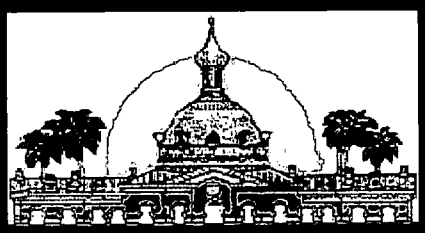
Leachate Management Plan
Southeast County Landfill
Hillsborough County, Florida



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DATED MARCH 2, 1999

LEACHATE MANAGEMENT PLAN
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

Presented to:

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SECTION 1

INTRODUCTION

In August 1995, the Hillsborough County Solid Waste Management Department (HCSWMD) submitted the original Leachate Management Plan (LMP) to the Florida Department of Environmental Protection (FDEP) and the Hillsborough County Environmental Protection Commission (EPC). The LMP was last updated in July 1996 to incorporate the temporary wellpoint dewatering system in Phase IV. SCS Engineers (SCS) has prepared this revised LMP to address the existing permit conditions, changes in operations, monitoring, and reporting that will occur when Permanent Pump Station B (PPS-B) becomes operational and landfilling begins in Phases V and VI. It is intended for this LMP to supersede the 1995 LMP and the 1996 update. In addition, this LMP replaces Sections 3.3 and 3.4 of the 1994 Operation Permit Renewal Application for the SCLF. This revised LMP presents the operational, monitoring, and reporting procedures the HCSWMD should follow at the Southeast County Landfill (SCLF) to meet the regulatory requirements stipulated in Chapter 62-701, Florida Administrative Code (FAC.) relating to leachate management.

PPS-B will become the primary leachate collection point in the SCLF when Phase VI is activated following the completion of Lift 7A in Phase V. PPS-B was designed to improve the performance of the leachate collection and removal system (LCRS), and provide reasonable assurance that leachate head over the liner will be 12 inches or less during routine landfill operations.

As shown on Figure 1-1, the SCLF leachate management system includes the following major components and disposal methods:

- Leachate collection and removal system in Phases I through VI.
- Collection points:
  - Permanent pump station "A" (PPS-A) north of Phase V.
  - Permanent pump station "B" (PPS-B) in Phase VI.
  - Temporary pump station No. 3 (TPS-3) in Phase VI.
  - Temporary pump station No. 4 (TPS-4) in Phase VI.
  - Temporary pump station No. 5 (TPS-5) in Phase IV.
  - Temporary wellpoint dewatering system in Phase IV.
  - Main leachate pump station (MLPS) north of Phase II.
- Leachate storage tank (575,000 gallons).
- Leachate treatment and reclamation facility (LTRF).
- Disposal methods:
  - Treated effluent spray irrigation system.
  - Tanker trucks hauling to off-site treatment facilities.
  - Truck mounted spray recirculation.

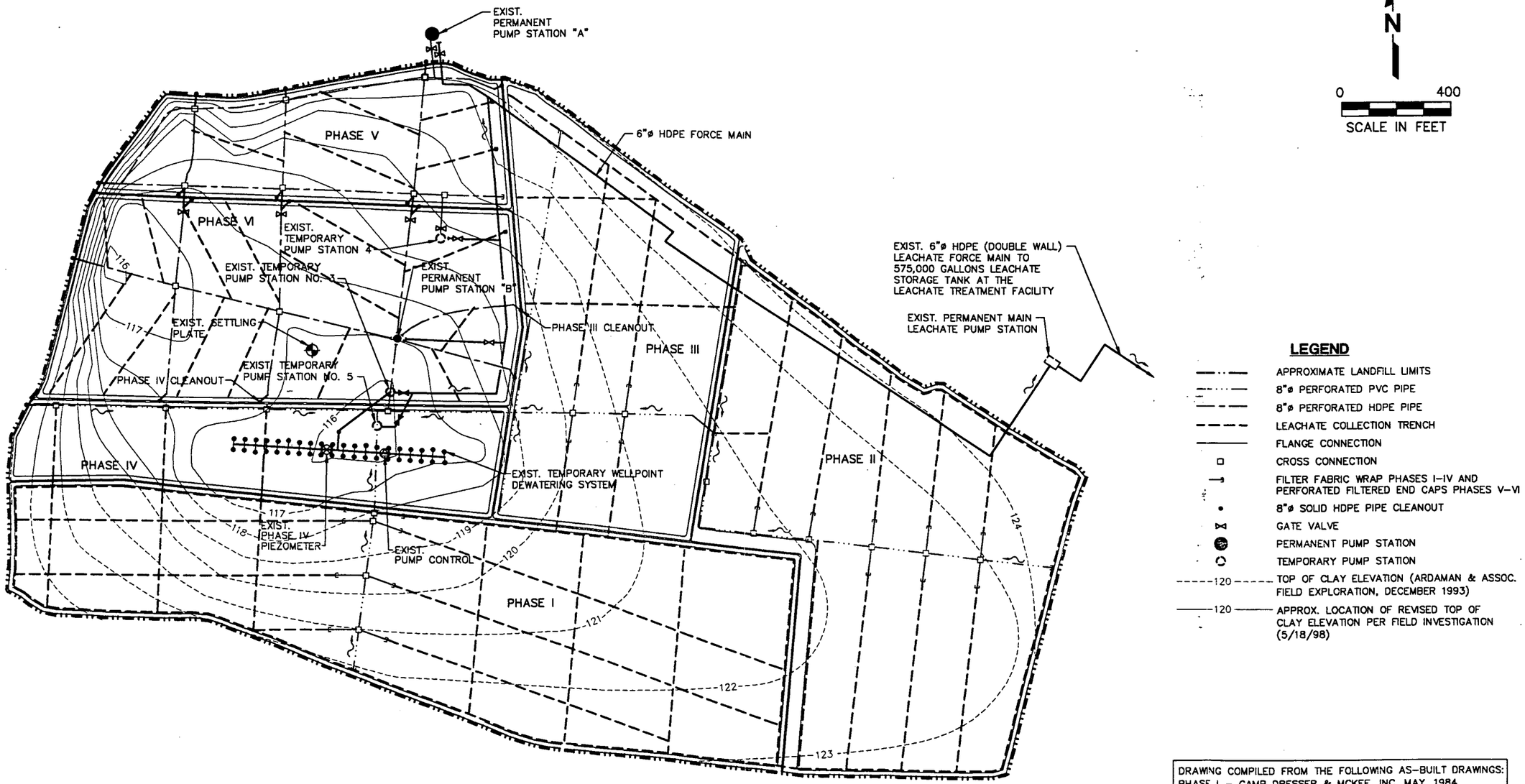


Figure 1–1. Leachate Collection System and Estimated Top of Phosphatic Clay.

SECTION 2

LEACHATE GENERATION

2.1 EXISTING (PHASES 1 THROUGH IV)

Precipitation falling on a landfill surface will run off, evaporate, evapotranspirate, or infiltrate. The percentage of precipitation falling on a landfill surface that will travel each of these paths can be estimated by use of water balance methods. For the SCLF, water balance computations were calculated using the United States Environmental Protection Agency's (U.S. EPA) Hydrological Evaluation of Landfill Performance (HELP) computer model (Schroeder, Payton, McEnroe, and Sjostrom, 1988).

SCS conducted a water balance analysis on the current and future phases for the SCLF to estimate the potential rate of leachate generation. The analysis incorporated climatological variables, landfill geometric variables (e.g., sideslope), and operational variables (e.g., intermediate and final cover sequencing). The results from the HELP model were provided in Exhibit A of the responses to FDEP by SCS dated May 26, 1995 regarding the 1994 Operation Permit Renewal Application.

Operations at the SCLF typically include an active 5-acre cell where waste is placed, compacted, and covered daily with initial cover (includes the working face plus other areas with initial cover). Table 2-1 presents the summary of calculated leachate generation for current conditions. SCS estimates that the SCLF has the potential to generate an average of 82,300 gallons per day (gpd) of leachate for the current operational area of 120.4 acres (Phases I – IV), or about 680 gallons per day per acre (gda). Table 2-1 also includes an estimated 50 gda of water generated from the consolidation of the phosphatic clay bottom liner system (Camp, Dresser, & McKee, 1983, p. 3-5), the leachate generation resulting from future treated effluent spray irrigation of 60,000 gpd, and truck mounted spray evaporation of 12,200 gpd (highest average reported in 1993).

2.2 FUTURE (PHASES I THROUGH VI)

The HELP model was used to analyze the following configurations for the entire landfill (i.e., Phases I-VI).

- Open phase.
- Working face.
- Intermediate soil cover with and without spray irrigation.
- Temporary clay capped slope.
- Geomembrane capping system on a 5 percent slope.

Tables 2-2 and 2-3 present the estimated leachate generation rates for Phases I through VI. A unit size of 1 acre was used for each computer run, resulting in leachate rates that can be applied on a gallons per day per acres basis. In addition to the data developed by the HELP model, the following liquid inputs were added:

TABLE 2-1. ESTIMATED LEACHATE GENERATION – PHASES I THROUGH IV SOUTHEAST COUNTY LANDFILL

Landfill Phases	Area (ac)	Grass Cover	Soil Cover Type	Waste Height (ft)	Average Leachate Generation Rate	
					(gpd)	(g/d/a)
Intermediately Capped Phases: Spray Irrigation	23.0	Fair	18-inch Intermediate Cover	40	35,600	1,500
Intermediately Capped Phases: No Spray Irrigation	69.2	Fair	18-inch Intermediate Cover	40	29,400	420
Capped Sideslopes (Phases I, II, & III)	23.2	Fair	18-inch Clay Cap	8	7,900	340
Active Cell (Leachate Recirc.)	5.0	Bare	6-inch Daily Cover	10	9,400	1,900
Totals	120.4				82,300	680

Table 2-1.doc Revised 10/20/98

Notes: (1) Model assumes steady state condition of current conditions.
(2) Model includes subsurface flow from compressed clays estimated at 50 gal/day/ac.
(3) Model includes spray irrigation of 60,000 gpd as per specific conditions.
(4) Model includes average leachate recirculation rate of 12,200 gpd.
(5) No runoff occurs from the active cells.

TABLE 2-2. ESTIMATED LEACHATE GENERATION – PHASES I THROUGH VI WITH GEOTARP SOUTHEAST COUNTY LANDFILL

Landfill Phases	Area (ac)	Grass Cover	Soil Cover Type	Waste Height (ft)	Average Leachate Generation Rate	
					(gpd)	(g/d/a)
Intermediately Capped Phases: Spray Irrigation	23.0	Fair	18-inch Intermediate Cover	40	35,600	1,500
Intermediately Capped Phases: No Spray Irrigation	74.0	Fair	18-inch Intermediate Cover	40	31,000	420
Capped Sideslopes (Phases I, II, & III)	23.2	Fair	18-inch Clay Cap	8	7,900	340
Tarp Cover (Phases V, & VI)	37.0	None	None	5	2,200	60
Active Cell (Leachate Recirc.)	5.0	Bare	6-inch Daily Cover	10	9,400	1,900
Totals	162.2				86,100	530

Table2-2.doc Revised date: 10/20/98

Notes: (1) Model assumes steady state condition of current conditions.
(2) Model includes subsurface flow from compressed clays estimated at 50 gal/day/ac.
(3) Model includes spray irrigation of 60,000 gpd as per specific conditions.
(4) Model includes average leachate recirculation rate of 12,200 gpd.
(5) No runoff occurs from the active cells.

TABLE 2-3. ESTIMATED LEACHATE GENERATION – PHASES I THROUGH VI WITH INTERMEDIATE COVER SOUTHEAST COUNTY LANDFILL

Landfill Phases	Area (ac)	Grass Cover	Soil Cover Type	Waste Height (ft)	Average Leachate Generation Rate	
					(gpd)	(g/d/a)
Intermediately Capped Phases: Spray Irrigation	23.0	Fair	18-inch Intermediate Cover	40	35,600	1,500
Intermediately Capped Phases: No Spray Irrigation	74.0	Fair	18-inch Intermediate Cover	40	31,000	420
Capped Sideslopes (Phases I, II, & III)	23.2	Fair	18-inch Clay Cap	8	7,900	340
Intermediate Fill (Phases V, & VI)	37.0	Fair	18-inch Clay Cap	15	5,700	135
Active Cell (Leachate Recirc.)	5.0	Bare	6-inch Daily Cover	10	9,400	1,900
Totals	162.2				89,600	550

Table 2.3.doc Revised date: 10/20/98

Notes: (1) Model assumes steady state condition of current conditions.
(2) Model includes subsurface flow from compressed clays estimated at 50 gal/day/ac.
(3) Model includes spray irrigation of 60,000 gpd as per specific conditions.
(4) Model includes average leachate recirculation rate of 12,200 gpd.
(5) No runoff occurs from the active cells.

- Water being generated from clay consolidation at a rate of 50 gda.
- Truck mounted spray evaporation application rate of 12,200 gpd.
- Treated effluent spray irrigation at a rate of 60,000 gpd.

The HCSWMD will install temporary rain covers over non-active areas of Lifts 7A and 7B to minimize leachate generation during the initial filling in Phases V and VI. SCS estimates that with the use of rain tarps, the SCLF has the potential to generate an average of 86,100 gpd of leachate for the future operational area of 162.2 acres (Phases I – VI), or about 530 gda (see Table 2-2).

Table 2-3 presents the summary of calculated leachate generation for a condition when Phases V and VI reach a capacity where intermediate cover is installed. For this condition, SCS estimates that the SCLF has the potential to generate an average of 89,600 gpd of leachate, or about 550 gda.

The final configuration of the SCLF, as shown in Appendix E, Drawing No. 14 of the 1994 Operation Permit Application, was modeled to estimate the leachate generation rate for the top slopes and sideslopes capped with a geomembrane system. Results indicate that an estimated rate of 12,000 gpd can be expected after final closure.

SECTION 3

LEACHATE MANAGEMENT SYSTEM COMPONENTS

3.1 LEACHATE COLLECTION AND REMOVAL SYSTEM (LCRS)

The LCRS in Phases I, II, III, and IV of the SCLF was constructed as designed in the 1983 permit application. The initial LCRS in Phases V and VI was constructed as designed during the period of November 1989 to January 1992. Water that has accumulated in Phases V and VI will continue to be discharged as stormwater until refuse is placed in Phases V and VI. In September 1998, the HCSWMD added chipped tire trenches in Phases V and VI at 200 feet of center to improve on the performance of the LCRS and provide additional redundancy in the system.

When Phases V and VI are activated, the LCRS in Phases V and VI will be connected to the Phase III and IV LCRS. The as-built report and certification for Phases V and VI were submitted to the FDEP and EPC in March 1993. The certification of construction for the chipped tire trenches and PPS-B were submitted to the FDEP and EPC in December 1998. Based on the current operational practices and leachate removal volumes at the SCLF, the active LCRS is operating efficiently.

As shown on Figure 1-1, the LCRS in Phases I through VI consist of:

- Granite rock filled trenches with 8-inch diameter perforated Schedule 80 polyvinyl chloride (PVC) pipes.
- Granite rock filled trenches.
- Granite-rock filled trenches and 8-inch diameter perforated high-density polyethylene (HDPE).
- Temporary internal clean outs and permanent clean outs around the perimeter of Phases V and VI.
- Chipped tire filled trenches.

As the filling sequence progresses (i.e., Lift 7) both systems will be connected to PPS-B from which leachate will be pumped to PPS-A. From PPS-A, leachate is conveyed to the MLPS.

3.2 PHASES V AND VI LCRS ACTIVATION SEQUENCE

The LCRS for Phases I through IV was constructed as described in Section 5.3.2 of the 1994 Operation Permit Renewal Application. Filling in Phases V and VI will follow the operating criteria outlined in the 1994 Operation Permit Renewal Application. The sequence for Lift 7 as described below is a supplement to the 1994 Operation Permit Renewal Application and supersedes the Phases V and VI sequence portions described in Section 5.3.2, pages 5-6 to 5-7 of the 1994 Operation Permit Renewal Application.

The initial filling in Phases V and VI will be Lift 7. The configuration of Lift 7 meets the loading requirements established by Ardaman and Associates, Inc. for the SCLF. To clarify and facilitate the management of the different filling stages, Lift 7 has been divided into six intermediate lifts (i.e., 7A through 7F). Attachment A presents the sequence drawings for Lift 7 - Phases V and VI. The activation sequence for Phases V and VI will be as described below and the activities described will be completed in numerical order.

3.2.1 PHASE V ACTIVATION

1. Install rain tarp over inactive areas of Phase V and inspect the existing liner boot of stormwater inlet No. 1 and boot tarp to stormwater inlet No. 1.

2. To prevent leachate in Phase V from entering the LCRS of Phase VI, LCRS valves No. 1, 2, 3, 5, and 6 must be closed (see Attachment A, Drawing No. 3).

3. LCRS valve No. 4 into the existing TPS-4 will remain open. Connect TPS-4 discharge to the existing 6-inch HDPE leachate force main. The leachate from Phase V will be collected in TPS-4 from which it will be pumped to the existing MLPS.

4. Open TPS-4 valve No. 8.

5. Remove tarp from Cell A and connect the LCRS between Phases V and III by constructing trenches through the interior lined berm at the locations shown on Phase V Activation Plan Drawing No. 3 and Detail 2 Drawing No. 7 of Attachment A.

6. Submit to the FDEP and EPC a letter certified by a professional engineer confirming the completion of activities 1 through 5.

7. Since the LCRS in Phase VI still will not be connected to Phases III, IV, or V, PPS-B will continue to pump stormwater from Phase VI into the SCLF northern perimeter ditch.

8. Begin placement of refuse Lift 7A - Cell A on the southeast corner of Phase V. Filling will progress in a westerly direction across Phase V. The rain tarp will be removed in sections as needed. The rain tarp will be re-used over completed cells. The stormwater runoff from the rain tarp will be maintained separate from the active cells by a lined berm (see Section A Drawing No. 9 of Attachment A). The stormwater runoff from the rain tarp over inactive areas will be conveyed into the stormwater inlet No. 1 in Phase V. Stormwater runoff from completed cells will be conveyed to the existing perimeter ditches.

9. Construct energy dissipator No. 5 prior to filling in Lift 7A - Cell H.

10. Cap the stormwater inlet No. 1 prior to filling in Lift 7A - Cell I (see Detail 1 Drawing No. 7). Submit to the FDEP and EPC a letter certified by a professional engineer confirming the completion of this activity.

3.2.2 PHASE VI ACTIVATION

1. Install rain tarp over inactive areas of Phase VI and inspect the existing liner boot of stormwater inlet No. 2 and boot tarp to stormwater inlet No. 2.

2. Install the pump from TPS-3 into PPS-A.

3. Connect the discharge from PPS-B into PPS-A.

4. Open LCRS valves No. 1, 2, 3, and 6. LCRS valve No. 5 will remain closed.

5. Remove TPS-3 and connect the LCRS header to PPS-B. Remove TPS-4, TPS-5, and related 6-inch diameter force main in Phase VI as shown on the Phase VI Activation Plan on Drawing No. 3 Attachment A.

6. Connect the LCRS between Phases VI, III, and IV by constructing trenches through the interior lined berm at the locations shown on Drawing No. 3 of Attachment A. Remove and replace tarp sections as needed.

7. Submit to the FDEP and EPC a letter certified by a professional engineer confirming the completion of activities 1 through 6.

8. As filling progresses, remove the sand pre-load to a maximum of 150 feet ahead of the active cell to a depth of 3 feet above the existing top of clay maintaining the following guidelines:

   - Excavation maximum slopes of 2H:1V.
   - Setback of 10 feet from the centerline of the access pipes to PPS-B.
   - Setback of 50 feet from the centerline of PPS-B.
   - Maintain a minimum sand cover of 12 inches over the tire trenches.

9. Begin placement of refuse in Lift 7B - Cell A on the northeast corner of Phase VI. Filling will progress in a westerly direction across Phase VI. The rain tarp and sand pre-load is to be removed as needed. The rain tarp will be re-used over completed cells. The stormwater runoff from the rain tarp will be maintained separate from the active cells by a lined berm (see Section A Drawing No. 9 of Attachment A). The stormwater runoff from the rain tarp over inactive areas will be conveyed into the stormwater inlet No. 2 in Phase VI. Stormwater runoff from completed cells will be conveyed to the existing perimeter ditches.

10. Remove the existing settling plate prior to filling in Lift 7B - Cell E. The settlement of the SCLF sump will continue to be monitored at the settling plates on PPS-B. In the future, the settlement plates on PPS-B will be removed prior to refuse placement in Lift 12.

11. Cap the stormwater inlet No. 2 prior to filling in Lift 7B - Cell I (see Detail 1 Drawing No. 7). Submit to the FDEP and EPC a letter certified by a professional engineer confirming the completion of this activity.

12. Continue placement of refuse Lift 7C - Cell A on the northeast corner of Phase V. Filling will progress in a westerly direction (counterclockwise) across Phase V and western portions of Phase VI. As filling progresses the rain tarp that was placed over Lifts 7A and 7B will be removed. At completion, Lift C will receive intermediate cover around the landfill perimeter slopes (6H:1V) and top slopes (30H:1V).

13. Continue placement of refuse Lift 7D - Cell A on the northwest corner of Phase VI against Lift C. Filling will progress in an easterly direction across Phase VI. As filling progresses the rain tarp that was placed over Lift 7B will be removed.

14. The placement of Lifts 7E and 7F consists of filling the valley area where Phases V and VI are adjacent to Phases III and IV. These lifts will overlap over Phases I, III and IV. Filling will continue with Lift 7E - Cell A on the southeast corner of Phase VI. Filling will progress in a northerly direction across Phases III, V, and VI. At completion, Lift E will receive intermediate cover around the landfill perimeter slopes (6H:1V) and top slopes (30H:1V).

15. Continue placement of refuse Lift 7F - Cell A in the middle of Phase III adjacent to the existing service haul road. Filling will progress in a westerly direction across Phases I, III, IV, and VI. At completion, Lift F will receive intermediate cover around the landfill perimeter slopes (6H:1V) and top slopes (30H:1V).

Landfilling will continue on Phase I Lift 8 as described in Section 5.3 and as shown on Drawing No. 8 of the 1994 Operation Permit Renewal Application.

3.3 LEACHATE DISPOSAL SYSTEM

The HCSWMD disposes of leachate and treated effluent at two of the County wastewater treatment plants. Tanker trucks (both County and private contract fleets) are used to transport the leachate from the SCLF to the treatment plants. A small quantity of leachate also is evaporated in the active landfill cell area using truck-mounted sprayers. When the on-site treatment plant is operational, treated effluent also is disposed through spray irrigation pursuant the current operations permit. Leachate and treated effluent quantities are measured with flow meters.

3.3.1 SPRAY IRRIGATION SYSTEM

The stationary spray irrigation system that was originally installed in 1994 has been abandoned and the stationary sprinkler heads were removed. The HCSWMD purchased and installed a mobile irrigation system consisting of two irrigation reels manufactured by ABI Irrigation, Model ABI 90 AT 1250. The mobile irrigation reels are stationed on the west side of Phase I and on the east side of Phase II as shown on Figure 3-1. Only treated effluent will be disposed through the spray irrigation system.

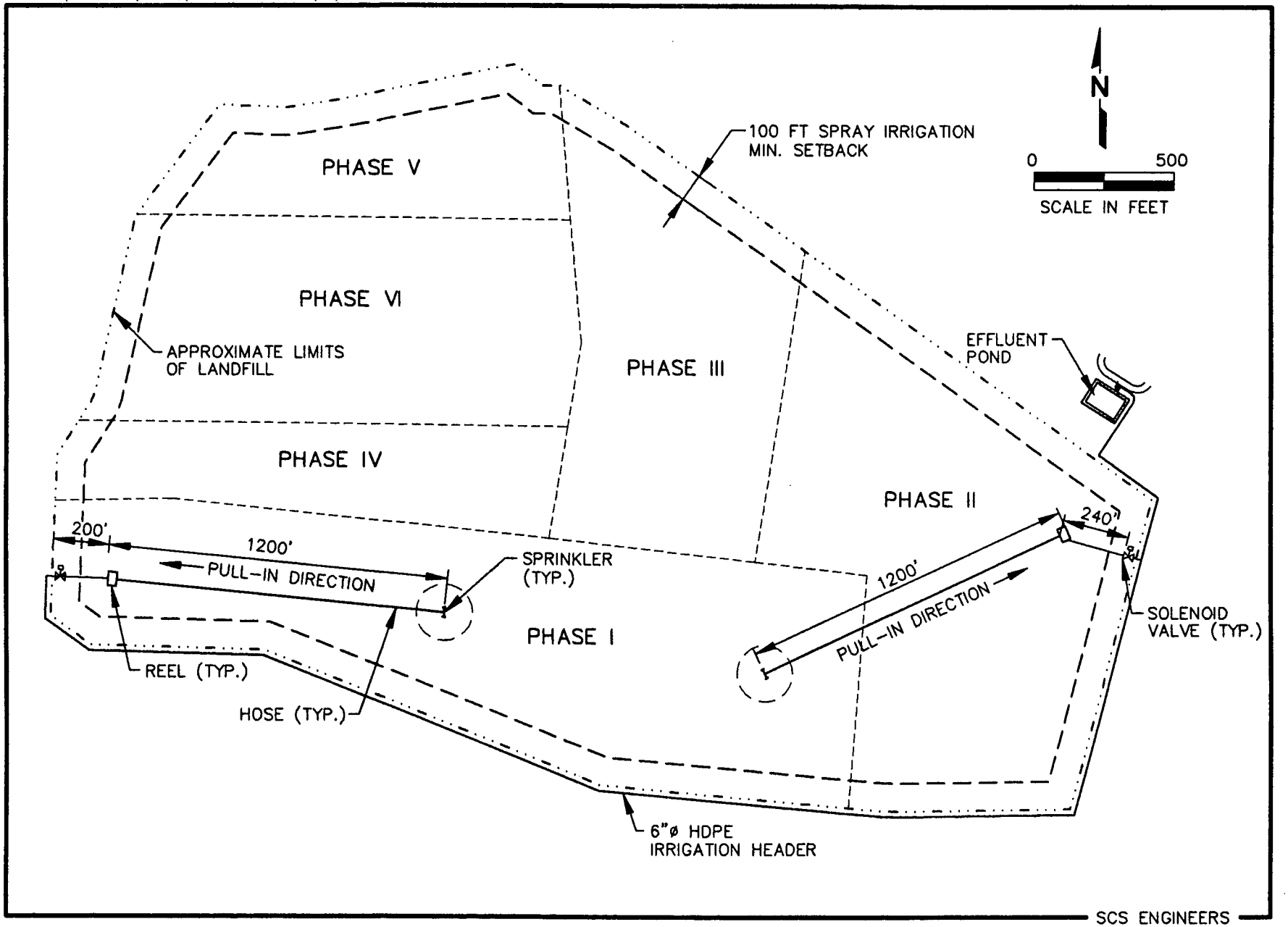


Figure 3–1. Location of Irrigation Sprinkler Reels.

The reel irrigation system offers the following advantages:

- The irrigation spray rate can be adjusted at, above, or below 60,000 gallons per day.
- Maintenance of the irrigation reels is minimal (once per week).
- Life expectancy of each irrigation reel is 15 to 20 years (as per the manufacturer's representative).
- The irrigation reels can be easily relocated on the SCLF as needed to compensate for adjustments due to the filling sequence progression.
- The amount of irrigation in a given area can be easily adjusted utilizing reel speed to maximize the capacity of the system.

The operational sequence of the mobile reel irrigators is as follows:

- Before each irrigation event, the medium density polyethylene (PE) hose is stretched out with a vehicle (approximately 1200 linear feet). This activity should take approximately 30 minutes per day.
- Once both PE hoses have been stretched out across the top of the SCLF, personnel will then turn on the irrigation pump(s) timer; one pump if the reels are operated sequentially, two pumps if the reels are being operated concurrently. The reels will automatically reel back the PE hose at a preset rate (i.e., 300 feet per hour).
- At the end of the irrigation event, the timer will turn off the irrigation pump(s) and the irrigation reels will automatically return to their original position.

Per the existing operational restrictions from the Operation permit No. SO29-256427, Specific Conditions No. 40 and 41, spray irrigation may be applied under the following conditions:

- The permit conditions allow spray irrigation at a rate of .10 inch per application followed by two hours (waiting period) between each application for a maximum of .30 inch per day of treated effluent. Under no circumstances shall treated effluent be allowed to discharge as runoff to adjacent stormwater systems or conveyance ditches. Treated effluent shall not be sprayed during weather conditions or in quantities that may cause runoff, surface seeps, wind-blown spray, or exceedance of limits of leachate head over the liner as described in Section 6.0 of the LMP. Ponding is prohibited.

  Spraying shall take place only when rainfall runoff into the onsite retention areas downgradient from the spray areas has terminated for 2 hours based on daily inspections of the influent point to each related retention area, or as follows, whichever is more restrictive:

- At least 4 hours after a rainfall of 3/4" or less, or
- At least 24 hours after a day of rainfall of 3/4" to 2-1/2", or
- At least 48 hours after a day of rainfall of 2-1/2" or greater

- The Water Balance Report Form presented in Attachment B, will continue to be completed and submitted to the FDEP and EPC by the 15th of the month following the monthly reporting period. The following shall be recorded daily on the Water Balance Report Form:

  - Treated effluent sprayed in gal/day.
  - Rainfall onsite in inches/day & time of day.
  - Observed runoff influent to retention areas as (yes/no) time of day of inspection.

- Spray irrigation of treated effluent shall not be conducted within 100 feet of the landfill liner trench, on slopes steeper than 10 percent, and areas with permanent final cover.

- Spray irrigation of treated effluent shall be conducted between the hours of 10:00 a.m. to 4:00 p.m.

3.3.2 SUPPLEMENTAL LEACHATE AND TREATED EFFLUENT EVAPORATION VIA TRUCK MOUNTED SPRAYING

Leachate evaporation will be employed as a supplemental method to dispose of leachate. The supplemental evaporation of leachate involves spraying small quantities of leachate from a spray bar mounted on the rear of a tank truck onto active-fill areas of the landfill. This approach has been used successfully at the SCLF since 1984. The advantages of this method are the reduction of leachate by evaporation, the promotion of the decomposition of organic matter in the landfilled refuse, and dust control.

The HCSWMD will monitor the rate of application, soil moisture conditions, and the specific landfill areas used so that this leachate disposal method does not generate runoff. This form of leachate evaporation should be acceptable as a supplementary means of leachate disposal. Leachate spray evaporation may be applied under the following conditions:

- Leachate may only be sprayed on active-fill areas, including the working face, and areas with the required 6 inches of initial cover.

- Leachate may not be sprayed on areas with intermediate or final cover, seeded or unseeded.

- The maximum grade leachate may be sprayed on is 10H:1V slope. Areas within 150 feet of a 4H:1V or steeper sideslope may not be sprayed on. At all times, areas receiving leachate must be controlled to prevent leachate runoff from entering the stormwater system.

- Leachate may not be sprayed after a rainfall event.

- The tank truck spray bar method maximizes soil moisture evaporation. The application rate of leachate should be such that leachate does not accumulate on the landfill surface, nor infiltrate quickly into the covered refuse. It is evaporation of soil moisture in the top 3 inches of initial cover that is the main goal of this leachate disposal method, rather than the actual recirculation of leachate.

- Leachate should not be sprayed at the end of the day on the initial cover of the working face or other areas. Spraying should be done early in the morning after any dew evaporates and continue until early afternoon or until all available areas have been utilized.

The HCSWMD will continue evaporating leachate and treated effluent in full conformance with Chapter 62-701, FAC. The HCSWMD will continue to notify the FDEP of all evaporated quantities in the leachate disposal reports.

3.4 SCHEDULE FOR MAINTENANCE OF THE LCRS

The SCLF facilities are inspected daily. Attachment C presents the inspection and evaluation forms used at the SCLF. Maintenance of the LCRS is conducted on an as-needed basis. If necessary, this LMP maintenance schedule will be modified to reflect permit conditions. On October 28, 1998, the HCSWMD performed the jet cleaning of the LCRS in Phases V and VI. In addition, the HCSWMD conducted a video inspection of the LCRS in Phases V and VI and found the system to be in good condition.

On July 5, 1995, a piezometer was installed in Phase IV to monitor the leachate depth over the liner in the SCLF. Top of clay data from the piezometer construction indicated that the low point of the SCLF apparently was just to the south of TPS-3. Recent top of clay data from Phases V and VI indicates that the SCLF sump area is expanding into Phase VI as expected. The low point condition in Phase IV was preventing some leachate from being conveyed to TPS-3; therefore, to lower the leachate depth within the low point in Phase IV, the HCSWMD constructed TPS-5 and a temporary wellpoint dewatering system to remove the leachate within the low area (November 1995 and July 1996 respectably).

SECTION 4

SYSTEM COMPONENTS PROJECTED PERFORMANCE

A leachate management system schematic of the permanent configuration is shown on Figure 4-1. The LCRS removal rates, pump rates, and pump control settings are as follows:

4.1 PERMANENT PUMP STATION "A" (PPS-A), CAPACITY 150 GPM

PPS-A consists of an 8-foot inside diameter below-grade concrete sump with a single submersible pump. From PPS-A, leachate is conveyed to the Main Leachate Pump Station via force main. The pump operation is set with the "on" float at 42 inches from the sump bottom and the "off" float at 18 inches the sump bottom. In case of unforeseen failure of Permanent Pump Station B (PPS-B), PPS-A may be used to remove leachate from the SCLF while PPS-B is under repairs. This can be accomplished by opening LCRS valve No. 5 (normally closed) which would allow gravity flow of leachate into PPS-A from the SCLF perimeter. LCRS valve No. 5 is on a non-perforated 8-inch diameter header that connects to the LCRS of Phase V.

4.2 PERMANENT PUMP STATION "B" (PPS-B), CAPACITY 150 GPM

PPS-B is the primary leachate collection point in the SCLF. Upon consolidation of the phosphatic clay liner, the low point for the final collection and removal of leachate within the SCLF is projected to be at the PPS-B location. The leachate collection and removal system for the SCLF was designed to drain to PPS-B; therefore, PPS-B was designed to manage the leachate from the entire LCRS of the SCLF.

PPS-B consists of an 8-foot inside square below-grade concrete vault with a single self-priming above-ground pump. The vault has two HDPE 18-inch diameter horizontal access pipes, the main access pipe leading to PPS-A and an alternate access pipe leading towards the western perimeter of the SCLF. PPS-B conveys leachate to PPS-A. The "on" sensor is set at 24 inches of depth from the sump bottom and the "off" sensor is set at 15 inches from the bottom. The settings provide for free flow of leachate into the vault from the LCRS thereby maximizing the LCRS performance.

The primary pump used to remove leachate from PPS-B is a Protek Power Primer Model 5JM3. The self-priming pump has a capacity of 150 gallons per minute (gpm). In the event of primary pump failure, the HCSWMD has stored on site an Acme-Sykes Model GP100 vacuum-assisted diesel pump that may be used as backup. The GP100 or an equal pump system will be on line within 8 hours. PPS-B is equipped with a level indicator located at the control panel near PPS-A and the HCSWMD monitors the level on a daily basis to ensure that the levels noted above are maintained. Maintaining the operation of PPS-B as proposed will provide reasonable assurance that the SCLF will maintain a leachate head over the liner of 12 inches or less during routine landfill operation.

SECTION 4

SYSTEM COMPONENTS PROJECTED PERFORMANCE

A leachate management system schematic of the permanent configuration is shown on Figure 4-1. The LCRS removal rates, pump rates, and pump control settings will be as follows:

4.1 PERMANENT PUMP STATION "A" (PPS-A), CAPACITY 150 GPM

PPS-A consists of an 8-foot inside diameter below-grade concrete sump with a single submersible pump. From PPS-A, leachate will be conveyed to the Main Leachate Pump Station via force main. The pump operation will be set with the "on" float at 42 inches from the sump bottom and the "off" float at 18 inches the sump bottom. In case of unforeseen failure of permanent pump station B, PPS-A may be used to remove leachate from the SCLF while PPS-B is under repairs. This can be accomplished by opening LCRS valve No. 5 (normally closed) which would allow gravity flow of leachate into PPS-A from the SCLF perimeter. LCRS valve No. 5 is on a non-perforated 8-inch diameter header that connects to the LCRS of Phase V.

4.2 PERMANENT PUMP STATION "B" (PPS-B), CAPACITY 150 GPM

PPS-B will become the primary leachate collection point in the SCLF when Phase VI is activated. Since the leachate collection system in Phases V and VI is not tied to any active landfilling Phase, initially the HCSWMD will use PPS-B to discharge stormwater via force main into the existing northern stormwater perimeter ditch. Upon consolidation of the phosphatic clay liner, the low point for the final collection and removal of leachate within the SCLF is projected to be at the PPS-B location. The leachate collection and removal system for the SCLF was designed to drain to PPS-B; therefore, PPS-B was designed to manage the leachate from the entire LCRS of the SCLF.

PPS-B consists of an 8-foot inside square below-grade concrete vault with a single submersible riser pump. The vault has two HDPE 18-inch diameter horizontal access pipes, the main access pipe leading to the existing PPS-A and an alternate access pipe leading towards the western perimeter of the SCLF. PPS-B will convey leachate to PPS-A. The "on" sensor will be set 24 inches of depth from the sump bottom and the "off" sensor will be set at 15 inches from the bottom. The settings described above provide for free flow of leachate into the vault from the LCRS thereby maximizing the LCRS performance.

Two EPG Companies Type WSD27-1 submersible pumps (one active and one stored as backup), comprised of stainless steel components will be used to remove the leachate from PPS-B. In the event of pump failure, the HCSWMD can replace the submersible pump with the backup pump within 8 hours. PPS-B will be equipped with a level indicator to be located at the control panel near PPS-A. The HCSWMD will monitor the level on a daily

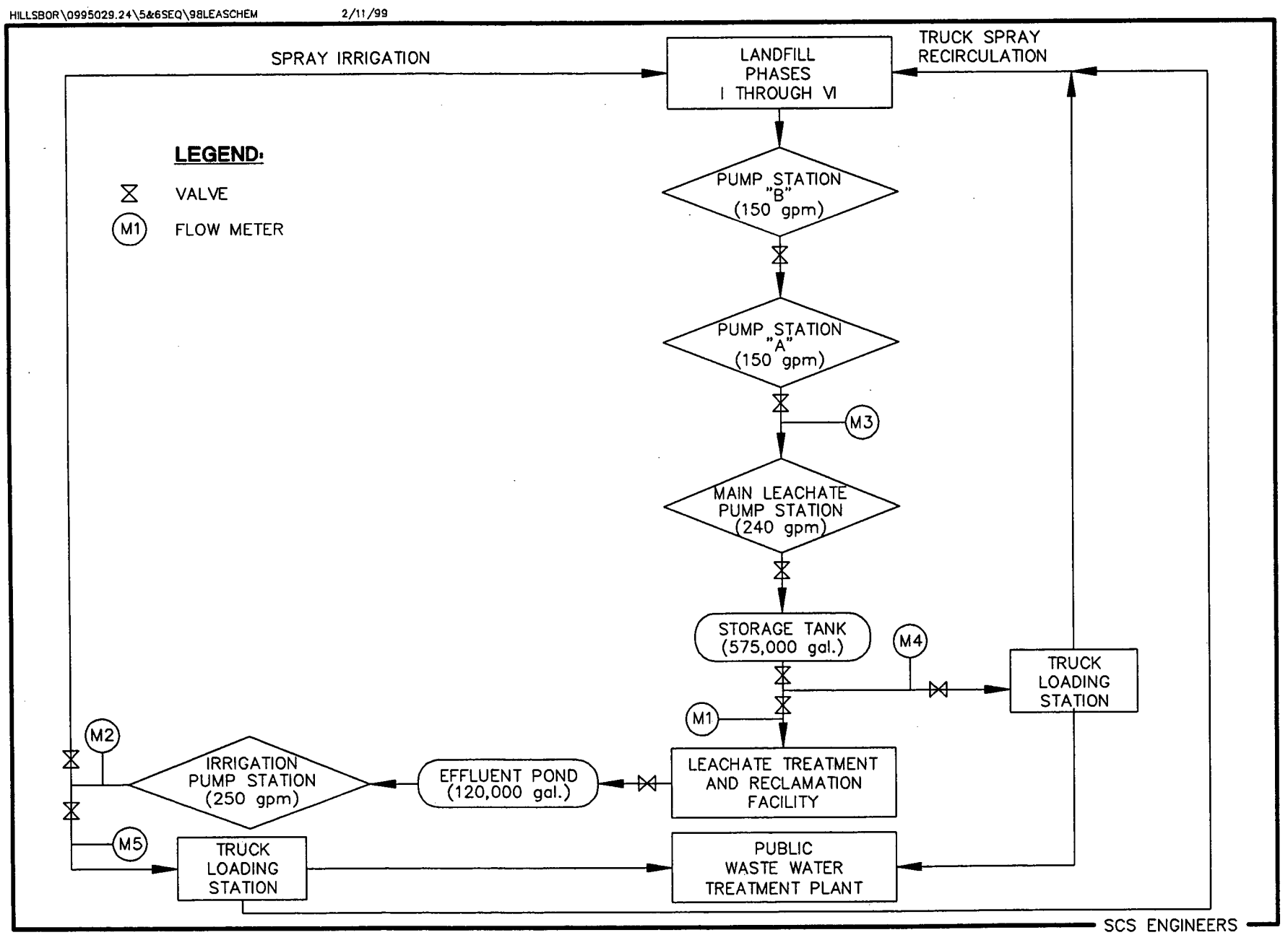


Figure 4–1. Leachate Management System Schematic.

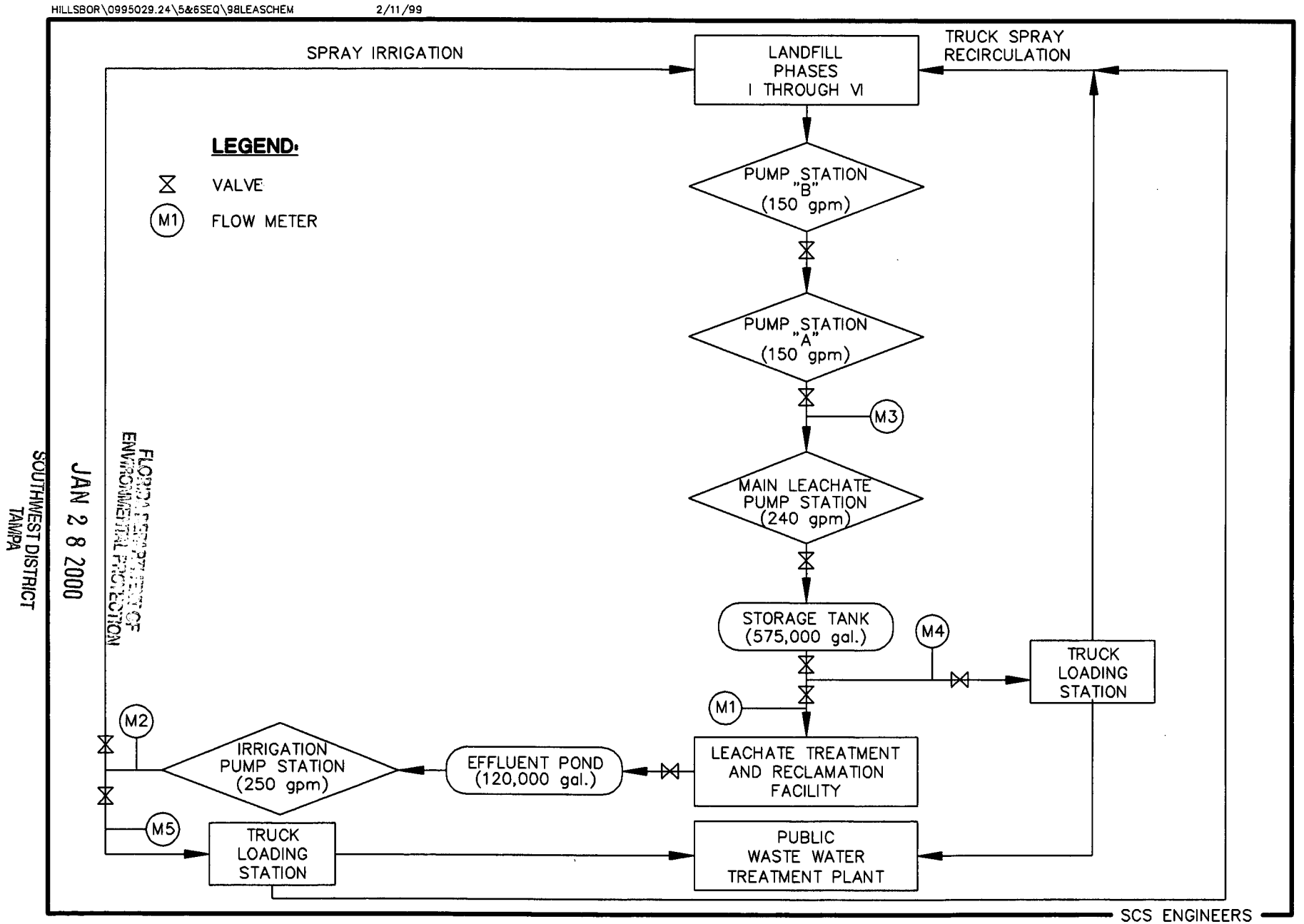


Figure 4–1. Leachate Management System Schematic.

4.3 TEMPORARY WELLPOINT DEWATERING SYSTEM IN PHASE IV, CAPACITY 0 TO 12,000 GPD

In July 1996, the HCSWMD completed construction of the temporary wellpoint dewatering system in Phase IV. The wellpoint dewatering system was designed to provide a supplemental leachate removal method so that the HCSWMD could bring the leachate depth in Phase IV to the depth outlined in the LMP. The wellpoint dewatering system consists of forty wellpoints installed in two parallel rows, spaced on 40-foot centers within the estimated sump area in Phase IV. The wellpoint dewatering is connected by discharge manifolds to a vacuum assisted dewatering pump. The leachate from the temporary dewatering system is pumped to PPS-B via a 3-inch diameter header pipe.

The temporary dewatering system was designed to remove the accumulated leachate in Phase IV. The wellpoint dewatering system will remain in place as long as needed to provide assurance that the leachate depth does not exceed the LMP goals. The HCSWMD plans to remove the wellpoint dewatering system prior to the beginning of waste filling in Phase VI Lift 7F. The HCSWMD may elect in the future to remove the wellpoint dewatering system prior to filling in Lift 7F if it can be demonstrated that the LMP goals can be maintained without the temporary dewatering system.

4.4 MAIN LEACHATE PUMP STATION (MLPS), CAPACITY 240 GPM

The MLPS consists of a 7-foot square, (inside dimension) below-grade concrete sump with dual submersible pumps (i.e., one operating and one stand by). From the MLPS, leachate is conveyed to the 575,000-gallon storage tank at the on-site LTRF. The pump in operation is set for a 24-hour operation cycle with the "on" float at 4 feet from the sump bottom and the "off" float at 2 feet from the sump bottom.

4.5 STORAGE TANK, CAPACITY 575,000 GALLONS

The leachate level in the storage tank is maintained to provide for the maximum storage capacity possible. The tank is maintained with an average low level of 6 feet or 180,000 gallons (3 days storage) to ensure enough leachate is available for the LTRF to operate without interruptions. When levels below 6 feet are reached in the tank, leachate hauling and recirculation is temporarily reduced or stopped. Similarly, an action level is established for high level of 11 feet (320,000 gallons) in the storage tank. A level of 11 feet provides for a remaining storage capacity in the tank of 180,000 gallons (3 days storage) to allow continuous operation of the SCLF pump stations. When levels are above 11 feet, treatment, hauling, and/or recirculation is increased.

4.6 LEACHATE TREATMENT AND RECLAMATION FACILITY AVERAGE CAPACTIY 60,000 GALLONS PER DAY

In December 1994, the HCSWMD constructed an on-site leachate treatment and reclamation facility (LTRF). The LTRF consists of a PACT carbon activated treatment system. The LTRF system is described in detail in the following documents:

basis to ensure that the levels mentioned above are maintained. Maintaining the operation of the PPS-B as proposed will provide reasonable assurance that the SCLF will maintain a leachate head over the liner of 12 inches or less during routine landfill operation.

4.3 TEMPORARY PUMP STATION NO. 3 (TPS-3), CAPACITY 150 GPM

TPS-3 currently is the initial collection point from the SCLF. TPS-3 consists of an 8-foot inside diameter below-grade concrete sump with a single submersible pump. TPS-3 conveys leachate to the Main Leachate Pump Station. The "on" float in the existing TPS-3 is set at 12 inches of depth from the sump bottom and the "off" float is being maintained at 6 inches from the bottom. This results in storage in the sump of 188 gallons of leachate. The settings described above provide for the maximum leachate withdrawal rate possible based on the existing configuration of the TPS-3. TPS-3 will be removed when PPS-B is activated at the beginning of waste filling in Phase VI Lift 7B.

The leachate from the temporary wellpoint dewatering system in Phase IV currently empties into the TPS-3 sump. TPS-3 pumps the leachate to the main leachate pump station. The LCRS header that connects to TPS-3 was closed off with a hydraulic plug, because after the installation of TPS-5 in November 1995, the gravity leachate flow from the SCLF into TPS-3 was reduced. In addition, the hydraulic plug prevents the leachate pumped by the dewatering system into TPS-3 from returning to the landfill.

4.4 TEMPORARY PUMP STATION NO. 4 (TPS-4), CAPACITY 125 GPM

Since the LCRS in Phases V and VI is not tied to any active landfilling Phase, the HCSWMD is using TPS-4 to discharge stormwater via force main into the existing Phase VI 16-inch HDPE drainage inlet No. 2. TPS-4 was designed to manage the leachate from Phase V during the initial stage when the Phases V and VI LCRS are separate (i.e., Phase V leachate and Phase VI stormwater). TPS-4 consists of an 8-foot inside diameter below-grade concrete sump with a single submersible pump. TPS-4 conveys leachate to the Main Leachate Pump Station. The "on" float in the existing TPS-4 is set at 18 inches of depth from the sump bottom and the "off" float is being maintained at 6 inches from the bottom. TPS-4 will be removed when PPS-B is activated at the beginning of waste filling in Phase VI Lift 7B.

4.5 TEMPORARY PUMP STATION NO. 5 (TPS-5), CAPACTIY 150 GPM

TPS-5 currently is the secondary collection point from the SCLF. TPS-5 consists of a vacuum assisted centrifugal pump with a 4-inch diameter HDPE suction line. The suction line is between 100 to 130 feet inside of the existing 8-inch diameter PVC LCRS header that passes through the existing temporary low point in Phase IV. TPS-5 conveys leachate to the Main Leachate Pump Station. TPS-5 will be removed when PPS-B is activated at the beginning of waste filling in Phase VI Lift 7B.

4.6 TEMPORARY WELLPOINT DEWATERING SYSTEM IN PHASE IV, CAPACITY 0 TO 12,000 GPD

In July 1996, the HCSWMD completed construction of the temporary wellpoint dewatering system in Phase IV. The wellpoint dewatering system was designed to provide a supplemental leachate removal method so that the HCSWMD could bring the leachate depth in Phase IV to the depth outlined in the LMP. The wellpoint dewatering system consists of forty wellpoints installed in two parallel rows, spaced on 40-foot centers within the estimated sump area in Phase IV. The wellpoint dewatering is connected by discharge manifolds to a vacuum assisted dewatering pump. The leachate from the temporary dewatering system is pumped to the existing TPS-3 via a 6-inch diameter header pipe.

The temporary dewatering system was designed to remove the accumulated leachate in Phase IV. The wellpoint dewatering system will remain in place as long as needed to provide assurance that the leachate depth does not exceed the LMP goals. The HCSWMD plans to remove the wellpoint dewatering system prior to the beginning of waste filling in Phase VI Lift 7F. The HCSWMD may elect in the future to remove the wellpoint dewatering system prior to filling in Lift 7F if it can be demonstrated that the LMP goals can be maintained without the temporary dewatering system.

4.7 MAIN LEACHATE PUMP STATION (MLPS), CAPACITY 240 GPM

The MLPS consists of a 7-foot square, (inside dimension) below-grade concrete sump with dual vertical pumps (i.e., one operating and one stand by). From the MLPS, leachate is conveyed to the 575,000-gallon storage tank at the on-site LTRF. The pump in operation is set for a 24-hour operation cycle with the "on" float at 4 feet from the sump bottom and the "off" float at 2 feet from the sump bottom.

4.8 STORAGE TANK , CAPACITY 575,000 GALLONS

The leachate level in the storage tank will be maintained to provide for the maximum storage capacity possible. The tank will be maintained with an average low level of 6 feet or 180,000 gallons (3 days storage) to ensure enough leachate is available for the LTRF to operate without interruptions. When levels below 6 feet are reached in the tank, leachate hauling and recirculation will be temporarily reduced or stopped. Similarly, an action level will be established for high level of 11 feet (320,000 gallons) in the storage tank. A level of 11 feet provides for a remaining storage capacity of 180,000 gallons (3 days storage) to ensure enough storage capacity is available for the SCLF pump stations to operate without interruptions. When levels are above 11 feet, treatment, hauling, and/or recirculation will be increased.

4.9 LEACHATE TREATMENT AND RECLAMATION FACILITY AVERAGE CAPACTIY 60,000 GALLONS PER DAY

In December 1994, the HCSWMD constructed an on-site leachate treatment and reclamation facility (LTRF). The LTRF consists of a PACT carbon activated treatment system. The LTRF system is described in detail in the following documents:

- Section 4 of the Design Report Leachate Management System Hillsborough County Southeast Landfill by SCS dated July 10, 1991.

- Initial Operational Period Evaluation Report for the Leachate Treatment and Reclamation Facility, Southeast County Landfill Hillsborough County, Florida by SCS dated July 2, 1996.

- Evaluation of the Leachate Treatment and Reclamation Facility January through September, 1996, Southeast County Landfill Hillsborough County, Florida by SCS dated August 25, 1997.

Once the leachate has been treated, it is pumped through a 4-inch diameter single-walled HDPE pipe to the treated effluent holding basin (described below). From the holding basin, the treated effluent is pumped through the spray irrigation system and used to water the areas of the SCLF with fair grass cover that have not received final cover. Excess treated effluent is transported to two off-site County wastewater treatment plants.

4.7 TREATED EFFLUENT STORAGE POND, CAPACITY 120,000 GALLONS

The treated effluent storage pond receives treated effluent from the LTRF. The pond is lined with 80-mil thick HDPE and provides for temporary treated effluent storage of 120,000 gallons plus 2 feet of freeboard. Using the existing staff gage in the pond, the pond is maintained at a high depth of 4 feet and a low depth of 6 inches. Treated effluent recirculation to the landfill or off-site hauling is increased if pond levels reach the high level of 4 feet during times when irrigation is not allowed. Similarly, if levels are below 6 inches then the irrigation, recirculation, and off-site hauling are temporarily reduced.

4.8 IRRIGATION PUMP STATION, CAPACITY 250 GPM

The irrigation pump station consists of a 5-foot inside square below-grade concrete sump with dual vertical pumps (i.e., one operating and one stand by). From the irrigation pump station, leachate is conveyed to the spray irrigation system on the landfill. The pump in operation is set manually depending on weather conditions.

- Section 4 of the Design Report Leachate Management System Hillsborough County Southeast Landfill by SCS dated July 10, 1991.

- Initial Operational Period Evaluation Report for the Leachate Treatment and Reclamation Facility, Southeast County Landfill Hillsborough County, Florida by SCS dated July 2, 1996.

- Evaluation of the Leachate Treatment and Reclamation Facility January through September, 1996, Southeast County Landfill Hillsborough County, Florida by SCS dated August 25, 1997.

Once the leachate has been treated, it is pumped through a 4-inch diameter single-walled HDPE pipe to the treated effluent holding basin (described below). From the holding basin, the treated effluent is pumped through the spray irrigation system and used to water the areas of the SCLF with fair grass cover that have not received final cover. Excess treated effluent is transported to two off-site County wastewater treatment plants.

4.10 TREATED EFFLUENT STORAGE POND, CAPACITY 120,000 GALLONS

The treated effluent storage pond receives treated effluent from the LTRF. The pond is lined with 80-mil thick HDPE and provides for temporary treated effluent storage of 120,000 gallons plus 2 feet of freeboard. Using the existing staff gage in the pond, the pond will be maintained at a high depth of 4 feet and a low depth of 6 inches. Treated effluent recirculation to the landfill or off-site hauling will be increased if pond levels reach the high level of 4 feet during times when irrigation is not allowed. Similarly, if levels are below 6 inches then the irrigation, recirculation, and off-site hauling will be temporarily reduced.

4.11 IRRIGATION PUMP STATION, CAPACITY 250 GPM

The irrigation pump station consists of a 5-foot inside square below-grade concrete sump with dual vertical pumps (i.e., one operating and one stand by). From the irrigation pump station, leachate is conveyed to the spray irrigation system on the landfill. The pump in operation is set manually depending on weather conditions.

SECTION 5

PERFORMANCE EVALUATION

The governing criteria of the LCRS is that it must maintain leachate levels at or below the levels required by Section 62-701.400(3), FAC, the operation permit, and as required by this Leachate Management Plan. Leachate levels in a landfill are a function of the impingement rate (e), the leachate travel distance (L), slope of the liner (tanβ), and the hydraulic conductivity of the drainage layer (k) (Giroud, 1992). The equation to estimate the leachate head over the liner, in the absence of pore pressure, is as follows:

$$T_{max} = \frac{CL\,[\,(4e/k + (\tan\beta)^2)]^{1/2} - \tan\beta)}{2\cos\beta}$$

Where:

T_{max}	=	Maximum head over liner (inches)
L	=	Length of horizontal projection of the leachate collection layer from top to collector (meters)
e	=	Impingement rate (meter/sec)
k	=	Saturated hydraulic conductivity of the drainage layer (m/sec)
tanβ	=	Slope to collection pipe (dimensionless)
C	=	Constant (39.37 inch/meter)

The LCRS at the SCLF has been installed; therefore, modification of these variables was not considered. The only two ways to further minimize head over the liner at this point is to reduce the leachate drainage length (L) and the impingement rate (e). The HCSWMD has completed the addition of tire chip trenches at 200 feet of center to the LCRS in Phases V and VI. This improvement reduces the drainage length of the existing conditions from 400 feet on center to 200 feet on center. Additionally, to reduce the impingement rate during the initial filling sequence, the HCSWMD will incorporate the use rain tarps over Lifts 7A and 7B.

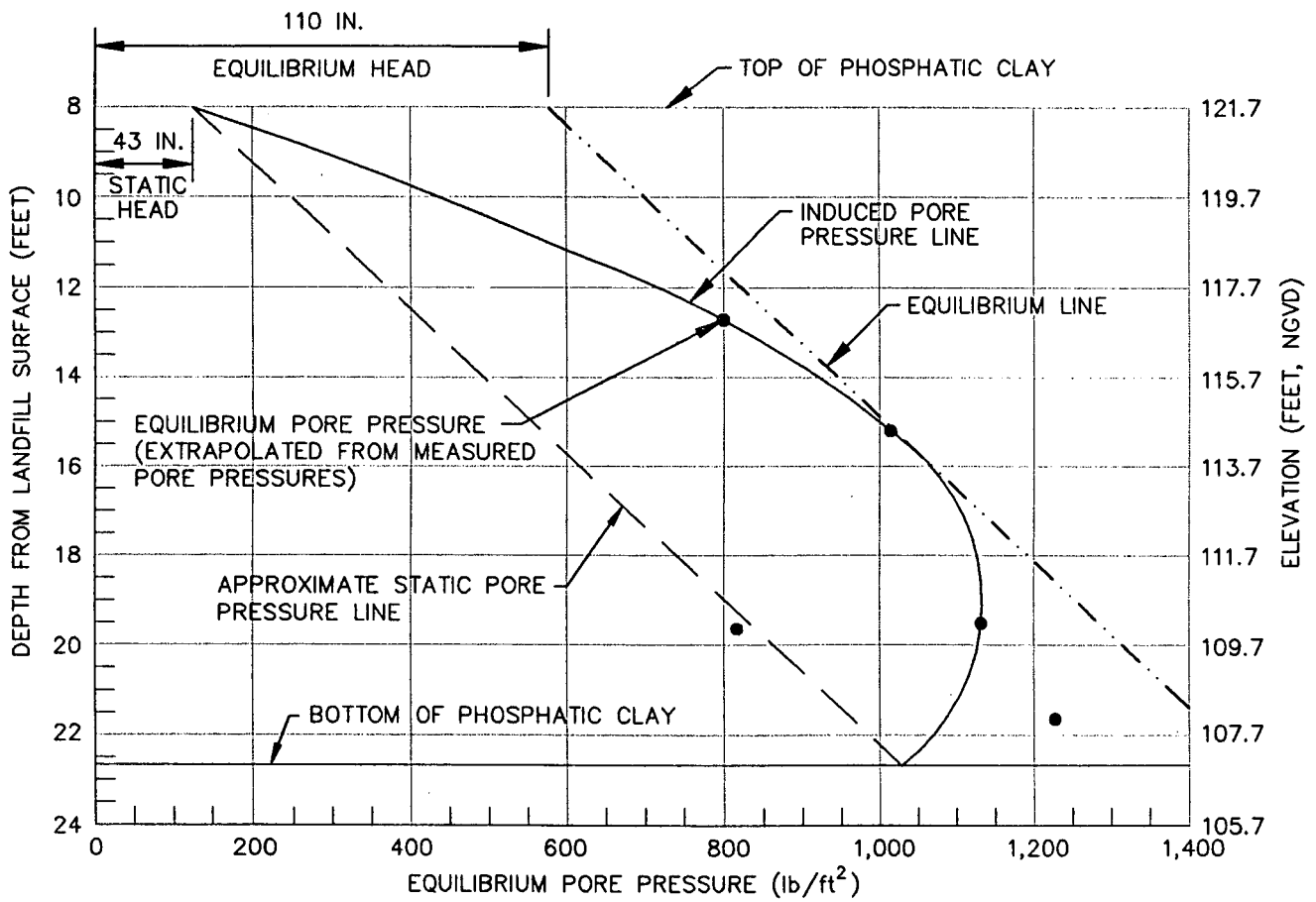
The Hydraulic Evaluation of Landfill Performance (HELP) model and the Giroud equation were used to evaluate the proposed improvements. The head over liner was calculated for areas within Phases V and VI that exhibited the longest distance for the leachate to travel to reach a collection point. For the evaluation, the varying slope of the phosphatic clay was calculated at approximately 0.5 percent. The estimated performance of the configurations evaluated are summarized in Table 5-1. Table 5-1 accounts for head over the liner including the clays upward pore pressure as measured by Ardaman and associates, Inc. in March 1994 (Figures 5-1 and 5-2). The configurations applicable to existing conditions at the SCLF are Scenarios No. 5, 6, and 7. As previously stated, results indicate that the SCLF will maintain a leachate head over the liner of 12 inches or less during routine landfill operation.

TABLE 5-1. LEACHATE COLLECTION AND REMOVAL SYSTEM ANALYSIS, SOUTHEAST COUNTY LANDFILL

Scenario	Description	Depth Over Liner		Clay Slope[2] (%)	Pipe Distance[3] (feet)	Head Over Liner Including Clay Pore Pressure[4]	
		FDEP[1] Equation (inches)	HELP Model (inches)			Year 1 (110 inches)[5]	Year 7 (43-inches)[5]
	Existing Configuration						
1	Beginning of filling sequence.	124	81	0.5	400	14	N/A
2	Beginning of filling sequence using tarp on non-active areas.	<1	<1	0.5	400	-109	-42
3	After placement of 30 ft. waste.	19	3	1.6	400	-91	-40
4	Final Closure.	9	<1	1.6	400	-101	-42
	New Trenches Configuration						
5	Beginning of filling sequence.	75	55	0.5	200	-35	N/A
6	Beginning of filling sequence using tarp on non-active areas.	<1	<1	0.5	200	-109	-42
7	Intermediate filling using intermediate cover over non-active areas. (Lifts 7C through 7D, 15 feet of waste).	12	5	1.0	200	-98	-38

Table5-1.doc Revised date: 12/31/98

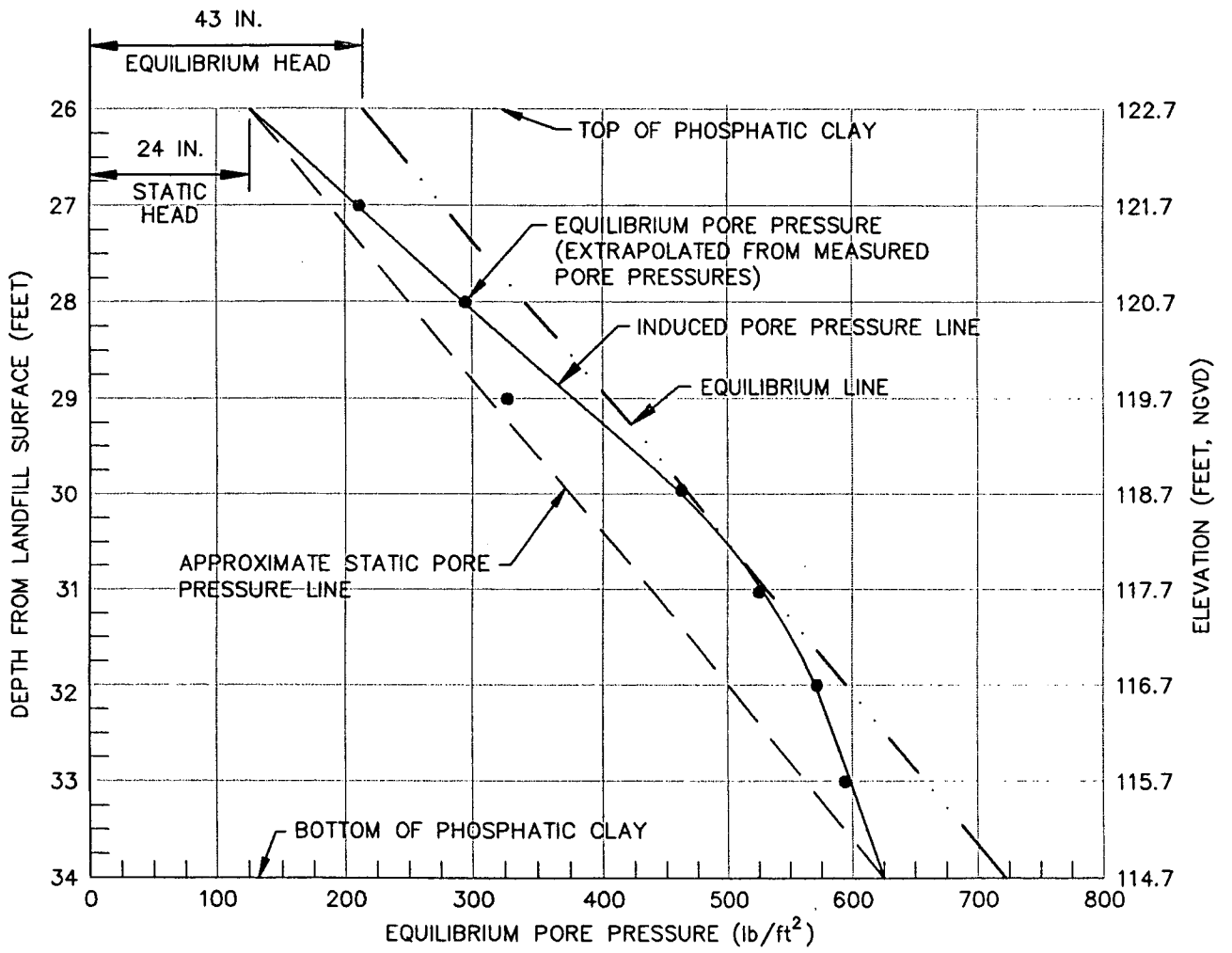
1. Moore's Equation as modified by J. P. Giroud and presented in the FDEP memorandum entitled "Municipal Solid Waste Landfill Alternate Design Closure Guidance" dated February 10, 1995.
2. Top of the clay as it slopes towards the collection pipe.
3. Distance leachate travels to reach collection pipe.
4. (-) represents an upward gradient.
5. Upward pore pressure based on loading and consolidation curves prepared by Ardaman and Associates, Inc. dated March 7, 1994.



SOURCE: GEOTECHNICAL INVESTIGATION BY ARDAMAN & ASSOCIATES, INC.
DATED MARCH 7, 1994.

SCS ENGINEERS

Figure 5-1. Pore Pressure Versus Depth Relationship at 1.3 Years.



SOURCE: GEOTECHNICAL INVESTIGATION BY ARDAMAN & ASSOCIATES, INC. DATED MARCH 7, 1994.

SCS ENGINEERS

Figure 5–2. Pore Pressure Versus Depth Relationship at 6.7 Years.

SECTION 6

MONITORING

Leachate depth and phosphatic clay settlement records continue to be maintained on site and are reported on a monthly basis to FDEP and the EPC. Copies of the updated forms used are included in Attachment B. Leachate monitoring will continue as outlined in the LMP. The piezometer will continue be used to monitor the leachate depth over the liner in Phase IV. When Phase VI is activated the HCSWMD will use the level indicator of PPS-B to monitor the leachate depth in the SCLF. The HCSWMD will monitor both locations until it can be demonstrated that the LMP goals, as outlined in Sections 6.1 and 6.2, can be achieved by maintaining the proposed levels at PPS-B. At that time, the Phase IV piezometer will be removed and PPS-B will become the compliance monitoring point for the SCLF.

To facilitate monitoring operations and gather accurate data, the HCSWMD installed four flow meters to quantify leachate removal volumes. The meters were installed at the Temporary Pump Station No. 3 (measures leachate removal quantity from TPS-3 and TPS-5), the truck bypass at the Leachate Treatment and Reclamation Facility (LTRF), the truck bypass and the treated effluent pond, and the dewatering system in Phase IV.

A significant reduction in leachate depth over the liner has been realized since the HCSWMD initiated the continuous leachate removal from TPS-5 and the temporary dewatering system. The reduction trends in the data collected from January 1995 through November 1998 are shown in Table 6-1.

TABLE 6-1 LEACHATE DEPTHS AND QUANTITY REMOVED

Monitoring Locations	1995	1996	1997	1998
Phase IV Piezometer (Average inches)	58.6	35.9	23.4	21.7
Total Leachate Removed (million gallons)	29.3	28.1	26.3	29.3

6.1 PHASE IV MONITORING

The piezometer in Phase IV will be used to monitor the leachate depth over the liner in Phase IV until it can be demonstrated that the LMP goals can be maintained by maintaining the proposed levels at PPS-B. After the demonstration is completed, the HCSWMD may elect to remove the piezometer in Phase IV. The performance of the LCRS will be evaluated on a daily basis, Attachment C presents the daily evaluation report form that will be used. The evaluation and record keeping forms will be revised as operating conditions

change. The action criteria are included on the daily evaluation form per the following conditions:

- Normal operation will be obtained with leachate depth over the liner between 12 inches and 24 inches. The HCSWMD will achieve this condition in April or May of each year and will strive to maintain this condition. If this condition is not achieved during the month of April or May of each year, the HCSWMD will evaluate the LCRS performance and will provide a report with recommendations to the FDEP and EPC.

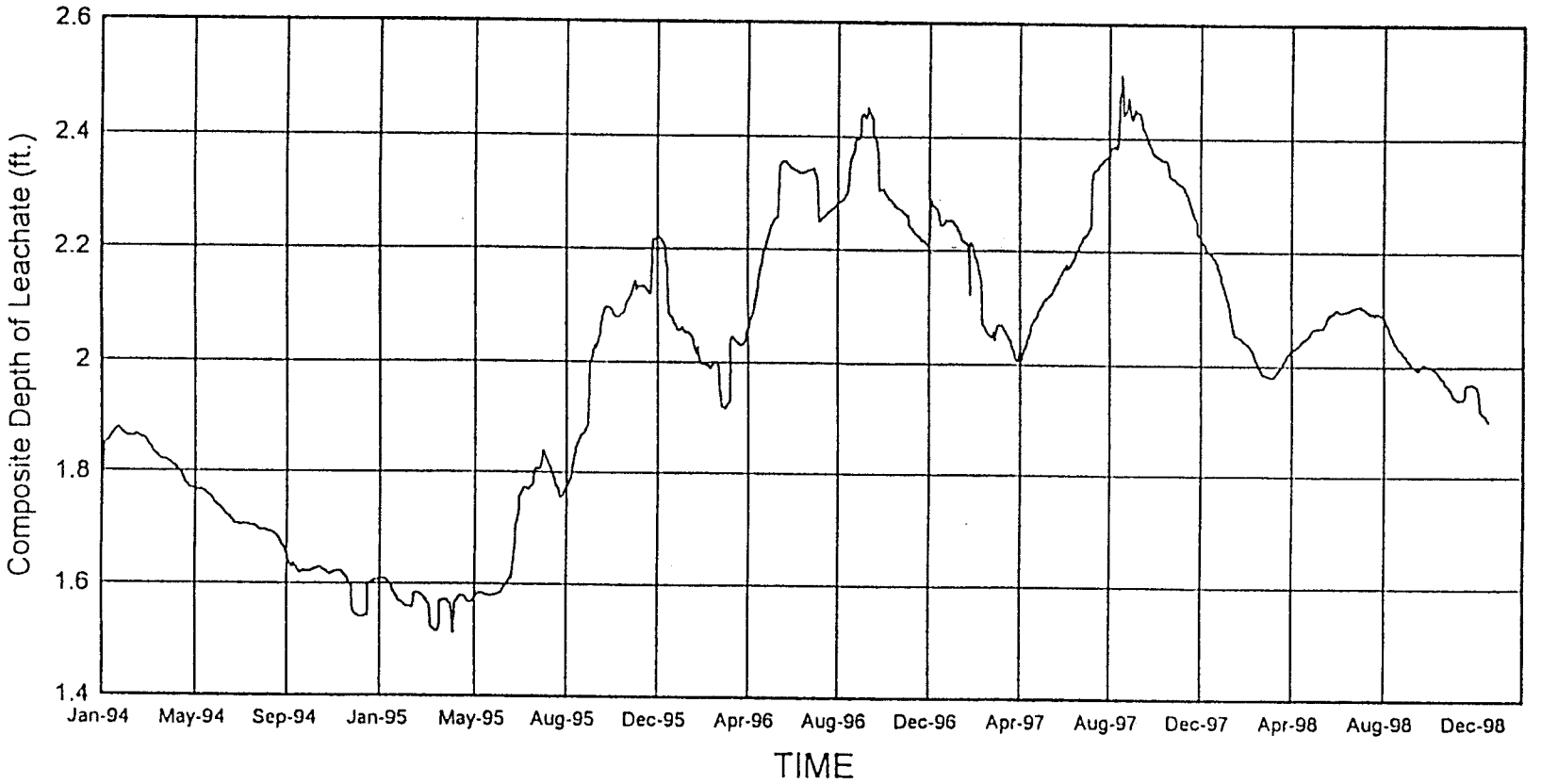
- High level operation will be obtained with leachate depth over the liner between 24 inches and 30 inches. This condition may be maintained for several months each year but will not exceed 30 inches during routine landfill operations. For this condition, accelerated leachate removal may be necessary.

These conditions, developed from Figure 6-1, will ensure that the system is managed so that the actual head of leachate over the liner is maintained at 12 inches or less (i.e., taking into account the pore pressures in the phosphatic clays during consolidation).

6.2 PHASE VI MONITORING

As Phases V and VI are loaded with refuse, settlement will continue in these areas to create an ultimate low point in Phase VI. The settlement calculations by Ardaman for the landfill liner system were presented in the original permit application and are still valid. The Permanent Pump Station B (PPS-B) was placed in the projected low point and will become the primary leachate collection point in the SCLF after Phase VI is activated. PPS-B was designed to maximize the performance of leachate collection and removal system by allowing unimpeded flow of leachate into the sump.

PPS-B will be equipped with a level indicator to be located at the control panel near PPS-A. The HCSWMD will monitor the level on a daily basis; Attachment C presents the daily evaluation report form that will be used. Maintaining the operation of the PPS-B such that the leachate level in the vault does not exceed 24 inches from bottom will provide reasonable assurance that the SCLF will maintain a leachate head (i.e., effective head taking into account consolidation pore pressures in the phosphatic clays after consolidation) over the liner of 12 inches or less during routine landfill operation.



1. STEADY STATE COMPOSITE HYDROGRAPH INCLUDES SPRAY IRRIGATION APPLICATION OF 60,000 gpd AND AVERAGE EFFLUENT RECIRCULATION OF 12,200 gpd.
2. DRAINAGE LAYER=0.005 cm/s AND WASTE LAYER=0.0001 cm/s. PEAK DEPTH=2.51 FT. AVERAGE DEPTH=1.99 FT.

SCS ENGINEERS

Figure 6-1. Five Year Hydrograph-Composite Depth Above Liner.

SECTION 7

NOTIFICATIONS

The FDEP and the EPC will be notified of any equipment failure or event that disrupts the routine operation of the LCRS. As indicated in the 1994 Operation Permit Renewal Section 5.2, the person responsible for operation of the SCLF is the Landfill Site Manager, HCSWMD, currently Mr. Meredith Matthews. He reports to the Landfill Services Executive Manager, HCSWMD, currently Ms. Patricia V. Berry. The HCSWMD will continue to evaluate the performance of the LMP and will propose modifications as necessary to accomplish the LMP objective and continue the proper management of leachate at the SCLF.

SECTION 8

REFERENCES

Application for New Stormwater Discharge Facility Construction Permit, Southeast County Landfill, CDM, February, 1983.

Application for Permit to Construct and Operate a Solid Waste Resource Recovery and Management Facility, Southeast County Landfill, CDM, February, 1983.

Construction Permit Application Phases V and VI Improvements, Southeast County Landfill, Hillsborough County, Florida, SCS Engineers, June 26, 1998.

Construction Plans, Phases II through VI, Southeast County Landfill, CDM, May, 1984.

Construction Quality Assurance Monitoring of Phase V and VI of the Southeast Landfill, Hillsborough County, Florida, GeoSyntec Consultants, May, 1992.

Contract Documents Including Initial Construction Plans and Specifications for Southeast County Landfill, as amended by the "as-built" Construction Drawings, CDM, January, 1994.

Evaluation of Filling Schedules and Stability Analysis for Southeast Sanitary Landfill, Hillsborough County, Florida, Ardaman & Associates, Inc., July, 1989.

Florida Administrative Code (FAC), Chapter 62, April 23, 1997.

Hillsborough County Solid Waste Management Department (HCSWMD).

Hydrogeological Investigation, Southeast County Landfill, Ardaman & Associates, Inc., February, 1983.

Operation Permit Renewal Application, Southeast Landfill, Hillsborough County, Florida, SCS Engineers, December, 1988.

Permanent Pump Station B, Construction Permit Application and Design Report, Southeast Landfill, Hillsborough County, Florida, SCS Engineers, October 15, 1997.

Schroeder, P.R., Peyton, R.L., McEnroe, B.M., and Sjostrom, J.W., The Hydrologic Evaluation of Landfill Performance (HELP) Model, U.S. EPA, October, 1988.

Waste Management Inc. of Florida (WMI).

ATTACHMENT A

LIFT 7- PHASES V AND VI SEQUENCE DRAWINGS

December 31, 1998

ATTACHMENT B

LEACHATE BALANCE REPORT AND SETTLEMENT DATA FORMS

December 31, 1998

TABLE 1. LEACHATE WATER BALANCE REPORT FORM
NOVEMBER 1998
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA

I	II			III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII
	Area (acres)																	
Day	final	active	int.	Rainfall (in.)	Depth in Effluent Pond (in.)	Est. Depth Over Liner (in.)	Pumped From Sta. No 3 (gal.)	Pumped From Sta. No. 5 (gal.)	Leachate Pumped to LTRF (gal.)	Leachate in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Cont./ Evaporation (gal.)	Effluent Pond Storage (gal.)	Effluent Irrigation Evaporation (gal.)	Effluent Dust Cont./ Evaporation (gal.)	Total Effluent Hauled (gal.)	Landfill Evaporation (gal.)
1	25.2	5	90.2	0	0	NR	*3,100*	*81,380*	84,480	NR	0	0	0	0	0	0	0	0
2	25.2	5	90.2	0	0	26.0	3,100	79,090	82,190	124,000	0	198,000	3,000	0	0	0	0	2,400
3	25.2	5	90.2	0	0	27.0	3,100	77,870	80,970	127,000	0	60,000	3,000	0	0	0	0	2,400
4	25.2	5	90.2	2.22	0	28.0	3,100	85,690	88,790	190,000	0	60,000	0	0	0	0	0	0
5	25.2	5	90.2	0.13	0	27.0	3,100	74,245	77,345	202,000	0	72,000	0	0	0	0	0	0
6	25.2	5	90.2	0	0	25.0	3,100	67,785	70,885	173,000	0	72,000	3,000	0	0	0	0	2,400
7	25.2	5	90.2	0	0	24.5	3,100	72,450	75,550	274,000	0	36,500	4,000	0	0	0	0	3,200
8	25.2	5	90.2	0	0	NR	*3,100*	*72,450*	75,550	NR	0	0	0	0	0	0	0	0
9	25.2	5	90.2	0	0	25.0	3,100	74,100	77,200	317,000	0	43,000	3,000	0	0	0	0	2,400
10	25.2	5	90.2	0	0	24.5	3,100	78,100	81,200	302,000	0	72,000	3,000	0	0	0	0	2,400
11	25.2	5	90.2	0	0	24.5	3,100	73,730	76,830	282,000	0	90,000	6,000	0	0	0	0	4,800
12	25.2	5	90.2	0	0	24.5	3,100	73,540	76,640	248,000	0	103,000	6,000	0	0	0	0	4,800
13	25.2	5	90.2	0	0	25.0	3,100	74,820	77,920	219,000	0	114,000	3,000	0	0	0	0	2,400
14	25.2	5	90.2	0	0	25.5	3,100	75,595	78,695	331,000	0	49,000	6,000	0	0	0	0	4,800
15	25.2	5	90.2	0	0	NR	*3,100*	*75,595*	78,695	NR	0	0	0	0	0	0	0	0
16	25.2	5	90.2	0	0	24.0	385	74,880	75,265	345,000	0	72,000	6,000	0	0	0	0	4,800
17	25.2	5	90.2	0	0	27.5	1,950	70,765	72,715	331,000	0	72,000	6,000	0	0	0	0	4,800
18	25.2	5	90.2	0	0	26.5	2,485	71,905	74,390	374,000	0	30,000	4,000	0	0	0	0	3,200
19	25.2	5	90.2	0	0	25.5	2,450	67,360	69,810	360,000	0	90,000	7,000	0	0	0	0	5,600
20	25.2	5	90.2	0	0	25.0	510	69,270	69,780	331,000	0	72,000	10,000	0	0	0	0	8,000
21	25.2	5	90.2	0.15	0	25.5	3,374	69,852	73,225	389,000	0	109,000	9,000	0	0	0	0	7,200
22	25.2	5	90.2	0	0	NR	*3,374*	*69,852*	73,225	NR	0	0	0	0	0	0	0	0
23	25.2	5	90.2	0	0	25.0	3,199	70,149	73,348	360,000	0	126,000	7,000	0	0	0	0	5,600
24	25.2	5	90.2	0	0	27.0	5,734	69,878	75,612	360,000	0	84,000	9,000	0	0	0	0	7,200
25	25.2	5	90.2	0.28	0	27.5	5,226	66,934	72,160	435,000	0	24,000	8,000	0	0	0	0	6,400
26	25.2	5	90.2	0	0	NR	*5,226*	*66,934*	72,160	NR	0	0	0	0	0	0	0	0
27	25.2	5	90.2	0	0	23.0	3,558	65,012	68,570	429,000	0	48,000	6,000	0	0	0	0	4,800
28	25.2	5	90.2	0	0	22.0	3,610	63,658	67,268	461,000	0	115,000	6,000	0	0	0	0	4,800
29	25.2	5	90.2	0	0	NR	*3,610*	*63,658*	67,268	NR	0	0	0	0	0	0	0	0
30	25.2	5	90.2	0	0	22.0	6,749	62,244	68,993	475,000	0	78,000	12,000	0	0	0	0	9,600
Total				2.8			97,939	2,158,789	2,256,728		0	1,889,500	130,000	0	0	0	0	104,000
Daily Average					0	24.3	3,498	71,960	75,224	297,560	0	78,729	5,910	0	0	0	0	4,730
Monthly Average					0	20.2	3,265	71,960	75,224	247,967	0	62,983	4,330	0	0	0	0	3,470

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Notes:

1. NR = No Records.
2. Column II, total area with waste is 120.4 acres (Phases I-IV).
3. Columns III and IV, field measured. Column III, Trace is less than 0.01 inches and is not included in total.
4. Column V, measured from depth in Phase IV Piezometer.
5. Column VII calculated by subtracting VI from flow meter reading.
6. Column VIII, quantity from flow meter.
7. Column IX, calculated from depth in 575,000 gal. leachate tank.
8. Columns X and XIV, quantities from flow meters.
9. Columns XI, XII, XV, and XVI, quantities calculated from truck weight and flow meter.
10. Column XVII, 80% of the daily values from Columns XII, XIV and XV.
11. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
12. Daily average calculated by dividing the total by the active days in the month.
13. Monthly average calculated by dividing the total by the number of days of the month.

TABLE 2. FIELD DATA ENTRY FORM
NOVEMBER 1998
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
									Leachate Hauled							Effluent Hauled		
Day	Active Area (ac.)	Piezometer Phase IV (in.)	Phase IV LCRS Cleanout (in.)	Phase III LCR Cleanout (in.)	Pump Sta. No. 4 (in.)	Pump Sta No. 3 Reading (gal.)	Landfill Flow Meter Pump Sta. No. 5 (gal.)	Depth in 575K Tank (ft.)	Contractor (gal.)	County (gal.)	Leachate Dust Cont./ Evaporation (gal.)	Rainfall (in.)	Depth in Effl. Pond (in.)	Leachate Treated at LTRF (gal.)	Effluent Irrigation Evaporation (gal.)	Contractor (gal.)	County (gal.)	Effluent Dust Cont./ Evaporation (gal)
1	5	NR	NR	NR	NR	*1,358,960*	*2,988,940*	NR	0	0	0	0	0	0	0	0	0	0
2	5	26.0	NR	NR	NR	1,362,060	3,073,420	8.4	198,000	0	3,000	0	0	0	0	0	0	0
3	5	27.0	NR	NR	NR	1,365,160	3,155,610	4.3	60,000	0	3,000	0	0	0	0	0	0	0
4	5	28.0	NR	NR	NR	1,368,260	3,236,580	4.4	60,000	0	0	2.22	0	0	0	0	0	0
5	5	27.0	NR	NR	NR	1,371,360	3,325,370	6.6	72,000	0	0	0.13	0	0	0	0	0	0
6	5	25.0	NR	NR	NR	1,374,460	3,402,715	7.0	72,000	0	3,000	0	0	0	0	0	0	0
7	5	24.5	NR	NR	NR	1,377,560	3,473,600	6.0	36,500	0	4,000	0	0	0	0	0	0	0
8	5	NR	NR	NR	NR	*1,380,660*	*3,549,150*	NR	0	0	0	0	0	0	0	0	0	0
9	5	25.0	NR	NR	NR	1,383,760	3,624,700	9.5	43,000	0	3,000	0	0	0	0	0	0	0
10	5	24.5	NR	NR	NR	1,386,860	3,701,900	11.0	72,000	0	3,000	0	0	0	0	0	0	0
11	5	24.5	NR	NR	NR	1,389,960	3,783,100	10.5	90,000	0	6,000	0	0	0	0	0	0	0
12	5	24.5	NR	NR	NR	1,393,060	3,859,930	9.8	103,000	0	6,000	0	0	0	0	0	0	0
13	5	25.0	NR	NR	NR	1,396,160	3,936,570	8.6	114,000	0	3,000	0	0	0	0	0	0	0
14	5	25.5	NR	NR	NR	1,399,260	4,014,490	7.6	49,000	0	6,000	0	0	0	0	0	0	0
15	5	NR	NR	NR	NR	*1,402,360*	*4,093,185*	NR	0	0	0	0	0	0	0	0	0	0
16	5	24.0	NR	NR	NR	4,950	4,171,880	11.5	72,000	0	6,000	0	0	0	0	0	0	0
17	5	27.5	NR	NR	NR	5,335	4,247,145	12.0	72,000	0	6,000	0	0	0	0	0	0	0
18	5	26.5	NR	NR	NR	7,285	4,319,860	11.5	30,000	0	4,000	0	0	0	0	0	0	0
19	5	25.5	NR	NR	NR	9,770	4,394,250	13.0	90,000	0	7,000	0	0	0	0	0	0	0
20	5	25.0	NR	NR	NR	12,220	4,464,060	12.5	72,000	0	10,000	0	0	0	0	0	0	0
21	5	25.5	NR	NR	NR	12,730	4,533,840	11.5	109,000	0	9,000	0.15	0	0	0	0	0	0
22	5	NR	NR	NR	NR	*16,104*	*4,607,065*	NR	0	0	0	0	0	0	0	0	0	0
23	5	25.0	NR	NR	NR	19,477	4,680,290	13.5	126,000	0	7,000	0	0	0	0	0	0	0
24	5	27.0	NR	NR	NR	22,676	4,753,638	12.5	84,000	0	9,000	0	0	0	0	0	0	0
25	5	27.5	NR	NR	NR	28,410	4,829,250	12.5	24,000	0	8,000	0.28	0	0	0	0	0	0
26	5	NR	NR	NR	NR	*33,636*	*4,901,410*	NR	0	0	0	0	0	0	0	0	0	0
27	5	23.0	NR	NR	NR	38,862	4,973,570	15.1	48,000	0	6,000	0	0	0	0	0	0	0
28	5	22.0	NR	NR	NR	42,420	5,042,140	14.9	115,000	0	6,000	0	0	0	0	0	0	0
29	5	NR	NR	NR	NR	*46,030*	*5,109,408*	NR	0	0	0	0	0	0	0	0	0	0
30	5	22.0	NR	NR	NR	49,640	5,176,675	16.0	78,000	0	12,000	0	0	0	0	0	0	0

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Notes:
1. NR = No Records.
2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
3. Columns II-IX , XIII and XIV, field measured.
4. Column XIII, Trace is less than 0.01 inches.
5. Column IV, if level exceeds 24 inches, leachate withdrawal from landfill must increase.
6. Column III, Phase IV piezometer began monitoring on 7/10/95.
7. Columns VII, XV and XVI, quantities from flow meters.

TABLE 3. 1998 LEAC. . BALANCE SUMMARY
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

		Leachate Arriving at LTRF		Leachate Leaving LTRF			Effluent Disposal			Inflow/Outflow For LTRF		
Month	Rainfall (in.)	Leachate Hauled to LTRF from HHLF/TRLF (gal.)	Leachate from SELF Pumped to LTRF (gal.)	Total Leach. Hauled From LTRF (gal.)	Leachate Dust Control / Evap. From LTRF (gal.)	Leachate Treated at LTRF (gal.)	Total Eff. Hauled (gal.)	Effluent Dust Control/ Evaporation (gal.)	Effluent Irrigation / Evaporation (gal.)	Total Inflow To LTRF (gal.)	Total Outflow From LTRF (gal.)	Net Change in Storage For Month (gal.)
January	4.1	0	3,423,300	2,730,000	46,000	0	0	0	0	3,423,300	2,776,000	647,300
February	9.7	0	3,077,220	2,773,500	50,000	0	0	0	0	3,077,220	2,823,500	253,720
March	7.1	0	3,004,230	2,965,600	83,000	0	0	0	0	3,004,230	3,048,600	-44,370
April	0.4	0	2,757,220	2,858,600	98,000	0	0	0	0	2,757,220	2,956,600	-199,380
May	0.8	0	2,299,310	1,798,300	115,000	0	0	0	0	2,299,310	1,913,300	386,010
June	1.3	0	1,892,775	1,923,000	94,000	0	0	0	0	1,892,775	2,017,000	-124,225
July	7.9	0	2,463,725	2,201,300	90,000					2,463,725	2,291,300	172,425
August	6.8	0	2,463,725	2,042,400	92,000	0	0	0	0	2,463,725	2,134,400	329,325
September	17.3	0	2,700,000	2,343,900	37,000	0	0	0	0	2,700,000	2,380,900	319,100
October	6.7	0	2,988,940	3,056,200	84,000	0	0	0	0	2,988,940	3,140,200	-151,260
November	2.8	0	2,256,728	1,889,500	130,000	0	0	0	0	2,256,728	2,019,500	237,228
December										0	0	0
YTD Total	64.9	0	29,327,173	26,582,300	919,000	0	0	0	0	29,327,173	27,501,300	

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Note:

1. If the effluent bypass 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 Falukenburg Road Waste Water Treatment Facility until the Leachate Treatment Plant resumes operation.

TABLE 4. APPROXIMATE TOP OF CLAY ELEVATIONS
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FL

	PHASE III	PHASE IV			PHASE VI			PERMANENT PUMP STATION B			
DATE	LCRS Cleanout	LCRS Cleanout	Piezometer	Pump Control Well	Pump Station No. 3	Pump Station No. 4	Settling Plate	NW	NE	SE	SW
December 28, 1993	NR	NR	NR	NR	*116.81*	NR	NR	N/A	N/A	N/A	N/A
December 5, 1994	NR	NR	NR	NR	*116.61*	NR	NR	N/A	N/A	N/A	N/A
January 26, 1995	NR	NR	NR	NR	*116.44*	*119.73*	NR	N/A	N/A	N/A	N/A
February 22, 1995	119.89	118.09	NR	NR	*116.44*	*119.72*	NR	N/A	N/A	N/A	N/A
July 13, 1995	NR	NR	NR	NR	*116.35*	*119.70*	NR	N/A	N/A	N/A	N/A
November 21, 1995	119.81	117.80	116.45	116.55	*116.30*	*119.65*	NR	N/A	N/A	N/A	N/A
December 7, 1995	NR	NR	NR	NR	NR	NR	117.35	N/A	N/A	N/A	N/A
June 6, 1996	119.75	117.69	116.20	116.26	*116.20*	*119.59*	116.96	N/A	N/A	N/A	N/A
October 2, 1996	119.80	117.66	116.14	116.21	*116.00*	*119.69*	116.95	N/A	N/A	N/A	N/A
January 20, 1997	119.70	117.54	115.97	116.00	*115.89*	*119.60*	116.85	N/A	N/A	N/A	N/A
May 2, 1997	119.68	117.43	115.92	115.94	*115.89*	*119.60*	116.79	N/A	N/A	N/A	N/A
August 1, 1997	119.70	117.50	115.88	115.89	*115.89*	*119.60*	116.81	N/A	N/A	N/A	N/A
January 13, 1998	119.68	117.48	115.83	115.83	*115.90*	*119.60*	116.81	N/A	N/A	N/A	N/A
April 6, 1998	119.66	117.40	115.75	115.71	*115.90*	*119.60*	116.71	N/A	N/A	N/A	N/A
September 3, 1998	119.65	117.25	115.69	115.62	115.64	119.50	116.54	N/A	N/A	N/A	N/A
December 2, 1998	119.62	117.30	115.64	115.55	115.70	119.55	116.57	N/A	N/A	N/A	N/A

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Notes: 1. Values in italic represent adjusted elevations per field exploration on 5/18/98.
2. Vertical Datum based on feet NGVD 1929.

LEACHATE DEPTH/SUMMARY DATA FORM
SOUTHEAST COUNTY LANDFILL
(Month/Year) _____

Date	Active Area (Acres)	(1) Piezometer Phase IV (inches)	(1) Pump Station B (inches)	Flow Meter Pump Station B (gallons)	Flow Meter Dewatering System (gallons)	Flow Meter Pump Sta. No. 5 (gallons)	Depth in 500K Tank (feet)	Leachate Hauled		Leachate Recirculation (gallons)	Rainfall (inches)
								Contractor (gallons)	County (gallons)		
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

(1) If depth is greater than 24 inches (2.0 feet): Contact Supervisor immediately. Complete Evaluation Report Form.

Comments:

_____

_____

_____

_____

Prepared by: _____

LEACHATE DEPTH/SUMMARY DATA FORM
SOUTHEAST COUNTY LANDFILL
(Month/Year) _____

Date	Active Area (Acres)	(1) Piezometer Phase IV (inches)	(1) Pump Station B (inches)	Flow Meter Pump Station B (gallons)	Flow Meter Dewatering System (gallons)	Flow Meter Pump Sta. No. 5 (gallons)	Depth in 500K Tank (feet)	Leachate Hauled		Leachate Recirculation (gallons)	Rainfall (inches)
								Contractor (gallons)	County (gallons)		
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											

(1) If depth is greater than 24 inches (2.0 feet): Contact Supervisor immediately. Complete Evaluation Report Form.

Comments:

_____

_____

_____

_____

Leachate Hauled Month Total: _____

Prepared by: _____

Daily Field Data Entry Form

Date: _____ Time: _____

Location	Measurement
Piezometer – Phase IV (Well point)	
Dewatering Flow Meter (Flow Meter Reading)	
Pump Station No. 5 (Flow Meter Reading)	
Pump Station B (Flow Meter Reading)	
Pump Station B (Level Reading)	
Depth in Effluent Pond	
Main Leachate Pump Station Effluent Bypass (Flow Meter Reading)	
Main Leachate Treatment Plant Leachate Bypass (Flow Meter Reading)	
Depth in 500K Tank	
Rainfall	
Effluent pH Reading	
Effluent Recirculation	

Additional Comments _____

Prepared by: _____

ATTACHMENT C

FACILITY INSPECTION AND EVALUATION FORMS

December 31, 1998

DAILY LOG

DATE: _____

INSPECTOR NAME: JOHN WONG

WEATHER CONDITIONS _____

LOW _____ 'S TO HIGH _____ 'S

OPERATIONAL ACTIVITIES

1.

2.

3.

4.

5.

6.

7.

8.

9.

CONSTRUCTION ACTIVITIES:

1.

PROPERTY MAINTENANCE ACTIVITIES (REPAIRS):

1. JANITOR AND MAINTENANCE ITEMS PER MONTHLY SCHEDULE

INSPECTED SITE FOR: _____

HOUSEKEEPING _____

CONDITION OF FACILITY _____

SPILLS _____

CONDITION OF COVER:

DAILY _____

INTERMEDIATE _____

FINAL _____

INSPECTED CONDITION OF STOMRWATER DISCHARGE:

GOOD _____ FAIR _____ POOR _____

RAIN GAUGE READINGS:

STATION #1 _____ STATION #2 _____ STATION #3 _____

STATION #4 _____ STATION #5 _____ STATION #6 _____

PUMP STATION READINGS:

STATION #3 _____ STATION #4 _____ STATION #5 _____

STATION "A" _____ STATION "B" _____ MAIN _____

CONDITION REQUIRING ATTENTION

LEACHATE RECIRCULATION:

GALLONS RECIRCULATED _____ A.M. _____ P.M.

LEACHATE RECIRCULATED IN ACCORDANCE WITH THE FDEP LATEST LEACHATE MANAGEMENT PLAN

INITIAL _____

ANY PROBLEMS OR CORRECTIVE ACTIONS REQUIRED <u>NOTED BY CONTRACTOR:</u>

_____

EQUIPMENT

EQUIPMENT	NO. ON SITE	NO. OPERATIONAL
DOZERS	1	
COMPACTORS	2	
SCRAPERS	1	
LOADERS	1	
TRACTORS	3	
EXCAVATORS	1	
GRADERS	1	
TANKERS	1	
PICK-UPS	5	
ROLL-OFFS	0	
DUMP TRUCKS	1	
MISCELLANEOUS	8	

COMMENTS:

BACKUP COMPACTOR AVAILABLE IN ORLANDO AND FT. MYERS SITES

PERSONNEL

DEPARTMENT	NO. ASSIGNED TO SITE*	NO. ON SITE
ADMINISTRATIVE	3	
OPS SUPERVISOR	1	
MAINTENANCE	0	
OPERATIONS	5	
LABORERS	4	
SECURITY	2	
ENGINEERING	1	
TRUCK DRIVERS	0	
TEMP LABORERS	0	
SUB-CONTRACTORS		
OTHER @		

COMMENTS:

DAILY LEACHATE COLLECTION AND REMOVAL SYSTEM
EVALUATION REPORT
SOUTHEAST COUNTY LANDFILL
(Month/Year)_____

Action	Date															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Piezometer Phase IV																
Normal Operation, depth 12 inches and less than or equal to 24 inches.																
High Level Operation, depth greater than 24 inches and less than or equal to 30 inches. Increase leachate removal and contact supervisor immediately.																
Pump Station B																
Normal Operation, level is equal or less than 24 inches.																
High Level Operation, confirm proper operation of the pump and level indicator. Contact supervisor immediately.																
500,000 Gallon Tank at LTRF																
Normal Operation.																
If level is greater than 11 feet, increase treatment, hauling, or recirculaiton.																
If level is greater than 6 feet, decrease or stop hauling, recirculation.																
Effluent Pond																
Normal Operation.																
If level is 6 inches or less, stop irrigation, recirculation, hauling.																
If level is greater than 4 feet, increase irrigation, reciruclation, hauling.																
Observe runoff of effluent to stormwater basins?																
No.																
If yes, contact supervisor immediately, Stop spray irrigation. Identify Basin, Runoff Type and Remedial Action taken. Runoff Type / To Basin 1=Severe / A, B, C, D 2= Moderate 3=Minor																

Comments/Remedial Action:

Prepared by:

leachfrm.xls
Revised 10/20/98

DAILY LEACHATE COLLECTION , ..) REMOVAL SYSTEM
EVALUATION REPORT
SOUTHEAST COUNTY LANDFILL
(Month/Year)_____

Action	Date														
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Piezometer Phase IV															
Normal Operation, depth 12 inches and less than or equal to 24 inches.															
High Level Operation, depth greater than 24 inches and less than or equal to 30 inches. Increase leachate removal and contact supervisor immediately.															
Pump Station B															
Normal Operation, level is equal or less than 24 inches.															
High Level Operation, confirm proper operation of the pump and level indicator. Contact supervisor immediately.															
500,000 Gallon Tank at LTRF															
Normal Operation.															
If level is greater than 11 feet, increase treatment, hauling, or recirculaiton.															
If level is greater than 6 feet, decrease or stop hauling, recirculation.															
Effluent Pond															
Normal Operation.															
If level is 6 inches or less, stop irrigation, recirculation, hauling.															
If level is greater than 4 feet, increase irrigation, reciruclation, hauling.															
Observe runoff of effluent to stormwater basins?															
No.															
If yes, contact supervisor immediately, Stop spray irrigation. Identify Basin, Runoff Type and Remedial Action taken. Runoff Type — To Basin 1=Severe — A, B, C, D 2= Moderate 3=Minor															

Comments/Remedial Action:

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Prepared by:

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