

41193



Lawton Chiles
Governor

Florida Department of Environmental Protection

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
813-744-6100

Virginia B. Wetherell
Secretary

4029C30075
5029-256427

FAX TRANSMITTAL SHEET

2/2/95
Date

TO: RICHARD TEDDER

DEPT.: SOLID WASTE MANAGEMENT

FAX #: (804) 921 8061

FROM: KIM FORD (FAE 744 6125)

DEPT.: D.E.P., Tampa Office

PHONE: 813-744-6100 or SunCom 542-6100 Ext. 382
FAX(local) 744-6125 or (SunCom) 542-6125

SUBJECT: SE LANDFILL, RFI REVISION

COMMENT: COMMENT ?
SOME REVISIONS ARE AS RESULT
OF OUR MEETING & SOME FROM EPC

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 5

RECEIVED BY: _____

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Department of Environmental Protection

Lawton Chiles
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Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

January 26, 1995

Mr. Daryl Smith, Director
Hillsborough County
Department of Solid Waste
Post Office Box 1110
Tampa, FL 33601

DRAFT

Re: Southeast Landfill, Hillsborough County
Operation Permit Renewal
Pending Permit No.: SO29-256427

Dear Mr. Smith:

This is to acknowledge receipt of the additional information in support of your permit application received January 13, 1995 to operate the solid waste management facility referred to as Southeast Class I Sanitary Landfill.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit remains incomplete. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 17-701, Florida Administrative Code (F.A.C.)]:

1. Please provide a comprehensive Leachate Management Plan that addresses all elements of the landfill's design and operation as described in our meeting on January 31, 1995. This plan should include but not be limited to the following items previously discussed:
 - a. maximum storage of leachate within the landfill not to exceed one foot of hydraulic head;
 - b. the projected annual leachate/water balance for the entire site including quantities of leachate to be stored, hauled and sprayed each month for a wet year and dry year;
 - c. leachate removal rate, pump rates, and pump control settings;
 - d. limiting factors that may affect the performance of any component of the leachate management plan and a contingency plan for corrective actions; and
 - e. record keeping and performance evaluations.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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Mr. Daryl Smith, Director
Hillsborough County

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2. According to SCS's January 13, 1995 letter, calculations indicate temporary drainage ditches and swales are designed for a maximum flow of 50 cfs with a maximum velocity not greater than 6 ft/sec. Are the designs shown in Exhibit "H" for both the existing and proposed temporary conveyances? Are all existing drainage ditches and swales constructed as shown in Exhibit "H", and are they handling a maximum flow of 50 cfs with a maximum velocity not greater than 6 ft/sec?
3. Please provide revised plans showing the location of future sprinkler heads and anticipated dates for installation. Will the future sprinkler heads be installed and operated in the same manner as the existing sprinkler heads? SCS's January 13, 1995 letter states that "the sprinkler system will be expanded into the inactive areas of Phases III and IV". Sheet C3 does not include such expansion.
4. Please explain how the 3.6 feet head was derived from Ardaman's Figures 12 and 13. Ardaman's reports do not explain how the static pore pressure line was estimated as shown in Figures 12 and 13 or why the leachate level was assumed to be 2 feet rather than the actual depth of leachate observed at the time of testing. Did Ardaman measure and record the actual depth of leachate at each test location? Figures 12 and 13 represent conditions that exist at two specific locations, but neither represents the worst case. Will the proposed equilibrium datum still balance at 3.6 feet in Phase I, where consolidation has significantly reduced the upward gradient? Will it still balance on the portions of the exterior synthetic sideliner in Phase I and Phase IV that are not in contact with groundwater and are not balanced by an inward gradient? Since the exterior perimeter berm is built above the 4-foot thick layer of phosphatic clay, how will the pore pressure of the underlying clay maintain a hydraulic gradient in the constructed berm? The test location in Phase I has not been loaded for more than 8 years, has a clay thickness of only 3.5 feet, and represents the existing worst case condition for hydraulic head over the liner. Please provide an additional figure such as Figures 12 and 13 that represents the expected worst case condition for hydraulic head at the test location in Phase I, or explain why this information is not needed. Since loading in Phase I has been delayed for more than the recommended "7 year waiting period", the additional figure is requested to represent conditions that would exist at the latest time of placing an additional lift in Phase I. The additional figure should be supported by the equations used for calculating the hydraulic head over the liner as a result of depth of leachate.

Mr. Daryl Smith, Director
Hillsborough County

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5. Please describe all methods and frequencies of reporting the depth of leachate throughout the landfill, and procedures the County will implement for corrective action to bring the landfill into compliance. Daily logs provided by Waste Management indicate that leachate has been impounded within most of the waste-filled disposal areas since 1990. Recent measurements have shown the depth of leachate to be greater than six feet.
6. Please provide the established minimum and maximum waiting period to ensure sufficient consolidation and a hydraulic head not greater than 12 inches over the liner. SCS states "the lapsed time in Phase I is over 8 years. According to current projections, the time interval between successive lifts should not exceed 7 years again". Ardaman's March 7 and October 25, 1994 reports recommend a "minimum" waiting period for loading Phase I of 7 years. The waiting period can "not exceed 7 years" and be a "minimum" of 7 years.
7. Please describe methods and frequencies of all monitoring for the elevations at the top of clay as it settles and the depth of leachate throughout the landfill to ensure that all leachate is conveyed to points of removal. Ardaman's February 22, 1983 report Figure 6.12 shows the clays are thicker in Phases IV and VI and should settle more than Phase I. SCS's November 18, 1994 report Figure 2 shows that the top of clay is lower in Phase I than Phases IV or VI. FAC Rule 17-701.400(4) requires that the LCRS convey leachate to collection points for removal. Could the top of clay in portions of Phase I settle more than other portions of the landfill and prevent some leachate from being conveyed for removal? SCS has indicated that HCDSW intends to maintain landfill leachate levels as low as possible. What is the lowest depth to which leachate may possibly be removed?
8. Please provide a copy of the long-term agreement with HCPUD for the disposal of leachate at its off-site WWTPs. How many gallons of leachate may be accepted at each WWTP included in the agreement?
9. Please provide a copy of the previously approved designs for each temporary sump in Phase VI, the permanent sump design north of the landfill, and a record drawing for the actual construction of each. If record drawings are not available, please explain why not and provide a current survey to show the elevations of the piping, structure, and top of clay bottom liner at each location. SCS's January 13, 1995 letter explains that the reason for ignoring Waste Management's daily logs that indicated excess leachate over the liner was because "HCDSW and SCS believed the temporary sump had been installed as designed".
10. What were the elevations of the tear and liner toe at top of clay along the anchor trench in Phase II as observed during the recent liner report?

Mr. Daryl Smith, Director
Hillsborough County

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11. Please explain the condition of Basin "D". Is this basin performing as designed?
12. Please provide your response to Ms. Allison Amram's concerns in her January 25, 1995 memorandum attached. You may contact Ms. Amram at (813) 744-6100, extension 336.

Please be advised that a separate construction permit is required for the review and approval of permanent site improvements such as the future downchutes, leachate collection gallery in Phase VI, and closure.

"NOTICE! Pursuant to the provisions of Section 120.600, F.S. and Chapter 17-12.070(5), F.A.C., if the Department does not receive a complete response to this request for information within 30 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you received this letter, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of a timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available."

You are requested to submit your response to this letter as one complete package. On all future correspondence to the Department, please include Robert Butera on distribution. If there are points which must be discussed and resolved, please contact me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management

KBF/ab
Attachment

cc: Patricia V. Berry, Hillsborough County DSW
Robert Gardner, P.E., SCS Engineers
Paul Schipfer, HCEPC
William Kutash, Program Administrator, Waste Management
Robert Butera, P.E., FDEP Tampa
Allison Amram, P.G., FDEP Tampa
Steve Morgan, FDEP Tampa
Richard Tedder, P.E., FDEP Tallahassee

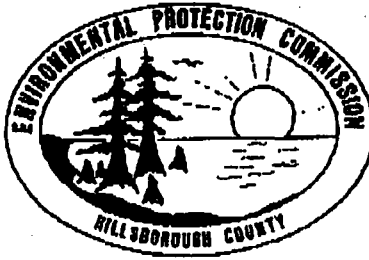
I N T E R O F F I C E M E M O R A N D U M

Date: 01-Feb-1995 02:49pm EST
From: Kim Ford TPA
FORD K@A1@TPA1
Dept: Southwest District Offi
Tel No: 813/620-6100
SUNCOM:

TO: Mary Jean Yon TAL (YON MJ@A1@DER)
TO: Richard Tedder TAL (TEDDER_R@A1@DER)
CC: William Kutash TPA (KUTASH_W@A1@TPA1)
CC: Robert Butera TPA (BUTERA_R@A1@TPA1)
CC: Chris McGuire TAL (MCGUIRE_C@A1@DER)

Subject: SE LANDFILL / JANUARY 31ST MEETING

Thank you for attending. I thought the meeting went quite well. The RFI letter has been revised and will be forwarded to you for your review. The letter as revised addresses the issues related to leachate management as discussed at the meeting. Their proposed concept of establishing one foot of hydraulic head as their new regulatory limit as long as it does not exceed the maximum amount of leachate that can be managed in each year appears to be a reasonable approach. I expect the permit process to move more smoothly with a compliance standard that prevents excessive hauling and is easily acheivable. If you have any further comments or suggestions feel free to share them with us.



COMMISSION
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ENVIRONMENTAL PROTECTION COMMISSION
of Hillsborough County

FAX Transmittal Sheet

DATE: 1/31/95

TO: Kim Ford

FAX Phone: 744 6125 Voice Phone: ext 382

TOTAL NUMBER OF PAGES INCLUDING THIS COVER PAGE: 4

EPC FAX Transmission Line: (813) 272-7144 For retransmission or any FAX problems, call: (813) 272-7104

FROM: Paul Schipfer (circle applicable phone number and organization below)

- | | | |
|--------------------|-------------------------|-----------------------------|
| (813) 272-8530 | (813) 272-5788 | (813) 272-7104 |
| Air Division | Waste Management | Ecosystems Management |
| - Special Programs | - UST Clean-Up | - Environmental Engineering |
| - Air Engineering | - Solid/Hazardous Waste | - Environmental Assessment |
| | - UST Compliance | - Compliance & Enforcement |

SPECIAL INSTRUCTIONS: _____

File:\work\info\FAXTrans.Frm

DRAFT

MEMORANDUM

DATE: January 31, 1995

TO: Kim Ford, P.E., FDEP SW-Permitting

FROM: Paul A. Schipfer, EPC SW-Permitting

SUBJECT: HILLSBOROUGH COUNTY SOUTHEAST LANDFILL INCOMPLETENESS RESPONSE DATED JANUARY 13, 1995, PENDING OPERATING RENEWAL OF PERMIT # 8029-158504

EPC has reviewed the above referenced document. Based on this review, EPC request that the following issues be addressed in your incompleteness response as well:

Note: Questions and issues are numbered to coincide with the applicant's responses in their January 13, 1995 submittal.

#4 In the response the applicant discusses hydraulic head over the liner. EPC is unaware that any of the existing permit conditions allows for hydraulic head;but rather, one foot depth of leachate over the liner. As we are all aware, the issue of one foot of hydraulic head over the liner is a design standard for composite liners presented in 62-701.400(3)(b) 2. This concept is also presented in 62-701.400(3)(c), double liners; however, only one inch of head is allowed on the leak detection liner, that may potentially discharge pollutants to the environment. In no case is a soil only liner presented where hydraulic head of only one foot is discussed. Therefore, I am unable to note an immediate equivalency.

Further, the clay liner system at the Southeast Landfill is in direct hydraulic contact with groundwater. According to Fetter (1988), "(1)t is possible for solutes to move through porous medium by diffusion, even though groundwater is not flowing. Thus, even if the hydraulic gradient is zero, a

solute could still move. In rock and soil with very low permeability, the water may be moving very slowly. Under these conditions, diffusion might cause a solute to travel faster than the groundwater is flowing."¹

Based on the applicant's proposed change in permit condition from one foot of leachate over the liner to one foot of hydraulic head, this issue should be addressed. In addition, will the effects of groundwater flow increase the potential for pollutant discharge when the landfill has a net outward hydraulic gradient? The current permitted landfill would not have to address this issue until the hydraulic conductivity of the liner is significantly reduced due to consolidation. However, with the proposed change, this issue should be addressed now.

#5 I still am unsure if the proposed equilibrium datum of 3.6 feet is accurate for all portions of the landfill. Will it still balance at 3.6 feet in phase I, where consolidation has significantly reduced pore pressure due to 95 percent consolidation, thus reducing the upward gradient? Will it still balance on the portions of the exterior synthetic sideliner in phase I and phase IV that are not in contact with groundwater and are not balanced by an inward gradient?

#6 Based on response #6 the applicant states it is their intention not to permanently store leachate in the landfill. If this is true, justification for the proposed change should address all the issues described above, and the methods of testing should be proposed that will continuously (or at least frequently) evaluate and assure that the hydraulic head over the liner is less than one foot.

Or, the applicant should explain the technical basis why the existing permit condition of one foot of leachate depth can not be complied with, and should propose a best operation plan that can be added as a specific condition.

#7 Since the exterior perimeter berm is built above the 4-foot thick layer of phosphatic clay, how will the pore pressure of the underlying clay maintain a hydraulic gradient in the constructed berm?

Kim Ford - Southeast Landfill
January 31, 1995 **DRAFT**
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#13 Again, I am not clear for the basis of why SCS concluded that "(b)ased on the observed leachate levels within the landfill, it would have been unlikely for leachate to reach the elevation of the damaged geomembrane." What was the elevation of the bottom of the tear of the geomembrane? Please provide methodology and data used to arrive at the expressed conclusions. If this data can not be provided, this issue may need to addressed outside of the permit renewal process.

Reference:

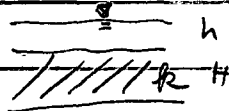
1. Fetter, C. W., Applied Hydrogeology, 2nd. ed., Macmillan Publishing Company, New York, (1988), p. 391.

AGENDA

1. Major Issues
 - A. Leachate Management
 1. Plan
 2. Current Disposal Rates
 3. Status Leachate Treatment and Reclamation Facility
 - B. "Head" vs "Depth"
 1. Applicability
 2. Performance
 3. Conveyance System
 - C. Permit Specific Conditions
 - D. Regulatory Management and Compliance
2. Schedule
 - A. Prepare Draft Permit
 - B. Notice, Public Comment
 - C. Issue Permit

1/30/95 SE LF Cont call w/District

Leach in contact with ground water
Diffusion issue would be



$$Q = k \frac{h+H}{H} A \frac{cm}{sec} (43560 \text{ ft}^2) \left(\frac{3.28 \text{ ft}}{100 \text{ cm}} \right) (7.48 \frac{\text{gal}}{\text{ft}^3}) (60 \frac{\text{sec}}{\text{min}}) (60 \frac{\text{min}}{\text{hr}}) (24 \frac{\text{hr}}{\text{day}})$$
$$k \frac{h+H}{H} (9.234 \times 10^8 \frac{\text{gal}}{\text{cm}^2 \text{ sec}})$$

1' or 3' of 1×10^{-7} clay $\frac{h+H}{H} = 1.33$
 $Q = 123 \text{ gpd}$

1/31/95 mtg

averaging $\approx 125,000 \text{ gpd}$ flow ~~now~~ now.

Leachate monitoring in

Leachate treatment - substantial compliance in Dec 94.

Nitrates tend to cause a problem.

Are installing flow ~~meter~~ meter in sumps

Looking at level recorder for sump.

Looking for back up pump.

Goal - 150,000 gpd recommended max

Ordering 240 gpm pump, $\Rightarrow 345,600 \text{ gpd}$ day

Existing 125 gpm $\Rightarrow 180,000 \text{ gpd}$ day

Hauling 2 long skips per day

$\approx 2 \text{ hr}$ per trip to haul leachate to WWTP

Trailer truck takes about 6000 gal/load

Bob Gordon

issue of head vs depth of leachate

County would like to see permit written 1' of hydraulic head.

County's goal is to remove the leachate from the landfill.

Rim - wants survey of top of clay in phase II to compare with phase I top of clay elevation. Larry is asking them to look about 70' from ramp #3.

500,000 gal leachate storage tank

Pump station #3 - current leachate sump pump.

Leachate generation rate currently about 50,000 gpd.

Sump modifications discussions. Invert pipe currently about 2" of bottom of sump. Discussed installing new sump with lower bottom to where the high level switch is set below the ~~pipe~~ ~~set~~ inlet pipe invert.

Conclusions

- 1- Year plan how leachate will be managed, BMP
- 2- will look at modifying sump.
- 3- DEP to finalize last letter
4. - SCS will respond
5. DEP open to 1' of hydraulic head

6. Sump alteration - consider site improvement
If apta permits issued => minor mod.
If byer permit issued => part of this renewal process.
7. No public notice required for this permit.
8. Plan to continue pumping as much leachate down in LF as possible now.
9. For Allison - get base map that has all the wells on the LF site. Long thinks a survey needs to be done to obtain this. Do not have to be surveyed. Do the best job you can to locate all wells on a base ~~map~~ map if some ones have been surveyed.

* Call FIPR on total sulfur disposed of at landfill.
Will it cause a gas or leachate problem?
let susan know.

Call about slimes settlement

look at comments from Paul & Kim.