

## Smith, George

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**From:** Pelley, Cindy <PelleyCA@HillsboroughCounty.ORG>  
**Sent:** Thursday, October 13, 2016 9:11 AM  
**To:** SWD\_Waste (Shared Mailbox)  
**Cc:** Morgan, Steve; Ruiz, Larry; Cope, Ronald; Byer, Kimberly; bclark@scsengineers.com  
**Subject:** WACS ID 41193 - Qtr 3 2016 Water Balance for Southeast County Landfill  
**Attachments:** 3Q2016 Water Balance.pdf

Mr. Morgan:

The Quarterly Water Balance Report for Southeast County Landfill is attached (WACS ID 41193).

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

Thank you,

**Cindy A. Pelley**  
**General Manager II**  
Solid Waste Management Division  
Public Works Department

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October 11, 2016

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### Interim Internal Auditor

Peggy Caskey

### County Attorney

Chip Fletcher

### Public Works

PO Box 1110  
Tampa, FL 33601-1110  
Phone: (813) 272-5912  
Fax: (813) 272-5811

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 September 30, 2016.

The data is being submitted as separate monthly reports for July, August, and September 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:** August 16, 2016  
September 14, 2016 (Revised)

**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 July 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 5.55 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 2.6 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 1.5.

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

(Revision 9/14/16)

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 except for July 1 through 4<sup>th</sup>, July 6<sup>th</sup>, and July 8<sup>th</sup>. The average recorded depth of leachate in the PS-B sump was 23.6 inches.

In the past as a conservative measure, the County was adding 9-inches to the bubbler reading. Moving forward, the bubbler reading will be reported to DEP without any adjustments as any liquid at the bottom of the sump is exempted by Rule. Maintaining the LMP goal of 24-inches above the bubbler will ensure the level over the liner is not more than 12-inches during normal operations.

**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 94,543 gallons. A total of 2,930,831 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 2,602 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 leachate was not pumped from Sections 7-8.

(Revision 9/14/16)

Upon closer inspection of the pump station systems, the flow meter was found to contain moisture in the instrumentation housing and thus was deemed not reliable. The County will be repairing or replacing the flow meter at PS-7.

**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 2,930,831 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. This month leachate was not pumped to the LTRF.

(Revision 9/14/16)

Upon closer inspection of the pump station systems, it was determined that the pump station flow meters had a grounding problem as such, the readings were not reliable. The grounding of the flow meters have been repaired and currently are working properly. In addition, the Pump Station 9 bubbler sensors may have not been showing accurate levels and in turn the pumps were not operating normal. The sensors have been replaced and the pump station is currently working normal.

**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 leachate was not 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 410,700 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 246,900 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 1,020,000 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 1,956,329 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 10,698 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 94,300 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 62,400 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 XXIV. This month 165,477 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 1,045,869 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 853,600 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 2,941,165 gallons. Total outflow quantity from the LTRF was 2,987,027 gallons. The change in storage for the month decreased by 45,863 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM**  
**JULY 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	0.7	24.5	92,468	0	0	92,468	0	0	384,000	216,000	22,100	49,156	0	145,000	9,000	0	0	0	0	0
2	0.53	3.4	1.4	27.5	92,466	212	0	92,466	0	0	403,000	216,000	30,100	56,620	0	129,000	38,000	0	0	0	0	0
3	0.58	3.4	1.5	26.2	79,869	185	0	79,869	0	0	432,000	245,000	30,100	0	0	140,000	38,000	0	0	0	0	0
4	0.77	3.5	1.5	25.4	53,246	123	0	53,246	0	0	451,000	264,000	30,100	0	0	140,000	44,000	0	0	0	0	0
5	0.00	3.5	1.6	23.7	106,492	246	0	106,492	0	0	489,000	302,000	30,100	78,112	0	140,000	51,000	0	0	0	0	0
6	0.00	3.7	2.6	24.4	97,960	0	0	97,960	0	0	466,000	206,000	35,300	85,286	0	151,000	133,000	0	0	0	0	0
7	0.00	3.5	2.8	23.3	96,757	133	0	96,757	0	0	446,000	230,000	28,900	70,994	0	140,000	152,000	0	0	0	0	0
8	0.00	3.5	2.8	24.3	96,406	0	0	96,406	0	0	453,000	257,000	29,200	71,046	0	140,000	152,000	0	25,446	0	0	20,400
9	0.00	2.9	2.8	23.6	98,636	0	0	98,636	0	0	441,000	281,000	29,400	102,632	0	103,000	152,000	0	47,930	0	0	38,300
10	0.00	2.8	2.8	23.5	99,153	0	0	99,153	0	0	463,000	287,000	29,400	0	0	98,000	143,000	0	0	0	0	0
11	0.58	2.7	2.7	23.3	99,153	0	0	99,153	0	0	485,000	293,000	29,400	101,696	0	93,000	143,000	0	72,615	0	0	58,100
12	0.00	3.4	2.7	23.7	95,862	0	0	95,862	0	0	417,000	211,000	30,600	109,022	1,016	129,000	143,000	0	85,602	0	0	69,300
13	1.02	2.9	2.2	23.4	94,912	0	0	94,912	0	0	369,000	230,000	28,600	116,474	1,066	103,000	97,000	56,338	83,379	0	0	70,400
14	0.00	2.9	2.1	23.4	97,489	0	0	97,489	0	0	324,000	214,000	30,400	101,804	0	103,000	88,000	68,540	53,418	0	0	46,200
15	0.01	2.3	1.9	23.5	97,112	0	0	97,112	0	0	297,000	238,000	27,300	57,212	1,026	74,000	72,000	40,599	59,204	0	0	50,200
16	0.26	2.4	1.4	23.7	98,510	0	0	98,510	0	0	329,000	235,000	26,400	0	0	79,000	38,000	0	44,377	0	0	35,500
17	0.00	2.5	1.1	23.6	96,064	61	0	96,064	0	0	389,000	262,000	26,400	0	0	83,000	19,000	0	0	0	0	0
18	0.00	2.6	0.7	23.4	96,064	61	0	96,064	0	0	449,000	288,000	26,400	72,218	1,026	88,000	9,000	0	59,702	0	0	48,600
19	0.00	3.1	0.7	23.4	94,266	268	0	94,266	0	0	439,000	223,000	23,800	77,470	1,017	113,000	9,000	0	72,117	0	0	58,500
20	0.00	2.3	0.7	23.5	97,402	266	0	97,402	0	0	422,000	216,000	30,300	49,400	1,128	74,000	9,000	0	45,772	0	0	37,500
21	0.00	2.2	0.0	23.1	103,546	258	0	103,546	0	0	435,000	240,000	36,400	71,771	0	70,000	0	0	0	0	0	0
22	0.33	2.6	0.0	22.5	101,479	248	0	101,479	0	0	435,000	245,000	34,500	78,823	1,024	88,000	0	0	58,709	0	0	47,800
23	0.00	3.1	0.0	22.4	100,516	245	0	100,516	0	0	417,000	194,000	35,200	49,432	0	113,000	0	0	59,566	0	0	47,700
24	1.02	2.8	0.0	22.4	94,184	148	0	94,184	0	0	448,000	220,000	35,200	0	0	98,000	0	0	0	0	0	0
25	0.01	2.4	0.4	22.3	94,184	148	0	94,184	0	0	478,000	245,000	35,200	79,207	0	79,000	3,000	0	0	0	0	0
26	0.00	2.6	0.4	23.3	94,600	0	0	94,600	0	0	435,000	266,000	39,300	58,085	1,129	88,000	3,000	0	45,270	0	0	37,100
27	0.00	1.7	0.4	22.1	92,306	0	0	92,306	0	0	461,000	305,000	42,300	86,261	1,134	48,000	3,000	0	29,641	0	0	24,600
28	0.00	1.0	0.3	23.1	92,971	0	0	92,971	0	0	415,000	288,000	45,400	122,948	1,132	24,000	33,000	0	0	0	0	900
29	0.02	0.8	2.3	23.4	93,188	0	0	93,188	0	0	320,000	225,000	48,000	116,099	0	17,000	106,000	0	0	0	0	0
30	0.00	0.8	2.5	22.3	91,892	0	0	91,892	0	0	262,000	238,000	47,100	94,561	0	17,000	124,000	0	108,772	0	0	87,000
31	0.42	0.9	2.6	23.7	91,680	0	0	91,680	0	0	279,000	275,000	47,100	0	0	17,000	124,000	0	94,349	0	0	75,500
Total	5.55				2,930,831	2,602	0	2,930,831	0	0			1,020,000	1,956,329	10,698			165,477	1,045,869	0	0	853,600
Daily Average		2.6	1.5	23.6	94,543	84	0	94,543	0	0	410,700	246,900				94,300	62,400					
Mo. Average															300				33,700	0	0	27,540

- 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.

projects\balance\2016\07-16bal.xls (CP 8/05/16)



**TABLE 2. FIELD DATA ENTRY FORM  
JULY 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	2,520,468	24.5	2,960,632	724,719	5,814,537	995,926	145,281	0.7	0.0	3.6	0	13.33	7.50	22,089	49,156	0	0	0	0	0
2	0.53	2,612,934	27.5	2,960,635	724,720	5,814,537	995,926	145,493	1.4	0.0	3.4	0	14.00	7.50	30,077	56,620	0	0	0	0	0
3	0.58	2,692,803	26.2	2,960,640	724,722	5,814,543	995,926	145,678	1.5	0.0	3.4	0	15.00	8.50	30,077	0	0	0	0	0	0
4	0.77	2,746,048	25.4	2,960,643	724,723	5,814,546	995,926	145,801	1.5	0.0	3.5	0	15.67	9.17	30,077	0	0	0	0	0	0
5	0.00	2,852,540	23.7	2,960,649	724,725	5,814,554	995,926	146,047	1.6	0.0	3.5	0	17.00	10.50	30,077	49,510	28,602	0	0	0	0
6	0.00	2,950,500	24.4	2,960,652	724,725	5,814,554	995,926	146,048	2.6	0.0	3.7	0	16.17	7.17	35,292	49,508	35,778	0	0	0	0
7	0.00	3,047,257	23.3	2,960,652	724,729	5,814,554	995,926	146,181	2.8	0.0	3.5	0	15.50	8.00	28,891	35,264	35,730	0	0	0	0
8	0.00	3,143,663	24.3	2,960,654	724,734	5,814,554	995,926	146,206	2.8	0.0	3.5	25,446	15.75	8.92	29,244	35,410	35,636	0	0	0	0
9	0.00	3,242,299	23.6	2,960,659	724,738	5,814,554	995,926	146,206	2.8	0.0	2.9	47,930	15.33	9.75	29,443	102,632	0	0	0	0	0
10	0.00	3,341,452	23.5	2,960,662	724,742	5,814,554	995,926	146,206	2.8	0.0	2.8	0	16.08	9.96	29,443	0	0	0	0	0	0
11	0.58	3,440,605	23.3	2,960,665	724,745	5,814,554	995,926	146,206	2.7	0.0	2.7	72,615	16.83	10.17	29,443	73,198	28,498	0	0	0	0
12	0.00	3,536,467	23.7	2,960,670	724,752	5,814,554	995,926	146,206	2.7	0.0	3.4	85,602	14.50	7.33	30,584	80,132	28,890	1,016	0	0	0
13	1.02	3,631,379	23.4	2,960,674	724,761	5,814,554	995,926	146,206	2.2	56338.0	2.9	83,379	12.83	8.00	28,642	79,906	36,568	1,066	0	0	0
14	0.00	3,728,868	23.4	2,960,688	724,763	5,814,554	995,926	146,206	2.1	68540.0	2.9	53,418	11.25	7.42	30,391	65,240	36,564	0	0	0	0
15	0.01	3,825,980	23.5	2,960,694	724,766	5,814,554	995,989	146,205	1.9	40599.0	2.3	59,204	10.33	8.25	27,253	28,150	29,062	1,026	0	0	0
16	0.26	3,924,490	23.7	2,960,696	724,769	5,814,554	995,989	146,205	1.4	0.0	2.4	44,377	11.42	8.17	26,383	0	0	0	0	0	0
17	0.00	4,020,554	23.6	2,960,699	724,773	5,814,554	995,989	146,266	1.1	0.0	2.5	0	13.50	9.09	26,383	0	0	0	0	0	0
18	0.00	4,116,617	23.4	2,960,701	724,776	5,814,554	995,989	146,327	0.7	0.0	2.6	59,702	15.58	10.00	26,383	35,374	36,844	1,026	0	0	0
19	0.00	4,210,883	23.4	2,960,706	724,780	5,814,554	995,989	146,595	0.7	0.0	3.1	72,117	15.25	7.75	23,765	42,403	35,067	1,017	0	0	0
20	0.00	4,308,285	23.5	2,960,712	724,784	5,814,554	995,989	146,861	0.7	0.0	2.3	45,772	14.67	7.50	30,305	49,400	0	1,128	0	0	0
21	0.00	4,411,831	23.1	2,960,715	724,787	5,814,554	995,989	147,119	0.0	0.0	2.2	0	15.10	8.33	36,408	42,394	29,377	0	0	0	0
22	0.33	4,513,310	22.5	2,960,721	724,790	5,814,554	995,989	147,367	0.0	0.0	2.6	58,709	15.10	8.50	34,518	42,361	36,462	1,024	0	0	0
23	0.00	4,613,826	22.4	2,960,760	724,795	5,814,554	995,994	147,612	0.0	0.0	3.1	59,566	14.50	6.75	35,168	49,432	0	0	0	0	0
24	1.02	4,708,010	22.4	2,960,766	724,801	5,814,554	995,994	147,760	0.0	0.0	2.8	0	15.55	7.63	35,168	0	0	0	0	0	0
25	0.01	4,802,194	22.3	2,960,771	724,806	5,814,554	995,994	147,908	0.4	0.0	2.4	0	16.60	8.50	35,168	42,439	36,768	0	0	0	0
26	0.00	4,896,794	23.3	2,960,772	724,806	5,814,554	995,994	147,910	0.4	0.0	2.6	45,270	15.10	9.25	39,340	21,231	36,854	1,129	0	0	0
27	0.00	4,989,100	22.1	2,960,783	724,810	5,814,554	995,994	147,910	0.4	0.0	1.7	29,641	16.00	10.58	42,277	49,483	36,778	1,134	0	0	0
28	0.00	5,082,071	23.1	2,960,787	724,812	5,814,554	995,994	147,910	1.3	0.0	1.0	0	14.40	10.00	45,399	86,992	35,956	1,132	0	0	0
29	0.02	5,175,259	23.4	2,960,788	724,815	5,814,554	995,996	147,910	2.3	0.0	0.8	0	11.10	7.83	48,020	86,841	29,258	0	0	0	0
30	0.00	5,267,151	22.3	2,960,796	724,818	5,814,554	995,997	147,910	2.5	0.0	0.8	108,772	9.10	8.25	47,067	94,561	0	0	0	0	0
31	0.42	5,358,831	23.7	2,960,799	724,826	5,814,554	995,998	147,911	2.6	0.0	0.9	94,349	9.70	9.54	47,067	0	0	0	0	0	0
Totals	5.55									165,477		1,045,869			1,019,842	1,347,637	608,692	10,698	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

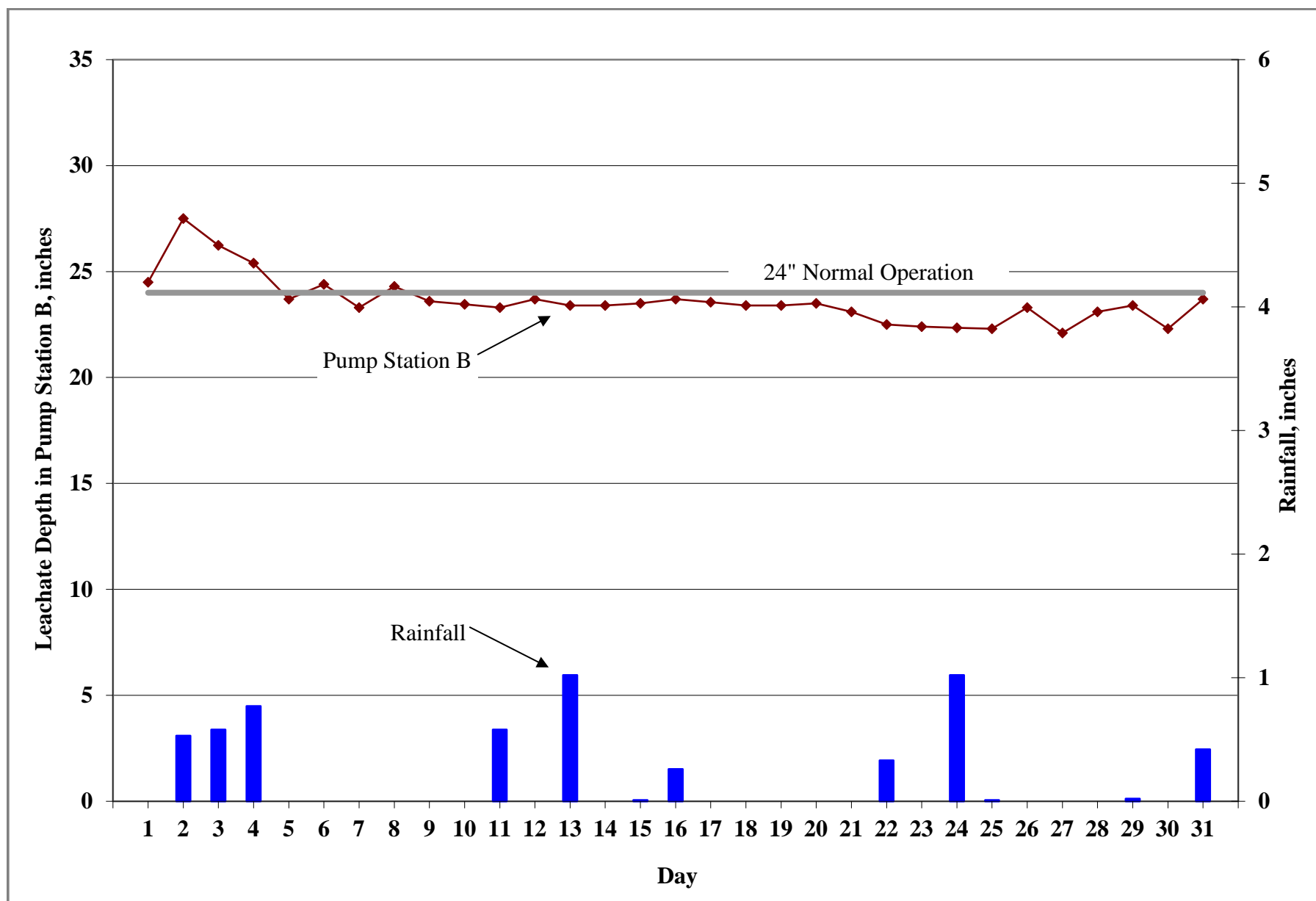


Figure 1. Leachate Levels in Pump Station B and Rainfall for July 2016.



## Public Works

### Board of County Commissioners

Kevin Beckner  
Victor D. Crist  
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### Interim Internal Auditor Peggy Caskey

### County Attorney Chip Fletcher

**Public Works**  
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**DATE:** September 12, 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 August 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 11.0 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 2.8 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 2.8.

**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 except for August 1 as the pump was down in preparation to install a new 6-inch diameter suction line. The average recorded depth of leachate in the PS-B sump was 18.0 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 108,150 gallons. A total of 3,352,655 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 7,962 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 340,167 gallons of leachate was pumped from Sections 7-8. It has been determined that the flow meter for Sections 7/8 will need to be replaced due to water intrusion. Staff has assumed that the pump at this pump station has in fact been working throughout the month because the telemetry system indicates that normal operating levels have been maintained. However, the meter readings are suspect at this time and the County will repair or replace the flow meter.

**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 3,692,822 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 458,958 gallons of leachate was pumped this month. The differential pressure transducers were replaced for all pumps at Pump Station 9 on August 12, 2016. All pumps are functioning as designed.

**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 leachate was not removed from the leak detection system. The differential pressure transducers were replaced for all pumps at Pump Station 9 on August 12, 2016. All pumps are functioning as designed.

**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 372,100 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 407,500 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 1,184,800 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 2,804,839 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 33,420 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 99,300 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 160,200 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 XXIV. This month 64,843 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 708,321 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 22,005 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 596,600 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 4,162,938 gallons. Total outflow quantity from the LTRF was 4,023,059 gallons. The change in storage for the month increased by 139,879 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM**  
**AUGUST 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	0.9	2.6	25.1	183,360	0	0	183,360	0	0	295,000	312,000	47,100	71,697	3,327	21,000	133,000	0	0	0	0	2,700
2	0.45	0.9	3.8	24.7	845	0	0	845	0	0	194,000	331,000	45,000	57,309	3,274	21,000	256,000	0	0	0	0	2,600
3	0.57	1.9	3.6	24.2	196,145	0	0	196,145	0	0	283,000	350,000	45,000	85,794	0	57,000	234,000	0	0	0	0	0
4	0.22	2.7	1.9	24.3	103,487	0	940	104,427	0	0	264,000	374,000	48,900	70,651	0	93,000	72,000	0	0	0	0	0
5	0.00	2.9	1.2	20.4	163,747	0	0	163,747	0	0	302,000	381,000	43,300	71,434	5,056	103,000	28,000	0	0	0	0	4,000
6	0.35	3.1	1.2	21.0	105,429	0	0	105,429	0	0	290,000	405,000	41,200	99,150	2,369	113,000	28,000	0	0	0	0	1,900
7	0.73	3.2	1.3	22.2	108,938	0	0	108,938	0	0	313,000	444,000	41,200	0	0	118,000	28,000	0	0	0	0	0
8	1.07	3.2	1.4	23.4	108,938	0	0	108,938	0	0	336,000	482,000	41,200	79,186	0	118,000	38,000	0	0	0	0	0
9	0.60	3.5	1.6	12.3	138,682	0	0	138,682	0	0	358,000	492,000	40,600	78,747	0	140,000	51,000	0	0	0	0	0
10	0.40	3.4	2.1	10.0	117,440	0	5,224	122,664	2,632	0	358,000	477,000	38,400	86,290	0	129,000	88,000	0	0	0	0	0
11	0.90	3.4	2.6	9.6	108,829	0	3,466	112,295	2,175	0	350,000	456,000	32,200	93,576	0	129,000	133,000	0	10,279	0	0	8,200
12	0.47	3.3	3.1	22.4	88,426	0	722	89,148	120,379	0	453,000	427,000	26,800	76,859	0	123,000	182,000	0	0	0	0	0
13	0.00	3.3	3.5	20.6	123,355	0	2,327	125,682	35,161	0	485,000	432,000	45,600	92,513	0	123,000	223,000	0	0	0	0	0
14	0.00	3.3	3.6	21.4	85,444	0	0	85,444	17,637	0	470,000	458,000	45,600	49,927	0	123,000	234,000	0	0	0	0	0
15	0.00	3.3	3.7	22.2	85,444	0	0	85,444	17,637	0	456,000	485,000	45,600	79,337	0	123,000	245,000	0	52,764	0	0	42,200
16	0.00	2.3	3.9	9.6	139,140	0	0	139,140	0	0	489,000	489,000	42,200	124,039	0	74,000	267,000	0	59,892	0	0	47,900
17	0.01	3.2	3.2	14.9	111,533	0	0	111,533	8,662	0	437,000	502,000	40,500	99,854	0	118,000	192,000	0	59,891	0	0	47,900
18	0.04	3.2	3.2	19.1	103,563	0	0	103,563	96,817	0	497,000	482,000	40,000	144,106	11,239	118,000	192,000	0	31,608	0	0	34,300
19	0.00	3.1	3.2	11.9	106,279	0	0	106,279	40,588	0	461,000	489,000	47,400	123,070	0	113,000	192,000	0	78,590	0	0	62,900
20	0.08	2.5	3.2	9.6	105,883	0	0	105,883	22,752	0	425,000	473,000	27,600	144,728	0	83,000	192,000	0	55,168	0	0	44,100
21	0.00	2.0	3.2	12.7	102,072	0	0	102,072	13,577	0	417,000	493,000	27,600	37,631	0	61,000	192,000	0	45,134	0	0	36,100
22	0.00	1.5	3.2	15.7	102,072	0	0	102,072	13,577	0	410,000	513,000	27,600	109,081	8,155	40,000	192,000	0	35,100	0	22,005	34,600
23	0.01	3.2	3.0	19.1	94,562	706	0	94,562	9,206	0	374,000	389,000	29,100	123,873	0	118,000	172,000	0	88,449	0	0	70,800
24	0.00	3.4	2.7	16.9	97,207	1,389	0	97,207	8,706	0	317,000	358,000	27,000	128,712	0	129,000	143,000	0	86,634	0	0	69,300
25	0.02	2.7	2.7	15.8	99,081	1,103	0	99,081	10,162	0	261,000	331,000	32,600	121,320	0	93,000	143,000	64,843	17,353	0	0	17,100
26	0.01	3.2	3.8	19.8	101,558	1,108	0	101,558	8,032	0	214,000	307,000	33,000	91,769	0	118,000	256,000	0	0	0	0	0
27	0.68	2.0	3.2	10.8	98,667	939	62,401	161,068	7,340	0	257,000	288,000	35,300	49,719	0	61,000	192,000	0	0	0	0	0
28	0.00	2.5	3.0	16.4	94,000	591	85,813	179,813	5,938	0	374,000	302,000	35,300	0	0	83,000	172,000	0	16,291	0	0	13,000
29	0.01	3.0	2.8	21.9	94,000	591	85,813	179,813	5,938	0	492,000	317,000	35,300	79,532	0	108,000	152,000	0	32,582	0	0	26,100
30	0.00	3.4	2.7	22.5	55,223	1,535	47,400	102,623	3,600	0	466,000	302,000	37,900	174,916	0	129,000	143,000	0	38,586	0	0	30,900
31	4.38	2.8	3.3	17.3	129,306	0	46,060	175,366	8,444	0	437,000	293,000	38,700	160,019	0	98,000	202,000	0	0	0	0	0
Total	11.00				3,352,655	7,962	340,165	3,692,820	458,958	0			1,184,800	2,804,839	33,420			64,843	708,321	0	22,005	596,600
Daily Average		2.8	2.8	18.0	108,150	257	10,973	119,123	14,805	0	372,100	407,500				99,300	160,200					
Mo. Average															1,100				22,800	0	700	19,250

projects\balance\2016\01-09\bal.xls (cp 9/12/15)

- 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**  
**AUGUST 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	5,450,511	25.1	2,960,802	724,833	5,814,554	995,999	147,911	2.6	0.0	0.9	0	10.25	10.83	47,067	35,223	36,474	3,327	0	0	0
2	0.45	5,451,356	24.7	2,960,805	724,837	5,814,554	995,875	147,912	3.8	0.0	0.9	0	6.75	11.50	45,023	27,994	29,315	3,274	0	0	0
3	0.57	5,647,501	24.2	2,960,808	724,843	5,814,554	995,079	147,912	3.6	0.0	1.9	0	9.83	12.17	45,024	49,260	36,534	0	0	0	0
4	0.22	5,750,988	24.3	2,960,809	724,843	5,814,554	996,019	147,912	1.9	0.0	2.7	0	9.17	13.00	48,885	70,651	0	0	0	0	0
5	0.00	5,914,735	20.4	2,960,812	724,846	5,814,554	996,019	147,912	1.2	0.0	2.9	0	10.50	13.25	43,267	42,308	29,126	5,056	0	0	0
6	0.35	6,020,164	21.0	2,960,815	724,851	5,814,554	996,019	147,912	1.2	0.0	3.1	0	10.08	14.08	41,221	56,536	42,614	2,369	0	0	0
7	0.73	6,129,102	22.2	2,960,818	724,855	5,814,554	996,011	147,912	1.3	0.0	3.2	0	10.88	15.42	41,222	0	0	0	0	0	0
8	1.07	6,238,040	23.4	2,960,821	724,859	5,814,554	996,003	147,912	1.4	0.0	3.2	0	11.67	16.75	41,222	35,165	44,021	0	0	0	0
9	0.60	6,376,722	12.3	2,960,827	724,862	5,814,554	995,993	147,912	1.6	0.0	3.5	0	12.42	17.08	40,631	42,165	36,582	0	0	0	0
10	0.40	6,494,162	10.0	2,961,033	727,288	5,814,554	1,001,217	147,912	2.1	0.0	3.4	0	12.42	16.58	38,399	42,185	44,105	0	0	0	0
11	0.90	6,602,991	9.6	2,961,036	729,460	5,814,554	1,004,683	147,912	2.6	0.0	3.4	10,279	12.17	15.83	32,155	42,161	51,415	0	0	0	0
12	0.47	6,691,417	22.4	2,961,375	849,500	5,814,563	1,005,405	147,912	3.1	0.0	3.3	0	15.75	14.83	26,781	35,421	41,438	0	0	0	0
13	0.00	6,814,772	20.6	2,971,670	874,366	5,814,648	1,007,732	147,912	3.5	0.0	3.3	0	16.83	15.00	45,627	42,537	49,976	0	0	0	0
14	0.00	6,900,216	21.4	2,971,767	891,906	5,814,649	1,007,732	147,912	3.6	0.0	3.3	0	16.33	15.92	45,628	0	49,927	0	0	0	0
15	0.00	6,985,660	22.2	2,971,863	909,446	5,814,649	1,007,732	147,912	3.7	0.0	3.3	52,764	15.83	16.83	45,628	35,402	43,935	0	0	0	0
16	0.00	7,124,800	9.6	NR	NR	NR	1,007,732	147,913	3.9	0.0	2.3	59,892	17.00	17.00	42,197	72,615	51,424	0	0	0	0
17	0.01	7,236,333	14.9	2,973,067	916,904	5,814,653	1,007,732	147,913	3.2	0.0	3.2	59,891	15.17	17.42	40,506	49,890	49,964	0	0	0	0
18	0.04	7,339,896	19.1	2,977,596	1,009,192	5,814,671	1,007,774	149,713	3.2	0.0	3.2	31,608	17.25	16.75	39,993	72,553	71,553	11,239	0	0	0
19	0.00	7,446,175	11.9	2,977,599	1,049,777	5,814,671	1,007,774	147,913	3.2	0.0	3.1	78,590	16.00	17.00	47,352	87,889	35,181	0	0	0	0
20	0.08	7,552,058	9.6	2,977,601	1,072,527	5,814,671	1,007,774	147,913	3.2	0.0	2.5	55,168	14.75	16.42	27,558	94,849	49,879	0	0	0	0
21	0.00	7,654,130	12.7	2,977,606	1,086,099	5,814,671	1,007,774	147,914	3.2	0.0	2.0	45,134	14.50	17.13	27,559	37,631	0	0	0	0	0
22	0.00	7,756,202	15.7	2,977,610	1,099,671	5,814,671	1,007,774	147,914	3.2	0.0	1.5	35,100	14.25	17.83	27,559	65,074	44,007	8,155	14,692	7,313	0
23	0.01	7,850,764	19.1	2,977,614	1,108,873	5,814,671	1,007,774	148,620	3.0	0.0	3.2	88,449	13.00	13.50	29,109	79,955	43,918	0	0	0	0
24	0.00	7,947,971	16.9	2,977,618	1,117,575	5,814,671	1,007,774	150,009	2.7	0.0	3.4	86,634	11.00	12.42	27,015	35,206	93,506	0	0	0	0
25	0.02	8,047,052	15.8	2,987,292	1,118,063	5,814,671	1,007,774	151,112	2.7	0.0	2.7	17,353	9.08	11.50	32,570	42,206	79,114	0	0	0	0
26	0.01	8,148,610	19.8	2,995,320	1,118,067	5,814,671	1,007,774	152,220	3.8	0.0	3.2	0	7.42	10.67	33,033	42,166	49,603	0	0	0	0
27	0.68	8,247,277	10.8	3,002,654	1,118,073	5,814,671	1,070,175	153,159	3.2	0.0	2.0	0	8.92	10.00	35,336	0	49,719	0	0	0	0
28	0.00	8,341,277	16.4	3,008,587	1,118,078	5,814,671	1,155,988	153,750	3.0	0.0	2.5	16,291	13.00	10.50	35,337	0	0	0	0	0	0
29	0.01	8,435,277	21.9	3,014,520	1,118,083	5,814,671	1,241,800	154,341	2.8	0.0	3.0	32,582	17.08	11.00	35,337	35,393	44,139	0	0	0	0
30	0.00	8,490,500	22.5	3,016,783	1,119,420	5,814,671	1,289,200	155,876	2.7	0.0	3.4	38,586	16.17	10.50	37,940	109,551	65,365	0	0	0	0
31	4.38	8,619,806	17.3	3,023,971	1,120,676	5,814,671	1,335,260	155,876	3.3	0.0	2.8	0	15.17	10.17	38,695	73,334	86,685	0	0	0	0
Totals	11.00									0		708,321			1,184,876	1,455,320	1,349,519	33,420	14,692	7,313	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

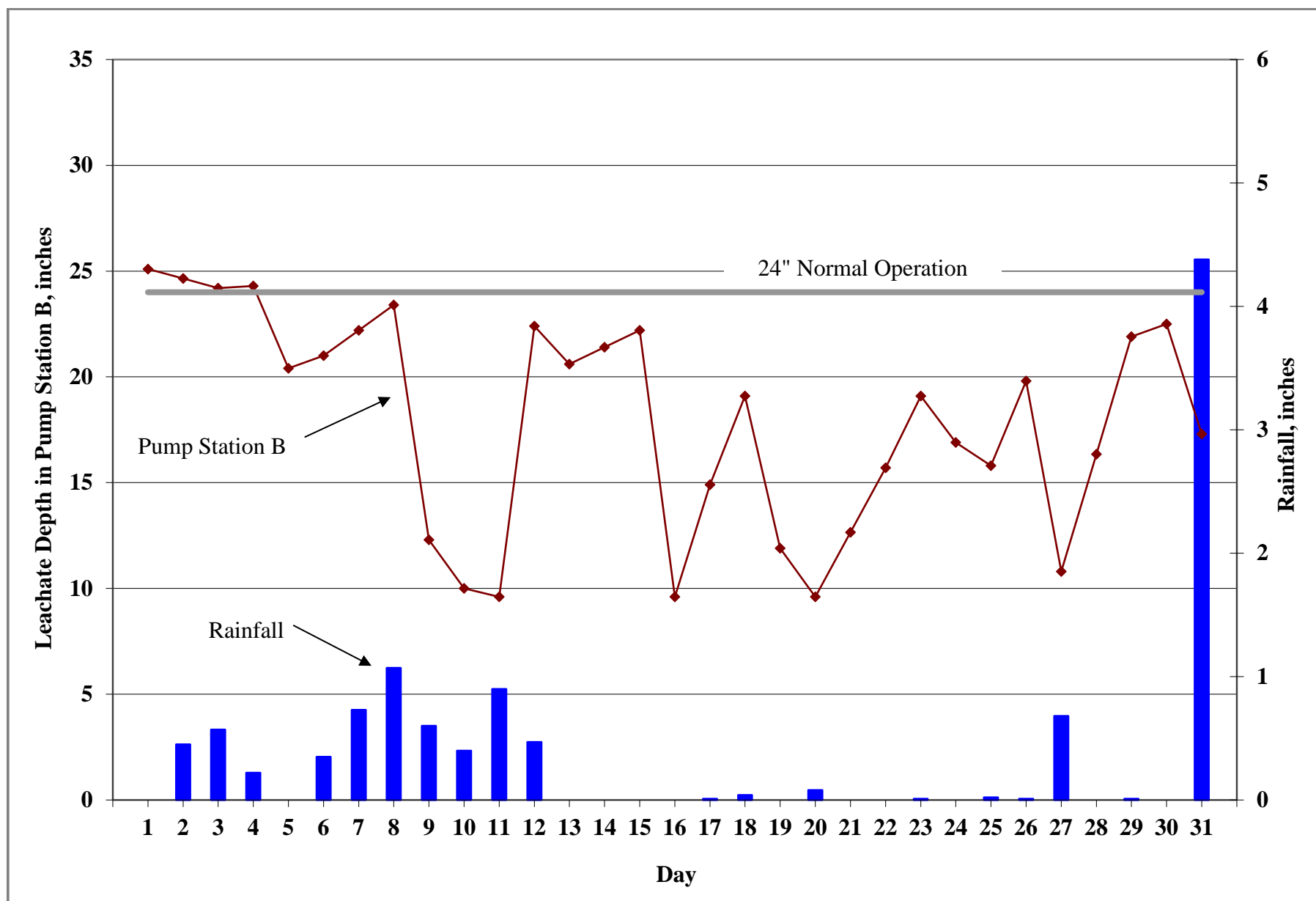


Figure 1. Leachate Levels in Pump Station B and Rainfall for August 2016.



## Public Works

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Kevin Beckner  
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**DATE:** October 10, 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 September 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 5.27 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 3.2 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 3.6 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 except for September 7, 8, and 9 due to additional leachate generated from hurricane Hermine. The average recorded depth of leachate in the PS-B sump was 18.2 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 117,644 gallons. A total of 3,529,312 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 anticipate installing the new pump by mid-October. This month the LDS was pumped manually and we estimate that a total of 900 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 September 12 the pump went down and a temporary pump was installed. A replacement pump has been ordered. The flow meter was serviced on September 20, all the boards were inspected and a new reading face was installed. Readings prior to the 20<sup>th</sup> are suspect and the SWMD will continue to monitor this pump station to ensure it is working as designed. This month Sections 7-8 was pumped manually and a total of 680,918 gallons were 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 4,210,230 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 318,003 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 4,084 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 402,400 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 440,600 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 936,400 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 3,564,637 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 120,500 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 235,400 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 XXIV. This month 229,164 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 630,452 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 108,019 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 515,700 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 4,531,576 gallons. Total outflow quantity from the LTRF was 4,501,037 gallons. The change in storage for the month increased by 30,539 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM  
SEPTEMBER 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	0.35	3.1	3.5	14.9	124,440	NR	70,936	195,376	23,806	20	458,000	328,000	40,700	166,924	0	113,000	223,000	0	0	0	0	0
2	1.50	3.4	3.7	19.8	124,440	NR	70,936	195,376	23,806	20	480,000	363,000	40,700	124,295	0	129,000	245,000	0	0	0	42,710	0
3	0.00	3.4	3.8	22.9	149,718	NR	37,477	187,195	30,750	920	489,000	397,000	37,400	167,029	0	129,000	256,000	0	0	0	0	0
4	0.42	3.4	3.8	22.9	107,220	NR	6,788	114,008	2,453	103	496,000	429,000	37,400	0	0	129,000	256,000	0	0	0	0	0
5	0.38	3.4	3.8	22.9	71,480	NR	4,526	76,006	1,635	68	500,000	450,000	37,400	42,844	0	129,000	256,000	0	0	0	0	0
6	0.00	3.4	3.8	22.9	142,960	NR	9,051	152,011	3,271	137	509,000	492,000	37,400	159,015	0	129,000	256,000	0	0	0	21,879	0
7	0.00	3.4	3.8	24.4	123,218	NR	3,537	126,755	37,214	261	487,000	504,000	38,400	115,390	0	129,000	256,000	0	41,664	0	36,114	33,300
8	0.00	2.6	3.8	24.4	147,840	NR	11,600	159,440	30,836	515	506,000	494,000	36,300	205,759	0	88,000	256,000	0	37,607	0	0	30,100
9	0.01	3.4	3.5	24.8	142,816	NR	87,581	230,397	18,944	576	509,000	484,000	34,900	184,062	0	129,000	223,000	0	44,389	0	7,316	35,500
10	0.00	3.4	3.0	18.6	146,016	NR	23,282	169,298	11,319	558	480,000	497,000	32,000	176,601	0	129,000	172,000	0	55,172	0	0	44,100
11	0.00	3.4	3.3	18.7	127,241	NR	0	127,241	1,755	0	463,000	467,000	32,000	52,294	0	129,000	202,000	0	0	0	0	0
12	0.00	3.4	3.6	18.7	127,241	NR	0	127,241	1,755	0	446,000	437,000	32,000	146,663	0	129,000	234,000	0	42,922	0	0	34,300
13	0.00	2.9	3.6	13.0	123,064	NR	11,802	134,866	22,402	342	425,000	446,000	34,800	137,427	0	103,000	234,000	0	0	0	0	0
14	0.00	3.4	3.8	19.9	117,362	NR	63,437	180,799	3,044	119	425,000	437,000	34,100	160,027	0	129,000	256,000	0	0	0	0	0
15	0.48	3.4	4.1	12.6	116,552	NR	42,063	158,615	12,021	108	398,000	426,000	35,500	181,342	0	129,000	267,000	0	44,844	0	0	35,900
16	0.38	2.9	4.2	19.6	112,380	NR	31,050	143,430	6,225	59	345,000	437,000	32,100	137,107	0	103,000	267,000	0	43,684	0	0	34,900
17	0.00	3.4	3.7	18.5	99,181	NR	24,958	124,139	8,361	66	324,000	449,000	33,200	109,973	0	129,000	245,000	0	28,732	0	0	23,000
18	0.00	3.4	3.8	19.2	116,417	NR	14,246	130,663	7,330	38	367,000	458,000	33,200	0	0	129,000	245,000	0	0	0	0	0
19	0.00	3.3	3.8	19.8	116,417	NR	14,246	130,663	8,672	38	410,000	468,000	33,200	159,966	0	123,000	256,000	0	57,599	0	0	46,100
20	0.00	3.2	3.3	12.1	116,292	NR	26,037	142,329	8,672	0	362,000	494,000	33,500	152,807	0	118,000	202,000	0	0	0	0	0
21	0.01	3.2	3.5	8.8	115,600	NR	18,350	133,950	5,346	0	312,000	497,000	32,100	137,761	0	118,000	223,000	0	67,270	0	0	53,800
22	0.24	3.2	3.3	15.3	102,622	NR	18,513	121,135	5,936	0	293,000	435,000	5,300	159,101	0	118,000	202,000	0	42,051	0	0	33,600
23	0.29	3.0	3.5	16.1	118,379	NR	14,945	133,324	6,029	0	240,000	405,000	28,100	109,800	0	108,000	223,000	0	53,933	0	0	43,100
24	0.47	3.3	3.4	19.1	104,521	NR	9,854	114,375	5,463	0	211,000	403,000	24,400	106,019	0	123,000	213,000	0	3,462	0	0	2,800
25	0.00	3.1	3.7	16.9	107,452	NR	5,655	113,107	5,372	0	278,000	404,000	24,400	0	0	113,000	234,000	0	0	0	0	0
26	0.07	2.9	3.9	14.6	107,452	NR	5,655	113,107	5,372	0	345,000	405,000	24,400	71,776	0	103,000	267,000	45,832	49,673	0	0	42,000
27	0.00	2.9	3.6	14.0	106,574	NR	0	106,574	5,133	0	372,000	405,000	22,100	86,139	0	103,000	234,000	45,833	0	0	0	2,300
28	0.19	3.4	3.4	12.1	105,503	NR	25,492	130,995	9,085	0	394,000	420,000	23,400	93,785	0	129,000	213,000	45,833	0	0	0	2,300
29	0.35	3.4	3.5	17.3	105,181	NR	16,250	121,431	3,222	0	389,000	432,000	23,200	121,789	0	129,000	223,000	45,833	17,450	0	0	16,300
30	0.13	3.2	3.5	20.9	103,734	NR	12,652	116,386	2,777	137	360,000	455,000	22,800	98,942	0	118,000	223,000	45,833	0	0	0	2,300
Total	5.27				3,529,312	900	680,918	4,210,230	318,003	4,084			936,400	3,564,637	0			229,164	630,452	0	108,019	515,700
Daily Average		3.2	3.6	18.2	117,644	30	22,697	140,341	10,600	136	402,400	440,600				120,500	235,400					
Mo. Average															0				21,000	0	3,600	17,190

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.

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

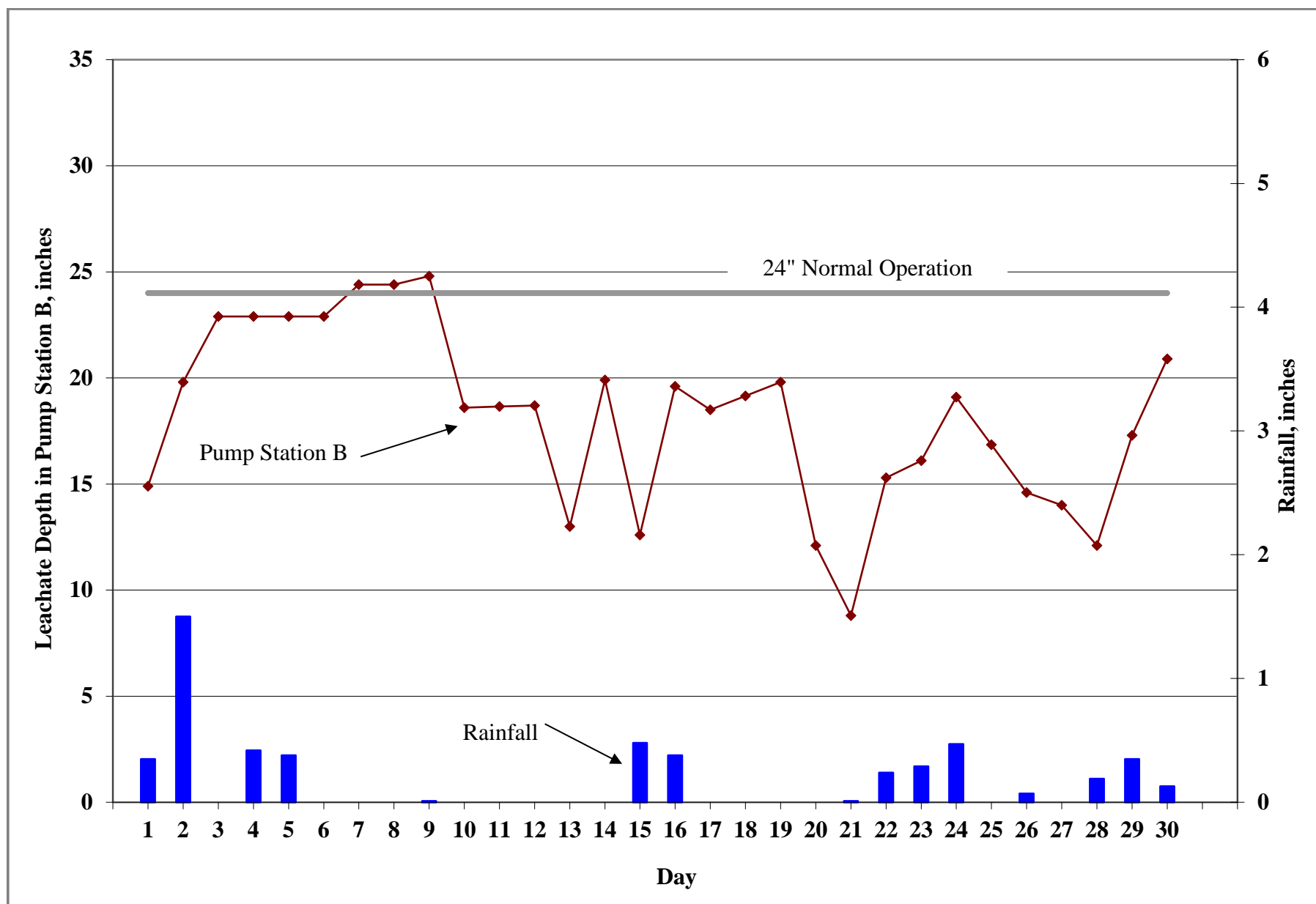
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Day	Rainfall (in.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal)	Pond A Depth (ft.)	Effluent 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	0.35	8,744,246	14.9	3,036,634	1,131,819	5,814,691	1,406,196	155,876	3.5	0.0	3.1	0	15.92	11.4	40,717	80,432	86,492	0	0	0	0
2	1.50	8,868,686	19.8	3,049,296	1,142,962	5,814,710	1,477,132	155,876	3.7	0.0	3.4	0	16.67	12.6	40,718	80,214	44,081	0	0	42,710	0
3	0.00	9,018,404	22.9	3,049,296	1,173,712	5,815,630	1,514,609	155,876	3.8	0.0	3.4	0	17.00	13.8	37,385	117,188	49,841	0	0	0	0
4	0.42	9,125,624	22.9	3,049,296	1,176,165	5,815,733	1,521,397	155,876	3.8	0.0	3.4	0	17.22	14.9	37,385	0	0	0	0	0	0
5	0.38	9,197,104	22.9	3,049,296	1,177,800	5,815,801	1,525,923	155,876	3.8	0.0	3.4	0	17.37	15.6	37,385	0	42,844	0	0	0	0
6	0.00	9,340,064	22.9	3,049,296	1,181,071	5,815,938	1,534,974	155,876	3.8	0.0	3.4	0	17.67	17.1	37,386	94,275	64,740	0	0	21,879	0
7	0.00	9,463,282	24.4	3,049,296	1,218,285	5,816,199	1,538,511	156,100	3.8	0.0	3.4	41,664	16.92	17.5	38,358	56,606	58,784	0	0	36,114	0
8	0.00	9,611,122	24.4	3,049,296	1,249,121	5,816,714	1,550,111	156,100	3.8	0.0	2.6	37,607	17.58	17.2	36,279	118,722	87,037	0	0	0	0
9	0.01	9,753,938	24.8	3,049,296	1,268,065	5,817,290	1,637,692	156,100	3.5	0.0	3.4	44,389	17.67	16.8	34,861	140,880	43,182	0	0	7,316	0
10	0.00	9,899,954	18.6	3,049,296	1,279,384	5,817,848	1,660,974	156,100	3.0	0.0	3.4	55,172	16.67	17.3	32,023	126,542	50,059	0	0	0	0
11	0.00	5,027,195	18.7	3,049,296	1,281,139	5,817,861	1,660,986	156,100	3.3	0.0	3.4	0	16.09	16.2	32,023	52,294	0	0	0	0	0
12	0.00	154,436	18.7	3,049,296	1,282,893	5,817,874	1,660,998	156,100	3.6	0.0	3.4	42,922	15.50	15.2	32,023	102,538	44,125	0	0	0	0
13	0.00	277,500	13.0	3,049,296	1,305,295	5,818,216	1,672,800	156,100	3.6	0.0	2.9	0	14.75	15.5	34,802	94,994	42,433	0	0	0	0
14	0.00	394,862	19.9	3,049,296	1,308,339	5,818,335	1,736,237	156,100	3.8	0.0	3.4	0	14.75	15.2	34,116	87,435	72,592	0	0	0	0
15	0.48	511,414	12.6	3,049,296	1,320,360	5,818,443	1,778,300	156,100	4.1	0.0	3.4	44,844	13.83	14.8	35,534	94,851	86,491	0	0	0	0
16	0.38	623,794	19.6	3,049,296	1,326,585	5,818,502	1,809,350	156,100	4.2	0.0	2.9	43,684	12.00	15.2	32,077	87,279	49,828	0	0	0	0
17	0.00	722,975	18.5	3,049,296	1,334,946	5,818,568	1,834,308	156,100	3.7	0.0	3.4	28,732	11.25	15.6	33,157	60,197	49,776	0	0	0	0
18	0.00	839,392	19.2	3,049,296	1,342,276	5,818,606	1,848,554	156,100	3.8	0.0	3.4	0	12.75	15.9	33,157	0	0	0	0	0	0
19	0.00	955,808	19.8	3,471,711	1,349,606	5,818,644	1,862,800	156,100	3.8	0.0	3.3	57,599	14.25	16.3	33,157	115,956	44,010	0	0	0	0
20	0.00	1,072,100	12.1	3,479,487	1,350,502	5,818,649	1,888,837	156,100	3.3	0.0	3.2	0	12.58	17.2	33,512	108,822	43,985	0	0	0	0
21	0.01	1,187,700	8.8	3,482,060	1,353,275	5,818,651	1,907,187	156,100	3.5	0.0	3.2	67,270	10.83	17.3	32,069	108,904	28,857	0	0	0	0
22	0.24	1,290,322	15.3	3,485,010	1,356,261	5,818,652	1,925,700	156,100	3.3	0.0	3.2	42,051	10.17	15.1	5,269	116,472	42,629	0	0	0	0
23	0.29	1,408,701	16.1	3,488,400	1,358,900	5,818,654	1,940,645	156,100	3.5	0.0	3.0	53,933	8.33	14.1	28,117	60,130	49,670	0	0	0	0
24	0.47	1,513,222	19.1	3,490,835	1,361,928	5,818,660	1,950,499	156,100	3.4	0.0	3.3	3,462	7.33	14.0	24,377	56,343	49,676	0	0	0	0
25	0.00	1,620,674	16.9	3,493,251	1,364,884	5,818,660	1,956,154	156,100	3.7	0.0	3.1	0	9.67	14.0	24,377	0	0	0	0	0	0
26	0.07	1,728,126	14.6	3,495,666	1,367,840	5,818,660	1,961,808	156,100	3.9	45833.0	2.9	49,673	12.00	14.1	24,377	28,118	43,658	0	0	0	0
27	0.00	1,834,700	14.0	3,497,757	1,370,882	5,818,660	1,961,808	156,100	3.6	45833.0	2.9	0	12.92	14.1	22,119	42,126	44,013	0	0	0	0
28	0.19	1,940,203	12.1	3,500,854	1,376,870	5,818,660	1,987,300	156,100	3.4	45833.0	3.4	0	13.67	14.6	23,405	0	93,785	0	0	0	0
29	0.35	2,045,384	17.3	3,502,251	1,378,695	5,818,660	2,003,550	156,100	3.5	45833.0	3.4	17,450	13.50	15.0	23,206	35,098	86,691	0	0	0	0
30	0.13	2,149,118	20.9	3,503,723	1,380,000	5,829,772	2,016,202	156,100	3.5	45833.0	3.2	0	12.50	15.8	22,786	49,148	49,794	0	0	0	0
Totals	5.27									229,164		630,452			936,157	2,115,564	1,449,073	0	0	108,019	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 September 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 <sup>3</sup> (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	318,003	680,918	3,529,312	3,564,637	0	936,400	108,019	0	630,452	4,531,576	4,501,037	30,539
October														
November														
December														
YTD Total	55.09	87,758	779,261	1,672,048	24,443,994	18,710,144	76,529	7,292,500	151,960	9,579	5,736,151	26,983,061	26,079,173	903,888

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.