	0.00	4,684,541	24.6	2,960,225	724,328	5,814,537	825,746	138,750	0.0	0.0	1.4	0	16.13	2.21	25,809	0	0	0	0	0	0	0	0
28	0.00	4,744,367	24.7	2,960,229	724,331	5,814,537	830,918	138,750	0.0	0.0	1.4	0	16.75	3.08	25,810	28,108	29,363	0	0	0	0	0	0
29	0.45	4,817,800	24.7	2,960,230	724,337	5,814,537	833,487	138,750	0.0	0.0	1.4	0	15.83	4.00	27,584	42,149	21,630	0	0	0	0	0	0
30	0.00	4,893,900	24.6	2,960,230	724,346	5,814,537	836,362	138,750	0.0	0.0	1.5	0	15.33	5.00	30,447	42,167	35,599	0	0	0	0	0	0
31	0.00	4,968,000	24.5	2,960,233	724,348	5,814,537	841,251	138,750	0.0	0.0	1.5	0	14.25	5.83	26,099	42,175	28,442	0	0	0	0	0	0
Totals	2.31									0		443,343			360,953	1,054,417	684,013	27,118	0	0	0	0	0

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- 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, E-I, K, M,P-R, and T-V are quantities from flow meters.
6. Columns J and L 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

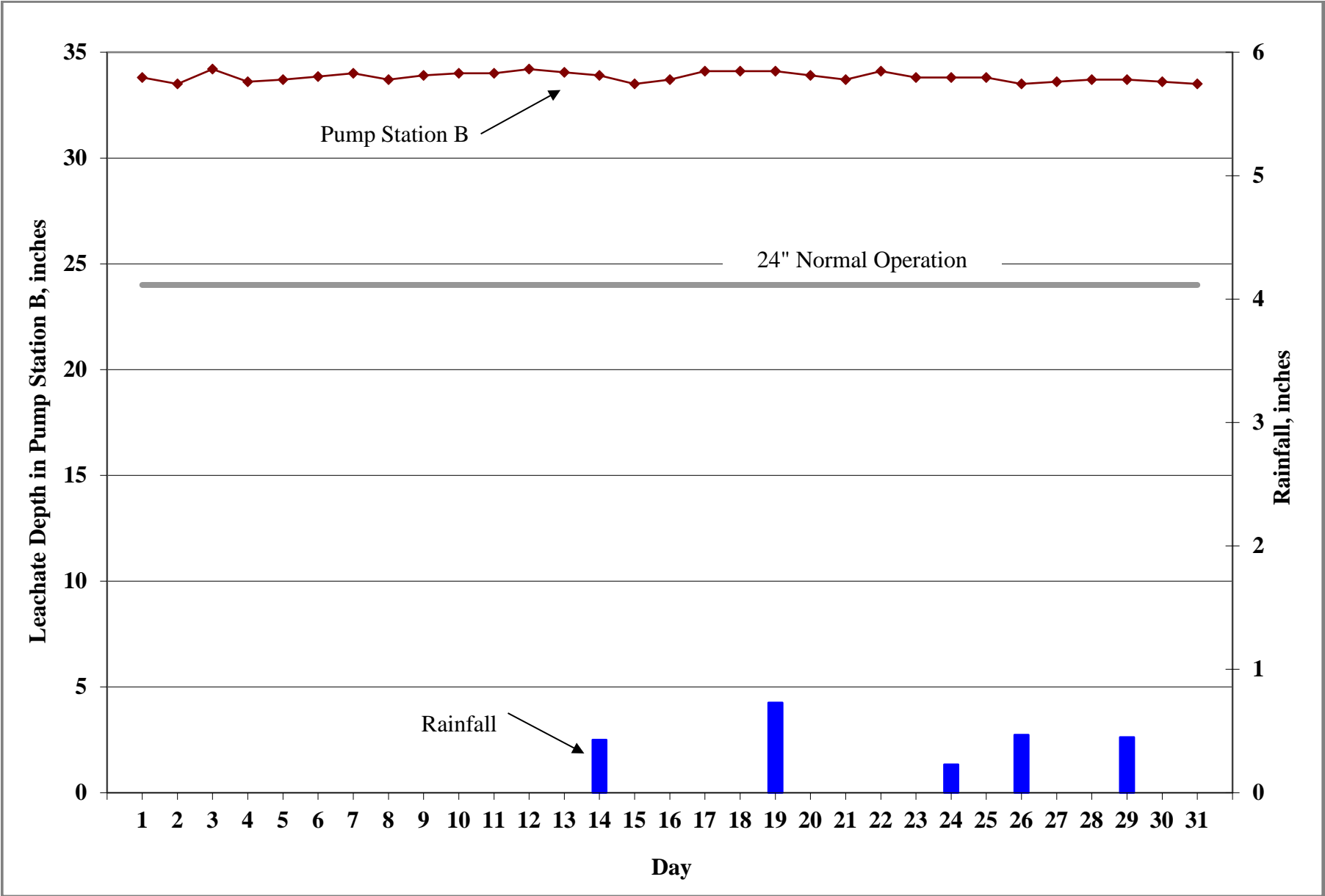


Figure 1. Leachate Levels in Pump Station B and Rainfall for March 2015.

**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														
May														
June														
July														
August														
September														
October														
November														
December														
YTD Total	11.28	31,787	1,641	494,339	7,171,196	5,474,504	27,118	1,605,300	0	0	833,323	7,698,963	7,106,922	592,041

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.