

**Hillsborough County  
Florida**

Office of the County Administrator  
Patricia G. Bean

Dept. Of Environ...

JAN

Southwest Dis.

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January 13, 2010

Ms. Susan J. Pelz, P.E.  
Solid Waste Permitting  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

RE: Southeast County Landfill – Leachate Data Quarterly Report

Dear Ms. Pelz:

In accordance with Specific Condition No. 8 of Permit No. 35435-014-SO, the Solid Waste Management Department (SWMD) is submitting the quarterly Leachate Water Balance summary for the Southeast County Landfill for the quarter ending January 15, 2010.

The data is being submitted as separate monthly reports for October, November, and December 2009. The information includes the leachate level in Pump Station B (PS-B). PS-B was below the 24-inch normal operation level during this quarter except for October 2 and 4, November 2, 4, 28 and 29, and December 5, 6 and 21 due to bubbler and pump malfunctions. These malfunctions were immediately corrected.

Also attached is the top of the phosphatic clay liner elevation at the Pump Station B Sump.

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

Sincerely,

Patricia V. Berry  
Landfill Services Section Manager  
Solid Waste Management Department

**Attachment**

xc: Larry Ruiz, SWMD  
Cindy Pelley, SWMD  
Jason Timmons, P.E. JEA  
Ron Cope, EPC  
Paul Schipfer, EPC

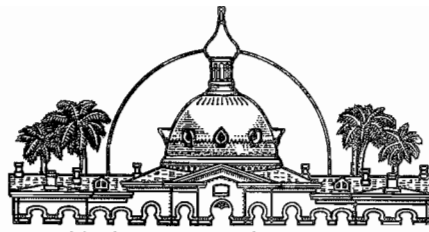
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November 30, 2009

Ms. Susan J. Pelz, P.E.  
Solid Waste Permitting  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
JAN 15 2010  
SOUTHWEST DISTRICT  
TAMPA

RE: Southeast County Landfill – October 2009 Leachate Data

Dear Ms. Pelz:

In accordance with the Hillsborough County Solid Waste Management Department's (SWMD) Leachate Management Plan (LMP) for the Southeast County Landfill (Landfill), the SWMD is providing the Landfill's Water Balance Report for the month of October 2009. In addition, the SWMD is providing the October 2009 field data forms for the Landfill, the daily leachate and collection system evaluation reports and the Year-to-Date Leachate Balance Summary.

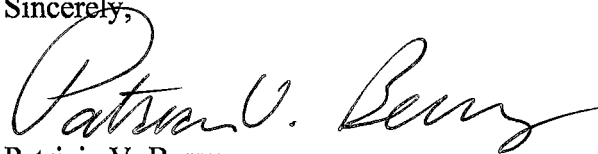
This information is being provided to the Florida Department of Environmental Protection (FDEP) and the Hillsborough County Environmental Protection Commission as part of the quarterly Leachate Water Balance report on the Landfill leachate management efforts in accordance with Permit No. 35435-014-SO, Specific Condition No. 8.

As initiated with the April 1996 report, the Landfill leachate information for October 2009 includes an evaluation by SWMD staff of the monthly data. The report includes a figure depicting the leachate levels in Pump Station B (PS-B) and rainfall. PS-B was below the normal operation level of 24 inches except for October 2 and 4 due to a pump malfunction. The average depth of leachate in the PS-B sump for the recorded days in October 2009 was 21.3 inches.

Ms. Susan J. Pelz  
November 30, 2009  
Page Two

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

Sincerely,

A handwritten signature in cursive script, reading "Patricia V. Berry". The signature is written in black ink and is positioned above the printed name and title.

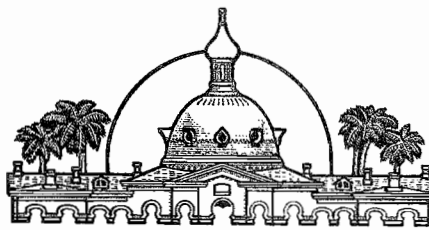
Patricia V. Berry  
Landfill Services Section Manager  
Solid Waste Management Department

Attachments

glfs/lea1009.dep

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MEMORANDUM

**DATE:** November 23, 2009

**TO:** Patricia Berry, Section Manager, Solid Waste Management Department

**FROM:** *for* Larry Ruiz, General Manager III, Solid Waste Management Department  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Department

**SUBJECT:** Leachate Water Balance Report Forms for October 2009  
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Department (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 2009 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 1.7 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 2.1 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 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 below the normal operation level of 24-inches except for October 3 and 4 to a pump malfunction. The average recorded depth of leachate in the PS-B sump was 21.3 inches.

**Leachate Pumped to PS-B from TPS-6 (Column VI)**

Normally, Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII). The average daily amount of leachate pumped from TPS-6 was 16,172 gallons. A total of 501,340 gallons of leachate was pumped this month.

**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 quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 28,307 gallons. A total of 877,508 gallons of leachate was pumped this month.

**Leachate Pumped from Sections 7-8 Leak Detection System (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 291 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 33,114 gallons of leachate was pumped from Sections 7-8.

**Total Leachate Pumped to LTRF (Column X)**

Column X presents the total quantity of leachate pumped to the LTRF through the MLPS from Phases I-VI and from Sections 7-8. This month a total of 979,112 gallons of leachate was pumped from Phases I-VI and Sections 7-8.

**Leachate in 575,000-Gallon Tank (Column XI)**

Column XI 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 281,600 gallons of leachate was stored in the tank.

**Leachate Treated at LTRF (Column XII)**

Column XII presents the daily amount of leachate, in gallons, treated at the LTRF. This month a total of 653,500 gallons of leachate was treated.

**Total Leachate Hauled (Column XIII)**

Column XIII presents the daily amount of leachate, in gallons, hauled off site. This month a total of 264,793 gallons of leachate was hauled off site.

**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. This month an average of 336,400 gallons of effluent 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 779,000 gallons of leachate was treated.

**Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 186,802 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 a total of 6,000 gallons of leachate was 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 65,900 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 6,700 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 788,666 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 a total of 31,236 gallons of effluent was 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. The total evaporation estimated for this month was 636,000 gallons.

**TABLE 2**

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



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November 23, 2009  
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**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 960,674 gallons. Total outflow quantity from the LTRF was 971,802 gallons. The change in storage for the month decreased by 11,128 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM**  
**OCTOBER 2009**  
**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	XXIV
		Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to PS-B from TFS-6 (gal.)	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.)
Dry	Rainfall (in.)																						
1	0.00	2.0	0.0	22.3	25,670	31,656	20	0	31,710	2,736	54	189,000	381,000	21,100	6,018	0	61,000	0	0	27,832	0	0	22,300
2	0.00	1.9	0.0	19.1	22,760	32,014	30	6,602	38,649	2,775	33	216,000	381,000	22,400	6,010	0	57,000	0	0	25,851	0	6,006	20,700
3	0.00	1.8	0.0	30.6	24,470	20,429	16	0	20,464	2,704	35	221,000	377,000	21,700	0	0	52,000	0	0	27,088	0	0	21,700
4	0.00	2.0	0.0	26.1	12,975	31,173	30	3,046	34,255	2,829	37	250,000	377,000	21,500	0	0	61,000	0	0	0	0	0	0
5	0.00	2.1	0.0	21.6	12,975	31,173	30	3,046	34,255	2,829	37	250,000	377,000	21,500	12,036	3,002	65,000	0	0	54,335	0	0	45,900
6	0.00	1.4	0.0	21.8	25,630	33,414	20	0	33,474	2,788	60	250,000	377,000	22,600	12,034	2,998	36,000	0	0	12,844	0	0	12,700
7	0.00	1.6	0.0	19.3	20,390	28,610	0	0	28,658	2,737	48	240,000	377,000	21,800	6,018	0	44,000	0	0	23,405	0	6,007	18,700
8	0.00	1.5	0.0	20.4	22,340	26,677	34	0	26,721	2,152	44	245,000	359,000	22,800	6,016	0	40,000	0	0	24,482	0	0	19,600
9	0.00	1.4	0.0	18.1	21,150	29,751	23	0	29,764	2,426	13	247,000	365,000	25,200	6,016	0	36,000	0	0	27,220	0	0	21,800
10	0.05	1.2	0.0	22.3	22,270	30,432	34	0	30,475	586	43	252,000	365,000	18,300	0	0	32,000	0	0	15,676	0	0	12,500
11	0.00	1.5	0.0	22.5	10,465	24,699	54	0	24,699	0	0	256,000	365,000	21,900	0	0	40,000	0	0	0	0	0	0
12	0.00	1.8	0.0	22.6	10,465	24,699	54	0	24,699	0	0	259,000	365,000	21,900	18,046	0	52,000	0	0	27,589	0	0	22,100
13	0.00	1.8	0.0	22.0	20,570	29,974	36	0	29,979	0	5	247,000	365,000	22,600	6,012	0	52,000	0	0	26,985	0	0	21,600
14	0.00	1.7	0.0	20.5	22,150	31,070	5	0	31,077	0	7	247,000	365,000	27,600	0	0	48,000	0	0	16,697	0	0	13,400
15	0.00	2.0	0.0	19.4	21,180	32,796	43	0	32,806	5,374	10	247,000	365,000	28,500	12,034	0	61,000	0	0	46,333	0	0	37,100
16	1.42	1.7	0.0	21.0	21,530	34,908	5	5,553	40,472	0	11	250,000	365,000	31,100	12,028	0	48,000	0	0	0	0	0	0
17	0.00	2.3	0.0	21.7	20,680	30,463	10	452	30,921	0	6	240,000	365,000	27,700	0	0	74,000	0	0	0	0	0	0
18	0.00	2.8	0.0	21.5	10,715	20,633	55	0	20,660	0	27	230,000	365,000	26,400	12,028	0	98,000	0	0	0	0	0	0
19	0.00	3.3	0.0	21.2	10,715	20,633	55	0	20,660	0	27	221,000	365,000	26,400	12,028	0	123,000	0	0	52,008	0	0	41,600
20	0.00	2.6	0.0	19.2	23,650	28,125	80	0	28,150	0	25	221,000	365,000	29,200	12,032	0	88,000	0	0	55,890	0	0	44,700
21	0.00	3.6	1.0	19.7	17,000	26,708	55	0	26,781	4,847	73	199,000	278,000	29,200	12,045	0	145,000	19,000	0	54,070	0	0	43,300
22	0.00	3.2	1.0	19.2	10,490	26,546	52	0	26,556	1,845	10	194,000	257,000	26,700	12,093	0	118,000	19,000	0	42,063	0	0	33,700
23	0.00	2.5	1.0	21.0	23,400	33,455	0	0	33,455	1,427	0	187,000	276,000	27,400	6,040	0	83,000	19,000	0	41,910	0	0	33,900
24	0.00	2.3	1.0	18.0	0	29,677	96	324	30,070	2,194	69	189,000	276,000	29,900	0	0	74,000	19,000	0	44,913	0	0	35,900
25	0.00	2.6	1.0	20.8	3,695	27,390	48	0	27,409	1,582	19	187,000	276,000	28,700	0	0	88,000	19,000	0	0	0	0	0
26	0.15	2.8	1.0	23.6	3,695	27,390	48	0	27,409	1,582	19	185,000	276,000	28,700	12,108	0	98,000	19,000	0	55,623	0	0	44,500
27	0.12	2.5	1.0	21.9	7,320	25,777	57	1,754	27,545	0	14	158,000	254,000	29,800	12,126	0	83,000	19,000	0	39,037	0	0	31,200
28	0.00	1.8	1.0	19.4	6,770	28,300	61	0	28,302	3,604	2	161,000	254,000	31,500	6,062	0	52,000	19,000	0	0	0	6,399	0
29	0.00	2.0	1.0	21.4	15,015	29,061	56	0	29,061	7,893	0	178,000	278,000	20,300	0	0	61,000	19,000	0	46,815	0	12,824	37,500
30	0.00	1.3	1.0	18.6	15,295	24,776	61	2,485	27,261	0	0	187,000	293,000	22,600	0	0	36,000	19,000	0	0	0	0	0
31	0.00	1.3	1.0	23.1	15,910	25,100	63	0	25,178	4,191	78	192,000	314,000	22,000	0	0	36,000	19,000	0	0	0	0	0
Total	1.74				501,340	877,508	1,149	23,261	901,574	59,100	805			779,000	186,802	6,000			788,666	0	31,236	636,000	
Daily Average		2.1	0.4	21.3	16,172	28,307	37	750	29,083	1,906	26	218,700	336,400				65,900	6,700					
Mo. Average																200			25,400	0	1,000	20,520	

- 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, Yield measured at staff gauges.
  7. Column V, PPS-B sensor reading plus 9 inches.
  8. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
  9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
  10. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
  11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

**TABLE 2. FIELD DATA ENTRY FORM  
OCTOBER 2009  
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	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	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	15,517,350	5,253,740	13.3	1,477,351	1,082,055	44,127	1,575,948	27,243	0.0	0.0	2.0	27,832	6.58	13.25	21,127	0	6,018	0	0	0	0
2	0.00	15,540,110	5,285,754	10.1	1,480,126	1,082,055	44,160	1,582,550	27,273	0.0	0.0	1.9	25,851	7.50	13.25	22,420	0	6,010	0	0	6,006	0
3	0.00	15,564,580	5,306,183	21.6	1,482,830	1,082,055	44,195	1,582,550	27,289	0.0	0.0	1.8	27,088	7.67	13.08	21,654	0	0	0	0	0	0
4	0.00	15,577,555	5,337,356	17.1	1,485,659	1,082,055	44,232	1,585,596	27,319	0.0	0.0	2.0	0	8.2	13.1	21,471	0	0	0	0	0	0
5	0.00	15,590,530	5,368,529	12.6	1,488,487	1,082,055	44,268	1,588,641	27,348	0.0	0.0	2.1	54,335	8.67	13.08	21,471	0	12,036	3,002	0	0	0
6	0.00	15,616,160	5,401,943	12.8	1,491,275	1,082,055	44,328	1,588,641	27,368	0.0	0.0	1.4	12,844	8.67	13.08	22,556	0	12,034	2,998	0	0	0
7	0.00	15,636,550	5,430,553	10.3	1,494,012	1,082,055	44,376	1,588,641	27,368	0.0	0.0	1.6	23,405	8.33	13.08	21,829	0	6,018	0	0	6,007	0
8	0.00	15,658,890	5,457,230	11.4	1,496,164	1,082,055	44,420	1,588,641	27,402	0.0	0.0	1.5	24,482	8.50	12.83	22,831	0	6,016	0	0	0	0
9	0.00	15,680,040	5,486,981	9.1	1,498,590	1,082,055	44,433	1,588,641	27,425	0.0	0.0	1.4	27,220	8.58	12.67	25,156	0	6,016	0	0	0	0
10	0.05	15,702,310	5,517,413	13.3	1,499,176	1,082,055	44,476	1,588,641	27,459	0.0	0.0	1.2	15,676	8.75	12.67	18,255	0	0	0	0	0	0
11	0.00	15,712,775	5,542,112	13.5	1,499,176	1,082,055	44,476	1,588,641	27,513	0.0	0.0	1.5	0	8.9	12.7	21,893	0	0	0	0	0	0
12	0.00	15,723,240	5,566,810	13.6	1,499,176	1,082,055	44,476	1,588,641	27,566	0.0	0.0	1.8	27,589	9.00	12.67	21,894	0	18,046	0	0	0	0
13	0.00	15,743,810	5,596,784	13.0	1,499,176	1,082,055	44,481	1,588,641	27,602	0.0	0.0	1.8	26,985	8.58	12.67	22,593	0	6,012	0	0	0	0
14	0.00	15,765,960	5,627,854	11.5	1,499,176	1,082,055	44,488	1,588,641	27,607	0.0	0.0	1.7	16,697	8.58	12.67	27,626	0	0	0	0	0	0
15	0.00	15,787,140	5,660,650	10.4	1,499,176	1,087,429	44,498	1,588,641	27,650	0.0	0.0	2.0	46,333	8.58	12.67	28,515	0	12,034	0	0	0	0
16	1.42	15,808,670	5,695,558	12.0	1,499,176	1,087,429	44,509	1,594,194	27,655	0.0	0.0	1.7	0	8.67	12.67	31,131	0	12,028	0	0	0	0
17	0.00	15,829,350	5,726,021	12.7	1,499,176	1,087,429	44,515	1,594,646	27,665	0.0	0.0	2.3	0	8.33	12.67	27,659	0	0	0	0	0	0
18	0.00	15,840,065	5,746,654	12.5	1,499,176	1,087,429	44,542	1,594,646	27,720	0.0	0.0	2.8	0	8.0	12.7	26,370	0	0	0	0	0	0
19	0.00	15,850,780	5,767,287	12.2	1,499,176	1,087,429	44,569	1,594,646	27,775	0.0	0.0	3.3	52,008	7.67	12.67	26,370	0	12,028	0	0	0	0
20	0.00	15,874,430	5,795,412	10.2	1,499,176	1,087,429	44,594	1,594,646	27,735	0.0	0.0	2.6	55,890	7.67	12.67	29,247	0	12,032	0	0	0	0
21	0.00	15,891,430	5,822,120	10.7	1,499,176	1,092,276	44,667	1,594,646	27,790	1.0	0.0	3.6	54,070	6.92	9.67	29,237	0	12,045	0	0	0	0
22	0.00	15,901,920	5,848,666	10.2	1,499,176	1,094,121	44,677	1,594,646	27,842	1.0	0.0	3.2	42,063	6.75	8.92	26,742	0	12,093	0	0	0	0
23	0.00	15,925,320	5,882,121	12.0	1,499,176	1,095,548	44,677	1,594,646	27,842	1.0	0.0	2.5	41,910	6.50	9.58	27,430	0	6,040	0	0	0	0
24	0.00	15,925,320	5,911,798	9.0	1,499,188	1,097,730	44,746	1,594,970	27,938	1.0	0.0	2.3	44,913	6.58	9.58	29,894	0	0	0	0	0	0
25	0.00	15,929,015	5,939,188	11.8	1,499,188	1,099,312	44,765	1,594,970	27,986	1.0	0.0	2.6	0	6.5	9.6	28,690	0	0	0	0	0	0
26	0.15	15,932,710	5,966,578	14.6	1,499,188	1,100,894	44,784	1,594,970	28,034	1.0	0.0	2.8	55,623	6.42	9.58	28,691	0	12,108	0	0	0	0
27	0.12	15,940,030	5,992,355	12.9	1,499,188	1,100,894	44,798	1,596,724	28,091	1.0	0.0	2.5	39,037	5.50	8.83	29,784	0	12,126	0	0	0	0
28	0.00	15,946,800	6,020,655	10.4	1,499,188	1,104,498	44,800	1,596,724	28,152	1.0	0.0	1.8	0	5.58	8.83	31,470	0	6,062	0	0	6,399	0
29	0.00	15,961,815	6,049,716	12.4	1,499,188	1,112,391	44,800	1,596,724	28,208	1.0	0.0	2.0	46,815	6.17	9.67	20,308	0	0	0	0	12,824	0
30	0.00	15,977,110	6,074,492	9.6	1,499,188	1,116,242	44,800	1,599,209	28,269	1.0	0.0	1.3	0	6.50	10.17	22,558	0	0	0	0	0	0
31	0.00	15,993,020	6,099,592	14.1	1,501,382	1,118,239	44,878	1,599,209	28,332	1.0	0.0	1.3	0	6.67	10.92	22,044	0	0	0	0	0	0
Totals	1.74										0		788,666			778,916	0	186,802	6,000	0	31,236	0

projects/balance/2009/10-09bal.xls (ler 11/23/09)

**Notes:**

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

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0

**TABLE 3. LEACHATE BALANCE SUMMARY  
SOUTHEAST COUNTY LANDFILL  
HILLSBOROUGH COUNTY, FLORIDA  
YEAR-2009**

Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Leachate Hauled to LTRF from HHLF/TRLF (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	1.42	0	90,300	17,804	941,552	211,844	132,550	657,900	12,202	0	687,395	1,049,656	1,002,294	47,362
February	0.85	0	266,080	19,246	786,116	530,317	18,002	674,200	31,352	0	635,640	1,071,442	1,222,519	-151,077
March	1.27	0	122,371	16,401	815,237	228,717	72,167	692,300	68,486	0	495,123	954,009	993,184	-39,175
April	1.08	0	166,683	7,410	667,134	158,443	78,369	716,400	64,084	0	603,003	841,227	953,212	-111,985
May	10.30	0	832,510	65,034	782,563	886,006	15,032	999,000	300,183	0	27,556	1,680,107	1,900,038	-219,932
June	8.95	0	593,537	68,657	938,062	413,865	39,049	1,180,600	459,870	0	752,735	1,600,256	1,633,514	-33,258
July	10.44	0	420,954	118,512	929,785	544,081	27,076	1,177,900	776,807	0	521,305	1,469,251	1,749,057	-279,806
August	9.71	0	103,535	79,513	734,300	214,533	6,294	552,800	587,945	0	115,671	917,348	773,627	143,721
September	7.93	0	140,922	104,451	967,733	928,349	3,104	496,900	158,425	0	635,641	1,213,106	1,428,353	-215,247
October	1.74	0	59,905	23,261	877,508	186,802	6,000	779,000	31,236	0	788,666	960,674	971,802	-11,128
November														
December														
YTD Total	53.69	0	2,796,797	520,289	8,439,990	4,302,957	397,643	7,927,000	2,490,590	0	5,262,735	11,757,075	12,627,600	-870,525

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.

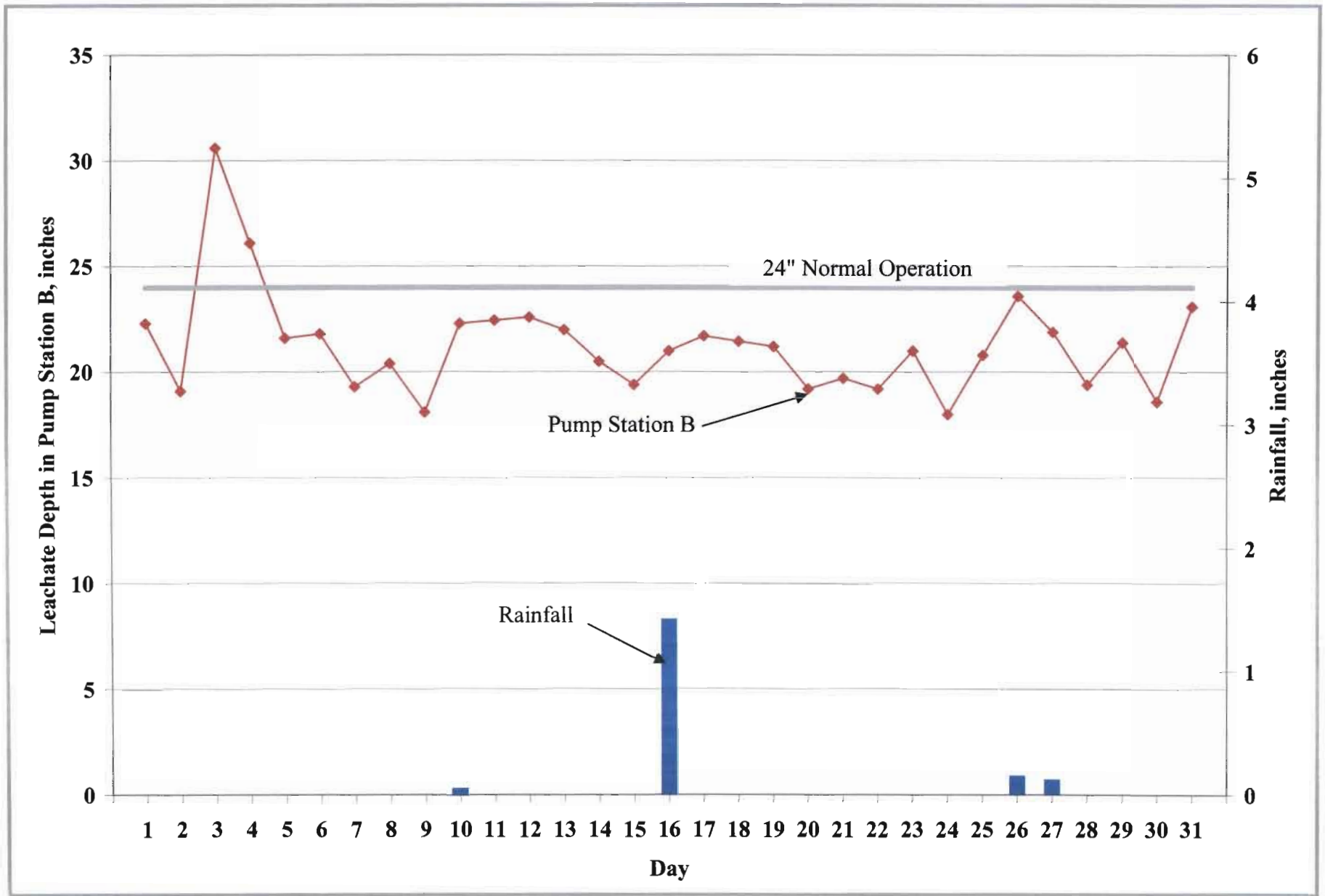
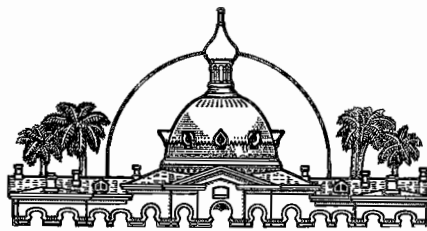


Figure 1. Leachate Levels in Pump Station B and Rainfall for October 2009.



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Eric R. Johnson  
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Manus J. O' Donnell  
Edith M. Stewart

December 30, 2009

Ms. Susan J. Pelz, P.E.  
Solid Waste Permitting  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
JAN 15 2010  
SOUTHWEST DISTRICT  
TAMPA

RE: Southeast County Landfill – November 2009 Leachate Data

Dear Ms. Pelz:

In accordance with the Hillsborough County Solid Waste Management Department's (SWMD) Leachate Management Plan (LMP) for the Southeast County Landfill (Landfill), the SWMD is providing the Landfill's Water Balance Report for the month of November 2009. In addition, the SWMD is providing the November 2009 field data forms for the Landfill, the daily leachate and collection system evaluation reports and the Year-to-Date Leachate Balance Summary.

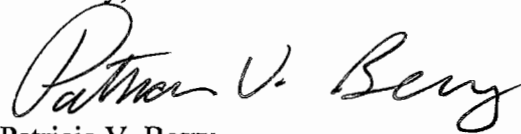
This information is being provided to the Florida Department of Environmental Protection (FDEP) and the Hillsborough County Environmental Protection Commission as part of the quarterly Leachate Water Balance report on the Landfill leachate management efforts in accordance with Permit No. 35435-014-SO, Specific Condition No. 8.

As initiated with the April 1996 report, the Landfill leachate information for November 2009 includes an evaluation by SWMD staff of the monthly data. The report includes a figure depicting the leachate levels in Pump Station B (PS-B) and rainfall. PS-B was below the normal operation level of 24 inches except for November 2, 4, 28 and 29 due to bubbler malfunctions. The average depth of leachate in the PS-B sump for the recorded days in November 2009 was 22.1 inches.

Ms. Susan J. Pelz  
December 30, 2009  
Page Two

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

Sincerely,

A handwritten signature in black ink, reading "Patricia V. Berry". The signature is written in a cursive style with a large, looping initial "P".

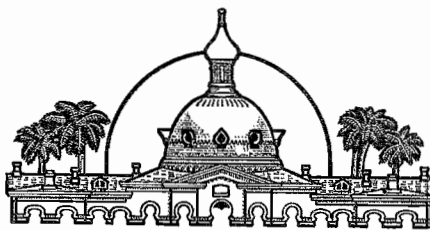
Patricia V. Berry  
Landfill Services Section Manager  
Solid Waste Management Department

Attachments

glfs/leal109.dep

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MEMORANDUM

**DATE:** December 21, 2009

**TO:** Patricia Berry, Section Manager, Solid Waste Management Department

**FROM:**  Larry Ruiz, General Manager III, Solid Waste Management Department  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Department

**SUBJECT:** Leachate Water Balance Report Forms for November 2009  
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Department (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 2009 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 1.6 inches of rainfall at the Southeast County Landfill (SCLF).



## MEMORANDUM

December 21, 2009

Page 2 of 6

### **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 1.9 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 depth of effluent stored in Pond B was 0.8 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 November 3, 4, 28, and 29 due to bubbler malfunctions. The average recorded depth of leachate in the PS-B sump was 22.1 inches.

### **Leachate Pumped to PS-B from TPS-6 (Column VI)**

Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII). The average daily amount of leachate pumped from TPS-6 was 9,742 gallons. A total of 292,250 gallons of leachate was pumped this month.

### **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 quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 25,855 gallons. A total of 775,636 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 1,818 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 40,846 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 816,871 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 57,872 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 389 gallons of leachate were 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. This month an average of 240,100 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. This month an average of 274,100 gallons of effluent 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 729,600 gallons of leachate was treated.

**Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 69,156 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 a total of 12,062 gallons of leachate was 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 57,700 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 13,200 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 574,609 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 a total of 200,356 gallons of effluent was 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. The total evaporation estimated for this month was 469,300 gallons.

**TABLE 2**

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

MEMORANDUM  
December 21, 2009  
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**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 874,742 gallons. Total outflow quantity from the LTRF was 810,818 gallons. The change in storage for the month increased by 63,924 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM**  
**NOVEMBER 2009**  
**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	XXIV
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to PS-B from TPS-6 (gal.)	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	1.3	1.0	23.6	16,555	29,038	57	0	29,044	2,853	0	200,000	336,000	22,000	0	0	36,000	19,000	0	0	0	0	0
2	0.00	1.3	1.0	24.0	16,555	29,038	57	0	29,044	2,855	6	209,000	358,000	22,000	6,072	0	36,000	19,000	0	27,000	0	6,324	21,600
3	0.00	3.1	1.0	33.9	25,970	30,630	73	0	30,630	2,232	0	218,000	259,000	21,700	12,058	0	113,000	19,000	0	54,473	0	0	43,600
4	0.00	2.1	0.8	34.1	53,170	54,557	59	0	54,560	2,245	3	235,000	278,000	23,300	6,014	0	65,000	12,000	0	0	0	7,663	0
5	0.00	2.6	0.8	21.9	610	3,487	68	2,801	6,288	2,132	0	214,000	276,000	29,000	12,858	0	88,000	12,000	0	58,026	0	0	46,400
6	0.00	2.3	0.8	16.4	11,160	19,291	69	0	19,376	2,213	85	194,000	264,000	25,400	12,854	0	74,000	12,000	0	53,113	0	0	42,500
7	0.00	1.2	0.8	16.8	12,070	22,636	75	2,136	24,773	2,082	1	192,000	278,000	22,400	0	0	32,000	12,000	0	15,923	0	0	12,700
8	0.00	1.7	0.8	18.3	6,005	23,427	75	1	23,436	2,050	8	192,000	271,000	22,400	0	0	48,000	12,000	0	0	0	0	0
9	0.00	2.2	0.8	19.8	6,005	23,427	75	1	23,436	2,050	8	192,000	264,000	22,400	19,300	0	70,000	12,000	0	30,631	0	0	24,500
10	0.29	1.6	0.8	20.0	12,540	28,977	59	4,689	33,675	2,288	9	189,000	278,000	23,600	0	0	44,000	12,000	0	0	0	12,010	0
11	0.04	2.0	0.8	20.6	17,060	33,627	81	0	33,648	2,138	21	209,000	271,000	19,100	0	0	61,000	12,000	0	0	0	0	0
12	0.01	2.7	0.8	20.6	7,510	34,007	46	1	34,031	2,224	23	223,000	250,000	19,100	0	0	93,000	12,000	0	0	0	18,025	0
13	0.00	2.7	0.8	22.3	10,520	29,608	32	0	29,638	2,072	30	233,000	254,000	22,000	0	0	93,000	12,000	0	51,501	0	18,032	41,200
14	0.00	1.6	0.8	17.4	6,880	29,412	0	0	29,428	1,799	16	240,000	259,000	21,800	0	0	44,000	12,000	0	14,505	0	0	11,600
15	0.00	1.8	0.8	20.7	2,960	16,266	0	0	16,275	1,769	9	241,000	262,000	21,800	0	0	61,000	12,000	0	0	0	0	0
16	0.00	2.0	0.8	22.8	2,960	16,266	0	0	16,275	1,769	9	241,000	264,000	21,800	0	0	61,000	12,000	0	39,174	0	18,016	31,300
17	0.00	1.1	0.8	22.4	6,560	34,092	182	12,649	46,754	1,828	13	257,000	269,000	18,900	0	0	28,000	12,000	0	0	0	18,017	0
18	0.00	1.1	0.8	19.2	5,850	25,528	182	0	25,537	1,869	9	257,000	274,000	25,200	0	3,012	28,000	12,000	0	0	0	12,008	2,400
19	0.00	1.1	0.8	22.5	6,980	22,066	56	0	22,066	1,823	0	257,000	288,000	25,300	0	3,000	28,000	12,000	0	0	0	12,012	2,400
20	0.00	2.0	0.8	21.3	7,440	24,527	55	0	24,546	1,831	19	254,000	259,000	21,400	0	0	61,000	12,000	0	39,412	0	12,066	31,500
21	0.00	1.1	0.8	22.3	8,350	26,956	53	5,148	32,120	1,819	16	274,000	271,000	25,000	0	0	28,000	12,000	0	0	0	0	0
22	0.00	1.6	0.8	20.4	3,860	25,492	57	2,390	27,882	1,815	0	277,000	275,000	25,000	0	0	44,000	12,000	0	0	0	0	0
23	0.00	2.0	0.8	18.4	3,860	25,492	57	2,390	27,882	1,815	0	281,000	278,000	25,000	0	3,040	61,000	12,000	0	55,916	0	18,016	47,200
24	0.55	1.2	0.8	19.5	7,610	22,019	44	4,983	27,014	1,360	12	281,000	271,000	28,800	0	3,010	32,000	12,000	0	8,966	0	18,038	9,600
25	0.65	1.3	0.8	21.9	7,360	25,506	56	1,884	27,432	1,815	42	276,000	271,000	31,800	0	0	36,000	12,000	0	0	0	12,095	0
26	0.07	1.7	0.9	21.3	5,108	26,409	50	887	27,307	1,835	11	276,000	273,500	31,800	0	0	50,500	15,500	0	0	0	0	0
27	0.00	2.1	0.9	20.6	5,108	26,409	50	887	27,307	1,835	11	276,000	276,000	31,800	0	0	65,000	15,000	0	26,638	0	21,890	0
28	0.00	2.3	0.9	33.4	7,545	26,143	47	0	26,157	1,805	14	278,000	271,000	26,600	0	0	74,000	15,000	0	42,352	0	0	33,900
29	0.00	2.6	0.9	27.4	4,043	20,653	53	0	20,660	1,651	8	272,000	265,000	26,600	0	0	88,000	15,000	0	0	0	0	0
30	0.00	2.8	0.9	21.4	4,045	20,653	53	0	20,653	0	0	266,000	259,000	26,600	0	0	98,000	15,000	0	50,979	0	18,034	45,600
Total	1.61				292,250	775,636	1,818	40,846	816,871	57,872	389			729,600	69,156	12,062			0	574,609	0	200,356	469,300
Daily Average		1.9	0.8	22.1	9,742	25,855	61	1,362	27,229	1,929	13	240,100	274,100				57,700	13,200					
Mo Average																400				19,200	0	14,200	14,200

Proctor balance 2009/01/09 gal. 816 (4/27/09)

- 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, True is less than 0.01 inches and is not included in total.
  6. Columns III and IV, field measured at staff gauges.
  7. Column V, PPS-B sensor reading plus 9 inches.
  8. Columns VIII & IX, Section 7-8 leak detection pumped rate Section 7 leachate sump riser.
  9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
  10. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
  11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.



**TABLE 2. FIELD DATA ENTRY FORM  
NOVEMBER 2009  
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	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	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 Contractor (gal.)	Leachate Hauled County (gal.)	Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled Contractor (gal.)	Effluent Hauled County (gal.)	Effluent Dust Control (Sprayed) (gal.)
1	0.00	16,009,575	6,128,630	14.6	1,504,237	1,118,239	44,884	1,599,209	28,389	1.0	0.0	1.3	0	6.96	11.67	22,044	0	0	0	0	0	0
2	0.00	16,026,130	6,157,668	15.0	1,507,092	1,118,239	44,890	1,599,209	28,445	1.0	0.0	1.3	27,000	7.25	12.42	22,045	0	6,072	0	0	6,324	0
3	0.00	16,052,100	6,188,298	24.9	1,509,324	1,118,239	44,890	1,599,209	28,518	1.0	0.0	3.1	54,473	7.58	9.00	21,730	0	12,058	0	0	0	0
4	0.00	16,105,270	6,242,855	25.1	1,511,569	1,118,239	44,893	1,599,209	28,577	0.8	0.0	2.1	0	8.17	9.67	23,257	0	6,014	0	0	7,663	0
5	0.00	16,105,880	6,246,342	12.9	1,513,701	1,118,239	44,893	1,602,010	28,645	0.8	0.0	2.6	58,026	7.42	9.58	29,044	0	12,858	0	0	0	0
6	0.00	16,117,040	6,265,633	7.4	1,515,914	1,118,239	44,978	1,602,010	28,714	0.8	0.0	2.3	53,113	6.75	9.17	25,411	0	12,854	0	0	0	0
7	0.00	16,129,110	6,288,269	7.8	1,517,996	1,118,239	44,979	1,604,146	28,789	0.8	0.0	1.2	15,923	6.67	9.67	22,425	0	0	0	0	0	0
8	0.00	16,135,115	6,311,696	9.3	1,520,046	1,118,239	44,987	1,604,147	28,864	0.80	0.0	1.70	0	6.67	9.42	22,425	0	0	0	0	0	0
9	0.00	16,141,120	6,335,123	10.8	1,522,096	1,118,239	44,995	1,604,147	28,939	0.8	0.0	2.2	30,631	6.67	9.17	22,426	0	19,300	0	0	0	0
10	0.29	16,153,660	6,364,100	11.0	1,524,384	1,118,239	45,004	1,608,836	28,998	0.8	0.0	1.6	0	6.50	9.67	23,590	0	0	0	0	12,010	0
11	0.04	16,170,720	6,397,727	11.6	1,526,522	1,118,239	45,025	1,608,836	29,079	0.8	0.0	2.0	0	7.25	9.42	19,111	0	0	0	0	0	0
12	0.01	16,178,230	6,431,734	11.6	1,528,746	1,118,239	45,048	1,608,837	29,125	0.8	0.0	2.7	0	7.75	8.67	19,112	0	0	0	0	18,025	0
13	0.00	16,188,750	6,461,342	13.3	1,530,818	1,118,239	45,078	1,608,837	29,157	0.8	0.0	2.7	51,501	8.08	8.83	22,024	0	0	0	0	18,032	0
14	0.00	16,195,630	6,490,754	8.4	1,532,617	1,118,239	45,094	1,608,837	29,157	0.8	0.0	1.6	14,505	8.33	9.00	21,817	0	0	0	0	0	0
15	0.00	16,198,590	6,507,020	11.1	1,534,386	1,118,239	45,103	1,608,837	29,157	0.80	0.0	1.80	0	8.38	9.09	21,817	0	0	0	0	0	0
16	0.00	16,201,550	6,523,285	13.8	1,536,154	1,118,239	45,112	1,608,837	29,157	0.8	0.0	2.0	39,174	8.42	9.17	21,818	0	0	0	0	18,016	0
17	0.00	16,208,110	6,557,377	13.4	1,537,982	1,118,239	45,125	1,621,486	29,339	0.8	0.0	1.1	0	8.92	9.33	18,871	0	0	0	0	18,017	0
18	0.00	16,213,960	6,582,905	10.2	1,539,851	1,118,239	45,134	1,621,486	29,521	0.8	0.0	1.1	0	8.92	9.50	25,200	0	0	3,012	0	12,008	0
19	0.00	16,220,940	6,604,971	13.5	1,541,674	1,118,239	45,134	1,621,486	29,577	0.8	0.0	1.1	0	8.92	10.00	25,330	0	0	3,000	0	12,012	0
20	0.00	16,228,380	6,629,498	12.3	1,543,505	1,118,239	45,153	1,621,486	29,632	0.8	0.0	2.0	39,412	8.83	9.00	21,441	0	0	0	0	12,066	0
21	0.00	16,236,730	6,656,454	13.3	1,545,324	1,118,239	45,169	1,626,634	29,685	0.8	0.0	1.1	0	9.50	9.42	24,992	0	0	0	0	0	0
22	0.00	16,240,590	6,681,946	11.4	1,547,139	1,118,239	45,169	1,629,024	29,742	0.80	0.0	1.55	0	9.63	9.55	24,992	0	0	0	0	0	0
23	0.00	16,244,450	6,707,438	9.4	1,548,953	1,118,239	45,169	1,631,414	29,798	0.8	0.0	2.0	55,916	9.75	9.67	24,992	0	0	3,040	0	18,016	0
24	0.55	16,252,060	6,729,457	10.5	1,550,313	1,118,239	45,181	1,636,397	29,842	0.8	0.0	1.2	8,966	9.75	9.42	28,773	0	0	3,010	0	18,038	0
25	0.65	16,259,420	6,754,963	12.9	1,552,128	1,118,239	45,223	1,638,281	29,898	0.8	0.0	1.3	0	9.58	9.42	31,750	0	0	0	0	12,095	0
26	0.07	16,264,528	6,781,372	12.3	1,553,963	1,118,239	45,234	1,639,168	29,948	0.9	0.0	1.7	0	9.58	9.50	31,750	0	0	0	0	0	0
27	0.00	16,269,635	6,807,780	11.6	1,555,797	1,118,239	45,245	1,640,055	29,997	0.9	0.0	2.1	26,638	9.58	9.58	31,752	0	0	0	0	0	0
28	0.00	16,277,180	6,833,923	24.4	1,557,603	1,118,239	45,259	1,640,055	30,044	0.9	0.0	2.3	42,352	9.67	9.42	26,613	0	0	0	0	0	0
29	0.00	16,281,225	6,854,576	18.4	1,559,254	1,118,239	45,267	1,640,055	30,097	0.90	0.0	2.55	0	9.46	9.21	26,613	0	0	0	0	0	0
30	0.00	16,285,270	6,875,228	12.4	1,560,904	1,118,239	45,274	1,640,055	30,150	0.9	0.0	2.8	56,979	9.25	9.00	26,614	0	0	0	0	18,034	0
Totals	1.61										0		574,609			729,779	0	69,156	12,062	0	200,356	0

projects\balance\2009\01-09bal.xls (ler 2/13/09)

**Notes:**

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

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0

**TABLE 3. LEACHATE BALANCE SUMMARY  
SOUTHEAST COUNTY LANDFILL  
HILLSBOROUGH COUNTY, FLORIDA  
YEAR-2009**

Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Leachate Hauled to LTRF from HHLF/TRLF (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	1.4	0	90,300	17,804	941,552	211,844	132,550	657,900	12,202	0	687,395	1,049,656	1,002,294	47,362
February	0.9	0	266,080	19,246	786,116	530,317	18,002	674,200	31,352	0	635,640	1,071,442	1,222,519	-151,077
March	1.3	0	122,371	16,401	815,237	228,717	72,167	692,300	68,486	0	495,123	954,009	993,184	-39,175
April	1.1	0	166,683	7,410	667,134	158,443	78,369	716,400	64,084	0	603,003	841,227	953,212	-111,985
May	10.3	0	832,510	65,034	782,563	886,006	15,032	999,000	300,183	0	27,556	1,680,107	1,900,038	-219,932
June	9.0	0	593,537	68,657	938,062	413,865	39,049	1,180,600	459,870	0	752,735	1,600,256	1,633,514	-33,258
July	10.4	0	420,954	118,512	929,785	544,081	27,076	1,177,900	776,807	0	521,305	1,469,251	1,749,057	-279,806
August	9.7	0	103,535	79,513	734,300	214,533	6,294	552,800	587,945	0	115,671	917,348	773,627	143,721
September	7.9	0	140,922	104,451	967,733	928,349	3,104	496,900	158,425	0	635,641	1,213,106	1,428,353	-215,247
October	1.7	0	59,905	23,261	877,508	186,802	6,000	779,000	31,236	0	788,666	960,674	971,802	-11,128
November	1.6	0	58,260	40,846	775,636	69,156	12,062	729,600	200,356	0	574,609	874,742	810,818	63,924
December														
YTD Total	55.3	0	2,855,057	561,135	9,215,626	4,372,113	409,705	8,656,600	2,690,946	0	5,837,344	12,631,817	13,438,418	-806,601

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.



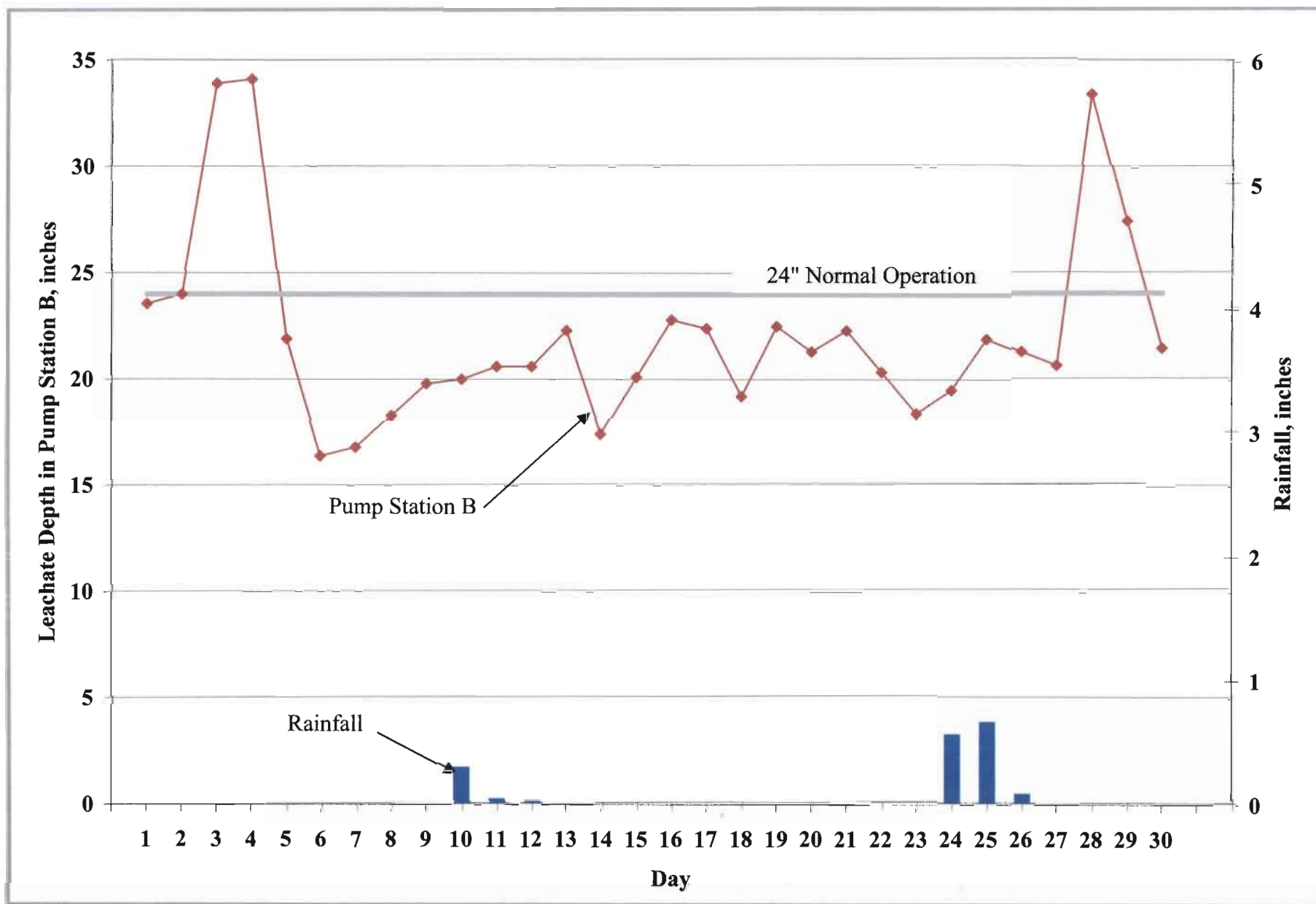
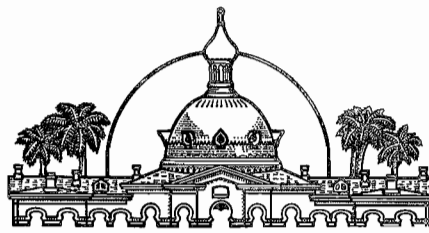


Figure 1. Leachate Levels in Pump Station B and Rainfall for November 2009.



BOARD OF COUNTY COMMISSIONERS

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Edith M. Stewart

January 13, 2010

Ms. Susan J. Pelz, P.E.  
Solid Waste Permitting  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
JAN 15 2010  
SOUTHWEST DISTRICT  
TAMPA

RE: Southeast County Landfill – December 2009 Leachate Data

Dear Ms. Pelz:

In accordance with the Hillsborough County Solid Waste Management Department's (SWMD) Leachate Management Plan (LMP) for the Southeast County Landfill (Landfill), the SWMD is providing the Landfill's Water Balance Report for the month of December 2009. In addition, the SWMD is providing the December 2009 field data forms for the Landfill, the daily leachate and collection system evaluation reports and the Year-to-Date Leachate Balance Summary.

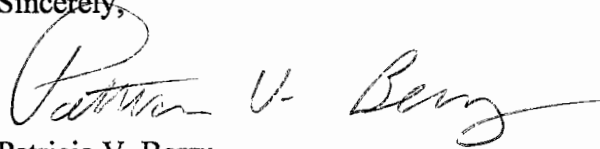
This information is being provided to the Florida Department of Environmental Protection (FDEP) and the Hillsborough County Environmental Protection Commission as part of the quarterly Leachate Water Balance report on the Landfill leachate management efforts in accordance with Permit No. 35435-014-SO, Specific Condition No. 8.

As initiated with the April 1996 report, the Landfill leachate information for December 2009 includes an evaluation by SWMD staff of the monthly data. The report includes a figure depicting the leachate levels in Pump Station B (PS-B) and rainfall. PS-B was below the normal operation level of 24 inches except for December 5, 6, and 21 due to bubbler malfunctions. The average depth of leachate in the PS-B sump for the recorded days in December 2009 was 20.6 inches.

Ms. Susan J. Pelz  
January 13, 2009  
Page Two

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

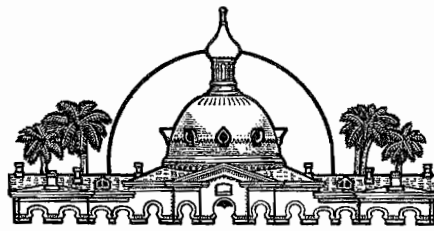
Sincerely,

A handwritten signature in black ink, appearing to read "Patricia V. Berry". The signature is fluid and cursive, with a large initial "P" and a long horizontal stroke at the end.

Patricia V. Berry  
Landfill Services Section Manager  
Solid Waste Management Department

Attachments

glfs/lea1209.dep



**Hillsborough County  
Florida**

Office of the County Administrator  
Patricia G. Bean

**BOARD OF COUNTY COMMISSIONERS**

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**MEMORANDUM**

**DATE:** January 12, 2010

**TO:** Patricia Berry, Section Manager, Solid Waste Management Department

**FROM:** *JR* Larry Ruiz, General Manager III, Solid Waste Management Department  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Department

**SUBJECT:** Leachate Water Balance Report Forms for December 2009  
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Department (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 2009 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

**TABLE 1**

**Day (Column I)**

Column I presents the calendar days for the month.

**Rainfall (Column II)**

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 3.4 inches of rainfall at the Southeast County Landfill (SCLF).

## MEMORANDUM

January 12, 2010

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### **Depth in Pond A (Column III)**

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

### **Depth in Pond B (Column IV)**

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month the daily average depth of effluent stored in Pond B was 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 below the normal operation level of 24-inches except for December 5, 6, and 21 due to bubbler malfunctions. The average recorded depth of leachate in the PS-B sump was 20.6 inches.

### **Leachate Pumped to PS-B from TPS-6 (Column VI)**

Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII). The average daily amount of leachate pumped from TPS-6 was 7,225 gallons. A total of 223,960 gallons of leachate was pumped this month.

### **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 quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 25,273 gallons. A total of 783,455 gallons of leachate was pumped this month.

MEMORANDUM

January 12, 2010

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**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 1,728 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 52,607 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 836,879 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 53,547 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 817 gallons of leachate were 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. This month an average of 274,300 gallons of leachate was stored in the tank.

## MEMORANDUM

January 12, 2010

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### **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. This month an average of 267,400 gallons of effluent 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 809,600 gallons of leachate was treated.

### **Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 54,292 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 a total of 38,740 gallons of leachate was 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 82,700 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 36,900 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 666,839 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 a total of 216,782 gallons of effluent was 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. The total evaporation estimated for this month was 564,600 gallons.

**TABLE 2**

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



MEMORANDUM

January 12, 2010

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**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 890,426 gallons. Total outflow quantity from the LTRF was 902,632 gallons. The change in storage for the month decreased by 12,206 gallons.

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

**TABLE 1. LEACHATE WATER BALANCE REPORT FORM**  
**DECEMBER 2009**  
**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	XXIV
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to PS-B from TPS-6 (gal.)	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	1.7	0.9	22.4	7,710	27,110	52	5,928	33,038	1,303	0	269,000	269,000	30,400	6,018	0	48,000	15,000	0	22,179	0	6,296	17,700
2	1.03	1.8	0.9	16.3	9,300	30,247	56	3,137	33,413	2,085	29	274,000	259,000	28,800	6,116	3,002	52,000	15,000	0	24,983	0	6,117	22,491
3	0.09	1.8	1.1	22.4	10,305	31,390	57	0.0	31,396	1,484	6	274,000	264,000	28,500	0	0	52,000	23,000	0	0	0	0	0
4	1.40	2.1	1.1	22.4	7,990	20,734	43	3,054	23,804	1,825	16	269,000	276,000	28,800	0	0	65,000	23,000	0	0	0	6,008	0
5	0.43	3.0	1.3	27.7	9,105	16,829	47	0	16,842	1,769	13	266,000	266,000	29,600	0	0	108,000	33,000	0	0	0	0	0
6	0.00	3.3	1.4	24.6	4,240	25,580	45	0.0	25,595	1,800	15	264,000	264,000	29,600	0	0	145,000	44,000	0	0	0	0	0
7	0.00	3.6	1.5	21.5	4,240	25,580	45	0.0	25,595	1,800	15	264,000	264,000	29,600	0	0	145,000	44,000	0	0	0	0	0
8	0.00	3.6	1.8	17.5	9,890	25,516	61	4,961	30,477	1,854	0	264,000	278,000	29,000	0	0	145,000	64,000	0	0	0	18,117	0
9	0.00	3.6	2.1	13.8	8,710	32,571	65	0	32,571	2,087	0	271,000	259,000	27,900	0	3,000	145,000	88,000	0	0	0	6,163	2,400
10	0.07	3.6	2.2	11.5	8,040	29,416	70	0	29,416	2,124	0	264,000	278,000	29,900	6,048	2,830	145,000	97,000	0	28,510	0	12,016	25,100
11	0.00	3.6	2.2	22.3	8,470	17,315	67	0	17,330	1,550	15	266,000	261,000	27,100	0	3,000	145,000	97,000	0	43,241	0	12,109	37,000
12	0.00	2.8	2.2	22.5	8,540	18,945	54	6,283	25,241	1,832	13	247,000	264,000	28,800	0	0	98,000	97,000	0	54,034	0	0	43,200
13	0.00	3.1	2.2	21.3	4,173	25,246	53	0	25,246	1,653	0	245,000	262,000	28,800	0	0	113,000	97,000	0	0	0	0	0
14	0.00	3.3	2.2	20.0	4,175	25,246	53	0	25,246	1,653	0	242,000	259,000	28,800	0	3,002	123,000	97,000	0	54,583	0	17,610	46,100
15	0.00	2.4	2.2	18.8	6,510	23,399	58	6,405	29,816	1,872	12	242,000	261,000	25,200	6,018	0	79,000	97,000	0	40,384	0	12,024	32,300
16	0.00	2.2	1.9	20.7	7,660	25,957	50	0	25,957	1,468	0	245,000	274,000	24,500	0	0	70,000	72,000	0	24,607	0	6,023	19,700
17	0.00	2.4	1.5	21.2	9,950	25,067	97	92	25,175	1,932	16	274,000	261,000	4,600	6,018	3,008	79,000	44,000	0	51,058	0	12,025	43,800
18	0.17	2.1	1.1	20.9	6,630	30,722	13	5,259	36,024	1,917	43	278,000	271,000	24,400	0	0	65,000	23,000	0	0	0	18,028	0
19	0.00	2.0	1.1	18.6	2,600	39,891	67	0	39,948	1,990	57	295,000	276,000	24,400	0	0	61,000	23,000	0	48,698	0	0	39,000
20	0.00	2.2	1.1	21.3	4,315	19,914	48	0	19,935	1,363	41	293,000	267,000	24,400	0	0	70,000	23,000	0	0	0	0	0
21	0.00	2.4	1.1	24.3	4,315	19,914	48	0	19,955	1,565	41	290,000	259,000	24,400	6,018	0	79,000	23,000	0	56,733	0	6,009	45,400
22	0.00	1.5	0.8	20.3	10,355	24,631	43	0	24,662	1,815	31	288,000	278,000	24,600	0	5,882	40,000	12,000	0	25,583	0	12,009	25,800
23	0.00	1.5	0.0	22.8	10,815	25,956	56	1,131	27,115	1,346	28	288,000	288,000	26,500	6,018	6,008	40,000	0	0	38,257	0	12,020	35,400
24	0.00	1.3	0.0	18.8	9,470	26,736	54	1,525	28,261	1,808	0	283,000	271,000	25,500	0	0	36,000	0	0	10,637	0	0	8,500
25	0.22	1.8	0.0	20.5	4,715	29,628	10	0	29,661	1,713	33	290,000	268,000	25,500	0	0	52,000	0	0	0	0	0	0
26	0.00	2.3	0.0	22.1	4,715	29,628	10	0	29,661	1,713	33	297,000	264,000	25,500	0	0	74,000	0	0	27,600	0	0	22,100
27	0.00	2.5	0.0	21.7	4,630	23,885	115	2	23,980	1,571	94	296,000	263,000	25,500	0	0	83,000	0	0	0	0	0	0
28	0.00	2.6	0.0	21.2	4,630	23,885	115	2	23,980	1,571	94	295,000	266,000	25,500	6,020	3,002	88,000	0	0	56,501	0	12,018	47,600
29	0.00	1.5	0.0	17.1	8,790	24,778	67	14,823	39,617	1,933	16	302,000	274,000	17,600	0	3,000	40,000	0	0	0	0	12,022	2,800
30	0.00	2.1	0.0	21.8	8,750	13,980	54	2	14,085	1,211	103	288,000	257,000	31,400	6,018	3,006	65,000	0	0	38,278	0	12,038	33,000
31	0.00	1.4	0.0	18.9	10,220	23,760	57	3	23,817	1,742	54	278,000	266,000	24,500	0	0	36,000	0	0	20,973	0	18,130	16,800
Total	3.41				223,960	783,455	1,728	52,607	836,879	53,547	817			809,600	54,292	38,740			0	666,839	0	216,782	564,600
Daily Average		2.4	1.1	20.6	7,225	25,273	56	1,697	26,996	1,727	26	274,300	267,400				82,700	36,900					
Mo. Average																1,200				21,500	0	7,000	18,210

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. Column V, PPS-B sensor reading plus 9 inches.
8. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
10. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
11. 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/2009/01-09/bal.xls (Rev. 1/11/10)

**TABLE 2. FIELD DATA ENTRY FORM  
DECEMBER 2009  
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	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	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.)	Pond A Effluent Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Contractor (gal.)	Leachate County (gal.)	Leachate Dust Control (Sprayed) (gal.)	Effluent Contractor (gal.)	Effluent County (gal.)	Effluent Dust Control (Sprayed) (gal.)
1	0.00	16,292,980	6,902,338	13.4	1,562,207	1,118,239	45,274	1,645,983	30,202	0.9	0.0	1.7	22,179	9.33	9.33	30,396	0	6,018	0	0	6,296	0
2	1.03	16,302,280	6,932,585	7.3	1,564,292	1,118,239	45,303	1,649,120	30,258	0.9	0.0	1.8	24,983	9.50	9.00	28,787	0	6,116	3,002	0	6,117	0
3	0.09	16,312,585	6,963,975	13.4	1,565,776	1,118,239	45,309	1,649,118	30,315	1.1	0.0	1.8	0	9.50	9.17	28,456	0	0	0	0	0	0
4	1.40	16,320,575	6,984,709	13.4	1,567,601	1,118,239	45,325	1,652,172	30,358	1.1	0.0	2.1	0	9.33	9.58	28,817	0	0	0	0	6,008	0
5	0.43	16,329,680	7,001,538	18.7	1,569,370	1,118,239	45,338	1,652,172	30,405	1.3	0.0	3.0	0	9.25	9.25	29,612	0	0	0	0	0	0
6	0.00	16,333,920	7,027,118	15.6	1,571,170	1,118,239	45,353	1,651,903	30,450	1.4	0.0	3.3	0	9.2	9.2	29,612	0	0	0	0	0	0
7	0.00	16,338,160	7,052,698	12.5	1,572,969	1,118,239	45,368	1,651,634	30,495	1.5	0.0	3.6	0	9.17	9.17	29,612	0	0	0	0	0	0
8	0.00	16,348,050	7,078,214	8.5	1,574,823	1,118,239	45,368	1,656,595	30,556	1.8	0.0	3.6	0	9.17	9.67	29,034	0	0	0	0	18,117	0
9	0.00	16,356,760	7,110,785	4.8	1,576,910	1,118,239	45,368	1,656,595	30,621	2.1	0.0	3.6	0	9.42	9.00	27,948	0	0	3,000	0	6,163	0
10	0.07	16,364,800	7,140,201	2.5	1,579,034	1,118,239	45,368	1,656,595	30,691	2.2	0.0	3.6	28,510	9.17	9.67	29,887	0	6,048	2,830	0	12,016	0
11	0.00	16,373,270	7,157,516	13.3	1,580,584	1,118,239	45,383	1,656,595	30,758	2.2	0.0	3.6	43,241	9.25	9.08	27,084	0	0	3,000	0	12,109	0
12	0.00	16,381,810	7,176,461	13.5	1,582,416	1,118,239	45,396	1,662,878	30,812	2.2	0.0	2.8	54,034	8.58	9.17	28,831	0	0	0	0	0	0
13	0.00	16,385,985	7,201,707	12.3	1,584,069	1,118,239	45,396	1,662,878	30,865	2.2	0.0	3.1	0	8.5	9.1	28,831	0	0	0	0	0	0
14	0.00	16,390,160	7,226,953	11.0	1,585,721	1,118,239	45,396	1,662,878	30,917	2.2	0.0	3.3	54,583	8.42	9.00	28,833	0	0	3,002	0	17,610	0
15	0.00	16,396,670	7,250,352	9.8	1,587,593	1,118,239	45,408	1,669,283	30,975	2.2	0.0	2.4	40,384	8.42	9.08	25,212	0	6,018	0	0	12,024	0
16	0.00	16,404,330	7,276,309	11.7	1,589,061	1,118,239	45,408	1,669,283	31,025	1.9	0.0	2.2	24,607	8.50	9.50	24,535	0	0	0	0	6,023	0
17	0.00	16,414,280	7,301,376	12.2	1,590,993	1,118,239	45,424	1,669,375	31,122	1.5	0.0	2.4	51,058	9.50	9.08	4,605	0	6,018	3,008	0	12,025	0
18	0.17	16,420,910	7,332,098	11.9	1,592,910	1,118,239	45,467	1,674,634	31,135	1.1	0.0	2.1	0	9.67	9.42	24,429	0	0	0	0	18,028	0
19	0.00	16,423,510	7,371,989	9.6	1,594,900	1,118,239	45,524	1,674,634	31,202	1.1	0.0	2.0	48,698	10.25	9.58	24,426	0	0	0	0	0	0
20	0.00	16,427,825	7,391,903	12.5	1,596,465	1,118,239	45,565	1,674,634	31,250	1.1	0.0	2.2	0	10.2	9.3	24,426	0	0	0	0	0	0
21	0.00	16,432,140	7,411,817	15.3	1,598,029	1,118,239	45,606	1,674,634	31,298	1.1	0.0	2.4	56,733	10.08	9.00	24,426	0	6,018	0	0	6,009	0
22	0.00	16,442,495	7,436,448	11.3	1,599,844	1,118,239	45,637	1,674,634	31,341	0.8	0.0	1.5	25,583	10.00	9.67	24,622	0	0	5,882	0	12,009	0
23	0.00	16,453,310	7,462,404	13.8	1,601,190	1,118,239	45,665	1,675,765	31,397	0.0	0.0	1.5	38,257	10.00	10.00	26,477	0	6,018	6,008	0	12,020	0
24	0.00	16,462,780	7,489,140	9.8	1,602,998	1,118,239	45,665	1,677,290	31,451	0.0	0.0	1.3	10,637	9.83	9.42	25,491	0	0	0	0	0	0
25	0.22	16,467,495	7,518,768	11.5	1,604,711	1,118,239	45,698	1,677,290	31,461	0.0	0.0	1.8	0	10.1	9.3	25,491	0	0	0	0	0	0
26	0.00	16,472,210	7,548,396	13.1	1,606,423	1,118,239	45,731	1,677,290	31,471	0.0	0.0	2.3	27,600	10.33	9.17	25,491	0	0	0	0	0	0
27	0.00	16,476,840	7,572,281	12.7	1,607,827	1,118,406	45,825	1,677,292	31,586	0.0	0.0	2.5	0	10.3	9.2	25,491	0	0	0	0	0	0
28	0.00	16,481,470	7,596,165	12.2	1,609,231	1,118,573	45,918	1,677,294	31,700	0.0	0.0	2.6	56,501	10.25	9.25	25,493	0	6,020	3,002	0	12,018	0
29	0.00	16,490,260	7,620,943	8.1	1,611,164	1,118,573	45,934	1,692,117	31,767	0.0	0.0	1.5	0	10.50	9.50	17,574	0	0	3,000	0	12,022	0
30	0.00	16,499,010	7,634,923	12.8	1,612,375	1,118,573	46,037	1,692,119	31,821	0.0	0.0	2.1	38,278	10.00	8.92	31,360	0	6,018	3,006	0	12,038	0
31	0.00	16,509,230	7,658,683	9.9	1,614,117	1,118,573	46,091	1,692,122	31,878	0.0	0.0	1.4	20,973	9.67	9.25	24,466	0	0	0	0	18,130	0
Totals	3.41										0		666,839			809,755	0	54,252	38,740	0	216,782	0

projects\balance\2009\01-09bal.xls (ler 1/11/10)

**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	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0

**TABLE 3. LEACHATE BALANCE SUMMARY  
SOUTHEAST COUNTY LANDFILL  
HILLSBOROUGH COUNTY, FLORIDA  
YEAR-2009**

Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Leachate Hauled to LTRF from HHLF/TRLF (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	1.4	0	90,300	17,804	941,552	211,844	132,550	657,900	12,202	0	687,395	1,049,656	1,002,294	47,362
February	0.9	0	266,080	19,246	786,116	530,317	18,002	674,200	31,352	0	635,640	1,071,442	1,222,519	-151,077
March	1.3	0	122,371	16,401	815,237	228,717	72,167	692,300	68,486	0	495,123	954,009	993,184	-39,175
April	1.1	0	166,683	7,410	667,134	158,443	78,369	716,400	64,084	0	603,003	841,227	953,212	-111,985
May	10.3	0	832,510	65,034	782,563	886,006	15,032	999,000	300,183	0	27,556	1,680,107	1,900,038	-219,932
June	9.0	0	593,537	68,657	938,062	413,865	39,049	1,180,600	459,870	0	752,735	1,600,256	1,633,514	-33,258
July	10.4	0	420,954	118,512	929,785	544,081	27,076	1,177,900	776,807	0	521,305	1,469,251	1,749,057	-279,806
August	9.7	0	103,535	79,513	734,300	214,533	6,294	552,800	587,945	0	115,671	917,348	773,627	143,721
September	7.9	0	140,922	104,451	967,733	928,349	3,104	496,900	158,425	0	635,641	1,213,106	1,428,353	-215,247
October	1.7	0	59,905	23,261	877,508	186,802	6,000	779,000	31,236	0	788,666	960,674	971,802	-11,128
November	1.6	0	58,260	40,846	775,636	69,156	12,062	729,600	200,356	0	574,609	874,742	810,818	63,924
December	3.4	0	54,364	52,607	783,455	54,292	38,740	809,600	216,782	0	666,839	890,426	902,632	-12,206
YTD Total	58.7	0	2,909,421	613,742	9,999,081	4,426,405	448,445	9,466,200	2,907,728	0	6,504,183	13,522,243	14,341,050	-818,807

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.

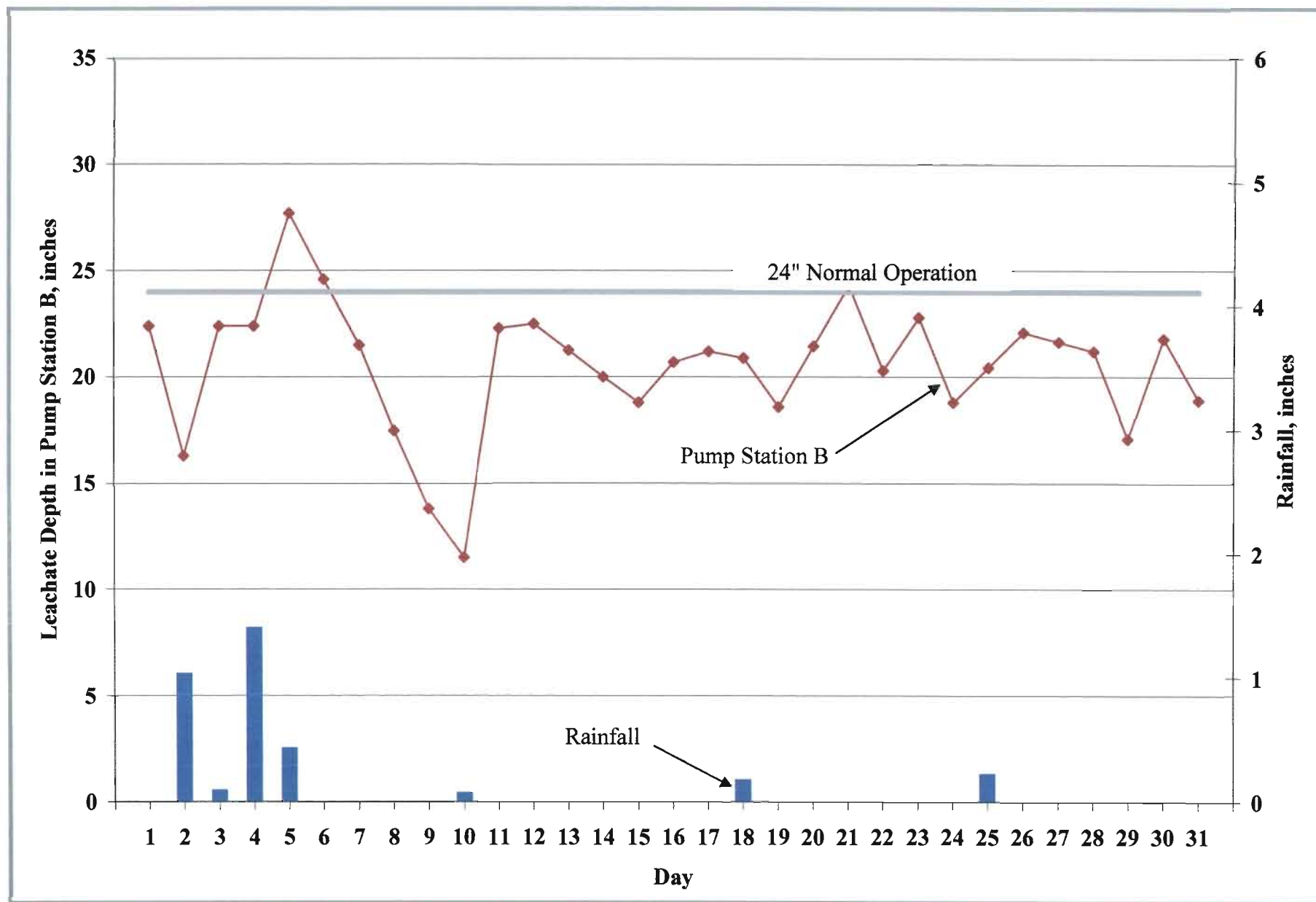


Figure 1. Leachate Levels in Pump Station B and Rainfall for December 2009.