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Hillsborough County  
Florida

Office of the County Administrator  
Patricia G. Bean  
November 3, 2004

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Mr. John Morris, P.G.  
Department of Environmental Protection  
Southwest District-Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
  
NOV - 9 2004  
  
SOUTHWEST DISTRICT  
TAMPA

Re: **Southeast County Landfill  
Operations Permit No. 35435-006-SO  
Semi-Annual Analytical Data Report, August 2004**

Dear Mr. Morris:

In accordance with the Landfill Operation Permits No. 35435-006-SO and 35435-007-SO, the Hillsborough County Solid Waste Management Department (SWMD) is pleased to provide the August 2004 analytical data report (ADR) for the semi-annual water quality monitoring at the Southeast County Landfill (SCLF). Samples were collected on August 23 through August 25 by the SWMD Field Sampling Team. Due to problems experienced by our contracted laboratory, Elab, during the month of September, the sample cooler containing the VOC vials for the Section 7 wells was lost during shipment to their laboratory in Tennessee. After notification by Elab on October 1, 2004, these wells were re-sampled on October 6, 2004 for VOCs and field parameters only.

The results from the October 6, 2004 sampling exhibited VOC and chlorinated solvent contaminants in two of the Section 7 detection wells, TH-59 and TH-60. Based on these results, an additional round of sampling was conducted on October 14, 2004 that included the two detection wells and the leak detection system. The results from these samples confirmed the presence of VOCs and chlorinated solvents in the two wells and the leak detection system.

The presence of contaminants in these two wells represents a serious concern to the SWMD. However, when one looks at the contaminants observed in the leak detection system in comparison to the water quality observed in TH-59 and TH-60, the principals of known contaminant transport are not effectively applied to this scenario. We would expect the more soluble compounds, such as methylene chloride to appear first in the detection wells if a liner system failure is contributing these contaminants to the groundwater. Methylene chloride does appear in these wells in the October 14, 2004 event, but the equipment blank exhibited this compound at a higher concentration than in the wells.

AUG. 2004  
SAMPLING  
EVENT

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Additionally, the concentrations of benzene in these detection wells is higher than what would be expected if the source area was somewhere in the liner system. The distance of travel from the closest location in the bottom of the liner to the detection wells is approximately 100 feet, and based on the known behavior of benzene in groundwater, it would be anticipated to decrease in concentration significantly over this distance. Furthermore, based on the estimated values of groundwater velocity at the site, the time required for a contaminant to enter the groundwater system and migrate to these two detection wells appears to be greater than the ten months that Section 7 has been actively receiving waste.

Based on the water quality comparisons of the contamination observed in the two down gradient monitoring wells and the leak detection system, the SWMD intends to conduct additional investigative sampling to assist in determining the source of the contaminants observed. It is our intent to utilize our in-house Field Sampling Team to sample the wells and leak detection system again, and have our contracted consultant SCS Engineers collect additional samples concurrently to provide an additional level of quality assurance in evaluating this situation. The two separate sets of samples shall be sent to two independent laboratories, and analyzed for EPA Method 8260 and the major cations and anions. This split sampling event is scheduled for November 9, 2004.

The water quality observed across the rest of the site remains consistent with the historical data set. The surficial aquifer monitoring wells continue to exhibit pH values below the Secondary Drinking Water Standard's (SDWS) acceptable range. Iron is consistently observed above the SDWS within the surficial aquifer at the SCLF. The SWMD maintains the position that the concentrations of iron and low pH values can be attributed to the previous usage of the property as a phosphate mining area. The violations of the water quality criteria and the overall impact to the future groundwater monitoring activities at the SCLF are discussed in parameter specific details herein.

### ***GENERAL PARAMETERS***

#### **pH**

The surficial aquifer background and detection monitoring wells continue to indicate pH values below the SDWS acceptable range of 6.5 to 8.5 pH units. The pH values range from 4.70 to 6.23 pH units. Surface water sites 3A in Long Flat Creek, and 1-D in Smith Lake exhibit pH values of 6.16 and 6.45, respectively. The surface water discharge monitoring point 3C2 exhibited a value of 6.82 pH units. No unusual conditions or changes in pH values within any of the groundwater monitoring wells or surface water sites were observed during this sampling event.

#### **Total Dissolved Solids**

Total dissolved solids were observed above the Secondary Drinking Water Standard (SDWS) of 500 milligrams per liter (mg/l) in the surficial aquifer detection wells, TH-59 and TH-60 at concentrations of 630 mg/l and 730 mg/l, respectively. All the other groundwater monitoring wells were observed below the SDWS for total dissolved solids during this sampling event.

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### Radium 226

The Weeks' private supply well indicated concentrations of radium 226 at 5.6 picocuries per liter (pCi/l), which is above the Primary Drinking Water Standard (PDWS) of 5 pCi/l. This supply well has periodically been observed to exhibit radium 226 slightly above the MCL. No unusual conditions or changes in radium 226 values were observed during this sampling event.

### METALS

#### Iron

Iron concentrations in all thirteen surficial aquifer monitoring wells were above the applicable SDWS of 0.300 mg/l. The highest concentration for iron was 8.3 mg/l in detection well TH-58. The SCLF private supply wells owned by Weeks and Holland exhibited levels of iron above the SDWS with concentrations of 0.500 mg/l and 1.5 mg/l, respectively. No unusual conditions or changes in iron concentrations within any of the groundwater monitoring wells or surface water samples at the site were observed during this event.

#### Nickel

Nickel was observed in TH-59 and TH-60 above the PDWS at concentrations of 0.12 and 0.16 mg/l, respectively. The concentration of nickel in these wells is lower in this sampling event than the previous sampling conducted in February, 2004. Nickel has consistently been observed in these wells since their initial sampling in October 2003, which was prior to waste being placed in the Section 7 cell.

#### Turbidity

In accordance with the April 3, 2003 Approval of Corrective Action Plan letter from the Florida Department of Environmental Protection (FDEP), the SWMD has included the recorded turbidity data for the period from March 2004 through August 2004. A summary table of the turbidity data obtained from the surface water sampling points 3A, 3B2B and 3C2 located in Long Flat Creek is provided within this ADR. The turbidity measurements have been within the compliance level of 29 nephelometric turbidity units (NTU) above the background (upstream) level, with exception of July 5, 2004. A turbidity reading of 39 NTU was observed at the discharge point, 3C2. A follow up reading on July 6, 2004 showed that the turbidity quickly returned to within compliance numbers. It continues to be apparent that the implementation of the stormwater improvement plan has been effective in reducing the turbidity entering Long Flat Creek, and the SWMD and Waste Management are working together to ensure the stormwater management system continues to function as designed. Future reporting of turbidity readings recorded at the SCLF shall continue to be submitted within each semi-annual ADR, and any violations will be immediately reported as agreed..

### ORGANIC PARAMETERS

The organic parameters tested under EPA Method 8260 were originally sampled between August 20 through 23, 2004. As previously discussed, our contracted laboratory, Elab, Inc. sent the

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volatile organics to their secondary laboratory in Tennessee due to a power outage from Hurricane Francis. During transportation of the shipment, the samples for the Section 7 detection wells were lost; therefore, re-sampling for volatile organics was conducted on October 6, 2004.

**Benzene**

Benzene was observed in TH-59 and TH-60 above the PDWS of 1 ug/l at concentrations of 3.8 and 2.7 ug/l, respectively. On October 14, 2004, the SWMD re-sampled the two detection wells and the leak detection system. The two wells and the leak detection system were sampled for EPA Method 8260 for volatile organic compounds. Results from these samples confirmed the presence of benzene and various chlorinated solvents in the two detection wells and the leak detection system. The SWMD intends to further evaluate the conditions in this area, with assistance from our contracted consultant SCS Engineers. Additional sampling of the two wells and the leak detection system has been scheduled for Tuesday November 9, 2004, and split samples shall be collected by the SWMD and SCS Engineers for analysis by EPA Method 8260 and the major cations and anions at two independent laboratories.

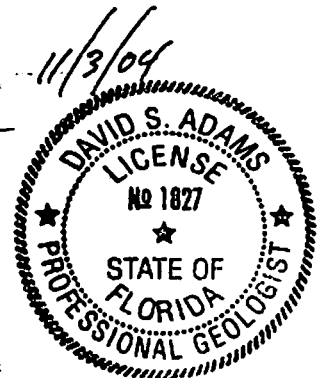
Enclosed for your review is a detailed site location map, the analytical data summary tables, an additional analytical data summary table of TH-59 and TH-60 and the leak detection system, a groundwater elevation data summary table, a surficial aquifer groundwater elevation contour diagram, a data summary table of turbidity measurements, a data summary table for the private wells, copies of the letters sent to the owners of the private wells, and the complete laboratory analytical data report sheets.

Should you have any questions or require any additional information, please feel free to contact me at (813) 276-2944 or via e-mail at [adamssds@hillsboroughcounty.org](mailto:adamssds@hillsboroughcounty.org).

Sincerely,

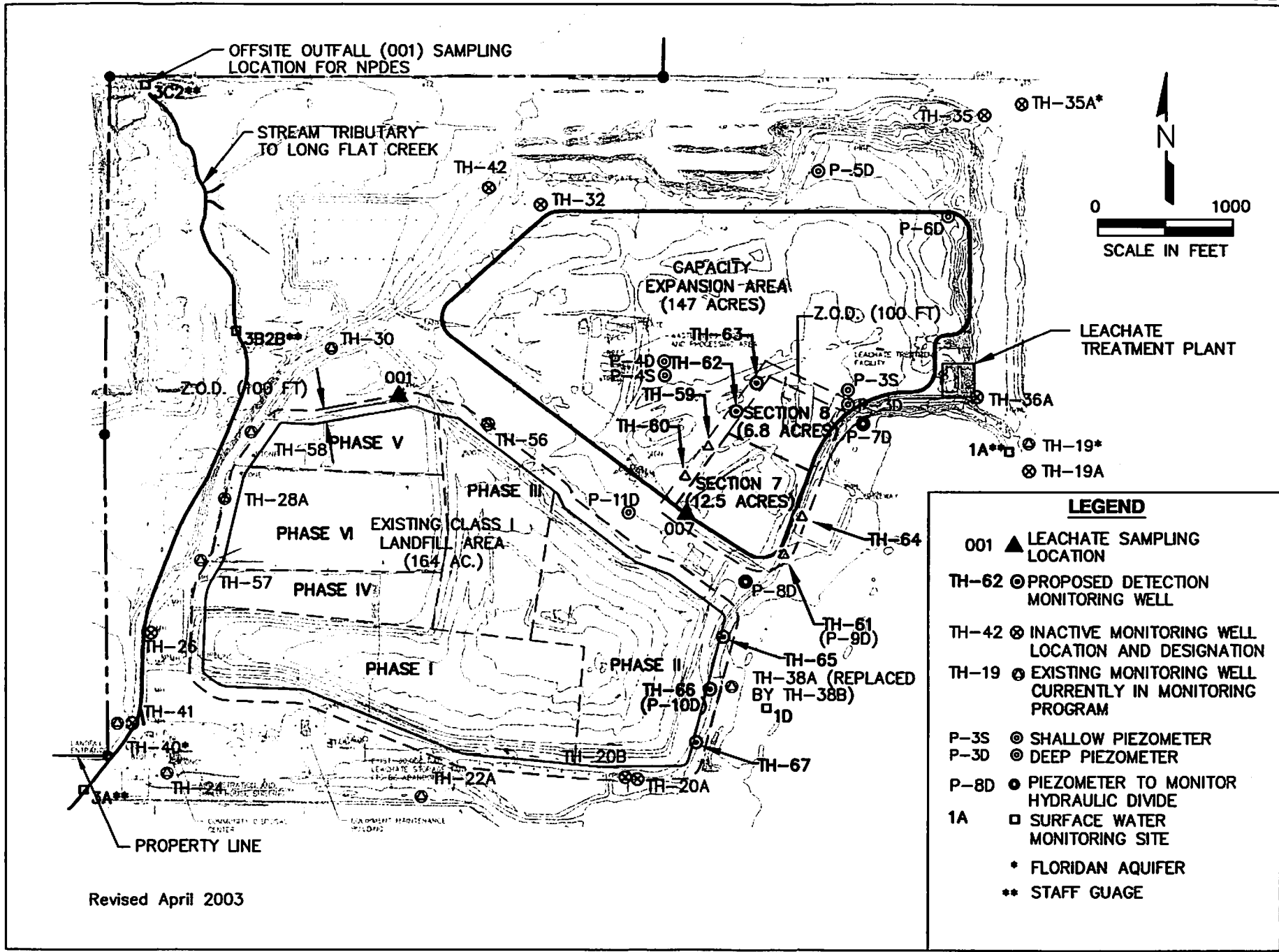


David S. Adams, P.G.  
Environmental Manager  
Solid Waste Management



DSA/mdt  
Enclosures

- xc: Daryl Smith, Director, SWMD, w/o enclosures  
Patricia Berry, Section Manager, SWMD, w/o enclosures  
Ernest Ely, Landfill Manager, WM, Southeast Landfill  
Carolyn McCreedy, Engineer, WM, Southeast Landfill  
Larry Ruiz, Project Manager, SCS Engineers  
Chongman Lee, Department of Environmental Protection  
Paul Schipfer, Environmental Protection Commission  
Irene Barnes, Southeast Hillsborough Civic Association



Revised April 2003

LEGEND	
001 ▲	LEACHATE SAMPLING LOCATION
TH-62 ⊙	PROPOSED DETECTION MONITORING WELL
TH-42 ⊗	INACTIVE MONITORING WELL LOCATION AND DESIGNATION
TH-19 ⊙	EXISTING MONITORING WELL CURRENTLY IN MONITORING PROGRAM
P-3S ⊙	SHALLOW PIEZOMETER
P-3D ⊙	DEEP PIEZOMETER
P-8D ⊙	PIEZOMETER TO MONITOR HYDRAULIC DIVIDE
1A □	SURFACE WATER MONITORING SITE
*	FLORIDAN AQUIFER
**	STAFF GUAGE

Southeast County Landfill Site Location Map

# Summary of Analytical Constituents Detected in Leachate Sump A August August 23, 2004

GENERAL (mg/l) PARAMETERS	LEACHATE SUMP A
conductivity (umhos/cm) (field)	12460
pH (field)	6.89
total dissolved solids (mg/l)	5000
temperature (°C) (field)	34.7
chloride (mg/l)	2300
ammonia nitrogen (mg/l as N)	240
nitrate (mg/l as N)	0.081
dissolved oxygen (mg/l) (field)	0.33
<b>LEACHATE SUMP A</b>	
Metals: (mg/l)	LEACHATE SUMP A
iron	22
arsenic	0.017
cadmium	0.0088
chromium	0.086
copper	0.12
barium	0.16
lead	0.15
mercury	0.00072
vanadium	0.087
nickel	0.067
sodium	1600
thallium	BDL
zinc	0.57
<b>LEACHATE SUMP A</b>	
Organics: (µg/l) Organic Parameters Detected	LEACHATE SUMP A
acetone	16
benzene	2
chlorobenzene	2.1
cis-1,2-dichloroethene	0.62
ethylbenzene	7.7
naphthalene	BDL
xylenes	9.6
toluene	2.7
1,4-dichlorobenzene	2.8
BDL=BELOW DETECTION LIMIT NTU=NEPHELOMETRIC TURBIDITY UNITS µg/l=MICROGRAMS PER LITER mg/l=MILLIGRAMS PER LITER	