

**DO NOT FILE ANY  
CORRESPONDENCE AFTER  
Dec 2004 IN THIS FILE**



Pasco County, Florida

**A.V. BORK**

CODE COMPLIANCE DIVISION

Pasco County Code Compliance  
West Pasco Government Center S-212  
7530 Little Road  
New Port Richey, FL 34654

N.P.R. (727) 847-8171  
D.C. (352) 521-4274  
L.O.L. (813) 929-1317

## Memorandum

Florida Department of  
Environmental Protection

To: File.

Through: Susan Pelz, P.E.

From: Simone Core, P.E.

Date: November 18, 2004

Subject: Enterprise Class III Landfill (177982-001-SC)  
November 1, 2004 Certification Inspection for Cells 1 and 16

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The purpose of this inspection was to certify the construction of Cell 16 and the west and south areas of Cell 1 as required by Specific Conditions #9 of the above-referenced permit. It appeared that Cell 1 was constructed in accordance with the approved plans and permit. Cell 16 contained stormwater. Construction on Cell 2 was almost complete at the time of the inspection.

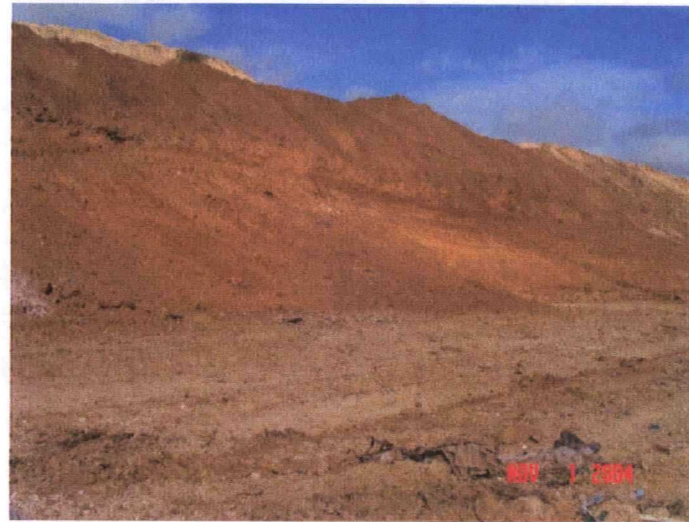
*Cert. inspection  
11/1/04  
Cells 1, 16, 2*



Enterprise Class III Landfill  
November 1, 2004 Permitting Inspection



West portion of Cell 1



West portion of Cell 1



West slope of Cell 1



Working face of Cell 1



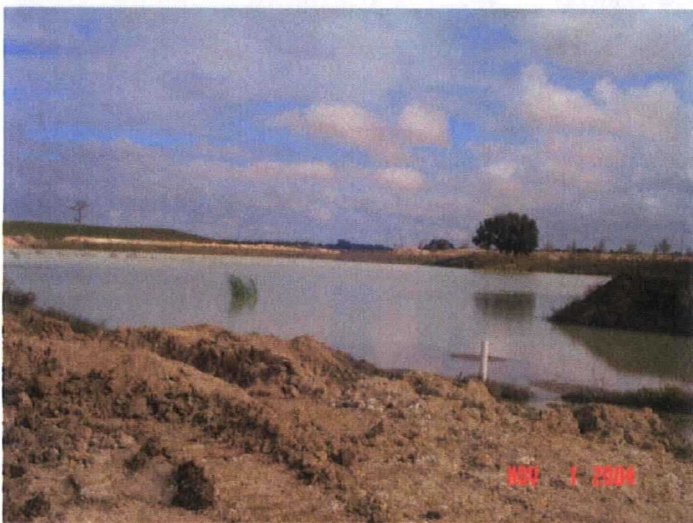
Enterprise Class III Landfill  
November 1, 2004 Permitting Inspection



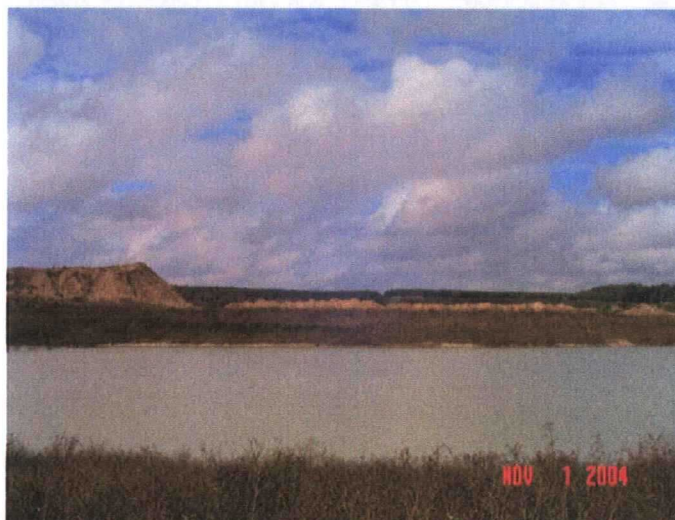
Working face of Cell 1



Working face of Cell 1



Cell 15 (stormwater pond)



Cells 15 and 16 (stormwater pond)



Enterprise Class III Landfill  
November 1, 2004 Permitting Inspection



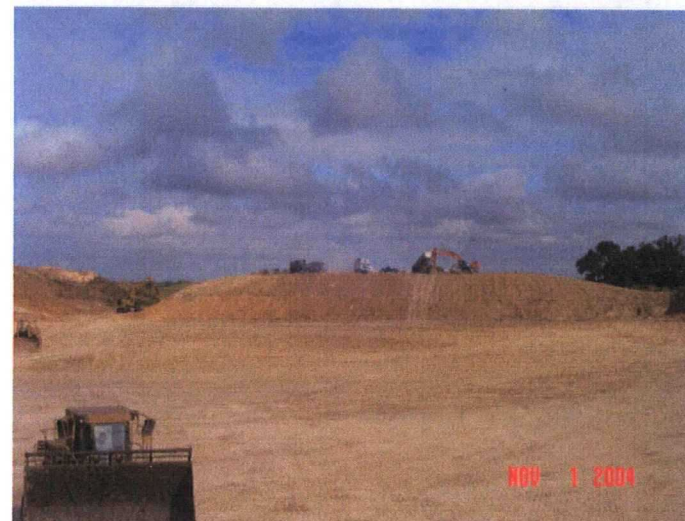
Cell 2 under construction



Cell 2 under construction



Cell 2 under construction



Cell 2 under construction

## Pelz, Susan

---

**From:** Pelz, Susan  
**Sent:** Wednesday, November 10, 2004 3:44 PM  
**To:** Core, Simone  
**Subject:** FW: Angelo's - Enterprise Landfill, Dade City

fyi

-----Original Message-----

From: Jennifer L. Deal, P.E. [mailto:Jennifer.deal@tetrattech.com]  
Sent: Wednesday, November 10, 2004 2:04 PM  
To: Pelz, Susan  
Subject: RE: Angelo's - Enterprise Landfill, Dade City

Susan,

Thank you for the prompt reply. I will discuss this with Angelo's and let you know what they decide.

Jennifer

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Sent: Wednesday, November 10, 2004 1:49 PM  
To: Jennifer.deal@tetrattech.com  
Cc: Core, Simone; Morris, John R.; Kendall, Donna  
Subject: RE: Angelo's - Enterprise Landfill, Dade City

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Let Simone or me know what you want to do.

Thanks,  
Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

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Susan and Simone,

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Jennifer L. Deal, P.E.  
Tetra Tech, Inc.  
Infrastructure Southeast Division  
Florida Operations  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955  
407-839-2066 (Fax)

**Tracking:**

**Recipient**

Core, Simone

**Read**

Read: 11/16/2004 7:13 AM

Enterprise C III  
Construction

**Pelz, Susan**

---

**From:** Jennifer L. Deal, P.E. [Jennifer.deal@tetrattech.com]  
**Sent:** Thursday, November 18, 2004 4:37 PM  
**To:** Pelz, Susan  
**Cc:** Core, Simone  
**Subject:** E-mail on behalf of Angelo's Aggregate Materials



Enterprise  
ter - November

Please see the attached letter from Mr. Dominic Iafrate of Angelo's Aggregate Materials. Hard copies will be sent via fax and U.S. Mail.

November 18, 2004

Ms. Susan Pelz, P.E.  
Southwest District Solid Waste Manager  
Florida Department of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Re: Certification of Construction Completion – Cell 1 – South and West  
Sections – Enterprise Recycling and Disposal Facility – Pasco County

Dear Ms. Pelz;

Hartman and Associates, Inc. submitted a Certification of Construction Completion Form # 62-701.900 (2) on behalf of Enterprise Recycling and Disposal Facility prior to placement of solid waste in the west and south areas of Cell 1. This Certification was hand carried to your office on October 15<sup>th</sup>, 2004. Enterprise Recycling and Disposal Facility provided the fourteen day advanced notice to the Department so that the Department had the opportunity to inspect the balance of Cell 1 in accordance with FAC 62-701.320 (9)(a). The Facility was inspected on November 1<sup>st</sup>, 2004, three days beyond the 14 day required notice, at which time Mr. Jeff Rogers was informed the letter authorizing disposal would be received in a couple of days.

Due to Enterprise Recycling and Disposal Facility attempt to comply with the permitted fill sequence in the active portion of the cell as well as the need to continue to provide disposal for our clients and our transfer facility Enterprise Recycling and Disposal Facility will commence disposal of waste in the west and south portions of Cell 1 on November 19<sup>th</sup>, 2004. In addition a review of the FAC 62-701.320 provides no requirement of a letter approving certification. If you have any questions relating to this letter you may contact Jennifer Deal, P.E. or myself @ 407-839-3955, Ext. 153 and 810-217-0726 respectively.

Sincerely,

Dominic Iafrate

Cc: William Kutash, Program Administrator  
Jennifer Deal, P.E., Hartman & Associates, Inc.

## Core, Simone

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**Sent:** Wednesday, November 10, 2004 1:49 PM  
**To:** 'Jennifer.deal@tetrattech.com'  
**Cc:** Core, Simone; Morris, John R.; Kendall, Donna  
**Subject:** RE: Angelo's - Enterprise Landfill, Dade City

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Jennifer,

The date I had in the last email was incorrect. The Dept. must take action on the currently pending modification by 1/6/05. This is based on last information received 10/08/04.

Sorry for the miscommunication.  
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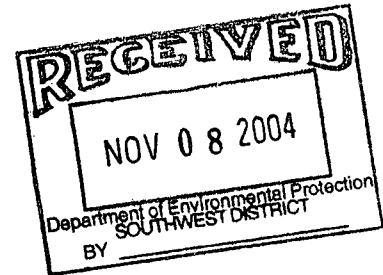
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November 3, 2004

**Via UPS Overnight**

Ms. Debra Zampetti  
**Pasco County - Zoning/Code Compliance Administrator**  
West Pasco Government Center  
7530 Little Road, Suite 140  
New Port Richey, Florida 34654-5598



Subject: **Temporary Air Curtain Incinerator Notification**  
Angelo's Aggregate Materials  
Enterprise Class III Landfill  
County Permit No. CU04-26  
Project No. 03-255.011

Dear Ms. Zampetti:

On behalf of Angelo's Aggregate Materials, HSA Golden is notifying the County Zoning Division of our intension to temporarily operate an air curtain incinerator (ACI) for hurricane storm debris disposal at the above referenced facility. The request to operate an ACI is authorized under the Florida Department of Environmental Protection's Emergency Order no. 04-1659, dated September 27, 2004. This order is currently extended until November 27, 2004, for Pasco County. An Operation Plan specifically for this ancillary facility is attached for your review. We will also obtain approval from the State Division of Forestry prior to ACI operation.

We trust that the information provided sufficient to approve this request. Please call us if you have any questions.

Sincerely,

**HSA GOLDEN**

A handwritten signature in dark ink, appearing to read "James E. Golden".

James E. Golden, P.G.  
Vice President, Principal Hydrogeologist

Attachments

Copy to: Mr. Dominic Iafrate - Mail  
Gerald Figurski, Esquire - UPS  
✓ Mr. Bill Kutash, FDEP Tampa - Mail



**ANGELO'S AGGREGATE MATERIALS COMPANY  
ENTERPRISE CLASS III LANDFILL  
TEMPORARY AIR CURTAIN INCINERATOR OPERATIONS PLAN**

**1.0 GENERAL**

Angelo's Aggregate Materials (Angelo's), Enterprise Class III landfill will operate an Air Curtain Incinerator on the subject 160 acre Class III landfill site. The landfill is currently permitted under FDEP permit no. 177982-002-SO and Pasco County permit no. CU04-26. This plan and the subject permits, shall act as the operation plan for this ancillary operation at the facility.

Under Section 3. "Open Burning," of the FDEP's Emergency Final Order no. 04-1659, dated September 27, 2004, related to storm damage caused by hurricane Jeanne, the Department authorizes agents of local government to conduct open burning of hurricane-generated yard trash and other vegetative debris in air curtain incinerators (ACIs) without prior notice of the DEP, see Attachment A. This ACI operation plan was requested by Pasco County as notice and authorization to operate. Authorization for ACI operation will also be obtained from the Florida Division of Forestry.

**1.1 Site Location and Description**

The subject site is located in Section 5 and Section 8, Township 25 South, Range 22 East, in Pasco County, Florida, as shown on the location map presented in Figure 1. More specifically, the facility is located on Enterprise Road, southeast of Dade City, Florida. Access to the property is from Enterprise Road to the north.

The current landfilling area is in Cell no. 1. The ACI location is to be near the center of the unexcavated or landfilled area more than 1000 feet from the site's boundaries, see Figure 2, Site Plan.

**1.2 Staff Training**

The existing staff will be trained in current burn methods and ACI equipment through interaction with ACI operators and by equipment representatives. Primarily, onsite supervisors will be trained, and in turn, will be responsible for training the remaining staff.

**1.3 Site Preparation**

An area of the Angelo's landfill to receive and burn land clearing debris, yard trash and other storm related wood products was selected on the basis of several factors. These factors are:

- A 600 foot separation from active landfill area;
- Stormwater runoff and control;
- Easy access to ACI and gatehouse; and
- A stable all-weather working surface and access road.

The designated ACI area, located in the central site is relatively level, with a floor of clayey sand and graded to provide a gradual slope in a easterly direction. The site floor is dry and at least 10 feet above the water table. There are no wetlands or other protected land types on the site. The site drawing attached as Figure 2 shows the currently designated ACI area and related site details.

Pursuant to the Emergency Order, the operating ACI pit width will not exceed 12 feet, vertical side walls shall be maintained. The wood waste material will not be loaded into the ACI such that it protrudes above the level of the air curtain. No or low visible emissions conditions will be maintained. Ash will not be allowed to build up in the pit higher than 1/3 the pit depth, or to the point where the ash begins to impede combustion. Removed ash will be allowed to cool, be watered down, and then disposed of in the Class III landfill.

### 1.3.1 Stormwater Management

All stormwater within the Angelo's Class III landfill site is managed on site for the 100 year storm event pursuant to Environmental Resource Permit no. 51-0172489-001. The subject wood burn (ACI) area is within the area covered by this permit and does not increase impervious area.

## 2.0 ACI OPERATION METHODS

### 2.1 Waste Separation

The landfill's system of trained spotters at the entrance and working face are key to the success of the waste separation process. Trucks identified at the entrance as carrying primarily storm generated wood products are directed to dump within the currently designated area of the site used to process these materials. Figure 2, Site Plan, located the currently designated areas to stockpile and process the wood debris and ACI operation.

At the working face, the spotter directs the separation of more mixed loads. Segregated storm debris, yard waste stockpiled near the working face are moved daily to the designated processing areas, as applicable.

### 2.2 CCA Treated Wood Segregation

Angelo's will burn only clean wood or yard trash in the ACI. Painted, treated (preserved), or contaminated wood will not be burned. Chromated-copper arsenate (CCA) pressure treated wood will be accepted for disposal at the Angelo's landfill as C&D debris; however, the following methods will be used to segregate this wood from the vegetative storm debris to be burned by Angelo's spotters.

CCA treated wood should be identified by the following methods: 1) all Class III wastes that are visually identified as wood fencing, decking or pressure treated lumber (such as 4" x 4" posts), should be considered CCA treated; 2) wood with a greenish color; and, 3) railroad ties, telephone poles, or other known outdoor use wood products. Other CCA treated wood identification methods may be used as developed. If any of these visual characteristics are identified, the wood will be

considered CCA treated and not recycled. If CCA treated wood is identified in the wood burning area it will immediately be removed from disposal in the landfill.

### 2.3 Wood Material Storage

Storm generated wood wastes, land clearing debris and yard trash received at Angelo's facility will be burned, or removed within six months, or within the period required to receive 12,000 cubic yards, whichever is greatest. Wood storm debris stockpiled to be burned in the ACI will be stored at least 20 feet from the incinerator within the area.

### 2.4 Equipment Selection and Operation

The following list of equipment, or equivalent, is planned to be on site as needed in the ACI area:

- T539 Air Burners, Inc - Air Curtain Incinerator, or equivalent.
- 950 Front-end loader with rake or track hoe, or equivalent.

The ACI is planned to be operated from 7:00 am to 5:00 pm.; Monday through Friday. Operation will not begin before sunrise and will end before sunset. The ACI will be continually be manned by a trained operator with radio communication.

## 3.0 **FIRE PROTECTION AND CONTROL PROVISIONS**

Angelo's will follow these best management practices to prevent fires at the subject ACI operation:

- An all-weather access road at least 20 feet wide to the wood burning area.
- Interior lanes between wood storage piles of at least 15 feet wide.
- All parts of the unprocessed or processed wood material storage areas will be within 50 feet from access by motorized fire fighting equipment.
- Wood waste storage piles shall be no higher than 15 feet.
- Dade City Fire Department will be immediately contacted upon all fires in the wood storage or landfill areas by calling 911.
- Excess cover soil is available on site from the borrow pit, for use as a fire suppression material. Water application to the wood piles and landfill should be discouraged, unless specified by the Fire Department to protect public property or health.
- Smoking and any type of open burning is strictly prohibited on the landfill site.
- Water to be used to supplement on site soil materials will be supplied by an on site irrigation well near the gate house can supply approximately 50 gpm.

## 4.0 RECORD KEEPING AND REPORTS

Daily records of incoming and incinerated cubic yardage of wood materials will be kept on site for at least one year. These records will be made available for County or DEP inspection.

### 4.1 Site Contacts

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Gatehouse Phone	352 567-7676
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Gatehouse Fax	352 567-9448
---------------	--------------

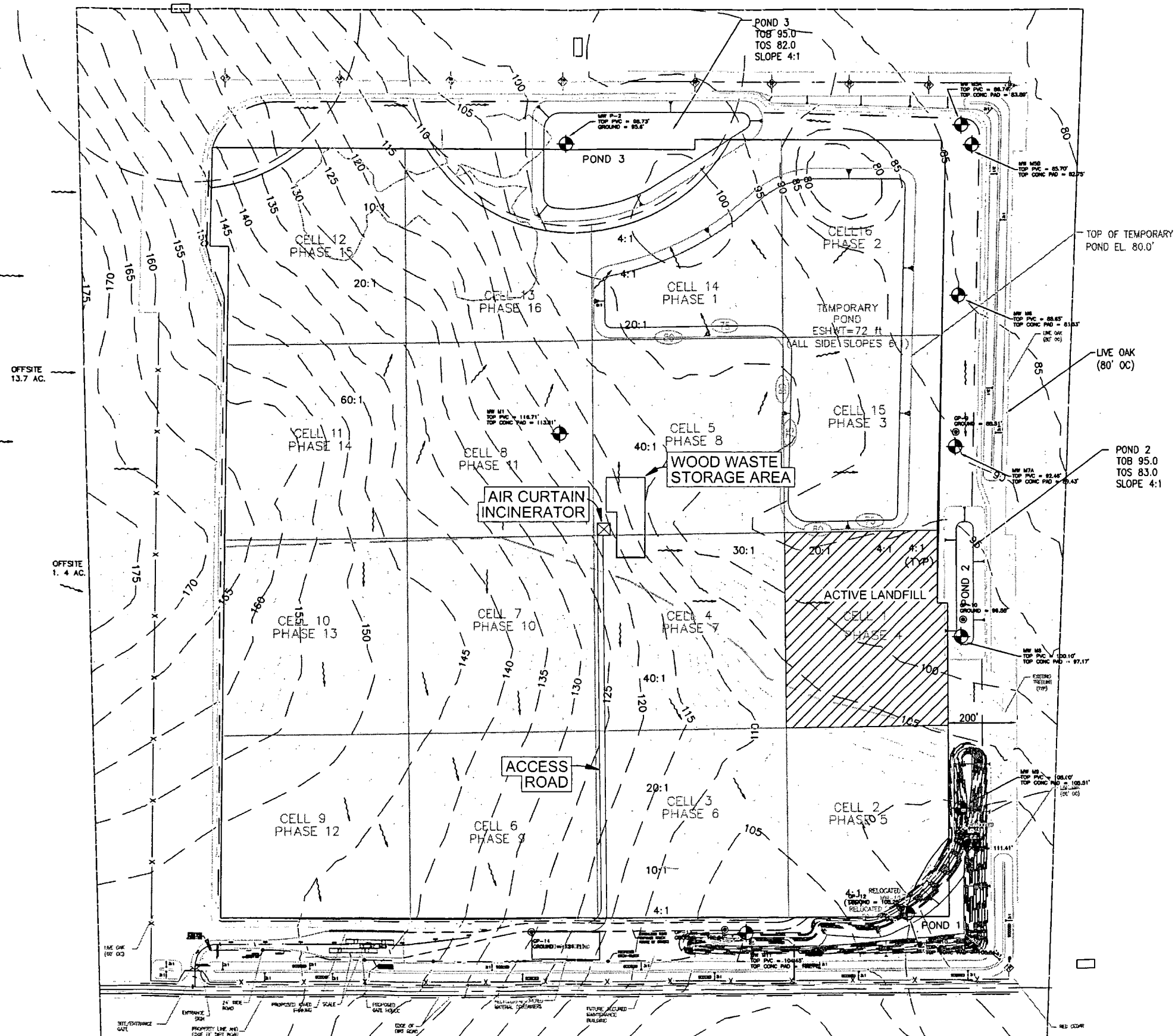
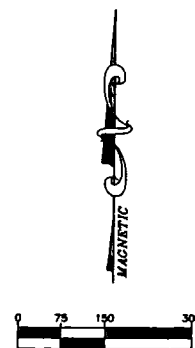
Site Manager	Jeff Rogers
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Cellular Phone	352 302-8934
----------------	--------------

Angelo's Office	727 581-1544
-----------------	--------------

## FIGURES





FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

NOV - 8 2004

SOUTHWEST DISTRICT  
TAMPA

SOURCE: HARTMAN & ASSOCIATES, INC.

**HSA**  
225 East Robinson Street  
Suite 100  
Orlando, Florida 32801  
Tel: 407 649-5475  
Fax: 407 649-6582

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ENTERPRISE LANDFILL  
PASCO COUNTY, FLORIDA

SITE PLAN

DATE	REVISIONS	REVISED	CHECKED
11/03	ADD ACI LOCATION	DRD	JEG

DESIGNED	BY	DATE	PROJECT NO.
			03-255.011
DRAWN			SCALE
			AS NOTED
CHECKED			FIGURE 2
QC APPROVAL			SHEET
			OF
FILE: ENTRANCE-2.DWG			

**ATTACHMENT A**



**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**In re:**

**EMERGENCY AUTHORIZATION FOR  
REPAIRS, REPLACEMENT,  
RESTORATION, AND CERTAIN  
OTHER MEASURES MADE NECESSARY  
BY HURRICANE JEANNE**

**OGC NO. 04-1659**

**FIRST AMENDED EMERGENCY FINAL ORDER**

Under sections 120.569(2)(n) and 252.36 of the Florida Statutes, and upon consideration of the State of Florida Executive Order No. 04-217 and the following findings of fact, the State of Florida Department of Environmental Protection (the Department) enters this Emergency Final Order (the Order), including Findings of Fact and Conclusions of Law, in response to the imminent or immediate danger to the public health, safety, and welfare of the citizens of the State of Florida resulting from the devastation wrought by Hurricane Jeanne (hereinafter "the Hurricane").

**FINDINGS OF FACT**

1. On the 25<sup>th</sup> day of September, 2004, the Hurricane struck Florida with reported maximum sustained winds of over 120 miles per hour with storm surges over 5 feet. The Hurricane caused widespread damage within the following locations: Brevard, Citrus, Desoto, Glades, Hardee, Hernando, Highlands, Hillsborough, Indian River, Martin, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, St. Lucie, Seminole, Sumter, and Volusia Counties, which shall constitute the specific areas covered by this Emergency Final Order: These areas shall herein be referred to as the "Emergency Areas."

2. By State of Florida Executive Order No. 04-217, the Governor declared that a state of emergency exists throughout the State of Florida, based upon the serious threat to the public health, safety and welfare posed by the Hurricane.

3. The Department finds that the Hurricane has created a state of emergency threatening the public health, safety, welfare, and property throughout the Emergency Areas. As

a result of the emergency, immediate action by Florida's citizens and government is necessary to repair, replace, and restore structures, equipment, surface water management systems, works, and operations damaged by the Hurricane.

4. The Department finds that an emergency authorization is required to address the need for immediate action.

5. The Department finds that immediate, strict compliance with the provisions of the statutes, rules, or orders noted in paragraph 12 of this Order would prevent, hinder, or delay necessary action in coping with the emergency.

#### **CONCLUSIONS OF LAW**

1. Based on the findings recited above, it is hereby concluded that the emergency caused by the Hurricane poses an immediate danger to the public health, safety, or welfare and requires an immediate order of the Department.

2. Under State of Florida Executive Order No. 04-217 and sections 120.569(2)(n) and 252.36 of the Florida Statutes, the Secretary of the Department is authorized to issue this Emergency Final Order.

3. Suspension of statutes and rules as noted in paragraph 12 is required in order not to prevent, hinder, or delay necessary action in coping with the emergency.

#### **THEREFORE, IT IS ORDERED:**

Within the Emergency Areas:

1. **Petroleum Storage Tank Systems, Water and Wastewater Plants, and Collection and Distribution Systems**

a. Owners and operators of petroleum storage tank systems, water and wastewater plants and collection and distribution systems, and their licensed engineers and contractors, are authorized to make all necessary repairs to restore essential services and repair or replace (as necessary) all structures, equipment, and appurtenances of the plants and systems to their pre-storm permitted or registered condition without prior notice to the Department. Within thirty days

of commencing the work of such repair or replacement, however, the owner or operator shall notify the Department in writing, describing the nature of the work, giving its location, and providing the name, address, and telephone number of the representative of the owner or operator to contact concerning the work. ~~Where an environmental resource permit is also~~ normally required to repair the above facilities, see paragraphs 6, 7, 8, and 9 of this Order for certain limitations that may exist.

b. Owners and operators of underground injection control Class V Group 6 lake level control wells in existence and functioning immediately before Hurricane Charley are authorized, without prior permission by the Department, to lower the intake structure to allow a greater volume of lake water to flow down the wells when not to do so would result in immediate flooding of structures not usually inundated by such lake waters. Within 72 hours of lowering said structures, written notice shall be provided to the Department's District office in which the structure is located.

**2. Solid Waste Management**

a. Owners and operators of solid waste management facilities permitted by the Department before the Hurricane are authorized to make all necessary repairs to restore essential services and the functionality of stormwater management and leachate collection systems damaged by the Hurricane, without prior notice to the Department. Within thirty days of commencing the work of such repair or replacement, however, the permittee shall notify the Department in writing, describing the nature of the work, giving its location, and providing the name, address, and telephone number of the representative of the permittee to contact concerning the work. Where an environmental resource permit is also normally required to repair the above facilities, see paragraphs 6, 7, 8, and 9 of this Order for certain limitations that may exist.

b. Uncontaminated yard trash may be disposed of in permitted lined or unlined landfills, permitted land clearing debris facilities or in permitted construction and demolition debris disposal facilities.

~~c. Construction and demolition debris that is mixed with other Hurricane-generated~~  
debris need not be segregated from other solid waste prior to disposal in a lined landfill.  
~~Construction and demolition debris that is either source-separated or is separated from other~~  
Hurricane-generated debris at an authorized staging area, or at another area specifically authorized by the Department, may be managed at a permitted construction and demolition debris disposal or recycling facility upon approval by the Department of the methods and operational practices used to inspect the waste during segregation.

d. Except as otherwise specifically provided herein, Hurricane-generated debris shall be disposed of in a Class I landfill or, except for asbestos-containing materials, in a waste-to-energy facility. Non-recyclables and residuals generated from segregation of Hurricane-generated debris shall also be disposed of in a Class I landfill or waste-to-energy facility.

e. Ash residue from the combustion of yard trash or clean wood wastes may be disposed of in a permitted disposal facility, or may be land spread in any areas approved by local government officials except in wellfield protection areas or water bodies.

f. Ash from the combustion of other Hurricane-generated debris shall be disposed of in a Class I landfill. Metals or other non-combustible materials segregated from the ash residue may also be disposed of in an unlined, permitted landfill.

g. Unsalvageable refrigerators and freezers containing solid waste such as rotting food that may create a sanitary nuisance may be disposed of in a Class I landfill; provided, however, that chlorofluorocarbons and capacitors must be removed and recycled to the greatest extent practicable using techniques and personnel meeting the requirements of 40 CFR Part 82.

h. Permitted landfills, waste-to-energy facilities, and transfer stations, within or outside of the Emergency Area, which accept Hurricane-generated debris in accordance with the terms of this Order may accept Hurricane-generated debris for disposal or storage without the need to first modify existing permits or certifications. Operators of landfills shall seek modifications of their existing permits to address any long-term impacts of accepting Hurricane-generated debris on operations and closure that are not addressed in existing permits. Long-term impacts are those, which will extend past the expiration date of this Order. The requests for modification shall be submitted as soon as possible, but no later than the expiration date of this Order. No permit fee will be required for any modifications necessitated solely by the Hurricane clean-up activities. This paragraph does not authorize the permanent lateral or vertical expansion of any facility beyond its permitted limits.

i. Field authorizations may be issued prior to or following a site inspection by Department personnel for staging areas, within or outside of the Emergency Area, to be used for temporary storage and chipping, grinding or burning of Hurricane-generated debris. Field authorizations may be requested by providing a notice to the local office of the Department containing a description of the staging area design and operation, the location of the staging area, and the name, address, and telephone number of the site manager. Field authorizations also may be issued by Department staff without prior notice. Written records of all field authorizations shall be created and maintained by Department staff.

j. Domestic wastewater residuals may be disposed of in Class I landfills, within or outside of the Emergency area, even if such residuals meet the definition of a liquid waste found in Rule 62-701.200(72), F.A.C., provided that such disposal is approved in advance by the Department and that the material is managed to the extent practicable so as to minimize liquid content, odors and runoff.

### 3. Open Burning

The Department authorizes local governments or their agents to conduct the open burning of Hurricane-generated yard trash and other vegetative debris in air curtain incinerators, within or outside of the Emergency Area, without prior notice to the Department. The Department also authorizes the open burning of demolition debris in such air curtain incinerators, provided reasonable efforts are made to limit the material being burned to untreated wood. Within ten days of commencing any such burning the local government or its agent shall notify the Department in writing, describing the general nature of the materials burned, stating the location and method of burning, and providing the name, address, and telephone number of the representative of the local government to contact concerning the work. This order does not relieve the air curtain incinerator operator from any requirement to obtain an open burning authorization from the Division of Forestry or any other agency empowered to grant such authorizations. In operating any such air curtain incinerator the pit width shall not exceed 12 feet, vertical side walls shall be maintained and waste material shall not be loaded into the air curtain incinerator such that it protrudes above the level of the air curtain. Ash shall not be allowed to build up in the pit higher than 1/3 the pit depth or to the point where the ash begins to impede combustion, whichever comes first. Refractory-lined air curtain incinerators may operate 24 hours per day. Air curtain incinerators without refractory-lined walls may operate 24 hours per day provided reasonable efforts are made to prevent nuisance smoke. Open burning of vegetative debris is managed under the authority of the Division of Forestry in the Department of Agriculture and Consumer Services, and the Department will defer to decisions made by that agency. Notwithstanding the provisions of this paragraph, the burning of asbestos-containing materials or hazardous waste is prohibited.

**4. Air Pollution Sources Other than Open Burning**

The Department authorizes the minor repair of any previously permitted stationary source of air pollution that was damaged by the Hurricane to restore it to its previously permitted condition without prior notice to the Department. Within thirty days of commencing such repairs, however, the permittee shall notify the Department in writing, stating the location and nature of the work and providing the name, address, and telephone number of the representative of the permittee to contact concerning the work. Minor repairs are repairs that would not constitute reconstruction under any definition of 40 CFR part 60, 61 or 63 and that could not affect potential to emit any pollutant. Repairs that would constitute reconstruction under any definition of 40 CFR Part 60, 61 or 63, or repairs that could affect potential to emit any pollutant are not authorized by this Order.

**5. Asbestos Clean-up**

The Department waives the requirement for prior notification for emergency demolition or emergency cleanup of asbestos-containing material resulting from the Hurricane. Within one business day of commencing such demolition or cleanup, however, the person responsible for such work shall notify the Department in writing. The notification shall be consistent with the information on the Notice for Asbestos Renovation or Demolition, and shall include the location and nature of the work and the name, address, and telephone number of operator on the project. The procedures in 40 CFR 61 Subpart M for handling asbestos-containing material shall be complied with during demolition and cleanup. Asbestos-containing material shall be disposed of in a Class I, II, or III landfill in accordance with rule 62-701.520(3) of the Florida Administrative Code. Burning of asbestos containing material is prohibited.

**6. Environmental Resource, Dredge and Fill, and Surface Water Management Activities**

The following activities may be undertaken to repair, restore, or replace structures, land, and submerged contours to the authorized or otherwise legally existing configuration and

conditions, subject to the limitations in this order. This order does not authorize the construction of structures that did not exist prior to the emergency, unless specifically authorized below.

**a. Definitions**

(1) For the purposes of paragraph 6 of this Order, the term "structures" includes:

(a) utility infrastructure, including wastewater treatment plants, substations, lift stations, solid and hazardous waste facilities, utility lines (including transmission and distribution), poles, towers, support structures, cables, conduits, outfalls, intake structures, and pipelines;

(b) roads, bridges, culverts, driveways, sidewalks, bike paths, and other similar public and private infrastructure;

(c) public, private, and commercial habitable and non-habitable buildings, and structures ancillary to these buildings, such as garages, cabanas, storage sheds, bath houses, pools, and decks;

(d) piers (including docks, boardwalks, observation platforms, boat houses, and gazebos), and pilings;

(e) shore-stabilization structures, such as seawalls, bulkheads, revetments, breakwaters, and groins;

(f) fences, signs and billboards; and

(g) buoys, navigational aids, and other channel markers.

(2) For the purposes of paragraph 6 of this Order, the term "drainage systems" includes ditches, canals, ponds, swales, and other surface water conveyances; dams, weirs, dikes, and levees; underdrains, outfalls, and associated water control structures. Any damage to structures or drainage systems authorized by the Department, and built to permitted design specifications, may be authorized to be repaired to the design that was originally authorized by the



Department; minor deviations to upgrade structures or drainage systems to current standards also are authorized;

**b. No Notice Required, Landward of the Coastal Construction Control Line**

The following activities may be conducted without notification to the Department:

(1) Temporary and permanent repair or restoration of structures and drainage systems that are still intact (i.e., not completely destroyed or eliminated) to the conditions, dimensions, and configurations that were authorized or otherwise legally existing immediately prior to the Hurricane, provided the repair and restoration activities do not result in any expansion, addition, or relocation of the existing structure or systems. However, this shall not preclude the use of different construction materials or minor deviations to allow upgrades to current structural and design standards.

(2) The restoration (regrading, dredging, or filling) by local, regional, and state governments of surface (upland), wetland, and submerged land contours to the conditions and configurations that were authorized or otherwise legally existing immediately prior to the Hurricane, provided the restoration does not result in any expansion or addition of land or deepening of waters beyond that which existed immediately prior to the Hurricane, subject to the following limits:

(a) The removal or deepening of plugs formerly separating canals from other waters is specifically not authorized by this Order;

(b) In the case of dredging, all excavated material shall be deposited on uplands that are diked or otherwise sloped or designed to prevent any discharge into wetlands or other surface waters, except where such dredged material is used to restore bottom contours and shorelines, exclusive of sandy beaches fronting the Gulf of Mexico or the Atlantic Ocean, to the conditions existing immediately prior to the Hurricane;

(c) In the case where upland or dredged material is placed in water to restore pre-existing conditions, only material from the previous uplands may be used in the restoration, and no change (from pre-existing conditions) in the slope of the land or the type, nature, or configuration of any pre-existing shoreline stabilization materials is authorized (e.g., sloping revetments cannot be replaced with vertical seawalls, and rock riprap cannot be replaced with interlocking blocks);

(d) Any restored shorelines that are susceptible to erosion, other than areas seaward of a coastal construction control line, shall be stabilized with vegetation or rock riprap to prevent erosion. Riprap may extend no further waterward than ten feet from the pre-Hurricane mean high water line. If the pre-existing shoreline was stabilized with a seawall, the seawall may be restored within three feet waterward of the pre-Hurricane mean high water line. Debris from the Hurricane or other sources, other than natural rocks and clean concrete rubble, shall not be used to stabilize shorelines;

(e) This shall not constitute authorization to fill submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund before the Hurricane.

(3) Removal of debris, including sunken vessels, and vegetation and structural remains that have washed into waters, wetlands, or uplands by the Hurricane, provided all removed debris are deposited on the uplands or otherwise deposited or burned in accordance with other provisions of this Order.

(4) Activities authorized under subparagraph 6.b. must be commenced before the expiration of this order.

**c. Field and Individual Authorization Required**

(1) Field authorizations may be issued following a site inspection by Department personnel for:

(a) activities including the replacement of structures that are no longer intact;

(b) restoration (regrading, dredging, or filling) of the contours of uplands, wetlands, and submerged bottoms, by parties other than local, regional, or state governments;

(c) trimming or alteration of mangroves; and

(d) other activities determined by Department personnel as having the potential to result in only minimal adverse individual or cumulative impact on water resources and water quality.

(2) Field authorization may be issued only to restore structures and property to authorized or otherwise legally existing conditions that existed immediately prior to the Hurricane, or to a more environmentally compatible design than existed immediately prior to the Hurricane. Field authorizations may be requested by providing a notice to the local office of the Department containing a description of the work requested, the location of the work, and the name, address, and telephone number of the owner or representative of the owner who may be contacted concerning the work. Field authorizations also may be issued by Department staff without prior notice. Written records of all field authorizations shall be created and maintained by Department staff.

(3) Other activities not described above shall be regulated in accordance with part IV of chapter 373 of the Florida Statutes, and the rules adopted thereunder. Stormwater systems within the Northwest Florida Water Management District that do not qualify under the above provisions shall require a stormwater permit.

(4) Activities authorized under paragraph 6.b above, must be commenced before the expiration of this order unless otherwise provided in a field authorization. The deadline for commencement under any field authorization issued under this order may be extended on a showing that contractors or supplies are not available to commence the work, or if additional time is needed to obtain any required authorization from the U.S. Army Corps of Engineers.

7. **Activities Seaward of the Coastal Construction Control Line (CCCL) or the Fifty-foot Setback Line, and Landward of the Mean High Water Line.**<sup>1</sup>

a. The following activities may be undertaken by local governments and utility companies to protect, repair, or replace structures and property without notice to the Department, subject to the limitations below. This Order does not authorize the construction of structures that did not exist prior to the emergency, unless specifically authorized below, nor does it authorize beach scraping performed by itself or in association with any of the following activities.

(1) Removal of Hurricane-generated debris. Prior to removing the debris and to the greatest extent possible, beach compatible sand should be separated from the debris and kept on site. To prevent debris from becoming buried, all Hurricane-generated debris shall be removed prior to conducting any fill activities.

(2) The repair of the following public facilities: utilities, roads and beach access ramps.

(3) Return of sand to the beach and dune system that has been deposited upland by the Hurricane, and restoration of a damaged dune system using beach compatible sand from an upland source. The fill material shall not cover any Hurricane-generated debris or construction debris. All fill material shall be sand that is similar to the pre-storm beach sand in both coloration and grain size and be free of debris, rocks, clay or other foreign matter. No sand may be obtained from the beach or below the mean high water line seaward of the CCCL without specific authorization from the Department.

b. After providing notice to the Department, local governments are authorized to issue permits to private and public property owners for the activities listed below. Notice of intent to implement this delegation shall be provided to the Department in the form of a

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<sup>1</sup> Terms used herein are defined in chapter 161 of the Florida Statutes, and chapter 62B-33 of the Florida Administrative Code.

statement of intent to issue permits pursuant to this section. The notice may be faxed to the Department at 850/488-5257 or provided via the telephone by calling 850/487-4475. This Order does not authorize the construction of structures that did not exist prior to the emergency, unless specifically authorized below, nor does it authorize beach scraping performed by itself or in association with any of the following activities. No additional authorization is required for repairs to interiors of existing structures not involving repairs to foundations.

(1) Temporary or remedial activities that are necessary to secure structures in order to remove safety hazards and prevent further damage or collapse of foundations. This Order does not authorize the permanent repair of foundations of major structures, rebuilding of major structures, or the repair or construction of coastal or shore protection structures.

(2) Repair or replacement of components and cladding (exterior glass windows and panels, roof sheathing, and other structural components such as studs and roof trusses) of major structures. The repair or replacement shall not constitute a substantial improvement. To protect nesting marine turtles and their hatchlings, damaged or destroyed glass windows and glass doors that are visible from any point on the beach should be replaced by tinted glass with a transmittance value of 45% or less.

(3) Repair or replacement of minor ancillary structures and service utilities associated with the existing habitable structure and necessary for occupancy of the habitable structure. Repaired or replaced components shall not exceed the size of the original minor ancillary structure or service utility damaged or destroyed by the Hurricane. Replacement of retaining walls, decks, and gazebos that are not necessary for occupancy of the existing habitable structure is specifically excluded.

(4) Repair, not including replacement, of surviving beach/dune walkovers provided the repair allows for adjustments to be made to the seaward terminus of the walkover if

necessary to accommodate changes in the shoreline topography and native salt-resistant vegetation patterns resulting from the post-storm recovery of the beach and dune system.

(5) Return of sand to the beach dune system which has been deposited upland by the Hurricane and the restoration of a damaged dune system using beach compatible sand from an upland source. The fill material shall not cover any Hurricane-generated debris or construction debris. All fill material shall be sand that is similar to the pre-storm beach sand in both coloration and grain size and be free of debris, rocks, clay or other foreign matter. No sand may be obtained from the beach or below mean high water seaward of the CCCL without specific authorization from the Department.

c. The nature, timing, and sequence of construction authorized under this order should be conducted, to the greatest extent practicable, in such a manner as to provide protection to nesting sea turtles and hatchlings and their habitat, pursuant to section 370.12 of the Florida Statutes, and to native salt-resistant vegetation and endangered plant communities.

d. Actions taken by local governments and utility companies under sections a. and b. above do not require additional permits from the Department. Activities not covered by this Order may require a permit from the Department under section 161.053 of the Florida Statutes, and chapter 62B-33 of the Florida Administrative Code. For more information, please contact the Bureau of Beaches and Coastal Systems by mail at 3900 Commonwealth Boulevard, Mail Station #300, Tallahassee, Florida 32399-3000 or by phone at 850/487-4475.

#### **8. General Conditions**

a. All activities conducted under Paragraphs 6 and 7 shall be performed using appropriate best management practices. For activities conducted in or discharging to wetlands or other surface waters, best management practices include properly installed and maintained erosion and turbidity control devices to prevent erosion and shoaling, to control turbidity, and to prevent violations of state water quality standards.

b. The authorizations in Paragraphs 6 and 7 shall not apply to structures and associated activities in the Emergency Areas that were not properly authorized by all applicable agencies before the passage of the Hurricane.

c. Environmental resource, surface water management, dredge and fill, stormwater, and coastal construction control line or joint coastal permits shall be required following provisions of statute and rule for other activities not authorized above that do not otherwise qualify as an exempt activity under statute or rule.

d. All activities shall be accomplished so as not to: disturb marked marine turtle nests or known nest locations; or damage existing native salt-tolerant or submerged vegetation.

e. This Emergency Final Order does not convey any property rights or any rights or privileges other than those specified in this Order.

f. This Emergency Final Order only serves as relief for the duration of the Order from the regulatory and proprietary requirements of the Department, and does not provide relief from the requirements of other federal, state, water management districts, and local agencies. This Order therefore does not negate the need for the property owner to obtain any other required permits or authorizations, nor from the need to comply with all the requirements of those agencies.

g. All structures that are rebuilt shall be rebuilt in accordance with all applicable local, state, and federal building standards and requirements of the Federal Emergency Management Act (FEMA).

h. It is recommended that, where possible, owners of property should maintain documentation (such as photos) of the condition of the structures or lands as they existed prior to initiating any activities authorized under this Order, and should provide such documentation if requested to do so.

i. This Emergency Final Order does not provide relief from any of the requirements of chapter 471 of the Florida Statutes regarding professional engineering.

9. **Authorization to Use Submerged Lands Owned by the State**

The Department has been delegated by the Board of Trustees of the Internal Improvement Trust Fund the authority to grant the following authorizations to use sovereign submerged lands, that is, most lands lying waterward of the line of mean high water or ordinary high water, in association with the repairs authorized in Paragraphs 6 and 7.

a. Except as provided in Paragraphs 9.b. and 10 below, a consent of use is hereby granted for the repair, replacement, or restoration of the activities and structures located on submerged lands owned by the state subject to the provisions and limitations of Paragraph 6, above, for which authorization from the Board of Trustees of the Internal Improvement Trust Fund had been obtained prior to the Hurricane, or which were otherwise legally existing immediately prior to the Hurricane, provided the structures and activities will be repaired, restored, or replaced in the same location and configuration as was authorized by the Board of Trustees of the Internal Improvement Trust Fund or which otherwise legally existed immediately prior to the Hurricane.

b. This Order does not authorize the reconstruction or repair of unauthorized structures, which failed to qualify for the grandfathering provisions of chapter 18-21 of the Florida Administrative Code.

c. The requirements for submitting a "Reclamation of Lands Lost Due to Recent Storm Events" application are specifically waived during the duration of this Order.

10. **General Limitations**

The Department issues this Emergency Final Order solely to address the emergency created by the Hurricane. This Order shall not be construed to authorize any activity within the jurisdiction of the Department except in accordance with the express terms of this Order. Under no circumstances shall anything contained in this Order be construed to authorize the repair,



replacement, or reconstruction of any type of unauthorized or illegal structure, habitable or otherwise.

**11. Other Authorizations Required**

Nothing in this Order shall eliminate the necessity for obtaining any other federal, state, water management district, or local permits or other authorizations that may be required.

**12. Suspension of Statutes and Rules**

The following provisions of statutes and rules are hereby suspended for the activities authorized by this Order for the duration of this Order:

a. For those activities noted above, subject to the limitations, duration and other provisions of this Order, all requirements for permits, leases, consent of uses or other authorizations under chapters 161, 253, 258, 373, 376 and 403 of the Florida Statutes, and rules adopted thereunder;

b. Notice requirements of sections 161.041, 161.053, 161.055, 253.115, and 373.413 of the Florida Statutes and rules 18-18, 18-20, 18-21, 62-4, 62-312, 62-343, and 62-620 of the Florida Administrative Code;

c. Application fee, lease fee, and easement fee requirements of sections 161.041, 161.053, 161.055, and 373.109 of the Florida Statutes and rules 18-18, 18-20, 18-21, and 62-4 of the Florida Administrative Code, provided however, that such lease and easement fees shall be suspended only in proportion to the percentage loss of functionality of the total area under lease or easement, and only for the duration of this order unless otherwise provided in a field authorization issued under part 6 above. The duration of the suspension of lease and easement fees under a field authorization may be extended on a showing that contractors or supplies are not available to commence the necessary repairs or replacement, or if additional time is needed to obtain any required authorization from the U.S. Army Corps of Engineers; and

d. Prohibitions for dredging and filling in waters approved or conditionally approved, for shellfish harvesting adopted under subsections 403.061(29) and 373.414(9) of the Florida Statutes.

**13. Extension of time to comply with specified deadlines**

For facilities regulated by the Department in the Emergency Area, this Order extends by thirty days the time to comply with the following specified deadlines that occur between September 4, 2004 and the expiration of this order:

a. The time deadlines to conduct or report periodic monitoring required by permits, leases, consent of uses, or other authorizations under chapters 161, 253, 258, 373, 376 and 403 of the Florida Statutes, and rules adopted thereunder, except for monitoring required by air permits issued under Title IV or V of the Clean Air Act or under the PSD program;

b. The time deadlines to file an application for renewal of an existing permit, lease, consent of use, or other authorization under chapters 161, 253, 258, 373, 376 and 403 of the Florida Statutes, and rules adopted thereunder, except for air permits issued under Title V of the Clean Air Act;

c. The time deadlines to file an application for an operation permit under chapters 161, 253, 258, 373, 376 and 403 of the Florida Statutes, and rules adopted thereunder, except for air permits issued under Title V of the Clean Air Act; and

d. The expiration date for an existing permit, lease, consent of use, or other authorization under chapters 161, 253, 258, 373, 376 and 403 of the Florida Statutes, and rules adopted thereunder, except for air permits issued under Title V of the Clean Air Act.

e. The time deadlines to petition for an administrative proceeding or to request an enlargement of time under Rule 62-110.106, Florida Administrative Code, except for petitions or requests involving air permits issued under Title IV or Title V of the Clean Air Act.

**14. Deadlines for Review and Issuance of Permits and Variances**

The deadlines specified in statutes and rules for the following Department offices, including delegated local programs, to take formal action to review and issue permits and variances for which the deadline had not expired as of the date of Executive Order 04-217 are hereby suspended. The time for the initiation of such proceedings is hereby tolled until the expiration of sixty (60) days following the issuance of Executive Order 04- 217.

a. Each Department district office and delegated local program that sustains within its geographic boundaries any significant physical damage occurring as a direct result of the Hurricane.

b. Any office of the Department not directly impacted by the Hurricane if that office has deployed staff to any Department district office or delegated local program specified above, or to any Water Management District office in the impacted area, to assist in Hurricane relief efforts or to supplement the normal staff in those impacted offices.

**15. Completion of Authorized Activities**

a. All activities authorized under this Emergency Final Order must be commenced before the expiration of this Order unless otherwise provided in a field authorization or permit. The deadline for commencement under any field authorization or permit issued under this order may be extended upon a showing that contractors or supplies are not available to commence the work, or if additional time is needed to obtain any required authorization from the U.S. Army Corps of Engineers. Any Environmental Resource Permit, Surface Water Management Permit, and Dredge and Fill Permit activities that require a field authorization must be completed by the expiration date of the field authorization; activities not completed by that expiration date are subject to the regulatory and proprietary authorizations required prior to the execution of this Order.

b. A blanket approval of time extensions under chapter 62-730 of the Florida Administrative Code is necessary within the Emergency Areas for hazardous waste generators and small quantity generators for the storage of their hazardous wastes on site, pending the cleanup of the Hurricane damage and restoration of essential services. The rules authorize a thirty-day extension because of unforeseen and uncontrollable circumstances. The specific effects of the Hurricane were unforeseen and uncontrollable. Therefore, to avoid having to issue a potentially large number of individual approvals on a case-by-case basis and waste limited agency resources during the time of emergency, the Department authorizes a general extension of time of thirty days from the expiration of this Order for all such hazardous waste generators and small quantity generators for the storage of their hazardous wastes on site, in the counties within the Emergency Areas.

**16. Expiration Date**

This Emergency Final Order shall take effect immediately upon execution by the Secretary of the Department, and shall expire in 60 days from the date of execution set forth below, unless modified or extended by further order.

**17. Violation of Conditions of Emergency Final Order**

Failure to comply with any condition set forth in this Emergency Final Order shall constitute a violation of a Department Final Order under chapters 161, 253, 258, 373, 376, and 403 of the Florida Statutes, and enforcement proceedings may be brought in any appropriate administrative or judicial forum.

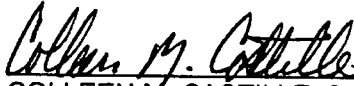
**NOTICE OF RIGHTS**

Any party substantially affected by this Order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000,

and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this Order is filed with the Clerk of the Department.

**DONE AND ORDERED** on this 27<sup>th</sup> day of September, 2004, in Tallahassee, Florida.

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION



COLLEEN M. CASTILLE, Secretary  
3900 Commonwealth Blvd  
Tallahassee, FL 32399-3000

FILED on this date, pursuant to §120.52 Florida Statutes,  
with the designated Department Clerk, receipt of which is hereby acknowledged.

  
CLERK

9/27/04  
DATE

## Memorandum

# Florida Department of Environmental Protection

**TO:** Simone Core, P.E.  
**FROM:** John R. Morris, P.G. *JRM*  
**DATE:** November 1, 2004  
**SUBJECT:** Enterprise Class III Landfill, Operation Permit Modification Application  
Permit No. 177982-002-SO, Modification No. 177982-005  
Draft Revisions – Environmental Monitoring Conditions  
**cc:** Susan Pelz, P.E.

I have prepared the revisions to the specific conditions of the operating permit for Enterprise Class III Landfill that are associated with modification No. 177982-005. The following summary lists the specific conditions that I revised and provides a brief description of the changes:

<u>Specific Condition No.</u>	<u>Content</u>
20.a. (Amended)	References the new gas probes to be installed at the facility, provides a schedule for installation, and references revisions to the "Engineering Report" that was submitted as part of the permit modification.
20.c. (Amended)	References the new figure that is used as a permit attachment to locate the gas probes and references revisions to the "Operations Plan" that was submitted as part of the permit modification.
28.a. (Amended)	References the revisions to the Department's Standard Operating Procedures that were associated with revisions to Chapter 62-160, F.A.C., that were effective on June 8, 2004.
30. (Amended)	Lists the wells that are associated with waste disposal in Sequences 1 and 2, provides a schedule for installation of three new Floridan aquifer monitor wells, adds a reference to the facility supply well, and references the new figure that is used as a permit attachment to locate the wells.
31. (Amended)	Deletes the piezometer designated P-7 as it has been abandoned and references the new figure that is used as a permit attachment to locate the piezometers.
32.a. (Amended)	References the schedule for conducting initial sampling events at the new wells presented in Specific Condition No. 30.
32.b. (Amended)	Indicates that the facility supply well shall be included in the routine monitoring events upon initiation of waste disposal in Cell 2 and clarifies the wells to be monitored during operation of the cells in Sequences 1 and 2.
33.a. (Amended)	References the construction details for the three proposed monitor wells.

jrm

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*Printed on recycled paper.*

## Memorandum

# Florida Department of Environmental Protection

**TO:** Simone Core, P.E.  
**FROM:** John R. Morris, P.G. *JRM*  
**DATE:** October 25, 2004  
**SUBJECT:** Enterprise Class III Landfill, Operation Permit Modification Application  
Permit No. 177982-002-SO, Pending Modification No. 177982-006  
Monitoring Review Comments (responses to RAI #2)  
**cc:** Susan Pelz, P.E.

I have reviewed portions of the responses to the Department's letter dated September 8, 2004 that requested additional information regarding the referenced permit modification application, prepared by Hartman & Associates, Inc. (HAI), dated October 6, 2004, received October 8, 2004. Please note that the review comments presented below are limited to the monitoring aspects of the operating permit modification application.

The review comment numbers presented below are consistent with my memoranda dated July 8, and September 2, 2004. The comments for which responses were previously received that were considered to be complete and sufficient have been omitted from this memorandum.

### Adequacy of Existing Monitor Wells

4. a. Proposed Well MW-8B – the response indicated that the final design of proposed well MW-8B will be developed following the installation of a pilot boring log to determine the thickness of the confining unit and the occurrence of the top of the Floridan aquifer. The response also indicated that 15 feet of well screen has been selected for proposed well MW-8B on the basis of the variations in ground water elevations recorded at the facility between June 2003 and April 2004 as presented in Table 1 of the submittal. **No additional information is requested.**
- b. Proposed Well MW-10B: the response indicated that the final design of proposed well MW-10B will be developed following the installation of a pilot boring log to determine the thickness of the confining unit and the occurrence of the top of the Floridan aquifer. The response also indicated that 15 feet of well screen has been selected for proposed well MW-10B on the basis of the variations in ground water elevations recorded at the facility between June 2003 and April 2004 as presented in Table 1 of the submittal. **No additional information is requested.**
- c. Proposed Wells MW-8B, MW-9B and MW-10B: the response indicated that approximate elevations of land surface have been established at the existing wells that are adjacent to these proposed wells. The response also indicated that the completion of the pilot boring at each of the proposed monitor wells to determine the appropriate screen elevations. **No additional information is requested.**
- d. Proposed Wells MW-8B, MW-9B and MW-10B: the response indicated that the variation in ground water elevations reported during the hydrogeological investigation and the water levels measured during the routine sampling events exceeded 12 feet and provided the basis for recommending 15 feet of well screen for the proposed monitor wells. **No additional information is requested.**

Based on the responses to review comment Nos. 4.a., through 4.d., the proposed changes to the monitoring plan to install three new wells, each completed in the Floridan aquifer, appear to meet the requirements of Rule 62-701.510, F.A.C.

jrm

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# TETRA TECH / HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants

## EXECUTIVE TEAM:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

Marco H. Rocca, C.M.C.  
Roderick K. Cashe, P.E.  
Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
Troy E. Layton, P.E., DEE  
Daniel M. Nelson, P.E.

## ASSOCIATES:

Les H. Porterfield, P.E.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Christopher W. Hardin, P.E.  
James R. Warner, E.I.

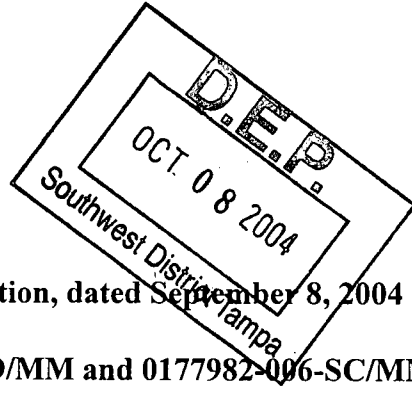
October 6, 2004

HAI# 99.0331.016

File 13.2

Ms. Simone Core, P.E.  
Florida Department of Environmental Protection  
Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Response to Request for Additional Information, dated September 8, 2004  
Enterprise Recycling & Disposal Facility  
Pending Modification Nos.: 0177982-005-SO/MM and 0177982-006-SC/MM  
Pasco County, Florida**



Dear Ms. Core:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Tetra Tech/Hartman & Associates, Inc. (HAI) is submitting responses to your request for additional information, dated September 8, 2004, regarding the minor modification requests for the construction and operation permits for the above facility. New report text is indicated by underline and deleted report text is indicated by strikethrough for your ease of review. Your comments are stated first with our responses following.

## Comments from Simone Core

1. The requested information and comments below do not repeat the information submitted by the applicant. However, every effort has been made to concisely refer to the section, page, drawing detail number, etc. where the information has been presented in the original submittal.

**Response:** Acknowledged.

2. Please submit four (4) copies of all requested information. Please specify if revised information is intended to supplement, or replace, previously submitted information. Please submit all revised plans and reports as a complete package. For revisions to the narrative reports, deletions may be struckthrough (~~struckthrough~~) and additions may be

*Spiral Document*



**TO:** Simone Core, P.E.  
**FROM:** John R. Morris, P.G. JRM  
**DATE:** September 2, 2004  
**SUBJECT:** Enterprise Class III Landfill, Operation Permit Modification Application  
 Permit No. 177982-002-SO, pending modification No. 177982-006  
 Monitoring Review Comments  
**cc:** Susan Pelz, P.E.

I have reviewed portions of the responses to the Department's letter dated July 15, 2004 that requested additional information regarding the referenced permit modification application, prepared by Hartman & Associates, Inc. (HAI), dated August 5, 2004, received August 9, 2004. Please note that the review comments presented below are limited to the monitoring aspects of the operating permit modification application.

Additional information is needed to evaluate the adequacy of the monitoring plan and to demonstrate compliance with the requirements of Rule 62-701.510, F.A.C. Please have the applicant address all of the review comments that do not include the phrase: **"No additional information is requested"**. Please have the applicant provide revised submittals, or replacement pages to the submittals, that use a strike through and underline format, or similar format, to facilitate review. Please also have the applicant include the revision date as part of the header/footer for all revised pages (including text, figures, tables, forms and appendices).

The review comment numbers presented below are consistent with my memorandum dated July 8, 2004.

**Changes to Fill Sequence Nos. 1 and 2**

1. The response acknowledged the review comment that described the intention to modify Specific Condition Nos. 30 and 32.b., of permit No. 177982-002-SO to list only those wells that will be required to be included in the routine sampling events for each of the cells in revised Sequence Nos. 1 and 2. **No additional information is requested.**
2. The HAI response included revisions to Section 3.3 of the "Engineering Report" and Section 19.1 of the "Operations Plan" that indicated the supply well shall be added to the routine monitoring events upon the initiation of waste disposal in Cell No. 2. The HAI response also included Figure 1A ("Well Location Map") that provided the location of the supply well. **No additional information is requested.**

**Adequacy of Existing Monitor Wells**

3. The HAI response indicated that the surficial aquifer is seasonally present at the locations of wells MW-8, MW-9 and MW-10. **No additional information is requested.**

**Adequacy of Existing Monitor Wells (continued)**

4. The HAI response proposed to install monitor wells completed in the upper Floridan aquifer at locations adjacent to existing wells MW-8, MW-9 and MW-10. The HAI response also provided descriptions of lithology encountered at borings B-8, B-9 and B-10 installed adjacent to these referenced wells. In addition, the HAI response indicated that the requested justification of construction details for the proposed monitor wells was provided by the boring logs and the proposed monitor well construction diagram (Figure 2). However, it appears that insufficient information was submitted to provide the requested justification for the construction of the proposed wells. Please submit responses to the following items:

- a. Proposed Well MW-8B – the boring log designated B-8 encountered a limestone lens at a depth of 34.9 feet below grade but appeared to encounter sandy clay and silty, sandy clay to the depth of investigation at 45 feet below grade. The proposed construction details provided on Figure 2 appear to indicate the well will be constructed with 15 feet of screen at depths between 45 and 60 feet below grade. Please submit the rationale used to select this screen interval to monitor the upper Floridan aquifer at this location.
- b. Proposed Well MW-10B: the boring log designated B-10 encountered limestone fragments in silty, clayey sand at intervals of 34.5 to 35 feet below grade and 38.5 to 40 feet below grade, noted hard drilling at a depth of about 41 feet below grade, and described limestone in the split spoon sample driven at a depth interval of 42 feet below grade. The proposed construction details provided on Figure 2 appear to indicate the well will be constructed with 15 feet of screen at depths between 35 and 50 feet below grade. Please submit the rationale used to select this screen interval to monitor the upper Floridan aquifer at this location.
- c. Proposed Wells MW-8B, MW-9B and MW-10B: Please submit supplemental information that provides elevations for land surface, top of the well screen and bottom of the well screen for each location.
- d. Proposed Wells MW-8B, MW-9B and MW-10B: Please submit supplemental information that provides the seasonal range of ground water elevations in the upper Floridan aquifer anticipated for each location. Please compare the information provided in Section 5.2.4, Figure 14.1 and Figure 14.2 of the “Hydrogeological Investigation and Groundwater Monitoring Plan” (Section 5 of the permit application submittal, revised April 3, 2001) with the results of the initial and routine sampling events conducted at the facility, and submit revisions to the description of site-specific ground water flow direction in the upper Floridan aquifer at the facility, if appropriate. Please submit additional description of the rationale used to select 15 feet of well screen (or 15 feet of open hole if cavernous conditions are encountered) based on the anticipated range of ground water elevations for each location.

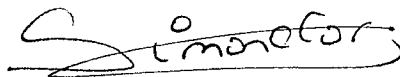
I can be reached at (813) 744-6100, extension 336, to discuss these comments.

jrm

Mr. Dominic Iafrate  
Angelo's Aggregate Materials, Ltd.  
0177982-005 -SO/MM & 0177982-006-SC/MM  
Page 5 of 5

You are requested to submit four (4) copies of your response to this letter as one complete package with an original and three copies of all correspondence (with one copy sent to Ms. Susan Pelz). Please contact me at (813) 744-6100, Extension 382, should you have any question.

Sincerely,

A handwritten signature in black ink that reads "Simone Core". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Simone Core, P.E.  
Solid Waste Section  
Southwest District

Attachment

cc: Jennifer L. Deal, P.E., [Hartman & Associates, Inc., 201 East Pine Street,  
Suite 1000, Orlando, FL 32801-2723]  
Susan Pelz, P.E., [FDEP - SWD]  
Fred Wick, [FDEP - Tallahassee]  
John Morris, [FDEP - SWD]



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Colleen M. Castille  
Secretary

September 8, 2004

Mr. Dominic Iafrate  
Angelo's Aggregate Materials, Ltd.  
1755 20<sup>th</sup> Avenue SE  
Largo, Florida 33771

Re: Enterprise Recycling & Disposal Facility  
Minor Modification to Construction and Operation Permit  
Pending Modification Nos.: 0177982-005-SO/MM and 0177982-006-SC/MM  
Pasco County

Dear Mr. Iafrate:

This is to acknowledge receipt of the additional information prepared by Hartman & Associates, Inc., dated August 5, 2004, (received August 9, 2004), to modify the construction and operation permits for a Class III landfill.

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

Your application for a permit is incomplete. This is the Department's second request for information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The comments are numbered in the same sequence as the unresolved issues from the previous incompleteness letter dated July 15, 2004. If no further action on your part is required, the comment is noted as "Response acknowledged". Details are as follows:

## GENERAL

1. The requested information and comments below do not repeat the information submitted by the applicant. However, every effort has been made to concisely refer to the section, page, drawing detail number, etc. where the information has been presented in the original submittal.
2. Please submit four (4) copies of all requested information. Please specify if revised information is intended to supplement, or replace, previously submitted information.

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Please submit all revised plans and reports as a complete package. For revisions to the narrative reports, deletions may be struckthrough (~~struckthrough~~) and additions may be shaded ~~shaded~~ or similar notation method. This format will expedite the review process. Please include revision date on all revised pages.

3. Please provide a summary of all revisions to drawings, and indicate the revision on each of the applicable plan sheets. Please use a consistent numbering system for drawings. If new sheets must be added to the original plan set, please use the same numbering system with a prefix or suffix to indicate the sheet was an addition, e.g. Sheet 1A, 1B, P1-A, etc.
4. Please be advised that although some comments do not explicitly request additional information, the intent of all comments shall be to request revised calculations, narrative, technical specifications, QA documentation, plan sheets, clarification to the item, and/or other information as appropriate. Please be reminded that all calculations must be signed and sealed by the registered professional engineer (or geologist as appropriate) who prepared them.
5. Please provide a letter signed by Dominic Iafrate authorizing Craig Bryan to act on behalf of Angelo's Aggregate Materials, Ltd.
6. Please address the comments in John Morris' September 2, 2004 memorandum (attached) regarding the groundwater monitoring at the site.

#### COVER LETTER

7. The stormwater permit modification does not indicate that a portion of Cell 5 will be a part of the temporary pond. Please address.

#### MODIFIED ENGINEERING REPORT

8. The cover sheet for the engineering report does not contain the impressed seal of a professional engineer. [Rule 62-701.320(7)(d)1, F.A.C.]
9. Your response indicates that the 6-foot chain link fence is installed around the northern property boundary. However, Section 3.6 indicates that the 6-foot security fence has been constructed along only the south and east boundaries. Your response is also inconsistent with the site plan. Please address.
10. The drawing and table showing the base elevation for each of the cells to be filled in sequence 1 and 2 were not provided. In addition, please note that the July 2003 groundwater sampling event showed an inferred contour line of 75.9 feet NGVD rather than 71.5 feet. The April 2004 groundwater sampling event showed a 71.5 feet NGVD

ground water contour line in the vicinity of Cell 1. Please revise your response to this item. In addition, please re-evaluate the results of the total and differential settlement of the foundation soils to determine if the proposed bottom elevations of the cells will be above the new SHGWT.

11. Response acknowledged.
- ✓12. Figure C-2 indicates that all the cells to be filled in sequences 1 and 2 will be at a base elevation of 82 feet NGVD. However, the cross-sections shown in Figures 3-26, 3-27 and 3-28 indicate that some cells will have a base elevation of 80 feet NGVD. Please revise the appropriate drawing accordingly.
- ✓13. Please revise Section 3.7 to indicate that "acceptable permeability and proctor test results" is considered "less than  $1 \times 10^{-6}$  cm/sec in a continuous layer of at least 36 inches in thickness" as indicated in your original cover letter dated June 15, 2004. In addition, please specify a numerical value(s) for acceptable optimal moisture content in this section of the Engineering Report.
14. through 16. Response acknowledged.
- ✓17. Sheet C-1 is not valid for illustrating the cell closure sequence since the sequence of cell closure no longer follows the cell numbers. Please provide a revised drawing using a different notation to illustrate cell closure sequence.
- ✓18. GP-6 is shown as located inside stormwater pond 3 in Figure 1A. Please address.
19. Response acknowledged.

#### MODIFIED OPERATIONS PLAN

20. Response acknowledged.
- ✓21. Your response indicates that the 6-foot chain link fence is installed around the northern property boundary. However, Section 2.3 indicates that the 6-foot security fence has been constructed along only the south and east boundaries. Your response is also inconsistent with the site plan. Please address.
- ✓22. Please indicate how vectors and odors will be controlled to allow for storage of putrescible waste for seven days.
23. Response acknowledged.

CONSTRUCTION DRAWINGS

24. Please identify on Figures 3-17 and 3-18, the location of the roll-offs for unacceptable waste, the yard waste processing area, recycling area and equipment maintenance area.

✓ 25. Figure 3-17 indicates that all the cells to be filled in sequences 1 and 2 will be at a base elevation of 82 feet NGVD. However, the cross-sections shown in Figures 3-26, 3-27 and 3-28 indicate that some cells will have a base elevation of 80 feet NGVD. Please revise the appropriate drawing accordingly.

26. through 28. Response acknowledged.

29. Figure 3-18 has not been revised to show the paved parking, gatehouse and septic tank as "existing".

30. Response acknowledged.

**Please provide all responses that relate to engineering for design and operation, including plan sheets, signed and sealed by a professional engineer. Responses that relate to the facility operations should be included as part of the Operation Plan. All replacement pages should be numbered, and with revision date.**

"NOTICE! Pursuant to the provisions of Section 120.60, F.S., if the Department does not receive a response to this request for information within 90 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 receive this letter, responding to as many of the information requests as possible 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 timetable for the submission of the requested information for Department review and consideration. Failure to comply with a timetable accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

**Pelz, Susan**

SC \_\_\_\_\_  
Enterprise Construction  
permit

**From:** Pelz, Susan  
**Sent:** Saturday, July 10, 2004 10:14 AM  
**To:** Jennifer L. Deal (E-mail)  
**Cc:** Morris, John R.; Core, Simone  
**Subject:** Enterprise grouting report

Jennifer,

I received a call from Miguel last week or week before about this report. I apologize, but I have not been able to catch up with him and I don't have his email address.

I have looked through our files and it does not appear that the final grouting report (for the subsidence in Cell 16) from Universal Engineering Sciences is located in our files. If it was submitted, it has been misplaced. Please send another copy for our files.

We should complete our review of the minor modifications for sequence of filling next week.

Thanks,  
Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

**Tracking:**

**Recipient**

Jennifer L. Deal (E-mail)  
Morris, John R.  
Core, Simone

**Read**

Read: 7/10/2004 1:35 PM  
Read: 7/14/2004 7:45 AM



*Enterprise  
construction  
permit*

**Pelz, Susan**

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Friday, July 09, 2004 3:36 PM  
**To:** Pelz, Susan  
**Subject:** Update for Angelo's projects

Susan,

I am sending you this e-mail to give you an update on the status of some of the Angelo's projects.

Regarding the Enterprise Landfill, the modification to the stormwater pond is underway and expected to be finished by the end of next week. HAI will prepare documentation for your review, certifying the presence of the consistent confining layer for Cell 16. Also, I know DEP is in the process of review the recent minor modification submittals for fill sequence and construction permit changes. Please give me a call if I can provide any information or answer any questions for you to assist with your review process.

Regarding the Largo recycling facility, I am finishing up the RAI response. The information I needed has been coming in pieces, so I have been working on it as the information is given to me. I expect to submit the response next week. Angelo's has requested that HAI submit the major modification for this facility during the week of July 19. We are contacting the stormwater section regarding their needs for the application.

Please feel free to contact me if you have any questions or if you need any information for either of these projects. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

Pelz, Susan

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Friday, July 09, 2004 3:36 PM  
**To:** Pelz, Susan  
**Subject:** Update for Angelo's projects

Susan,

I am sending you this e-mail to give you an update on the status of some of the Angelo's projects.

Regarding the Enterprise Landfill, the modification to the stormwater pond is underway and expected to be finished by the end of next week. HAI will prepare documentation for your review, certifying the presence of the consistent confining layer for Cell 16. Also, I know DEP is in the process of review the recent minor modification submittals for fill sequence and construction permit changes. Please give me a call if I can provide any information or answer any questions for you to assist with your review process.

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Please feel free to contact me if you have any questions or if you need any information for either of these projects. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

## Memorandum

# Florida Department of Environmental Protection

TO: Simone Core, P.E.  
FROM: John R. Morris, P.G.  
DATE: July 8, 2004  
SUBJECT: Enterprise Class III Landfill, Operation Permit Modification Application  
Permit No. 177982-002-SO, pending modification No. 177982-006  
Monitoring Review Comments  
cc: Susan Pelz, P.E.

I have reviewed portions of the document entitled "Construction Permit and Fill Sequence Modifications, Enterprise Recycling & Disposal Facility, Angelo's Aggregate Materials, Ltd.", prepared by Hartman & Associates, Inc. (HAI), dated June 15, 2004, received June 17, 2004. Please note that the referenced document requested modifications of both the existing construction permit and operating permit which are being processed as separate applications, however my review comments are limited to the monitoring aspects of the operating permit modification application.

Additional information is needed to evaluate the adequacy of the monitoring plan and to demonstrate compliance with the requirements of Rule 62-701.510, F.A.C. Please have the applicant address the following comments.

Please have the applicant provide revised submittals, or replacement pages to the submittals, that use a strikethrough and underline format, or similar format, to facilitate review. Please also have the applicant include the revision date as part of the header/footer for all revised pages (including text, figures, tables, forms and appendices).

### Changes to Fill Sequence Nos. 1 and 2

1. Section 3.8 in the document entitled "Engineering Report", prepared by HAI, dated June 15, 2001, anticipated filling Sequence Nos. 1 through 7, including Cells 1 through 16. Accordingly, Section 5.3.1 of the document entitled "Hydrogeological Investigation and Groundwater Monitoring Plan", prepared by HAI, dated May 18, 2001 presented a monitor well phasing schedule that reflected disposal in Cells 1 through 16. The proposed revisions to Section 3.8 of the "Engineering Report" prepared by HAI, dated June 7, 2004, included in the permit modification application indicated that only Sequence Nos. 1 and 2 (Cells 1 through 5 and Cell 15) will be filled prior to expiration of permit No. 177982-002-SO, with the filling of future sequences to be determined during the operating permit renewal. As the monitoring plan is no longer intended to address Cells 1 through 16, please note that it is the Department's intention to modify Specific Condition Nos. 30 and 32.b., of the permit to list only those wells that will be required to be included in the routine sampling events for each of the cells in revised Sequence Nos. 1 and 2. This comment is presented for informational purposes and does not require a response.

2. The information provided to the Department by Eric Eshom, Southwest Florida Water Management District (SWFWMD), via facsimile on September 8, 2003, indicated that a permit application has been received from Angelo's Aggregate Materials to use an on-site irrigation well for potable ("public supply") purposes. Based on item No. 5 in Stipulation No. 3 of the SWFWMD well construction permit No. 688944.01, the supply well shall be included in the routine sampling events in accordance with Specific Condition No. 32.b., of permit No. 177982-002-SO when the disposal cells become less than 500 feet from the wellhead. Please submit revisions to Section 3.3 of the "Engineering Report" to identify the potable use of this well. Please also submit revisions to Figure 15 of the "Hydrogeological Investigation and Groundwater Monitoring Plan" to identify the location and unique identification number of this supply well. It is the Department's intention to modify Specific Condition Nos. 30 and 32.b., to list this supply well and include it in the semi-annual sampling events upon initiation of disposal in Cell No. 2.

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Adequacy of Existing Monitor Wells

3. The initial sampling event results (conducted July 2003, transmitted via HAI letter dated Oct. 16, 2003) and the first routine sampling event results (conducted April 2004, transmitted via HAI letter dated May 20, 2004) appear to indicate ground water elevations that are inconsistent with the document entitled "Hydrogeological Investigation and Groundwater Monitoring Plan", prepared by HAI, dated May 18, 2001, as follow:

- Figure 9 – Water Table Elevation Map, 3/28/00: Cell 1 elevation about 61 feet NGVD
- Figure 10 – Water Table Elevation Map, 5/2/00: Cell 1 elevation about 60.25 feet NGVD
- Figure 11 – Water Table Elevation Map, 10/25/00: Cell 1 elevation about 61 feet NGVD
- Figure 11.1 – Water Table Elevation Map, 3/26/01: Cell 1 elevation about 58.6 feet NGVD
- Figure 11.2 – Water Table Elevation Map, 5/8/01: Cell 1 elevation about 58 feet NGVD
- Figure 12 – Estimated Seasonal High Water Table Map: Cell 1 elevation about 73 feet NGVD

The contour map provided for the July 2003 sampling event presented the following information:

- Well MW-8 at 78.17 feet NGVD, identified as "perched"
- Well MW-9 was dry
- Well MW-10 at 78.60 feet NGVD, identified as "perched"
- Inferred ground water contour line of 75.9 feet NGVD crossing the north half of Cell 1

The contour map provided for the April 2004 sampling event presented the following information:

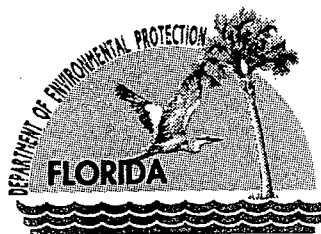
- Well MW-8 was dry
- Well MW-9 was dry
- Well MW-10 was dry
- Ground water contour line of 71.5 feet NGVD crossing the northwest corner of Cell 1

Please submit an evaluation of the ground water elevations reported for the surficial aquifer in the two referenced sampling events and explain the deviations from the Hydrogeological Investigation (revised May 2001) for the cells included in revised Sequence Nos. 1 and 2.

4. Section 5.3.1 (Ground Water Monitoring System Design) of the document entitled "Hydrogeological Investigation and Groundwater Monitoring Plan", prepared by HAI, dated May 18, 2001, indicated that eleven downgradient (detection) wells were located at 500 feet intervals to intercept the west to east ground water flow in the surficial aquifer. Based on the results of the July 2003 and April 2004 sampling events, the surficial aquifer may only be seasonally present (MW-8 and MW-10) or absent (MW-9) along a portion of the eastern property boundary. It appears that wells MW-8, MW-9 and MW-10 are not sufficient to meet the requirements of Rule 62-701.510(2)(b), F.A.C., regarding monitoring of the uppermost aquifer. It also appears that the downgradient Floridan aquifer wells (MW-2B, MW-5B, MW-7B and MW-12B) do not meet the spacing requirements of Rule 62-701.510(3)(d)3, F.A.C., if the Floridan aquifer is determined to be the uppermost aquifer. Please submit supplemental monitor well locations and justification of construction details for upper Floridan aquifer wells adjacent to existing wells MW-8, MW-9 and MW-10. Please also submit revisions to Figure 15 of the "Hydrogeological Investigation and Groundwater Monitoring Plan" to identify the locations and unique identification numbers of these supplemental wells.

I can be reached at (813) 744-6100, extension 336, to discuss these comments.

jrm



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

July 15, 2004

Colleen M. Castille  
Secretary

Mr. Dominic Iafrate  
Angelo's Aggregate Materials, Ltd.  
1755 20<sup>th</sup> Avenue SE  
Largo, Florida 33771

Re: Enterprise Recycling & Disposal Facility  
Minor Modification to Construction and Operation Permit  
Pending Modification Nos.: 0177982-005-SO/MM and 0177982-006-SC/MM  
Pasco County

Dear Mr. Iafrate:

This is to acknowledge receipt of the permit application prepared by Hartman & Associates, Inc., dated June 15, 2004, (received June 17, 2004), to modify the construction and operation permits for a Class III landfill.

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

Your applications for permit modifications are incomplete. This is the Department's first request for additional information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

## GENERAL

1. The requested information and comments below do not repeat the information submitted by the applicant. However, every effort has been made to concisely refer to the section, page, drawing detail number, etc. where the information has been presented in the original submittal.
2. Please submit four (4) copies of all requested information. Please specify if revised information is intended to supplement, or replace, previously submitted information. Please submit all revised plans and reports as a complete package. For revisions to the narrative reports, deletions may be struckthrough (~~struckthrough~~) and additions may be shaded ~~shaded~~ or similar notation method. This format will expedite the review process. Please include revision date on all revised pages.

3. Please provide a summary of all revisions to drawings, and indicate the revision on each of the applicable plan sheets. Please use a consistent numbering system for drawings. If new sheets must be added to the original plan set, please use the same numbering system with a prefix or suffix to indicate the sheet was an addition, e.g. Sheet 1A, 1B, P1-A, etc.
4. Please be advised that although some comments do not explicitly request additional information, the intent of all comments shall be to request revised calculations, narrative, technical specifications, QA documentation, plan sheets, clarification to the item, and/or other information as appropriate. Please be reminded that all calculations must be signed and sealed by the registered professional engineer (or geologist as appropriate) who prepared them.
5. Please submit a revised DEP Form 62-701.900(1) that addresses the proposed construction and fill sequence modification. The form must include the signature of the applicant and the signature, date of signature and seal of a profession engineer registered in the State of Florida.
6. Please address the comments in John Morris' July 8, 2004 memorandum (attached) regarding the groundwater monitoring at the site.

#### COVER LETTER

7. Please provide a copy of the approved stormwater permit modification for the Class III disposal facility

#### MODIFIED ENGINEERING REPORT

8. The engineering report must contain a cover sheet stating the project title, location, applicant's name, and the engineer's name, address, signature, date of signature and seal. Please provide a cover sheet for the engineering report that meets these requirements. [Rule 62-701.320(7)(d)1, F.A.C.]
9. Section 3.6.3. Please provide a drawing depicting the 6-foot security fence along perimeter of the site. In addition, paragraph one is inconsistent as to whether the chain link fence "has been" or "will be" installed. Please also clarify whether the FDEP setbacks have been surveyed and marked or provide a timeframe for completing this task.
10. Section 3.7 states that the bottom of the cells is at least 5 feet above the seasonal high water table, however the initial sampling event (conducted July 2003) indicates that the ground water table is higher than indicated in the "Hydrogeological Investigation and Groundwater Monitoring Plan", prepared by HAI, dated May 18, 2001 (also see comment

3 of John Morris' July 8, 2004 memorandum). Please address and provide a drawing, as well as a table indicating the base elevation for each of the cells to be filled in sequence 1 and 2.

11. Section 3.7 - Figure 3-7 (C-2). The sequence of excavation identified by phase numbers needs to be updated, since a portion of cell 5 will be excavated for use as part of the stormwater control system prior to filling in cell 15.
12. Section 3.7. Please provide a drawing that shows the base elevation for each of the cells to be filled in sequence 1 and 2.
13. Section 3.7. Please indicate the source of the confining material and clarify how the laboratory proctor test will be used to determine the permeability of the cell floor material. In addition, please define what will be considered "acceptable test results".
14. Section 3.8, second paragraph. The narrative on the fill sequence is inconsistent with the drawings provided. Please note that cell 2 is not west of cell 15 and cell 13 is not included in sequence 1 and 2. Please revise this section of the Engineering Report to be consistent with the other portions of the application.
15. Section 3.8. Please provide a table that shows the corresponding stormwater pond that will be constructed with each sequence of fill.
16. Section 3.8.3. Please submit a revised Table 1 showing the sequence of fill as proposed under this permit modification application.
17. Section 3.9 - Figure C-1 is no longer valid for illustrating the cell closure sequence, since cell 15 is now part of sequence 1 and 2. Please provide a revised drawing depicting the cell closure sequence.
18. Section 3.10.1.1. Please provide a drawing that shows the location of the gas probes that will be installed for the revised fill sequence 1 and 2, as well as the location of existing gas probes.
19. Section 3.10.3. Please describe the modification to the temporary stormwater system as a result of the modified fill sequence in this section of the Engineering Report.

#### MODIFIED OPERATIONS PLAN

20. Please revise Section 1.0 of the Operations Plan by removing the word "proposed" since the disposal facility is currently in operation.

21. Section 2.3 is inconsistent as to whether the chain link fence "has been" or "will be" installed. Please revise this section accordingly.
22. Please revise Section 5.3 to indicate that putrescible waste will not be stored at the disposal facility for longer than 48 hours.
23. Section 8.0. The narrative on the fill sequence is inconsistent with the drawings provided. Please note that cell 2 is not west of cell 15 and cell 13 is not included in sequence 1 and 2. Please revise this section of the Operations Plan to be consistent with the other portions of the application.

#### CONSTRUCTION DRAWINGS

24. Figures 3-17 and 3-18 show an existing wire fence around only a portion of the site rather than the "security fence" reference in Section 3.6.3 of the Engineering Report. Please revise Figures 3-17 and 3-18 to show the security fence around the entire perimeter of the site (see Comment 9), the location of the roll-offs for unacceptable waste, the yard waste processing area, recycling area and equipment maintenance area.
25. Figure 3-17. Please show the base grades on this drawing. Please note that it is not necessary to show the final elevations for sequence 1, alternatively the final elevations can be shown as very light contour lines.
26. Figure 3-17 is inconsistent with Figure C-2 in regards to the bottom grading plan for Cell 5. What is the expected water elevation in the temporary pond?
27. Figures 3-17 and 3-18, note 2 is inconsistent with Section 8.1 of the Operations Plan and Section 3.8 of the Engineering Report which state that the working slopes will not exceed 3(H):1(V) prior to 125 feet NGVD. Please correct the appropriate document(s) accordingly.
28. Please provide North-South and East-West Cross-Sections for Sequence 1 and reference them to the appropriate plan view on Figure 3-17.
29. Figure 3-18 indicates that paved parking, gatehouse and septic tank are proposed. Please verify whether these features are proposed or existing and revise Figure 3-18 accordingly.
30. Please specify the exterior slopes on the cross-section views.



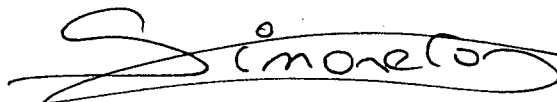
Mr. Dominic Iafrate  
Angelo's Aggregate Materials, Ltd.  
0177982-005 -SO/MM & 0177982-006-SC/MM  
Page 5 of 5

**Please provide all responses that relate to engineering for design and operation, including plan sheets, signed and sealed by a professional engineer. Responses that relate to the facility operations should be included as part of the Operation Plan. All replacement pages should be numbered, and with revision date.**

"NOTICE! Pursuant to the provisions of Section 120.60, F.S., if the Department does not receive a response to this request for information within 90 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 receive this letter, responding to as many of the information requests as possible 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 timetable for the submission of the requested information for Department review and consideration. Failure to comply with a timetable accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

You are requested to submit four (4) copies of your response to this letter as one complete package with an original and three copies of all correspondence (with one copy sent to Ms. Susan Pelz). Please contact me at (813) 744-6100, Extension 382, should you have any question.

Sincerely,

A handwritten signature in black ink, appearing to read "Simone Core", with a stylized flourish at the end.

Simone Core, P.E.  
Solid Waste Section  
Southwest District

Attachment

cc: Jennifer L. Deal, P.E., [Hartman & Associates, Inc., 201 East Pine Street,  
Suite 1000, Orlando, FL 32801-2723]  
Susan Pelz, P.E., [FDEP - SWD]  
Fred Wick, [FDEP - Tallahassee]  
John Morris, [FDEP - SWD]

# HARTMAN & ASSOCIATES, INC.

## OFFICERS:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., PH.  
Michael B. Bomar, P.E.  
Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

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Roderick K. Cashe, P.E.  
Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
Troy E. Layton, P.E., DEE  
Daniel M. Nelson, P.E.

engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

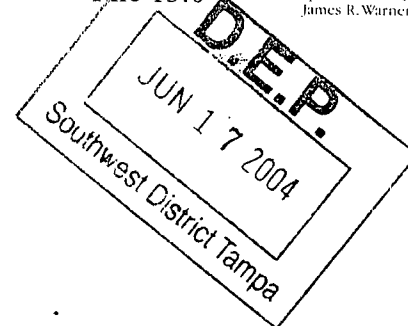
June 15, 2004

## ASSOCIATES:

James E. Golden, P.G.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
L. Todd Shaw, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero  
Christopher W. Hardip, P.E.  
James R. Warner, E.I.

HAI #99.0331.016

File 13.0



### Via UPS Overnight

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Construction Permit and Fill Sequence Modifications  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**

Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting minor permit modification requests for the above Class III landfill in Pasco County, Florida. These include a minor permit modification to the construction permit, and a modification to the operations permit to revise the waste filling sequence. A check from Angelo's in the amount of \$500.00 for the minor permit modification review fees is enclosed. Each modification request is detailed below.

Revised copies of the Department approved Engineering Report and Operations Plan are attached. All proposed text is underlined, and all deleted text is shown with a strike through for your ease of review. General updates have also been incorporated. Modified figures are attached, as necessary.

### Minor Construction Permit Modification

Specific Condition 9.c. of the construction permit, in part, states "The maximum hydraulic conductivity below or as part of each cell floor shall be less than  $1 \times 10^{-6}$  cm/sec in a continuous layer of at least 36 inches in thickness, unless otherwise approved in writing by the Department." In order to eliminate question as to the continuity of the confining layer, Angelo's proposes to over-excavate each cell as it is constructed to approximately 3-feet below the approved

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Spiral  
document

**Southwest District  
Permitting Application**

New Site

Site Name:		
Site ID:		
County:	Pasco	
Type/Subcode:		
Fee submitted:	( ) correct	( ) incorrect
Total Fee Required \$ _____ Need \$ _____ Refund \$ _____		

Existing Site

Site ID:		
177 982-006		
Project Name:		
Enterprise Construction Permit Modification		
Type/Subcode:		
SC / mm		
Fee submitted:	( ) correct	( ) incorrect
\$ 250.00		
Total Fee Required \$ 250.00 Need \$ _____ Refund \$ _____		

Applicant Information

Name:	
Dominic Lafata	
Role:	
Applicant	
Company:	
Angelo's Aggregate materials, Ltd.	
Address:	
P.O. Box 1493	
City:	Zip Code:
Largo	FL 33779
Phone:	

Fee verified by: [Signature]

Application Assigned To: Core - S Date: 6/21/04

one  
check  
two  
projects

Southwest District  
Permitting Application

Susan Pulz

New Site

Site Name:	
Site ID:	
County:	Pasco
Type/Subcode:	
Fee submitted:	( ) correct ( ) incorrect
Total Fee Required \$	Need \$ Refund \$

Existing Site

Site ID:	177982-005
Project Name:	Enterprise Fill Sequence modification
Type/Subcode:	SO/MM
Fee submitted:	\$250.00 ( ) correct ( ) incorrect
Total Fee Required \$	250.00 Need \$ Refund \$

Applicant Information

Name:	Dominic Ingrate
Role:	Applicant
Company:	Angelo's Aggregate materials, Ltd.
Address:	P.O. BOX 1493
City:	Largo
Zip Code:	FL 33779
Phone:	

Fee verified by: [Signature]

Application Assigned To: Core-S Date: 6/20/24

one  
week  
two  
projects

WARREN MI 48091

ST

## Annual Reports

Report Year	Filed Date
2002	05/24/2002
2003	03/24/2003
2004	03/11/2004

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[04/30/2001 -- ANN REP/UNIFORM BUS REP](#)  
[05/16/2000 -- ANN REP/UNIFORM BUS REP](#)  
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[10/26/1998 -- Reg. Agent Change](#)  
[07/08/1998 -- ANNUAL REPORT](#)

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Florida Department of State, Division of Corporations

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Public Inquiry

## Florida Profit

## IAFRATE FLORIDA PROPERTIES, INC.

## PRINCIPAL ADDRESS

26400 SHERWOOD  
WARREN MI 48091  
Changed 07/08/1998

## MAILING ADDRESS

26400 SHERWOOD  
WARREN MI 48091  
Changed 07/08/1998

Document Number  
P97000040503

FEI Number  
593448424

Date Filed  
05/07/1997

State  
FL

Status  
ACTIVE

Effective Date  
05/05/1997

## Registered Agent

## Name &amp; Address

CT CORPORATION SYSTEM  
1200 SOUTH PINE ISLAND RD.  
PLANTATION FL 33324

Name Changed: 10/26/1998

Address Changed: 10/26/1998

## Officer/Director Detail

Name & Address	Title
IAFRATE, DOMINIC 26400 SHERWOOD WARREN MI 48091	PD
IAFRATE, ANGELO E 26400 SHERWOOD WARREN MI 48091	VPD
KIEHNAW, MICHAEL 26400 SHERWOOD	



## Annual Reports

Report Year	Filed Date
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2003	03/25/2003
2004	03/05/2004

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[05/03/2002 -- COR - ANN REP/UNIFORM BUS REP](#)  
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[05/08/1998 -- ANNUAL REPORT](#)  
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Public Inquiry

## Florida Limited Partnership

## ANGELO'S AGGREGATE MATERIALS, LTD.

## PRINCIPAL ADDRESS

26400 SHERWOOD  
WARREN MI 48091

## MAILING ADDRESS

26400 SHERWOOD  
WARREN MI 48091

## Document Number

A97000001016

## FEI Number

593448428

## Date Filed

05/07/1997

## State

FL

## Status

ACTIVE

## Effective Date

NONE

## Last Event

CONTRIBUTION CHANGE

## Event Date Filed

07/10/2000

## Event Effective Date

NONE

## Actual Contribution

2,800,000.00

## Registered Agent

## Name &amp; Address

C T CORPORATION SYSTEM  
1200 SOUTH PINE ISLAND ROAD  
PLANTATION FL 33324

Name Changed: 10/26/1998

Address Changed: 10/26/1998

## General Partner Detail

## Name &amp; Address

IAFRATE FLORIDA PROPERTIES, INC.  
26400 SHERWOOD  
WARREN MI 48091Document  
Number

P97000040503



**Pelz, Susan**

---

**From:** Pelz, Susan  
**Sent:** Tuesday, June 08, 2004 4:23 PM  
**To:** 'jld@consulthai.com'  
**Cc:** Miguel Garcia; Morris, John R.  
**Subject:** RE: Enterprise Landfill conversation on June 3, 2004

Jennifer,

I agree. Your summary accurately reflects our conversation.

Thanks,  
Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Monday, June 07, 2004 11:08 AM  
To: Pelz, Susan  
Cc: Miguel Garcia  
Subject: Enterprise Landfill conversation on June 3, 2004

Susan,

Thank you for taking a few minutes to speak with Miguel and I on Thursday regarding the Cell 16 certification at the Enterprise facility. This e-mail serves as a summary to our conversation, to ensure we are all in agreement of the requirements for certification.

Cell 16 is roughly 5.75 acres. Angelo's intends to over-excavate the sandy areas by three-feet. Confining material, as determined by laboratory proctor testing, will be compacted into the cell bottom in three, 12-inch lifts. The material will be compacted into the surrounding confining layer at the surface of the cell floor. In-place density testing will be performed by a trained technician who will also collect shelly tube samples for permeability confirmation. The Department has requested five permeability tests per lift, for a total of 15 perm tests.

An additional one-foot of confining material, not intended for field testing, will be placed in the cell to raise the cell floor to an elevation of 76 ft, NGVD, as per the recent stormwater permit modification. Upon completion, the cell will be surveyed and this information, along with the solid waste certification form, and results of the laboratory testing, will be submitted to the Department for certification of this cell.

Please confirm by reply if you are in concurrence with this summary. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Tracking:**

**Recipient**

**Read**

**Recipient**

'jld@consulthai.com'

Miguel Garcia

Morris, John R.

**Read**

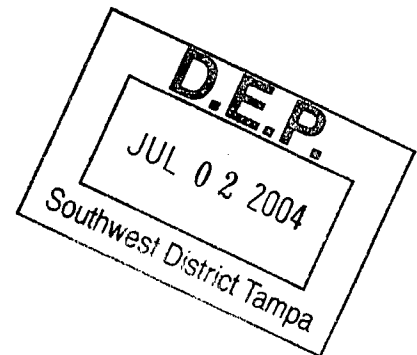
Read: 6/9/2004 7:16 AM



5C Sme J 7/10/04  
225 East Robinson Street, Suite 100  
Orlando, Florida 32801  
Phone: 407 649-5475  
Fax: 407 649-6582  
Web: www.hsagolden.com

June 29, 2004

Mr. Andy Aliphor  
**Pasco County Development Review**  
7530 Little Road, Suite 230  
New Port Richey, Florida 34654



Subject: **Enterprise Class III Landfill**  
Class I Mine Modification Submittal MP104-005  
Project No. 03-255.001

Dear Mr. Aliphor:

On behalf of Enterprise Recycling and Disposal facility (Enterprise), HSA Golden would like to respond to the following comments on the subject application from Ms. Susan Pelz, P.E. of the FDEP, Tampa dated June 21, 2004.

*Comment 1. It appears that the information submitted to [Pasco County] is inconsistent with the landfill design currently permitted by our Department. For example, the cell bottom elevations on Sheet 9-6 do not correlate with the actual constructed bottom elevation in Cell 1 which was previously permitted and is currently being used for disposal operations.*

Response: Ms. Pelz is correct that not all the details of the currently constructed and active 160-acre Class III landfill are shown on the proposed landfill expansion plans for the following reasons:

1. The plans for the landfill expansion were designed and finalized prior to approval of the final construction and operational certification of the current Cell 1 by the DEP. Therefore, the final construction details of the landfill, such as Cell 1 size, elevation, pond design and construction, etc., had to necessarily be more general and preliminary. However, judging by the minor comments from you and your staff, the level of detail of our expansion plans was sufficient to show compliance with Pasco County code Sections 312 and 313.
2. Specifically, on Sheet 9-6, a proposed 82-foot contour was depicted generally over the east side of the existing landfill, covering the existing active Cell 1 area. Because of the multiple design revisions required to accommodate the proposed 383-acre landfill expansion, and the unknown final construction details of the Cell 1 area, this site plan could not accurately

show all the details of the current landfill. As-built surveys of active Cell 1 show that the cell bottom elevation varies from 80 to 83 feet NGVD. Our 82-foot contour on Sheet 9-6 is in close range to these elevations and recognizes the required five (5)-foot separation between the cell bottom and the seasonal high water table (SHWT). This level of accuracy is sufficient for this preliminary phase of the project. As-built consistent details will be provided to the DEP and County in subsequent state permit applications and prior to any new cell operation or landfill expansion.

3. Pursuant to the current 160-acre landfill Pasco County CUP, condition no.38, and Section 312.4.6 of the Land Development Code (LDC), all DEP permits must be obtained prior to commencing any operations under the landfill, or mine, CUP. Therefore, in compliance with this condition and the LDC, the level of detail and consistency required for construction and operation of the proposed expansion will be provided to the County, and the DEP, prior to any activities in the proposed expansion area. Pasco County has been copied on all final plans approved to date by the DEP for the current landfill.

*Comment 2. Sheet 9-8 does not specify the type of "earth to be excavated" and the County should be aware that a surface depression (possibly a sinkhole) appeared during construction of the cells to the north of Cell 1 (currently permitted sequence).*

Response: The cross sections depicted on Sheet 9-8 are provided to comply with County LDC Section 312.2.A.13.z, requiring "proposed cross sections at intervals sufficient to determine volume." Therefore, the general label, "earth to be excavated" refers to all existing soil (sand, clay, etc.) above the proposed mine/landfill bottom elevation in an effort to depict the proposed volumes to be excavated. Although Sheet 9-8 was not intended to depict geological data, the proposed mine/landfill floor elevation on Sheet 9-8 was designed not to breach the known confining layer, or the five (5)-foot buffer above the SHWT, based on the hydrogeologic investigation of the 160-acre, and proposed 383-acre landfill expansion. Sheet 9-8 is sufficient to comply with the County code, and no revisions are proposed.

#### Surface Depression in Temporary Pond

As Ms. Pelz points out, on January 12, 2004, a shallow, 12-foot-diameter by 5-foot-deep subsidence feature was observed in a recent construction area in the northern section of the temporary stormwater pond, 600 feet north of landfill Cell 1. The subsidence feature was not an open sinkhole, but had clay at the base and sides of the feature. The temporary pond area was designed to be five (5) feet deeper than the landfill cells to allow proper drainage of the surrounding cells, so the combination of additional excavation and construction equipment in the area, and saturated soils, may have caused the subsidence.

Repair of the area began immediately, and the area was filled to grade with clay on January 13, 2004, to allow construction to continue and support a drilling investigation. The area was thoroughly investigated by Hartman & Associates and

Universal Engineering Sciences (UES), under the review of the DEP, from January 15 to 19, 2004. All loose soil zones detected were filled with grout by LRE Ground Services during February and March as documented in a March 10, 2004, UES report, enclosed. The landfill was certified to operate on March 9, 2004, acknowledging that the current Cell 1 disposal area had a stable subsurface. Although the subsidence area of the temporary pond has been fully remediated, Enterprise plans to install a compacted three (3)-foot-thick clay layer over the northern portion of the temporary pond to allow future certification of the area for landfilling.

The extensive drilling programs of the Geotechnical investigation for the existing and proposed landfill prove the existing and proposed landfill areas to have a natural clay confining layer and to be stable to support a landfill. However, to guarantee this clay layer protection, each future new cell area will be individually investigated by Enterprise, filled with three (3) feet of clay (maximum vertical hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec) and certified, as approved by the DEP prior to operation. The County will be copied on all future reports of the construction of the landfill cells.

*Comment 3. The Department invites County staff to review our files on this facility, particularly with regard to the subsurface conditions and strata encountered during the past construction activities.*

Response: Enclosed for your information are the primary documents submitted to the Department describing the extensive investigation, repair and certification of the subsurface conditions encountered during the construction of Cell 1 and the temporary pond of the active landfill. Again, as these documents show, the depressional area was not in the proposed Cell 1 disposal area, and was fully studied and repaired prior to landfill operation and is not characteristic of the site as a whole.

Enterprise is currently installing a three (3)-foot-thick layer of clay over the northern temporary pond area to insure confining layer consistency. Although the site has a natural clay confining layer, Enterprise is proposing as an additional protection to put in place a three (3)-foot-thick layer of clay at the base of all future proposed landfill cells.

*Comment 4. Please note also that to date, the Department's Solid Waste Section has not received an application for expansion of the existing Class III landfill. Prior to initiation of any changes to the previously permitted construction or operation of the facility, a permit modification or new permit issued by our Department will be required. As part of that permitting process, the Department will make a detailed review of the information submitted by the applicant to ensure compliance with Department rules.*

Response: As with the initial 160-acre landfill approval process, DEP permit applications were submitted following County CUP approval. This same time sequence also applies to the proposed expansion. Once the County has reviewed, and approved, the CUP

for the expansion, the DEP permit application will be prepared. We will comply with the County code and DEP rules stating that no construction or operational changes can be made without first obtaining a DEP permit modification and copy the County on all future DEP submittals.

*Comment 5. Since the information you submitted indicates that the pending application is for mining, this information has been forwarded to the Department's ERP Section for their information and/or comments.*

Response: Although the County's application was not intended to support an ERP, we welcome the DEP's comments. As stated above, an ERP will be obtained prior to any activities.

We trust that the concerns raised by Ms. Pelz letter have been sufficiently addressed to allow the project to progress through the County's review process. We would be glad to meet with you to discuss the details of the enclosed information. Please call if you wish to meet, or if you have any questions.

Sincerely,

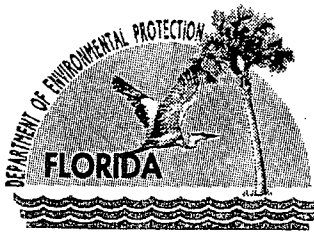
**HSA GOLDEN**



James E. Golden, P.G.  
Vice President, Principal Hydrogeologist

Enclosures

Copy to: Mr. Dominic Iafrate  
Gerald Figurski, Esquire  
Mr. Jeff Rogers, Enterprise Recycling and Disposal  
Ms. Susan Pelz, FDEP, without enclosures  
Mr. Mark Hardy, UES, without enclosures



# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Colleen M. Castille  
Secretary

Ms. Donna Huber, Permitting Technician  
Pasco County Development Review  
7530 Little Road, Suite 230  
New Port Richey, FL 34654

June 21, 2004

RE: Enterprise Class III Landfill  
Class I Mine Modification Submittal, MPI04-005

Dear Ms. Huber:

The Department has received the information dated June 7, 2004 (received June 12, 2004) that your office has forwarded concerning the proposed Enterprise Landfill Expansion. It appears that the information submitted to you is inconsistent with the landfill design currently permitted by our Department. For example, the cell bottom elevations on Sheet 9-6 do not correlate with the actual constructed bottom elevation in Cell 1 which was previously permitted and is currently being used for disposal operations. Sheet 9-8 does not specify the type of "earth to be excavated" and the County should be aware that a surface depression (possibly a sinkhole) appeared during construction of the cells to the north of Cell 1 (currently permitted sequence). The Department invites County staff to review our files on this facility, particularly with regard to the subsurface conditions and strata encountered during the past construction activities.

Please note also that to date, the Department's Solid Waste Section has not received an application for expansion of the existing Class III landfill. Prior to initiation of any changes to the previously permitted construction or operation of the facility, a permit modification or new permit issued by our Department will be required. As part of that permitting process, the Department will make a detailed review of the information submitted by the applicant to ensure compliance with Department rules.

Since the information you submitted indicates that the pending application is for mining, this information has been forwarded to the Department's ERP Section for their information and/or comments. Please contact Mr. Ted Murray at 813-744-6100 x 323 if you have any questions concerning the mining or wetland issues. Please contact me at 813-744-6100 x 386 if you have additional questions concerning solid waste issues.

Sincerely,

Susan J. Pelz, P.E.  
Solid Waste Manager  
Southwest District

sjp  
cc:

David Smith, P.E., FDEP Tampa, ERP/IW  
Ted Murray, FDEP Tampa, ERP  
Simone Core, P.E., FDEP Tampa, Solid Waste  
Mike Zavosky, FDEP Tampa

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Pelz, Susan

SC  
Enterprise Construction  
permit File

**From:** Pelz, Susan  
**Sent:** Tuesday, June 08, 2004 4:23 PM  
**To:** 'jld@consulthai.com'  
**Cc:** Miguel Garcia; Morris, John R.  
**Subject:** RE: Enterprise Landfill conversation on June 3, 2004

Jennifer,

I agree. Your summary accurately reflects our conversation.

Thanks,  
Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Monday, June 07, 2004 11:08 AM  
To: Pelz, Susan  
Cc: Miguel Garcia  
Subject: Enterprise Landfill conversation on June 3, 2004

Susan,

Thank you for taking a few minutes to speak with Miguel and I on Thursday regarding the Cell 16 certification at the Enterprise facility. This e-mail serves as a summary to our conversation, to ensure we are all in agreement of the requirements for certification.

Cell 16 is roughly 5.75 acres. Angelo's intends to over-excavate the sandy areas by three-feet. Confining material, as determined by laboratory proctor testing, will be compacted into the cell bottom in three, 12-inch lifts. The material will be compacted into the surrounding confining layer at the surface of the cell floor. In-place density testing will be performed by a trained technician who will also collect shelly tube samples for permeability confirmation. The Department has requested five permeability tests per lift, for a total of 15 perm tests.

An additional one-foot of confining material, not intended for field testing, will be placed in the cell to raise the cell floor to an elevation of 76 ft, NGVD, as per the recent stormwater permit modification. Upon completion, the cell will be surveyed and this information, along with the solid waste certification form, and results of the laboratory testing, will be submitted to the Department for certification of this cell.

Please confirm by reply if you are in concurrence with this summary. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

Tracking:

Recipient

Read



**Recipient**

'jld@consulthai.com'

Miguel Garcia

Morris, John R.

**Read**

Read: 6/9/2004 7:16 AM

# HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

## OFFICERS:

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Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Michael B. Bomar, P.E.  
Lawrence E. Jenkins, P.S.M.

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Troy E. Layton, P.E., DEE  
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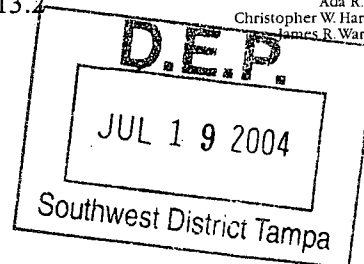
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Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero  
Christopher W. Hardin, P.E.  
James R. Warner, E.I.

March 30, 2004  
(Resubmitted July 15, 2004)

HAI #99.0331.007

File 13.2



Via UPS Ground

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Grouting Completion Report  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**

Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Inc. (AAM), Hartman & Associates, Inc. (HAI) is submitting for your review the grouting completion report for the remediation of the subsidence area in cell 16, at the subject site in Dade City, Florida.

The subsidence area was discovered during an HAI site visit on January 12, 2004. The Department was notified about the existing site conditions within 24-hours, as required by the approved Construction Permit. AAM was advised by one of its consultants to fill in the subsidence area with clay immediately to prevent any additional slumping and to create areas stable enough to accommodate a drill rig. The approximate location of the subsidence area prior to being filled and the top of the excavated slope was marked and surveyed by Foresight Surveyors, Inc. A map showing the surveyed location of the subsidence area is included as Figure 1. HAI was onsite from January 15 through 17, 2004 with UES drillers to complete SPT borings in an effort to delineate the lateral and vertical extent of the subsidence area.

Using the lithologic description and blow count data from the SPT borings, engineers from UES calculated the approximate volume of grout required to remediate the subsidence area. LRE Ground Services, Inc. was onsite from March 2 through 9, 2004 to complete the grouting operation. A total of 357 cubic yards of grout was injected into a total of twenty-seven (27) grout injection points, within and adjacent to the original subsidence area.

Universal Engineering Sciences, Inc. (UES) observed the remedial grouting operation at the site, performed by LRE Ground Services, Inc. A grouting completion report, signed and sealed by a UES engineer has been included in Attachment A. Field notes completed by the onsite UES technician during the remedial grouting are included in Attachment B.

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See  
FILE  
copy

## Pelz, Susan

---

**From:** Pelz, Susan  
**Sent:** Monday, March 08, 2004 11:45 AM  
**To:** Tedder, Richard; McGuire, Chris  
**Subject:** FW: Draft Enterprise CIII Cert approval letter

Bill's comments

-----Original Message-----

**From:** Kutash, William  
**Sent:** Wednesday, March 03, 2004 12:06 PM  
**To:** Pelz, Susan  
**Subject:** RE: Draft Enterprise CIII Cert approval letter

Fine with the letter generally, but concerned about the last paragraph - do we believe that they can convince us that the cell can be operated in the future with only design changes? Or do we believe that a liner/leachate collection system may be needed? If we are going to stake out our future permitting position on this cell (or any others) , we need to be clear where we think this is going.

-----Original Message-----

**From:** Pelz, Susan  
**Sent:** Wednesday, March 03, 2004 11:56 AM  
**To:** Tedder, Richard  
**Cc:** McGuire, Chris; Kutash, William  
**Subject:** Draft Enterprise CIII Cert approval letter  
**Importance:** High

Richard/Chris,

Can you look at this & give me your comments? I am especially interested in your comments on the last paragraph. It goes back to the question of is the exemption from liners & leachate collection still valid if the conditions encountered are different than those described in permitting, and if it's not what can we do?

I need to email this approval letter (or mail out hardcopy) no later than next Monday 3/8/04 since they have told us they're not waiting anymore (see attached email).

thanks for your help,  
Susan

<< File: EnterpriseCell1-15Cert.03-03-04.DOC >> << Message: Enterprise Facility >>

Tracking:	Recipient	Read
	Tedder, Richard	Read: 3/8/2004 1:43 PM
	McGuire, Chris	Read: 3/9/2004 4:35 PM

## Pelz, Susan

---

**From:** Kutash, William  
**Sent:** Wednesday, March 03, 2004 12:06 PM  
**To:** Pelz, Susan  
**Subject:** RE: Draft Enterprise CIII Cert approval letter

Fine with the letter generally, but concerned about the last paragraph - do we believe that they can convince us that the cell can be operated in the future with only design changes? Or do we believe that a liner/leachate collection system may be needed? If we are going to stake out our future permitting position on this cell (or any others) , we need to be clear where we think this is going.

-----Original Message-----

**From:** Pelz, Susan  
**Sent:** Wednesday, March 03, 2004 11:56 AM  
**To:** Tedder, Richard  
**Cc:** McGuire, Chris; Kutash, William  
**Subject:** Draft Enterprise CIII Cert approval letter  
**Importance:** High

Richard/Chris,

Can you look at this & give me your comments? I am especially interested in your comments on the last paragraph. It goes back to the question of is the exemption from liners & leachate collection still valid if the conditions encountered are different than those described in permitting, and if it's not what can we do?

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thanks for your help,  
Susan

<< File: EnterpriseCell1-15Cert.03-03-04.DOC >> << Message: Enterprise Facility >>

## Pelz, Susan

---

**From:** Pelz, Susan  
**Sent:** Wednesday, March 03, 2004 11:56 AM  
**To:** Tedder, Richard  
**Cc:** McGuire, Chris; Kutash, William  
**Subject:** Draft Enterprise CIII Cert approval letter

**Importance:** High

Richard/Chris,

Can you look at this & give me your comments? I am especially interested in your comments on the last paragraph. It goes back to the question of is the exemption from liners & leachate collection still valid if the conditions encountered are different than those described in permitting, and if it's not what can we do?

I need to email this approval letter (or mail out hardcopy) no later than next Monday 3/8/04 since they have told us they're not waiting anymore (see attached email).

thanks for your help,  
Susan



EnterpriseCell1-  
.5Cert.03-03-0..



Enterprise  
Facility

### Tracking:

#### Recipient

Tedder, Richard  
McGuire, Chris  
Kutash, William

#### Read

Read: 3/3/2004 1:19 PM  
Read: 3/3/2004 4:20 PM  
Read: 3/3/2004 11:57 AM

## Pelz, Susan

---

**From:** Pelz, Susan  
**Sent:** Tuesday, March 02, 2004 12:46 PM  
**To:** McGuire, Chris; Tedder, Richard  
**Cc:** London, Lisa  
**Subject:** FW: Enterprise Facility

**Importance:** High



PELZ.DOC

Richard/Chris,

Would like to respond to this?

Susan

-----Original Message-----

**From:** Jennifer L. Deal [mailto:jld@consulthai.com]  
**Sent:** Tuesday, March 02, 2004 12:24 PM  
**To:** Pelz, Susan  
**Subject:** Enterprise Facility

Susan,

At the request of Angelo's, Hartman has prepared the attached correspondence. An original will follow via UPS overnight service. Please call me if you have any questions or would like to discuss this matter. Thank you for your time.

Respectfully,

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

### Tracking:

#### Recipient

McGuire, Chris  
Tedder, Richard  
London, Lisa

#### Read

Read: 3/3/2004 4:24 PM  
Read: 3/3/2004 1:14 PM  
Read: 3/2/2004 12:55 PM

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Daniel M. Nelson, P.E.

engineers, hydrogeologists, surveyors & management consultants  
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March 2, 2004

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Christopher W. Hardin, P.E.  
James R. Warner, E.I.

HAI #99.0331.007

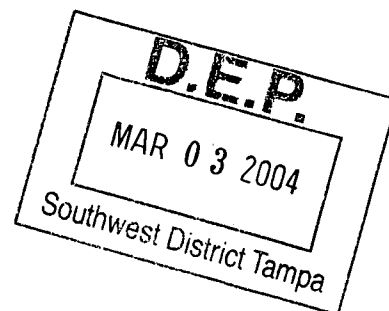
Phase 5

File 12.0

### Via E-mail and UPS Overnight

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Initiation of Landfill Operations  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**



Dear Ms. Pelz:

Thank you for your recent e-mail correspondence regarding the Enterprise Recycling and Disposal Facility in Dade City, Florida (Facility). This response to your correspondence is being prepared by Hartman & Associates, Inc. (HAI), on behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), the holder of the above-referenced permits to construct and operate the Facility.

In accordance with Specific Condition 9 of the construction permit, HAI submitted to the Department the following documents on October 9, 2003: a Certification of Construction Completion, DEP Form 62-701.900(2); as-built surveys showing all changes; a narrative of the changes; and additional supporting documentation. Financial assurance documentation in accordance with F.A.C. Rule 62-701.630 was previously submitted to the Department. Addendums to this document were submitted at the request of the Department on November 14, 2003 and January 14, 2004, including a revised Certification of Construction Completion form. Since more than 14 days have passed since HAI submitted these documents, Angelo's is authorized under F.A.C. Rule 62-701.320(9)(a) to proceed with operation of the Facility in accordance with its construction and operation permits and the submitted modifications.

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Ms. Susan Pelz, P.E.  
March 2, 2004  
Page 2

Grouting activities for the subsidence in Cell 16 began on Monday, March 1, 2004, and is expected to require two to five days for completion. Documentation of the remedial activities will be submitted to the Department, as required by the recently modified stormwater permit.

Certification activities for Cell 16 will be concurrent with landfill operation. Certification documentation will be submitted to the Department upon completion.


At the request of Angelo's, HAI is submitting this notification of Angelo's intent to initiate landfill operations at the Facility. The Facility will begin to accept waste into the certified portion of Cell 1 on March 9, 2004.

Angelo's has been advised by their attorney that neither FAC Rule 62-701.320(9)(a) nor the Facility construction and operation permits require the Department's approval of a certification prior to commencement of landfill operations. This rule allows 14 days for the Department to visit the site prior to opening, but does not specify a legal authority for the Department to prevent a facility from operating. The most recent certification addendum package was submitted to the Department on January 14, 2004 via hand delivery. Kim Ford and John Morris performed a site visit on January 21, 2004. Therefore, the Department is not legally authorized to object to Angelo's proceeding with Facility operations as indicated herein. If you disagree with our understanding of the law, please advise us at your earliest convenience.

Please call us if you have any questions. Thank you for your consideration.

Very truly yours,

**Hartman & Associates, Inc.**

  
Jennifer E. Deal, P.E.  
Project Manager

JLD/cr/99.0331.007/T5/corresp/Pelz.doc

cc: Dominic Iafrate, Angelo's  
Dan Thompson, Berger Singerman  
Robert Butera, P.E.  
Kim Ford, P.E., FDEP  
John Morris, P.G., FDEP  
James E. Golden, P.G., HSA Golden



**Ford, Kim**

---

**From:** Ford, Kim  
**Sent:** Monday, February 16, 2004 10:49 AM  
**To:** Pelz, Susan  
**Cc:** Morris, John R.  
**Subject:** Class III questions

Susan, after further review of our rules there appears to be some questions that are not quite clear, and maybe we ought to ask Chris. When the Department exempts a Class III landfill from a double or composite liner (62-701.400(3)) and requires a clay layer only:

1. Will the clay layer be considered to be a "liner" (62-701.200(70))?
2. Is the landfill considered to be a "lined landfill" (62-701.200(69))?
3. Is the landfill considered to be an "unlined landfill" (62-701.200(128)), and if so then why?
4. Is the clay layer (partly or wholly) subject to the requirements of 62-701.400(3)(a)1. -5., 62-701.400(3)(f), 62-701.400(7) and (8)?
5. Can the Department approve the leachate to drain to a sump and allow it to percolate, and later require leachate removal after detecting water quality violations?

Kim

2/16/2004

## **Comments on the water table elevations and the related monitoring wells**

Comments on the monitoring wells that are listed in the current operation permit (#177982-002-SO) are as follows:

Specific Conditions #30 and #32 of the current permit includes a list of the wells that must be installed and initially sampled "prior to disposal", and monitored. According to a review of Department records, all of the wells required for disposal in Cells 1 and 2 appear to be installed however initial sampling correspondence has not been reviewed. Additionally, specific condition #31 of the current permit includes a list of piezometers to be used for measuring groundwater levels. According to a review of recent HAI correspondence, piezometer P-7 is not included and may not be installed.

Comments on the weekly water levels (report by HAI dated December 30, 2003, received on December 31, 2003), are as follows:

This report includes weekly water level elevations from June 30, 2003 through December 17, 2003. There appears to be no other more recent report provided for January 2004 weekly water levels. [Since the temporary pond appears to be empty/dry at this time, the weekly water levels since December 2003 may provide more representative expected groundwater levels that would not be impacted by water in the temporary pond. This review of water levels is an attempt to determine the likeliness of a connection between the surficial and Floridan aquifers.]

The temporary pond excavation was completed down to elevation of +75 NGVD, and Cell 1 was excavated to elevation +80.

The report shows that MW-9 has been dry since it was installed, and MW-10 has been dry since December 1, 2003. According to related records, MW-9 and MW-10 are screened down to elevation +56, with screened intervals very similar to those for MW-5A, MW-6, MW-7A, and MW-8. Wells MW-6, MW-7A, and MW-8 have not been dry but show water level elevations from +73 to +78. [There appears to be a need to provide groundwater monitoring in the vicinity of MW-9 and MW-10, adjacent to Cell 2.]

The report shows that the Floridan groundwater has been in an artesian condition (meaning water would flow to the surface naturally when unconfined) in the vicinity of the temporary pond, and the Floridan groundwater level elevations from +73 to +78. The report shows that the water levels in the temporary pond has been consistently at or above the Floridan groundwater level on the date of each measurement (except 2 out of 21 weeks). [Therefore, there may be a potential connection between the Floridan groundwater level and the temporary pond.]

The report shows the surficial water level elevations from +74 to +81 in MW-8 (adjacent to Cell 1), and the surficial water level elevations from +76 to +84 in MW-5A (adjacent to Cell 16). Cell 1 has been excavated to elevation +80, therefore the Cell 1 base is lower than some of the adjacent surficial water levels. Cells 16 has been excavated to elevation +75, therefore the Cell 16 (temporary pond) base is lower than most of the adjacent surficial water levels by several feet. [The original design shows a maximum SHWT of elevation +73 NGVD. The base of each cell should be designed to remain above the SHWT.]

The report shows that the surficial water level elevations in MW-6 and MW-7A are most often almost identical to the Floridan groundwater level elevations in MW-5B and MW-7B, especially while there is no water in the temporary pond. [Therefore, there may be a potential connection between the Floridan groundwater level and the surficial water.]

## **Comments related to previous geotechnical reports and related documents**

[I suggest that Tallahassee staff assist in the review of all geotechnical calculations for this project. I do not feel entirely comfortable opposing the consultant's stated factors of safety (FS).]

Comments on original geotechnical report by Universal dated May 5, 2000 (received on November 20, 2000 as Section 4 of the permit application document), are provided as follows:

Universal used only 2 cross-sections provided by Hartman & Assoc. as the basis for the geotechnical investigation. This seem too general and not specific to the geology in Cells 1, 15, 16. The report identifies the underlying "artesian" Floridan aquifer. The report describes variable geology, and the "limestone was contacted at depths of 32 to 67 feet" [with 32 feet below surface apparently being a typo that should have been 37 feet at boring B-07 with limestone at elevation +56 feet NGVD].

The water table was found to be elevation +61 NGVD during the 2000 geotechnical investigation [this is much lower than the estimated SHWT elevation +73. Supporting documents were not provided to show what water table value was used for the bearing capacity, or the rotational and wedge/block geotechnical calculations.]

In the general discussion of sinkhole potential, the report explains that "the confining layer prevents an interconnected hydrostatic condition", and describes a "net upward gradient" and a "net downward gradient", and this depends on the difference between the shallow and deep water table. The report goes on to explain that "if an opening develops in the confining layer, connecting the voids or caverns in the limestone bedrock below to the relatively sandy soils above, then the soil and groundwater conditions might become unbalanced. In some instances, the clay in the confining layer soil may crack when the shallow water table is absent, and the result can be a breach in the confining layer." [The shallow water table and the deep water table must be compared and hydrostatic uplift must be considered if the potential exists for damage to the confining layer due to hydrostatic uplift after removal of surficial soil and over-excavating parts of the confining layer especially when the shallow water table is absent. Therefore, since dewatering would increase the potential for cracking/breaching the confining layer, and backfilling must be done in a dry (not wet/saturated) condition for compaction, then over-excavating part of the confining layer (for the reason to achieve stormwater capacity, or for any other reason) is inappropriate unless the plan to over-excavate is provided with evidence that there is no potential for hydrostatic uplift/breaching of the confining layer.]

The report described the "lineament" features of the study area and states that "no significant lineament traverse the site, and no significant loose or raveled soil zones were detected in our borings above the upper limestone surface", and "Based on the above lineament study and subsurface exploration information, it is our opinion that the potential for sinkhole occurrence at the site is low." [I wonder if Universal's opinion would be the same based on the new information such as limestone observed much higher than in their early borings in 2000, the over-excavating of the limestone and parts of the confining layer, and the occurrence of a sinkhole.]

The report describes the slope stability results [apparently for circular/rotational failure only without cross-section printouts showing the failures and boundary conditions, and no wedge/block analysis] with  $FS > 3$  based on 4H:1V final sideslopes and water table at elevation +70 [which is lower than the current water table. If 4H:1V only was used for the slope stability analysis then 4H:1V must not be exceeded anywhere at anytime including the working face and active disposal area]

The report describes the bearing capacity results [with no supporting calculations or cross-sections] and a  $FS > 3$ .

The report describes the settlement "based on average N-value of 6 blows per foot, the total settlement of the foundation soil was estimated to be on the order of magnitude of one inch" [with no supporting calculations or cross-sections]. Universal's boring logs show no less than 4 blows per foot in the vicinity of the base grade elevation +80 NGVD all the way down to the limestone with most commonly 10-20 blows per foot. [Miguel Garcia of Hartman & Assoc. during the site inspection on January 21, 2004 described several locations with 1 blow per foot and in one location with 3 feet per blow and that these locations would be grouted.]

In the report, Universal recommends that "if subsurface conditions are encountered during the mining [excavation] stage, which were not encountered in the borings, report those conditions immediately to us [Universal Engineering Sciences] for observation and recommendations." [If Hartman & Assoc. contacted Universal for additional recommendations then DEP should have received a copy of those recommendations. Jennifer Deal has mentioned calling a company that specializes in subsurface grouting but DEP has received only information from Hartman & Assoc regarding the sinkhole.]

Comments on the responses by Hartman&Assoc dated March 23, 2001, are provided as follows:

The responses included CQA for the "cell floor". There appeared to be no anticipation of certifying anything other than the "cell floor", and Hartman & Assoc. proposed that "if the cell floor does not meet the requirements of the anticipated conditions, additional samples may be tested", and if the cell does not meet the requirements then "that cell will be reworked or reconstructed so that it meets these requirements." The maximum allowable hydraulic conductivity for the cell floor does not appear to have been included in the response.

Comments on the responses by Hartman & Assoc. dated April 2, 2001, are provided as follows:

The responses included "additional borings completed across the site also confirm the presence of a sandy clay over limerock for each cell", and "The proposed base of the landfill does not breach this confining layer nor does it encounter limestone". The description for the certification of construction was revised to "recognize observation of the in-situ clays at the base of the landfill and testing of the landfill soils to ensure stability." There appeared to be no anticipation of certifying anything other than the "base of the landfill".

Comments on the responses by Hartman & Assoc. dated May 18, 2001, are provided as follows:

The responses included a reminder that "The Department shall exempt a Class III landfill from liner and leachate controls based on site specific operational controls and hydrogeological /geotechnical investigation results", and "The facility's operations plan requires a certification of the existence of a sandy clay confining layer over the limestone aquifer underlying each cell prior to waste disposal in that Cell", and "This requirement will insure there is no unimpeded discharge to groundwater and that the clay layer is not breached."

The Engineering Report and Operations Plan by Hartman&Assoc dated June 2001, (total replacements with no other revisions) were provided on June 21, 2001.

On May 30, 2003, the Department received notification (by phone call to John Morris) that limestone was encountered during Cell 1 excavation and estimated to be 10 feet above the planned bottom elevation, and excavation was continuing in other portions of Cell 1. More rock was exposed as the excavation continued. Hartman & Assoc. proposed a plan to excavate to the design base of the cell and over-excavate the cell base by 3 feet in the locations of limestone and backfill with clay.

Comments regarding the Borings and the occurrence of limestone and "limestone fragments"

Comments on the borings that were included as part of the original geotechnical report (Section 4 of the application document) are provided as follows:

Borings B-1 through B-10 show no limestone above the base of the landfill, and no limestone fragments above the base of the landfill, not even a trace of a fragment in any of the ten borings.

Comments on the borings that were included as part of the original hydrogeological investigation (Section 5 of the application document) are provided as follows:

In Section 5.1.6, HAI described all drilling fluid circulation losses "at the contact between the clay and the limestone, or within the limestone at depth, which are not evidence of sinkhole formation." [This section may need to be revised due to the recent sinkhole.]

Only cross-section B-B' (Figure 6) shows limestone (projected/drawn, and not confirmed by a boring) above the base of the landfill near boring B-1, and this limestone shown on the cross-section is not shown/noted on the B-1 boring log. There are no limestone fragments shown on any of the cross-sections.

Several of the HAI lithologic logs (B-8, B-9, B-10) note "trace rock fragments" and "trace sandstone" in the upper 20 feet of the borings, but not continuous and no limestone fragments.

Several of the HAI field boring logs (B-12, B-14) and test boring logs (DCL01-2, DCL01-4, DCL01-12) note "rock fragments" in the upper 20 feet of the borings, but not continuous and no limestone fragments. The Test Boring Log DCL01-10 (in Cell 1) shows no rock at all, not even a trace of a fragment. One peculiar item to note is that the Test Boring Log DCL01-12 (in Cell 15) shows/notes "cobbles" and "limestone" from elevation +87 to +81, and there are no reports of such "cobbles" and "limestone" during the construction of Cell 15.

Comments on the borings that were included as part of the Cell 1 and Landfill Site Certification Addendum 2 (dated January 14, 2004, received on January 15, 2004) are provided as follows:

The cross-sections in Appendix A note one new, and distinctly different and predominant soil classification being "LS Marl". The predominance of the "LS Marl" and the common occurrence of continuous "limestone fragments" within most of the deeper borings changes the entire appearance of the site geology from that which was presented in the original documents as part of the permit application. 12 out of 13 of the borings shown on cross-section A-A' (in Cell 1) show continuous "limestone fragments", and "LS Marl" is shown to be present throughout the entire bottom portion of the cross-section. As a matter of fact, there is no "limestone" shown on the cross-sections A-A' and B-B' anywhere at all. [The presentation of "LS Marl" rather than limestone at elevation +50 NGVD and below (in Cell 1) is entirely contrary to the geology presented on the original borings and cross-sections. The misrepresentation is confusing and leads one to conclude that either the "LS Marl" has the same properties as the Floridan Aquifer Limestone, or that there is no Floridan Aquifer Limestone.]

**Pelz, Susan**

---

**From:** Angulo, Yanisa  
**Sent:** Monday, February 16, 2004 10:25 AM  
**To:** Pelz, Susan  
**Subject:** RE: Meeting on Monday, 2/16/04

Susan

He is working on issuing a partial approval. We stole your idea!!!  
Yanisa

-----Original Message-----

From: Pelz, Susan  
Sent: Monday, February 16, 2004 7:30 AM  
To: Angulo, Yanisa; Smith, David G  
Subject: FW: Meeting on Monday, 2/16/04  
Importance: High

What did you end up doing? issuing (partial) or denying?

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Friday, February 13, 2004 6:04 PM  
To: Pelz, Susan  
Subject: Meeting on Monday, 2/16/04

Susan,

We have scheduled a meeting with David Smith for 9 a.m. on Monday, 2/16/04 to discuss the stormwater management system at the Enterprise site. Dominic Iafrate asked me to send this e-mail requesting your attendance at this meeting. Sorry for the short notice, but we were only informed late today of David's permitting decision. You can reach me on Monday morning on our cell phone if necessary, 407-341-2035. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955



225 East Robinson Street, Suite 100  
Orlando, Florida 32801  
Phone: 407 649-5475  
Fax: 407 649-6582  
Web: [www.hsagolden.com](http://www.hsagolden.com)

February 18, 2004

*J2/19*  
Ms. Susan Pelz, P.E., Manager, Solid Waste Section  
**Florida Department of Environmental Protection**  
3804 Coconut Palm Drive  
Tampa, Florida 33619

Re: Certification of Operations Cells 1 and 15  
**Enterprise Class III Landfill**  
Angelos Aggregate Materials, Pasco County, Florida  
Permit No. 177982-002-SO  
Project No. 03-255.004

Dear Ms. Pelz:

At the request of the applicant for the above site, Angelos Aggregate Materials, we have concerns over recent DEP correspondence that leads me to believe that the Department may wrongly characterize the subject site as having active sinkholes.

With all due respect to the Department, I have been studying this site for over five years, most as the Professional Geologist of record, and past studies have always indicated that the Site's geology is very stable. Standard Penetration Test (SPT) borings show dense to very dense sediments and indicate no significant signs of active sinkholes, such as raveling soils, voids, and large areas of soft soils. There has been the typical loss of circulation at the soil-limestone interface at depth, and a few one- to two-foot-thick layers of soft sediment layers (one to three blow counts), but in all borings dense/firm and/or very dense/very firm sediments have surrounded these softer soil layers in a stable setting. Geologically, it is an excellent site for a Class III landfill.

The recent occurrence of a small collapse structure (12 feet in diameter and five feet deep) in Cell 16-temporary pond is a result of the unique factors associated with that specific area of the Site:

- 1) 20 feet of firm clay were excavated to construct the temporary pond, removing some of the previously stabilizing clay overburden;
- 2) Stormwater has been focused in the area over the last four to six months, resulting in the saturation of the sediments, which would tend to make any soft sediments less stable;
- 3) In the vicinity of the collapse, the top of the limestone is 15 to 25 feet below grade (previously 25 to 35 feet below grade), the shallowest in the entire site;
- 4) Zones of soft clayey sand/marl sediments that were found by the drilling investigation in the collapsed area are near the surface at a depth of eight to 15 feet; this is again unique to this area of the site. Dense or firm limestone and clays were encountered above and below these soft zones, indicating no direct connection to the Floridan Aquifer; and
- 5) Concentrated heavy equipment loads from work in the area to build the berm between Cells 15 and 16 happened only a day or two before the collapse. Heavy equipment had worked in this area all last spring with no stability problems.

These area specific factors all add up to a unique situation in Cell 16 that is not characteristic of the Site in general. With the exception of one paleosink in the northeast corner of the site, which was extensively investigated and found to be stable, there is no evidence of sinkhole activity on site. Additionally, internal drainage does not occur, providing further evidence for lack of sinkhole activity. Also, recall that Cell 16 is not within the perimeter of the disposal area currently being certified; this cell will not be filled with waste for at least 25 years.

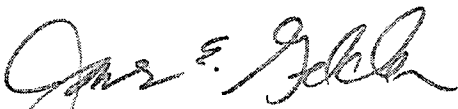
As you know, Angelos is planning to immediately inject grout in the collapse area and add three feet of compacted clay over this and the sandier areas within Cell 16. Further study and monitoring may be needed, but there is plenty of time during the operating phase of the facility to do so. If desired by the Department, the grouting of the collapse within Cell 16 could be added as a condition of operation for the facility and to allow current operation within Cells 1 and 15. We recommend that the unique situation at Cell 16 should in no way preclude the operation of the Facility in Cells 1 and 15 or any of the other parts of the Site.

All of the data support that the facility's Cells 1 and 15 are certifiable and that the site should be certifiable to operate. All of the environmental protections are in place: the consistent clay layer in Cells 1 and 15; groundwater monitoring wells within the surficial and Floridan Aquifers; spotters at the working face; and a camera at the gate house. With the exception of this localized area, all of our geotechnical and hydrogeological studies at this site show it to be stable and not sinkhole prone. Grout will be injected to further stabilize the area, and three feet of compacted clay will be added. In our opinion, the operation of the Facility and the occurrence of this collapse does not significantly increase the threat to the environment.

We respectfully request that the Department judge this site by its overall geology and not by a localized occurrence that should be managed separately.

Sincerely,

**HSA GOLDEN**



James E. Golden, P.G.  
Vice President, Principal Hydrogeologist

Copy to: Mr. Richard Tedder, FDEP - Tallahassee  
Mr. Chris McGuire, FDEP - Tallahassee  
Mr. Dominic Iafrate, Angelos Aggregate Materials  
Ms. Jennifer Deal, Hartman & Associates



**Pelz, Susan**

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Friday, February 13, 2004 6:04 PM  
**To:** Pelz, Susan  
**Subject:** Meeting on Monday, 2/16/04

Susan,

We have scheduled a meeting with David Smith for 9 a.m. on Monday, 2/16/04 to discuss the stormwater management system at the Enterprise site. Dominic Iafrate asked me to send this e-mail requesting your attendance at this meeting. Sorry for the short notice, but we were only informed late today of David's permitting decision. You can reach me on Monday morning on our cell phone if necessary, 407-341-2035. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**HARTMAN & ASSOCIATES, INC.**

## OFFICERS:

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 Harold E. Schmidt, Jr., P.E., DEE  
 James E. Christopher, P.E.  
 Charles W. Drake, P.G.  
 Mark A. Rynning, P.E., M.B.A.  
 William D. Musser, P.E., P.H.  
 Michael B. Bomar, P.E.  
 Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

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 Roderick K. Cashe, P.E.  
 Douglas P. Dufresne, P.G.  
 Jon D. Fox, P.E.  
 Troy E. Layton, P.E., DEE

engineers, hydrogeologists, surveyors &amp; management consultants

## ASSOCIATES:

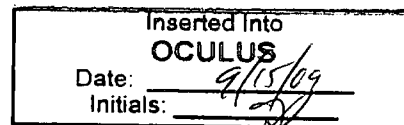
James E. Golden, P.G.  
 Andrew T. Woodcock, P.E., M.B.A.  
 John P. Toomey, P.E.  
 Mark A. Gabriel, P.E.  
 George S. Flint, M.P.A.  
 Jennifer L. Woodall, P.E.  
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 Daniel M. Nelson, P.E.  
 Valerie C. Davis, P.G.  
 Charles M. Shultz, P.E.  
 Jan M. Parks, AICP, QEP  
 C. Michelle Gaylord  
 Tara L. Hollis, C.P.A., M.B.A.  
 W. Bruce Lafrenz, P.G.  
 Darryll B. Parker, M.B.A.  
 Alexis K. Stewart, P.E.  
 Beverly J. Garrett, P.E.

January 19, 2004

HAI #99.0331.007

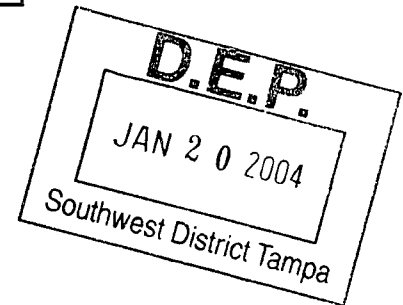
Phase 5

File 12.0

Via UPS Overnight

Ms. Susan Pelz, P.E. *[Signature]*  
 Florida Department of Environmental Protection  
 Southwest District  
 3804 Coconut Palm Drive  
 Tampa, Florida 33619

**Subject: Notification of Shallow Subsidence  
 Enterprise Recycling & Disposal Facility  
 Angelo's Aggregate Materials, Ltd.  
 FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
 Pasco County, Florida**



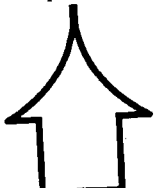
Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the required written notification to the Department of a subsurface instability observed at the above facility. A description of the subsidence, the approximate location, actions taken, and proposed remediation are discussed below.

On January 12, 2003, HAI's geologist and the operator of the facility observed an opening in the surface of the temporary pond. This opening was approximately 12 to 15 feet across, five feet in depth, and located approximately 30 feet north of the temporary berm in Cell 16. The attached figure indicates the approximate location. A surveyed location of the area will be provided once this information is received by HAI. Photographs taken by Miguel Garcia of HAI are attached for your review.

On January 13, 2003, under the direction of Jim Golden, P.G. of HSA Golden, the area was partially excavated, then back-filled with on-site clay material so that investigative drilling could begin as quickly as possible. As required by permit condition, HAI provided verbal notification to the DEP on January 13.

Universal Engineering Sciences (UES) began drilling on January 15, 2003 under the direction of HAI, and completed the drilling on January 17. A total of 11 borings were completed to depths between 20 and 32 feet below land surface. The approximate locations are indicated on the attached figure. A survey of these locations will be provided once this information is received by HAI. The borings indicate a layer of loose or raveling material at a depth of 15 to 18 feet below land surface, and a second smaller area (3 borings) at 8 to 10 feet below land surface, at the site of the subsidence. HAI believes that the area of potential instability has been delineated, based on the field logs and the professional opinion of UES's



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Ms. Susan Pelz, P.E.  
January 19, 2004  
Page 2

geotechnical engineer. Field logs prepared by HAI's on-site geologists are attached for your review. A survey of the

It appears that the subsidence may have occurred due to removal of the overlying stable soils along with vibration caused by the operation of heavy equipment in the area used to construct the temporary berm between Cells 15 and 16. We believe that the vibration caused loose sand to ravel from a pocket below the opening. Once these cells are no longer used for stormwater retention, five feet of compacted, stabilized confining clay will be placed over the cells to bring the elevation to that approved on the construction plans and to provide a solid, stable base for the landfill.


Based on the information obtained during the investigation of the unstable area, we recommend that the unstable interval be stabilized by pressure grouting. We are requesting quotes from geotechnical contractors that specialize in cavity specialization.

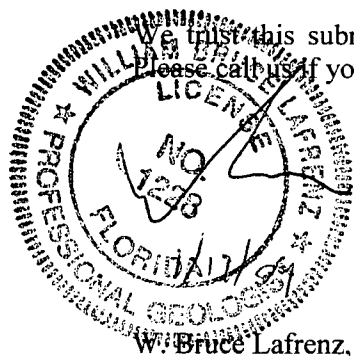
Once the grouting is completed, additional borings for geotechnical analysis are required to ensure that the area has been stabilized. Those results will be forwarded to the DEP once the analysis is completed.

We trust this submittal will allow the Department's approval for remediation of this area in Cell 16. Please call us if you have any questions or require additional information.

Very truly yours,

**Hartman & Associates, Inc.**

  
Jennifer L. Deal, P.E.  
Project Manager



W. Bruce Lafrenz, P.G.  
Senior Hydrogeologist/Associate

JLD/wbl/99.0331.007/T5/corresp/Pelz4.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
Kim Ford, P.E., FDEP  
John Morris, P.G., FDEP  
James E. Golden, P.G., HSA Golden

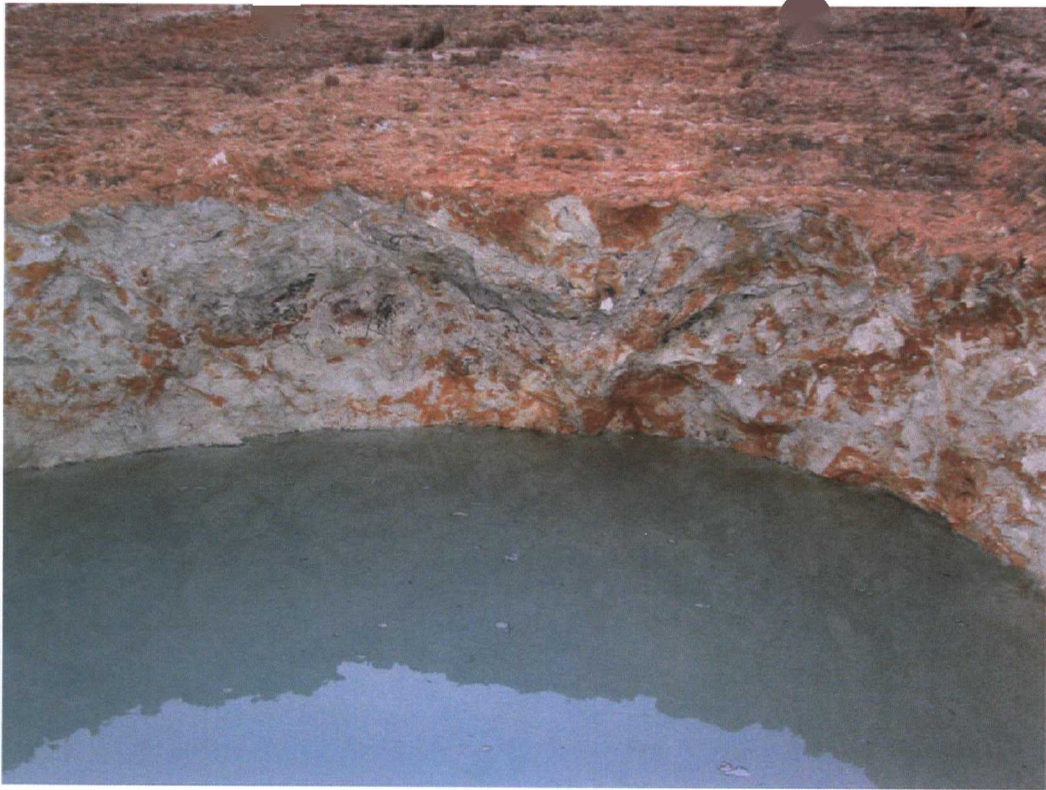


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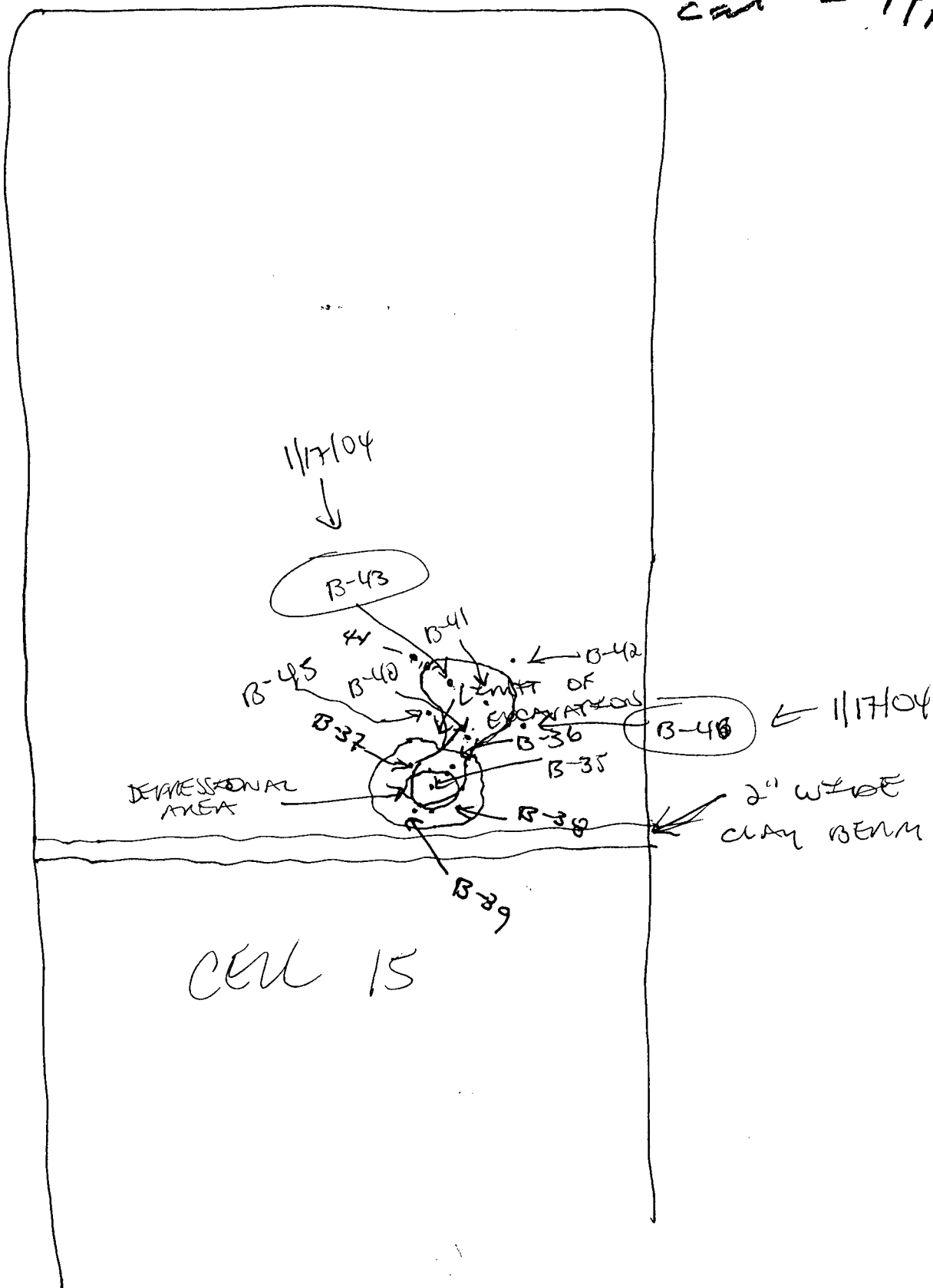


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1-15-04  
14F ~ APPROX HOLE  
CUT - 14F B33





# HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants

## FIELD BORING LOG

MOBILE

B-35

1 of 2

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	% REC.						
1					7		SANDY-CLAY, L. CLAY + TAN-ORANGE, MED. TO SILT, V. FIRM. 0-4		SMALL (1-2) CM LR FRAG. 0-2'
2					6				
3					3		SILT-CLAY, TAN-ORANGE FINE TO SILT, MOD. SOFT 4-12'		SLIGHTLY SOFTEN
4					4		SAA		
5					4				SEMI-FIRM 8-12'
6					9		SAA		
7					6		SANDY-CLAY, GAY + TAN ORANGE, FINE TO SILT, SEMI-SOFT, 12-15'		SOFT - BRITTLE LR (WEATHERED) ZONE 11-11.5' SMALL (1 CM) WEATH. LR FRAG
8					1		LS-MARK, SOFT + BRITTLE LR FRAG (1-3 CM) w/ SOFT WHITE CLAYEY SAND. 15-18		
9					21		LR - HARD LR FRAGMENTS (1-5 CM) FRACTURED & MIXED w/ SOFT WHITE CLAYEY SAND 18-20		
10					7		SAA		(INCREASE IN CLAYEY SAND MAT. POOR REC.
11					12		(1"-2" SAA CONTINUOUS LR FRAGMENTS, BROKEN)		
12					2		SAA		POOR REC. 4"
13					24		LR - HARD + BRITTLE (BROKEN) LR FRAG. MIXED w/ MOD. SOFT WHITE CLAYEY - SAND 26-32		
14					11		SAA		

### PROJECT

NUMBER: 99.0331.  
NAME: ENTER PRIZE  
RECYCLING + DISP.  
CLIENT: ANGELO'S RECY MAT  
LOCATION: DASE CITY, FL

### BORING

GR. ELEV.: ~75'  
DIA-TYPE: 3 1/4" - MR  
DEPTH: 32'  
DATE STARTED: 1-15-04  
DATE ENDED: 1-15-04

### GROUNDWATER

DEPTH: ~4'  
TIME:  
DATE:  
REMARKS:

### DRILLING

RIG TYPE: CME 55  
CREW: UNIVERSAL  
SUPERVISOR: LEROY PATE

### PIEZ/WELL

CASING DIA.:  
CASING TYPE:  
CASING DEPTH:  
SCREEN DEPTH:  
SCREEN LENGTH:  
FILTER PACK:  
RISER HEIGHT ALS:  
T.O.C. ELEV.:

### REMARKS

LOOSE MAT.  
FROM 15-18'



M GARCIA

B-35

2 of 2

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO./TYPE	SYMBOL	% REC.						
0	15			39			LR - HARD BROWN FRAG MIXED w/ SOFT CLAYEY SAND, 30'-32' FOR @ 32'		
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									
80									
85									
90									
95									
100									

### PROJECT

NUMBER: 99.0351.

NAME: ENTER PRIZE

RECYCLING + DISP.

CLIENT: ANGEL'S RECY MAT

LOCATION: DASE CITY, TX

### BORING

GR. ELEV.: ~75'

DA-TYPE: 3 3/4" - MN

DEPTH: 32'

DATE STARTED: 1-15-04

DATE ENDED: 1-15-04

### GROUNDWATER

DEPTH: \_\_\_\_\_

TIME: \_\_\_\_\_

DATE: \_\_\_\_\_

REMARKS: \_\_\_\_\_

### DRILLING

RIG TYPE: CME 55

CREW: UNIVERSAL

SUPERVISOR: LEXY PRIZ

### PIEZ/WELL

CASING DIAM.: \_\_\_\_\_

CASING TYPE: \_\_\_\_\_

CASING DEPTH: \_\_\_\_\_

SCREEN DEPTH: \_\_\_\_\_

SCREEN LENGTH: \_\_\_\_\_

FILTER PACK: \_\_\_\_\_

RISE HEIGHT ALS: \_\_\_\_\_

T.O.C. ELEV.: \_\_\_\_\_

### REMARKS

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# HARTMAN & ASSOCIATES, INC.

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## FIELD BORING LOG

MANCOSA

B-36

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6"	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	% REC.						
1					4		SANDY-CLAY, LT. GRAY + TAN-ORANGE (MOTTLED), MED. TO STIFF, V. FIRM 0-4		( $< 1$ cm) WENTH. LR FRAG 0-4'
2					7				
3					8		STIFF-CLAY, TAN-ORANGE TO LT. GRAY, FINE TO STIFF, V. FIRM TO FIRM. 4-8		
4					5		NO SAMPLE 8-10'		HARD BRITTLE (1-2 cm) LR FRAG. 5.5-7
5					10		LS-MARKL SOFT TAN STIFF CLAY w/ HARD BROKEN LR FRAG (1-5 cm). 10-14		POOR REC. 10-12
6					6				
7					4		LR - HARD TAN LR FRAG. (~4 cm) SMALL AMT. OF STIFF CLAY. 14-16		ENCASED IN STIFF CLAY 12-14
8					15				POOR REC. ~4"
9					2				
10					4		LS-MARKL - <del>SOFT</del> HARD BROKEN LR FRAG. IN STIFF-CLAY MATRIX. 16-18		LARGE MT. OF LR FRAG. ~40%
11					7		LS - HARD LS FRAG. (BROKEN), MIXED w/ CLAYEY SAND, SOFT WHITE. 18-20'		
12									
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14									
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30									

**PROJECT**  
NUMBER: 99.0351.  
NAME: ENTER PRIZE  
RECYCLING + DISP.  
CLIENT: ANGELO'S RECY MAT  
LOCATION: DANE CITY, WI

**BORING**  
GR. ELEV.: ~75'  
DIA-TYPE: 3 3/4" - MA  
DEPTH: 20'  
DATE STARTED: 1-15-94  
DATE ENDED: .

**GROUNDWATER**  
6"  
DEPTH:  
TIME:  
DATE:  
REMARKS:

**DRILLING**  
RIG TYPE: CMF 45  
CREW: UNIVERSAL  
SUPERVISOR: LEROY PRIN

**PIEZ/WELL**  
CASING DIA.:  
CASING TYPE:  
CASING DEPTH:  
SCREEN DEPTH:  
SCREEN LENGTH:  
FILTER PACK:  
RISER HEIGHT ALS:  
T.O.C. ELEV.:

**REMARKS**  
1 LOOSE SOIL TO 10' 8-10'



# HARTMAN & ASSOCIATES, INC.

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## FIELD BORING LOG

MBAXCEA

B-37

1 of 1

### PROJECT

NUMBER: 99.0331.

NAME: ENTERPRISE

RECYCLING + DISP.

CLIENT: ANGELO'S RECY MAT

LOCATION: DASE CITY, TX

### BORING

GR. ELEV.: ~75'

DIAMETER: 3 3/4" - MC

DEPTH: 26'

DATE STARTED: 1-15-04

DATE ENDED: 1-15-04

### GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

### DRILLING

RIG TYPE: CMF-45

CREW: UNIVENSAZ

SUPERVISOR: LEROY PATE

### PIEZ/WELL

CASING DIAM.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISE HEIGHT ALS:

T.O.C. ELEV.:

### REMARKS

LAST CALCULATED

@ 12'

DEPTH (FT)	SAMPLE			BLOWS PER 6"	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	% REC.						
1				5			SILTY-CLAY, GRAY + TAN ORANGE, MED TO ST V. FIRM, 0-4		(1-3 cm) WEATH. LR FRAG 0.5-2
2				9			SILTY-CLAY, LT. GRAY FINE TO ST, V. FIRM 4-8		SMALL (1 cm) LR FRAG 4-8
3				10			SAA (LT. GRAY + TAN - ORANGE (MOTTLED), 6-8 SILTY-CLAY, LT. TAN + ORANGE, FIRM TO SOFT, MED TO ST 8-10		MD. LR FRAG (1-3 cm) 8-10
4				7			LS - MALL, LIGHT TAN HARD LR FRAG., SOFT CLAYEY-SAND. 10-14		LR FRAG. CLOKEN (1-5 cm) LARGE AMT OF SOFT WEATH. LR FRAG (1-3 cm) 12-16.5
5				5			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		LR FRAG. HARD. (1-4 cm) 16.5-26'
6				11			LS - MALL, LIGHT TAN HARD LR FRAG., SOFT CLAYEY-SAND. 10-14		
7				6			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
8				21			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
9				50			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
10				32			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
11				24			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
12				25			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
13				9			LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
14							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
15							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
16							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
17							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
18							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
19							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
20							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
21							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
22							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
23							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
24							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
25							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
26							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
27							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
28							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
29							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		
30							LS - MALL, CREAMY TAN SILTY-CLAY, WITH MOD. AMT. OF SOFT + HARD LR FRAG. 14-16.5		



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## FIELD BORING LOG

MAGNUSIA

B-38

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6"	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	% REC.						
1				6			SANDY-CLAY, GRAY + TAN ORANGE (MOTTLED), MED. TO SFT, V. FIRM, 0-2		LR FINE. (CL - 3 cm) HARD. 0-2'
2				4			SILT-CLAY, GRAY + TAN ORANGE, FINE TO SFT, V. FIRM 2-7.5		
3				3					V. FIRM TO SFT 7.5'
4				2			SAA		
5				4			SAA		
6				8			LS-MAN, HARD LR FINE + CEMENTED SS, MIXED w/ SFT CLAY, SAND 7.5-18.5		INCREASE IN SAND LR FINE. (CL - 5 cm) 10-18.5
7				12			SAA		
8				20			SAA		
9				13			SAA		
10				17			SAA		
11				65			LS-HARD, BUTTLE 2 LS LENSES FROM 18.5-19.5 MIXED w/ SAND LENSES TO 20'		
12							EOB @ 20'		
13									
14									
15									
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30									

**PROJECT**

NUMBER: 99.0331.

NAME: ENTER PRIZE

RECYCLING + DISP.

CLIENT: ANGEL'S RECY MAT

LOCATION: DASE CITY, FL

**BORING**

GR. ELEV.: ~75'

DIAM-TYPE: 2 3/8" - MK

DEPTH: 20'

DATE STARTED: 1-16-04

DATE ENDED: 1-16-04

**GROUNDWATER**

DEPTH: ~4.5'

TIME:

DATE:

REMARKS:

**DRILLING**

RIG TYPE:

CREW: UNIVERSAL

SUPERVISOR: LEXY PRINCE

**PIEZ/WELL**

CASING DIAM.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISER HEIGHT ALS:

T.O.C. ELEV.:

**REMARKS**



# HARTMAN & ASSOCIATES, INC.

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## FIELD BORING LOG

B-39

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO./TYPE	SYMBOL	% REC.						
1	1			3			SANDY-CLAY, TAN-ORANGE ONLY (MOTTLED), MED. TO STIFF, V. FIRM 0-4		LR. FRAG CL-2cm 2-7.5
2	2			5			STIFF-CLAY, GRAY + DARK ORANGE, FINE TO STIFF, V. FIRM. 4-7.5		MOSTLY GRAY 2-4
5	3			11					
10	4			12			LS-MARL, LIGHT TAN, NARROW LR FRAG. MIXED w/ sandy-clay (MOD. FIRM). 7.5-15		LR FRAG. CL-5cm 7.5-14
15	5			9					
16	6			10			SAA		
17	7			17			SAA		
18	8			10			LS - HARD BROKEN LS FRAGMENTS MIXED w/ CLAYEY SAND 14-15		LARGE LR FRAG CL-6cm
19	9			18			LS-MARL, WHITE HARD LR FRAG. MIXED w/ CLAYEY SAND SOFT. 15-18		
20	10			36			LS - HARD BROKEN LS FRAG. MIXED, w/ CLAYEY SAND 18-20		
21							ESB @ 20'		
22									
23									
24									
25									
26									
27									
28									
29									
30									

### PROJECT

NUMBER: 99.0331

NAME: ENTER PRIZE

RECYCLING + DISP.

CLIENT: ANGELO'S RECY MAT

LOCATION: DANE CITY

### BORING

GR. ELEV.: 275

DA-TYPE: 2 1/2" - MR

DEPTH: 20

DATE STARTED: 1-16-99

DATE ENDED: 1-16-99

### GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

### DRILLING

RIG TYPE: CME 55

CREW: UNIVERSAL

SUPERVISOR: LEXY PRIN

### PIEZ/WELL

CASING DIAM.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISER HEIGHT ALS:

T.O.C. ELEV.:

### REMARKS



# HARTMAN & ASSOCIATES, INC.

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## FIELD BORING LOG

MOBILE

B-40

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6"	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	R REC.						
1				16	11		SANDY-CLAY, LT. GRAY + TAN-ORANGE, MED. TO SFT, V. FIRM, 0-4		SMALL AMT. OF LR FRAG (21-2 cm) 0-4
2				16	18		SANDY-CLAY, LT. GRAY + DK. ORANGE, FINE TO SFT, V. FIRM, 4-8		LR FRAG (21 cm) 4-11.5
3				16	12		SANDY-CLAY, V. LIGHT GRAY, FINE TO SFT, V. FIRM TO FIRM, 6-11.5		DK. ORANGE 6-11.5
4				16	10				CLAY + TAN-ORANGE, V. FIRM 8-10
5				16	3				
6				16	2		LS - HARD LR FRAG ~ 3" THICK FIRM 11.5-13		
7				16	6		LS - MAXI HARD, BROKEN LS FRAG MIXED W/ CLAYEN SAND, WHITE, SOFT. 13-18		LR FRAG. (21-5 cm) 13-18
8				16	1				
9				16	12		SAA		
10				16	30		LS - HARD, BROWN + WHITE LS FRAG. WITH CLAYEN SAND. 18-22		
11				16	15		SAA		
12				16			END @ 22'		

### PROJECT

NUMBER: 99.0331.

NAME: ENTER PRIZE

RECYCLING + DISP.

CLIENT: ANGELO'S RECY MFG

LOCATION: DASE CITY, FL

### BORING

GR. ELEV.: ~ 75

DIA-TYPE: 2 3/8" - MR

DEPTH: 22'

DATE STARTED: 1-16-04

DATE ENDED: 1-16-04

### GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

### DRILLING

RIG TYPE: CME 55

CREW: UNIVERSAL

SUPERVISOR: LEXY PRIN

### PIEZ/WELL

CASING DIA.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISE HEIGHT ALS:

T.O.C. ELEV.:

### REMARKS

LOUSE SOIL

FROM 10'-11'

BS + 14' 16'



B-42

[illegible]



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## FIELD BORING LOG

MGARKEA

B-41

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TY	SYMBOL	% REC.						
1	1			9			SANDY-CLAY, GRAY, COARSE TO SILT, EXT. FIRM. 0-2		
2	2			22			SILT-CLAY, LT. GRAY + DR. ORANGE, FINE TO SILT, V. FIRM, 2-6		
3	3			16			SANDY-CLAY, LT. GRAY + ORANGE, V. ORANGE TO SILT, FIRM. 6-8		V. COARSE SAND + SAND LENS 7-8'
4	4			12			SILT-CLAY, LT. GRAY + TAN ORANGE, COARSE TO SILT, V. FIRM TO FIRM. 8-14'		LR. FRAG (41-4cm) 7.5-12.5'
5	5			7					
6	6			4			BROKEN QZ. (41-1.5cm) ZONE FROM 12.5-13'		V. LIGHT GRAY 7.5-12.5 POOR REC. 12-14' ~7"
7				2			LS-MARK, HAND B.C. TAN LR. FRAG, MIXED W/ SOFT COARSE GR. FINE CLAYEY-SAND 14-18		LR. FRAG (21-5cm) 14-18
8				3					
9				36			LS-MARK, LB FRAG. BRITTLE (BROKEN), MIXED W/ SOFT CLAYEY SAND. 18-22'		
10									
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**PROJECT**  
NUMBER: 99.0331.  
NAME: ENTER PLEASE  
RECYCLING + DISP.  
CLIENT: ANGEL'S RECY MA  
LOCATION: DANE CITY

### BORING

GR. ELEV.: ~75  
DIA-TYPE: 2 3/8" - MA  
DEPTH: 22'  
DATE STARTED: 1-16-99  
DATE ENDED: 1-16-99

### GROUNDWATER

DEPTH:  
TIME:  
DATE:  
REMARKS:

### DRILLING

RIG TYPE: CME 55  
CREW: UNIVERSAL  
SUPERVISOR: LEXY PITH

### PIEZ/WELL

CASING DIA.:  
CASING TYPE:  
CASING DEPTH:  
SCREEN DEPTH:  
SCREEN LENGTH:  
FILTER PACK:  
RISER HEIGHT ALS:  
T.O.C. ELEV.:

### REMARKS



W H B  
B 43

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO/TYPE	SYMBOL	% REC.						
0									
1	①			2			CLAY WITH MINOR ROCK FRAGS PAL GR GRN		
2	②			9			CLAY SL ROCK FRAGS PAL GR GRN CLAY WHITE FRAGS		RUSTY COLOR IN VEINS ②
3	③			11			SILT/CLAY PAL GR GRN		
4	④			12			FRAGS SL CLAYEY SILT BECOMING SL CLAYEY UFSAD PGR GRN (LAYERED)		
5	⑤			13			SL CLAYEY UFSAD BECOMING SILT/CLAY PGR GRN		WATER IN SPOON
6	⑥			14			SL SAND CLAY MINOR FRAGS PGR GR WITH RUST VEINS		
7	⑦			15			CLAYEY SILT PGR GR WITH RUST PART		
8	⑧			16			SL CLAY M SAND WITH FRAGS		
9	⑨			17			LBS PALE TAN		
10	⑩			18			LBS PALE TAN		
11	⑪			19			LS PALE TAN		
12				20			END OF BORING		

### PROJECT

NUMBER: 99.0331.

NAME: ENTER PRIZE

RECYCLING + DISP.

CLIENT: ANGELUS RECY MAT

LOCATION: DANE CITY

### BORING

GR. ELEV.: ~75

DA-TYPE: 2 7/8" - MR

DEPTH: 22

DATE STARTED: 1/6/2009

DATE ENDED: 1/6/2009

### GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

### DRILLING

RIG TYPE:

CREW: UNIVERSAL

SUPERVISOR: LEXY PRIZE

### PIEZ/WELL

CASING DIA.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISER HEIGHT ALS:

T.O.C. ELEV.:

### REMARKS

17





FIELD BORING LOG

W43  
MAGNETA

B44  
B-44

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO./TYPE	SYMBOL	% REC.						
1	1			1			CLAY SL SANDY PGRGM WITH RUST VEINS		
2	2			2			CLAY SL SILTY PALE GRGM TO PGRGM		
3	3			3			CLAY SL SILTY PGRGM WITH RUST VEINS		
4	4			4			CLAY SL SILTY / PGRGM MINOR FRAGS (WHITE)		
5	5			5			CLAYEY SILT PGRGM WITH RUST VEINS		
6	6			6			SILTY CLAY PGRGM WITH RUST VEINS		SPENT PAAP
7	7			7			SCALY FRAGS WHITE TO TALL GRGM		WET
8	8			8			WITH FRAGS PALE OR GR		
9	9			9			FRAGS WHITE TO PALE OR		
10	10			10			WITH FRAGS PALE OR		
11	11			11			WITH SS/LS WHITE		
12	12			12			WITH LS/SS WITH SAND LAYER		

PROJECT

NUMBER: 99.0331.007

NAME: ENTERPRISE  
LF

CLIENT: ANGELOS RM.

LOCATION: DART CITY, FL

BORING

GR. ELEV.: 75

DIA-TYPE: 2 1/8" - MK

DEPTH: 24

DATE STARTED: 16 JAN 04

DATE ENDED: 16 JAN 04

GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

DRILLING

RIG TYPE: CME 55

CREW: UNIVERSAL

SUPERVISOR: LEROY  
PIENICE

PIEZ/WELL

CASING DIA.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISER HEIGHT ALS:

T.O.C. ELEV.:

REMARKS



B 45

FIELD BORING LOG

WH3

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO./TYPE	SYMBOL	% REC.						
1	①			2		③	CLAY SLT. CTY - PGR GRW		
2	②			2		③	CLAY w FRAGS PERGR ABOVE CLAY MINOR S&T M ORANGE		
3	③			2		③	CLAY, MINOR S&T PALE & MOTTLED P&T - CLAY		
4	④			2		②	SILT & CLAY PGR GRW TRACE FRAGS		
5	⑤			2		③	CLAY SLT. CTY PALE W		WET
6	⑥			2		⑥	FRAGS - WHITE CLAYEY MOTTLED		
7	⑦			2		⑥	CLAY SANDY & CL. F&H ABOVE LITH FRAGS LITH FRAGS		
8	⑧			2		⑦	PALE T&P LITH PALE W M OR		
9	⑨			2		⑦	LITH PALE WHITE		
10	⑩			2					
11									
12									
13									
14									
15									
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21									
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23									
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28									
29									
30									

PROJECT

NUMBER: 99.0331.

NAME: ENTERPRISE

RECYCLING + DISP.

CLIENT: ANGELO'S RECY MAT

LOCATION: DANE CITY, WI

BORING

GR. ELEV.: ~ 75

DA-TYPE: 2 3/8" MC

DEPTH: 20

DATE STARTED: 16 JAN 04

DATE ENDED: 16 JAN 04

GROUNDWATER

DEPTH:

TIME:

DATE:

REMARKS:

DRILLING

RIG TYPE: CMF 55

CREW: UNIVERSAL

SUPERVISOR: LEXY PITH

PIEZ/WELL

CASING DIAM.:

CASING TYPE:

CASING DEPTH:

SCREEN DEPTH:

SCREEN LENGTH:

FILTER PACK:

RISER HEIGHT ALS:

T.O.C. ELEV.:

REMARKS

**HARTMAN & ASSOCIATES, INC.**

engineers, hydrogeologists, surveyors &amp; management consultants

B46

**FIELD BORING LOG**

with B

1 of 1

DEPTH (FT)	SAMPLE			BLOWS PER 6'	N-VALUE	BORING LOG	MATERIAL DESCRIPTION CLASSIFICATION	WELL	REMARKS
	NO./TYPE	SYMBOL	% REC.						
1	①			2		③	CLAY SL SILTY PAL GR GRW		
2				2		③	CLAY SL SILTY PAL GR GRW		
3	②			2		③	CLAY SL SILTY PAL GR GRW WITH RUST STAIN		
4				2		③	CLAY SL SILTY PAL GR GRW		
5	③			2		③	DRY GR GRW TR FRAC		
6	④			2		③	CLAY SL SILTY PAL GR GRW		
7	⑤			2		③	CLAY SL SILTY P GR GRW		
8				2		③	CLAY SILTY P GR GRW		
9				2		③	CLAY GR GRW (PAV WASH) RUST STAIN		
10				2		④	LITE SS/LS PAV TARD		⑦ LOW RECUR ROCK IN T.P.
11				2		⑦			
12				2		⑦	LITE SS/LS PAV TARD		
13				2					
14				2					
15				2					
16				2					
17				2					
18				2					
19				2					
20	⑩			2					
21				2					
22				2					
23				2					
24				2					
25				2					
26				2					
27				2					
28				2					
29				2					
30				2					

**PROJECT**  
NUMBER: 99.0331.  
NAME: ENTER PRISC  
RECYCLING + DISP.  
CLIENT: ANGELO'S RECY MFG  
LOCATION: DANE CTRY, WI  
**BORING**  
GR. ELEV.: ~75  
DA-TYPE: 23/8" MR  
DEPTH: 20  
DATE STARTED: 16 JAN 04  
DATE ENDED: 16 JAN 04  
**GROUNDWATER**  
DEPTH:  
TIME:  
DATE:  
REMARKS:  
**DRILLING**  
RIG TYPE: CME 55  
CREW: UNIVERSAL  
SUPERVISOR: LEXY PATT  
**PIEZ/WELL**  
CASING DIA.:  
CASING TYPE:  
CASING DEPTH:  
SCREEN DEPTH:  
SCREEN LENGTH:  
FILTER PACK:  
RISER HEIGHT ALS:  
T.O.C. ELEV.:  
**REMARKS**

Enterprise III  
construction file

D. Smith  
you copy

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January 19, 2004

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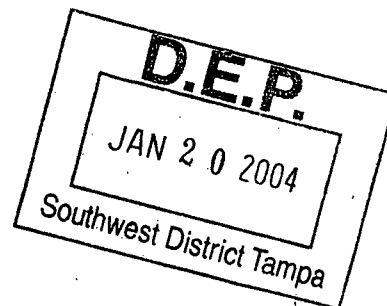
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Alexis K. Stewart, P.E.  
Beverly J. Garrett, P.E.

HAI #99.0331.007  
Phase 5  
File 12.0

### Via UPS Overnight

Ms. Susan Pelz, P.E. *SP*  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Notification of Shallow Subsidence  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**



Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the required written notification to the Department of a subsurface instability observed at the above facility. A description of the subsidence, the approximate location, actions taken, and proposed remediation are discussed below.

On January 12, 2003, HAI's geologist and the operator of the facility observed an opening in the surface of the temporary pond. This opening was approximately 12 to 15 feet across, five feet in depth, and located approximately 30 feet north of the temporary berm in Cell 16. The attached figure indicates the approximate location. A surveyed location of the area will be provided once this information is received by HAI. Photographs taken by Miguel Garcia of HAI are attached for your review.

On January 13, 2003, under the direction of Jim Golden, P.G. of HSA Golden, the area was partially excavated, then back-filled with on-site clay material so that investigative drilling could begin as quickly as possible. As required by permit condition, HAI provided verbal notification to the DEP on January 13.

Universal Engineering Sciences (UES) began drilling on January 15, 2003 under the direction of HAI, and completed the drilling on January 17. A total of 11 borings were completed to depths between 20 and 32 feet below land surface. The approximate locations are indicated on the attached figure. A survey of these locations will be provided once this information is received by HAI. The borings indicate a layer of loose or raveling material at a depth of 15 to 18 feet below land surface, and a second smaller area (3 borings) at 8 to 10 feet below land surface, at the site of the subsidence. HAI believes that the area of potential instability has been delineated, based on the field logs and the professional opinion of UES's

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# HARTMAN & ASSOCIATES, INC.

logists, surveyors & management consultants  
A Tetra Tech Company

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Alexis K. Stewart, P.E.  
Ada R. Terrero

January 14, 2004

HAI #99.0331.007

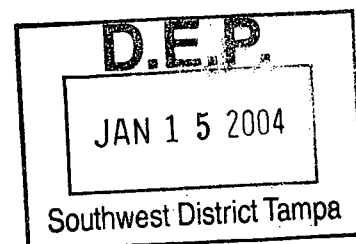
Phase 5

File 12.0

### Via Hand Delivery

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Cell 1 and Landfill Site Certification Addendum 2  
and Responses to Department Certification Comments  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**



Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting responses to the Department's comments, dated December 8, 2003, regarding the certification submittals for the above referenced facility. Our responses are based on the discussion from our meeting with the Department on January 5, 2004. For your convenience, your comments are stated first with our responses, when applicable, following.

### **Comments from Kim Ford's Letter:**

- 1) **Document entitled Cell 1 Certification dated October 8, 2003:**
  - a) **The cover letter page 1 - HAI states that "the attached document indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than 1x10<sup>-6</sup>cm/sec, and is prepared to accept waste". [The Department has not reached this same conclusion at this time as described below. This comment does not require a response.]**

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engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

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Ada R. Terrero

LETTER OF TRANSMITTAL  
Southwest District Tampa

TO: FL Dept. of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619

DATE: Jan. 14, 2004 JOB NO. 99.0331-007/2 12.0  
ATTENTION: Ms. Susan Pelz, P.E.  
RE: Enterprise Landfill, Dade City

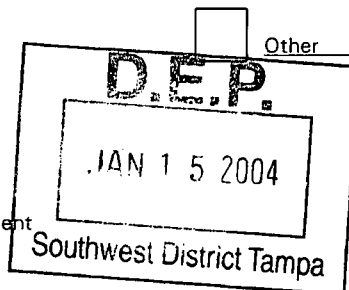
WE ARE SENDING YOU ☒ ATTACHED ☐ UNDER SEPARATE COVER VIA ☐ THE FOLLOWING ITEMS:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Reports ☐ Specifications  
☐ Copy of Letter ☐ Change Order ☐ Other \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
3	01/14/04		Certification Addendum 2 / Response to Comments (1 original, 2 copies)

THESE ARE TRANSMITTED as checked below:

☒ For Approval  
☐ For your use  
☒ As requested  
☐ For review and comment  
☐ Other \_\_\_\_\_



REMARKS:	Susan, Enclosed is the addendum to the certification package that we discussed in our January 5, 2004 meeting for the Enterprise Landfill. Please call us if you have any questions or need any clarification prior to our on-site meeting, January 21, 2004. Thank you.
----------	---

COPY TO: File

SIGNED:

Name: Jennifer L. Deal, P.E.

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# HARTMAN & ASSOCIATES, INC.

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January 14, 2004

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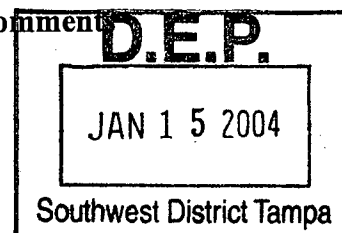
HAI #99.0331.007

Phase 5  
File 12.0

### Via Hand Delivery

Ms. Susan Pelz, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Cell 1 and Landfill Site Certification Addendum 2  
and Responses to Department Certification Comments  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**



Dear Ms. Pelz:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting responses to the Department's comments, dated December 8, 2003, regarding the certification submittals for the above referenced facility. Our responses are based on the discussion from our meeting with the Department on January 5, 2004. For your convenience, your comments are stated first with our responses, when applicable, following.

### **Comments from Kim Ford's Letter:**

- 1) **Document entitled Cell 1 Certification dated October 8, 2003:**
  - a) **The cover letter page 1 - HAI states that "the attached document indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than 1x10<sup>-6</sup>cm/sec, and is prepared to accept waste". [The Department has not reached this same conclusion at this time as described below. This comment does not require a response.]**

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ADMIN/UTILITY ENGINEERING FAX - (407) 839-3790

CIVIL ENG./SURVEY/FINANCE FAX - (407) 481-8447

**FACSIMILE TRANSMITTAL**

TO: Susan Pelz, PE FROM: Bruce Lafrenz, PG  
FAX: 813.744.6125 DATE: 1/9/04  
RE: Angelo's - Enterprise Rd. PROJECT: HAI #99.0331.007 - Ph 5

We are sending you 8 pages, including this cover sheet. These pages are being transmitted for your use. HARD COPY: will be sent with the other RAI responses.

MESSAGE: Susan - I'm faxing a few pages from Freeze & Cherry (GW Hydrology textbook) that discuss the relationship between grain size and permeability. The methods discussed are not really applicable to fine grain sediments or (especially) to bimodal sediments such as clay-sand mixtures. A similar discussion from Fetter (3<sup>rd</sup> Ed.) is also attached. It adds the work of Shepherd that relates permeability as a power function of the mean grain size. Again, this method is not intended for fine grain or bimodal sediments.

As mean grain size decreases the size of pores available for transmission of water decreases. Even more important may be the degree of sorting or grading. As sorting decreases fine grain sediments increasingly fill the intergranular volume and decrease available passages. This should be as true for bimodal sediments as for unimodal poorly sorted sediments. Clearly, the poorer the sorting (better the grading for you engineers) and the finer the grain size, the lower the permeability will be.

Our correlations are not based on the mean diameter or even a standard percentile (10% passing, for example), but rather on an arbitrary grain size. Even so, I think the most recent correlation plots are adequate to illustrate sufficiently low hydraulic conductivity at 30% passing a 200 sieve, but it could be difficult to define a sound theoretical basis for the -200 to 10<sup>-6</sup> cm/s correlation.

IF THERE ARE ANY PROBLEMS WITH THIS TRANSMISSION  
PLEASE CALL (407) 839-3955



the use of the pumping-test approach is usually inappropriate. It is our opinion that the method is widely overused. Piezometer tests are simpler and cheaper, and they can provide adequate data in many cases where pumping tests are not justified.

### 8.7 Estimation of Saturated Hydraulic Conductivity

It has long been recognized that hydraulic conductivity is related to the grain-size distribution of granular porous media. In the early stages of aquifer exploration or in regional studies where direct permeability data are sparse, this interrelationship can prove useful for the estimation of conductivity values. In this section, we will examine estimation techniques based on grain-size analyses and porosity determinations. These types of data are often widely available in geological reports, agricultural soil surveys, or reports of soil mechanics testing at engineering sites.

The determination of a relation between conductivity and soil texture requires the choice of a representative grain-size diameter. A simple and apparently durable empirical relation, due to Hazen in the latter part of the last century, relies on the effective grain size,  $d_{10}$ , and predicts a power-law relation with  $K$ :

$$K = Ad_{10}^2 \quad (8.47)$$

The  $d_{10}$  value can be taken directly from a grain-size gradation curve as determined by sieve analysis. It is the grain-size diameter at which 10% by weight of the soil particles are finer and 90% are coarser. For  $K$  in cm/s and  $d_{10}$  in mm, the coefficient  $A$  in Eq. (8.47) is equal to 1.0. Hazen's approximation was originally determined for uniformly graded sands, but it can provide rough but useful estimates for most soils in the fine sand to gravel range.

Textural determination of hydraulic conductivity becomes more powerful when some measure of the spread of the gradation curve is taken into account. When this is done, the median grain size,  $d_{50}$ , is usually taken as the representative diameter. Masch and Denny (1966) recommend plotting the gradation curve [Figure 8.25(a)] using Krumbein's  $\phi$  units, where  $\phi = -\log_2 d$ ,  $d$  being the grain-size diameter (in mm). As a measure of spread, they use the inclusive standard deviation,  $\sigma_I$ , where

$$\sigma_I = \frac{d_{16} - d_{84}}{4} + \frac{d_3 - d_{97}}{6.6} \quad (8.48)$$

For the example shown in Figure 8.25(a),  $d_{50} = 2.0$  and  $\sigma_I = 0.8$ . The curves shown in Figure 8.25(b) were developed experimentally in the laboratory on prepared samples of unconsolidated sand. From them, one can determine  $K$ , knowing  $d_{50}$  and  $\sigma_I$ .

For a fluid of density,  $\rho$ , and viscosity,  $\mu$ , we have seen in Section 2.3 [Eq. (2.26)] that the hydraulic conductivity of a porous medium consisting of uniform

Hydro 1.96 x 10<sup>-2</sup> cm/sec

March + Denny 1.17 x 10<sup>-2</sup> cm/sec clean sand category

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Groundwater Resource Evaluation / Ch. 8

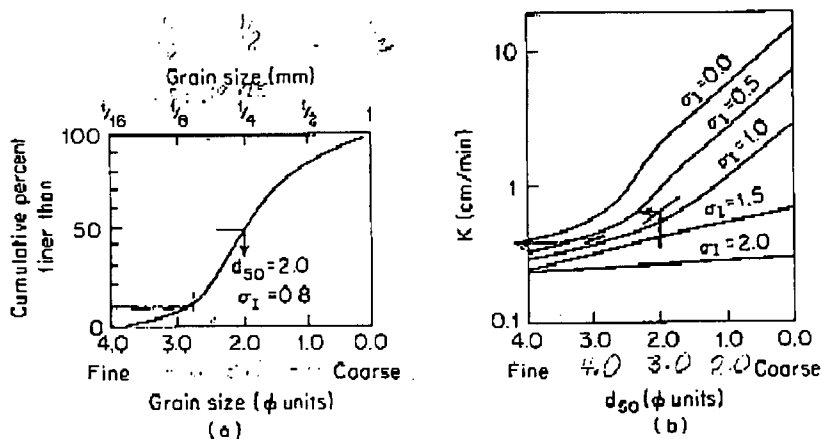


Figure 8.25 Determination of saturated hydraulic conductivity from grain-size gradation curves for unconsolidated sands (after Masch and Denny, 1966).

spherical grains of diameter,  $d$ , is given by

$$K = \left( \frac{\rho g}{\mu} \right) C d^2 \quad (8.49)$$

For a nonuniform soil, we might expect the  $d$  in Eq. (8.49) to become  $d_m$ , where  $d_m$  is some representative grain size, and we would expect the coefficient  $C$  to be dependent on the shape and packing of the soil grains. The fact that the porosity,  $n$ , represents an integrated measure of the packing arrangement has led many investigators to carry out experimental studies of the relationship between  $C$  and  $n$ . The best known of the resulting predictive equations for hydraulic conductivity is the *Kozeny-Carmen equation* (Bear, 1972), which takes the form

$$K = \left( \frac{\rho g}{\mu} \right) \left[ \frac{n^3}{(1-n)^2} \right] \left( \frac{d_m^2}{180} \right) \quad (8.50)$$

In most formulas of this type, the porosity term is identical to the central element of Eq. (8.50), but the grain-size term can take many forms. For example, the *Fair-Hatch equation*, as reported by Todd (1959), take the form

$$K = \left( \frac{\rho g}{\mu} \right) \left[ \frac{n^3}{(1-n)^2} \right] \left[ \frac{1}{m \left( \frac{\theta}{100} \sum \frac{P}{d_m} \right)^2} \right] \quad (8.51)$$

where  $m$  is a packing factor, found experimentally to be about 5;  $\theta$  is a sand shape factor, varying from 6.0 for spherical grains to 7.7 for angular grains;  $P$  is the

percentage of sand held between adjacent sieves; and  $d_m$  is the geometric mean of the rated sizes of adjacent sieves.

Both Eqs. (8.50) and (8.51) are dimensionally correct. They are suitable for application with any consistent set of units.

### 8.8 Prediction of Aquifer Yield by Numerical Simulation

The analytical methods that were presented in Section 8.3 for the prediction of drawdown in multiple-well systems are not sophisticated enough to handle the heterogeneous aquifers of irregular shape that are often encountered in the field. The analysis and prediction of aquifer performance in such situations is normally carried out by numerical simulation on a digital computer.

There are two basic approaches: those that involve a *finite-difference* formulation, and those that involve a *finite-element* formulation. We will look at finite-difference methods in moderate detail, but our treatment of finite-element methods will be very brief.

#### *Finite-Difference Methods*

As with the steady-state finite-difference methods that were described in Section 5.3, transient simulation requires a discretization of the continuum that makes up the region of flow. Consider a two-dimensional, horizontal, confined aquifer of constant thickness,  $b$ ; and let it be discretized into a finite number of blocks, each with its own hydrogeologic properties, and each having a node at the center at which the hydraulic head is defined for the entire block. As shown in Figure 8.26(a), some of these blocks may be the site of pumping wells that are removing water from the aquifer.

Let us now examine the flow regime in one of the interior nodal blocks and its four surrounding neighbors. The equation of continuity for transient, saturated flow states that the net rate of flow into any nodal block must be equal to the time rate of change of storage within the nodal block. With reference to Figure 8.26(b), and following the developments of Section 2.11, we have

$$Q_{15} + Q_{25} + Q_{35} + Q_{45} = S_s \Delta x \Delta y b \frac{\partial h_5}{\partial t} \quad (8.52)$$

where  $S_s$  is the specific storage of nodal block 5. From Darcy's law,

$$Q_{15} = K_{15} \frac{h_1 - h_5}{\Delta y} \Delta x b \quad (8.53)$$

where  $K_{15}$  is a representative hydraulic conductivity between nodes 1 and 5. Similar expressions can be written for  $Q_{25}$ ,  $Q_{35}$ , and  $Q_{45}$ .

FUTUR

**TABLE 4.6** Ranges of intrinsic permeabilities and hydraulic conductivities for unconsolidated sediments

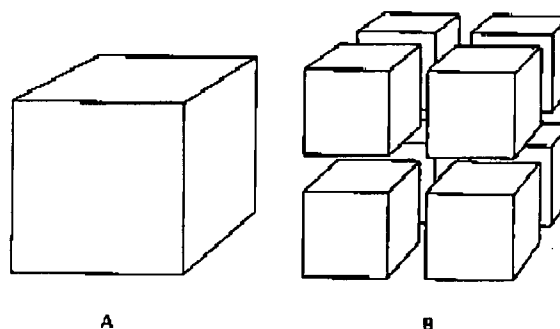
Material	Intrinsic Permeability (darcys)	Hydraulic Conductivity (cm/s)
Clay	$10^{-6}$ – $10^{-3}$	$10^{-9}$ – $10^{-6}$
Silt, sandy silts, clayey sands, till	$10^{-3}$ – $10^{-1}$	$10^{-6}$ – $10^{-4}$
Silty sands, fine sands	$10^{-2}$ –1	$10^{-5}$ – $10^{-3}$
Well-sorted sands, glacial outwash	1– $10^2$	$10^{-3}$ – $10^{-1}$
Well-sorted gravel	$10$ – $10^3$	$10^{-2}$ –1

#### 4.4.3 Permeability of Sediments

Unconsolidated coarse-grained sediments represent some of the most prolific producers of ground water. Likewise, clays are often used for engineering purposes, such as lining solid-waste disposal sites, because of their extremely low intrinsic permeability. There is obviously a wide-ranging continuum of permeability values for unconsolidated sediments (Table 4.6).

The intrinsic permeability is a function of the size of the pore opening. The smaller the size of the sediment grains, the larger the surface area the water contacts (Figure 4.13). This increases the frictional resistance to flow, which reduces the intrinsic permeability. For well-sorted sediments, the intrinsic permeability is proportional to the grain size of the sediment (Norris & Fidler 1965).

For sand-sized alluvial deposits, several factors relating intrinsic permeability to grain size have been noted (Masch & Denny 1966). These observations would hold true for all sedimentary deposits, regardless of origin of deposition.



**FIGURE 4.13** Relationship of sediment grain size to surface area of pore space. A. A cube of sediment with a surface area of 6 square units. B. The cube has been broken into 8 pieces, each with a diameter of one-half of the cube in part A. The surface area has increased to 12 square units—an increase of 100%.

## HYDRAULIC CONDUCTIVITY OF EARTH MATERIALS

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1. As the median grain size increases, so does permeability. This is due to larger pore openings.
2. Permeability will decrease for a given median diameter as the standard deviation of particle size increases. The increase in standard deviation indicates a more poorly sorted sample, so that the finer material can fill the voids between larger fragments.
3. Coarser samples show a greater decrease in permeability with an increase in standard deviation than do fine samples.
4. Unimodal (one dominant size) samples have a greater permeability than bimodal (two dominant sizes) samples. This is again a result of poorer sorting of the sediment sizes, as the bimodal distribution indicates.

The hydraulic conductivity of sandy sediments can be estimated from the grain-size distribution curve by the Hazen method (Hazen 1911). The method is applicable to sands where the effective grain size ( $d_{10}$ ) is between approximately 0.1 and 3.0 mm. The Hazen approximation is

$$K = C(d_{10})^2 \quad (4-19)$$

where

$K$  is hydraulic conductivity (cm/s)

$d_{10}$  is the effective grain size (cm)

$C$  is a coefficient based on the following table

Very fine sand, poorly sorted	40-80
Fine sand with appreciable fines	40-80
Medium sand, well sorted	80-120
Coarse sand, poorly sorted	80-120
Coarse sand, well sorted, clean	120-150

The work of Hazen (1911) demonstrated that hydraulic conductivity could be related to the square of a characteristic dimension of a sediment. Shepherd (1989) analyzed data from 18 published studies where hydraulic conductivity had been related to grain size. He found that all studies could be related to the general formula

$$K = C d_{50}^j \quad (4-20)$$

where

$C$  is a shape factor

$d_{50}$  is the mean grain size (mm)

$j$  is an exponent

The shape factor,  $C$ , and the exponent,  $j$ , were greatest for sediments that were texturally mature, as evidenced by well-sorted samples with uniformly sized

particles that had high roundness and sphericity. Both the shape factor and the exponent declined for sediments that were less texturally mature and were least for consolidated sediments.

Shepherd (1989) used the data sets to produce an idealized graph that relates hydraulic conductivity to the mean grain diameter for different sediment types. (Figure 4.14). The  $C$  values on the graph are those that give the hydraulic

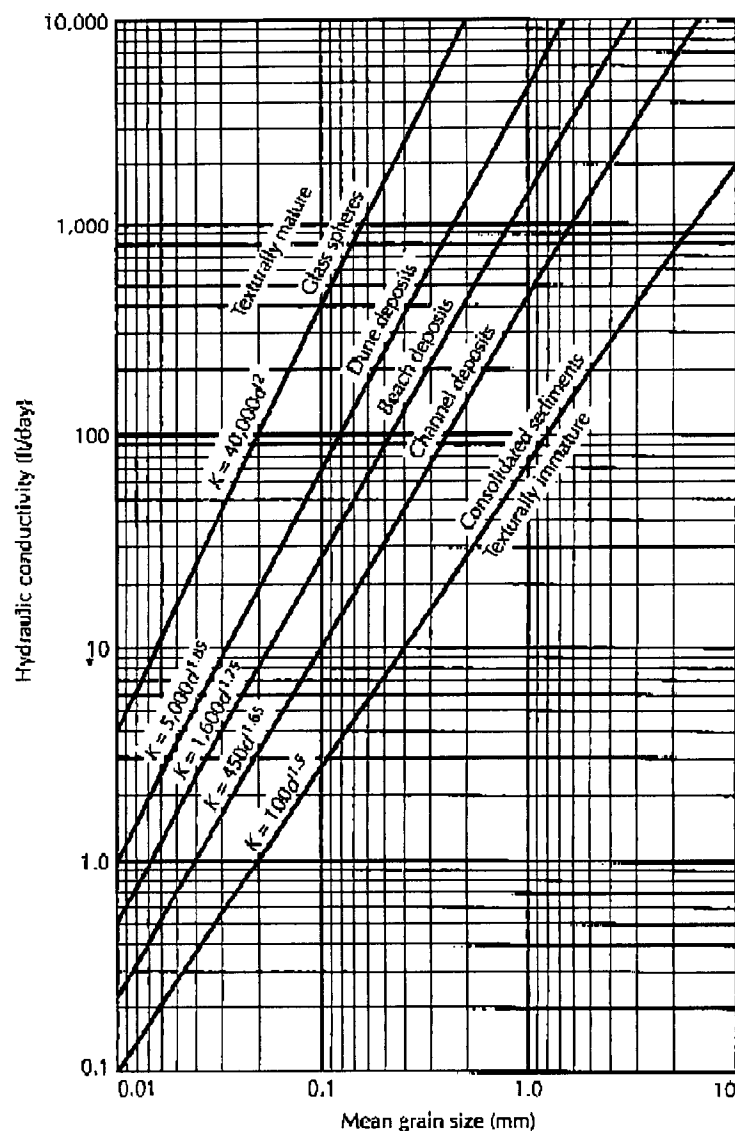


FIGURE 4.14 Graph showing the relationship of hydraulic conductivity to mean grain diameter for sediments of different textural maturity. Modified from R. G. Shepherd, *Ground Water* 27, no. 5 (1989): 633–638. Copyright © 1989 Ground Water Publishing Co.

## HYDRAULIC CONDUCTIVITY OF EARTH MATERIALS

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conductivity in units of feet per day. An upper bound is presented for glass spheres, where the exponent is 2.0. Texturally mature sediments have an exponent of 1.75 or greater, whereas texturally immature sediments can have an exponent as low as 1.5.

### CASE STUDY: HYDRAULIC CONDUCTIVITY ESTIMATES IN GLACIAL OUTWASH

A hazardous-waste-processing site was located on a level glacial outwash plain in southern Indiana. There were two aquifers present in the unconsolidated glacial deposits. The upper aquifer consisted of a well-sorted fine to medium sand. There were 27 ground-water monitoring wells installed in this aquifer. The lower aquifer was a poorly sorted fine to coarse sand. There were 9 monitoring wells installed in this aquifer. The grain-size analyses of the sand samples from the screen zones of the wells in each aquifer are summarized in the following table:

	Upper Aquifer		Lower Aquifer	
	Mean	Range	Mean	Range
$d_{10}$	0.14 mm	0.08–0.20 mm	0.16 mm	0.09–0.26 mm
$d_{60}$	0.31 mm	0.19–0.45 mm	2.04 mm	0.35–6.70 mm
$C_u$	2.29	1.50–3.89	11.01	3.89–33.50

The hydraulic conductivities of the sediments at each monitoring well were estimated by the Hazen method, using a coefficient of 100. The hydraulic conductivities of the sediments at each monitoring well were measured by means of a Hvorslev slug test performed on the well (see Section 7.5.3). The following table compares the results in centimeters per second.

	Geometric Mean (cm/s)	Range (cm/s)
Upper Aquifer		
Hazen method	$1.9 \times 10^{-2}$	$4.0 \times 10^{-2} - 6.4 \times 10^{-3}$
Hvorslev test	$1.9 \times 10^{-2}$	$8.9 \times 10^{-2} - 4.2 \times 10^{-3}$
Lower Aquifer		
Hazen method	$1.2 \times 10^{-2}$	$2.6 \times 10^{-2} - 8.1 \times 10^{-3}$
Hvorslev test	$1.4 \times 10^{-2}$	$1.7 \times 10^{-1} - 2.6 \times 10^{-3}$

The geometric means of the data sets were used to compare the Hvorslev test results with the Hazen method results in the above case study. Hydraulic conductivity values frequently vary by more than two orders of magnitude within the same hydrogeologic unit. An arithmetic mean of such a sample population tends to give more weight to the more permeable values. Some hydrogeologists

## Ford, Kim

---

**From:** Pelz, Susan  
**Sent:** Thursday, January 08, 2004 6:18 PM  
**To:** 'jld@consulthai.com'; Smith, David G  
**Cc:** Ford, Kim; Morris, John R.  
**Subject:** RE: Enterprise Landfill

Jennifer,

Rule 62-701.400(9)(a), F.A.C., requires that construction of the stormwater system shall be completed prior to acceptance of waste. If the stormwater management system that was already permitted is constructed and approved for operation (even though there's a pending modification) the facility may be able to operate. If the stormwater management system has not been constructed, the facility will not be able to accept waste for disposal until it has been.

David, do you have anything to add?

Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

-----Original Message-----

**From:** Jennifer L. Deal [mailto:jld@consulthai.com]  
**Sent:** Thursday, January 08, 2004 5:06 PM  
**To:** Pelz, Susan  
**Subject:** Enterprise Landfill

Susan,

Craig Bryan of Angelo's spoke to David Smith today at the DEP office. David mentioned that he is currently quite busy, and as a result, the modified ERP for the Enterprise site will not be issued until February 16. As you know, Dominic lafrate is aiming for DEP's solid waste certification approval, and initiation of site operations, by the end of the month. If the ERP modification application is considered complete and is otherwise approved, is it possible to waive the requirement that the modified ERP be issued prior to operation [Comment 2)d) of Kim's letter]? The original ERP permit was issued on February 22, 2001. Please advise as soon as possible, as I will need to discuss this issue with Mr. lafrate. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955





# Enterprise Certification

1/3

1/5/04

## Correlation w/ sieves & perme

- we will look @ again  $\Rightarrow$  proposing 30%
- we will relook @ boring logs & cross-sections with X% in mind

## Variability in subsurface - fragments

Borings

B-1 (west side) cells 10/11

B-6 (NE of cell 16)

B-8 (east of SE corner cell 15)

B-9 (SW of SW corner cell 2)

B-10 (S of cell 6)

Feb 2001

B-14 ( )

DCL012

B-15

B-16 (cell 1)

Cell 15 & 16 -

is too low now, but need to put mat'l back in (w 5 ft to get to elevation)

- patch sand areas in Cell 16  $\Rightarrow$  want to put 3 ft clay over all of Cell 16
- 1/2 mo to complete Cell 16

\* Check w/ David on ERP status

## SSA-bairings

- keep location so we know where patches were
- note that it was overexcavated & tie clay patch to contours

parts for corners of areas you're certifying

★ check w/ Dave Smith -

ERP stormwater capacity based on SHWT (78 ft?)

## Action Items:

### DEP

- relook @ boring logs & cross-sections in light of ~~then~~ alternate correlations
- check on ERP

### Angelo's

- Hazen formulas
- revised clay maps <sup>contours</sup> - show edge of certified area
- surveys w/ accuracy noted
- input data for contouring program
- revise cross-sections to go beyond boundaries
- hydrographs
- build berm between cell 15 & 16 (will be done before site visit)

Site visit  $\Rightarrow$  Wed 14<sup>th</sup> pm. 2:00pm

Resubmit by ~~xxxxxxxxxxxxxxxx~~ before Wed 14<sup>th</sup>

1/5/04

## ENTERPRISE CLASS III - CELL #1 CERTIFICATION LETTER MEETING

DOMINIC LAFAITE

JIM GOLDEN

JENNIFER DEAL

MIGUEL GARCIA

BRUCE LAFAITE

JEFF ROGERS

KCF

SJP

JRM

DEC. 8, 2003 LETTER ITEMS &amp; SJP RESPONSE TO JENNIFER'S E-MAIL

## ① % FINES CORRELATION

- SWITCHED X & Y AXES (PUT % FINES ON Y AXIS)
- USING ALL DATA POINTS END UP W/ ~24% FINES @  $1 \times 10^{-6}$  CM/SEC USING POWER FUNCTION
- INDEPENDENT VARIABLE IS % FINES; DEPENDENT VARIABLE IS PERMEABILITY
- DATA ~~PLOTS~~ PLOTS FOR INVERTED AXES ARE ALMOST COINCIDENT AT  $1 \times 10^{-6}$  CM/SEC, SO SEPARATE ANALYSES USING DIFFERENT DATA SETS DON'T NEARLY CHANGE AT THE  $1 \times 10^{-6}$  CM/SEC PERMEABILITY

② ASSUMING 30% FINES IS ACCEPTABLE, MOVED ON W/ DISCUSSION OF REVIEW COMMENTS IN DEP LETTER (INDICATED THAT WE WOULD REVIEW INVERTED DATA PLOTS & GET BACK TO THEM)

INTRODUCTION IP OF 12/8/03 DEP LETTER:

"VARIABLE GEOLOGY" - JD FEELS THAT THE SAME MATERIALS WERE IDENTIFIED

- PRESENCE OF LS  
FRAGMENTS IS NOT  
IN DISPUTE

IN THE PERMIT APPLICATIONS & LTI'S, AS FOLLOWS

B-1 (WEST SIDE, WEST OF CELLS 10/11)

B-6 (NE OF CELL 14)

B-8 (EAST OF SE CORNER  
CELL 15)

B-9 (SW OF SW CORNER CELL 2)

B-10 (S. OF CELL 6)

B-14 (E. SIDE OF CELL 2)

DCL-01-12 (MIDDLE OF CELL 15) <sup>INCLUDES</sup> COBBLE SIZED IS BOUNDED

B-15 (E-CENTRAL PART OF CELL 8)

B-16 (CELL 1)

ENTERPRISE CLASS III - CELL 1 CERTIFICATION MEETING

- DEPRESSIONAL AREA IN CELL 16 (FIG 38)
- SAND IN NW CORNER OF CELL 16 (DISCUSSED AT LENGTH IN PMOR MEETING)
- BORINGS SOUTH OF DEPRESSIONAL AREA IN CELL 16 DEMONSTRATED A CONSIDERABLE THICKNESS OF CLAY. DEP QUESTIONED HOW DOES THE DATA DEMONSTRATE THAT THERE WAS AT LEAST 3 FT OF CLAY ON THE "SLOPE" OF THE CLAY SURFACE
- DOMINIC INDICATES THAT TEMPORARY POND IS DRAINING OUT, THINKS THAT BY MID TO END OF JANUARY WILL BE ABLE TO GET HEAVY EQUIPMENT IN TO PUT 3 FT OF CLAY ACROSS PART OF THE CELL w/ DEEPER CLAY
- BOTTOM OF TEMP. POND AT 75 FT NGVD - HAVE TO FILL 5 FT w/ OTHER MATERIAL TO GET BACK TO 80 FT NGVD BEFORE CAN FILL IN CELLS 15/16, SO CAN GO BACK TO CELLS 15/16 LATER & PUT IN A CERTAIN ~~THICKNESS~~ THICKNESS OF SPECIFIC PERMEABILITY CLAY
- CERTIFY CELLS 15/16 LATER?
- CELL 15 - CLAY IS MOSTLY AT SURFACE; SO THEN IT WOULD BE RELATIVELY EASY TO PATCH CELL 16 AT THE SURFACE ACROSS THE DEPRESSIONAL AREA; DO NOT NEED TO PUT A BEAM UP BETWEEN CELLS 15 & 16 DURING THE DRY SEASON AS THE VOLUME OF WATER IN THE POND HAS REDUCED TO THE POINT DURING THE DRY SEASON THAT IT IS EASY TO WORK w/
- DEP DOES NOT OBJECT TO PUTTING PATCH ACROSS DEPRESSIONAL AREA IN CELL 16 PROVIDED THE IN 3 FT OF  $1 \times 10^{-6}$  CM/SEC IS DEMONSTRATED AT SURFACE
- SANDY AREA AT NW CORNER OF CELL 16 WILL ALSO BE TIED IN BY PLACING SURFACE PATCH
- ADD CLAY AT CURRENT SURFACE OR OVEREXCAVATE 3 FT TO PUT IN PATCH?

1/9/03  
Pg 3/5

### ENTERPRISE CLASS III LF - CELL 1 CERTIFICATION MEETING

- SEQUENCE OF SITE INSPECTION, OPENING CELL #1, WORK IN CELL #16
- WILLING TO INSTALL BEAM ACROSS CELL 15/16 TO KEEP WATER OUT OF CELL 16 TO ALLOW HEAVY EQUIPMENT TO PUT PATCH IN PROBLEM AREAS
- WILLING TO LET THEM OPERATE IN CELL 1, w/ STORMWATER GOING TO CELL 15 TEMPORARILY UNTIL CELL 16 GETS PATCHED; UPON COMPLETION OF PATCHING WORK IN CELL 16 WILL SUBMIT CERTIFICATION PACKAGE, CONDUCT SECOND SITE INSPECTION, UPON APPROVAL OF CERT. IN CELL 16 CAN REMOVE BEAM BETWEEN CELLS 15/16
- WILL GET BACK TO US BASED ON STORMWATER CALCULATIONS/VOLUMES IF THEY WILL BE PATCHING FROM EXISTING SURFACE OR OVEREXCAVATE POND TO PUTTING IN THE PATCH; ALL THIS DEPENDS ON ERP NOT HAVING PROBLEMS w/ THIS APPROACH

### EDGES OF AREAS TO BE CERTIFIED - "EXTRAPOLATE CONTOURS"

- CAN EXTRAPOLATE "OUTBOARD" AREAS AS MUCH AS THE SAMPLING INTERVAL BETWEEN BORINGS
- NEED LINES DRAWN BETWEEN "INTERIOR" CORNER POSTS TO CLEARLY DELINEATE THE ~~THE~~ BOTTOM OF THE CELL THAT IS BEING CERTIFIED
- CONTOUR LINES FOR TOP OF CCM CAN NOT BE SHOWN ABOVE DESIGN BOTTOM ELEVATION
- NEED TO BE CLEAR IF FIGURES INDICATE CCM OCCURS AT DESIGN ELEVATION OR BT DEPTH
- TOP OF CCM CONTOUR LINES NEED TO EXTEND "OUTBOARD" OF CORNER POSTS THAT DELINEATE AREA TO BE CERTIFIED
- QUESTION ABOUT HOW THE TOP OF CCM CONTOUR MAPS WERE PREPARED; CAN PROVIDE INPUT VALUES FOR EACH BORING (X & Y COORDINATES & ELEVATION DATA)
- WILL RESUBMIT THE CONTOUR MAPS THAT REFER TO SURVEYOR'S DRAWING

ENTERPRISE CERTIFICATION MEETING -

COMMENT # 4e - CONCERN ABOUT REDUCING THE SURFACE W/ BORINGS THAT WERE ONLY 3 FT DEEP - HOW MUCH OF THE ORIGINAL 3 FT OF CLAY REMAINS IN PLACE ("AS" SERIES BORINGS OF PARTICULAR CONCERN)

- WILL REVISE FIG 38/39 TO DISTINGUISH WHICH BORINGS WERE EXCLUDED FROM MAP (EG. THOSE BORINGS THAT WERE IN ~~THE~~ AREAS THAT WERE EXCAVATED AND LATER PATCHED)

COMMENT # 1.k)

- CAN EXTEND X-SECTION LINES USING SOME BORINGS FROM PERMITTING OR USING MONITOR WELLS
- MAY BE SOME LOCATIONS WHERE DON'T HAVE EXISTING BORINGS TO EXTEND OUTSIDE AREA EXCAVATED
- WHERE THE BORING IS LOCATED IS THE OUTBOUND DIMENSION OF WHAT WILL BE CERTIFIED

COMMENT # 1.u)

- PLAN TO SUBMIT HYDROGRAPHS TO SHOW DISPARITY BETWEEN SURFACE (FLOODING) ELEVATIONS
- SEASONAL HIGH WT ELEVATION DISCUSSED - HAVE 2003 DATA ONLY - A WET YEAR
- WANT SOME ASSURANCE THAT WATER TABLE DOES NOT GET ABOVE 80 FT NGVD
- (DAVID SMITH HAS ~~THE~~ INPUT DATA FOR MODELLING THAT DEMONSTRATES SURFACE WATER ELEVATIONS IN POND AT 100 YEAR EVENT)

COMMENT # 3-4 - COMMENTARY; NOT LOOKING FOR RESPONSES FROM HANDBOOK



# ENTERPRISE LANDFILL - CELL 1 CERTIFICATION MEETING NOTES

## ACTION ITEMS

DEP - BOUND LOGS & X-SECTIONS TO BE REVIEWED IN LIGHT OF ~~ALTERNATE~~ CORRELATION  
(BOTH PROVIDED IN PERMITTING & CERTIFICATION)

- CHECK W/ DAVID SMITH ABOUT ERP PERMIT

HARTMAN - PROVIDE FAX COPIES OF THEORETICAL STATISTICAL (HAZEN FORMULAS)

- REVISED TOP OF CITY CONTOUR MAPS

- SURVEY SHEETS W/ ACCURACY INFO FROM SURVEYOR

- INPUT DATA FOR CONTOURING

- REVISE SOME OF THE X-SECTIONS TO GO BEYOND BOUNDARIES TO BE CERTIFIED  
(W/ EDGE OF AREA TO BE CERTIFIED)

- HYDROGRAPHS

- DETAILS ON BUILDING BEAM BETWEEN CELLS 15/16 (NO SPECIFIC TYPE OF MATERIALS) - WANT BEAM IN PLACE BEFORE SITE ~~INSPECTION~~ INSPECTION

- 2 FT HIGH BEAM OK FOR US

→ 1/14/03 IN AFTERNOON (2 PM.) ←

- NEED AT LEAST 2 WKS TO REVIEW MATERIALS SUBMITTED BY HARTMAN

- CONCERN/BOE THAT COULD RECEIVE APPROVAL BY 4<sup>TH</sup> WEEK OF JANUARY

1/5/04

1/3

## Enterprise COT

CORRELATION 7. FINDS OF PIMM

B.L. PROVIDED NEW GRAPH OF SAME DATA

DEC 8, 2003 (LHM)

- 1) J.D. DISCUSSED SAME GEOLOGY AS WAS PREVIOUS  
3-7, 3-6, 3-8, 3-9, 3-1, 3-11, - PREVIOUS BORINGS

SP ASKED IF THERE WERE US FRAGMENTS  
JD SAID YES

SP SAID THE VARIABILITY IS NOT DISPUTED,  
WHAT NEEDS TO BE DONE TO DEMONSTRATE  
THE EXCEPTIONS WERE SHE PROVIDED

DI ASKED ABOUT ENTIRE AT SURFACE OR  
AT DEPTH

SP SAID YES WERE CORREL AT SURFACE TO  
AT DEPTH

DI CONFIRMED EXCAVATION 3' AND  
FILLING WITH THE CLAY

2) CUL 15 + 16

2) ALT 1: TO FILL W/ 1' OF CLAY, NOW  
AND MORE WATER

ALT 2: PARTIAL AREA

- 3) Cell 15 clay at surface (SL, MG)  
 so partition is better.

All contact with. Go to where?

JD same surface above goes into 16

over 3' clay

DI will partition all w/ 3' clay

And excavate 14 and cover all with

3' clay

Beam 1st between 15 & 16

until 16 is partitioned

Cell 16 2nd A condition of. C&T approval

- 4) Certification to posts  
 posts must be written

Discuss clay contour maps

JD will be replaced w/ revisions

If some SSA excavated out

so shown out for inclusion

if clay not at surface

- 5) BL will evaluate W.T.  
 and provide hydrograph

Summary

DEP will look at

OLDER SURVEYS AND ALT CORRELATION  
OF 10 FMS OF PERMS

And will

1) Review surveys

of input DATA

EXTEND CROSS-SECTIONS

2) Will send down between 15 & 16

→ 3) SITE VISIT WED. 14th pm.

4)

Below

# HARTMAN & ASSOCIATES, INC.

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Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
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engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

December 30, 2003

HAI #99.0331.007

Phase 5

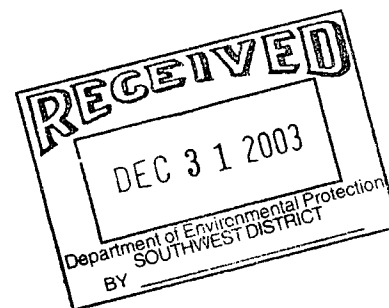
File 12.0

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James R. Warner, E.I.

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**



Dear Mr. Ford:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the requested weekly water level measurements for the above site. Attached is a table summarizing the water levels measured since June 30, 2003. In some cases, measurements were unable to be obtained within one week. The table also includes water elevations for the temporary pond and measurements for the rain gauge.

We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

Jennifer L. Deal, P.E.  
Project Manager

JLD/cr/99.0331.007/corresp/Ford19.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4***	85.83	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge	(inches)								
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
*** Piezometer reinstalled, old TOC elevation 84.55, new TOC elevation 85.83									
Bold indicates standing water on land surface									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4***	85.83	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge (inches)			3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
<b>Bold indicates standing water</b>									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4***	85.83	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge	(inches)		1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to)							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
*** Piezometer reinstalled, old							
<b>Bold</b> indicates standing water							



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003	October 21, 2003	October 21, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96	38.02	78.69
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65	98.19	76.29
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90	7.44	79.30
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56	9.50	76.20
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67	12.35	76.30
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82	16.08	76.38
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59	17.02	76.22
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36	23.37	76.73
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38	34.79	76.83
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22	27.55	76.90
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18	22.04	76.69
P-4***	85.83	5.04	79.51	5.49	79.06	5.62	78.93	6.20	78.35
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61	17.92	76.24
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09	59.20	74.74
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55	56.42	76.18
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28	42.80	107.96
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14		76.89
Rain Gauge (inches)			1.02		0.00		1.20		0.00
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
<b>Bold</b> indicates standing water									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 30, 2003	October 30, 2003	November 5, 2003	November 5, 2003	November 19, 2003	November 19, 2003	December 1, 2003	December 1, 2003
MW-1	116.71	38.39	78.32	38.44	78.27	38.97	77.74	39.40	77.31
MW-1B	174.48	98.74	75.74	98.86	75.62	NM	-	100.12	74.36
MW-5A*	86.74	7.85	78.89	8.02	78.72	8.65	78.09	9.16	77.58
MW-5B	85.70	10.06	75.64	10.19	75.51	10.99	74.71	11.46	74.24
MW-6	88.65	12.89	75.76	13.03	75.62	13.86	74.79	14.34	74.31
MW-7A	92.46	16.68	75.78	16.81	75.65	17.67	74.79	18.18	74.28
MW-7B	93.24	17.57	75.67	17.73	75.51	18.51	74.73	18.98	74.26
MW-8*	100.10	24.04	76.06	24.13	75.97	24.84	75.26	25.36	74.74
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	35.57	76.05	35.79	75.83	36.65	74.97	Dry	-
MW-11	104.45	28.09	76.36	28.25	76.20	29.00	75.45	29.58	74.87
P-2**	98.73	22.67	76.06	22.82	75.91	23.66	75.07	24.19	74.54
P-4***	85.83	7.95	77.88	8.12	77.71	8.88	76.95	9.44	76.39
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	18.48	75.68	18.63	75.53	19.40	74.76	19.88	74.28
P-8	133.94	59.77	74.17	59.89	74.05	60.66	73.28	61.17	72.77
P-10	132.60	56.96	75.64	57.08	75.52	57.89	74.71	58.37	74.23
P-11	150.76	43.32	107.44	43.42	107.34	44.16	106.60	44.86	105.90
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.67		76.43		75.77		75.32
Rain Gauge	(inches)		0.70		0.00		0.00		0.20
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
<b>Bold</b> indicates standing water									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

<b>Location</b>	<b>TOC Elevation, ft NGVD</b>	<b>Depth to Water, ft BTOC</b>	<b>Water Level, ft NGVD</b>	<b>Depth to Water, ft BTOC</b>	<b>Water Level, ft NGVD</b>
		December 8, 2003	December 8, 2003	December 17, 2003	December 17, 2003
MW-1	116.71	39.70	77.01	40.09	76.62
MW-1B	174.48	100.47	74.01	100.84	73.64
MW-5A*	86.74	9.48	77.26	9.88	76.86
MW-5B	85.70	11.80	73.90	12.15	73.55
MW-6	88.65	14.66	73.99	15.03	73.62
MW-7A	92.46	18.52	73.94	18.88	73.58
MW-7B	93.24	19.32	73.92	19.65	73.59
MW-8*	100.10	25.60	74.50	25.95	74.15
MW-9	108.00	Dry	-	Dry	-
MW-10*	111.62	Dry	-	Dry	-
MW-11	104.45	29.91	74.54	30.34	74.11
P-2**	98.73	24.56	74.17	24.94	73.79
P-4***	85.83	9.81	76.02	10.23	75.60
P-5	94.56	AB	-	AB	-
P-6	94.16	20.22	73.94	20.56	73.60
P-8	133.94	61.50	72.44	61.86	72.08
P-10	132.60	58.71	73.89	59.07	73.53
P-11	150.76	45.27	105.49	45.80	104.96
P-13	112.91	AB	-	AB	-
TP			N/A		N/A
Rain Gauge (inches)			0.00		1.00
TP - Temporary Pond					
TOC - top of casing					
BTOC - below top of casing					
NM - not measured (unable to					
AB - abandoned					
* Considered perched water table					
** Piezometer reinstalled, old					
*** Piezometer reinstalled, old					
<b>Bold</b> indicates standing water					

## Ford, Kim

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**From:** Pelz, Susan  
**Sent:** Wednesday, December 31, 2003 3:35 PM  
**To:** 'jld@consulthai.com'; Miguel Garcia; Bruce Lafrenz  
**Cc:** Morris, John R.; Ford, Kim; Smith, David G  
**Subject:** RE: Enterprise Certification Comments

Jennifer,

Here are my comments in underlined blue italics based on your responses. See below.

We'll see you all on Monday, January 5, 2004 at 1:00pm.

Thanks,  
Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Wednesday, December 17, 2003 6:00 PM  
To: Pelz, Susan  
Cc: Ford, Kim; Morris, John R.; diafrate@iafrate.com; Miguel Garcia;  
Bruce Lafrenz  
Subject: Enterprise Certification Comments

Susan,

We have reviewed the letter from Kim and John regarding the certification comments for the Enterprise Class III facility. Kim Ford requested that I forward any comments to you via email. Several of the comments appear to require text clarification or acknowledgement, and we have no issues with those comments. However, there are several comments that warrant discussion or a meeting with your staff in order to resolve. Some of these comments include the following (the related comments referenced in each of Kim's comments are not necessarily listed below):

1)h) We propose to redesign the pond after the facility is operating. [O.K.]

1)j) We submitted as-built surveys that indicate the changes from the approved plans. If separate record drawings are also required, we would like to know what level of detail you are requesting. [Two drawings provided as part of the certification document appear to contain the level of detail needed and should be labeled as RECORD DRAWING and signed, dated, and sealed by a P.E.]

1)m) We do not agree with the suggestion of co-signing the drawing with the surveyor. We propose to add a note to the revised figures, signed by a Florida registered P.G., referencing the signed and sealed topographic

survey. [O.K.]

We will request that Foresight Surveyors add the boring elevations and a reference to the degree of accuracy to the topographic as-built survey. [O.K.]

Regarding the clay layer/confining unit maps, these maps are generated by a computer model, using the site-specific geologic data obtained from the site. This results in some extrapolation of the contours beyond the limits of the cells. We are able to "dash" these portions of the contours and note them as extrapolated, if the Department requests. [We should discuss this at the meeting. Although dashed lines and extrapolation may clarify the method used to generate the contours, how can these areas be certified to contain the required 3-feet of clay if the elevations are extrapolated? I think we should discuss how the adequacy of the clay layer at and beyond the edges of the cells is determined and presented on the Figures.]

We do not agree that additional borings are required to confirm the presence of clay near borings AS-10 and AS-42. These areas were excavated and replaced with confining unit material that met or exceeded the permit requirement. The scale used for this figure was chosen to display the area of interest in a standard 11" x 17" sheet.

We do not agree that additional borings are required in Cell 16. Depressional features are common in central Florida and this type of change in the elevation of the confining unit is not uncommon. [We do not disagree that depressional features are common in Central Florida.] We believe reasonable assurance of the existence of confining material was confirmed with the permeability of sample ST-16. [Our concern is that due to the severity of the change in elevations around this point, that one boring/sample may not be representative of the lithology in this area. It also appears that ST-16 is not shown on the map. Other borings (DCL01-14, ST-7) in the vicinity of the depression are not shown on the map. These borings may help to clarify the lithology around this point.] Please see the scale comment above. Further discussion of this comment is necessary. [I agree.]

1)n) We do not agree that all of the cross-sections should be to the same scale. Each cross-section is shown to depict the geology through a horizontal distance and a vertical elevation. The horizontal distances vary and therefore different scales are required to provide magnification and clarity for ease of evaluation. [O.K.]

2)d) It appears that the intention of the temporary pond is misunderstood. This pond is intended to collect run-off from Cell 1, and also to collect stormwater from other portions of the site. Capacity calculations were included in the stormwater permit application and the pending modification application. [O.K., but confirmation that the water in the temporary pond will not be elevated above the base of the adjacent disposal area at any time following a 100 year storm would be helpful.] We acknowledge that the stormwater diversion conveyance is actually a berm which creates an open channel for flow, and not a "swale". [O.K.]

4)b) We do not agree with the statement that "additional assurances should be provided to demonstrate and confirm adequate environmental protection..." Geologic logs submitted during permitting show the occurrence of limestone fragments within the confining material at elevations similar to those encountered in Cell 1. These fragments do not indicate a direct connection to the Floridan aquifer, but rather are lenses with confining material below. [Please remember that unlike C&Ds, Class III landfills are **required** to have liners and leachate collection systems (Rule 62-701.340(3)(c), F.A.C.) **unless** the applicant demonstrates that no significant threat

to the environment will result from the exemption. The criteria is not whether the facility has a "direct connection" to the Floridan aquifer, but whether a significant threat to the environment will result from the exemption from liner and leachate collection. It is my understanding that the demonstration that was made during permitting did not include depressional areas (relic sinkholes), sand lenses, or the extent of limestone that was actually encountered within the cells. Since the actual site conditions are not the same as described during permitting, the permittee must take additional steps to provide reasonable assurance that the basis for exemption is still valid.]

4)e) The borings labeled SSA-1 through SSA-18 are identified as approximate locations due to the fact that they were completed one day prior to the initial DEP site visit. The Department recommended that these areas be excavated prior to the visit. Therefore, sufficient time was not available to perform the survey work. [One concern with this is that if the locations represented by these borings were reworked after the borings were taken, then the material that remained may not be the thickness and permeability required or represent the as-built elevations of the cell floor in its certified condition. We should discuss this at the meeting.]

Memo from John Morris: We do not agree with the alternate correlation indicating a minimum of 37% fines to be acceptable. We believe that soils with 31% fines are adequate to provide a confining unit. We are developing alternate correlations to be discussed. [I agree, we need to discuss.]

We are requesting a meeting or teleconference with you and your staff in order to fully address the Department's comments. Please contact Miguel Garcia or Bruce Lafrenz via email or telephone to make these arrangements. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Ford, Kim**

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**From:** Pelz, Susan  
**Sent:** Wednesday, December 24, 2003 12:41 PM  
**To:** jld@consulthai.com  
**Cc:** Ford, Kim; Morris, John R.; Miguel Garcia; Bruce Lafrenz; jgolden@hsagolden.com; diafrate@iafrate.com  
**Subject:** RE: Meeting for Enterprise Certification Discussion

Jennifer,

We've got you scheduled Monday 1/5/04 1-3pm. I'll try to get you some preliminary comments back early next week.

Thanks,  
Susan

-----Original Message-----

**From:** Jennifer L. Deal [mailto:jld@consulthai.com]  
**Sent:** Tue 12/23/2003 11:50 AM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim; Morris, John R.; Miguel Garcia; Bruce Lafrenz; jgolden@hsagolden.com; diafrate@iafrate.com  
**Subject:** Meeting for Enterprise Certification Discussion

Susan,

I spoke with Dominic Iafrate regarding your suggested dates for a meeting to discuss some of the certification comments. Dominic proposed dates of December 29 (afternoon) or December 30 (any time), as he will be in Florida at that time. However, if these dates are not feasible, then he would prefer to meet on the afternoon of January 5. As soon as possible, please let me know which of these dates we can schedule. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

1/5/2004

**Ford, Kim**

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**From:** Morris, John R.  
**Sent:** Tuesday, December 23, 2003 3:16 PM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim  
**Subject:** FW: Enterprise Certification Comments

I have sent out meeting invitations for 1/6/04 from 8 am to noon to cover the morning hours, figuring we can refine the exact time of the meeting later.

-----Original Message-----

**From:** Pelz, Susan  
**Sent:** Monday, December 22, 2003 4:56 PM  
**To:** jld@consulthai.com  
**Cc:** Ford, Kim; Morris, John R.; Miguel Garcia; Bruce Lafrenz  
**Subject:** RE: Enterprise Certification Comments

Jennifer,

I looked over your comments and although I don't have the letter in front of me, I agree that we need to meet to discuss some of them. Some we have no further comment on. I will pick up a copy of our letter on Wed. a.m. and will review your comments again in detail over this weekend.

It looks like we can meet 1/5 afternoon or 1/6/04 morning.

John, please check your and Kim's availability and room availability and send a meeting notice to schedule.

Jennifer, let me know if these dates are o.k.

Thanks,  
Susan Pelz, P.E.  
Solid Waste Manager  
813-744-6100 x 386  
[susan.pelz@dep.state.fl.us](mailto:susan.pelz@dep.state.fl.us)

-----Original Message-----

**From:** Jennifer L. Deal [mailto:jld@consulthai.com]  
**Sent:** Wed 12/17/2003 5:59 PM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim; Morris, John R.; diafrate@iafrate.com; Miguel Garcia; Bruce Lafrenz  
**Subject:** Enterprise Certification Comments

Susan,

We have reviewed the letter from Kim and John regarding the certification comments for the Enterprise Class III facility. Kim Ford requested that I forward any comments to you via email. Several of the comments appear to require text clarification or acknowledgement, and we have no issues with those comments. However, there are several comments that warrant discussion or a meeting with your staff in order to resolve. Some of these comments include the following (the related comments referenced in each of Kim's comments are not necessarily listed below):

1)h) We propose to redesign the pond after the facility is operating.

1/5/2004



1)j) We submitted as-built surveys that indicate the changes from the approved plans. If separate record drawings are also required, we would like to know what level of detail you are requesting.

1)m) We do not agree with the suggestion of co-signing the drawing with the surveyor. We propose to add a note to the revised figures, signed by a Florida registered P.G., referencing the signed and sealed topographic survey. We will request that Foresight Surveyors add the boring elevations and a reference to the degree of accuracy to the topographic as-built survey. Regarding the clay layer/confining unit maps, these maps are generated by a computer model, using the site-specific geologic data obtained from the site. This results in some extrapolation of the contours beyond the limits of the cells. We are able to "dash" these portions of the contours and note them as extrapolated, if the Department requests.

We do not agree that additional borings are required to confirm the presence of clay near borings AS-10 and AS-42. These areas were excavated and replaced with confining unit material that met or exceeded the permit requirement. The scale used for this figure was chosen to display the area of interest in a standard 11" x 17" sheet.

We do not agree that additional borings are required in Cell 16. Depressional features are common in central Florida and this type of change in the elevation of the confining unit is not uncommon. We believe reasonable assurance of the existence of confining material was confirmed with the permeability of sample ST-16. Please see the scale comment above. Further discussion of this comment is necessary.

1)n) We do not agree that all of the cross-sections should be to the same scale. Each cross-section is shown to depict the geology through a horizontal distance and a vertical elevation. The horizontal distances vary and therefore different scales are required to provide magnification and clarity for ease of evaluation.

2)d) It appears that the intention of the temporary pond is misunderstood. This pond is intended to collect run-off from Cell 1, and also to collect stormwater from other portions of the site. Capacity calculations were included in the stormwater permit application and the pending modification application. We acknowledge that the stormwater diversion conveyance is actually a berm which creates an open channel for flow, and not a "swale".

4)b) We do not agree with the statement that "additional assurances should be provided to demonstrate and confirm adequate environmental protection..." Geologic logs submitted during permitting show the occurrence of limestone fragments within the confining material at elevations similar to those encountered in Cell 1. These fragments do not indicate a direct connection to the Floridan aquifer, but rather are lenses with confining material below.

4)e) The borings labeled SSA-1 through SSA-18 are identified as approximate locations due to the fact that they were completed one day prior to the initial DEP site visit. The Department recommended that these areas be excavated prior to the visit. Therefore, sufficient time was not available to perform the survey work.

Memo from John Morris: We do not agree with the alternate correlation indicating a minimum of 37% fines to be acceptable. We believe that soils with 31% fines are adequate to provide a confining unit. We are developing alternate correlations to be discussed.

We are requesting a meeting or teleconference with you and your staff in order to fully address the Department's comments. Please contact Miguel Garcia or Bruce Lafrenz via email or telephone to make these arrangements. Thank you.

- Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Ford, Kim**

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**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Tuesday, December 23, 2003 11:50 AM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim; Morris, John R.; Miguel Garcia; Bruce Lafrenz; jgolden@hsagolden.com; diafrate@iafrate.com  
**Subject:** Meeting for Enterprise Certification Discussion

Susan,

I spoke with Dominic Iafrate regarding your suggested dates for a meeting to discuss some of the certification comments. Dominic proposed dates of December 29 (afternoon) or December 30 (any time), as he will be in Florida at that time. However, if these dates are not feasible, then he would prefer to meet on the afternoon of January 5. As soon as possible, please let me know which of these dates we can schedule. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

## Ford, Kim

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**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Wednesday, December 17, 2003 6:00 PM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim; Morris, John R.; diafrate@iafrate.com; Miguel Garcia; Bruce Lafrenz  
**Subject:** Enterprise Certification Comments

Susan,

We have reviewed the letter from Kim and John regarding the certification comments for the Enterprise Class III facility. Kim Ford requested that I forward any comments to you via email. Several of the comments appear to require text clarification or acknowledgement, and we have no issues with those comments. However, there are several comments that warrant discussion or a meeting with your staff in order to resolve. Some of these comments include the following (the related comments referenced in each of Kim's comments are not necessarily listed below):

1)h) We propose to redesign the pond after the facility is operating.

1)j) We submitted as-built surveys that indicate the changes from the approved plans. If separate record drawings are also required, we would like to know what level of detail you are requesting.

1)m) We do not agree with the suggestion of co-signing the drawing with the surveyor. We propose to add a note to the revised figures, signed by a Florida registered P.G., referencing the signed and sealed topographic survey. We will request that Foresight Surveyors add the boring elevations and a reference to the degree of accuracy to the topographic as-built survey. Regarding the clay layer/confining unit maps, these maps are generated by a computer model, using the site-specific geologic data obtained from the site. This results in some extrapolation of the contours beyond the limits of the cells. We are able to "dash" these portions of the contours and note them as extrapolated, if the Department requests.

We do not agree that additional borings are required to confirm the presence of clay near borings AS-10 and AS-42. These areas were excavated and replaced with confining unit material that met or exceeded the permit requirement. The scale used for this figure was chosen to display the area of interest in a standard 11" x 17" sheet.

We do not agree that additional borings are required in Cell 16. Depressional features are common in central Florida and this type of change in the elevation of the confining unit is not uncommon. We believe reasonable assurance of the existence of confining material was confirmed with the permeability of sample ST-16. Please see the scale comment above. Further discussion of this comment is necessary.

1)n) We do not agree that all of the cross-sections should be to the same scale. Each cross-section is shown to depict the geology through a horizontal distance and a vertical elevation. The horizontal distances vary and therefore different scales are required to provide magnification and clarity for ease of evaluation.

2)d) It appears that the intention of the temporary pond is misunderstood. This pond is intended to collect run-off from Cell 1, and also to collect

stormwater from other portions of the site. Capacity calculations were included in the stormwater permit application and the pending modification application. We acknowledge that the stormwater diversion conveyance is actually a berm which creates an open channel for flow, and not a "swale".

4)b) We do not agree with the statement that "additional assurances should be provided to demonstrate and confirm adequate environmental protection..." Geologic logs submitted during permitting show the occurrence of limestone fragments within the confining material at elevations similar to those encountered in Cell 1. These fragments do not indicate a direct connection to the Floridan aquifer, but rather are lenses with confining material below.

4)e) The borings labeled SSA-1 through SSA-18 are identified as approximate locations due to the fact that they were completed one day prior to the initial DEP site visit. The Department recommended that these areas be excavated prior to the visit. Therefore, sufficient time was not available to perform the survey work.

Memo from John Morris: We do not agree with the alternate correlation indicating a minimum of 37% fines to be acceptable. We believe that soils with 31% fines are adequate to provide a confining unit. We are developing alternate correlations to be discussed.

We are requesting a meeting or teleconference with you and your staff in order to fully address the Department's comments. Please contact Miguel Garcia or Bruce Lafrenz via email or telephone to make these arrangements. Thank you.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

## Ford, Kim

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**From:** Pelz, Susan  
**Sent:** Tuesday, December 16, 2003 8:54 AM  
**To:** 'jld@consulthai.com'  
**Cc:** Morris, John R.; Morgan, Steve; Ford, Kim  
**Subject:** RE: Enterprise Certification



enterpriseCIII3.d03  
.doc

Jennifer,

Attached is the correct version of John's memo.

Susan

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Monday, December 15, 2003 10:11 AM  
To: Pelz, Susan  
Subject: RE: Enterprise Certification

Susan,

Since we haven't received the hard copy yet, we would appreciate the e-mail.  
Thank you.

Jennifer

-----Original Message-----

From: Pelz, Susan [mailto:Susan.Pelz@dep.state.fl.us]  
Sent: Monday, December 15, 2003 9:58 AM  
To: jld@consulthai.com  
Cc: Morris, John R.; Ford, Kim; Morgan, Steve  
Subject: Enterprise Certification

Jennifer,

I found out that John's memo I attached to the email was not the correct version. The hardcopy you'll be getting shortly (if you haven't gotten it already) will have the correct version included. I apologize for any inconvenience this may have caused.

If you need an electronic version, let me know I'll email it to you.

Thanks,  
Susan

## Memorandum

# Florida Department of Environmental Protection

**TO:** File for Permit Nos. 177982-001-SC and 177982-002-SO  
**FROM:** John R. Morris, P.G.  
**DATE:** December 4, 2003  
**SUBJECT:** Enterprise Recycling and Disposal Facility  
Cell 1 Certification Review Comments – Confining Unit Continuity  
**cc:** Kim Ford, P.E.  
Susan Pelz, P.E.

I have reviewed sections of the submittal prepared by Hartman & Associates, Inc. (HAI) dated October 8, 2003, received October 9, 2003, regarding the certification for Cell 1 at the referenced facility. My review focused on the information provided to characterize the continuity of the native clay confining unit as indicated in the following sections of the referenced HAI submittal:

- Transmittal letter – correlation between sieve test results (% passing No. 200 sieve = “% fines”)
- Appendix B – permeability test results, correlation between % fines and permeability
- Appendix C – confining unit contour maps, cross sections, boring logs

Supplemental information included in the document entitled *Cell 1 and Landfill Site Certification Addendum*, prepared by HAI, dated November 13, 2003, received November 14, 2003, was also reviewed to further characterize site conditions.

The section of the HAI transmittal letter dated October 8, 2003 entitled “**TEMPORARY POND AREA**” includes a sub-heading entitled “**Cell 16**” (page 6) that indicates the following: “Due to a conflict of a preliminary correlation between permeability and percent fines with the actual permeability values obtained from test locations ST-13, ST-14, ST-16, and ST-17 in Cell 16, and ST-21 in Cell 14, tested by Ardaman (considered as outliers), some of the remaining intact Shelby tube samples were re-evaluated by UES.” The initial and retest results for the referenced locations are summarized below:

Boring #	Cell #	Sample #	Sample Depth (ft BLS/elevation)	% Fines	Perm. (cm/sec)
B-20 (initial test)	16	ST-13	8 – 10 / 65 – 67	38.1	$5.3 \times 10^{-6}$
B-20 (retest)	16	ST-13	8 – 10 / 65 – 67	47.6	$4.9 \times 10^{-7}$
B-21 (initial test)	16	ST-14	4 – 6 / 69 – 71	64.7	$2.6 \times 10^{-6}$
B-21 (retest)	16	ST-14	4 – 6 / 69 – 71	52.3	$6.7 \times 10^{-8}$
B-22 (initial test)	16	ST-16	44 – 46 / 29 – 31	13.3	$9.2 \times 10^{-6}$
B-22 (retest)	16	ST-16	44 – 46 / 29 – 31	57.2	$1.9 \times 10^{-7}$
B-23 (initial test)	16	ST-17	2 – 4 / 71 – 73	25.4	$1.3 \times 10^{-5}$
B-23 (retest)	16	ST-17	2 – 4 / 71 – 73	38.8	$6.9 \times 10^{-8}$
B-28 (initial test)	14	ST-21	32 – 34 / 62 – 64	33.8	$2.1 \times 10^{-6}$
B-28 (retest)	14	ST-21	32 – 34 / 62 – 64	33.1	$7.5 \times 10^{-7}$

The basis for determining that the initial results from these five locations were outliers was not presented in the certification submittals. The procedure for handling the Shelby tubes to prepare the samples that were submitted for retesting and the intervals within the Shelby tube submitted for retesting were not described in the certification submittals. The reasons for the different results were not presented in the certification submittals. Descriptions of the lithology of the samples submitted for retesting were not presented in the certification submittals.

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The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” indicates that the correlation between permeability and percent fines results in acceptable confining materials containing at least 31% fines, as presented in Appendix B of the submittal. It appears that the initial testing results from these five locations (“outliers”) were omitted from the correlation between sample permeability and percent fines. It also appears that a power function was selected by HAI for this correlation for all permeability tests conducted at the facility excluding the outliers, with an  $R^2$  value of about 0.54. Alternate correlation #1 was prepared with the same data points using an exponential function to better fit the data and resulted in an  $R^2$  value of about 0.66. Using alternate correlation #1, it is estimated that acceptable confining materials would be required to contain about 42% fines (see attached plot entitled “Perms. vs % Fines (Alternate Correlation #1) and attached summary table).

The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” describes seven “field units” in the soils encountered at the facility, four of which were indicated to be acceptable confining materials (sandy clay, silty clay, clay and clayey sand) and three of which were indicated to be unacceptable confining materials (silty sand, limestone marl and limestone). It appears that the clayey sand field unit exhibits a range of percent fine and permeability values that require further evaluation regarding its suitability as confining material. Alternate correlation #2 was prepared with only the samples that were described to be clayey sands to obtain a better solution (“better fit”) for the data points. To be consistent with the approach taken by HAI, the “outliers” were excluded from alternate correlation #2, and an exponential function was selected, with an  $R^2$  value of about 0.77. Using alternate correlation #2, it is estimated that acceptable confining materials would be required to contain about 37% fines (see attached plot entitled “Perms. vs % Fines (Alternate Correlation #2) and attached summary table).

The differences in the correlation between percent fines and permeability provided by HAI and the alternate correlations described above appear to be significant when depicting the soil types that are included as part of the confining unit. It appears appropriate to exclude the clayey sand field unit from the confining materials based solely on physical description unless the clayey sand sediments in individual borings have testing data that demonstrates an acceptable % fines content is present.

Instances where the thickness of the confining unit within Cell 1 as shown on Figure 38 in the HAI submittal dated October 8, 2003 is subject to revision if acceptable confining materials are determined by using at least 37% fines and clayey sands are excluded unless supported by a sieve test are summarized below:

- AS-6: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 31.7% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-11: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 2.5-3 feet BLS; it appears that 2.5 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-16: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; it appears that 1 foot of acceptable confining materials was demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location was included in the area excavated as part of Test Pit No. 4.
- AS-18: the silty sand sediments encountered from 0-2 feet BLS were indicated to be unacceptable materials for the confining layer; it appears that the boring was too shallow to demonstrate the occurrence of 3 feet of acceptable confining materials at this location.
- AS-19: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; a sieve test conducted on the sandy clay encountered at 2 feet BLS indicated the sample was 34.9% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.



- AS-34: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-1 foot below land surface (ft BLS); it appears that 2 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.
- AS-37: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1.5-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-38: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-42: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 15.8% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-44: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 33.5% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- SSA-19: it does not appear that sieve tests were conducted on the clayey sands that were encountered from 0-4 ft BLS and 9-13 ft BLS; it appears that 5 feet of acceptable confining materials were demonstrated at this location rather than the 13 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.
- SSA-20: a sieve test conducted on the clayey sands encountered from 5-10 feet BLS indicated the sample was 29% fines; it appears that 4 feet of acceptable confining materials were demonstrated at this location rather than the 18 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.

Given the importance of determining the occurrence of acceptable confining materials at the facility, it does not seem appropriate to further review the boring logs, contour maps and cross sections until the questions about the correlation evaluation have been resolved.

Attachments -- Perms. vs. % Fines plots (Alternate Correlations #1 and #2)  
Table of Soil Test Results (Alternate Correlations #1 and #2)

jrm

**Pelz, Susan**

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**From:** Pelz, Susan  
**Sent:** Thursday, December 11, 2003 6:35 PM  
**To:** 'jld@consulthai.com'  
**Cc:** Ford, Kim; Morris, John R.  
**Subject:** Enterprise Certification



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ert RAI 12-08.. 03.doc

Jennifer,

Attached is the letter that will be mailed tomorrow, and John's memo. Generally, the letter is informational but requests some additional information/clarification. There is a problem area in Cell 16 that may need additional borings to verify clay presence and thickness due to the presence of an unexpected depressional area.

The correlation in John's memo is our best look at the data. If you have alternate correlations that are a better fit of the data, we can certainly consider it.

After you have a chance to look over the letter and memo, email me to discuss. I'll be out of the office pretty much until after Christmas but will be checking email. I have not contacted Craig Bryan about the letter. If you could pass the word along I would appreciate it.

I think Kim gave you some tentative dates for a site visit in January. I won't be attending the site visit, but you should go ahead & firm up the date with Kim and John.

We understand the urgency of getting the facility open. We are doing what we can to expedite it. I'm sure you can appreciate the complexity of the project, and our concerns generally about unlined disposal facilities. We just want to make sure that the as-built condition of the facility is consistent with what we all expected when it was permitted.

Thanks,

Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

December 8, 2003

Mr. Craig Bryan  
Angelo's Aggregate Materials, Ltd.  
P.O. Box 1493  
Largo, Florida 33779

**Re: Enterprise Class III landfill  
Certification - Cells 1, 15, 16  
Permit Nos.: 177982-001-SC and 177982-001-SO, Pasco County**

Dear Mr. Bryan:

The Department has received and reviewed the document entitled Cell 1 Certification dated October 8, 2003, and the document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003, by Hartman and Associates, Inc. (HAI). Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, there may be a greater potential for groundwater contamination from the Enterprise Class III Landfill than originally thought. Although the Department may be able to authorize at least part of the new Enterprise Class III Landfill to operate and accept Class III waste, some additional conditions may be most appropriate for the operation and even for future new construction to demonstrate that the prohibition that "No person shall dispose of solid waste in a manner or location that causes water quality standards or criteria of the receiving waters to be violated" according to 62-701.300(1)(b) is not violated. Therefore, in an effort to make sure all reasonable protective measures are in place prior to acceptance of waste, additional information is requested in response to the following comments [*comments provided in italics with cross-references underlined*].

- 1) **Document entitled Cell 1 Certification dated October 8, 2003:**
  - a) **The cover letter page 1** - HAI states that "the attached document indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than  $1 \times 10^{-6}$  cm/sec, and is prepared to accept waste". [*The Department has not reached this same conclusion at this time as described below. This comment does not require a response.*]
  - b) **The cover letter page 2** - HAI states that "The confining unit may be at the cell base, under the cell base, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of  $1 \times 10^{-6}$  cm/sec". [*The Department agrees that this is the approved design criteria.*] HAI states that "All borings used to verify the confining unit are shown on Figure 1 in Appendix A." [*Figure 1 in Appendix A was resubmitted as part of the addendum. Confirmation that Figure 1 (for both documents) includes the locations for all borings and all failing test locations should be provided.*]

- c) **The cover letter page 3** - HAI states that "Based on this correlation, a sample with at least 31% passing the #200 sieve was considered acceptable as confining material." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "The Confining Layer Contour Map for Cell 1 (Figure 38) is in Appendix C." *[Figure 38 in Appendix C was resubmitted as part of the addendum. Confirmation that Figure 38 (for both documents) includes the locations for all borings and all failing test locations should be provided.]*
- d) **The cover letter page 4** - HAI states that a benchmark is installed in a cell corner post. *[A description of the benchmark should be provided with its elevation (NGVD).]*
- e) **The cover letter page 5** - *[no comments]*
- f) **The cover letter page 6** - HAI states that "As shown on the Confining Layer Contour Map for the temporary pond area, the continuous confining unit extends from the north end of Cell 1 through Cell 16. This map is provided as Figure 39 in Appendix C. Therefore, no additional quality assurance testing or construction will be required for certification of the confining unit in Cell 15 and in Cell 16." *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in item 1)m of this letter.]*
- g) **The cover letter page 7** - HAI states that a stormwater permit modification is currently under review for changes, and a copy the approval for the construction will be provided. *[A stormwater permit must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- h) **The cover letter page 8** - HAI states that Pond 2 may need to be redesigned and Appendix D includes revised entrance plan details. *[Record drawings should be provided to show all changes. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- i) **Certification of Construction Completion (DEP Form #62-701.900(2))** - *[This form includes the certification for all of Cells 1, 15, and 16. A new certification (on DEP Form #62-701.900(2) as a replacement) should be provided to include only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit.]*
- j) **Summary of Deviations (attached to certification form)** - HAI states: the as-built survey for Cell 1 is provided in Appendix D and that Cell 1 was not entirely excavated *[The as-built topographic survey by Foresight shows that only parts of Cells 1, 15, 16 have been excavated. Related comments are provided in item 1)p of this letter.]*, swales were not constructed to drain Cell 1 or the west slope to the temporary pond, a berm was constructed with an open channel *[Related comments are provided in item 2)d of this letter.]*; the side slopes of Cell 1 were not constructed as designed and the north-central boundary of Cell 1 was over-excavated *[The "north-central boundary of Cell 1" appears to be adjacent to Cell 15 and would require no redesign. Clarification should be provided.]*; Pond 1 was modified, the location of the entrance, scalehouse, scales, and maintenance area have changed. *[Record drawings should be provided to show all changes from the approved plans.]*

- k) **Appendix A, Figure 1 (map of borings)** - [There are very few borings shown on this figure that include the boundaries of the cells, and there are no borings located on any the part of the selected cross-sections shown on this figure that include the boundaries of any of the cells. Only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit should be certified. All cross-sections must include borings shown for the certified area in order to include the entire certified waste disposal area for approval. All borings that represent the lithology in the vicinity of each cross-section, and the lithology for each of the detection well locations in the vicinity of the cross-section, should be included on the selected cross-section to show the continuity of the clay layer/confining unit. The degree of accuracy (for example: +/- 20 feet) must be provided for the boring locations. Related comments are provided in items 1)l), 1)m), and 1)n) of this letter.]
- l) **Appendix B (soil test results, tables of values, and correlation)** - [All borings must have an elevation (referred to the NGVD, rather than "MSL" referred to for the "AS" borings) at surface to be useful, especially for the shallower borings at surface. All other elevations below surface should be calculated from the surface elevation minus the depth. ("The elevations that are normally used in topographic mapping, geodetic surveys, engineering studies, and engineering construction surveys are referred to the NGVD. The NGVD should not be confused with local mean sea level datums." - from textbook entitled Surveying, by Davis, Foote, Anderson, and Mikhail.) The tables of values for the borings should provide the date of each boring, elevation (NGVD) at surface, elevation (NGVD) at the top of the clay layer/confining unit (that may be at the cell base/floor, under the cell base/floor, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of  $1 \times 10^{-6}$  cm/sec), clay layer/confining unit thickness, elevation (NGVD) for each sieve sample, % passing the #200 sieve, elevation (NGVD) for each permeability sample, and permeability test results in cm/sec. A separate table for each type of boring (such as for "B", "AS", "SSA", "ST", etc.), with each boring listed sequentially by the boring #, would be very helpful. The actual elevations (NGVD) at surface at the time of each boring must be provided. Related comments are provided in items 1)k), 1)m), and 1)n) of this letter.]
- m) **Appendix C, clay layer/confining unit contour maps:** A topographic survey provided or referenced for the at surface elevations for each boring (at the time of each boring) would be very helpful. The actual elevations (NGVD) at surface at the time for each boring are essential to the success of this certification and should be provided either on the topographic survey or listed separately. In either case, the list and the survey must be signed, dated, and sealed by a registered professional surveyor and mapper (F.S. 472.003(2)). For the clay layer/confining unit contour maps, a registered professional geologist may interpret the topographic survey/data and prepare the Figures 38 and 39, however, the professional surveyor must either cosign, date, and seal the figures or the referenced topographic survey/data (FAC 61G16-2.005, FS 492.102(7), F.S. 472.003(2)). Each figure should reference the topographic survey/data. With the topographic survey/data, the professional surveyor should provide the horizontal degree of accuracy (for example: +/- 20 feet) for the boring locations and the degree of accuracy (for example: +/- 6 inches) vertically for the elevations (NGVD) at surface at the time of each boring. The clay layer/confining unit contour maps show the clay layer/confining unit beyond the last boring along the cell boundaries and must be revised to limit the contours to the areas where supporting data is available. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

**Figure 38 (Cell 1 clay layer/confining unit contour map)** - [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cell 1 clay layer/confining unit contours and the locations of specific features (borings, the limits of the excavated cells, and test pits/excavated areas). This figure/map shows that portions of the top of the clay layer/confining unit is at elevation +85 (3 feet above the surface) and higher, the cells (sideslopes) are not completely excavated, and no corner posts are shown for the limits of waste disposal. Boring B-18 is missing from this drawing. All borings must be shown on all top of clay layer/confining unit contour maps, or a specific reason provided for each excluded boring. This figure shows the excavated area for "AS-10" to be extremely small in comparison to the size of other excavated areas, and the location of boring "AS-42" is not shown within the excavated area. Additional borings should be provided in the vicinity of these two areas to confirm the presence of the clay layer/confining unit. The corner posts appear to be located at the cell boundaries and in areas along the toe of slope that have not been confirmed to have the specified clay layer/confining unit. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. The scale of 1"=100' appears to be incorrect and must be corrected. This drawing must be corrected prior to the approval for Cell 1. A scale of 1"=60' is suggested, the same as for the cross-sections. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

**Figure 39 (Cells 15 and 16 clay layer/confining unit contour map)** - [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cells 15 and 16 clay layer/confining unit contours and the locations of specific features (borings and the limits of the excavated cells). This figure/map shows that Cell 15 and Cell 16 are not completely excavated and there are no corner posts shown at the cell boundaries. The top of clay layer/confining unit contours dramatically change near the center of Cell 16, and the clay layer/confining unit thickness of at least 3 feet is not confirmed by an adequate number of borings. A top of the clay layer/confining unit drop of five feet between two borings spaced 100 feet apart is significant but acceptable when adequate thickness and permeability are confirmed. However, the top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and must be confirmed by additional borings and permeability tests. Therefore, the clay layer/confining unit thickness of 3 feet at the bottom of B-22 is of concern, and reasonable assurance of at least 3 feet of thickness must be provided by more closely spaced borings and/or greater than 3 feet of thickness. More continuity between borings allows for more widely spaced borings. Less continuity and dramatic changes requires more closely spaced borings. For areas with dramatic changes (such as those shown for Cell 16), additional borings on a grid of 50 feet are suggested. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. All borings must be shown on all top of clay layer/confining unit contour maps. The scale of 1"=100' appears to be incorrect and must be corrected. A scale of 1"=60' is suggested, same as for the cross-sections. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

- n) **Appendix C, cross-sections (Figures 1 through 7):** [The cross-sections show clay below borings with no supporting data and must be revised to show all the lithologies on cross-sections end at the lower tip of the deepest representative boring, and at the last included boring, unless other deeper borings are shown to provide supporting data. All scales on each cross-section should be the same (1"=60'H, 1"=20'V suggested). More E-W cross-sections would be very helpful. More specific comments are provided for each cross-section. Related comments are provided in item 1)k) of this letter.]

**Figure 1, cross-section A-A' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows only one permeability test for 6 deeper borings. This cross-section shows silty clay on the southeast slope with no borings and no borings on the cell base/floor along the west side for 350 feet from ST-2. This cross-section should show many of the "AS" borings and others (B-17 and SSA-11), and should be extended to the east to include SSA-20 and SSA-37.]*

**Figure 2, cross-section B-B' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows no boring for the south edge of Cell 1, or for the north edge. This cross-section provides more information, permeability tests, more borings, and is more helpful, and shows more clay layer/confining unit continuity. This cross-section should show many more of the "AS" borings and others (such as SSA-24).]*

**Figure 3, cross-section C-C' (Scale: 1"=60'H, 1"=30'V)** - *[Shows no borings for the east and west edges of Cell 15, and only one permeability test. This cross-section should be extended to the east to include MW-7A and MW-7B, and to the west to include DCL01-8.]*

**Figure 4, cross-section D-D' (Scale: 1"=50'H, 1"=25'V)** - *[This cross-section shows no boring for the north edge of Cell 16, and no permeability test for Cells 15 and 16. This cross-section should be extended to the north to include more borings (ST-7, B-22, B-26, B-31, DCL01-14, B-32, B-20, SSA-26, SSA-28, SSA-29). All of Cell 16 could be included.]*

**Figure 5, cross-section E-E' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for west edge of Cell 15 and the east edge of Cell 16. The top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and should be confirmed by additional borings and permeability tests, therefore the clay layer/confining unit thickness of 3 feet at B-22 is of concern. This cross-section should be extended to the northeast to include B-6, MW-5A and MW-5B, and to the southwest to include DCL01-8.]*

**Figure 6, cross-section F-F' (Scale: 1"=40'H, 1"=20'V)** - *[This cross-section shows no borings for the east and west edges of Cell 15. This cross-section should be extended to the east to include B-8, and on the west to include DCL01-8.]*

**Figure 7, cross-section G-G' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for the east and west edges of Cell 16. This cross-section should include more borings (B-5, SSA-27), and should be extended to the northwest to include MW-4 and to the southeast to include MW-6.]*

- o) **Appendix C, boring logs (B-15 -B-34, SSA-1 -SSA-37, AS-1 -AS-47):** *[Related comments are provided in item 1) of this letter.]*
- p) **Appendix D (as-built surveys)** - *[All as-built topographic surveys by Foresight must signed, dated, and sealed by a professional surveyor. The elevations on Sheet 1 of 2 are difficult to read due to the scale. A scale of 1"=60' is suggested, same as for the cross-sections, and for the top of clay layer/confining unit contour maps. The cell corner posts, and the posts for the certification limits/disposal limits should be shown on each drawing, with the benchmarks described and shown with elevations (NGVD). The Plan & Profile Entrance Road drawing PP-1 (Sheet 1 of 4) appears to be part of another set of drawings that were not reviewed or approved by the Department. A complete set of these drawings should be provided. The As-Built Drainage Plan is not legible and should be provided as a record drawing. All drawings provided as record drawings must be signed, dated, and sealed by the professional engineer of record.]*

- q) **Appendix E (soil stockpile test results)** - *[no comments]*
  - r) **Appendix F (photos of tie-ins)** - *[no comments]*
  - s) **Appendix G (field test results for tie-ins)** - *[no comments]*
  - t) **Appendix H (test results)** - *[The note "For information purposes only" appears to indicate that these test reports are not the official final reports. The official final reports should be provided.]*
  - u) **Appendix I (water table elevations)** - *[An evaluation of the water elevations should be provided to demonstrate that there is not a direct connection to the deeper Floridan LS aquifer and that the wells are adequately placed to monitor the groundwater (both the surficial and the deeper Floridan LS aquifer), and that the base/floor of each cell will remain at least 5 feet above the SHWT. Additionally, the location for a piezometer along the west side of the temporary pond to measure the groundwater fluctuations should be provided.]*
- 2) **Document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003:**
- a) **The cover letter page 1** - HAI states that "The boring logs for AS-1 through AS-47 describe the depth from surface of each boring in NGVD." *[Related comments are provided in item 1)l) of this letter.]*
  - b) **The cover letter page 2** - HAI states that "borings confirmed areas as limestone surface lenses underlain by clay and not connected to the limestone aquifer. *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k), 1)l), 1)m), and 1)n) of this letter.]* HAI states that FDEP did not stipulate additional borings in Cell 16 *[Related comments are provided in item 1)m) of this letter.]* HAI states that "The data collected from Cells 15 and 16 provide reasonable assurance of a confining layer below the temporary pond" *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k), 1)l), 1)m), and 1)n) of this letter.]*, and "water level observations in the temporary pond show very little percolation, a direct test of confinement" *[The basis for this conclusion should be provided. Related comments are provided in item 1)u) of this letter.]*, and the dilution calculation predicts that only iron will exceed DEP groundwater quality criteria *[Related comments are provided in item 4)b) of this letter.]* HAI states that "AS-10 and AS-42 were located in sandy areas that were excavated and replaced with confining unit material." *[Related comments are provided in item 1)m) of this letter.]*
  - c) **The cover letter page 3** - HAI states that "Any intervals that did not meet the minimum of 31% fines passing, were either identified as non-conforming material in the boring logs, or located in areas not specified for certification, or had boring intervals below the failed interval." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "the locations of the corner posts that define the area of waste disposal on the floor of Cell 1 were included in Appendix D, Figures 1 and 38." *[Related comments are provided in items 1)k), 1)m), and 1)p) of this letter]*



- d) **The cover letter page 4** - HAI states that approval of the ERP is expected. *[The ERP must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]* HAI states that a swale was constructed in the west portion of Cell 1, and a survey of the swale is included in Appendix C. *[This survey shows a berm (not a swale) that appears to divert the stormwater (from beyond the excavated portion of Cell 1) into the temporary pond away from the waste. This design does not appear to be compatible with the intended function of the temporary pond. The temporary pond was/is designed to contain the contact water that drains from the partially filled waste disposal areas only (not to collect stormwater from beyond the excavated disposal areas). Therefore, capacity calculations should be provided to demonstrate that the temporary pond will have the capacity to contain both the stormwater from beyond the excavated disposal areas and the contact water that drains from the partially filled waste disposal areas. Drainage from Cell 1 must be allowed to flow freely from the cell. Clarification should be provided.]*
- e) **The cover letter pages 4 and 5** - HAI describes several items not yet completed: the fence, signs, special non-conforming waste containers for batteries and paint, video camera, perimeter road, containers for Class I waste, and financial assurance. *[These items must be completed prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]*
- f) **Figures 1 and 38** - *[Related comments are provided in items 1)k) and 1)m) of this letter.]*
- g) **Appendix A (estimated effluent concentration)** - *[Related comments are provided in item 4)b) of this letter.]*
- h) **Appendix B, "ST" borings (table of values)** - *[Related comments are provided in item 1)l) of this letter.]*
- i) **Appendix C (topographic survey for west side of Cell 1)** - *[This survey shows a berm (not a swale). Related comments are provided in item 2)d) of this letter.]*
- j) **Appendix D (water elevations)** - *[Related comments are provided in item 1)u) of this letter.]*

To gain a better understanding of the project, the Department has reviewed the original permit application and Department files, and offers the following comments *[comments provided in italics with cross-references underlined].*

- 3) **Document entitled Enterprise Recycling and Disposal Facility Class III Landfill Permit Application, November 2000 (with revisions included):**
  - a) **Section 1 (application form, part B.21.)** - HAI requested a liner and LCRS exemption due to acceptance of only Class III waste and the presence of a natural confining layer. *[This has been typical for Class III landfill designs.]*

- b) **Section 3.7 (Engineering Report)** - HAI states that the landfill base will be "at least 5 feet above SHWT". *[This was/is part of the original design and part of the Department's basis for approval. Confirmation that the SHWT has been and will be at least 5 feet below the Cell 1 base/floor should be provided. Related comments are provided in item 1)u of this letter.]*
- c) **Section 3.7 (Engineering Report)** - HAI states that each cell will be overcut by 50 feet for truck traffic and stormwater transport from the cell to the temporary pond, and a 6 feet high berm will prevent stormwater from entering the working face, as shown on Sheet G-1. *[Cell 1 was not overcut for stormwater on the south or the west, and the berm to divert stormwater and the conveyance for runoff from Cell 1 to the temporary pond do not appear to be constructed as designed. Related comments are provided in item 2)d of this letter.]*
- d) **Section 3.8.3 (Engineering Report)** - HAI states that each 6-acre cell is expected to last 2 years with two ten-foot lifts per year. *[no comments]*
- e) **Section 3.10.1 (Engineering Report)** - HAI states that "Surface water and groundwater contact with the Class III wastes will be prevented by the proposed facility design." *[Related comments are provided in items 1)u, 2)d and 3)b of this letter.]*
- f) **Section 3.10.1 (Engineering Report)** - HAI states that "Since the facility proposes to accept only those wastes described in 62-701.340(3)(c), FAC, *[now described in 62-701.200(14)]* it is not expected to produce a leachate that would pose a threat to public health or the environment" *[The Department has not reached this same conclusion at this time. This comment does not require a response.]*, and "the strict method of controlling type of wastes disposed of also supports the liner exemption". *[Related comments are provided in item 4)b of this letter.]*
- g) **Section 3.15 (Engineering Report)** - HAI states that "if the test data from the cell floor section does not meet the requirements, additional random samples may be tested, and if the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable". *[The Department agrees that retests are appropriate in some instances. An explanation should be provided for all retests (such as an area was reworked and retested, or due to a specifically described laboratory error).]*
- h) **Figures 3-6 - 3-12 (Sheets C-1 - C-6, and G-1)** - *[These drawings should be provided as record drawings for the initial construction, and should show the SHWT based on more data, and to show the initial berms and conveyances, and other new features (such as the locations of gas probes, groundwater monitoring wells, and stormwater ponds).]*

- 4) **Review of correspondence in Department files - #177982-001-SC:**
- a) **5/31/01, HAI response** - HAI explains that after dilution from rainfall and not including dispersion, diffusion, sorption, and biodegradation, only iron will exceed at the ZOD. *[Related comments are provided in item 4)b) of this letter.]*
  - b) **6/28/01, Department memorandum** - *[As indicated during the permit review, the Department has not considered the dilution equation and associated assumptions as adequate to describe the potential impacts to groundwater quality, however, other assurances were provided by the "control of unauthorized wastes, site hydrogeology, stormwater control, groundwater monitoring, and cell certification." Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, additional assurances should be provided to demonstrate and confirm adequate environmental protection. Related comments are provided in item 1)u) of this letter.]*
  - c) **7/25/03 report by HAI** - Borings and LS areas are shown on Figure 1 (dated 7/14/03). *[This figure/map is the first topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the LS areas, with elevations to the nearest tenth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
  - d) **8/05/03 report by HAI** - HAI describes CQA for patching the LS areas, and states that "a soil liner is not being constructed at this site. The tie-ins are being constructed to ensure a continuous confining unit at the base of Cell 1." The report includes Figure 3 (not dated). *[This figure/map is the second topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for the "AS" (at surface) borings, with elevations to the nearest hundredth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
  - e) **8/12/03, report by HAI** - This report includes Figure 6 (not dated). *[This figure/map appears to be incomplete and does not appear to qualify as a topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for some of the "AS" and "SSA" borings, (without elevations) with a note that states that the "locations are approximate". Both horizontal and vertical control are essential to the success of this certification. The intended use of this map should be described and clarification should be provided for the lack of both horizontal and vertical control. Related comments are provided in items 1)k), and 1)m) of this letter.]*
  - f) **8/19/03, Department meeting with HAI and Angelo's (notes in files)** - Discussed the Plan of Action required by specific condition #5 for LS, and that the intended design was/is that the clay layer/confining unit is either at the base/floor and/or at depth below the base/floor. Agreed that the top of clay layer/confining unit contour map must show the clay layer/confining unit to be continuous with at least 3 feet at 1x10<sup>-6</sup>cm/sec, with no averaging. Discussed the north half of Cell #1 and the concern for demonstrating that the clay layer/confining unit is at the base/floor due to the west side sandy area that may have the clay layer/confining unit at depth. *[Related comments are provided in item 1)m) of this letter.]* Discussed Cell #15 and the concern that the bottom cannot be observed due to water. Discussed Cell #16 and the concern with the sandy area at north end, and the need for acceptable permeability test results in the target clay layer/confining unit. *[Related comments are provided in item 1)m) of this letter.]*

- g) **9/08/03 Fax from SWFWMD** - SWFWMD approves an on-site potable drinking water supply well (converted from an existing irrigation well). *[The operations plan should be revised to describe the use of this on-site potable drinking water supply well rather than bottled drinking water, and to describe the plans for its future use or abandonment as waste disposal progresses to within 500 feet.]*

The certification for Cells 1, 15, and 16, is not approved. The Enterprise Class III Landfill is not authorized to accept waste. Upon receipt of the necessary supporting documents, the Department will continue its review and arrange for an inspection of the completed construction. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

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

kbf

Attachment

cc: Jennifer Deal, P.E., Hartman and Associates  
Susan Pelz, P.E., FDEP Tampa  
John Morris, P.G., FDEP Tampa  
David Smith, P.E., FDEP Tampa  
Richard Tedder, P.E., FDEP Tallahassee  
Chris McGuire, OGC, FDEP Tallahassee  
Fred Wick, FDEP Tallahassee

## Memorandum

# Florida Department of Environmental Protection

**TO:** File for Permit Nos. 177982-001-SC and 177982-002-SO  
**FROM:** John R. Morris, P.G.  
**DATE:** December 4, 2003  
**SUBJECT:** Enterprise Recycling and Disposal Facility  
Cell 1 Certification Review Comments – Confining Unit Continuity  
**cc:** Kim Ford, P.E.  
Susan Pelz, P.E.

I have reviewed sections of the submittal prepared by Hartman & Associates, Inc. (HAI) dated October 8, 2003, received October 9, 2003, regarding the certification for Cell 1 at the referenced facility. My review focused on the information provided to characterize the continuity of the native clay confining unit as indicated in the following sections of the referenced HAI submittal:

- Transmittal letter – correlation between sieve test results (% passing No. 200 sieve = “% fines”)
- Appendix B – permeability test results, correlation between % fines and permeability
- Appendix C – confining unit contour maps, cross sections, boring logs

Supplemental information included in the document entitled *Cell 1 and Landfill Site Certification Addendum*, prepared by HAI, dated November 13, 2003, received November 14, 2003, was also reviewed to further characterize site conditions.

The section of the HAI transmittal letter dated October 8, 2003 entitled “**TEMPORARY POND AREA**” includes a sub-heading entitled “**Cell 16**” (page 6) that indicates the following: “Due to a conflict of a preliminary correlation between permeability and percent fines with the actual permeability values obtained from test locations ST-13, ST-14, ST-16, and ST-17 in Cell 16, and ST-21 in Cell 14, tested by Ardaman (considered as outliers), some of the remaining intact Shelby tube samples were re-evaluated by UES.” The initial and retest results for the referenced locations are summarized below:

<u>Boring #</u>	<u>Cell #</u>	<u>Sample #</u>	<u>Sample Depth (ft BLS/elevation)</u>	<u>% Fines</u>	<u>Perm. (cm/sec)</u>
B-20 (initial test)	16	ST-13	8 – 10 / 65 – 67	38.1	$5.3 \times 10^{-6}$
B-20 (retest)	16	ST-13	8 – 10 / 65 – 67	47.6	$4.9 \times 10^{-7}$
B-21 (initial test)	16	ST-14	4 – 6 / 69 – 71	64.7	$2.6 \times 10^{-6}$
B-21 (retest)	16	ST-14	4 – 6 / 69 – 71	52.3	$6.7 \times 10^{-8}$
B-22 (initial test)	16	ST-16	44 – 46 / 29 – 31	13.3	$9.2 \times 10^{-6}$
B-22 (retest)	16	ST-16	44 – 46 / 29 – 31	57.2	$1.9 \times 10^{-7}$
B-23 (initial test)	16	ST-17	2 – 4 / 71 – 73	25.4	$1.3 \times 10^{-5}$
B-23 (retest)	16	ST-17	2 – 4 / 71 – 73	38.8	$6.9 \times 10^{-8}$
B-28 (initial test)	14	ST-21	32 – 34 / 62 – 64	33.8	$2.1 \times 10^{-6}$
B-28 (retest)	14	ST-21	32 – 34 / 62 – 64	33.1	$7.5 \times 10^{-7}$

The basis for determining that the initial results from these five locations were outliers was not presented in the certification submittals. The procedure for handling the Shelby tubes to prepare the samples that were submitted for retesting and the intervals within the Shelby tube submitted for retesting were not described in the certification submittals. The reasons for the different results were not presented in the certification submittals. Descriptions of the lithology of the samples submitted for retesting were not presented in the certification submittals.

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The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” indicates that the correlation between permeability and percent fines results in acceptable confining materials containing at least 31% fines, as presented in Appendix B of the submittal. It appears that the initial testing results from these five locations (“outliers”) were omitted from the correlation between sample permeability and percent fines. It appears that a power function was selected by HAI for this correlation of all permeability tests conducted at the facility excluding the outliers, with an  $R^2$  value of about 0.54. An alternate correlation of the same data points was prepared by the Department using an exponential solution to better fit the data resulted in an  $R^2$  value of about 0.66. Using the alternate correlation, it is estimated that acceptable confining materials would be required to contain about 42% fines (see attached plot entitled “Permeability vs. % Fines and attached summary table).

The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” describes seven “field units” in the soils encountered at the facility, four of which were indicated to be acceptable confining materials (sandy clay, silty clay, clay and clayey sand) and three of which were indicated to be unacceptable confining materials (silty sand, limestone marl and limestone). The differences in the correlation between percent fines and permeability provided by HAI and the alternate correlation described above appear to be significant when depicting the soil types that are included as part of the confining unit. In particular, it appears that the clayey sand field unit exhibits a range of percent fines and permeabilities that may make this unit unacceptable. It appears appropriate to exclude the clayey sand sediments from the confining materials based solely on physical description unless the clayey sand sediments in individual borings have testing data that demonstrates an acceptable % fines content is present in the samples.

Instances where the thickness of the confining unit within Cell 1 as shown on Figure 38 in the HAI submittal dated October 8, 2003 is subject to revision if acceptable confining materials are determined by using at least 42% fines and clayey sands are excluded unless supported by a sieve test are summarized below:

- AS-6: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 31.7% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-11: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 2.5-3 feet BLS; it appears that 2.5 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-16: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; it appears that 1 foot of acceptable confining materials was demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location was included in the area excavated as part of Test Pit No. 4.
- AS-18: the silty sand sediments encountered from 0-2 feet BLS were indicated to be unacceptable materials for the confining layer; it appears that the boring was too shallow to demonstrate the occurrence of 3 feet of acceptable confining materials at this location.
- AS-19: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; a sieve test conducted on the sandy clay encountered at 2 feet BLS indicated the sample was 34.9% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-34: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-1 foot below land surface (ft BLS); it appears that 2 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.

- AS-37: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1.5-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-38: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-42: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 15.8% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-44: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 33.5% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- SSA-19: it does not appear that sieve tests were conducted on the clayey sands that were encountered from 0-4 ft BLS and 9-13 ft BLS; it appears that 5 feet of acceptable confining materials were demonstrated at this location rather than the 13 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.
- SSA-20: a sieve test conducted on the clayey sands encountered from 5-10 feet BLS indicated the sample was 29% fines; it appears that 4 feet of acceptable confining materials were demonstrated at this location rather than the 18 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.

Given the importance of determining the occurrence of acceptable confining materials at the facility, it does not seem appropriate to further review the boring logs, contour maps and cross sections until the questions about the correlation evaluation have been resolved.

Attachments -- Table of Soil Test Results  
Permeability vs. % Fines plot (exponential solution)

jrm

**Ford, Kim**

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**From:** Ford, Kim

**Sent:** Thursday, December 11, 2003 6:00 PM

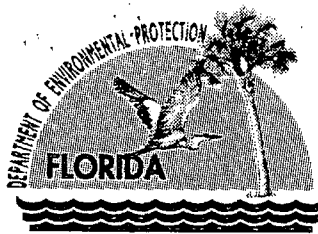
**To:** Pelz, Susan

**Subject:** Enterprise Class III Certification RAI

the letter as you requested.  
Kim

12/11/2003





Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

December 8, 2003

Mr. Craig Bryan  
Angelo's Aggregate Materials, Ltd.  
P.O. Box 1493  
Largo, Florida 33779

**Re: Enterprise Class III landfill  
Certification - Cells 1, 15, 16  
Permit Nos.: 177982-001-SC and 177982-001-SO, Pasco County**

Dear Mr. Bryan:

The Department has received and reviewed the document entitled Cell 1 Certification dated October 8, 2003, and the document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003, by Hartman and Associates, Inc. (HAI). Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, there may be a greater potential for groundwater contamination from the Enterprise Class III Landfill than originally thought. Although the Department may be able to authorize at least part of the new Enterprise Class III Landfill to operate and accept Class III waste, some additional conditions may be most appropriate for the operation and even for future new construction to demonstrate that the prohibition that "No person shall dispose of solid waste in a manner or location that causes water quality standards or criteria of the receiving waters to be violated" according to 62-701.300(1)(b) is not violated. Therefore, in an effort to make sure all reasonable protective measures are in place prior to acceptance of waste, additional information is requested in response to the following comments *[comments provided in italics with cross-references underlined]*.

- 1) **Document entitled Cell 1 Certification dated October 8, 2003:**
  - a) **The cover letter page 1** - HAI states that "the attached document indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than 1x10-6cm/sec, and is prepared to accept waste". *[The Department has not reached this same conclusion at this time as described below. This comment does not require a response.]*
  - b) **The cover letter page 2** - HAI states that "The confining unit may be at the cell base, under the cell base, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of 1x10-6cm/sec". *[The Department agrees that this is the approved design criteria.]* HAI states that "All borings used to verify the confining unit are shown on Figure 1 in Appendix A." *[Figure 1 in Appendix A was resubmitted as part of the addendum. Confirmation that Figure 1 (for both documents) includes the locations for all borings and all failing test locations should be provided.]*

*"More Protection, Less Process"*

- c) **The cover letter page 3** - HAI states that "Based on this correlation, a sample with at least 31% passing the #200 sieve was considered acceptable as confining material." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "The Confining Layer Contour Map for Cell 1 (Figure 38) is in Appendix C." *[Figure 38 in Appendix C was resubmitted as part of the addendum. Confirmation that Figure 38 (for both documents) includes the locations for all borings and all failing test locations should be provided.]*
- d) **The cover letter page 4** - HAI states that a benchmark is installed in a cell corner post. *[A description of the benchmark should be provided with its elevation (NGVD).]*
- e) **The cover letter page 5** - *[no comments]*
- f) **The cover letter page 6** - HAI states that "As shown on the Confining Layer Contour Map for the temporary pond area, the continuous confining unit extends from the north end of Cell 1 through Cell 16. This map is provided as Figure 39 in Appendix C. Therefore, no additional quality assurance testing or construction will be required for certification of the confining unit in Cell 15 and in Cell 16." *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in item 1)m of this letter.]*
- g) **The cover letter page 7** - HAI states that a stormwater permit modification is currently under review for changes, and a copy the approval for the construction will be provided. *[A stormwater permit must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- h) **The cover letter page 8** - HAI states that Pond 2 may need to be redesigned and Appendix D includes revised entrance plan details. *[Record drawings should be provided to show all changes. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- i) **Certification of Construction Completion (DEP Form #62-701.900(2))** - *[This form includes the certification for all of Cells 1, 15, and 16. A new certification (on DEP Form #62-701.900(2) as a replacement) should be provided to include only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit.]*
- j) **Summary of Deviations (attached to certification form)** - HAI states: the as-built survey for Cell 1 is provided in Appendix D and that Cell 1 was not entirely excavated *[The as-built topographic survey by Foresight shows that only parts of Cells 1, 15, 16 have been excavated. Related comments are provided in item 1)p of this letter.]*, swales were not constructed to drain Cell 1 or the west slope to the temporary pond, a berm was constructed with an open channel *[Related comments are provided in item 2)d of this letter.]*; the side slopes of Cell 1 were not constructed as designed and the north-central boundary of Cell 1 was over-excavated *[The "north-central boundary of Cell 1" appears to be adjacent to Cell 15 and would require no redesign. Clarification should be provided.]*; Pond 1 was modified, the location of the entrance, scalehouse, scales, and maintenance area have changed. *[Record drawings should be provided to show all changes from the approved plans.]*

- k) **Appendix A, Figure 1 (map of borings)** - [There are very few borings shown on this figure that include the boundaries of the cells, and there are no borings located on any the part of the selected cross-sections shown on this figure that include the boundaries of any of the cells. Only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit should be certified. All cross-sections must include borings shown for the certified area in order to include the entire certified waste disposal area for approval. All borings that represent the lithology in the vicinity of each cross-section, and the lithology for each of the detection well locations in the vicinity of the cross-section, should be included on the selected cross-section to show the continuity of the clay layer/confining unit. The degree of accuracy (for example: +/- 20 feet) must be provided for the boring locations. Related comments are provided in items 1)l), 1)m), and 1)n) of this letter.]
- l) **Appendix B (soil test results, tables of values, and correlation)** - [All borings must have an elevation (referred to the NGVD, rather than "MSL" referred to for the "AS" borings) at surface to be useful, especially for the shallower borings at surface. All other elevations below surface should be calculated from the surface elevation minus the depth. ("The elevations that are normally used in topographic mapping, geodetic surveys, engineering studies, and engineering construction surveys are referred to the NGVD. The NGVD should not be confused with local mean sea level datums." - from textbook entitled Surveying, by Davis, Foote, Anderson, and Mikhail.) The tables of values for the borings should provide the date of each boring, elevation (NGVD) at surface, elevation (NGVD) at the top of the clay layer/confining unit (that may be at the cell base/floor, under the cell base/floor, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of  $1 \times 10^{-6}$  cm/sec), clay layer/confining unit thickness, elevation (NGVD) for each sieve sample, % passing the #200 sieve, elevation (NGVD) for each permeability sample, and permeability test results in cm/sec. A separate table for each type of boring (such as for "B", "AS", "SSA", "ST", etc.), with each boring listed sequentially by the boring #, would be very helpful. The actual elevations (NGVD) at surface at the time of each boring must be provided. Related comments are provided in items 1)k), 1)m), and 1)n) of this letter.]
- m) **Appendix C, clay layer/confining unit contour maps:** A topographic survey provided or referenced for the at surface elevations for each boring (at the time of each boring) would be very helpful. The actual elevations (NGVD) at surface at the time for each boring are essential to the success of this certification and should be provided either on the topographic survey or listed separately. In either case, the list and the survey must be signed, dated, and sealed by a registered professional surveyor and mapper (F.S. 472.003(2)). For the clay layer/confining unit contour maps, a registered professional geologist may interpret the topographic survey/data and prepare the Figures 38 and 39, however, the professional surveyor must either cosign, date, and seal the figures or the referenced topographic survey/data (FAC 61G16-2.005, FS 492.102(7), F.S. 472.003(2)). Each figure should reference the topographic survey/data. With the topographic survey/data, the professional surveyor should provide the horizontal degree of accuracy (for example: +/- 20 feet) for the boring locations and the degree of accuracy (for example: +/- 6 inches) vertically for the elevations (NGVD) at surface at the time of each boring. The clay layer/confining unit contour maps show the clay layer/confining unit beyond the last boring along the cell boundaries and must be revised to limit the contours to the areas where supporting data is available. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

**Figure 38 (Cell 1 clay layer/confining unit contour map)** - [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cell 1 clay layer/confining unit contours and the locations of specific features (borings, the limits of the excavated cells, and test pits/excavated areas). This figure/map shows that portions of the top of the clay layer/confining unit is at elevation +85 (3 feet above the surface) and higher, the cells (sideslopes) are not completely excavated, and no corner posts are shown for the limits of waste disposal. Boring B-18 is missing from this drawing. All borings must be shown on all top of clay layer/confining unit contour maps, or a specific reason provided for each excluded boring. This figure shows the excavated area for "AS-10" to be extremely small in comparison to the size of other excavated areas, and the location of boring "AS-42" is not shown within the excavated area. Additional borings should be provided in the vicinity of these two areas to confirm the presence of the clay layer/confining unit. The corner posts appear to be located at the cell boundaries and in areas along the toe of slope that have not been confirmed to have the specified clay layer/confining unit. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. The scale of 1"=100' appears to be incorrect and must be corrected. This drawing must be corrected prior to the approval for Cell 1. A scale of 1"=60' is suggested, the same as for the cross-sections. Related comments are provided in items 1)(k), 1)(l), and 1)(n) of this letter.]

**Figure 39 (Cells 15 and 16 clay layer/confining unit contour map)** - [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cells 15 and 16 clay layer/confining unit contours and the locations of specific features (borings and the limits of the excavated cells). This figure/map shows that Cell 15 and Cell 16 are not completely excavated and there are no corner posts shown at the cell boundaries. The top of clay layer/confining unit contours dramatically change near the center of Cell 16, and the clay layer/confining unit thickness of at least 3 feet is not confirmed by an adequate number of borings. A top of the clay layer/confining unit drop of five feet between two borings spaced 100 feet apart is significant but acceptable when adequate thickness and permeability are confirmed. However, the top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and must be confirmed by additional borings and permeability tests. Therefore, the clay layer/confining unit thickness of 3 feet at the bottom of B-22 is of concern, and reasonable assurance of at least 3 feet of thickness must be provided by more closely spaced borings and/or greater than 3 feet of thickness. More continuity between borings allows for more widely spaced borings. Less continuity and dramatic changes requires more closely spaced borings. For areas with dramatic changes (such as those shown for Cell 16), additional borings on a grid of 50 feet are suggested. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. All borings must be shown on all top of clay layer/confining unit contour maps. The scale of 1"=100' appears to be incorrect and must be corrected. A scale of 1"=60' is suggested, same as for the cross-sections. Related comments are provided in items 1)(k), 1)(l), and 1)(n) of this letter.]

- n) **Appendix C, cross-sections (Figures 1 through 7):** [The cross-sections show clay below borings with no supporting data and must be revised to show all the lithologies on cross-sections end at the lower tip of the deepest representative boring, and at the last included boring, unless other deeper borings are shown to provide supporting data. All scales on each cross-section should be the same (1"=60'H, 1"=20'V suggested). More E-W cross-sections would be very helpful. More specific comments are provided for each cross-section. Related comments are provided in item 1)(k) of this letter.]

**Figure 1, cross-section A-A' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows only one permeability test for 6 deeper borings. This cross-section shows silty clay on the southeast slope with no borings and no borings on the cell base/floor along the west side for 350 feet from ST-2. This cross-section should show many of the "AS" borings and others (B-17 and SSA-11), and should be extended to the east to include SSA-20 and SSA-37.]*

**Figure 2, cross-section B-B' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows no boring for the south edge of Cell 1, or for the north edge. This cross-section provides more information, permeability tests, more borings, and is more helpful, and shows more clay layer/confining unit continuity. This cross-section should show many more of the "AS" borings and others (such as SSA-24).]*

**Figure 3, cross-section C-C' (Scale: 1"=60'H, 1"=30'V)** - *[Shows no borings for the east and west edges of Cell 15, and only one permeability test. This cross-section should be extended to the east to include MW-7A and MW-7B, and to the west to include DCL01-8.]*

**Figure 4, cross-section D-D' (Scale: 1"=50'H, 1"=25'V)** - *[This cross-section shows no boring for the north edge of Cell 16, and no permeability test for Cells 15 and 16. This cross-section should be extended to the north to include more borings (ST-7, B-22, B-26, B-31, DCL01-14, B-32, B-20, SSA-26, SSA-28, SSA-29). All of Cell 16 could be included.]*

**Figure 5, cross-section E-E' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for west edge of Cell 15 and the east edge of Cell 16. The top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and should be confirmed by additional borings and permeability tests, therefore the clay layer/confining unit thickness of 3 feet at B-22 is of concern. This cross-section should be extended to the northeast to include B-6, MW-5A and MW-5B, and to the southwest to include DCL01-8.]*

**Figure 6, cross-section F-F' (Scale: 1"=40'H, 1"=20'V)** - *[This cross-section shows no borings for the east and west edges of Cell 15. This cross-section should be extended to the east to include B-8, and on the west to include DCL01-8.]*

**Figure 7, cross-section G-G' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for the east and west edges of Cell 16. This cross-section should include more borings (B-5, SSA-27), and should be extended to the northwest to include MW-4 and to the southeast to include MW-6.]*

- o) **Appendix C, boring logs (B-15 -B-34, SSA-1 -SSA-37, AS-1 -AS-47):** *[Related comments are provided in item 1)l of this letter.]*
- p) **Appendix D (as-built surveys)** - *[All as-built topographic surveys by Foresight must signed, dated, and sealed by a professional surveyor. The elevations on Sheet 1 of 2 are difficult to read due to the scale. A scale of 1"=60' is suggested, same as for the cross-sections, and for the top of clay layer/confining unit contour maps. The cell corner posts, and the posts for the certification limits/disposal limits should be shown on each drawing, with the benchmarks described and shown with elevations (NGVD). The Plan & Profile Entrance Road drawing PP-1 (Sheet 1 of 4) appears to be part of another set of drawings that were not reviewed or approved by the Department. A complete set of these drawings should be provided. The As-Built Drainage Plan is not legible and should be provided as a record drawing. All drawings provided as record drawings must be signed, dated, and sealed by the professional engineer of record.]*

- q) **Appendix E (soil stockpile test results)** - *[no comments]*
  - r) **Appendix F (photos of tie-ins)** - *[no comments]*
  - s) **Appendix G (field test results for tie-ins)** - *[no comments]*
  - t) **Appendix H (test results)** - *[The note "For information purposes only" appears to indicate that these test reports are not the official final reports. The official final reports should be provided.]*
  - u) **Appendix I (water table elevations)** - *[An evaluation of the water elevations should be provided to demonstrate that there is not a direct connection to the deeper Floridan LS aquifer and that the wells are adequately placed to monitor the groundwater (both the surficial and the deeper Floridan LS aquifer), and that the base/floor of each cell will remain at least 5 feet above the SHWT. Additionally, the location for a piezometer along the west side of the temporary pond to measure the groundwater fluctuations should be provided.]*
- 2) **Document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003:**
- a) **The cover letter page 1** - HAI states that "The boring logs for AS-1 through AS-47 describe the depth from surface of each boring in NGVD." *[Related comments are provided in item 1)l of this letter.]*
  - b) **The cover letter page 2** - HAI states that "borings confirmed areas as limestone surface lenses underlain by clay and not connected to the limestone aquifer. *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k), 1)l), 1)m), and 1)n of this letter.]* HAI states that FDEP did not stipulate additional borings in Cell 16 *[Related comments are provided in item 1)m of this letter.]*. HAI states that "The data collected from Cells 15 and 16 provide reasonable assurance of a confining layer below the temporary pond" *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k), 1)l), 1)m), and 1)n of this letter.]*, and "water level observations in the temporary pond show very little percolation, a direct test of confinement" *[The basis for this conclusion should be provided. Related comments are provided in item 1)u of this letter.]*, and the dilution calculation predicts that only iron will exceed DEP groundwater quality criteria *[Related comments are provided in item 4)b of this letter.]* HAI states that "AS-10 and AS-42 were located in sandy areas that were excavated and replaced with confining unit material." *[Related comments are provided in item 1)m of this letter.]*
  - c) **The cover letter page 3** - HAI states that "Any intervals that did not meet the minimum of 31% fines passing, were either identified as non-conforming material in the boring logs, or located in areas not specified for certification, or had boring intervals below the failed interval." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "the locations of the corner posts that define the area of waste disposal on the floor of Cell 1 were included in Appendix D, Figures 1 and 38." *[Related comments are provided in items 1)k), 1)m), and 1)p of this letter]*

- d) **The cover letter page 4** - HAI states that approval of the ERP is expected. *[The ERP must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]* HAI states that a swale was constructed in the west portion of Cell 1, and a survey of the swale is included in Appendix C. *[This survey shows a berm (not a swale) that appears to divert the stormwater (from beyond the excavated portion of Cell 1) into the temporary pond away from the waste. This design does not appear to be compatible with the intended function of the temporary pond. The temporary pond was/is designed to contain the contact water that drains from the partially filled waste disposal areas only (not to collect stormwater from beyond the excavated disposal areas). Therefore, capacity calculations should be provided to demonstrate that the temporary pond will have the capacity to contain both the stormwater from beyond the excavated disposal areas and the contact water that drains from the partially filled waste disposal areas. Drainage from Cell 1 must be allowed to flow freely from the cell. Clarification should be provided.]*
- e) **The cover letter pages 4 and 5** - HAI describes several items not yet completed: the fence, signs, special non-conforming waste containers for batteries and paint, video camera, perimeter road, containers for Class I waste, and financial assurance. *[These items must be completed prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]*
- f) **Figures 1 and 38** - *[Related comments are provided in items 1)k) and 1)m) of this letter.]*
- g) **Appendix A (estimated effluent concentration)** - *[Related comments are provided in item 4)b) of this letter.]*
- h) **Appendix B, "ST" borings (table of values)** - *[Related comments are provided in item 1)l) of this letter.]*
- i) **Appendix C (topographic survey for west side of Cell 1)** - *[This survey shows a berm (not a swale). Related comments are provided in item 2)d) of this letter.]*
- j) **Appendix D (water elevations)** - *[Related comments are provided in item 1)u) of this letter.]*

To gain a better understanding of the project, the Department has reviewed the original permit application and Department files, and offers the following comments *[comments provided in italics with cross-references underlined]*.

- 3) **Document entitled Enterprise Recycling and Disposal Facility Class III Landfill Permit Application, November 2000 (with revisions included):**
  - a) **Section 1 (application form, part B.21.)** - HAI requested a liner and LCRS exemption due to acceptance of only Class III waste and the presence of a natural confining layer. *[This has been typical for Class III landfill designs.]*

- b) **Section 3.7 (Engineering Report)** - HAI states that the landfill base will be "at least 5 feet above SHWT". *[This was/is part of the original design and part of the Department's basis for approval. Confirmation that the SHWT has been and will be at least 5 feet below the Cell 1 base/floor should be provided. Related comments are provided in item 1)u) of this letter.]*
- c) **Section 3.7 (Engineering Report)** - HAI states that each cell will be overcut by 50 feet for truck traffic and stormwater transport from the cell to the temporary pond, and a 6 feet high berm will prevent stormwater from entering the working face, as shown on Sheet G-1. *[Cell 1 was not overcut for stormwater on the south or the west, and the berm to divert stormwater and the conveyance for runoff from Cell 1 to the temporary pond do not appear to be constructed as designed. Related comments are provided in item 2)d) of this letter.]*
- d) **Section 3.8.3 (Engineering Report)** - HAI states that each 6-acre cell is expected to last 2 years with two ten-foot lifts per year. *[no comments]*
- e) **Section 3.10.1 (Engineering Report)** - HAI states that "Surface water and groundwater contact with the Class III wastes will be prevented by the proposed facility design." *[Related comments are provided in items 1)u), 2)d) and 3)b) of this letter.]*
- f) **Section 3.10.1 (Engineering Report)** - HAI states that "Since the facility proposes to accept only those wastes described in 62-701.340(3)(c), FAC, *[now described in 62-701.200(14)]* it is not expected to produce a leachate that would pose a threat to public health or the environment" *[The Department has not reached this same conclusion at this time. This comment does not require a response.]*, and "the strict method of controlling type of wastes disposed of also supports the liner exemption". *[Related comments are provided in item 4)b) of this letter.]*
- g) **Section 3.15 (Engineering Report)** - HAI states that "if the test data from the cell floor section does not meet the requirements, additional random samples may be tested, and if the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable". *[The Department agrees that retests are appropriate in some instances. An explanation should be provided for all retests (such as an area was reworked and retested, or due to a specifically described laboratory error).]*
- h) **Figures 3-6 - 3-12 (Sheets C-1 - C-6, and G-1)** - *[These drawings should be provided as record drawings for the initial construction, and should show the SHWT based on more data, and to show the initial berms and conveyances, and other new features (such as the locations of gas probes, groundwater monitoring wells, and stormwater ponds).]*



- 4) **Review of correspondence in Department files - #177982-001-SC:**
- a) **5/31/01, HAI response** - HAI explains that after dilution from rainfall and not including dispersion, diffusion, sorption, and biodegradation, only iron will exceed at the ZOD. *[Related comments are provided in item 4)b) of this letter.]*
- b) **6/28/01, Department memorandum** - *[As indicated during the permit review, the Department has not considered the dilution equation and associated assumptions as adequate to describe the potential impacts to groundwater quality, however, other assurances were provided by the "control of unauthorized wastes, site hydrogeology, stormwater control, groundwater monitoring, and cell certification." Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, additional assurances should be provided to demonstrate and confirm adequate environmental protection. Related comments are provided in item 1)u) of this letter.]*
- c) **7/25/03 report by HAI** - Borings and LS areas are shown on Figure 1 (dated 7/14/03). *[This figure/map is the first topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the LS areas, with elevations to the nearest tenth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- d) **8/05/03 report by HAI** - HAI describes CQA for patching the LS areas, and states that "a soil liner is not being constructed at this site. The tie-ins are being constructed to ensure a continuous confining unit at the base of Cell 1." The report includes Figure 3 (not dated). *[This figure/map is the second topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for the "AS" (at surface) borings, with elevations to the nearest hundredth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- e) **8/12/03, report by HAI** - This report includes Figure 6 (not dated). *[This figure/map appears to be incomplete and does not appear to qualify as a topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for some of the "AS" and "SSA" borings, (without elevations) with a note that states that the "locations are approximate". Both horizontal and vertical control are essential to the success of this certification. The intended use of this map should be described and clarification should be provided for the lack of both horizontal and vertical control. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- f) **8/19/03, Department meeting with HAI and Angelo's (notes in files)** - Discussed the Plan of Action required by specific condition #5 for LS, and that the intended design was/is that the clay layer/confining unit is either at the base/floor and/or at depth below the base/floor. Agreed that the top of clay layer/confining unit contour map must show the clay layer/confining unit to be continuous with at least 3 feet at 1x10<sup>-6</sup>cm/sec, with no averaging. Discussed the north half of Cell #1 and the concern for demonstrating that the clay layer/confining unit is at the base/floor due to the west side sandy area that may have the clay layer/confining unit at depth. *[Related comments are provided in item 1)m) of this letter.]* Discussed Cell #15 and the concern that the bottom cannot be observed due to water. Discussed Cell #16 and the concern with the sandy area at north end, and the need for acceptable permeability test results in the target clay layer/confining unit. *[Related comments are provided in item 1)m) of this letter.]*

- g) **9/08/03 Fax from SWFWMD** - SWFWMD approves an on-site potable drinking water supply well (converted from an existing irrigation well). *[The operations plan should be revised to describe the use of this on-site potable drinking water supply well rather than bottled drinking water, and to describe the plans for its future use or abandonment as waste disposal progresses to within 500 feet.]*

The certification for Cells 1, 15, and 16, is not approved. The Enterprise Class III Landfill is not authorized to accept waste. Upon receipt of the necessary supporting documents, the Department will continue its review and arrange for an inspection of the completed construction. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

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

kb

Attachment

cc: Jennifer Deal, P.E., Hartman and Associates  
Susan Pelz, P.E., FDEP Tampa  
John Morris, P.G., FDEP Tampa  
David Smith, P.E., FDEP Tampa  
Richard Tedder, P.E., FDEP Tallahassee  
Chris McGuire, OGC, FDEP Tallahassee  
Fred Wick, FDEP Tallahassee

**Ford, Kim**

---

**From:** Pelz, Susan  
**Sent:** Thursday, December 11, 2003 6:35 PM  
**To:** 'jld@consulthai.com'  
**Cc:** Ford, Kim; Morris, John R.  
**Subject:** Enterprise Certification



Enterprise CIII Cert enterpriseCIII.d03.  
RAI 12-08... doc

Jennifer,

Attached is the letter that will be mailed tomorrow, and John's memo. Generally, the letter is informational but requests some additional information/clarification. There is a problem area in Cell 16 that may need additional borings to verify clay presence and thickness due to the presence of an unexpected depressional area.

The correlation in John's memo is our best look at the data. If you have alternate correlations that are a better fit of the data, we can certainly consider it.

After you have a chance to look over the letter and memo, email me to discuss. I'll be out of the office pretty much until after Christmas but will be checking email. I have not contacted Craig Bryan about the letter. If you could pass the word along I would appreciate it.

I think Kim gave you some tentative dates for a site visit in January. I won't be attending the site visit, but you should go ahead & firm up the date with Kim and John.

We understand the urgency of getting the facility open. We are doing what we can to expedite it. I'm sure you can appreciate the complexity of the project, and our concerns generally about unlined disposal facilities. We just want to make sure that the as-built condition of the facility is consistent with what we all expected when it was permitted.

Thanks,

Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

# HARTMAN & ASSOCIATES, INC.

## OFFICERS:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Michael B. Bomar, P.E.  
Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

Marco H. Rocca, C.M.C.  
Roderick K. Cashe, P.E.  
Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
Troy E. Layton, P.E., DEE

engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

December 9, 2003

HAI #99.0331.007

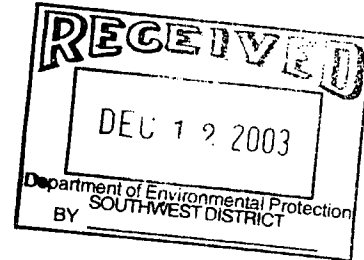
Phase 5

File 12.0

## ASSOCIATES:

James E. Golden, P.G.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
L. Todd Shaw, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Daniel M. Nelson, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619



**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**

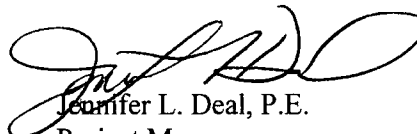
Dear Mr. Ford:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the requested weekly water level measurements for the above site. Attached is a table summarizing the water levels measured since June 30, 2003. In some cases, measurements were unable to be obtained within one week. The table also includes water elevations for the temporary pond and measurements for the rain gauge.

We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

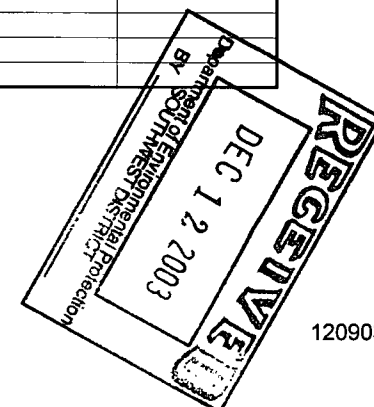
  
Jennifer L. Deal, P.E.  
Project Manager

JLD/cr/99.0331.007/corresp/Ford18.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4***	85.83	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge (inches)									
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
*** Piezometer reinstalled, old TOC elevation 84.55, new TOC elevation 85.83									
<b>Bold</b> indicates standing water on land surface									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4***	85.83	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge (inches)			3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
Bold indicates standing water									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4***	85.83	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge (inches)			1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
*** Piezometer reinstalled, old							
<b>Bold indicates standing water</b>							

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003	October 21, 2003	October 21, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96	38.02	78.69
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65	98.19	76.29
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90	7.44	79.30
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56	9.50	76.20
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67	12.35	76.30
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82	16.08	76.38
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59	17.02	76.22
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36	23.37	76.73
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38	34.79	76.83
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22	27.55	76.90
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18	22.04	76.69
P-4***	85.83	5.04	79.51	5.49	79.06	5.62	78.93	6.20	78.35
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61	17.92	76.24
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09	59.20	74.74
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55	56.42	76.18
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28	42.80	107.96
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14		76.89
Rain Gauge (inches)			1.02		0.00		1.20		0.00
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
Bold indicates standing water									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 30, 2003	October 30, 2003	November 5, 2003	November 5, 2003	November 19, 2003	November 19, 2003	December 1, 2003	December 1, 2003
MW-1	116.71	38.39	78.32	38.44	78.27	38.97	77.74	39.40	77.31
MW-1B	174.48	98.74	75.74	98.86	75.62	NM	-	100.12	74.36
MW-5A*	86.74	7.85	78.89	8.02	78.72	8.65	78.09	9.16	77.58
MW-5B	85.70	10.06	75.64	10.19	75.51	10.99	74.71	11.46	74.24
MW-6	88.65	12.89	75.76	13.03	75.62	13.86	74.79	14.34	74.31
MW-7A	92.46	16.68	75.78	16.81	75.65	17.67	74.79	18.18	74.28
MW-7B	93.24	17.57	75.67	17.73	75.51	18.51	74.73	18.98	74.26
MW-8*	100.10	24.04	76.06	24.13	75.97	24.84	75.26	25.36	74.74
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	35.57	76.05	35.79	75.83	36.65	74.97	Dry	-
MW-11	104.45	28.09	76.36	28.25	76.20	29.00	75.45	29.58	74.87
P-2**	98.73	22.67	76.06	22.82	75.91	23.66	75.07	24.19	74.54
P-4***	85.83	7.95	77.88	8.12	77.71	8.88	76.95	9.44	76.39
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	18.48	75.68	18.63	75.53	19.40	74.76	19.88	74.28
P-8	133.94	59.77	74.17	59.89	74.05	60.66	73.28	61.17	72.77
P-10	132.60	56.96	75.64	57.08	75.52	57.89	74.71	58.37	74.23
P-11	150.76	43.32	107.44	43.42	107.34	44.16	106.60	44.86	105.90
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.67		76.43		75.77		75.32
Rain Gauge (inches)			0.70		0.00		0.00		0.20
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
<b>Bold indicates standing water</b>									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

<b>Location</b>	<b>TOC Elevation, ft NGVD</b>	<b>Depth to Water, ft BTOC</b>	<b>Water Level, ft NGVD</b>
		December 8, 2003	December 8, 2003
MW-1	116.71	39.70	77.01
MW-1B	174.48	100.47	74.01
MW-5A*	86.74	9.48	77.26
MW-5B	85.70	11.80	73.90
MW-6	88.65	14.66	73.99
MW-7A	92.46	18.52	73.94
MW-7B	93.24	19.32	73.92
MW-8*	100.10	25.60	74.50
MW-9	108.00	Dry	-
MW-10*	111.62	Dry	-
MW-11	104.45	29.91	74.54
P-2**	98.73	24.56	74.17
P-4***	85.83	9.81	76.02
P-5	94.56	AB	-
P-6	94.16	20.22	73.94
P-8	133.94	61.50	72.44
P-10	132.60	58.71	73.89
P-11	150.76	45.27	105.49
P-13	112.91	AB	-
TP			N/A
Rain Gauge	(inches)		0.00
TP - Temporary Pond			
TOC - top of casing			
BTOC - below top of casing			
NM - not measured (unable to			
AB - abandoned			
* Considered perched water table			
** Piezometer reinstalled, old			
*** Piezometer reinstalled, old			
<b>Bold indicates standing water</b>			

**Pelz, Susan**

---

**From:** Ford, Kim

**Sent:** Tuesday, December 09, 2003 12:54 PM

**To:** Pelz, Susan; Morgan, Steve; Morris, John R.; Petro, Stephanie; Ross, Lora

**Subject:** Conversation with Jennifer Deal about Enterprise CIII

FYI

6/21/2004

### Conversation with Jennifer Deal about Enterprise CIII

On December 9, 2003 at 9:40am, I called J.D. (with Steve and John) to discuss tentative dates for a site visit in January. I said that John and I can visit the site during the week of January 12-15. J.D. said what about earlier. I said I would like to discuss the reason for the site visit. Usually the site visit is sort of taking a tour after the certification has been resolved, so I wanted to make sure that she was not mislead into thinking that the site visit is more important than it really is or for some other reason. She said that she was asked by Angelos to set up the site visit as soon as possible. I said that I just did not want her to invite a whole bunch of people and think that it would be a meeting because Susan said that she intends to attend the meeting and she might not visit the site. J.D. said that Susan had mentioned that she may not visit the site. I said that the response to our letter is more important. J.D. said she understands and when will she get the letter. I said Susan intends to have it faxed to you on Thursday. I said that John, Susan, and I have worked on it and the drafts to make it as clear as possible, and she may have some questions about the letter and she may not. I said I hope it is clear enough so that she can start working on it. I asked if she will probably start working on responses right way? J.D. said yes. I suggested that if she has some questions, then she could make an agenda for a meeting and use her questions to expand on items in her agenda and send it to us so that we can be prepared for the meeting. I explained that Susan will be out and then I will be out so the meeting would be in January if we need one. I said that she could e-mail the agenda/question to Susan and copy me so that we can sort of keep Susan as the point person. J.D. said that will be fine. Steve asked if all that was Ok or did she want to set up a specific date for a site visit. J.D. said yes it is Ok, and she looks forward to getting the letter, and that the tentative dates are Ok for now.

Kim



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

December 8, 2003

Mr. Craig Bryan  
Angelo's Aggregate Materials, Ltd.  
P.O. Box 1493  
Largo, Florida 33779

**Re: Enterprise Class III landfill  
Certification - Cells 1, 15, 16  
Permit Nos.: 177982-001-SC and 177982-001-SO, Pasco County**

Dear Mr. Bryan:

The Department has received and reviewed the document entitled Cell 1 Certification dated October 8, 2003, and the document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003, by Hartman and Associates, Inc. (HAI). Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, there may be a greater potential for groundwater contamination from the Enterprise Class III Landfill than originally thought. Although the Department may be able to authorize at least part of the new Enterprise Class III Landfill to operate and accept Class III waste, some additional conditions may be most appropriate for the operation and even for future new construction to demonstrate that the prohibition that "No person shall dispose of solid waste in a manner or location that causes water quality standards or criteria of the receiving waters to be violated" according to 62-701.300(1)(b) is not violated. Therefore, in an effort to make sure all reasonable protective measures are in place prior to acceptance of waste, additional information is requested in response to the following comments [*comments provided in italics with cross-references underlined*].

- 1) **Document entitled Cell 1 Certification dated October 8, 2003:**
  - a) **The cover letter page 1** - HAI states that "the attached document indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than  $1 \times 10^{-6}$  cm/sec, and is prepared to accept waste". [*The Department has not reached this same conclusion at this time as described below. This comment does not require a response.*]
  - b) **The cover letter page 2** - HAI states that "The confining unit may be at the cell base, under the cell base, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of  $1 \times 10^{-6}$  cm/sec". [*The Department agrees that this is the approved design criteria.*] HAI states that "All borings used to verify the confining unit are shown on Figure 1 in Appendix A." [*Figure 1 in Appendix A was resubmitted as part of the addendum. Confirmation that Figure 1 (for both documents) includes the locations for all borings and all failing test locations should be provided.*]

"More Protection, Less Process"

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- c) **The cover letter page 3** - HAI states that "Based on this correlation, a sample with at least 31% passing the #200 sieve was considered acceptable as confining material." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "The Confining Layer Contour Map for Cell 1 (Figure 38) is in Appendix C." *[Figure 38 in Appendix C was resubmitted as part of the addendum. Confirmation that Figure 38 (for both documents) includes the locations for all borings and all failing test locations should be provided.]*
- d) **The cover letter page 4** - HAI states that a benchmark is installed in a cell corner post. *[A description of the benchmark should be provided with its elevation (NGVD).]*
- e) **The cover letter page 5** - *[no comments]*
- f) **The cover letter page 6** - HAI states that "As shown on the Confining Layer Contour Map for the temporary pond area, the continuous confining unit extends from the north end of Cell 1 through Cell 16. This map is provided as Figure 39 in Appendix C. Therefore, no additional quality assurance testing or construction will be required for certification of the confining unit in Cell 15 and in Cell 16." *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in item 1)m of this letter.]*
- g) **The cover letter page 7** - HAI states that a stormwater permit modification is currently under review for changes, and a copy the approval for the construction will be provided. *[A stormwater permit must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- h) **The cover letter page 8** - HAI states that Pond 2 may need to be redesigned and Appendix D includes revised entrance plan details. *[Record drawings should be provided to show all changes. This may be resolved as a condition of approval for Cell 1. This comment does not require a response.]*
- i) **Certification of Construction Completion (DEP Form #62-701.900(2))** - *[This form includes the certification for all of Cells 1, 15, and 16. A new certification (on DEP Form #62-701.900(2) as a replacement) should be provided to include only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit.]*
- j) **Summary of Deviations (attached to certification form)** - HAI states: the as-built survey for Cell 1 is provided in Appendix D and that Cell 1 was not entirely excavated *[The as-built topographic survey by Foresight shows that only parts of Cells 1, 15, 16 have been excavated. Related comments are provided in item 1)p of this letter.]*, swales were not constructed to drain Cell 1 or the west slope to the temporary pond, a berm was constructed with an open channel *[Related comments are provided in item 2)d of this letter.]*; the side slopes of Cell 1 were not constructed as designed and the north-central boundary of Cell 1 was over-excavated *[The "north-central boundary of Cell 1" appears to be adjacent to Cell 15 and would require no redesign. Clarification should be provided.]*; Pond 1 was modified, the location of the entrance, scalehouse, scales, and maintenance area have changed. *[Record drawings should be provided to show all changes from the approved plans.]*

- k) **Appendix A, Figure 1 (map of borings)** - *[There are very few borings shown on this figure that include the boundaries of the cells, and there are no borings located on any the part of the selected cross-sections shown on this figure that include the boundaries of any of the cells. Only those areas that have been completely excavated and confirmed to have the specified clay layer/confining unit should be certified. All cross-sections must include borings shown for the certified area in order to include the entire certified waste disposal area for approval. All borings that represent the lithology in the vicinity of each cross-section, and the lithology for each of the detection well locations in the vicinity of the cross-section, should be included on the selected cross-section to show the continuity of the clay layer/confining unit. The degree of accuracy (for example: +/- 20 feet) must be provided for the boring locations. Related comments are provided in items 1)l), 1)m), and 1)n) of this letter.]*
- l) **Appendix B (soil test results, tables of values, and correlation)** - *[All borings must have an elevation (referred to the NGVD, rather than "MSL" referred to for the "AS" borings) at surface to be useful, especially for the shallower borings at surface. All other elevations below surface should be calculated from the surface elevation minus the depth. ("The elevations that are normally used in topographic mapping, geodetic surveys, engineering studies, and engineering construction surveys are referred to the NGVD. The NGVD should not be confused with local mean sea level datums." - from textbook entitled Surveying, by Davis, Foote, Anderson, and Mikhail.) The tables of values for the borings should provide the date of each boring, elevation (NGVD) at surface, elevation (NGVD) at the top of the clay layer/confining unit (that may be at the cell base/floor, under the cell base/floor, or a combination of both, as long as it is at least 36-inches thick and continuous with a maximum permeability of  $1 \times 10^{-6}$  cm/sec), clay layer/confining unit thickness, elevation (NGVD) for each sieve sample, % passing the #200 sieve, elevation (NGVD) for each permeability sample, and permeability test results in cm/sec. A separate table for each type of boring (such as for "B", "AS", "SSA", "ST", etc.), with each boring listed sequentially by the boring #, would be very helpful. The actual elevations (NGVD) at surface at the time of each boring must be provided. Related comments are provided in items 1)k), 1)m), and 1)n) of this letter.]*
- m) **Appendix C, clay layer/confining unit contour maps:** *A topographic survey provided or referenced for the at surface elevations for each boring (at the time of each boring) would be very helpful. The actual elevations (NGVD) at surface at the time for each boring are essential to the success of this certification and should be provided either on the topographic survey or listed separately. In either case, the list and the survey must be signed, dated, and sealed by a registered professional surveyor and mapper (F.S. 472.003(2)). For the clay layer/confining unit contour maps, a registered professional geologist may interpret the topographic survey/data and prepare the Figures 38 and 39, however, the professional surveyor must either cosign, date, and seal the figures or the referenced topographic survey/data (FAC 61G16-2.005, FS 492.102(7), F.S. 472.003(2)). Each figure should reference the topographic survey/data. With the topographic survey/data, the professional surveyor should provide the horizontal degree of accuracy (for example: +/- 20 feet) for the boring locations and the degree of accuracy (for example: +/- 6 inches) vertically for the elevations (NGVD) at surface at the time of each boring. The clay layer/confining unit contour maps show the clay layer/confining unit beyond the last boring along the cell boundaries and must be revised to limit the contours to the areas where supporting data is available. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]*

**Figure 38 (Cell 1 clay layer/confining unit contour map) -** [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cell 1 clay layer/confining unit contours and the locations of specific features (borings, the limits of the excavated cells, and test pits/excavated areas). This figure/map shows that portions of the top of the clay layer/confining unit is at elevation +85 (3 feet above the surface) and higher, the cells (sideslopes) are not completely excavated, and no corner posts are shown for the limits of waste disposal. Boring B-18 is missing from this drawing. All borings must be shown on all top of clay layer/confining unit contour maps, or a specific reason provided for each excluded boring. This figure shows the excavated area for "AS-10" to be extremely small in comparison to the size of other excavated areas, and the location of boring "AS-42" is not shown within the excavated area. Additional borings should be provided in the vicinity of these two areas to confirm the presence of the clay layer/confining unit. The corner posts appear to be located at the cell boundaries and in areas along the toe of slope that have not been confirmed to have the specified clay layer/confining unit. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. The scale of 1"=100' appears to be incorrect and must be corrected. This drawing must be corrected prior to the approval for Cell 1. A scale of 1"=60' is suggested, the same as for the cross-sections. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

**Figure 39 (Cells 15 and 16 clay layer/confining unit contour map) -** [This figure/map is based on a topographic survey (with both horizontal and vertical control) and is intended to show both the Cells 15 and 16 clay layer/confining unit contours and the locations of specific features (borings and the limits of the excavated cells). This figure/map shows that Cell 15 and Cell 16 are not completely excavated and there are no corner posts shown at the cell boundaries. The top of clay layer/confining unit contours dramatically change near the center of Cell 16, and the clay layer/confining unit thickness of at least 3 feet is not confirmed by an adequate number of borings. A top of the clay layer/confining unit drop of five feet between two borings spaced 100 feet apart is significant but acceptable when adequate thickness and permeability are confirmed. However, the top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and must be confirmed by additional borings and permeability tests. Therefore, the clay layer/confining unit thickness of 3 feet at the bottom of B-22 is of concern, and reasonable assurance of at least 3 feet of thickness must be provided by more closely spaced borings and/or greater than 3 feet of thickness. More continuity between borings allows for more widely spaced borings. Less continuity and dramatic changes requires more closely spaced borings. For areas with dramatic changes (such as those shown for Cell 16), additional borings on a grid of 50 feet are suggested. The certified area should be provided on one drawing (drawn to scale) and limited to the area completely excavated and prepared for waste disposal, and the limits of waste disposal/certified area must be marked by corner posts. All borings must be shown on all top of clay layer/confining unit contour maps. The scale of 1"=100' appears to be incorrect and must be corrected. A scale of 1"=60' is suggested, same as for the cross-sections. Related comments are provided in items 1)k), 1)l), and 1)n) of this letter.]

- n) **Appendix C, cross-sections (Figures 1 through 7):** [The cross-sections show clay below borings with no supporting data and must be revised to show all the lithologies on cross-sections end at the lower tip of the deepest representative boring, and at the last included boring, unless other deeper borings are shown to provide supporting data. All scales on each cross-section should be the same (1"=60'H, 1"=20'V suggested). More E-W cross-sections would be very helpful. More specific comments are provided for each cross-section. Related comments are provided in item 1)k) of this letter.]



**Figure 1, cross-section A-A' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows only one permeability test for 6 deeper borings. This cross-section shows silty clay on the southeast slope with no borings and no borings on the cell base/floor along the west side for 350 feet from ST-2. This cross-section should show many of the "AS" borings and others (B-17 and SSA-11), and should be extended to the east to include SSA-20 and SSA-37.]*

**Figure 2, cross-section B-B' (Scale: 1"=100'H, 1"=10'V)** - *[This cross-section shows no boring for the south edge of Cell 1, or for the north edge. This cross-section provides more information, permeability tests, more borings, and is more helpful, and shows more clay layer/confining unit continuity. This cross-section should show many more of the "AS" borings and others (such as SSA-24).]*

**Figure 3, cross-section C-C' (Scale: 1"=60'H, 1"=30'V)** - *[Shows no borings for the east and west edges of Cell 15, and only one permeability test. This cross-section should be extended to the east to include MW-7A and MW-7B, and to the west to include DCL01-8.]*

**Figure 4, cross-section D-D' (Scale: 1"=50'H, 1"=25'V)** - *[This cross-section shows no boring for the north edge of Cell 16, and no permeability test for Cells 15 and 16. This cross-section should be extended to the north to include more borings (ST-7, B-22, B-26, B-31, DCL01-14, B-32, B-20, SSA-26, SSA-28, SSA-29). All of Cell 16 could be included.]*

**Figure 5, cross-section E-E' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for west edge of Cell 15 and the east edge of Cell 16. The top of the clay layer/confining unit drop of 30 feet in 100 feet (from B-33 to B-22) is dramatic and should be confirmed by additional borings and permeability tests, therefore the clay layer/confining unit thickness of 3 feet at B-22 is of concern. This cross-section should be extended to the northeast to include B-6, MW-5A and MW-5B, and to the southwest to include DCL01-8.]*

**Figure 6, cross-section F-F' (Scale: 1"=40'H, 1"=20'V)** - *[This cross-section shows no borings for the east and west edges of Cell 15. This cross-section should be extended to the east to include B-8, and on the west to include DCL01-8.]*

**Figure 7, cross-section G-G' (Scale: 1"=60'H, 1"=30'V)** - *[This cross-section shows no borings for the east and west edges of Cell 16. This cross-section should include more borings (B-5, SSA-27), and should be extended to the northwest to include MW-4 and to the southeast to include MW-6.]*

- o) **Appendix C, boring logs (B-15 -B-34, SSA-1 -SSA-37, AS-1 -AS-47):** *[Related comments are provided in item 1)l of this letter.]*
- p) **Appendix D (as-built surveys)** - *[All as-built topographic surveys by Foresight must signed, dated, and sealed by a professional surveyor. The elevations on Sheet 1 of 2 are difficult to read due to the scale. A scale of 1"=60' is suggested, same as for the cross-sections, and for the top of clay layer/confining unit contour maps. The cell corner posts, and the posts for the certification limits/disposal limits should be shown on each drawing, with the benchmarks described and shown with elevations (NGVD). The Plan & Profile Entrance Road drawing PP-1 (Sheet 1 of 4) appears to be part of another set of drawings that were not reviewed or approved by the Department. A complete set of these drawings should be provided. The As-Built Drainage Plan is not legible and should be provided as a record drawing. All drawings provided as record drawings must be signed, dated, and sealed by the professional engineer of record.]*

- q) **Appendix E (soil stockpile test results)** - *[no comments]*
  - r) **Appendix F (photos of tie-ins)** - *[no comments]*
  - s) **Appendix G (field test results for tie-ins)** - *[no comments]*
  - t) **Appendix H (test results)** - *[The note "For information purposes only" appears to indicate that these test reports are not the official final reports. The official final reports should be provided.]*
  - u) **Appendix I (water table elevations)** - *[An evaluation of the water elevations should be provided to demonstrate that there is not a direct connection to the deeper Floridan LS aquifer and that the wells are adequately placed to monitor the groundwater (both the surficial and the deeper Floridan LS aquifer), and that the base/floor of each cell will remain at least 5 feet above the SHWT. Additionally, the location for a piezometer along the west side of the temporary pond to measure the groundwater fluctuations should be provided.]*
- 2) **Document entitled Cell 1 and Landfill Site Certification Addendum dated November 13, 2003:**
- a) **The cover letter page 1** - HAI states that "The boring logs for AS-1 through AS-47 describe the depth from surface of each boring in NGVD." *[Related comments are provided in item 1)l of this letter.]*
  - b) **The cover letter page 2** - HAI states that "borings confirmed areas as limestone surface lenses underlain by clay and not connected to the limestone aquifer. *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k, 1)l, 1)m, and 1)n of this letter.]* HAI states that FDEP did not stipulate additional borings in Cell 16 *[Related comments are provided in item 1)m of this letter.]*. HAI states that "The data collected from Cells 15 and 16 provide reasonable assurance of a confining layer below the temporary pond" *[The Department has not reached this same conclusion at this time. This comment does not require a response. Related comments are provided in items 1)k, 1)l, 1)m, and 1)n of this letter.]*, and "water level observations in the temporary pond show very little percolation, a direct test of confinement" *[The basis for this conclusion should be provided. Related comments are provided in item 1)u of this letter.]*, and the dilution calculation predicts that only iron will exceed DEP groundwater quality criteria *[Related comments are provided in item 4)b of this letter.]* HAI states that "AS-10 and AS-42 were located in sandy areas that were excavated and replaced with confining unit material." *[Related comments are provided in item 1)m of this letter.]*
  - c) **The cover letter page 3** - HAI states that "Any intervals that did not meet the minimum of 31% fines passing, were either identified as non-conforming material in the boring logs, or located in areas not specified for certification, or had boring intervals below the failed interval." *[Related comments (memorandum dated December 4, 2003, by Mr. John Morris) are provided as an attachment to this letter.]* HAI states that "the locations of the corner posts that define the area of waste disposal on the floor of Cell 1 were included in Appendix D, Figures 1 and 38." *[Related comments are provided in items 1)k, 1)m, and 1)p of this letter]*

- d) **The cover letter page 4** - HAI states that approval of the ERP is expected. *[The ERP must be issued prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]* HAI states that a swale was constructed in the west portion of Cell 1, and a survey of the swale is included in Appendix C. *[This survey shows a berm (not a swale) that appears to divert the stormwater (from beyond the excavated portion of Cell 1) into the temporary pond away from the waste. This design does not appear to be compatible with the intended function of the temporary pond. The temporary pond was/is designed to contain the contact water that drains from the partially filled waste disposal areas only (not to collect stormwater from beyond the excavated disposal areas). Therefore, capacity calculations should be provided to demonstrate that the temporary pond will have the capacity to contain both the stormwater from beyond the excavated disposal areas and the contact water that drains from the partially filled waste disposal areas. Drainage from Cell 1 must be allowed to flow freely from the cell. Clarification should be provided.]*
- e) **The cover letter pages 4 and 5** - HAI describes several items not yet completed: the fence, signs, special non-conforming waste containers for batteries and paint, video camera, perimeter road, containers for Class I waste, and financial assurance. *[These items must be completed prior to acceptance of waste. This may be resolved as a condition of approval for Cell 1.]*
- f) **Figures 1 and 38** - *[Related comments are provided in items 1)k) and 1)m) of this letter.]*
- g) **Appendix A (estimated effluent concentration)** - *[Related comments are provided in item 4)b) of this letter.]*
- h) **Appendix B, "ST" borings (table of values)** - *[Related comments are provided in item 1)l) of this letter.]*
- i) **Appendix C (topographic survey for west side of Cell 1)** - *[This survey shows a berm (not a swale). Related comments are provided in item 2)d) of this letter.]*
- j) **Appendix D (water elevations)** - *[Related comments are provided in item 1)u) of this letter.]*

To gain a better understanding of the project, the Department has reviewed the original permit application and Department files, and offers the following comments *[comments provided in italics with cross-references underlined]*.

- 3) **Document entitled Enterprise Recycling and Disposal Facility Class III Landfill Permit Application, November 2000 (with revisions included):**
  - a) **Section 1 (application form, part B.21.)** - HAI requested a liner and LCRS exemption due to acceptance of only Class III waste and the presence of a natural confining layer. *[This has been typical for Class III landfill designs.]*

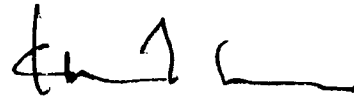
- b) **Section 3.7 (Engineering Report)** - HAI states that the landfill base will be "at least 5 feet above SHWT". *[This was/is part of the original design and part of the Department's basis for approval. Confirmation that the SHWT has been and will be at least 5 feet below the Cell 1 base/floor should be provided. Related comments are provided in item 1)u) of this letter.]*
- c) **Section 3.7 (Engineering Report)** - HAI states that each cell will be overcut by 50 feet for truck traffic and stormwater transport from the cell to the temporary pond, and a 6 feet high berm will prevent stormwater from entering the working face, as shown on Sheet G-1. *[Cell 1 was not overcut for stormwater on the south or the west, and the berm to divert stormwater and the conveyance for runoff from Cell 1 to the temporary pond do not appear to be constructed as designed. Related comments are provided in item 2)d) of this letter.]*
- d) **Section 3.8.3 (Engineering Report)** - HAI states that each 6-acre cell is expected to last 2 years with two ten-foot lifts per year. *[no comments]*
- e) **Section 3.10.1 (Engineering Report)** - HAI states that "Surface water and groundwater contact with the Class III wastes will be prevented by the proposed facility design." *[Related comments are provided in items 1)u), 2)d) and 3)b) of this letter.]*
- f) **Section 3.10.1 (Engineering Report)** - HAI states that "Since the facility proposes to accept only those wastes described in 62-701.340(3)(c), FAC, *[now described in 62-701.200(14)]* it is not expected to produce a leachate that would pose a threat to public health or the environment" *[The Department has not reached this same conclusion at this time. This comment does not require a response.]*, and "the strict method of controlling type of wastes disposed of also supports the liner exemption". *[Related comments are provided in item 4)b) of this letter.]*
- g) **Section 3.15 (Engineering Report)** - HAI states that "if the test data from the cell floor section does not meet the requirements, additional random samples may be tested, and if the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable". *[The Department agrees that retests are appropriate in some instances. An explanation should be provided for all retests (such as an area was reworked and retested, or due to a specifically described laboratory error).]*
- h) **Figures 3-6 - 3-12 (Sheets C-1 - C-6, and G-1)** - *[These drawings should be provided as record drawings for the initial construction, and should show the SHWT based on more data, and to show the initial berms and conveyances, and other new features (such as the locations of gas probes, groundwater monitoring wells, and stormwater ponds).]*

- 4) **Review of correspondence in Department files - #177982-001-SC:**
- a) **5/31/01, HAI response** - HAI explains that after dilution from rainfall and not including dispersion, diffusion, sorption, and biodegradation, only iron will exceed at the ZOD. *[Related comments are provided in item 4)b) of this letter.]*
- b) **6/28/01, Department memorandum** - *[As indicated during the permit review, the Department has not considered the dilution equation and associated assumptions as adequate to describe the potential impacts to groundwater quality, however, other assurances were provided by the "control of unauthorized wastes, site hydrogeology, stormwater control, groundwater monitoring, and cell certification." Due to the variable geology of the site uncovered during construction that appears to be different than what was intended as part of permitting, additional assurances should be provided to demonstrate and confirm adequate environmental protection. Related comments are provided in item 1)u) of this letter.]*
- c) **7/25/03 report by HAI** - Borings and LS areas are shown on Figure 1 (dated 7/14/03). *[This figure/map is the first topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the LS areas, with elevations to the nearest tenth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- d) **8/05/03 report by HAI** - HAI describes CQA for patching the LS areas, and states that "a soil liner is not being constructed at this site. The tie-ins are being constructed to ensure a continuous confining unit at the base of Cell 1." The report includes Figure 3 (not dated). *[This figure/map is the second topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for the "AS" (at surface) borings, with elevations to the nearest hundredth of a foot. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- e) **8/12/03, report by HAI** - This report includes Figure 6 (not dated). *[This figure/map appears to be incomplete and does not appear to qualify as a topographic survey (with both horizontal and vertical control) for the Cell 1 base/floor and shows the locations for some of the "AS" and "SSA" borings, (without elevations) with a note that states that the "locations are approximate". Both horizontal and vertical control are essential to the success of this certification. The intended use of this map should be described and clarification should be provided for the lack of both horizontal and vertical control. Related comments are provided in items 1)k), and 1)m) of this letter.]*
- f) **8/19/03, Department meeting with HAI and Angelo's (notes in files)** - Discussed the Plan of Action required by specific condition #5 for LS, and that the intended design was/is that the clay layer/confining unit is either at the base/floor and/or at depth below the base/floor. Agreed that the top of clay layer/confining unit contour map must show the clay layer/confining unit to be continuous with at least 3 feet at 1x10<sup>-6</sup>cm/sec, with no averaging. Discussed the north half of Cell #1 and the concern for demonstrating that the clay layer/confining unit is at the base/floor due to the west side sandy area that may have the clay layer/confining unit at depth. *[Related comments are provided in item 1)m) of this letter.]* Discussed Cell #15 and the concern that the bottom cannot be observed due to water. Discussed Cell #16 and the concern with the sandy area at north end, and the need for acceptable permeability test results in the target clay layer/confining unit. *[Related comments are provided in item 1)m) of this letter.]*

- g) **9/08/03 Fax from SWFWMD** - SWFWMD approves an on-site potable drinking water supply well (converted from an existing irrigation well). *[The operations plan should be revised to describe the use of this on-site potable drinking water supply well rather than bottled drinking water, and to describe the plans for its future use or abandonment as waste disposal progresses to within 500 feet.]*

The certification for Cells 1, 15, and 16, is not approved. The Enterprise Class III Landfill is not authorized to accept waste. Upon receipt of the necessary supporting documents, the Department will continue its review and arrange for an inspection of the completed construction. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,



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

kbk

Attachment

cc: Jennifer Deal, P.E., Hartman and Associates  
Susan Pelz, P.E., FDEP Tampa  
John Morris, P.G., FDEP Tampa  
David Smith, P.E., FDEP Tampa  
Richard Tedder, P.E., FDEP Tallahassee  
Chris McGuire, OGC, FDEP Tallahassee  
Fred Wick, FDEP Tallahassee

## Memorandum

# Florida Department of Environmental Protection

**TO:** File for Permit Nos. 177982-001-SC and 177982-002-SO  
**FROM:** John R. Morris, P.G. *JRM*  
**DATE:** December 4, 2003  
**SUBJECT:** Enterprise Recycling and Disposal Facility  
Cell 1 Certification Review Comments – Confining Unit Continuity  
**cc:** Kim Ford, P.E.  
Susan Pelz, P.E. *SP*

I have reviewed sections of the submittal prepared by Hartman & Associates, Inc. (HAI) dated October 8, 2003, received October 9, 2003, regarding the certification for Cell 1 at the referenced facility. My review focused on the information provided to characterize the continuity of the native clay confining unit as indicated in the following sections of the referenced HAI submittal:

- Transmittal letter – correlation between sieve test results (% passing No. 200 sieve = “% fines”)
- Appendix B – permeability test results, correlation between % fines and permeability
- Appendix C – confining unit contour maps, cross sections, boring logs

Supplemental information included in the document entitled *Cell 1 and Landfill Site Certification Addendum*, prepared by HAI, dated November 13, 2003, received November 14, 2003, was also reviewed to further characterize site conditions.

The section of the HAI transmittal letter dated October 8, 2003 entitled “**TEMPORARY POND AREA**” includes a sub-heading entitled “Cell 16” (page 6) that indicates the following: “Due to a conflict of a preliminary correlation between permeability and percent fines with the actual permeability values obtained from test locations ST-13, ST-14, ST-16, and ST-17 in Cell 16, and ST-21 in Cell 14, tested by Ardaman (considered as outliers), some of the remaining intact Shelby tube samples were re-evaluated by UES.” The initial and retest results for the referenced locations are summarized below:

<u>Boring #</u>	<u>Cell #</u>	<u>Sample #</u>	<u>Sample Depth (ft BLS/elevation)</u>	<u>% Fines</u>	<u>Perm. (cm/sec)</u>
B-20 (initial test)	16	ST-13	8 – 10 / 65 – 67	38.1	$5.3 \times 10^{-6}$
B-20 (retest)	16	ST-13	8 – 10 / 65 – 67	47.6	$4.9 \times 10^{-7}$
B-21 (initial test)	16	ST-14	4 – 6 / 69 – 71	64.7	$2.6 \times 10^{-6}$
B-21 (retest)	16	ST-14	4 – 6 / 69 – 71	52.3	$6.7 \times 10^{-8}$
B-22 (initial test)	16	ST-16	44 – 46 / 29 – 31	13.3	$9.2 \times 10^{-6}$
B-22 (retest)	16	ST-16	44 – 46 / 29 – 31	57.2	$1.9 \times 10^{-7}$
B-23 (initial test)	16	ST-17	2 – 4 / 71 – 73	25.4	$1.3 \times 10^{-5}$
B-23 (retest)	16	ST-17	2 – 4 / 71 – 73	38.8	$6.9 \times 10^{-8}$
B-28 (initial test)	14	ST-21	32 – 34 / 62 – 64	33.8	$2.1 \times 10^{-6}$
B-28 (retest)	14	ST-21	32 – 34 / 62 – 64	33.1	$7.5 \times 10^{-7}$

The basis for determining that the initial results from these five locations were outliers was not presented in the certification submittals. The procedure for handling the Shelby tubes to prepare the samples that were submitted for retesting and the intervals within the Shelby tube submitted for retesting were not described in the certification submittals. The reasons for the different results were not presented in the certification submittals. Descriptions of the lithology of the samples submitted for retesting were not presented in the certification submittals.

*“Protect, Conserve and Manage Florida's Environment and Natural Resources”*

*Printed on recycled paper.*

The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” indicates that the correlation between permeability and percent fines results in acceptable confining materials containing at least 31% fines, as presented in Appendix B of the submittal. It appears that the initial testing results from these five locations (“outliers”) were omitted from the correlation between sample permeability and percent fines. It also appears that a power function was selected by HAI for this correlation for all permeability tests conducted at the facility excluding the outliers, with an  $R^2$  value of about 0.54. Alternate correlation #1 was prepared with the same data points using an exponential function to better fit the data and resulted in an  $R^2$  value of about 0.66. Using alternate correlation #1, it is estimated that acceptable confining materials would be required to contain about 42% fines (see attached plot entitled “Perms. vs % Fines (Alternate Correlation #1) and attached summary table).

The section of the HAI transmittal letter dated October 8, 2003 entitled “CELL 1 COA TESTING” describes seven “field units” in the soils encountered at the facility, four of which were indicated to be acceptable confining materials (sandy clay, silty clay, clay and clayey sand) and three of which were indicated to be unacceptable confining materials (silty sand, limestone marl and limestone). It appears that the clayey sand field unit exhibits a range of percent fine and permeability values that require further evaluation regarding its suitability as confining material. Alternate correlation #2 was prepared with only the samples that were described to be clayey sands to obtain a better solution (“better fit”) for the data points. To be consistent with the approach taken by HAI, the “outliers” were excluded from alternate correlation #2, and an exponential function was selected, with an  $R^2$  value of about 0.77. Using alternate correlation #2, it is estimated that acceptable confining materials would be required to contain about 37% fines (see attached plot entitled “Perms. vs % Fines (Alternate Correlation #2) and attached summary table).

The differences in the correlation between percent fines and permeability provided by HAI and the alternate correlations described above appear to be significant when depicting the soil types that are included as part of the confining unit. It appears appropriate to exclude the clayey sand field unit from the confining materials based solely on physical description unless the clayey sand sediments in individual borings have testing data that demonstrates an acceptable % fines content is present.

Instances where the thickness of the confining unit within Cell 1 as shown on Figure 38 in the HAI submittal dated October 8, 2003 is subject to revision if acceptable confining materials are determined by using at least 37% fines and clayey sands are excluded unless supported by a sieve test are summarized below:

- AS-6: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 31.7% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-11: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 2.5-3 feet BLS; it appears that 2.5 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-16: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; it appears that 1 foot of acceptable confining materials was demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location was included in the area excavated as part of Test Pit No. 4.
- AS-18: the silty sand sediments encountered from 0-2 feet BLS were indicated to be unacceptable materials for the confining layer; it appears that the boring was too shallow to demonstrate the occurrence of 3 feet of acceptable confining materials at this location.
- AS-19: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-2 feet BLS; a sieve test conducted on the sandy clay encountered at 2 feet BLS indicated the sample was 34.9% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.



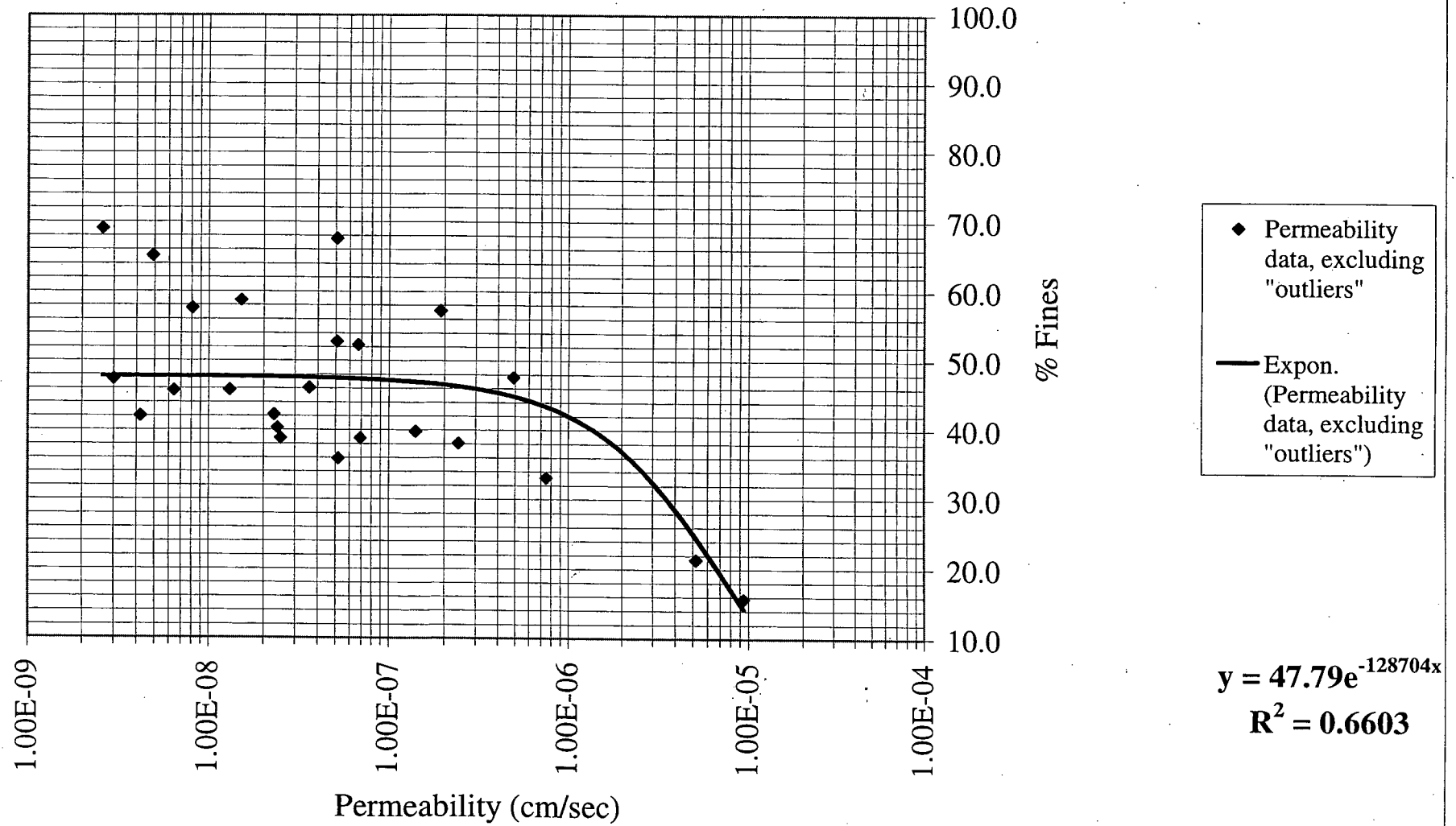
- AS-34: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 0-1 foot below land surface (ft BLS); it appears that 2 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.
- AS-37: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1.5-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-38: it does not appear that a sieve test was conducted on the clayey sands that were encountered from 1-1.75 feet BLS; it appears that 1.25 feet of acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-42: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 15.8% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- AS-44: a sieve test conducted on the clayey sands encountered at 2 feet BLS indicated the sample was 33.5% fines; it appears that no acceptable confining materials were demonstrated at this location rather than the 3 feet shown on Figure 38.
- SSA-19: it does not appear that sieve tests were conducted on the clayey sands that were encountered from 0-4 ft BLS and 9-13 ft BLS; it appears that 5 feet of acceptable confining materials were demonstrated at this location rather than the 13 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.
- SSA-20: a sieve test conducted on the clayey sands encountered from 5-10 feet BLS indicated the sample was 29% fines; it appears that 4 feet of acceptable confining materials were demonstrated at this location rather than the 18 feet shown on Figure 38; it is unclear if this boring location is outside the portion of Cell 1 that was intended to be included in the certification.

Given the importance of determining the occurrence of acceptable confining materials at the facility, it does not seem appropriate to further review the boring logs, contour maps and cross sections until the questions about the correlation evaluation have been resolved.

Attachments -- Perms. vs. % Fines plots (Alternate Correlations #1 and #2)  
Table of Soil Test Results (Alternate Correlations #1 and #2)

jrm

### Perms. vs % Fines (Alternate Correlation #1)



### Enterprise Class III -- Soil Test Results (Alternate Correlation #1)

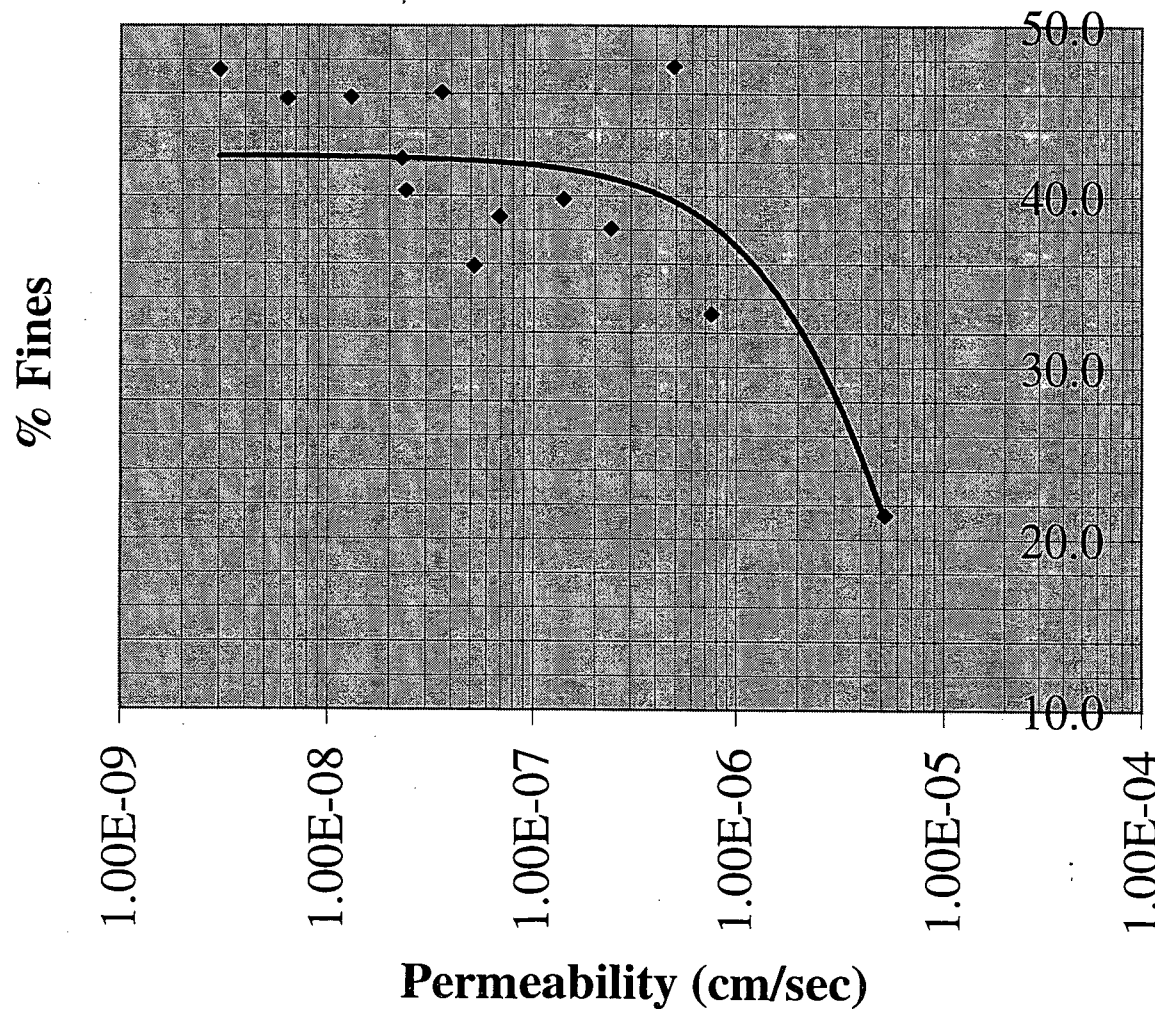
Test #	ALL PERM. TESTS		PERMS. EXCLUDING RETESTS		PERMS. EXCLUDING OUTLIERS		Testing Laboratory
	Permeability (cm/sec)	% Passing #200 (% fines)	Permeability (cm/sec)	% Passing #200 (% fines)	Permeability (cm/sec)	% Passing #200 (% fines)	
ST-1	2.40E-08	40.3	2.40E-08	40.3	2.40E-08	40.3	Universal
ST-2	8.10E-09	57.6	8.10E-09	57.6	8.10E-09	57.6	Universal
ST-3	1.30E-08	45.8	1.30E-08	45.8	1.30E-08	45.8	Universal
ST-4	2.60E-09	69.0	2.60E-09	69.0	2.60E-09	69.0	Universal
ST-5	1.50E-08	58.7	1.50E-08	58.7	1.50E-08	58.7	Universal
ST-6	3.60E-08	46.1	3.60E-08	46.1	3.60E-08	46.1	Universal
ST-7	9.40E-06	15.7	9.40E-06	15.7	9.40E-06	15.7	Universal
ST-8	5.10E-08	52.8	5.10E-08	52.8	5.10E-08	52.8	Universal
ST-9	2.30E-08	42.2	2.30E-08	42.2	2.30E-08	42.2	Ardaman
ST-10	5.20E-08	35.9	5.20E-08	35.9	5.20E-08	35.9	Ardaman
ST-11	6.40E-09	45.7	6.40E-09	45.7	6.40E-09	45.7	Ardaman
ST-12	2.40E-07	38.1	2.40E-07	38.1	2.40E-07	38.1	Ardaman
ST-12A	3.00E-09	47.4	3.00E-09	47.4	3.00E-09	47.4	Ardaman
ST-13	5.30E-06	38.1	5.30E-06	38.1			Ardaman
ST-13R	4.90E-07	47.6			4.90E-07	47.6	Universal
ST-14	2.60E-06	64.7	2.60E-06	64.7			Ardaman
ST-14R	6.70E-08	52.3			6.70E-08	52.3	Universal
ST-15	5.20E-06	21.4	5.20E-06	21.4	5.20E-06	21.4	Ardaman
ST-16	9.20E-06	13.3	9.20E-06	13.3			Ardaman
ST-16R	1.90E-07	57.2			1.90E-07	57.2	Universal
ST-17	1.30E-05	25.4	1.30E-05	25.4			Ardaman
ST-17R	6.90E-08	38.8			6.90E-08	38.8	Universal
ST-18	5.10E-08	67.6	5.10E-08	67.6	5.10E-08	67.6	Ardaman
ST-19	4.90E-09	65.1	4.90E-09	65.1	4.90E-09	65.1	Ardaman
ST-20	1.40E-07	39.8	1.40E-07	39.8	1.40E-07	39.8	Ardaman
ST-21	2.10E-06	33.8	2.10E-06	33.8			Ardaman
ST-21R	7.50E-07	33.1			7.50E-07	33.1	Universal
Stockpile 1	4.20E-09	42.0	4.20E-09	42.0	4.20E-09	42.0	Ardaman
Stockpile 2	2.50E-08	38.8	2.50E-08	38.8	2.50E-08	38.8	Ardaman

Data from Hartman & Associates, Inc., Cell 1 Certification,  
dated October 8, 2003, received October 9, 2003, Appendix B

- Ardaman = Ardaman & Associates, Inc.

- Universal = Universal Engineering Sciences

## Perms. vs % Fines (Alternate Correlation #2)



- ◆ Clayey sands, excluding "outliers"
- Expon. (Clayey sands, excluding "outliers")

$$y = 42.369e^{-133377x}$$

$$R^2 = 0.7694$$

Enterprise Class III -- Soil Test Results (Alternate Correlation #2)

Test #	CLAYEY SAND (all data)		CLAYEY SAND (no outliers)		SANDY CLAY/CLAY (all data)		SILTY SAND (all data)		Testing Laboratory
	Permeability (cm/sec)	% Passing #200 (% fines)	Permeability (cm/sec)	% Passing #200 (% fines)	Permeability (cm/sec)	% Passing #200 (% fines)	Permeability (cm/sec)	% Passing #200 (% fines)	
ST-1	2.40E-08	40.3	2.40E-08	40.3					Universal
ST-2					8.10E-09	57.6			Universal
ST-3	1.30E-08	45.8	1.30E-08	45.8					Universal
ST-4					2.60E-09	69.0			Universal
ST-5					1.50E-08	58.7			Universal
ST-6	3.60E-08	46.1	3.60E-08	46.1					Universal
ST-7							9.40E-06	15.7	Universal
ST-8					5.10E-08	52.8			Universal
ST-9	2.30E-08	42.2	2.30E-08	42.2					Ardaman
ST-10	5.20E-08	35.9	5.20E-08	35.9					Ardaman
ST-11	6.40E-09	45.7	6.40E-09	45.7					Ardaman
ST-12	2.40E-07	38.1	2.40E-07	38.1					Ardaman
ST-12A	3.00E-09	47.4	3.00E-09	47.4					Ardaman
ST-13	5.30E-06	38.1							Ardaman
ST-13R	4.90E-07	47.6	4.90E-07	47.6					Universal
ST-14					2.60E-06	64.7			Ardaman
ST-14R					6.70E-08	52.3			Universal
ST-15	5.20E-06	21.4	5.20E-06	21.4					Ardaman
ST-16							9.20E-06	13.3	Ardaman
ST-16R							1.90E-07	57.2	Universal
ST-17	1.30E-05	25.4							Ardaman
ST-17R	6.90E-08	38.8	6.90E-08	38.8					Universal
ST-18					5.10E-08	67.6			Ardaman
ST-19					4.90E-09	65.1			Ardaman
ST-20	1.40E-07	39.8	1.40E-07	39.8					Ardaman
ST-21	2.10E-06	33.8							Ardaman
ST-21R	7.50E-07	33.1	7.50E-07	33.1					Universal
Stockpile 1					4.20E-09	42.0			Ardaman
Stockpile 2					2.50E-08	38.8			Ardaman
	R <sup>2</sup>	% Fines Correlation	R <sup>2</sup>	% Fines Correlation					
Linear	0.4838	40	0.6488	38					
Log	0.5973	34	0.5706	33					
Polynomial	0.5657	39	0.6649	35					
Power	0.578	33	0.5805	32					
Exponential	0.5099	39	0.7694	37					

Data from Hartman & Associates, Inc., Cell 1 Certification,  
dated October 8, 2003, received October 9, 2003, Appendix B  
- Ardaman = Ardaman & Associates, Inc.  
- Universal = Universal Engineering Sciences

**Ford, Kim**

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**From:** Pelz, Susan  
**Sent:** Thursday, December 11, 2003 6:35 PM  
**To:** 'jld@consulthai.com'  
**Cc:** Ford, Kim; Morris, John R.  
**Subject:** Enterprise Certification



Enterprise CIII Cert enterpriseCIII.d03.  
RAI 12-08... doc

Jennifer,

Attached is the letter that will be mailed tomorrow, and John's memo. Generally, the letter is informational but requests some additional information/clarification. There is a problem area in Cell 16 that may need additional borings to verify clay presence and thickness due to the presence of an unexpected depressional area.

The correlation in John's memo is our best look at the data. If you have alternate correlations that are a better fit of the data, we can certainly consider it.

After you have a chance to look over the letter and memo, email me to discuss. I'll be out of the office pretty much until after Christmas but will be checking email. I have not contacted Craig Bryan about the letter. If you could pass the word along I would appreciate it.

I think Kim gave you some tentative dates for a site visit in January. I won't be attending the site visit, but you should go ahead & firm up the date with Kim and John.

We understand the urgency of getting the facility open. We are doing what we can to expedite it. I'm sure you can appreciate the complexity of the project, and our concerns generally about unlined disposal facilities. We just want to make sure that the as-built condition of the facility is consistent with what we all expected when it was permitted.

Thanks,

Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
813-744-6100 x 386  
susan.pelz@dep.state.fl.us

**Ford, Kim**

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**From:** Ford, Kim

**Sent:** Tuesday, December 09, 2003 12:54 PM

**To:** Pelz, Susan; Morgan, Steve; Morris, John R.; Petro, Stephanie; Ross, Lora

**Subject:** Conversation with Jennifer Deal about Enterprise CIII

FYI

12/9/2003

### Conversation with Jennifer Deal about Enterprise CIII

On December 9, 2003 at 9:40am, I called J.D. (with Steve and John) to discuss tentative dates for a site visit in January. I said that John and I can visit the site during the week of January 12-15. J.D. said what about earlier. I said I would like to discuss the reason for the site visit. Usually the site visit is sort of taking a tour after the certification has been resolved, so I wanted to make sure that she was not mislead into thinking that the site visit is more important than it really is or for some other reason. She said that she was asked by Angelos to set up the site visit as soon as possible. I said that I just did not want her to invite a whole bunch of people and think that it would be a meeting because Susan said that she intends to attend the meeting and she might not visit the site. J.D. said that Susan had mentioned that she may not visit the site. I said that the response to our letter is more important. J.D. said she understands and when will she get the letter. I said Susan intends to have it faxed to you on Thursday. I said that John, Susan, and I have worked on it and the drafts to make it as clear as possible, and she may have some questions about the letter and she may not. I said I hope it is clear enough so that she can start working on it. I asked if she will probably start working on responses right way? J.D. said yes. I suggested that if she has some questions, then she could make an agenda for a meeting and use her questions to expand on items in her agenda and send it to us so that we can be prepared for the meeting. I explained that Susan will be out and then I will be out so the meeting would be in January if we need one. I said that she could e-mail the agenda/question to Susan and copy me so that we can sort of keep Susan as the point person. J.D. said that will be fine. Steve asked if all that was Ok or did she want to set up a specific date for a site visit. J.D. said yes it is Ok, and she looks forward to getting the letter, and that the tentative dates are Ok for now.

Kim



**Pelz, Susan**

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**From:** Pelz, Susan  
**Sent:** Thursday, December 04, 2003 7:10 AM  
**To:** Morris, John R.  
**Subject:** FW: Enterprise Recycling and Disposal Facility

fyi

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Wednesday, December 03, 2003 5:29 PM  
To: Pelz, Susan  
Cc: Ford, Kim  
Subject: Enterprise Recycling and Disposal Facility

Susan,

As you and your staff are reviewing the Enterprise certification package and addendum, please know that Miguel Garcia, Bruce Lafrenz, and I are all available to answer any questions you may have regarding those items. We would like to ensure that the certification is approved so that the site may be opened for operation. So if there are any issues that we can address prior to the meeting, please feel free to call us for clarification. As you know, Angelo's is eager to open their landfill, and we appreciate any assistance you can provide to us in getting all issues resolved ahead of time. Thank you for your consideration.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Tracking:**

**Recipient**

Morris, John R.

**Read**

Read: 12/4/2003 9:20 AM

**Ford, Kim**

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Wednesday, December 03, 2003 5:29 PM  
**To:** Pelz, Susan  
**Cc:** Ford, Kim  
**Subject:** Enterprise Recycling and Disposal Facility

Susan,

As you and your staff are reviewing the Enterprise certification package and addendum, please know that Miguel Garcia, Bruce Lafrenz, and I are all available to answer any questions you may have regarding those items. We would like to ensure that the certification is approved so that the site may be opened for operation. So if there are any issues that we can address prior to the meeting, please feel free to call us for clarification. As you know, Angelo's is eager to open their landfill, and we appreciate any assistance you can provide to us in getting all issues resolved ahead of time. Thank you for your consideration.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Ford, Kim**

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**From:** Jim Golden [jegolden@bellsouth.net]  
**Sent:** Wednesday, December 03, 2003 11:42 AM  
**To:** Pelz, Susan; Ford, Kim  
**Subject:** Angelos Aggregate Materials, Enterprise Rd. Class III Landfill, Pasco Co.

Susan and Kim, FYI, I have recently left Hartman, on good terms, to form a new consulting firm called HSA Golden at the address below. I have been asked by Angelos to stay involved with the subject site, and especially assisting them with the certification and opening process, which they are so anxious to complete. So please notify me of any related meetings or certification inspections in the near future. Jennifer Deal, P.E. should still be the P.E. of record and your main contact. We are looking forward to working with you and your staff on this and upcoming projects, Jim

\*\*\*\*\*

James E. Golden, P.G.  
Vice President, Principal Hydrogeologist

HSA Golden  
225 East Robinson Street, Suite 100  
Orlando, FL 32801  
Telephone: 407 649-5475  
Direct Tel: 407 649-6458  
Fax: 407 649-6582  
[jgolden@hsagolden.com](mailto:jgolden@hsagolden.com)

\*\*\*\*\*

12/4/2003

## Ford, Kim

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**From:** Pelz, Susan  
**Sent:** Wednesday, November 26, 2003 10:41 AM  
**To:** Ford, Kim; Morris, John R.  
**Subject:** FW: Proposed dates for Meeting/Inspection for Enterprise Facility

We need to see where we're at with this. let's discuss on Monday.

-----Original Message-----

From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Wednesday, November 26, 2003 10:40 AM  
To: Pelz, Susan  
Cc: diafrate@iafrate.com; sharyan5@aol.com; Miguel Garcia; Bruce Lafrenz  
Subject: Proposed dates for Meeting/Inspection for Enterprise Facility

Susan,

On behalf of Angelo's Aggregate Materials, I would like to propose possible dates for our meeting and/or certification inspection of the Enterprise Recycling and Disposal Facility. The following dates and times would be most convenient for Angelo's, due to travel arrangements.

Monday, 12/8/03, 2 p.m. or after;  
Tuesday, 12/9/03, any time;  
Wednesday, 12/10/03, any time.

Please let me know if we can make arrangements for any of the above times. If during your review, you have any questions regarding the certification documents or the addendum package, please do not hesitate to contact me or Miguel Garcia at the telephone number below. Thank you for your consideration in this matter.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

## Pelz, Susan

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Wednesday, November 26, 2003 10:40 AM  
**To:** Pelz, Susan  
**Cc:** diafrate@iafrate.com; sharyan5@aol.com; Miguel Garcia; Bruce Lafrenz  
**Subject:** Proposed dates for Meeting/Inspection for Enterprise Facility

Susan,

On behalf of Angelo's Aggregate Materials, I would like to propose possible dates for our meeting and/or certification inspection of the Enterprise Recycling and Disposal Facility. The following dates and times would be most convenient for Angelo's, due to travel arrangements.

Monday, 12/8/03, 2 p.m. or after;  
Tuesday, 12/9/03, any time;  
Wednesday, 12/10/03, any time.

Please let me know if we can make arrangements for any of the above times. If during your review, you have any questions regarding the certification documents or the addendum package, please do not hesitate to contact me or Miguel Garcia at the telephone number below. Thank you for your consideration in this matter.

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Ford, Kim**

---

**From:** Pelz, Susan  
**Sent:** Monday, November 24, 2003 4:26 PM  
**To:** Morris, John R.; Ford, Kim  
**Subject:** FW: Enterprise Landfill - change of completion date for security cameras

I told Jennifer that I would get with you all & discuss early next week to find out where we're at. Maybe then we can give them a ballpark on when we want to go to the site (I will not be going to the site).

Let's plan on discussing no later than Monday afternoon next week.

thanks

-----Original Message-----

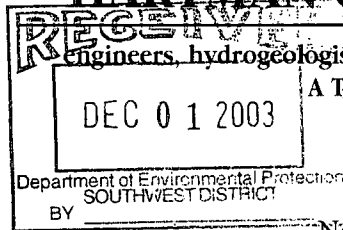
From: Jennifer L. Deal [mailto:jld@consulthai.com]  
Sent: Monday, November 24, 2003 4:17 PM  
To: Pelz, Susan  
Cc: sharyan5@aol.com; Miguel Garcia  
Subject: Enterprise Landfill - change of completion date for security cameras

Susan,

This e-mail is a follow-up to our conversation today regarding the installation of security cameras at the Enterprise Recycling and Disposal Facility in Pasco County. I was informed that the camera installation is to be completed on Monday, 12/1/03 through Tuesday, 12/2/03. Angelo's is prepared to meet with you after Wednesday, 12/3/03 to discuss the certification and visit the site for the certification inspection. Angelo's would appreciate as much notice as possible for the inspection in order for Mr. Dominic Iafrate to make travel arrangements. Thank you for this consideration. Please do not hesitate to contact me or Miguel Garcia if you have any questions or concerns regarding the certification addendum.

Jennifer L. Deal, P.E.  
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201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

# HARTMAN & ASSOCIATES, INC.



engineers, hydrogeologists, surveyors & management consultants

A Tetra Tech Company

Department of Environmental Protection  
SOUTHWEST DISTRICT  
BY

November 25, 2003

HAI #99.0331.007

Phase 5

File 12.0

## OFFICERS:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Michael B. Bomar, P.E.  
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Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**

Dear Mr. Ford:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the requested weekly water level measurements for the above site. Attached is a table summarizing the water levels measured since June 30, 2003. In some cases, measurements were unable to be obtained within one week. The table also includes water elevations for the temporary pond and measurements for the rain gauge.

We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

Jennifer L. Deal, P.E.  
Project Engineer

JLD/cr/99.0331.007/corresp/Ford17.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

201 EAST PINE STREET • SUITE 1000 • ORLANDO, FL 32801-2723  
TELEPHONE (407) 839-3955 • FAX (407) 839-3790 • www.consulthai.com  
A TETRA TECH COMPANY (Offices Nationwide)

ORLANDO FORT MYERS FT. LAUDERDALE JACKSONVILLE DESTIN ATLANTA

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4***	85.83	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge (inches)									
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
*** Piezometer reinstalled, old TOC elevation 84.55, new TOC elevation 85.83									
<b>Bold</b> indicates standing water on land surface									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4***	85.83	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge (inches)			3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
*** Piezometer reinstalled, old									
<b>Bold</b> indicates standing water									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4***	85.83	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge	(inches)		1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to)							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
*** Piezometer reinstalled, old							
Bold indicates standing water							

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003	October 21, 2003	October 21, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96	38.02	78.69
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65	98.19	76.29
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90	7.44	79.30
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56	9.50	76.20
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67	12.35	76.30
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82	16.08	76.38
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59	17.02	76.22
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36	23.37	76.73
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38	34.79	76.83
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22	27.55	76.90
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18	22.04	76.69
P-4***	85.83	5.04	79.51	5.49	79.06	5.62	78.93	6.20	78.35
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61	17.92	76.24
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09	59.20	74.74
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55	56.42	76.18
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28	42.80	107.96
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14		76.89
Rain Gauge (inches)			1.02		0.00		1.20		0.00
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
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<b>Bold</b> indicates standing water									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 30, 2003	October 30, 2003	November 5, 2003	November 5, 2003	November 19, 2003	November 19, 2003
MW-1	116.71	38.39	78.32	38.44	78.27	38.97	77.74
MW-1B	174.48	98.74	75.74	98.86	75.62	NM	-
MW-5A*	86.74	7.85	78.89	8.02	78.72	8.65	78.09
MW-5B	85.70	10.06	75.64	10.19	75.51	10.99	74.71
MW-6	88.65	12.89	75.76	13.03	75.62	13.86	74.79
MW-7A	92.46	16.68	75.78	16.81	75.65	17.67	74.79
MW-7B	93.24	17.57	75.67	17.73	75.51	18.51	74.73
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MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	35.57	76.05	35.79	75.83	36.65	74.97
MW-11	104.45	28.09	76.36	28.25	76.20	29.00	75.45
P-2**	98.73	22.67	76.06	22.82	75.91	23.66	75.07
P-4***	85.83	7.95	77.88	8.12	77.71	8.88	76.95
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	18.48	75.68	18.63	75.53	19.40	74.76
P-8	133.94	59.77	74.17	59.89	74.05	60.66	73.28
P-10	132.60	56.96	75.64	57.08	75.52	57.89	74.71
P-11	150.76	43.32	107.44	43.42	107.34	44.16	106.60
P-13	112.91	AB	-	AB	-	AB	-
TP			76.67		76.43		75.77
Rain Gauge (inches)			0.70		0.00		0.00
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
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**Pelz, Susan**

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**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Monday, November 24, 2003 4:17 PM  
**To:** Pelz, Susan  
**Cc:** sharyan5@aol.com; Miguel Garcia  
**Subject:** Enterprise Landfill - change of completion date for security cameras

Susan,

This e-mail is a follow-up to our conversation today regarding the installation of security cameras at the Enterprise Recycling and Disposal Facility in Pasco County. I was informed that the camera installation is to be completed on Monday, 12/1/03 through Tuesday, 12/2/03. Angelo's is prepared to meet with you after Wednesday, 12/3/03 to discuss the certification and visit the site for the certification inspection. Angelo's would appreciate as much notice as possible for the inspection in order for Mr. Dominic Iafrate to make travel arrangements. Thank you for this consideration. Please do not hesitate to contact me or Miguel Garcia if you have any questions or concerns regarding the certification addendum.

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## SENIOR ASSOCIATES:

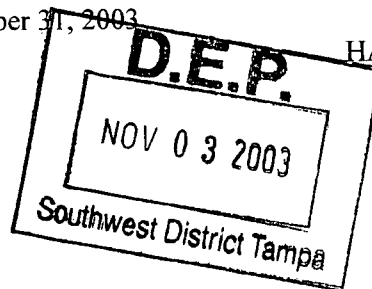
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W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero

October 31, 2003



HAI #99.0331.007

Phase 5  
File 12.0

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**


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We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

Hartman & Associates, Inc.

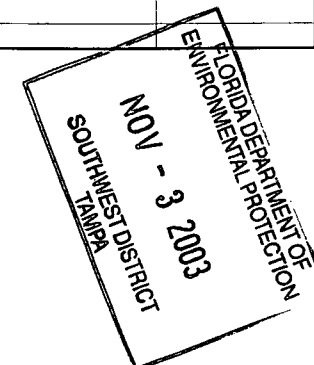
  
Jennifer L. Deal, P.E.  
Project Engineer

JLD/cr/99.0331.007/corresp/Ford16.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4***	85.83	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge (inches)									
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
** Piezometer reinstalled, old TOC elevation 84.55, new TOC elevation 85.83									
<b>Bold</b> indicates standing water on land surface									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4***	85.83	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge	(inches)		3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
** Piezometer reinstalled, old									
<b>Bold</b> indicates standing water									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4***	85.83	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge	(inches)		1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to)							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
** Piezometer reinstalled, old							
<b>Bold indicates standing water</b>							

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003	October 21, 2003	October 21, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96	38.02	78.69
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65	98.19	76.29
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90	7.44	79.30
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56	9.50	76.20
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67	12.35	76.30
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82	16.08	76.38
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59	17.02	76.22
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36	23.37	76.73
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38	34.79	76.83
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22	27.55	76.90
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18	22.04	76.69
P-4***	85.83	5.04	79.51	5.49	79.06	5.62	78.93	6.20	78.35
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61	17.92	76.24
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09	59.20	74.74
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55	56.42	76.18
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28	42.80	107.96
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14		76.89
Rain Gauge (inches)			1.02		0.00		1.20		0.00
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
** Piezometer reinstalled, old									
<b>Bold indicates standing water</b>									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water,	Water Level, ft
		ft BTOC	NGVD
		October 30, 2003	October 30, 2003
MW-1	116.71	38.39	78.32
MW-1B	174.48	98.74	75.74
MW-5A*	86.74	7.85	78.89
MW-5B	85.70	10.06	75.64
MW-6	88.65	12.89	75.76
MW-7A	92.46	16.68	75.78
MW-7B	93.24	17.57	75.67
MW-8*	100.10	24.04	76.06
MW-9	108.00	Dry	-
MW-10*	111.62	35.57	76.05
MW-11	104.45	28.09	76.36
P-2**	98.73	22.67	76.06
P-4***	85.83	7.95	77.88
P-5	94.56	AB	-
P-6	94.16	18.48	75.68
P-8	133.94	59.77	74.17
P-10	132.60	56.96	75.64
P-11	150.76	43.32	107.44
P-13	112.91	AB	-
TP			76.67
Rain Gauge	(inches)		0.70
TP - Temporary Pond			
TOC - top of casing			
BTOC - below top of casing			
NM - not measured (unable to)			
AB - abandoned			
* Considered perched water table			
** Piezometer reinstalled, old			
** Piezometer reinstalled, old			
<b>Bold indicates standing water</b>			

# HARTMAN & ASSOCIATES, INC.

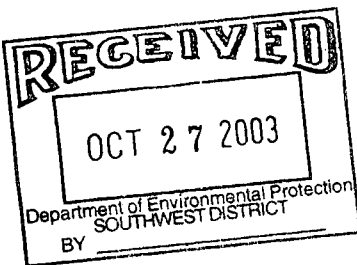
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engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company



October 23, 2003

HAI #99.0331.007

Phase 5

File 12.0

## ASSOCIATES:

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Ada R. Terrero

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**

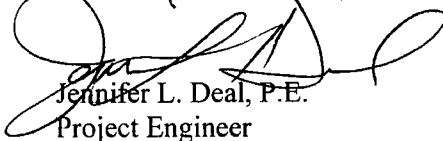
Dear Mr. Ford:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the requested weekly water level measurements for the above site. Attached is a table summarizing the water levels measured since June 30, 2003. In some cases, measurements were unable to be obtained within one week. The table also includes water elevations for the temporary pond and measurements for the rain gauge.

We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

  
Jennifer L. Deal, P.E.  
Project Engineer

JLD/cr/99.0331.007/corresp/Ford15.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4	84.55	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge (inches)									
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
Bold indicates standing water on land surface									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4	84.55	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge (inches)			3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
<b>Bold indicates standing water</b>									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4	84.55	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge (inches)			1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
<b>Bold</b> indicates standing water							

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003	October 21, 2003	October 21, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96	38.02	78.69
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65	98.19	76.29
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90	7.44	79.30
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56	9.50	76.20
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67	12.35	76.30
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82	16.08	76.38
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59	17.02	76.22
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36	23.37	76.73
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38	34.79	76.83
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22	27.55	76.90
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18	22.04	76.69
P-4	84.55	5.04	79.51	5.49	79.06	5.62	78.93	6.20	78.35
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61	17.92	76.24
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09	59.20	74.74
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55	56.42	76.18
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28	42.80	107.96
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14		76.89
Rain Gauge (inches)			1.02		0.00		1.20		0.00
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
<b>Bold</b> indicates standing water									



# HARTMAN & ASSOCIATES, INC.

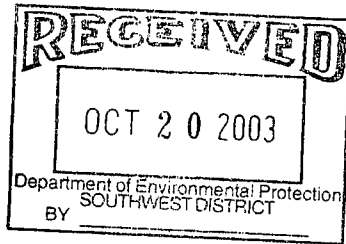
## OFFICERS:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Michael B. Bomar, P.E.  
Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

Marco H. Rocca, C.M.C.  
Roderick K. Cashe, P.E.  
Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
Troy E. Layton, P.E., DEE

engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company



October 16, 2003

HAI #99.0331.007

Phase 5

File 12.0

## ASSOCIATES:

James E. Golden, P.G.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
L. Todd Shaw, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Daniel M. Nelson, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Weekly Water Levels  
Enterprise Recycling & Disposal Facility  
Angelo's Aggregate Materials, Ltd.  
FDEP Permit Nos. 177982-001-SC, 177982-002-SO  
Pasco County, Florida**


Dear Mr. Ford:

On behalf of Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting the requested weekly water level measurements for the above site. Attached is a table summarizing the water levels measured since June 30, 2003. In some cases, measurements were unable to be obtained within one week. The table also includes water elevations for the temporary pond and measurements for the rain gauge.

We trust this information will satisfy the Department. Please call me if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

  
Jennifer L. Deal, P.E.  
Project Engineer

JLD/cr/99.0331.007/corresp/Ford14.jld

cc: Dominic Iafrate, Angelo's  
Craig Bryan, Angelo's  
John Morris, P.G., FDEP  
Susan Pelz, P.E., FDEP

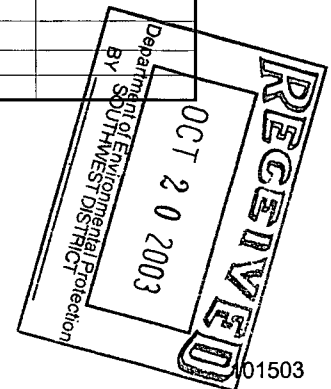
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**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		June 30, 2003	June 30, 2003	July 8, 2003	July 8, 2003	July 17, 2003	July 17, 2003	August 4, 2003	August 4, 2003
MW-1	116.71	41.93	74.78	41.12	75.59	40.25	76.46	39.45	77.26
MW-1B	174.48	100.05	74.43	99.30	75.18	99.02	75.46	98.53	75.95
MW-5A*	86.74	5.69	81.05	7.58	79.16	7.53	79.21	7.63	79.11
MW-5B	85.70	11.37	74.33	10.65	75.05	10.36	75.34	9.86	75.84
MW-6	88.65	13.96	74.69	13.23	75.42	17.16	71.49	12.62	76.03
MW-7A	92.46	17.04	75.42	16.41	76.05	16.64	75.82	16.16	76.30
MW-7B	93.24	18.87	74.37	18.16	75.08	17.87	75.37	17.35	75.89
MW-8*	100.10	18.97	81.13	19.19	80.91	21.93	78.17	22.40	77.70
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	30.40	81.22	25.56	86.06	33.02	78.60	33.76	77.86
MW-11	104.45	-	-	-	-	-	-	-	-
P-2**	98.73	22.31	74.52	21.51	75.32	21.27	75.56	22.43	76.30
P-4	84.55	6.69	77.86	8.48	76.07	8.17	76.38	7.82	76.73
P-5	94.56	NM	-	19.45	75.11	19.16	75.40	AB	-
P-6	94.16	19.63	74.53	18.98	75.18	18.73	75.43	18.23	75.93
P-8	133.94	61.10	72.84	60.34	73.60	60.05	73.89	59.55	74.39
P-10	132.60	58.28	74.32	57.55	75.05	57.25	75.35	56.77	75.83
P-11	150.76	46.39	104.37	45.40	105.36	44.35	106.41	43.33	107.43
P-13	112.91	37.70	75.21	36.94	75.97	36.14	76.77	AB	-
TP			76.93		76.51		76.12		76.00
Rain Gauge (inches)									
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to be located in field on that date)									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old TOC elevation 96.83, new TOC elevation 98.73									
Bold indicates standing water on land surface									



**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		August 11, 2003	August 11, 2003	August 19, 2003	August 19, 2003	August 25, 2003	August 25, 2003	September 2, 2003	September 2, 2003
MW-1	116.71	39.35	77.36	39.17	77.54	38.99	77.72	38.66	78.05
MW-1B	174.48	98.30	76.18	98.08	76.40	97.72	76.76	97.41	77.07
MW-5A*	86.74	6.70	80.04	6.07	80.67	2.61	<b>84.13</b>	4.22	82.52
MW-5B	85.70	9.57	76.13	9.41	76.29	9.06	<b>76.64</b>	8.74	76.96
MW-6	88.65	12.17	76.48	12.10	76.55	11.56	77.09	11.44	77.21
MW-7A	92.46	15.33	77.13	15.49	76.97	14.63	77.83	14.69	77.77
MW-7B	93.24	17.09	76.15	16.92	76.32	16.58	76.66	16.25	76.99
MW-8*	100.10	20.59	79.51	21.45	78.65	19.81	80.29	21.10	79.00
MW-9	108.00	Dry	-	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.89	77.73	32.90	78.72	32.69	78.93	32.08	79.54
MW-11	104.45	-	-	27.20	77.25	26.98	77.47	26.65	77.80
P-2**	98.73	22.23	76.50	20.31	78.42	20.10	78.63	20.12	78.61
P-4	84.55	7.29	77.26	6.43	78.12	3.48	<b>81.07</b>	3.46	81.09
P-5	94.56	AB	-	AB	-	AB	-	AB	-
P-6	94.16	17.95	76.21	17.79	76.37	17.42	76.74	17.11	77.05
P-8	133.94	59.29	74.65	59.11	74.83	58.05	75.89	58.43	75.51
P-10	132.60	56.50	76.10	56.31	76.29	55.97	76.63	55.64	76.96
P-11	150.76	43.30	107.46	43.11	107.65	42.93	107.83	42.65	108.11
P-13	112.91	AB	-	AB	-	AB	-	AB	-
TP			76.44		75.78		76.18		76.87
Rain Gauge (inches)			3.48		0.15		3.70		1.10
TP - Temporary Pond									
TOC - top of casing									
BTOC - below top of casing									
NM - not measured (unable to									
AB - abandoned									
* Considered perched water table									
** Piezometer reinstalled, old									
<b>Bold indicates standing water</b>									

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

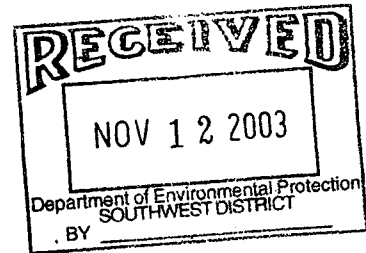
Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		September 9, 2003	September 9, 2003	September 15, 2003	September 15, 2003	September 23, 2003	September 23, 2003
MW-1	116.71	38.38	78.33	38.17	78.54	37.89	78.82
MW-1B	174.48	97.27	77.21	97.13	77.35	97.09	77.39
MW-5A*	86.74	5.43	81.31	2.89	<b>83.85</b>	5.32	81.42
MW-5B	85.70	8.62	77.08	8.45	<b>77.25</b>	8.45	77.25
MW-6	88.65	11.35	77.30	11.29	77.36	11.14	77.51
MW-7A	92.46	14.58	77.88	14.34	78.12	14.51	77.95
MW-7B	93.24	16.12	77.12	15.97	77.27	15.95	77.29
MW-8*	100.10	21.46	78.64	20.66	79.44	20.75	79.35
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	32.66	78.96	32.75	78.87	32.46	79.16
MW-11	104.45	26.48	77.97	26.33	78.12	26.16	78.29
P-2**	98.73	20.36	78.37	20.18	78.55	20.36	78.37
P-4	84.55	4.48	80.07	2.66	<b>81.89</b>	4.22	80.33
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.00	77.16	16.86	77.30	16.82	77.34
P-8	133.94	58.31	75.63	58.15	75.79	58.12	75.82
P-10	132.60	55.51	77.09	55.36	77.24	55.34	77.26
P-11	150.76	42.47	108.29	42.31	108.45	42.17	108.59
P-13	112.91	AB	-	AB	-	AB	-
TP			77.13		77.46		77.35
Rain Gauge (inches)			1.70		3.60		0.15
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
<b>Bold indicates standing water</b>							

**GROUNDWATER AND TEMPORARY POND ELEVATIONS  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA**

Location	TOC Elevation, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD	Depth to Water, ft BTOC	Water Level, ft NGVD
		October 2, 2003	October 2, 2003	October 7, 2003	October 7, 2003	October 14, 2003	October 14, 2003
MW-1	116.71	37.72	78.99	37.66	79.05	37.75	78.96
MW-1B	174.48	97.32	77.16	97.53	76.95	97.83	76.65
MW-5A*	86.74	6.41	80.33	6.77	79.97	6.84	79.90
MW-5B	85.70	8.65	77.05	8.89	76.81	9.14	76.56
MW-6	88.65	11.39	77.26	11.62	77.03	11.98	76.67
MW-7A	92.46	14.97	77.49	15.30	77.16	15.64	76.82
MW-7B	93.24	16.16	77.08	16.40	76.84	16.65	76.59
MW-8*	100.10	21.58	78.52	21.93	78.17	22.74	77.36
MW-9	108.00	Dry	-	Dry	-	Dry	-
MW-10*	111.62	33.20	78.42	33.69	77.93	34.24	77.38
MW-11	104.45	26.60	77.85	26.85	77.60	27.23	77.22
P-2**	98.73	20.85	77.88	21.13	77.60	21.55	77.18
P-4	84.55	5.04	79.51	5.49	79.06	5.62	78.93
P-5	94.56	AB	-	AB	-	AB	-
P-6	94.16	17.04	77.12	17.28	76.88	17.55	76.61
P-8	133.94	58.35	75.59	58.58	75.36	58.85	75.09
P-10	132.60	55.55	77.05	55.77	76.83	56.05	76.55
P-11	150.76	42.21	108.55	42.31	108.45	42.48	108.28
P-13	112.91	AB	-	AB	-	AB	-
TP			77.32		77.20		77.14
Rain Gauge	(inches)		1.02		0.00		1.20
TP - Temporary Pond							
TOC - top of casing							
BTOC - below top of casing							
NM - not measured (unable to)							
AB - abandoned							
* Considered perched water table							
** Piezometer reinstalled, old							
<b>Bold</b> indicates standing water							

SM KF  
*Angelo's* AGGREGATE MATERIALS LTD.

dba Angelo's RECYCLED MATERIALS  
dba FRONTIER RECYCLING  
P.O. Box 1493  
Largo, Florida 33779  
(727) 581-1544 FAX: (727) 586-5676



August 22, 2003

To whom it may concern,

This letter is to authorize Craig A. Bryan II, as a representative of Angelo's Aggregate Materials, LTD., to apply for, provide information to and for all permitting issues pertaining to Angelo's Aggregate Materials, LTD, in Pinellas, Hillsborough, and Pasco Counties.

Sincerely,

A handwritten signature in cursive script, appearing to read "Angelo Iafrate, Sr.".

Angelo Iafrate, Sr.  
President

A handwritten signature in cursive script, appearing to read "Dominic Iafrate".

Dominic Iafrate  
Vice President



Tammy Simmons  
MY COMMISSION # DD233517 EXPIRES  
July 20, 2007  
BONDED THRU TROY FAIN INSURANCE, INC.

A handwritten signature in cursive script, appearing to read "Tammy Simmons".

**Ford, Kim**

---

**From:** Ford, Kim

**Sent:** Friday, October 24, 2003 9:49 AM

**To:** Pelz, Susan

**Cc:** Morris, John R.

**Subject:** conversation with Jennifer Deal and Jim Golden (Hartman and Associates) about phone call to Craig Bryan about Enterprise Certification

on October 23 at 4:45pm , Susan Plelz and Kim Ford spoke with J.D. and J.G. about our phone call to C.B. as follows:

Susan explained that we (Susan, John Morris, Kim) called C.B because of the "14 day rule" and because C.B. is in-charge of the site and responsible for the facility operation, and we needed to give him reasons why we were saying that he could not dispose of waste in the new area. Kim explained that the phone call was not avoid or criticize Hartman and Associates, or anyone, and we had not completed our review, and we intend to respond in writing to Hartman after the review is completed. Kim explained that the conversation evolved as C.B. asked for more details. so, J.M. made comment and Susan and Kim added to it. Susan explained that the main reason we called was to say no before the "14 days". J.G. asked if the 14 day clock starts again when we receive the complete information. Susan said no, only initially but we will put it on the 30 day clock anyway when we receive it.

Kim

10/24/2003

**Ford, Kim**

---

**From:** Ford, Kim  
**Sent:** Wednesday, October 22, 2003 5:37 PM  
**To:** Pelz, Susan; Morris, John R.; Smith, David G  
**Subject:** conversation with Craig Bryan about Enterprise CIII Certification Document

On October 22, 2003 at 4:30pm, C.B. returned DEP's call, with Susan Pelz, John Morris, and Kim Ford present, we discussed the following items:

- 1) The certification is not complete due to the items already identified in the certification document as not completed.
- 2) the ERP permit mod. must be issued and the area construction completed, and its certification provided to David Smith, and its certification approved by David Smith by letter transferring it into operation, prior to acceptance of waste.
- 3) the boring logs are reported as depth without elevations provided for the ground surface at each boring, so DEP suggested a table listing all borings with the ground surface elevation at the time of the boring provided for each boring and the table of elevations signed and sealed by a PLS. there is a big disconnect between the top of clay contour map and the borings without the ground surface elevations at each.
- 4) DEP commented that generally Cell#1 may have problems with limestone, Cell#15 is much better, and Cell#16 may have problems with sand, and more borings may be needed to confirm clay in areas with drastically changing clay contours.
- 5) DEP mentioned 5 borings in Cell#1 without confirmed clay (J.M. said which ones).
- 6) DEP (S.P. & K.F.) mentioned recalling earlier agreements that each boring would have a seive analysis to compare to other values related to permeability and that soil descriptions only would not be used to demonstrate the values of permeability, and the seives samples must be taken from the required 3 feet of clay layer.
- 6) DEP explained that the certification must include the location of posts for delineating the limits of waste disposal where all excavation is completed and there will be no more excavation of the certified area.
- 7) C.B. asked since DEP has not completed its review of the entire certification document, are there items that we have discussed that may be resolved later in the document. DEP said it is likely that all of what we have discussed will be expanded on later when DEP continues its review.
- 8) DEP explained that the main reason for the discussion was to advise that the new certified area is not approved for use, and that we expect a complete certification package to start DEP's review again and then we will provide written comments on all of it within 30 days.

kbf

10/22/2003



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Jim Gulcher

Phone

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Company

Hartman + Associates

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Dept./Floor/Suite/Room

City

Orlando

State

FL

ZIP

32801

**2 Your Internal Billing Reference**

**3 To**

Recipient's  
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MK. Kim Ford

Phone

813 744-6100

Company

Florida Department of  
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☐ FedEx Standard Overnight  
Next business afternoon

☐ FedEx First Overnight  
Earliest next business morning  
delivery to select locations

☐ FedEx 2Day  
Second business day

☐ FedEx Express Saver  
Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

**4b Express Freight Service**

Packages over 150 lbs.

Delivery commitment may be later in some areas.

☐ FedEx 1Day Freight\*  
Next business day

☐ FedEx 2Day Freight  
Second business day

☐ FedEx 3Day Freight  
Third business day

\* Call for Confirmation

**5 Packaging**

\* Declared value limit \$500

☐ FedEx Envelope\*

☒ FedEx Pak\*  
Includes FedEx Small Pak, FedEx  
Large Pak, and FedEx Sturdy Pak

☐ Other

**6 Special Handling**

Include FedEx address in Section 3.

☐ SATURDAY Delivery  
Available only for FedEx Priority  
Overnight and FedEx 2Day  
to select ZIP codes

☐ HOLD Weekday  
at FedEx Location  
Not available for  
FedEx First Overnight

☐ HOLD Saturday  
at FedEx Location  
Available only for  
FedEx Priority Overnight  
and FedEx 2Day to  
select locations

Does this shipment contain dangerous goods?

One box must be checked.

☐ No

☐ Yes

As per attached  
Shipper's Declaration

☐ Yes

Shipper's Declaration  
not required

☐ Dry Ice

Dry Ice, 5 UN 1845 x \_\_\_\_\_ kg

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

☐ Cargo Aircraft Only

**7 Payment Bill to:**

Enter FedEx Acct. No. or Credit Card No. below.

☐ Obtain Recip.  
Acct. No.

☒ Sender  
Acct. No. in Section  
1 will be billed.

☐ Recipient

☐ Third Party

☐ Credit Card

☐ Cash/Check



Total Packages

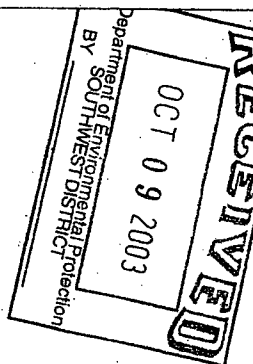
Total Weight

Total Declared Value

Total Charges

**8 Release Sig**

By signing and agreeing to  
these terms and conditions,  
I agree to release FedEx from  
all liability for loss or damage to  
the contents of this shipment.  
Rev. Date 10/01



Susan  
Do we want to  
consider this "9  
on the clock"  
62-701, 32d(9)(a) only  
14 days to inspect  
plan to accept or write  
10/13/03

John  
try I  
for

SSOCIATES:  
Golden, P.G.  
P.E., M.B.A.  
Toomey, P.E.  
Woodall, P.E.  
D. Shaw, P.E.  
O. P.E., D.E.E.  
Jenkins, P.E.  
Nelson, P.E.  
Davis, P.G.  
Shultz, P.E.  
ALCH QEP  
the Cayford  
P.A., M.B.A.  
Arreaza, P.G.  
Kewani, P.E.  
R. Terroto

& Associates, Inc. (HAI) is  
a conditions of the site that  
62-701, F.A.C., HAI's Plan  
reduced construction permit-  
ing layer, at least 36-inches  
certification requirements of  
1982-001-SC was issued for  
2001. On January 25, 2002,  
e Materials, Ltd.  
s were encountered in Cell 1  
was agreed that excavation  
could be evaluated by HAI's  
n, making it difficult for the  
of Cells 1, 15, and 16 was

# HARTMAN & ASSOCIATES, INC.

engineers, hydrogeologists, surveyors & management consultants  
A Tetra Tech Company

## OFFICERS:

Gerald C. Hartman, P.E., DEE  
Harold E. Schmidt, Jr., P.E., DEE  
James E. Christopher, P.E.  
Charles W. Drake, P.G.  
Mark A. Rynning, P.E., M.B.A.  
William D. Musser, P.E., P.H.  
Michael B. Bomar, P.E.  
Lawrence E. Jenkins, P.S.M.

## SENIOR ASSOCIATES:

Marco H. Rocca, C.M.C.  
Roderick K. Cashe, P.E.  
Douglas P. Dufresne, P.G.  
Jon D. Fox, P.E.  
Troy E. Layton, P.E., DEE

## ASSOCIATES:

James E. Golden, P.G.  
Andrew T. Woodcock, P.E., M.B.A.  
John P. Toomey, P.E.  
Jennifer L. Woodall, P.E.  
L. Todd Shaw, P.E.  
Rafael A. Terrero, P.E., DEE  
Jill M. Hudkins, P.E.  
Daniel M. Nelson, P.E.  
Valerie C. Davis, P.G.  
Charles M. Shultz, P.E.  
Sean M. Parks, AICP, QEP  
C. Michelle Gaylord  
Tara L. Hollis, C.P.A., M.B.A.  
W. Bruce Lafrenz, P.G.  
Alexis K. Stewart, P.E.  
Ada R. Terrero

October 8, 2003

HAI #99.0331.007

Phase 5

File 12.0

## Via FedEx Overnight

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

**Subject: Cell 1 Certification**  
**Enterprise Recycling & Disposal Facility**  
**Angelo's Aggregate Materials, Ltd.**  
**FDEP Permit Nos. 177982-001-SC, 177982-002-SO**  
**Pasco County, Florida**



Dear Mr. Ford:

As requested by Angelo's Aggregate Materials, Ltd. (Angelo's), Hartman & Associates, Inc. (HAI) is submitting this Cell Certification package to the Department to describe the conditions of the site that HAI has certified as constructed in accordance with the requirements of Rule 62-701, F.A.C., HAI's Plan of Action for Cell Certification dated August 21, 2003, and the above referenced construction permit. The attached documentation indicates that Cell 1 has a continuous confining layer, at least 36-inches thick, with a permeability value no greater than  $1 \times 10^{-6}$  cm/s, meeting the certification requirements of the facility construction permit, and is prepared to accept waste.

## INTRODUCTION

Florida Department of Environmental Protection (Department) permit #177982-001-SC was issued for construction of the Enterprise Recycling & Disposal Facility on October 5, 2001. On January 25, 2002, the permit was transferred from Sid Larkin & Son, Inc. to Angelo's Aggregate Materials, Ltd.

Excavation of Cells 1, 15, and 16 began in March 2003. Limestone fragments were encountered in Cell 1 during excavation on June 2, 2003. The Department was notified, and it was agreed that excavation would continue until base grades were achieved and the floor of the cell could be evaluated by HAI's Geologists. Excessive rainfall during June and July hindered the construction, making it difficult for the heavy equipment to maneuver throughout the cells. Initial excavation of Cells 1, 15, and 16 was completed on July 14, 2003.

201 EAST PINE STREET • SUITE 1000 • ORLANDO, FL 32801-2723  
TELEPHONE (407) 839-3955 • FAX (407) 839-3790 • [www.consulthai.com](http://www.consulthai.com)

A TETRA TECH COMPANY (Offices Nationwide)

ORLANDO FORT MYERS FT. LAUDERDALE JACKSONVILLE DESTIN ATLANTA

**Ford, Kim**

---

**From:** Ford, Kim  
**Sent:** Wednesday, October 22, 2003 5:37 PM  
**To:** Pelz, Susan; Morris, John R.; Smith, David G  
**Subject:** conversation with Craig Bryan about Enterprise CIII Certification Document

On October 22, 2003 at 4:30pm, C.B. returned DEP's call, with Susan Pelz, John Morris, and Kim Ford present, we discussed the following items:

- 1) The certification is not complete due to the items already identified in the certification document as not completed.
- 2) the ERP permit mod. must be issued and the area construction completed, and its certification provided to David Smith, and its certification approved by David Smith by letter transferring it into operation, prior to acceptance of waste.
- 3) the boring logs are reported as depth without elevations provided for the ground surface at each boring, so DEP suggested a table listing all borings with the ground surface elevation at the time of the boring provided for each boring and the table of elevations signed and sealed by a PLS. there is a big disconnect between the top of clay contour map and the borings without the ground surface elevations at each.
- 4) DEP commented that generally Cell#1 may have problems with limestone, Cell#15 is much better, and Cell#16 may have problems with sand, and more borings may be needed to confirm clay in areas with drastically changing clay contours.
- 5) DEP mentioned 5 borings in Cell#1 without confirmed clay (J.M. said which ones).
- 6) DEP (S.P. & K.F.) mentioned recalling earlier agreements that each boring would have a seive analysis to compare to other values related to permeability and that soil descriptions only would not be used to demonstrate the values of permeability, and the seives samples must be taken from the required 3 feet of clay layer.
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- 7) C.B. asked since DEP has not completed its review of the entire certification document, are there items that we have discussed that may be resolved later in the document. DEP said it is likely that all of what we have discussed will be expanded on later when DEP continues its review.
- 8) DEP explained that the main reason for the discussion was to advise that the new certified area is not approved for use, and that we expect a complete certification package to start DEP's review again and then we will provide written comments on all of it within 30 days.

kbk

10/22/2003

**Ford, Kim**

---

**From:** Ford, Kim  
**Sent:** Friday, October 24, 2003 9:49 AM  
**To:** Pelz, Susan  
**Cc:** Morris, John R.  
**Subject:** conversation with Jennifer Deal and Jim Golden (Hartman and Associates) about phone call to Craig Bryan about Enterprise Certification

on October 23 at 4:45pm , Susan Plelz and Kim Ford spoke with J.D. and J.G. about our phone call to C.B. as follows:

Susan explained that we (Susan, John Morris, Kim) called C.B because of the "14 day rule" and because C.B. is in-charge of the site and responsible for the facility operation, and we needed to give him reasons why we were saying that he could not dispose of waste in the new area. Kim explained that the phone call was not avoid or criticize Hartman and Associates, or anyone, and we had not completed our review, and we intend to respond in writing to Hartman after the review is completed. Kim explained that the conversation evolved as C.B. asked for more details. so, J.M. made comment and Susan and Kim added to it. Susan explained that the main reason we called was to say no before the "14 days". J.G. asked if the 14 day clock starts again when we receive the complete information. Susan said no, only initially but we will put it on the 30 day clock anyway when we receive it.

Kim

10/24/2003

Ford, Kim

---

**From:** Jennifer L. Deal [jld@consulthai.com]  
**Sent:** Thursday, October 23, 2003 12:10 PM  
**To:** Ford, Kim  
**Cc:** Bruce Lafrenz; Miguel Garcia; Jim Golden; diafrate@iafrate.com  
**Subject:** Phone call to Craig Bryan, Angelo's Aggregate Materials

Kim,

I was informed this morning by Jim Golden and Miguel Garcia that you again called our client, Craig Bryan of Angelo's Aggregate Materials, to provide an informal review of a submittal from Hartman, after you had told Jim Golden that you would call Hartman to discuss the submittal. You may recall our conversation of August 13, 2003 where you and I discussed how inappropriate it was of you to contact our client to discuss technical components of a submittal without including the Professional Engineer or the Professional Geologist in charge of the project. You agreed that we should have been involved in those conversations. I also explained to you that, in my opinion, your behavior was unprofessional and disrespectful, and that as a registered professional yourself, you should understand basic professional courtesy. Speaking as a former employee of the Department, we were encouraged to respond to and work with the regulated community and their representatives.

In sending this e-mail, I am requesting that Jim Golden or I be contacted directly to discuss any and all concerns with submittals signed by us or on our behalf by other HAI staff.

The professionals of HAI are committed to working with the Department and to maintain a good working relationship with you. I would like to resolve this matter with you at your level, as we wish to continue to work together with the Department in a respectful and efficient manner to best serve our client and the environment. However, should this issue arise again, I will not hesitate to bring this matter to the appropriate Department officials to ensure that we can continue to properly serve our clients and continue to communicate professionally with the Department. Should you want to discuss this issue, please feel free to contact me at the telephone number below.

Respectfully,

Jennifer L. Deal, P.E.  
Hartman & Associates, Inc.  
201 E. Pine Street, Ste. 1000  
Orlando, FL 32801  
407-839-3955

**Ford, Kim**

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kbf

AS-10  
AS-42  
SSA-13  
SSA-17  
SSA-20

(Cell  
1)

10/22/2003

**Ford, Kim**

---

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kbk

10/22/2003



David B. Struhs  
Secretary—

SUBJECT: ENTERPRISE WBS III LANDFILL

*Printed on recycled paper.*



**ANGELO'S AGGREGATE MATERIALS, LTD.  
ENTERPRISE RECYCLING & DISPOSAL FACILITY  
PROPOSED MEETING AGENDA  
August 19, 2003**

1. Intent of draft Plan of Action, dated August 11, 2003
2. Permitted design of the landfill – in permit application

**CQA Plan**

3. Confining Layer Contour Map
4. DEP's opinion regarding existing hydrogeologic conditions
5. "all the variability"
6. More cross-sections
7. In-situ tests of clay with limestone fragments, per EPA Method

JG

goal is to finalize Plan of Action  
August 11, 2003 draft was to bring us back together,  
start better dialogue (we were diverging) ...  
COA Plan don't want to totally focus on the base  
want to look below as well ... they are now developing  
new clay contour maps ... want to understand what  
final testing needs to be ... know it will take  
some time .... want some feedback

SP

go down agenda ... <sup>need to agree on</sup> bigger picture before we can agree  
on details

JG

refocus on where confining layer is ...  
cell <sup>North to South</sup> 38 ft - 68 ft - 70 ft - 68 ft BY (75 ft)

BY confining layer is shallower than expected  
more recent has been shallower because of clay

found in Cell 1 ... Always expected deeper borings  
for certification ... realize they need deeper borings ...  
expected some sand at bottom of some cells

ICF

page 3-17

test & observation of cell floor doesn't reference deeper  
clay ~~layer~~ layer

JG

general statement: if we didn't find clay @  
surface .... only shallow peron was in stormwater pond for  
stormwater perc .... design based on continuous clay  
at depth (not necessarily @ base) ...  
unexpected conditions  $\Rightarrow$  4 borings in permitting w/ L&P

56 LR WAS NOT unexpected in low portions of site. <sup>LR</sup> B-6 (50 ft el) <sup>NE corner</sup> cell 16, <sup>east of</sup> B-8 (75 ft 65) cell 15, <sup>east center cell 1</sup> B16 (63 ft), DCL01-12 (cell 15 center el 85-80)

BL there's a lot of geologic variability.

MG DCL01-12 is good example of going through cobbled area & below is clay

56 not certifying clay layer in bottom of cell, but certifying clay below

DI proposed to ~~overexcavating~~ <sup>overexcavating</sup> LR 3 ft & placing clay will excavate until 3 ft laterally & 3 ft deep key laterally w/ existing ~~laterally~~ laterally remove ALL LR at cell bottom el. & put back in 3 ft

KE we're less concerned about base grade if design is deeper layer

56 Confining layer map - are preparing top of clay map w/ cell 1 in still may need some on eastern slope

MG deeper

56 shallow on north side, need more eastern slope & south

BL isopach on clay (thickness), & top of clay ~~map~~

BL top of clay - only use points where clay is  
JRM solid stem auger -  
MG intent to go through LR ...  
JG intent for geological description only not split-spoon

LCF 1 map or 2 maps? All borings? shallow & deep?  
JG 2 maps, topography of top of clay (plan view contours)  
2<sup>nd</sup> map shows thickness of layer, every boring  
may not show total thickness

\* how to do clay contouring - only deep borings? use shallow  
borings?

SP concern is ~~not~~ not enough deep borings interior  
to tie to deep permitting borings

....

### "All the variability"

JG have done 10 Shelby tubes; A lot have been clay w/no LR  
fragments ... ST-6 gravel = ~~100%~~ <sup>25%</sup> retained on #4 sieve

....

JG where do they need more persons? (they will look @ data  
& decide) want to keep

### temporary pond

JG want to certify cell 15 & 16 now  
they understand that they will recertify them again  
before use as disposal

1CF uncomfortable that can't see soils at bottom of 15 & 16

cell 1, 15, 16 will be submitted All at same time

Cell 15 & 16 -

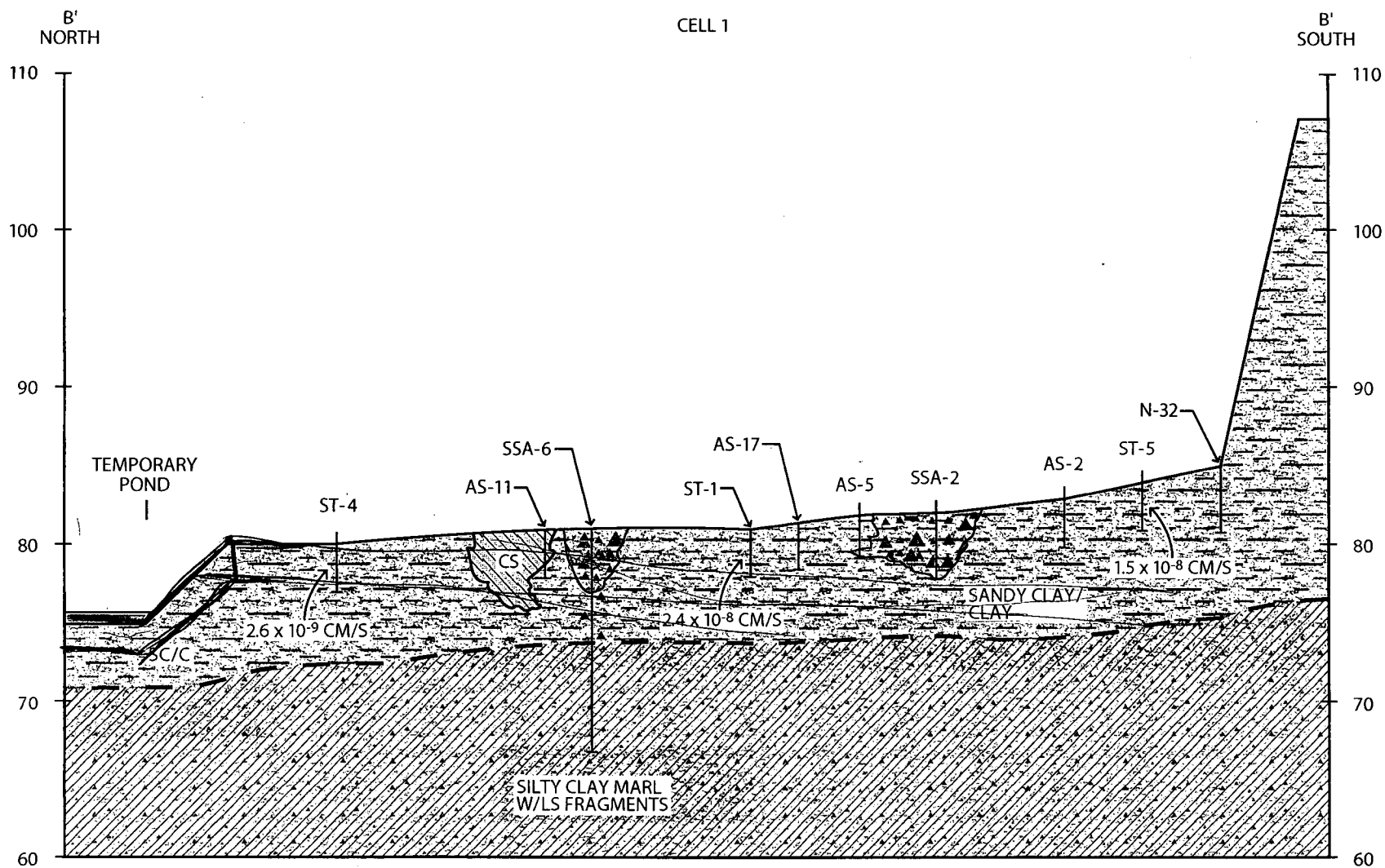
- 11 additional borings, deep enough to show 3 ft  $1 \times 10^{-6}$
- worst case locations for perans
- sieves on All borings
- # of perans depends on variability

will survey locations of patches in cell 1  
Hartman will be observing

Cell 1 sandy area will do deeper borings to try & fix in small area will excavate &

Cell 15 & 16 -

- do All borings upto where "you're secure"
- & back off from "bad" areas for this certification
- do testing to decide what repairs need to be done



99.0331.007-15.dwg-Fig 11, 8/18/03, all

FIGURE  
11



**HARTMAN & ASSOCIATES, INC.**

engineers, hydrogeologists, surveyors, & management consultants

201 EAST PINE STREET - SUITE 1000 - ORLANDO, FL 32801  
TELEPHONE (407) 839-3955 - FAX (407) 839-3790

CELL No. 1 - CROSS-SECTION B-B' - CERTIFICATION  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA

8/19/03

# ENTERPRISE CUI

meeting

1/2

JG to GET A plan. FOR CERTIFICATION  
plan of action - sent in AT km, REQUIRES  
(IS REQUIRES BY PERMIT)  
REFOCUS ON INTENT OF PERMIT - 3' OF  
GOAL IS WHAT FORM PLAN TESTS TO BE INCLUDED

Susan SUGGESTED FOLLOWING AGENDA

- 1) 2) JG clay found Below BASE  
sit down DURING PERMITTING "10-8"  
KE MENTIONED PG 3-17 CQA  
INDICATES TESTS AT BASE FOR  $10^{-6}$  cm/sec  
KE ASKED IF ANY PERMEABILITIES TAKEN  
AT BASE ELEV. 7 JG SAID YES  
JG SAID SOME BORINGS (FOR PERMITTING)  
SHOWED LIMESTONE FRAGMENTS  
JP SAID BORINGS ARE DEEPER THAN CELL BASE  
MG MENTIONED ONE LOCATION WHERE  
CLAY BELOW LIMESTONE  
JG SAID CLAY BELOW THE "SHELL BEDS"

2/2

### 3/4/8) Confined Layer Contour map DISCUSS

SP-2 maps or one,

ALL BORINGS OR SOME BORINGS?

Jim - how samples RETRIEVED?

MC-20112 STEM - ATTACHED

KE REQUESTED ONE MAP WITH

TOP OF CLAY CONTOUR LINES

WITH THE DEPTH NOTED FOR EACH BORING

MC SLOWED CORES

(ST-6 w/18% GRAVEL - Limestone - > #4 sieve -  
ST-4 60% > #200 sieve -  
ST-6 w/18% GRAVEL - Limestone - > #4 sieve -  
(ST-6 w/18% GRAVEL - Limestone - > #4 sieve -

SP - NOT ATTACHING, INTENT IS 3' THICK  
AND CONTINUITY IS IMPORTANT

### b) Cross Sections

NEW CROSS SECTION INADEQUATE

SP SAID CHOOSE SHALLOW OR DEEP

AND MUST KNOW PERMEABILITIES

AGREED WE WOULD A

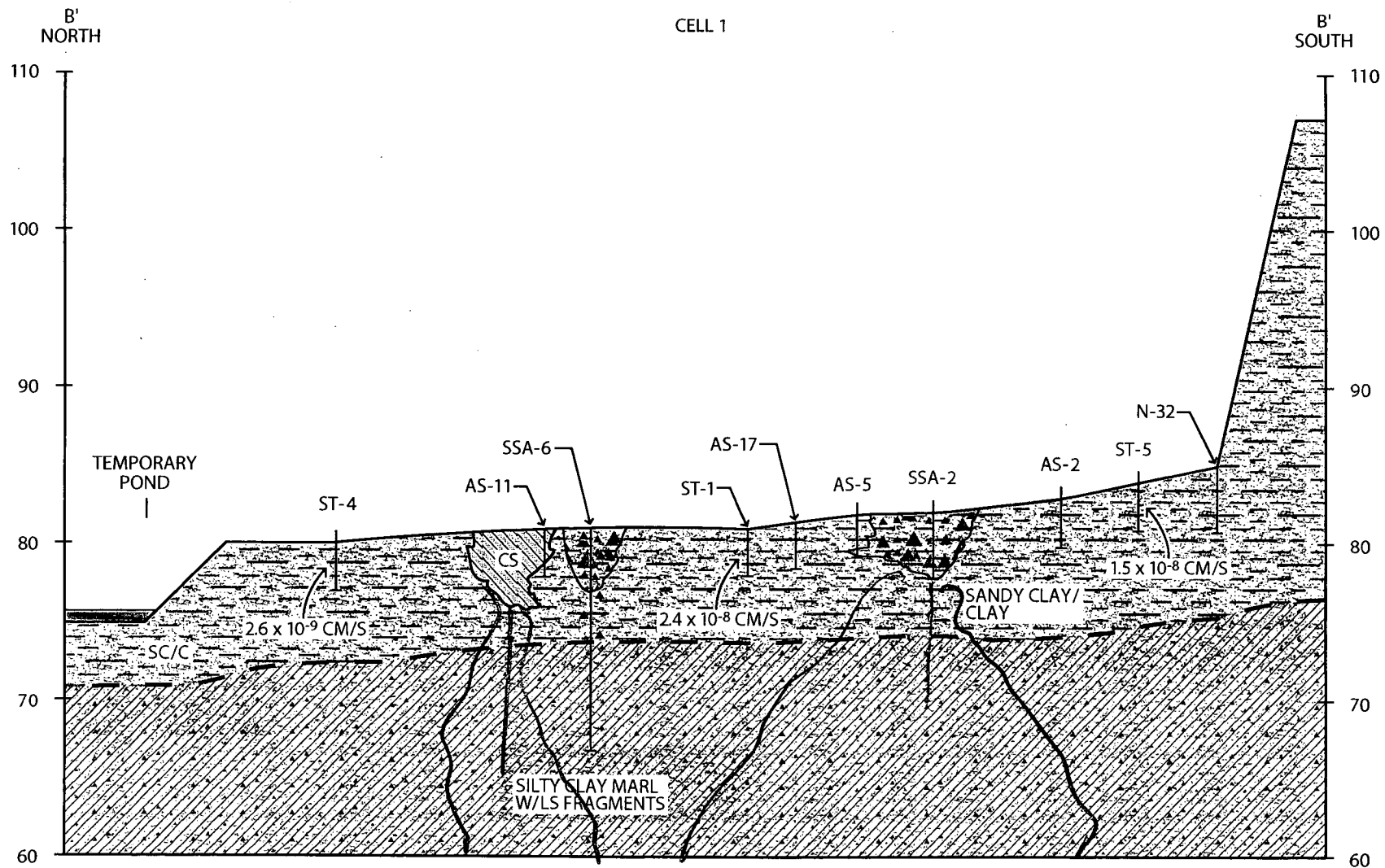
TOP OF CLAY CONTOUR MAP w/CLAY THICKNESS

AND TABLE WITH PERM. VALUES

FOR EACH LOCATION

SP ASKED FOR NEW PLAN OF ACTION





CLAYEY SAND (CS)

SILTY CLAY MARL  
W/MINOR LIMESTONE PEBBLES

SANDY CLAY -  
CLAY (SC) / CLAY (C)

SANDY CLAY  
W/LARGE LIMESTONE  
FRAGMENTS

HORIZONTAL SCALE 1" = 100'  
VERTICAL SCALE 1" = 10'

FIGURE  
11



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CELL No. 1 - CROSS-SECTION B-B' - CERTIFICATION  
ENTERPRISE RECYCLING AND DISPOSAL FACILITY  
DADE CITY, FLORIDA

8/19/03

# ENTERPRISE CLASS III LANDFILL

OMINIL IAFRATE  
RUE LA FRENZ  
IM GOLDEN  
ENNIFER DETL  
ALFUEL GARCIA  
LITA BROWN  
JSP  
CBF  
JRM

HARDMAN

## DRAFT PLAN OF ACTION (8/11/03)

- J.G. - DEVELOPING NEW CLAY CONTOUR MAP TO REPLACE MAP PREVIOUSLY PROVIDED
- J.G. - WANTED TO GET COMMENTS FROM KBF ON PLAN OF ACTION TO FOCUS ON GETTING AN APPROVAL FOR CELL 1

## BIG PICTURES

- J.G. - CLAY AT BASE OF CELL VS. CLAY AT DEPTH BELOW BOTTOM OF CELL
  - REFERRED TO X-SECTIONS PROVIDED AS PART OF HYDROGEOLOGIC INVESTIGATION THAT IDENTIFIED SOME AREAS WHERE CLAY OCCURRED BELOW BASE OF CELL
- KBF - QUESTION ABOUT FIG. 3-17 OF ENG. REPORT REGARDING INTENT OF ENCOUNTERING CONFINING UNIT AT BASE OF CELL OR DEEPER?
- JSP - REGARDLESS OF INTENT THE INFO. PROVIDES ~~CELL~~ CELL BOTTOM IN SOME AREAS ABOVE THE CONFINING UNIT - THAT IS THE DESIGN

- J.G.
  - B-6 <sup>FLATS</sup> ~~US~~ @ 50 FT ELEV ; ROCK AT 30 FT ELEV
  - B-8 ↓ @ 75 FT & @ 65 FT ELEV ; ROCK @ 45 FT ELEV
  - B-14 ↓ @ 63 FT ELEV ; ROCK @ 5 FT ELEV
  - DCL01-12 ↓ @ 80-85 FT ELEV ; DID NOT ENCOUNTER TOP OF FLOWING AQUIFER

B. LAFRENZ LOTS OF VARIABILITY IN LITHOLOGY ~~WATER~~ LATERNALLY

M. GARCIA DCL01-12 GOOD EXAMPLE OF FINDING CLAY BELOW FLATS.

- J.G. - PLAN TO UTILIZE EXISTING CLAY AT BASE OF CELL 1 (ABOUT HALF OF CELL IS GOOD CLAY)
  - PLAN TO TAKE OUT SAND (US. FLATS AT BASE ; EXCAVATE LATERNALLY TO FIND GOOD CLAY ; EXCAVATE 3 FT BELOW DESIGN ELEVATION & REPLACE WITH CLAY "PATCH"

- KBF - WHERE ARE THEY DEMONSTRATING CONFINING UNIT ; IF MAKING THE CLAIM THAT DEEPER CLAY IS PRESENT, THEN WORKING OVER THE BASE IS "OVERKILL"
  - THE DESIGN DO NOT ...

### ENTERPRISE CLASS III

SJP - NOT A GOOD IDEA TO ~~ALLOW~~ PLACE WASTE OVER LIMESTONE ; REGARDLESS OF WHERE THE CONFINING UNIT IS (AT BASE OF CELL OR AT DEPTH) WE WILL NOT ALLOW WASTE DIRECTLY OVER EXPOSED LS

JG - FEEL HAVE ADEQUATE DATA (EXISTING) TO PREPARE NEW

M. GARCIA - EXPLAINED HOW SAMPLES WERE DESCRIBED N/A SOLID FROM AUGERS

- CONSOLIDATED SS AUGERS INTO DEPTH OF INVESTIGATION & POWED BACK THE AUGER FLIGHTS TO PREPARE LITHOLOGICAL DESCRIPTIONS

KBF - ONE OR TWO MAPS TO DETERMINE EXTENT OF CLAY ?

- JG - ONE MAP TO ~~SHOW~~ SHOW TOP OF CLAY UNIT (PLAN VIEW - CONTOUR ELEV.)
- SECOND MAP TO SHOW CLAY THICKNESS (NEED TO SHOW 3 FT CLAY THICKNESS)

B. LAFRANCE - METHODS OF PLOTTING OUT ISOMACH MAP DISCUSSED

SJP - HOW TO DO CLAY CONTOURING MAP ?

KBF - LOOKING FOR ONE MAP - SHOWING TOP OF CLAY ELEVATION & THICKNESS AT EACH LOCATION

SJP - LET'S GO BACK TO CLAY MAP LATER ; WANT TO GO OVER CURRENT DISPOSAL IN CELL 1 & WHERE THEY ARE AT

### VARIABILITY

JG - HISTORICAL BORINGS SHOWED VARIABILITY

- 10 SAMPLES W/ VERTICAL PERMEABILITY DATA
- MANY OF THE PERM SAMPLES WERE CLAY W/O LS FRAGS

JOSEPH CASE IN STG @ 25% GRAVEL

@ ST-6 - SIEVE SHOWED 18% GRAVEL SIZE - PERM @  $3.6 \times 10^{-8}$  cm/sec

@ ST-4 - SIEVE SHOWED INSIGNIFICANT GRAVEL - PERM @  $2.4 \times 10^{-9}$  cm/sec

B. LAFRANCE - WHAT ABOUT EQUIVALENCE OF MIXING 3 FT OF  $10^{-6}$  cm/sec MATERIAL

SJP - NOT LOOKING AT "MIXING" 3 FT OF  $10^{-6}$  cm/sec & 2 FT  $10^{-8}$  cm/sec & 1 FT OF  $10^{-8}$  cm/sec MATERIAL ; THAT WAS NOT THE DESIGN THAT WAS PERMITTED

JTM NOTES  
Pg 3/5  
3/11/03

- SJP - IF TRYING TO DEMONSTRATE 3 FT OF CLAY OCCUR AT DEPTH THEN NEED ADDITIONAL INVESTIGATION TO SHOW CONTINUOUS 3 FT LAYER; WE DON'T CARE WHERE THE CLAY OCCURS - BUT NEEDS TO BE CONTINUOUS BETWEEN CELLS
- JG - FEEL CLAY IS COMPETENT AS GET DEEPER BEHIND LS OCCURRING AT CELL 1 BASE
- HAVE PREPARED ADD'L X-SECTIONS FOR TODAY & HAVE ADD'L X-SECTIONS BEING PREPARED
- JG - IN SITU CLAY TEST METHOD - "IN-FIELD PENOMETER"
- SJP - WOULD RATHER STICK W/ UNDISTURBED PEM TESTING

### BIG PICTURE

- SJP - HAVE TO DECIDE IF ARE PLANNING TO USE SHALLOW CLAY OR NOT
- IF GOING TO USE DEEPER CLAY DEPOSITS, THEN NEED TO DEMONSTRATE W/ PEM TEST THAT MEET 3 FT @  $10^{-6}$  CM/SEC
  - NEED TO DEVELOP CRITERIA TO INDICATE HOW MUCH LS CAN BE IN A PEM TEST THAT WILL "PASS"
  - NEED LITHOLOGIC DESCRIPTIONS OF MATERIALS BEING ENCOUNTERED
- 6 LAFITE - TABULATE DESCRIPTIONS/SIGNS/PEMS FOR EACH OF THE SOIL TYPES "ENCOUNTERED" TO HELP CHARACTERIZE THE NATURE OF THE CONFINING UNIT ("FIELD UNITS")
- SJP - ALTERNATIVES:
- ① CLAY AT SURFACE
  - ② CLAY AT DEPTH
  - ③ PLACE 3 FT CLAY
- } SOUNDS LIKE MIXING (MATCHING #1 & #2)
- SJP - WHERE DO WE GO FROM HERE? HOW TO BUILD IN FOR A LANDING
- LOOKING TO MODIFY DRAFT PLAN OF ACTION & SUBMIT "THE PLAN" TO PROVIDE 1 COMPREHENSIVE PLAN; NEXT SUBMITTAL AFTER THAT IS THE CERTIFICATION
- JG - CELL #15 - TEMP. STORAGE POND - NOT INTENDED TO CERTIFY UP FRONT IN PERMIT
- SJP - NEED TO INCLUDE CELL #15 (AND #16) IN CERTIFICATION UP FRONT TO ADDRESS STORMWATER/LEACHATE DISPOSAL WHILE OPERATING IN CELL #1

JEM NOTES  
Pg 4/5  
2/11/03

### ENTERPRISE CLASS III

- JG - SOME PERMS IN CELL 15 ; DO NOT HAVE 3 FT BOUNGES TO DEMONSTRATE 3 FT CONFINING UNIT ; CURRENTLY PUMPING OUT OF CELL #15 TO OLD BORROW PIT
- SJP - POTENTIAL FOR MORE INFILTRATION IN CELL #15 DUE TO INCREASED HEAD
- JG - DON'T WANT TO INSTALL BEAM BETWEEN CELLS 15/16 ; NOT PRACTICAL TO SEPARATE ; PLANNING TO CONDUCT ADD'L TESTING IN CELL 16
- KBF - ISSUES W/ CELL 16 HAS QUESTIONABLE AREA AT NORTH END ; NOT CONVINCED THAT MINIMUM OF 3 LOCATIONS IN CELL #16
- DOMINIC - CERTIFY CELL 16 EXCEPT FOR "PROBLEM AREA" AT NW CORNER ; DIKE IT OFF & CERTIFY IT LATER
- KBF - NOT COMFORTABLE NOT SEEING THE BOTTOM OF CELL #15 DUE TO THE MUD IN THE POND NOW ; IDEA WAS TO SEPARATE CELLS #15 & 16 TO MINIMIZE AMOUNT OF ADD'L INVESTIGATION TO GET IT CERTIFIED
- DOMINIC - DON'T WANT TO LOSE CAPACITY FOR STORMWATER BY EXCLUDING CELL #16
- SJP - SAME PERFORMANCE CRITERIA WOULD APPLY TO CELLS #15/16
- KBF - NEED SUFFICIENT DETAIL TO DEMONSTRATE CONTINUITY OF CONFINING UNIT ACROSS 1, 15 & 16
- J.D. - AGREED TO PLAN OF INVESTIGATION FOR CELL #15 DURING SITE VISIT
- PAUL BRYAN - NEED TO HAVE STARTING POINT FOR CELL #15 DATA COLLECTION
- J.D. - BASED ON FIELD OBSERVATIONS & PROPOSED TESTS & IF TESTS, NEED TO SEE BASE?
- SJP - CERTIFY 1, 15 & 16? ALL TOGETHER?
- JG - PUT ALL TOGETHER ON ONE FIGURE
- SJP - 3 PERMS FOR CELL 15 IS NOT ENOUGH - BASED ON
- KBF - PERMS IN CELL 15/16 NEED TO BE IN TARGET CONFINING UNIT LAYER
- IF FIND LS FRAGS NEED TO HAVE PERM TESTS
  - WILL OVEREXCAVATE LS EXPOSURES IN CELL 1 & SURVEY
- TC -

JRM NOTES  
pg 5/5  
8/18/03

### ENTERPRISE CLASS III

JG - SANDY AREA ON WEST SIDE OF CELL 1; NOT AS WORRIED ABOUT  
SAND DRAINING AT THE BASE GRADE; WILL TRY TO DO PDM  
TESTING BELOW SANDY AREA & NOT OVER-EXCAVATE

DOMINIC - TRY TO DO CERTIFICATION FOR ALL OF CELLS # 15/16 AT ONETIME,  
SEE WHAT THE RESULTS TURN OUT & PDM OFF THE NW CORNER  
IF NEEDED AND CERTIFY IT LATER

- PLAN OF ACTION TO SHOW PROPOSED TESTING LOCATIONS (BORING, PDMs, SLOVES)
- NEW COA PLAN?
- ONE FINAL PLAN
- TEST RESULTS WILL BE SUBMITTED AS PART OF CERTIFICATION

## \*\* Transmit Conf. Report \*\*

P.1

Aug 13 2003 13:28

Telephone Number	Mode	Start	Time	Pages	Result	Note
814078392066	NORMAL	13,13:27	0'30"	2	# O K	

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

3804 Coconut Palm Drive  
Tampa, FL 33619-8318

# FAX

Date:

8/13/03

Number of pages including cover sheet:

2

To:

Jennifer Deal

Harrison

Phone:

407 839 3955

Fax phone:

407 839 2066

CC:

From:

Jim Ford

Phone:

(813) 744-6100 x 382

Fax phone:

(813) 744-6125

REMARKS:

☐

Urgent

☒

For your review

☐

Reply ASAP

☐

Please comment

Conversation Record As you requested.

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Wednesday, August 13, 2003 1:25 PM  
**To:** Ford, Kim; Pelz, Susan; Morris, John R.  
**Subject:** RE: conversation with Craig Bryan about Enterprise CIII

Susan,

As we discussed for clarification -

#5. "to prevent discharge from making its way under a Cell 1 liner" means that if Cell 15 has the continuous clay then the Cell 1 liner would have to be keyed into the Cell 15 continuous clay layer, however, if Cell 15 cannot be demonstrated to have the required clay layer then Cell 15 would have to be lined too.

#7 as you requested, I will call Craig Bryan with a date and time for all of us to meet including Jennifer D, Jim G., Craig B., John M., Susan P., and Kim F.

Kim

-----Original Message-----

**From:** Ford, Kim  
**Sent:** Tuesday, August 12, 2003 6:11 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Craig Bryan about Enterprise CIII

On August 12, 2003 at 5pm we (Susan Pelz, John Morris, Kim Ford) spoke with Craig Bryan about the following:

1. The August 11, 2003 letter (DRAFT) is confusing and appears to suggest that the DEP does not need any more information because we knew of the presence of the deeper confining unit as part of permitting.
2. We explained that the permitted design showed clay with no limestone and the new cross-section shows clay with limestone.
3. The letter says that the over-excavation and repairs are not intended to be the confining layer, however, the top of clay contour map is drawn for the Cell base and is not drawn for the deeper clay confining unit, and the CQA has been for the Cell base and has not been for the deeper confining unit. So, the top of clay contour map should be drawn for the deeper confining clay based on representative test borings through the limestone and into the clay (at least 3 feet into the clay) and with permeability test results from the same clay layer.
4. We said DEP's earlier decision for exemption from a liner was based on the earlier information without all the variability, and if the certification comes in without confirming the presence of 3 feet at 1x10<sup>-6</sup>cm/sec continuous everywhere then the certification would not be approved.
5. We explained there could be other options such as lining the bottom. We discussed some design concepts and a way to prevent discharge to the west from Cell 1 and to prevent discharge from making its way under a Cell 1 liner so lining Cell 15 may be required too.
6. We said that with all the new borings there should be more cross-sections showing the continuous clay with the permeability of the clay.
7. We said we could not meet this week but could next week.

Kim



**Ford, Kim**

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**From:** Morris, John R.  
**Sent:** Friday, August 08, 2003 9:32 AM  
**To:** Ford, Kim  
**Cc:** Pelz, Susan  
**Subject:** RE: conversation with Jim Golden about Enterprise CIII  
**Importance:** High  
**Sensitivity:** Confidential

I think having a meeting is a great idea. Maybe Angelo should be also involved to provide the permittee with an understanding of the big picture. Maybe Jennifer should be involved as the engineer that will be sealing the certification (s).

My suggestions for topics for discussion:

- occurrence of limestone fragments, cobbles, boulders within the clay confining unit of Cell 1 based on observation of the cell floor, "3-feet auger borings", solid stem auger borings; significance of limestone within the clay sediments
- adequacy of the "3-feet auger borings" (AS-1 through AS-35) where any limestone was encountered in Cell 1
- occurrence of limestone fragments, cobbles, boulders within the clay stockpile that will be used for "patching"; adequacy of the "rule of thumb" discussed on site 8/1/03 regarding the largest size of limestone fragments that can be present in the clay to be used for the "patch"
- our expectation regarding the installation of test pits -- at all areas where limestone is present at the design bottom and (?) at all "3-feet auger borings" that do not indicate 3 feet of clay without limestone fragments
- our expectation of the information required (soil borings, test pits, permeability samples, sieve samples) for certification of Cell 15
- soil borings, cross-sections, and description of the confining unit presented in the Hydrogeological Investigation compared with the lithology encountered within the confining unit at the design elevation in Cells 1 and 15
- permeability tests run in "best case" clay, "worst case" clayey sand or silty sand, clay with limestone fragments to provide adequate basis for evaluating sieve tests and extrapolating permeability values
- top of clay contour map -- what is it we really are looking for; how will the contour map demonstrate that there is 3 feet of continuous clay that is tied into the confining unit (especially important at areas where clay is not present at the designed cell bottom elevation)
- evaluation of ground water elevations collected in the existing monitor wells and piezometers; comparison of ground water elevations with water levels in temporary stormwater pond; conclusion regarding impacts to ground water (surficial and Floridan aquifers) from "loading" the temporary stormwater pond
- proposal in the HAI submittal dated 8/5/03 ("Progress report # 4/CQA Plan") regarding installation of two new Floridan aquifer monitor wells (MW-4B and MW-6B) and the early installation of a planned surficial aquifer well (MW-4) around the temporary stormwater pond INSTEAD OF certifying Cells 15/16; discussion during telecom on 8/7/03 that if they separate cells 15 and 16, and certify cell 15, then Hartman does not want to implement the proposed changes to the monitoring plan

It would be helpful if Jim would provide an agenda prior to the meeting.

-----Original Message-----

**From:** Ford, Kim  
**Sent:** Thursday, August 07, 2003 5:28 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jim Golden about Enterprise CIII

On August 7, 2003 at 4:40pm I spoke with J.G. about the following:

1. Jim asked for himself and Craig Bryan to meet with John and I. I explained that we meet to discuss documents that we have reviewed and Susan should be part of the meeting. I asked if he wanted to discuss some new design. He said no.

8/8/2003

2. I said that we may want to meet after we get the top of clay contour map. Jim said he can provide the top of clay contour map now. I explained that we will be looking at all the data to find any problems with the contours and to show that we have supporting data for the entire 3' @ 10-6 clay layer. Jim said there may some rock but it is all within clay. I said maybe so but at the location of the rock fragments there may be only 2' of clay above or below the pieces of rock. I explained that we seem to be far apart on resolution because he may be looking at things more conceptually and I seem to be micro-inspecting every inch of the area. Jim agreed and said the clay layer permeabilities are in the range of 10-7 to 10-8.

3. I suggested that he and Jennifer Deal provide the top of clay contour map and if there are rock fragments in it then just say so and if the permeabilities are 10-7 for at least 2 feet of the three feet of clay then say that too. I said that he can fax a draft top of clay contour map with the detailed explanations and we will review it and discuss it next week, but the draft should be complete. Jim agreed.

Kim

**Ford, Kim**

**From:** Ford, Kim  
**Sent:** Thursday, August 07, 2003 5:28 P  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jim Golden abc

On August 7, 2003 at 4:40pm I spoke with J.C

1. Jim asked for himself and Craig Bryan to we have reviewed and Susan should be part ( no.

2. I said that we may want to meet after we get the top of clay contour map. Jim said he can provide the top of clay contour map now. I explained that we will be looking at all the data to find any problems with the contours and to show that we have supporting data for the entire 3' @ 10-6 clay layer. Jim said there may some rock but it is all within clay. I said maybe so but at the location of the rock fragments there may be only 2' of clay above or below the pieces of rock. I explained that we seem to be far apart on resolution because he may be looking at things more conceptually and I seem to be micro-inspecting every inch of the area. Jim agreed and said the clay layer permeabilities are in the range of 10-7 to 10-8.

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Kim

CRAIG Bryan

Your copies:

- 1) Conversation Records
- 2) August 5th letter on financial
- 3) August 1st letter on report & photos

Jim 8/8/03

o discuss documents that  
ome new design. He said

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Thursday, August 07, 2003 5:28 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jim Golden about Enterprise CIII

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1. Jim asked for himself and Craig Bryan to meet with John and I. I explained that we meet to discuss documents that we have reviewed and Susan should be part of the meeting. I asked if he wanted to discuss some new design. He said no.
2. I said that we may want to meet after we get the top of clay contour map. Jim said he can provide the top of clay contour map now. I explained that we will be looking at all the data to find any problems with the contours and to show that we have supporting data for the entire 3' @ 10-6 clay layer. Jim said there may some rock but it is all within clay. I said maybe so but at the location of the rock fragments there may be only 2' of clay above or below the pieces of rock. I explained that we seem to be far apart on resolution because he may be looking at things more conceptually and I seem to be micro-inspecting every inch of the area. Jim agreed and said the clay layer permeabilities are in the range of 10-7 to 10-8.
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Kim

8/8/2003

**Ford, Kim**

---

**From:** Ford, Kim  
**Date:** Thursday, August 07, 2003 2:38 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation record for Enterprise CIII conference call

On August 7, 2003 at 11:50am, several items were discussed as part of a conference call with the following persons:  
 Jim Golden, Miguel Garcia, and Jennifer Deal (Hartman&Assoc.)  
 Craig Bryan (Angelos/Enterprise CIII)  
 John Morris and Kim Ford (DEP)

The following items were discussed:

- 1) A "Plan of Action" is required for repairs over limestone areas, signed and sealed by a P.E. and P.G., including the extent of limestone.
- 2) A top of clay contour map was requested to include the extent of limestone (as required by the permit S.C.#5.). I explained that the top of clay must indicate that the clay is continuous at least 36" @ 1x10<sup>-6</sup> cm/sec, and limerock areas would be shown as an encircled area to be repaired (the same for showing the sandy areas too).
- 3) It was agreed that all test pits would be expanded to remove all limerock laterally to expose the clay (36" @ 1x10<sup>-6</sup> cm/sec), and then some of the excavated clayey material would be pushed down over the bottom 6"-12" thick to seal the bottom and repaired later, so the extent of limerock would be shown as part of the top of clay contour map.
- 4) I requested a test pit be dug at each boring that does not indicate the required clay (36" @ 1x10<sup>-6</sup> cm/sec), and each boring in question must be located within the encircled area to be repaired and shown as part of the top of clay contour map.
- 5) We agreed that Cell 15 would be included as part of the certification, and a clay berm would be constructed to separate Cell 15 from Cell 16, and the water in Cell 15 would be pumped into Cell 16 to allow observation and possibly more borings in Cell 15.
- 6) I requested borings along the south part of Cell 15 and between some borings in the north part of Cell 1.
- 7) I requested posts in the bottom of Cell 1 to identify the area to be included as part of the certification, with a benchmark, and a map with the location of the posts for the limits of filling.
- 8) I requested the top of clay contour map for Cells 1 and 15 to be on one drawing.
- 9) We discussed diverting site runoff away from the Cells 1 and 15 open areas.
- 10) I said I would be at the site before and during repairs of excavated areas.
- 11) We discussed observing Cell 15 and running a dozer across it to scrape and observe the bottom after the water is pumped out.
- 12) J.D. mentioned that a new deep well was proposed but may not be needed at this time north of Cell 16. John said he will review.

Kim

8/7/2003

**Ford, Kim**

---

m: Ford, Kim

Sent: [REDACTED]

To: Pelz, Susan; Morris, John R.

Subject: conversation with Craig Bryan about Enterprise CIII

On August 6, 2003 I spoke with C.B. about the following items:

1. S.C. #5 requires a plan of action with the extent of limestone. I said the plan of action must be signed and sealed by a P.E.
2. I requested a topo survey with the locations and dimensions for each test pit (12 test pits were observed on August 1st).
3. I requested a top of clay contour map also showing the locations of each test pit.
4. We discussed separating Cell 15 from Cell 16 by a clay berm, and diverting the surface water from unused areas away from Cells 1 and 15.
5. I requested corner posts and a benchmark in the bottom of cells for certification.
6. I gave C.B. copies of previous correspondence and conversation records.

Kim

8/7/2003

**Ford, Kim**

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**From:** Ford, Kim

**Date:** Thursday, August 7, 2003

**To:** Pelz, Susan; Morris, John R.

**Subject:** conversation with Jennifer Deal about Enterprise CIII

On August 5, 2003, I spoke with J.D. J.D.said the CQA repair plan was coming soon.

- 1) I asked for the plan to included the items listed in rule 62-701.400(3)(f), including proctor test on soil from the stockpile for optimum moisture, compaction and permeability, and to propose moisture /density tests.
- 2) I suggested a berm between Cell 15 and Cell 16 if Cell 16 has problems.

Kim

8/7/2003

Ford, Kim

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From: Ford, Kim

nt: [REDACTED]

To: Pelz, Susan; Morris, John R.

Subject: conversation with Miguel Garcia about Enterprise CIII

On August 1, 2003 at 10:30am (by cell phone) I spoke with M.G. (Hartman&Assoc.) about Enterprise CIII. **I requested a test pit at each location for each boring where a continuous 36" of 1x10-6 cm/sec clay was not indicated by the boring log.** I explained that staff told me that some of the 3 feet borings provided as part of the July 25, 2003 "Progress Report #3" did not have a continuous 3 feet of 1x10-6 cm/sec clay.

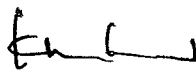
Kim

8/7/2003



**M**emorandum

Florida Department of  
**Environmental Protection**

To: Susan Pelz  
From: Kim Ford   
Date: August 1, 2003  
Subject: Enterprise CIII Site Visit On Friday August 1, 2003

On Friday August 1, 2003 John Morris and Kim Ford met others at the Enterprise CIII landfill. Others at the site:

Angelo (left early)

Craig Bryan

Jennifer Deal, Miguel Garcia, Dale (Hartman & Assoc.)  
a contractor's representative

The site visit went as follows:

- 1) We observed the Cell 1. DEP explained that only part of Cell 1 could be included in the certification because the side slope areas on the south and west are not excavated and only the bottom part of Cell 1 can be included.
  - We observed standing water in ruts on the north half of Cell 1.
  - We went down into the Cell 1 and observed 12 areas of concern- 9 test pits excavated 3'-4' deep exposing limestone and one test pit exposing sand, and two areas not excavated. (see digital photos).
- 4) We observed one location with exposed limestone at the surface on the west side slope not yet excavated. While walking from one test pit to another, a small area of what appeared to be exposed limestone at the surface was observed. (see digital photos).
- 5) Most of the boring locations and test pits were not identified by identification stakes.
- 6) We went to the top and met to discuss several items as follows:
  - a) The surface water ditch along the east side of Cell 1 was not constructed. After review of the sequence of filling in the operations plan we agreed that the east ditch was not needed until Cell # 3 is excavated because all filling will be below grade until then.
  - b) Daily rainfall and daily staff gauge (in the temporary stormwater pond) measurements were requested.
  - c) Weekly water elevations in each installed well and each piezometer were requested.
  - d) The accuracy of the location for each boring was discussed.
  - e) All borings logs and test results were requested.
  - f) Sampling of the temporary stormwater pond was suggested as a requirement until demonstrated that there is no connection to the Floridan aquifer.
  - g) The reason why the temporary stormwater pond is not filling up after rainfall was requested. Is it draining out to the Floridan aquifer, or out the sides and evaporating?
  - h) The depth of borings was questioned because the permitted design requires a "continuous" 3 feet of clay at 10-6 cm/sec. Why are the borings only 3' deep when limestone is hit in the boring?

g) DEP requested to examine each 3 feet core for each permeability. DEP requested most permeabilities in the "worst case locations". DEP discussed and suggested updating the geologic cross-sections across the cells connecting the permeabilities and borings. DEP requested a contour map showing the top and bottom of the "continuous" 3 feet of clay at 10-6 cm/sec, and the limestone.

h) DEP advised that SC#5 requires a "plan of action" for the repairs, and SC#9.c. addresses the design requirement for the "continuous" 3 feet of clay at 10-6 cm/sec and that there have been no requested changes to the design.

i) DEP provided comments on the July 25th progress report #3 as follows:

1. more CQA already done without DEP agreement
2. "worst case" information has not been provided, such as 4 out of the 5 permeability tests appear to have been taken in the best locations not the worst.
3. some descriptions area too vague, such as "and does not appear to be competent limestone connected to the aquifer" and "clay has been encountered below the limestone in most areas".
4. more borings have been completed at locations not agreed on by DEP.
5. borings continue to be only 3 feet deep with limestone fragments and sand without showing the continuous 3' of clay.
6. permeability test results still not provided after 3 weeks.
7. the previously requested survey locations for all borings and all questionable areas not kept up-to-date and not provided.
8. some descriptions are incomplete and misleading, such as "Two (2) of the original 12 boring locations encountered limestone.", however the previous paragraph says 25 borings have been completed.
9. the description of the temporary stormwater pond is inadequate and does not include a description of test results for thickness and permeability, and indicates the observation "of a few small limestone boulders and cobbles" without further investigation and without test results.

j) We discussed the certification of the temporary stormwater pond (Cells 15 and 16). DEP indicated that the variability in the lithology encountered during excavation of Cell 1 has placed additional emphasis on demonstrating that 3 feet of continuous clay is present below the temporary pond as it will be receiving leachate from Cell 1 when disposal begins.

7) We observed the clay stockpile and discussed the location of backfill clay material to be used to repair the excavated areas. We agreed that the clay used for the backfill repairs would have no limestone fragments larger than thumbsize.

KBF

Attachments - selected photos (12 pages)

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Thursday, August 07, 2003 5:28 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jim Golden about Enterprise CIII

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1. Jim asked for himself and Craig Bryan to meet with John and I. I explained that we meet to discuss documents that we have reviewed and Susan should be part of the meeting. I asked if he wanted to discuss some new design. He said no.
2. I said that we may want to meet after we get the top of clay contour map. Jim said he can provide the top of clay contour map now. I explained that we will be looking at all the data to find any problems with the contours and to show that we have supporting data for the entire 3' @ 10-6 clay layer. Jim said there may some rock but it is all within clay. I said maybe so but at the location of the rock fragments there may be only 2' of clay above or below the pieces of rock. I explained that we seem to be far apart on resolution because he may be looking at things more conceptually and I seem to be micro-inspecting every inch of the area. Jim agreed and said the clay layer permeabilities are in the range of 10-7 to 10-8.
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Kim

8/7/2003

**Ford, Kim**

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John Morris and Kim Ford (DEP)

The following items were discussed:

- 1) A "Plan of Action" is required for repairs over limestone areas, signed and sealed by a P.E. and P.G., including the extent of limestone.
- 2) A top of clay contour map was requested to include the extent of limestone (as required by the permit S.C.#5.). I explained that the top of clay must indicate that the clay is continuous at least 36" @ 1x10-6 cm/sec, and limerock areas would be shown as an encircled area to be repaired (the same for showing the sandy areas too).
- 3) It was agreed that all test pits would be expanded to remove all limerock laterally to expose the clay (36" @ 1x10-6 cm/sec), and then some of the excavated clayey material would be pushed down over the bottom 6"-12" thick to seal the bottom and repaired later, so the extent of limerock would be shown as part of the top of clay contour map.
- 4) I requested a test pit be dug at each boring that does not indicate the required clay (36" @ 1x10-6 cm/sec), and each boring in question must be located within the encircled area to be repaired and shown as part of the top of clay contour map.
- 5) We agreed that Cell 15 would be included as part of the certification, and a clay berm would be constructed to separate Cell 15 from Cell 16, and the water in Cell 15 would be pumped into Cell 16 to allow observation and possibly more borings in Cell 15.
- 6) I requested borings along the south part of Cell 15 and between some borings in the north part of Cell 1.
- 7) I requested posts in the bottom of Cell 1 to identify the area to be included as part of the certification, with a benchmark, and a map with the location of the posts for the limits of filling.
- 8) I requested the top of clay contour map for Cells 1 and 15 to be on one drawing.
- 9) We discussed diverting site runoff away from the Cells 1 and 15 open areas.
- 10) I said I would be at the site before and during repairs of excavated areas.
- 11) We discussed observing Cell 15 and running a dozer across it to scrape and observe the bottom after the water is pumped out.
- 12) J.D. mentioned that a new deep well was proposed but may not be needed at this time north of Cell 16. John said he will review.

Kim

8/7/2003

**Ford, Kim**

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**From:** Ford, Kim

**Sent:** Thursday, August 7, 2003

**To:** Pelz, Susan; Morris, John R.

**Subject:** conversation with Craig Bryan about Enterprise CIII

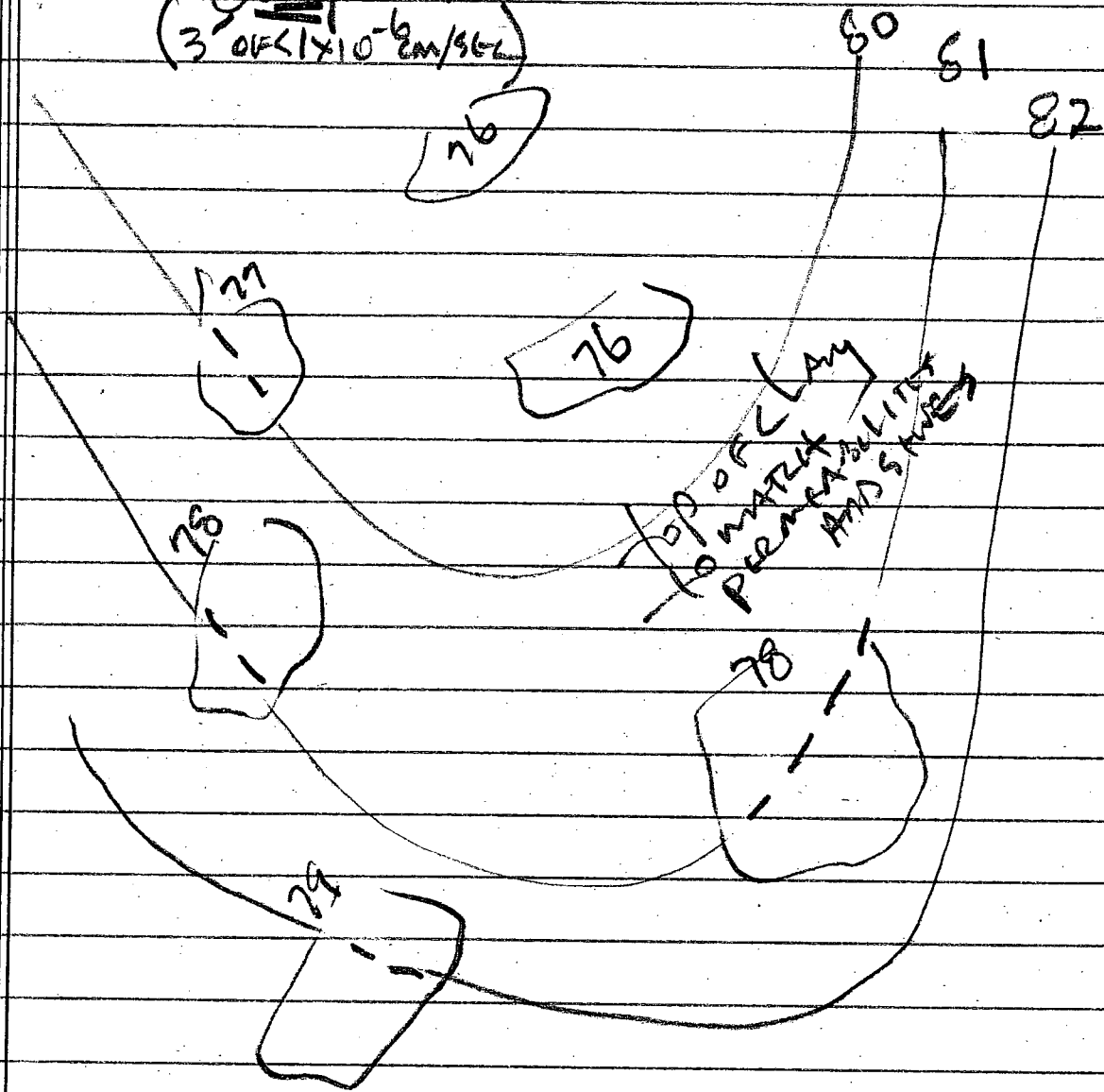
On August 6, 2003 I spoke with C.B. about the following items:

1. S.C. #5 requires a plan of action with the extent of limestone. I said the plan of action must be signed and sealed by a P.E.
2. I requested a topo survey with the locations and dimensions for each test pit (12 test pits were observed on August 1st).
3. I requested a top of clay contour map also showing the locations of each test pit.
4. We discussed separating Cell 15 from Cell 16 by a clay berm, and diverting the surface water from unused areas away from Cells 1 and 15.
5. I requested corner posts and a benchmark in the bottom of cells for certification.
6. I gave C.B. copies of previous correspondence and conversation records.

Kim

8/7/2003

CLAY AT SURFACE  
( $3.0 \times 10^{-6} \text{ cm/sec}$ )





7. Geosynthetic clay liner (GCL) specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials.

(f) Standards for soil components.

1. Soil components of liner systems shall be constructed to preclude, to the greatest extent practicable, lenses, cracks, channels, root holes, pipes, or other structural inconsistencies that can increase the saturated hydraulic conductivity of the soil component. The design shall illustrate and describe those instances in which overexcavation of permeable areas and backfilling may be necessary to seal the permeable area. The soil component shall be placed and compacted in layers to achieve the design performance.

2. The permeability of soil liner components shall not be increased above the values specified for the component, as a result of contact with leachate from the solid waste disposal unit. Compatibility of the soil component and leachate shall be demonstrated by testing the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method.

3. The soil component of the liner system may consist of in-situ soils, provided they meet the specifications for soil liners. Testing of in-situ soil shall be performed in accordance with the site specific Construction Quality Assurance Plan in accordance with Rules 62-701.400(7) and (8), F.A.C.

4. Specifications for the soil component of the liner system shall be provided to and approved by the Department, and shall contain at a minimum:

a. Allowable range of particle size distribution and Atterberg limits, to include shrinkage limit;

b. Placement moisture criteria and dry density criteria;

c. Maximum laboratory-determined saturated hydraulic conductivity, using simulated leachate as the saturating and testing liquid;

d. Minimum thickness of the soil liner;

e. Lift thickness;

f. Surface preparation (scarification) for tying lifts together; and

g. Type and percentage of clay mineral within the soil component.

5. The soil liner shall be placed using construction equipment and procedures that achieve the required saturated hydraulic conductivity and thickness. A field test section shall be constructed using the proposed construction equipment and tested to document that the desired saturated hydraulic conductivity and thickness is achieved in the field. Test results shall be submitted to the Department along with the completion of construction documents.

(4) Leachate collection and removal system. Landfills shall have a leachate collection and removal system that is designed, constructed, maintained, and operated to collect leachate and convey it to collection points for removal.

(a) The primary and secondary leachate collection and removal systems shall:

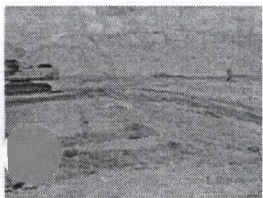
1. Be constructed of materials that are chemically resistant to the waste disposed of in the landfill and the leachate expected to be generated;

2. Have sufficient mechanical properties to prevent collapse under pressures exerted by overlying wastes, cover materials, and by any equipment used at the landfill;

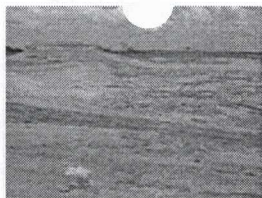
3. Have granular material or synthetic geotextile filter overlying or surrounding the leachate collection and removal system to prevent clogging of the collection system by infiltration of fine particles; and

In Review For All City Layer Construction

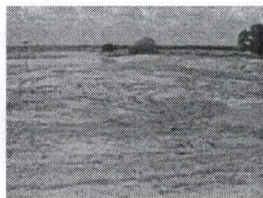




Picture 018



Picture 019



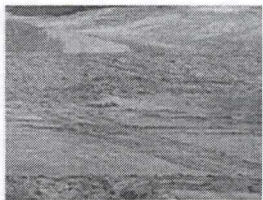
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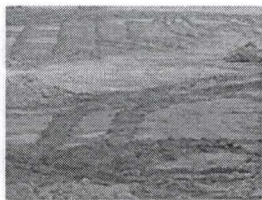
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Picture 022



Picture 023



Picture 024



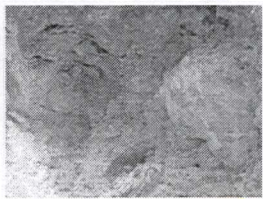
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Picture 026



Picture 027



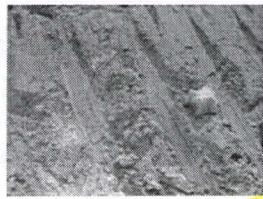
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Picture 029



Picture 030



Picture 031



Picture 032



Picture 033



Picture 034



Picture 035



Picture 036



Picture 037



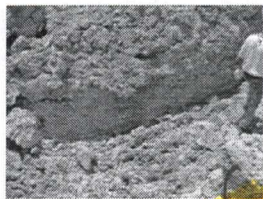
Picture 038



Picture 039



Picture 040



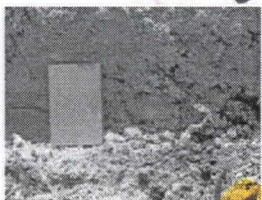
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Picture 042



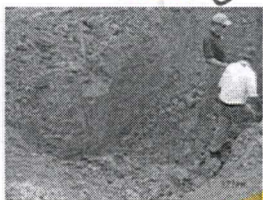
Picture 043



Picture 044



Picture 045



Picture 046



Picture 047



Picture 048



Picture 049



Picture 050



Picture 051



Picture 052





Picture 053

8



Picture 054

9



Picture 055

7



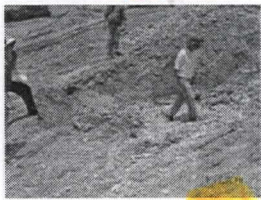
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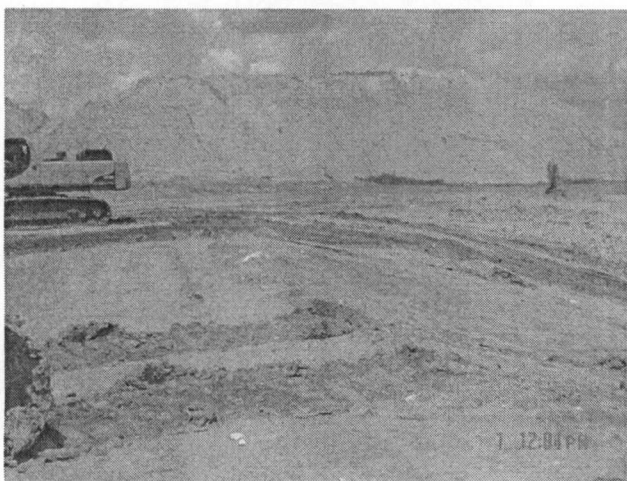
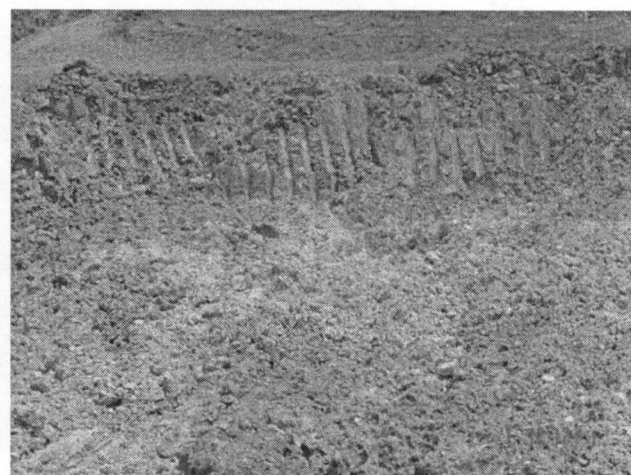
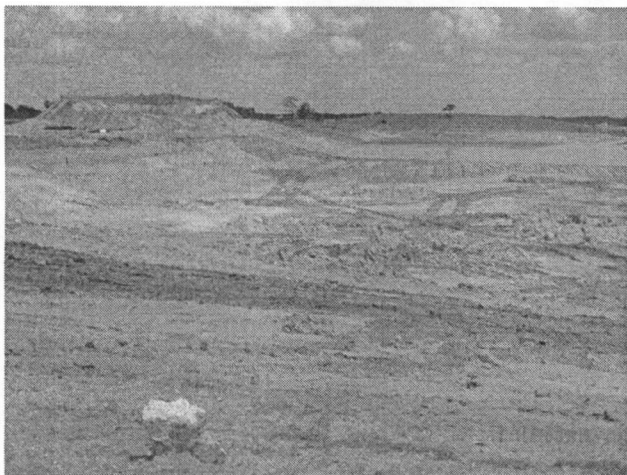
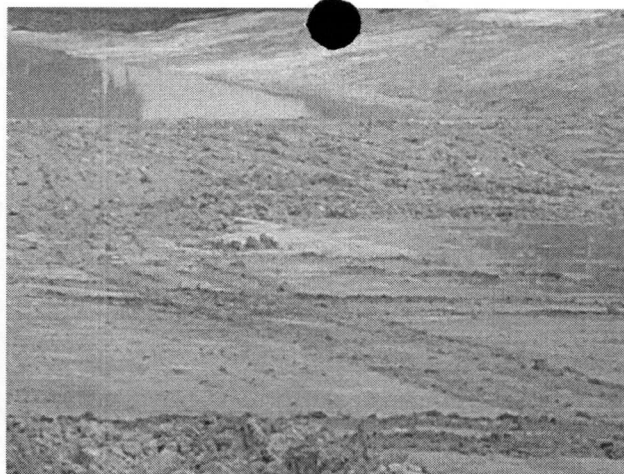
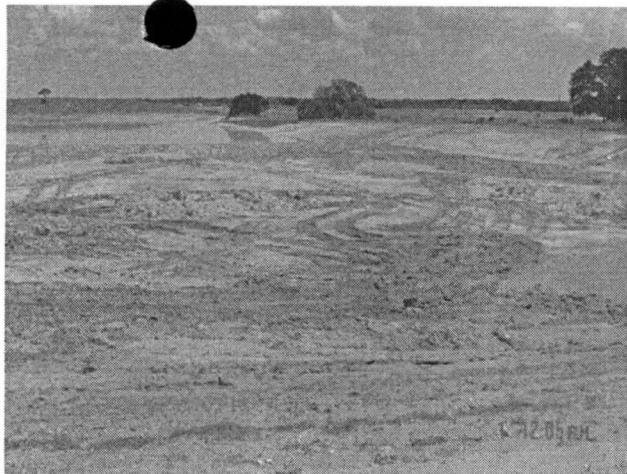
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11

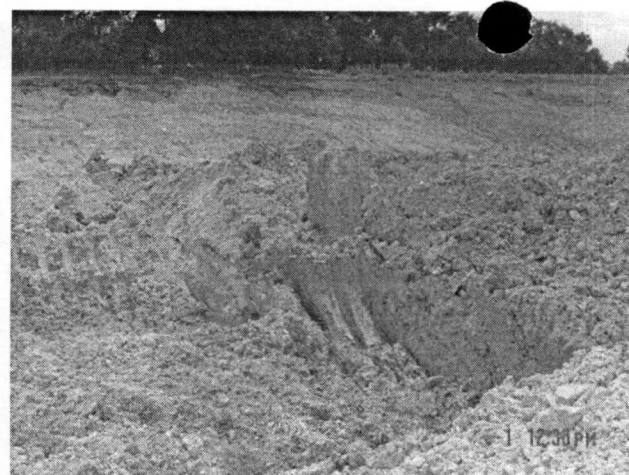
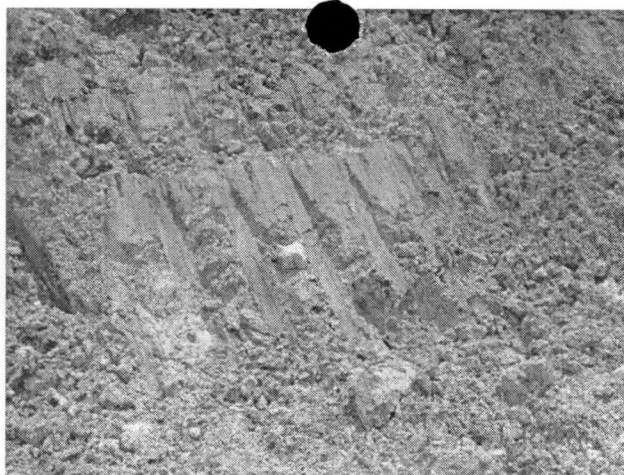


Picture 058

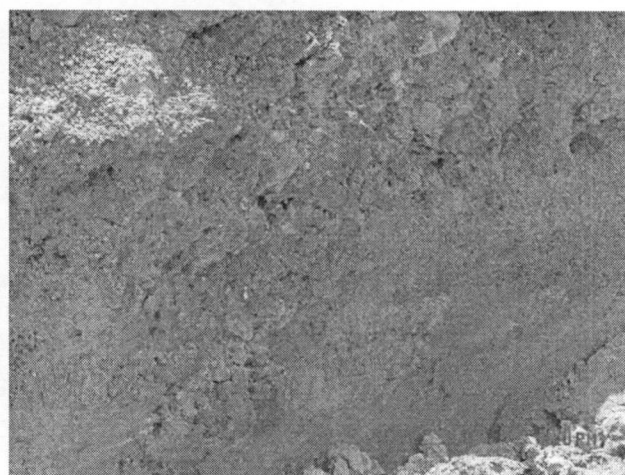
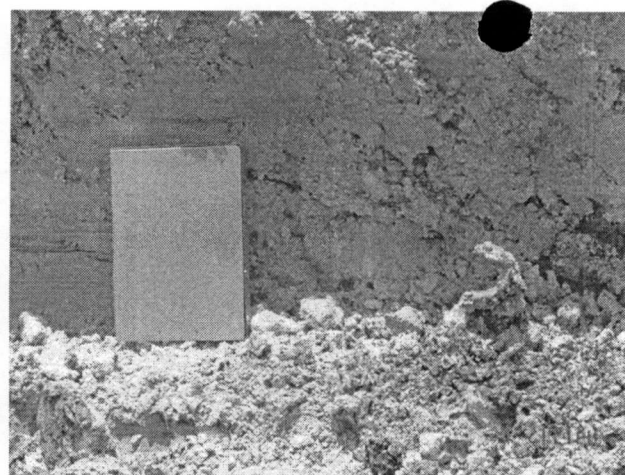
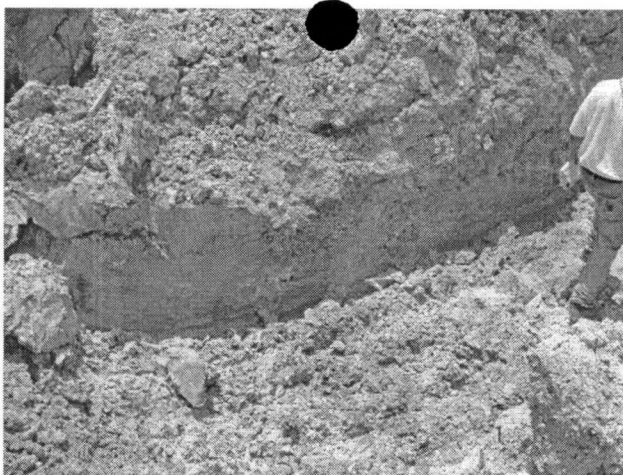
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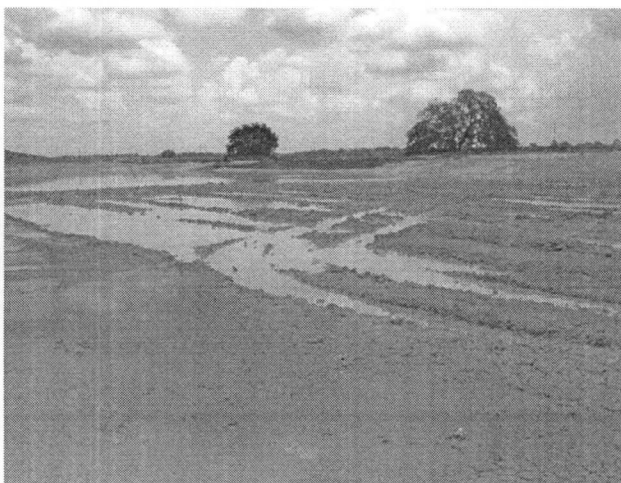
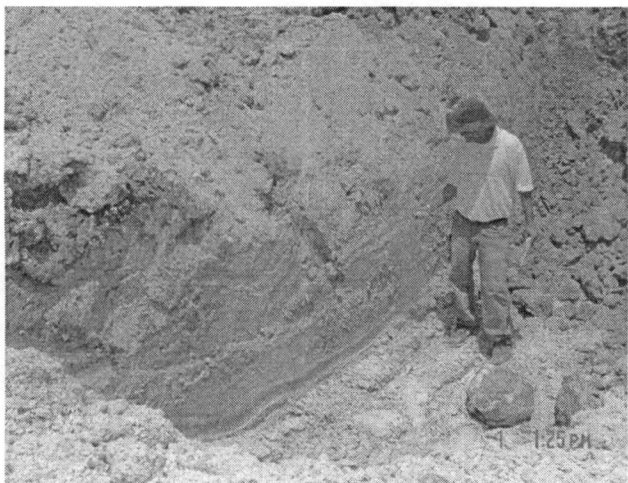
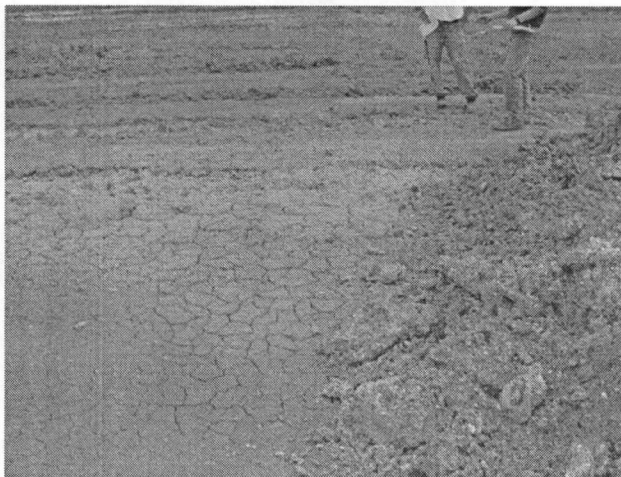
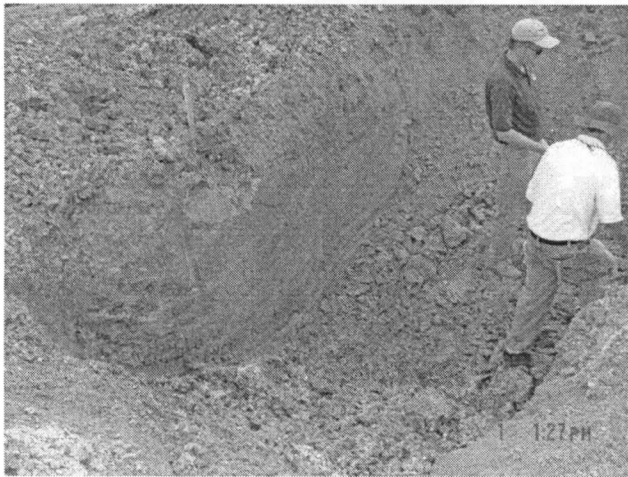
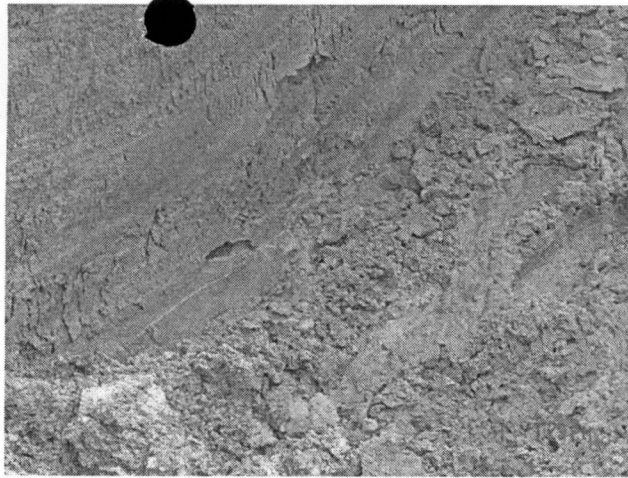


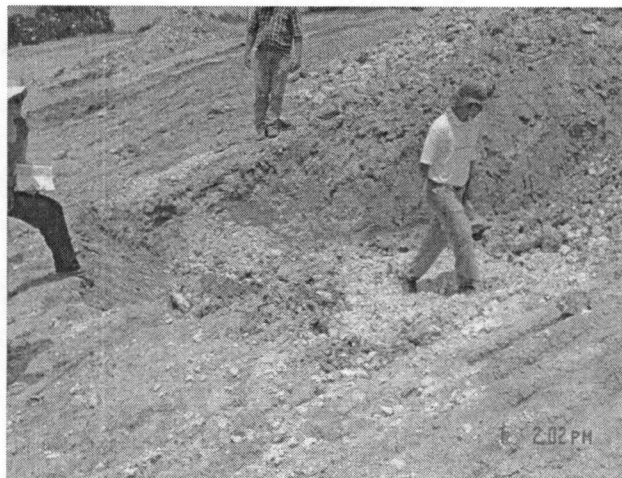
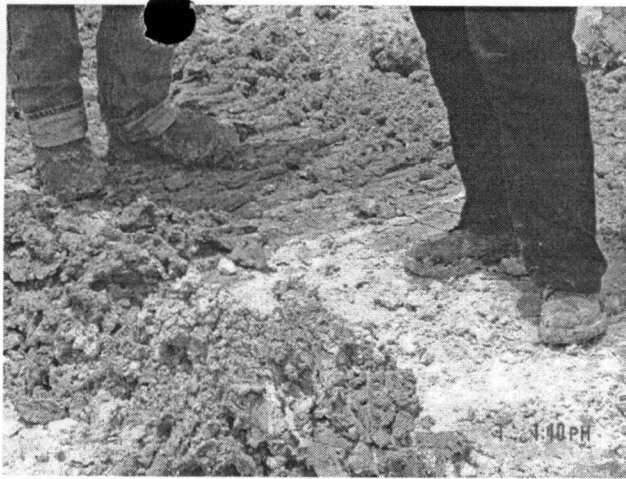












**Ford, Kim**

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**From:** Ford, Kim

**Sent:** Thursday, August 7, 2003 2:30 PM

**To:** Pelz, Susan; Morris, John R.

**Subject:** conversation with Jennifer Deal about Enterprise CIII

On August 5, 2003, I spoke with J.D. J.D.said the CQA repair plan was coming soon.

- 1) I asked for the plan to included the items listed in rule 62-701.400(3)(f), including proctor test on soil from the stockpile for optimum moisture, compaction and permeability, and to propose moisture /density tests.
- 2) I suggested a berm between Cell 15 and Cell 16 if Cell 16 has problems.

Kim

8/7/2003



# BRIDGEMAN LF EVAPORATION

## ASSUMPTIONS

- ① USE 100 ACRE SURFACE AREA AT ELW. 4.0  
= 65 ACRES POND +  
20 ACRES TEMP POND +  
15 ACRES OTHER PONDS & CANALS

- ② USE .85 X AVERAGE MONTHLY PAN WAP

(DO NOT ENTER DAILY USE MONTHLY TOTAL  
ON SPREADSHEET  
ANNUAL SUMMARY)

## 96 REPORTS

	AC-FT X $\frac{12''}{100 \text{ ACRES}}$	
JAN	14 = 1.68"	
FEB	21 = 3.24"	
MAR	63 = 7.56"	
APR	123 = 14.76"	
MAY	101 = 12.12"	
JUNE	150 = 18.00"	
JULY	61 = 7.32"	
AUG	70 = 8.40"	
SEPT	129 = 15.48"	
OCT	29 = 3.48"	
NOV	25 = 3.00"	
DEC	20 <sup>+</sup> = 2.40"	
	<u>812</u>	≠

TABLE 3.	
<u>.85</u> X MONTHLY AVER.	X $\frac{100 \text{ ACRES}}{12''}$
2.38"	= 19.8 AC-FT
3.04"	= 25.3
4.43"	= 36.9
5.38"	= 44.8
6.39"	= 52.9
5.63"	= 46.9
5.39"	= 44.9
5.17"	= 43.1
4.60"	= 38.3
3.95"	= 32.9
2.79"	= 23.2
2.21"	= 18.4
	<u>427</u>

For ENTALPIS

Use .85 x AVE  
PAN  
EVAL

⇒ June 5.63"  
July 5.39"  
August 5.17"

# DESOTO POND EVAPORATION (WITH ONE SEGMENT IN USE)

⇒ .5 ACRES for ONE SEGMENT

⇒ .5 X AVERAGE pan EVAPORATION

Example.

For January

$$2.80 \times .5 \times \frac{1 \text{ ft}}{12''} \times .5 \text{ AC} \times \frac{43560 \text{ SF}}{\text{AC}} \times \frac{7.5 \text{ GAL}}{\text{CF}} =$$

$$= 19,058 \text{ Gallons}$$

## AVERAGE PAN EVAP

Jan	2.80	→	=	19,057 Gallons
Feb	3.58	→	=	24,366
MAR	5.21	→	=	35,460
April	6.33	→	=	43,084
May	7.47	→	=	50,843
June	6.62	→	=	45,057
July	6.34	→	=	43,152
AUG	6.08	→	=	41,382
Sept	5.41	→	=	36,822
OCT	4.65	→	=	31,649
Nov	3.28	→	=	22,324
Dec	2.60	→	=	17,696

AKC 4/19/01



PASCO COUNTY: UTILITIES SERVICES BRANCH  
LEACHATE REPORT  
CALENDAR MONTH END 12/31/03

MONTH & DAY	EAST PASCO CLASS I						MEASURED RAINFALL	EAST PASCO TRANSFER STATION LEACHATE HAULED ****
	TANK 1	TANK 2	TANK 3	TANK 4	TANK 5	TOTAL LEACHATE		
1-Jun	0	0	0	0	0	0	0.000	0
2-Jun	6,000	0	0	0	12,000	18,000	0.000	0
3-Jun	0	6,000	0	0	12,000	18,000	0.500	0
4-Jun	0	0	6,000	0	6,000	12,000	1.750	0
5-Jun	0	0	0	0	18,000	18,000	0.000	6,000
6-Jun	0	0	0	0	12,000	12,000	0.000	0
7-Jun	18,000	0	0	0	0	18,000	0.000	0
8-Jun	0	0	0	0	0	0	0.000	0
9-Jun	0	6,000	0	0	6,000	12,000	2.000	0
10-Jun	0	0	6,000	0	6,000	12,000	0.330	6,000
11-Jun	0	0	0	0	0	0	0.000	0
12-Jun	0	0	0	0	18,000	18,000	0.000	0
13-Jun	0	0	0	0	18,000	18,000	0.000	0
14-Jun	0	0	0	0	0	0	0.000	0
15-Jun	0	0	0	0	0	0	0.000	0
16-Jun	0	0	0	0	12,000	12,000	0.000	0
17-Jun	6,000	0	0	0	12,000	18,000	2.500	0
18-Jun	0	0	6,000	0	0	6,000	0.000	6,000
19-Jun	0	0	0	0	6,000	6,000	1.250	0
20-Jun	0	6,000	0	0	6,000	12,000	1.000	0
21-Jun	0	0	0	0	12,000	12,000	1.500	0
22-Jun	0	0	0	0	0	0	0.000	0
23-Jun	0	0	0	0	6,000	6,000	3.000	6,000
24-Jun	6,000	0	0	0	30,000	36,000	0.000	0
25-Jun	0	0	12,000	0	18,000	30,000	0.000	0
26-Jun	0	0	18,000	0	30,000	48,000	0.000	0
27-Jun	0	0	0	0	12,000	12,000	0.000	0
28-Jun	6,000	0	0	0	24,000	30,000	0.500	6,000
29-Jun	0	0	0	0	0	0	0.000	0
30-Jun	6,000	6,000	6,000	0	18,000	36,000	3.500	0
Jun-03	48,000	24,000	54,000	0	294,000	420,000	17.830	30,000

\* East Pasco Sanitary Landfill is comprised of a total of 120 acres (Including roads & boarders). The Northeast 40 acres are formerly closed and were constructed prior to the requirements of a landfill liner and leachate collection system.

The above tanks collect leachate as follows:

TANK 1 - Interim liner, closed area 6.94 acres, gas vented.

TANK 2 - Phase 3 & 4 closed area 7.2 acres(West), gas vented.

TANK 3 - Phase 3 & 4 closed area 5.0 acres(East), gas vented.

TANK 4 - Phase 2, 5.1 acres closed and 6.3 intermediate.

TANK 5 - 2 acres open & active and 4.13 acres intermediate.

\*\*\*\* The Transfer Station is a holding tank and is not affected by rainwater.



## Ford, Kim

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**From:** Pelz, Susan  
**Sent:** Monday, August 04, 2003 5:06 PM  
**To:** Ford, Kim; Morgan, Steve; Morris, John R.; Petro, Stephanie; Ross, Lora; Sobczak, Danielle  
**Subject:** FW: Final Report Available



CHAPTER

/I\_C&D\_chapter.doc

interesting info on C&Ds & arsenic

-----Original Message-----

From: Solo-Gabriele, Helena M [mailto:hmsolo@miami.edu]  
Sent: Monday, July 21, 2003 6:25 PM  
To: Solo-Gabriele, Helena M  
Subject: Final Report Available

Dear All,

You are receiving this email message because you assisted our research team in collecting groundwater arsenic data in the vicinity of construction and demolition landfills in Florida. I first would like to thank all for the assistance received. It was an huge undertaking that was only achievable through the participation of the FDEP offices, the C&D landfill operators, and their consultants. Your help is greatly appreciated.

Second I would like to inform you that a draft report that includes the results of this study have been posted on the web. The C&D landfill portion of the study was included as chapter VI of this report (attached). Please visit the following web site for a copy of the entire report.

<http://www.ccaresearch.org/publications.htm>

The title of the report is, "Arsenic and Chromium Speciation in Leachates from CCA-Treated Wood."

Again, we appreciate the assistance received on this project. Please contact me if you have any questions or comments on the report.

Sincerely,

Helena Solo-Gabriele

\*\*\*\*\*

Helena Solo-Gabriele, Ph.D., P.E.  
Associate Professor  
University of Miami  
Dept. of Civil, Arch., & Environ. Engineering  
P.O. Box 248294  
Coral Gables, FL 33124-0630  
Phone: 305-284-3489  
Fax: 305-284-3492  
email: hmsolo@miami.edu  
<http://www.eng.miami.edu/~hmsolo>

Street Address for FEDEX  
1251 Memorial Drive  
cArthur Bldg., Room 325  
Coral Gables, FL 33146-0630

\*\*\*\*\*

## **CHAPTER VI, ANALYSIS OF GROUNDWATER NEAR C&D LANDFILLS**

This chapter focuses on arsenic speciation analysis of groundwater collected in the vicinity of Construction and Demolition (C&D) landfills within the State of Florida. The motivation for this work was due to concern about the lack of liners at these landfills and the co-disposal of CCA-treated wood which could possibly contaminate groundwater in the vicinity of these landfills. The intent of this effort was to determine whether or not arsenic concentrations in groundwaters near these landfills were in fact elevated above background levels and, if elevated, what were the arsenic species of the samples. It was believed that arsenic speciation of the groundwater samples would shed some light on the ultimate source of the arsenic and would be useful in evaluating the relative toxicity of those groundwater samples. A considerable amount of work early during the study was associated with obtaining permission to collect the samples. A summary of these preliminary efforts are described in sub-section VI.1. Furthermore, early efforts also focused on the use of ion exchange cartridges in an effort to preserve arsenic speciation immediately upon sampling. Laboratory work with the ion exchange cartridges indicated that they did not function properly in maintaining the arsenic species, and this effort was therefore abandoned. A description of the work with the cartridges is described in Appendix A. After these preliminary efforts, a new strategy was established for collecting the required samples (sub-section VI.2). This new strategy resulted in the collection of the originally targeted groundwater samples and the results for these groundwater samples are described in sub-section VI.3.

### **VI.1 PRELIMINARY EFFORTS**

Preliminary efforts for this study focused on getting voluntary permission to sample groundwater at the C&D facilities. This was the initial approach that was requested by the Florida Department of Environmental Protection (FDEP). Groundwater data from C&D landfills were obtained through Richard Tedder of the FDEP on March 20, 2001. A spreadsheet was provided by Richard Tedder that provided C&D landfill data collected between January 1998 and December 2000. Out of 832 samples, 125 had arsenic concentrations greater than the detection limit, 593 did not detect arsenic, and the remaining 114 samples were not analyzed for arsenic. The 125 detects were observed at 30 different C&D landfills throughout the State. Of these 30 facilities, 26 facilities had at least one groundwater sample with an arsenic concentration greater than 10 ug/L. The 10ug/L threshold corresponds to the new drinking water limit for arsenic.

The 26 C&D landfills with at least one groundwater sample with an arsenic concentration greater than 10 ug/L were thus targeted for sampling. The Florida Department of Environmental Protection originally requested that the research team contact each of the targeted C&D landfills and ask that they volunteer to provide a sample. Each of the facilities was contacted by telephone and in some cases by fax. Contact was made with either a facility owner or operator. In some cases, owners/operators would indicate that they did not want to participate. In other cases, owners/operators indicated that they needed to consider the request further, but in all of these cases the owners/operators did not respond to further inquiries and therefore permission

was never granted for sample collection in this first attempt to contact the landfill owners and operators.

## VI.2 NEW STRATEGY

As a result of the difficulty in getting voluntary participation, the research team re-approached the Florida Department of Environmental Protection for assistance in getting permission to collect the groundwater samples. During this second effort, the Florida Department of Environmental Protection, Tallahassee, contacted the District Offices asking for assistance with obtaining the samples. In many instances the District Offices informed the landfill owners/operators of the study by letters, telephone, and email. The research team then followed up with subsequent correspondence and arranged for sample collection. Participation among the C&D landfills was much improved with this new strategy. Of the 26 landfills targeted for sample collection, 21 participated in the study. The 5 that did not participate were under enforcement action with either the FDEP or local regulatory agencies, and as a consequence cooperation would have required legal action which was beyond the mandate of this research project.

Sample collection at the participating 21 landfills was to coincide with the landfill's regular sampling schedule for FDEP compliance purposes. Prior to sample collection at the landfill, the research team would establish a "sampling coordinator" for the landfill which would be the individual who collects the sample on behalf of the landfill. The sample coordinators were typically the consultants hired by the landfill and in the case of the Northwest District, the FDEP District Office personnel. Once a sampling coordinator and a sampling date were established, the research team would then request a diagram of the landfill which included the location of the monitoring wells. A minimum of 1 background well was identified for sample collection. In the cases where two geologic layers existed below the landfill, two background samples, one from each geologic layer, were targeted for sample collection. In addition to the background samples, wells downgradient of the landfills were identified for sample collection. A minimum of two downgradient wells were to be sampled. For landfills overlying two geologic layers at least one sample was to be collected from each geologic layer. The down-gradient monitoring wells were either compliance and /or detection monitoring wells, depending upon the availability at each landfill. Once the sample locations were established, a Fedex a sampling box was shipped to each sampling coordinator one to two weeks prior to the sample collection date. The sampling box consisted of a styrofoam cooler which contained pre-labeled sampling bottles, freezer packs, a sample collection log sheet, a pre-paid Fedex label for over-night return shipment, and detailed instructions for sample collection. Once the box was sent, the research team followed-up with the sampling coordinator to assure receipt of the box and to reconfirm sample collection procedures. The day after the scheduled sampling date the research team would call the sampling coordinator to confirm the shipping date for the samples. About a month after the sample collection date, the research team would recontact the sampling coordinator to obtain the results from the samples analyzed on behalf of the landfill for FDEP compliance purposes. The results provided by the sampling coordinator were analyzed for total arsenic concentrations by an independent commercial lab as contracted by the landfill owner.

In order to develop sampling instructions, three facilities were sampled by a member of the research team early during the study. During these visits the research team member "tagged

along” with the sampling coordinator for the landfill to observe their sampling procedures. During these visits, the sampling coordinators followed standard procedures for sample collection as specified by the Florida Department of Environmental Protection which include limits on purge rate and requirements for monitoring temperature, turbidity, conductivity, and dissolved oxygen. As a result of these visits, sample collection sheets and instructions for the sampling coordinators were fine tuned in order to make sample collection procedures clearer and easier to follow (See Appendix B for Sample Collection Log Sheet). Subsequently all samples were collected by the sampling coordinator without a member of the research team present.

During this sample collection effort, groundwater samples were collected from 21 C&D debris facilities from 16 counties in Florida. A total of 71 samples were collected, 23 were from background wells and 48 were from compliance or detection wells. One landfill was not able to provide a background sample and three landfills provided two sets of background samples. In some cases, more than two downgradient samples were provided.

Arsenic speciation for all groundwater samples were analyzed by HPLC-ICP-MS. See sub-section II.1.b for more details concerning this analysis method. Total arsenic was analyzed independently by commercial labs for FDEP compliance purposes on behalf of the landfill facilities.

### **VI.3 RESULTS**

Results are presented for both the background wells (sub-section VI.3.a) and for the compliance/detection wells (sub-section VI.3.b). A comparison between background wells and compliance wells is provided towards the end of sub-section VI.3.b.

#### **VI.3.a Background Wells**

The total arsenic concentration (calculated by summing the individual arsenic species concentrations obtained by HPLC-ICP-MS) was compared with the results from the commercial laboratories (Figure VI.1 and Table VI.1). Results indicate that there were no detectable levels of arsenic in 14 of the 23 background wells. Only 7 samples were above the 5 ug/L detection limit of the HPLC-ICP-MS system. The highest concentration measured for total arsenic was 67 ug/L. Most of the arsenic in this sample was in the form of As(V) with smaller quantities of As(III) and DMAA. The overall average total arsenic concentration computed for the background wells was 7 ug/L (where samples below the detection limit were set to a value of 0 ug/L). For background wells testing positive for arsenic, the majority of the arsenic was present at As(V). Smaller quantities of As(III) and DMAA were detected for some of the positive samples. MMAA was not detected in any of the background samples.

The results between HPLC-ICP-MS and the commercial laboratories were fairly consistent. The one sample that was significantly elevated above detection limits was measured as 67 ug/L using HPLC-ICP-MS and at 77 ug/L by the commercial lab. These values are reasonably close given that two separate samples (not splits) were analyzed and considering the possible differences in analytical procedures used. All the other samples were very close to the



detection limits of the commercial laboratories which were reported to range between 5 and 10 ug/L.

### **VI.3.b Detection/Compliance Wells**

Of the 48 detection/compliance samples, 21 were found to contain total arsenic concentrations greater than the 5 ug/L detection limit of the HPLC-ICP-MS system (Table VI.2). The average among all of the wells (where the below detects were set to 0) was 10 ug/L. The maximum concentration measured by HPLC-ICP-MS was 57 ug/L as observed for well #64.

The results from HPLC-ICP-MS and the commercial laboratories were fairly consistent (Figure VI.2). Most samples were either at or near the detection limits. For samples that were significantly above the detection limits, results were found to be consistently elevated between the two sets of samples. This is shown for well #3, 5, 22, and 24. Wells 64 and 65 were also found to be significantly above background levels by both HPLC-ICP-MS and the commercial laboratories; however, in this case, the commercial laboratory measured concentrations much higher than the concentrations measured by HPLC-ICP-MS. Overall, the results are consistent in that when one method indicates that concentrations are significantly above background, the other method confirms this result.

The arsenic species of those samples that were above background levels are shown in Figure VI.3. Only three separate landfills were found to contain arsenic concentrations significantly above 20 ug/L. For one of these landfills (corresponding to well numbers 1, 3, 4, and 5) the background sample for that well was also characterized by an elevated arsenic concentration (60 ug/L). A background sample was not available for the second C&D landfill characterized by elevated arsenic concentrations (corresponding to well numbers 22, 23, and 24). The background concentration was low (<10 ug/L) for the third landfill characterized by elevated arsenic concentrations. Interestingly, the landfill with the elevated background concentration contained arsenic in the organic forms as both DMAA and MMAA. Groundwater at the other two landfills did not have measureable levels of organic species. Perhaps the presence of arsenic in the background well impacted the speciation of the arsenic observed in the detection/compliance wells for the first landfill. The differences observed in speciation between the landfills are worth further exploration.

Well #	HPLC-ICP-MS					Commercial Lab
	As(III) (mg/L)	DMAA (mg/L)	MMAA (mg/L)	As(V) (mg/L)	Total As (mg/L)	Total As (mg/L)
2	0.002	<0.005	ND	0.060	0.067	0.077
6	ND <sup>a</sup>	ND	ND	ND	ND	<0.01
8	<0.005	ND	ND	ND	<0.005	<0.01
10	<0.005	ND	ND	<0.005	0.010	BDL <sup>b</sup>
13	<0.005	<0.005	ND	<0.005	0.015	<0.005
16	ND	ND	ND	ND	ND	<0.005
27	ND	ND	ND	ND	ND	0.010
28	ND	ND	ND	ND	ND	0.018
31	ND	ND	ND	ND	ND	BDL
33	ND	ND	ND	ND	ND	BDL
37	<0.005	<0.005	ND	<0.005	0.015	<0.005
38	ND	ND	ND	ND	ND	<0.005
41	ND	ND	ND	ND	ND	<0.005
44	ND	ND	ND	0.010	0.010	<0.005
47	<0.005	ND	ND	<0.005	0.010	BDL
50	ND	ND	ND	<0.005	<0.005	<0.005
53	ND	ND	ND	ND	ND	BDL
54	ND	ND	ND	ND	ND	BDL
57	0.007	ND	ND	0.011	0.018	0.010
60	ND	ND	ND	ND	ND	<0.01
63	ND	ND	ND	ND	ND	<0.001
66	ND	ND	ND	ND	ND	<0.005
69	ND	ND	ND	ND	ND	<0.005

<sup>a</sup>ND = Not Detected by HPLC-ICP-MS

<sup>b</sup>BDL = Below Detection Limit (Detection Limits of Commercial Laboratories Between 0.005 and 0.010 mg/L)

Table VI.1: Groundwater Data for Background Wells at C&D Landfills

Well #	HPLC-ICP-MS					Commercial Lab
	As(III) (mg/L)	DMAA (mg/L)	MMAA (mg/L)	As(V) (mg/L)	Total As (mg/L)	Total As (mg/L)
1	<0.005	<0.005	<0.005	ND <sup>a</sup>	0.015	0.018
3	0.012	0.008	0.008	0.014	0.042	0.039
4	0.003	ND <sup>a</sup>	<0.005	<0.005	0.013	<0.01
5	0.008	0.008	0.010	0.018	0.044	<0.054
7	<0.005	ND	ND	ND	<0.005	<0.01
9	<0.005	<0.005	<0.005	ND	0.015	<0.01
11	<0.005	<0.005	ND	ND	0.010	BDL <sup>b</sup>
12	<0.005	ND	ND	ND	<0.005	BDL
14	0.004	ND	<0.005	ND	0.008	0.007
15	0.003	<0.005	0.004	0.006	0.017	<0.005
17	ND	ND	<0.005	ND	<0.005	<0.005
18	<0.005	ND	<0.005	ND	0.010	<0.005
19	ND	ND	<0.005	ND	<0.005	<0.005
20	ND	ND	<0.005	ND	<0.005	<0.005
21	<0.005	ND	<0.005	ND	0.010	<0.005
22	0.029	<0.005	ND	ND	0.034	0.029
23	<0.005	ND	<0.005	ND	0.010	<0.01
24	0.026	<0.005	ND	ND	0.031	0.054
25	ND	ND	ND	ND	ND	0.010
26	ND	ND	ND	ND	ND	0.010
29	<0.005	ND	<0.005	ND	0.010	0.010
30	<0.005	ND	<0.005	ND	0.010	0.010
32	ND	ND	ND	ND	ND	BDL
34	ND	ND	ND	ND	ND	BDL
35	<0.005	ND	<0.005	<0.005	0.015	<0.005
36	<0.005	ND	<0.005	ND	0.010	<0.005
39	<0.005	ND	ND	ND	<0.005	<0.005
40	<0.005	ND	ND	ND	<0.005	0.006
42	ND	ND	ND	ND	ND	<0.005
43	<0.005	ND	ND	ND	<0.005	0.009
45	<0.005	ND	ND	ND	<0.005	<0.005
46	ND	ND	ND	ND	ND	<0.005
48	ND	ND	ND	ND	ND	BDL
49	ND	<0.005	ND	ND	<0.005	BDL
51	ND	ND	ND	ND	ND	<0.005
52	ND	ND	ND	ND	ND	<0.005
55	ND	ND	ND	ND	ND	BDL
56	ND	ND	ND	ND	ND	BDL
58	ND	ND	ND	ND	ND	<0.01
59	<0.005	<0.005	ND	ND	0.010	0.010
61	<0.005	ND	ND	ND	<0.005	<0.1
62	0.006	ND	ND	ND	0.006	0.017
64	0.016	0.041	ND	ND	0.057	0.091
65	0.016	0.024	ND	ND	0.040	0.180
67	ND	ND	ND	ND	ND	<0.005
68	ND	ND	ND	ND	ND	<0.005
70	ND	ND	ND	ND	ND	<0.005
71	ND	ND	ND	ND	ND	<0.005

<sup>a</sup>ND = Not Detected by HPLC-ICP-MS

<sup>b</sup>BDL = Below Detection Limit (Detection Limits of Commercial Laboratories Between 0.005 and 0.010 mg/L)

Table VI.1: Groundwater Data for Detection/Compliance Wells at C&D Landfills

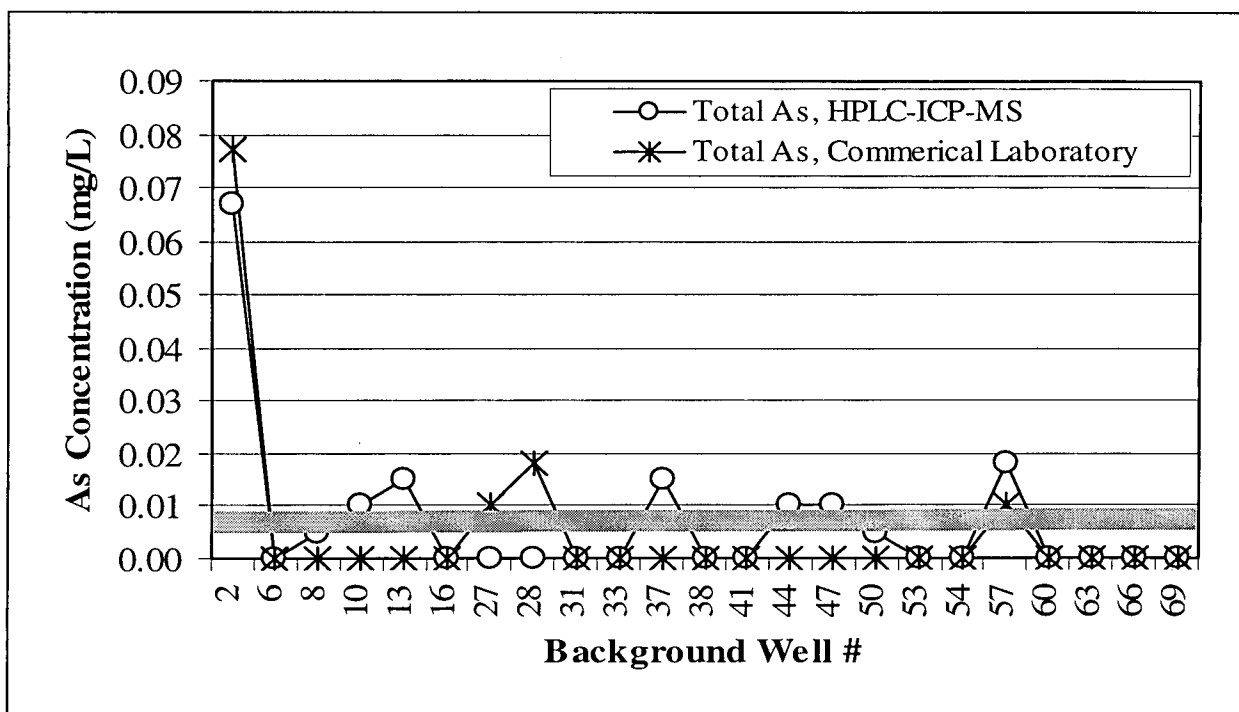


Figure VI.1: Total Arsenic for Background Wells as Measured by HPLC-ICP-MS and Independent Commercial Laboratories

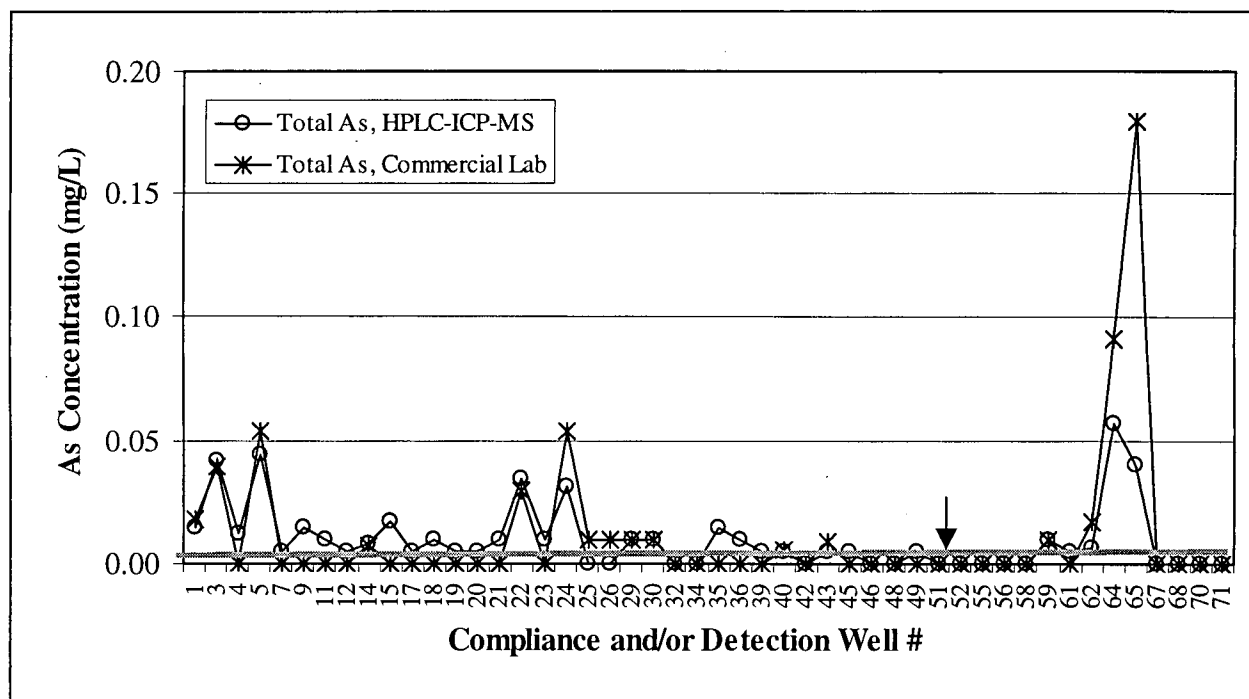


Figure VI.2: Total Arsenic for Compliance/Detection Wells as Measured by HPLC-ICP-MS and Independent Commercial Laboratories

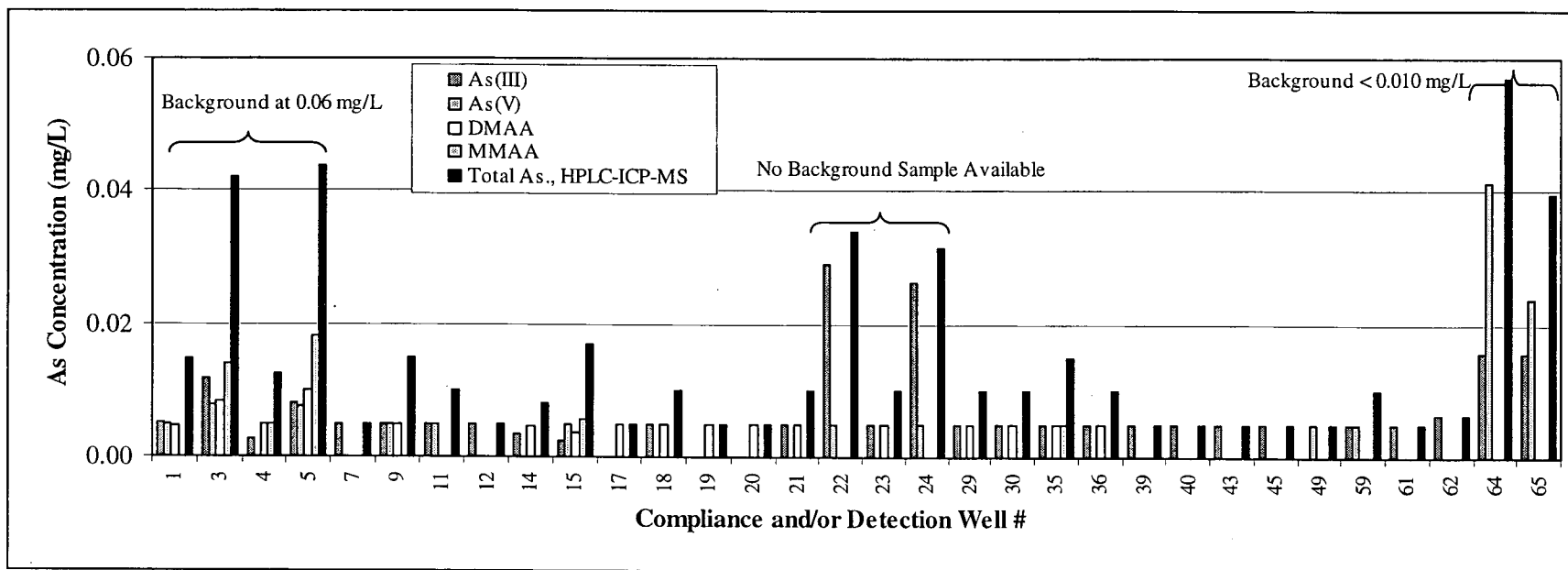

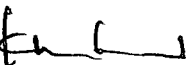


Figure VI.3: Arsenic Species of Compliance/Detection Wells that Tested Above Detection Limits

## Memorandum

# Florida Department of Environmental Protection

To: Susan Pelz   
From: Kim Ford   
Date: August 1, 2003  
Subject: Enterprise CIII Site Visit On Friday August 1, 2003

On Friday August 1, 2003 John Morris and Kim Ford met others at the Enterprise CIII landfill. Others at the site:

Angelo (left early)

Craig Bryan

Jennifer Deal, Miguel Garcia, Dale (Hartman & Assoc.)  
a contractor's representative

The site visit went as follows:

- 1) We observed the Cell 1. DEP explained that only part of Cell 1 could be included in the certification because the side slope areas on the south and west are not excavated and only the bottom part of Cell 1 can be included.
- 2) We observed standing water in ruts on the north half of Cell 1.
- 3) We went down into the Cell 1 and observed 12 areas of concern- 9 test pits excavated 3'-4' deep exposing limestone and one test pit exposing sand, and two areas not excavated. (see digital photos).
- 4) We observed one location with exposed limestone at the surface on the west side slope not yet excavated. While walking from one test pit to another, a small area of what appeared to be exposed limestone at the surface was observed. (see digital photos).
- 5) Most of the boring locations and test pits were not identified by identification stakes.
- 6) We went to the top and met to discuss several items as follows:
  - a) The surface water ditch along the east side of Cell 1 was not constructed. After review of the sequence of filling in the operations plan we agreed that the east ditch was not needed until Cell # 3 is excavated because all filling will be below grade until then.
  - b) Daily rainfall and daily staff gauge (in the temporary stormwater pond) measurements were requested.
  - c) Weekly water elevations in each installed well and each piezometer were requested.
  - d) The accuracy of the location for each boring was discussed.
  - e) All borings logs and test results were requested.
  - f) Sampling of the temporary stormwater pond was suggested as a requirement until demonstrated that there is no connection to the Floridan aquifer.
  - g) The reason why the temporary stormwater pond is not filling up after rainfall was requested. Is it draining out to the Floridan aquifer, or out the sides and evaporating?
  - h) The depth of borings was questioned because the permitted design requires a "continuous" 3 feet of clay at 10-6 cm/sec. Why are the borings only 3' deep when limestone is hit in the boring?

g) DEP requested to examine each 3 feet core for each permeability. DEP requested most permeabilities in the "worst case locations". DEP discussed and suggested updating the geologic cross-sections across the cells connecting the permeabilities and borings. DEP requested a contour map showing the top and bottom of the "continuous" 3 feet of clay at 10-6 cm/sec, and the limestone.

h) DEP advised that SC#5 requires a "plan of action" for the repairs, and SC#9.c. addresses the design requirement for the "continuous" 3 feet of clay at 10-6 cm/sec and that there have been no requested changes to the design.

i) DEP provided comments on the July 25th progress report #3 as follows:

1. more CQA already done without DEP agreement
2. "worst case" information has not been provided, such as 4 out of the 5 permeability tests appear to have been taken in the best locations not the worst.
3. some descriptions are too vague, such as "and does not appear to be competent limestone connected to the aquifer" and "clay has been encountered below the limestone in most areas".
4. more borings have been completed at locations not agreed on by DEP.
5. borings continue to be only 3 feet deep with limestone fragments and sand without showing the continuous 3' of clay.
6. permeability test results still not provided after 3 weeks.
7. the previously requested survey locations for all borings and all questionable areas not kept up-to-date and not provided.
8. some descriptions are incomplete and misleading, such as "Two (2) of the original 12 boring locations encountered limestone.", however the previous paragraph says 25 borings have been completed.
9. the description of the temporary stormwater pond is inadequate and does not include a description of test results for thickness and permeability, and indicates the observation "of a few small limestone boulders and cobbles" without further investigation and without test results.

j) We discussed the certification of the temporary stormwater pond (Cells 15 and 16). DEP indicated that the variability in the lithology encountered during excavation of Cell 1 has placed additional emphasis on demonstrating that 3 feet of continuous clay is present below the temporary pond as it will be receiving leachate from Cell 1 when disposal begins.

7) We observed the clay stockpile and discussed the location of backfill clay material to be used to repair the excavated areas. We agreed that the clay used for the backfill repairs would have no limestone fragments larger than thumbsize.

KBF

Attachments - selected photos (12 pages)



Enterprise Site Visit On August 1, 2003 – selected photos



#020 – looking from south to north across Cell 1 and test pits  
(temporary stormwater pond –Cells 15 and 16 in the background)



#022 – looking from south to north across Cell 1 and test pits  
(temporary stormwater pond –Cells 15 and 16 in the background)



Enterprise Site Visit On August 1, 2003 – selected photos



#026 – Test Pit at location #1 southeast part of Cell 1



#027 – Test Pit at location #1



Enterprise Site Visit On August 1, 2003 – selected photos



#028 – Test Pit at location #1 (big limestone 18" boulders)



#030 – Test Pit at location #1 (big limestone 18" boulders and hole)



Enterprise Site Visit On August 1, 2003 – selected photos



#033 – Test Pit at location #2 southeast part of Cell 1



#035 – Test Pit at location #2



Enterprise Site Visit On August 1, 2003 – selected photos



#036 - Test Pit at location #3 south part of Cell 1



#037 - Test Pit at location #3 south part of Cell 1



Enterprise Site Visit On August 1, 2003 – selected photos



#038 – Test Pit at location #4 southwest part of Cell 1



#039 – Test Pit at location #4 (limestone 6"-12" pieces and clay)



Enterprise Site Visit On August 1, 2003 – selected photos



#040 – Test Pit at location #5 southwest part of Cell 1  
(limestone pieces mixed in clay)



#041 – Test Pit at location #6 southwest part of Cell 1



Enterprise Site Visit On August 1, 2003 – selected photos



#044 – Test Pit at location #6



#046 – Test Pit at location #7 west part of Cell 1  
(sandy clay above limestone)



Enterprise Site Visit On August 1, 2003 – selected photos



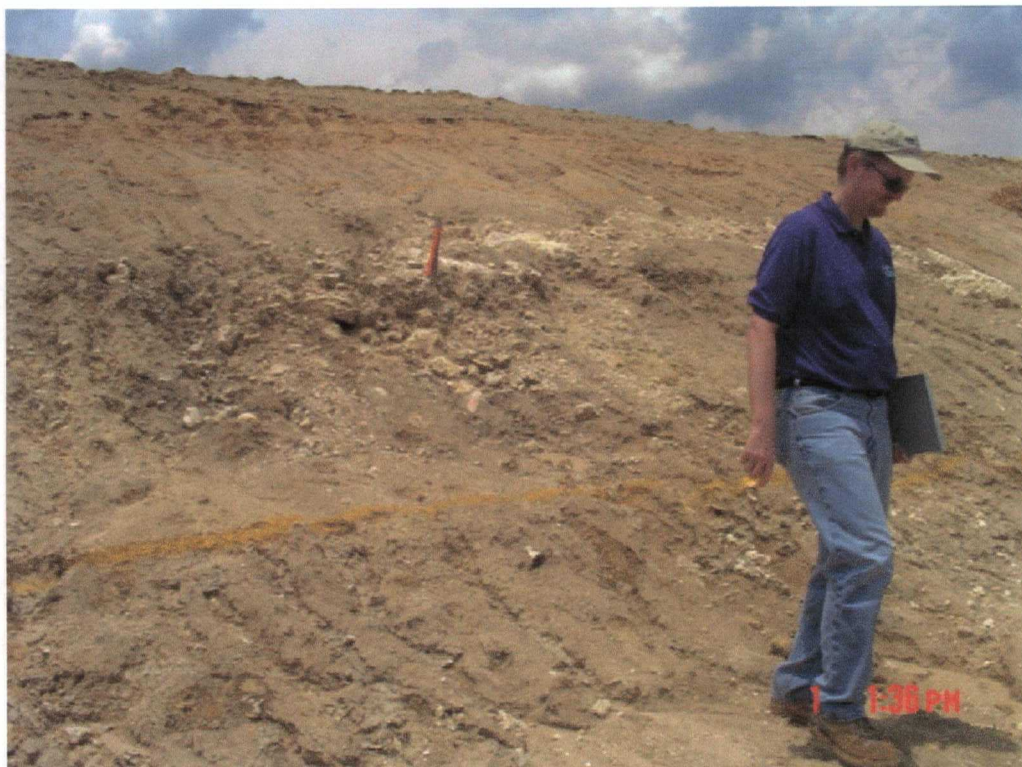
#047 – Test Pit at location #7 (sandy clay and wet in bottom)



#048 - Looking from the west central part of Cell 1 to the northeast across Cell 1  
(standing water in ruts)



Enterprise Site Visit On August 1, 2003 – selected photos



#053 – Limestone area at location #8 on the west sideslope of Cell 1 not excavated



#054 – Test Pit at location #9 central part of Cell 1



Enterprise Site Visit On August 1, 2003 – selected photos



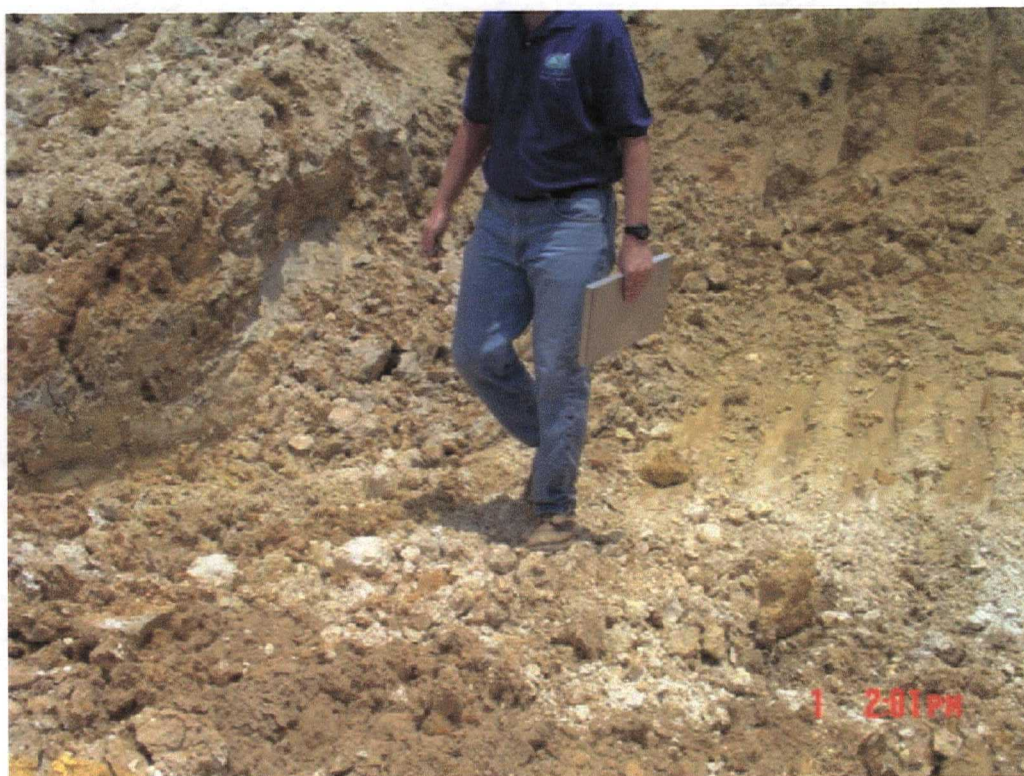
#055 – Test Pit at location #9



#056 – Limestone at surface at unknown location #10 not identified



Enterprise Site Visit On August 1, 2003 – selected photos



#057 – Test Pit at location #11 along the east sideslope of Cell 1



#058 – Test Pit at location #12 along the east sideslope of Cell 1

Ford, Kim

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**From:** Ford, Kim

**Sent:** [REDACTED]

**To:** Pelz, Susan; Morris, John R.

**Subject:** conversation with Miguel Garcia about Enterprise CIII

On August 1, 2003 at 10:30am (by cell phone) I spoke with M.G. (Hartman&Assoc.) about Enterprise CIII. **I requested a test pit at each location for each boring where a continuous 36" of 1x10<sup>-6</sup> cm/sec clay was not indicated by the boring log.** I explained that staff told me that some of the 3 feet borings provided as part of the July 25, 2003 "Progress Report #3" did not have a continuous 3 feet of 1x10<sup>-6</sup> cm/sec clay.

Kim

8/7/2003

Ford, Kim

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**From:** Ford, Kim

**Sent:** Wednesday, July 23, 2003 4:10 PM

**To:** Pelz, Susan

**Cc:** Morris, John R.

**Subject:** conversation with Jennifer Deal and Jim Golden about Enterprise CIII

On July 23, 2003 at 4pm John Morris and Kim Ford discussed Enterprise CIII with J.D. and J.G. (Hartman & Associates) as follows:

- 1) Certification should include Cell1 and the stormwater pond because the temporary stormwater pond must be certified and the certification approved prior to the future disposal in the pond area.
- 2) Borings were requested along the sides of the temporary stormwater pond at this time because the pond has water over the bottom, and more boring may be required in the future prior to disposal in the pond area.
- 3) Requested "worst case" seive analysis at each boring with percent passing the 200 seive.
- 4) By Monday 7/28/03, J.D and J.G. will propose: a CQA plan, provide a survey of all L.R. areas and borings, will provide all lab results for the 12 completed borings and the one permeability test, will propose borings for the temporary stormwater pond;
- 5) will excavate L.R. areas by Friday August 1st.

Kim

7/30/2003

**Ford, Kim**

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**From:** Ford, Kim

**Sent:** [REDACTED] 11:27 AM

**To:** Pelz, Susan; Morris, John R.

**Subject:** conversation with Jennifer Deal and Jim Golden about Enterprise CIII

On July 23, 2003 at 4pm, John Morris and Kim Ford spoke with J.D. and J.G. (Hartman) and discussed the following:

- 1) I suggested that the certification for Cell 1 should also include the tempoary stormwater pond (Cells 15 and 16).
- 2) I requested worst case seive analysis at each boring. Jim said someone is at the site observing the clay as it comes out of the hole. I explained that the worst case seive analysis must include the percent passing the 200 seive.
- 3) J.D. and J.G. said the by Monday July 28th the following would be provided:
  - a) CQA Plan
  - b) Survey of all limerock and all borings locations
  - c) lab results for all tests
  - d) proposed boring locations for the tempoary stomwater pond
- 4) J.D. and J.G. said limerock will be excavated by August 1st (the date John and I said we would observe the site).

Kim

8/7/2003

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Friday, July 18, 2003 4:00 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jennifer Deal - Enterprise CIII

On July 17, 2003 at 4:15pm I spoke with J.D. I explained :

- 1) that we should agree on the CQA plan now.
- 2) J.D. said that we approved a CQA plan on pg 3-17 of the engineering report.
- 3) I reviewed it and said that it includes minimums for sampling and that was for the condition of continuous clay at the base everywhere with no limerock.
- 4) I asked for the CQA in steps with:
  - 5) Step 1 to identify the extent of limerock and determine where the clay layer is at the base or deeper after they receive their one permeability and their 12 sieve test results.
  - 5) Step 2 then propose a CQA with more permeability tests (4), and seive analysis on a 100 feet grid (equals about 25 sieves if the clay is at the base not deeper, and maybe a 50 feet grid if the clay is deeper than the base), and 3 sieve tests at each permeability test location (one separate seive analysis for each foot of thickness), and test pits (6).
  - 6) Step 3 to overexcavate the limerock and cover with the required clay layer, and complete the CQA tests.

Kim

STEP 1  
STEP 2  
STEP 3  
NOT  
FOLLOWED  
AS REQUESTED

Enterprise

### 3.15 CERTIFICATION

Laboratory testing and observation of cell floor conditions during cell construction completion shall consist of the following:

- Percent fines of the cell floor in accordance with ASTM-D1140 will be determined at a minimum frequency of three tests per cell.
- Hydraulic conductivity testing of Shelby tube or drive cylinder samples of the compacted cell floor material will be performed at a minimum frequency of one test per cell, or one test per differing lithology encountered.
- Observance for unstable areas such as limestone, sink holes and soft ground will be performed for each cell.

If the test data from a well floor section does not meet the requirements of the anticipated conditions of the hydrogeological and geotechnical reports, additional random samples may be tested from that cell section. If the additional testing demonstrates that the hydraulic conductivity meets the requirements, the cell will be considered acceptable. If not, that cell will be reworked or reconstructed so that it will meet these requirements.

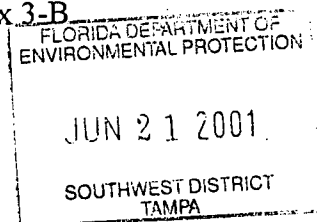
Upon completion of construction of the proposed disposal facility, the Engineer of Record shall certify to the FDEP on form 62-701.900(2) that the approved construction is complete and in accordance with the submitted plans. The operator will provide the completed form to the FDEP and arrange for an inspection prior to acceptance of Class III wastes into the proposed disposal area.

### 3.16 OPERATIONS PLAN

The proposed landfill's Operations Plan is included as Appendix 3-A.

### 3.17 CONTINGENCY PLAN

The proposed landfill's Contingency Plan is included as Appendix 3-B.





**Ford, Kim**

**From:** Ford, Kim  
**Sent:** Tuesday, July 01, 2003 3:04 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** coversation with Jennifer Deal about Enterprise CIII

On July 1, 2003 at 2:35pm I spoke with J.D. and discussed the following:

1. I requested the site location for each of the photos (provided as part of the June 24th plan)
2. I requested all info previously requested (see June 19th conversation record)
3. I requested water elevations in NGVD not the depth to water.
4. Jennifer said part of the cell already excavated to design elevation and surveyors are on site today.
5. I requested the survey (as part of the weekly progress report) show the completed area elevations.
6. I requested the CQA be included as part of the weekly progress report and include the location of all proposed borings on a grid, proposed permeability locations, test pit locations, double ring infiltrometer test locations, and sieve analysis for each boring.
7. I requested the weekly progress report provide a work schedule.

Kim

still no  
complete  
progress report,  
incomplete info,  
no CQA plan

7/1/2003



**Ford, Kim**

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**From:** Ford, Kim

**Sent:** Tuesday, July 01, 2003 3:04 PM

**To:** Pelz, Susan; Morris, John R.

**Subject:** coversation with Jennifer Deal about Enterprise CIII

On July 1, 2003 at 2:35pm I spoke with J.D. and discussed the following:

1. I requested the site location for each of the photos (provided as part of the June 24th plan)
2. I requested all info previously requested (see June 19th conversation record)
3. I requested water elevations in NGVD not the depth to water.
4. Jennifer said part of the cell already excavated to design elevation and surveyors are on site today.
5. I requested the survey (as part of the weekly progress report) show the completed area elevations.
6. I requested the CQA be included as part of the weekly progress report and include the location of all proposed borings on a grid, proposed permeability locations, test pit locations, double ring infiltrometer test locations, and sieve analysis for each boring.
7. I requested the weekly progress report provide a work schedule.

Kim

7/1/2003

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Thursday, June 19, 2003 3:38 PM  
**To:** Pelz, Susan; Morris, John R.  
**Subject:** conversation with Jennifer Deal about Enterprise CIII

On June 19, 2003 at 3:10pm I spoke with JD and discussed the following:

1. call John about well screen depths
2. fax in writing all design changes to Kim from Jennifer (the certifying engineer) for review
3. call David Smith for all stormwater related changes
4. use Sheet C-2 for the base grades maybe enlarge the cell 1 part of the sheet to 1" = 100' or 1' = 50', and show all elevations on that drawing as part of the weekly report
5. a cross-section N-S along the east new wells is needed for geology of the area
6. water levels requested as part of each weekly report for all wells and PZs
7. photos of all walls of excavation around cell 1 requested
8. notification requested when within 1 foot of final base grades to observe the geology after the last cuts without mixing of the excavated soil. I asked if pans are being used for the excavation. JD did not know.
9. I suggested possible test pits may be requested to determine how many and where the base will be samples taken for permeability.

Kim

6/19/2003



SOUTHWEST DISTRICT  
TAMPA

APR 04 2001

10/2/4 CON101537 (p) 101537-06 (0001) (0001) (0001)

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

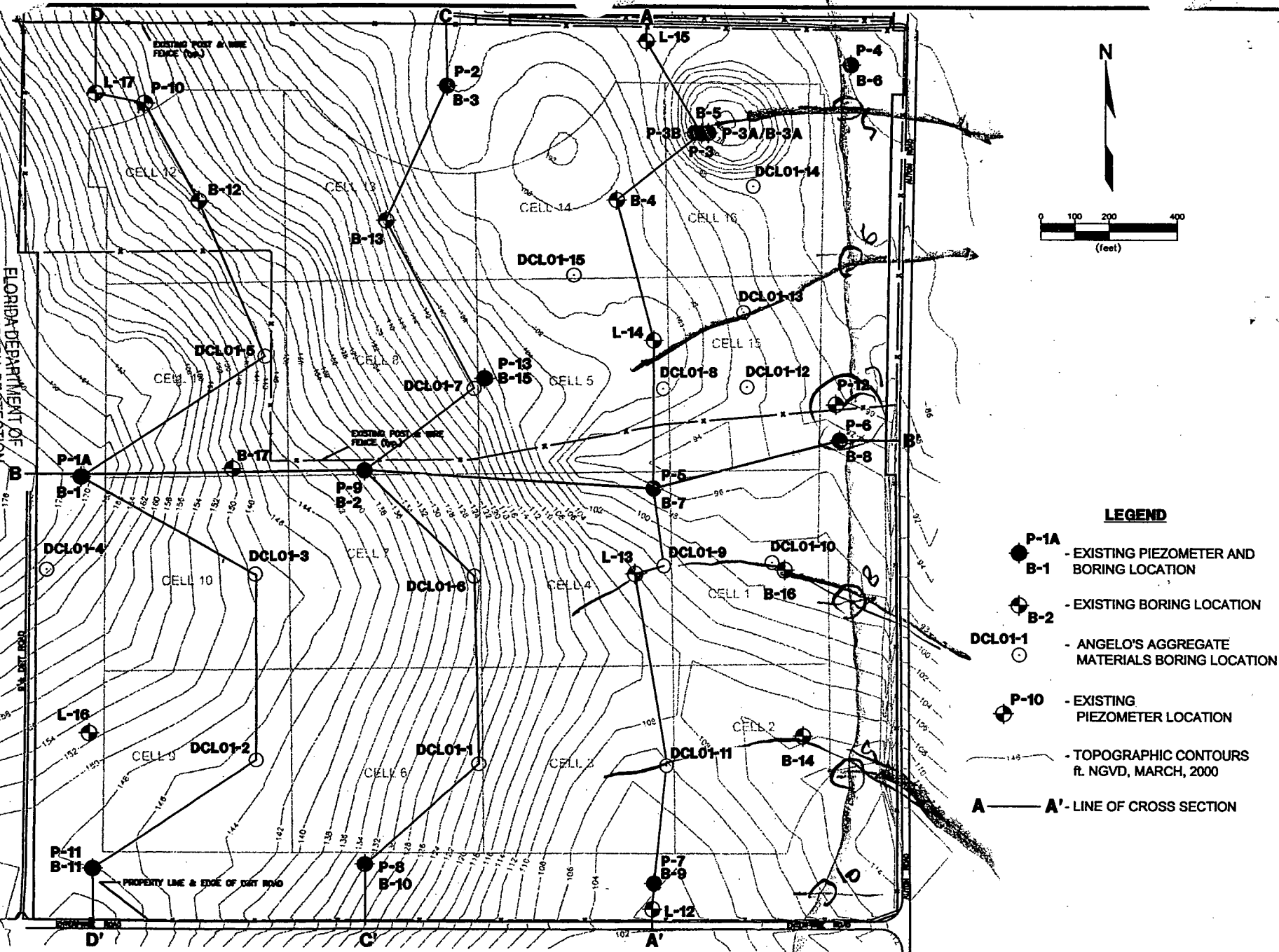


FIGURE  
4



**HARTMAN & ASSOCIATES, INC.**  
engineers, hydrogeologists, surveyors & management consultants  
201 EAST PINE STREET - SUITE 1000 - ORLANDO, FL 32801  
TELEPHONE (407) 838-3855 - FAX (407) 838-3790

**PIEZOMETER AND BORING LOCATION MAP**  
**PROPOSED ENTERPRISE RECYCLING AND DISPOSAL FACILITY**  
**DADE CITY, FLORIDA**

**Morris, John R.**

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**From:** Morris, John R.  
**Sent:** Thursday, June 19, 2003 10:42 AM  
**To:** 'Miguel Garcia'  
**Cc:** Ford, Kim; Pelz, Susan  
**Subject:** RE: Enterprise Class III Landfill, Pasco County; telephone conversations

**Importance:** High

Miguel:

Thanks for reviewing the attached e-mail message and providing your response. Please note that the last bullet item listed for our discussion on 6/18/03 should refer to Pond 2 along the EAST boundary of the facility -- the reference to Pond 2 along the west boundary is incorrect.

Thanks again.

-----Original Message-----

**From:** Miguel Garcia [mailto:mgarcia@consulthai.com]  
**Sent:** Thursday, June 19, 2003 10:24 AM  
**To:** Morris, John R.  
**Subject:** RE: Enterprise Class III Landfill, Pasco County; telephone conversations

John,

This summary accurately describes our discussions regarding the Enterprise Road Landfill site in Pasco County.

Miguel A. Garcia  
Hydrogeologist  
Hartman & Associates, Inc.  
201 E. Pine St., Suite 1000  
Orlando, Florida 32806  
Ph. 407-839-3955 Fax. 407-839-2066  
Email: Mgarcia@consulthai.com

-----Original Message-----

**From:** Morris, John R. [mailto:John.R.Morris@dep.state.fl.us]  
**Sent:** Wednesday, June 18, 2003 6:06 PM  
**To:** Miguel Garcia (E-mail)  
**Subject:** Enterprise Class III Landfill, Pasco County; telephone conversations

Miguel:

As we discussed today, I have prepared the following summary to describe items of interest during our previous telephone conversations regarding the Enterprise facility:

4/1/03:

- \* referenced the written notification of soil boring/monitor well/gas probe installation and piezometer abandonment that was previously provided in the HAI letter dated 3/20/03

- \* indicated that field activities were planned to start 4/2/03, and were anticipated to last about 2 weeks

4/4/03:

- \* soil boring installed near the NE corner of the facility to characterize subsurface conditions for proposed wells MW-5A (surficial

aquifer) and MW-5B (Florida aquifer) showed no competent limestone to a depth of 95 ft bls

- \* consistent silty clay unit was encountered below the water table sediments

- \* well screen depth of 60-70 ft bls was anticipated for proposed well MW-5B; due to different lithology encountered, now plan to complete well MW-5B as a deep surficial aquifer well with well screen at 70-80 ft bls

- \* I did not object to the proposed change in screened interval and did not feel it was appropriate to keep drilling to find limestone at this location

5/9/03:

- \* soil boring installed along east boundary to characterize subsurface conditions for proposed well MW-9 (surficial aquifer) showed mixed clayey sand/sandy clay to 37 ft bls, silty clay with limestone fragments were encountered at 37 ft bls, lost circulation zone at 41 ft bls, and depth to water was at 37 ft bls; well screen of 34-54 ft bls was anticipated for proposed well MW-9; due to different lithology encountered, now plan to complete as a shallower well so don't breach confining unit with well screen;

I did not object to proposed change in screened interval to maintain the integrity of the confining unit

- \* soil boring installed along east boundary to characterize subsurface conditions for proposed well MW-8 (surficial aquifer) showed limestone fragments at 38-40 ft bls, with hard limestone below; well screen of 29-49 ft

bls was anticipated for proposed well MW-8; due to different lithology encountered, now plan to complete as a shallower well so don't breach confining unit with well screen; I did not object to proposed change in screened interval to maintain integrity of the confining unit

- \* plan to delete the 2 ft long sumps that were planned below the screened intervals in the surficial aquifer monitor wells; I did not object to the deletion of the well sumps

- \* plan to bring another drill rig to the facility next week or following week; plan to install gas probes next week

5/23/03:

- \* existing piezometer along the south boundary (P-7) needs to be abandoned to allow for construction of stormwater pond in the southeast corner (Pond 1?); to allow continued ground water elevation data collection in the southern portion of the facility plan to install proposed well MW-11 ahead of schedule; I did not object to the early abandonment of P-7 and early installation of MW-11

5/29/03:

- \* received voice mail message providing verbal notification that limestone had been encountered during excavation of Cell 1

5/30/03:

- \* follow-up conversation to discuss occurrence of limestone, plan to get surveyors out to the facility on 5/31/03 or 6/2/03, plan to provide written notification to the Department by 6/3/03

6/18/03:

- \* plan to install stormwater pond in southeast corner (Pond 1?) ahead of schedule and needed to discuss well and gas probe locations in proximity to this pond

- \* well MW-9 has been installed and appears to be located along the western bank of the pond; plan to remove the existing concrete pad, install larger diameter protective casing and replace the concrete pad to provide better protection for the well

- \* well MW-10 has been installed and appears to be located within the bottom of the pond; plan to abandon the existing well and install a replacement well located to the NW toward the footprint of Cell 2; indicated my preference to refer to the replacement well as MW-10 so do not have to do minor permit modification to reference new well number; not a problem as had

not conducted initial sampling event and have not reported monitoring data for this location to date

- \* gas probe GP-11 is adjacent to well MW-9 and will be modified in a similar manner
- \* gas probe GP-12 is adjacent to well MW-10 and will be replaced in a similar manner

- \* HAI has been coordinating with Pasco County to route some of the stormwater drainage from the roadside swale along the north side of Enterprise Road into the stormwater pond at the southeast corner of the facility (Pond 1?); this pond will be somewhat enlarged from its proposed configuration - extended westward along the south berm and expanded toward Cell 2, with some changes to the footprint of Cell 2; I asked if these changes to the stormwater permit had been discussed with stormwater permitting personnel to determine if a permit modification was needed

- \* suggested that proposed changes to stormwater pond and Cell 2 configuration should be discussed with Kim Ford

- \* also discussed proposed stormwater Pond 2 (west boundary) and Pond 3 (north boundary); the site map attached to the operating permit (# 177982-002-SO) appears to indicate that proposed well MW-8 and gas probe GP-10 may be located within Pond 2; it also appears that proposed well MW-3 and gas probe GP-6 may be located within Pond 3; need to consider relocating these wells/gas probes prior to their installation to minimize impacts with the stormwater ponds

Please let me know if you agree with this summary and indicate any changes that you may recall. It is my intention to update this summary as needed for our permit file. Thanks for your assistance.

John R. Morris, P.G.

Solid Waste Section, Southwest District Office

Telephone: 813-744-6100, ext. 336 (suncom 512-1042, ext. 336)

Facsimile: 813-744-6125

E-mail: john.r.morris@dep.state.fl.us



on phone w/ J. Dean  
ENTERPRISE

6/17/03  
Susan

L.R. plan

John  
Kam

Other Conditions

- 1) NO LR AT BASE
- 2) CLAY EVERYWHERE AT BASE
- 3) CLAY DEEPER THAN BASE
- 4) CLAY MISSING

S.P. must GROUT Solution features

CERTIFICATION

BORINGS 3' into clay on 100' Grits

WATER LEVEL in Temp STORMWATER pond

**Ford, Kim**

---

**From:** Ford, Kim

**Sent:** ~~Monday, June 09, 2003 1:55 PM~~

**To:** Morris, John R.

**Cc:** Pelz, Susan

**Subject:** CONVERSATION WITH JIM GOLDEN (HARTMAN & ASSOC.)

On June 4, 2003 at 2:30pm, John Morris and myself spoke with Jim Golden (Hartman 407-8393955) to discuss Enterprise CIII exposed limerock. Jim G. said will overexcavate L.R. 3' and clay is near the surface so will patch with 3 feet of clay as specified in the permit and key into existing clay for a continuous clay layer. John Morris said water should drain off away from the L.R. and not pond on the bottom. I asked that the bottom to slope away from the L.R. and for photos at elevation 80'. J. Golden said will e-mail photos and excavation is at 85-90' and will certify Cell 1 only about 6 acres. I asked for corner posts with benchmarks and elevation with his proposal. Jim G asked for DEP to respond to his proposal within 2 weeks.

Kim

5/9/2003

**Ford, Kim**

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**From:** Ford, Kim  
**Sent:** Friday, June 06, 2003 9:12 AM  
**To:** Morris, John R.  
**Cc:** Pelz, Susan  
**Subject:** conversation record with J. Deal (Hartman)

On Friday at 9:am I spoke with Jennifer Deal at (407-8393955) Hartman & Associates and I requested the following:

1. A weekly progress report;
2. with photos (1 distance and 1 closeup ) of each limerock area.
3. a survey drawn to scale updated weekly with elevations and the location with dimensions of each limerock area.
4. corner posts maintained for the area being excavated (suppposedly for Cell 1 only).

Kim

6/6/2003

## Ford, Kim

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**From:** Morris, John R.  
**Sent:** Friday, May 30, 2003 2:14 PM  
**To:** Ford, Kim  
**Cc:** Pelz, Susan  
**Subject:** Enterprise Class III -- limestone excavated in Cell 1

I had a telephone conversation with Miguel Garcia, Hartman & Associates, 407-839-3955, ext. 174, regarding the occurrence of limestone within Cell 1 during excavation activities. He visited the site on 5/29/03 to observe the excavation area and provided the following details:

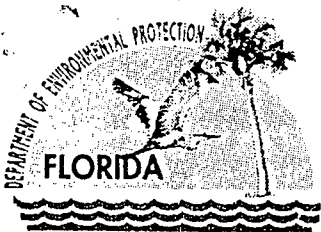
- two areas within Cell 1 encountered limestone sediments, one area about 10x15 feet and the second area about 15x20 feet
- excavation has been stopped in areas where the limestone was encountered
- excavation continues in other portions of Cell 1
- he estimated that the planned bottom elevation was 10 feet below where the limestone was encountered
- surveyors were scheduled to be at the site either Friday or Monday to locate these areas within Cell 1 and to establish elevation data for both areas
- Jim Golden is on vacation this week and will not be informed about encountering limestone in Cell 1 until Monday morning; Miguel anticipates being on-site to complete monitor well installation activities on Monday, so he will be in touch with Jim Golden via telephone to discuss the matter

I asked Miguel if the topography of the areas where the limestone sediments were exposed would be likely to pond water in the event of a significant rainfall. He indicated that areas where the limestone was encountered was sloped, so there would not be much of an opportunity for water to pond and infiltrate at the two areas. He did not feel it was necessary to build berms or use tarps to keep any standing water away from the exposed limestone areas. I indicated it would be prudent to take necessary actions to minimize the opportunity for water to pond/infiltrate at the areas where the limestone sediments were exposed.

He anticipated that the written notification required by Specific Condition No. 5 of permit No. 177982-001-SC would be provided to the Department by Tuesday (June 3, 2003), but that schedule may need to be revised depending on the surveyor's availability.

---

John R. Morris, P.G.  
Solid Waste Section, Southwest District Office  
Telephone: 813-744-6100, ext. 336 (suncom 512-1042, ext. 336)  
Facsimile: 813-744-6125  
E-mail: john.r.morris@dep.state.fl.us



# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

## PERMITTEE

Angelo's Aggregate Materials, Ltd.  
c/o Mr. Dominic Iafrate  
1755 20<sup>th</sup> Avenue SE  
Largo, FL 33771

## PERMIT/CERTIFICATION

WACS Facility ID No: SWD/51/87895  
Permit No: 177982-001-SC  
Date of Issue: 10-05-2001  
Expiration Date: 10-05-2006  
County: Pasco  
Lat/Long: 28°19'53"  
82°08'06"  
Sec/Town/Rge: 5 & 8/25S/22E  
Project: Enterprise Class III  
Landfill and Recycling  
Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 62-4, 62-522 and 62-701. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

To construct a Class III Landfill, subject to the specific and general conditions attached, located north of Enterprise Road and west of Auton Road, southeast of Dade City, Pasco County, Florida. The specific conditions attached are for the construction of:

### 1. Class III Landfill

General Information: Approximately 110 acres out of the site property of 155 acres are designated for disposal in a total of 16 cells in a series of seven sequences. The maximum height will be elevation 170.0, with the top sloping outward from the west-center portion of the landfill. The bottom elevation varies for each disposal area as shown on the site plans, and shall be sloped to drain to the north and east and away from previously filled disposal areas.

Replaces Permit No.: N/A, new

This permit contains compliance items summarized in Attachment 1 that shall be complied with and submitted to the Department by the dates noted. If the compliance dates are not met and submittals are not received by the Department on the dates noted, enforcement action may be initiated to assure compliance with the conditions of this permit.

**SPECIFIC CONDITIONS:**

5. **Prohibitions.** The prohibitions of F.A.C. 62-701.300 shall not be violated.

- In the event that limestone is encountered during construction (excavation) of new disposal areas (cells), the excavation activities shall cease and the Department shall be notified. This notification shall include the location, elevation, and extent of limestone noted on a plan sheet; a description of the materials encountered, and a plan of action which ensures that groundwater will not be adversely affected by the construction and operation of the new disposal area (cell). Construction activities shall not resume in the affected area until the Department-approved plan of action has been completed.
- In the event that surface depressions which are indicative of sinkhole activity, or subsurface instability, are discovered onsite, or within 500 feet of the site, the Department shall be notified within 24 hours of discovery. Written notification shall be submitted within 7 days of discovery. The written notification shall included a description of the depression, the location and size of the depression shown on an appropriate plan sheet, and a corrective action plan which describes the actions necessary to prevent the unimpeded discharge of waste or leachate into ground or surface water.

6. **Piezometer Abandonment.** The piezometers located as shown on Figure 15, titled "Proposed Monitor Well Location Map" prepared by Hartman & Associates, Inc., received April 4, 2001 (attached), shall be abandoned, as follows:

<u>Well No.</u>	<u>Aquifer</u>	<u>Designation</u>	<u>Location</u>
P-3*	Surficial	Piezometer	See Figure 15
P-3A*	Surficial	Piezometer	↓
P-3B*	Floridan	Piezometer	↓
P-5*	Surficial/Floridan	Piezometer	↓
P-9*	Floridan	Piezometer	↓
P-13*	Surficial	Piezometer	↓

\* To be abandoned within 30 days of permit issuance.

7. **Abandonment Documentation.** All piezometers listed in Specific Condition No. 6 shall be plugged and abandoned in accordance with Rule 62-532.440, F.A.C., and the Southwest Florida Water Management District. The permittee shall submit written documentation to the Department to verify piezometer abandonment within 30 days of completion.

**SPECIFIC CONDITIONS:**

8. **Construction Schedule and Progress Report.** The owner or operator shall submit a construction schedule which includes estimated dates for construction and closure of each disposal area (cell), and progress report for the cell under construction but not yet completed, **annually by April 1st of each year** to the Department. The Engineer of Record or another qualified professional engineer shall inspect the construction to ensure that design integrity is maintained.

9. **Certification of Construction Completeness.** After the specified construction has been completed, and **prior to operation/acceptance of waste** into each new disposal area (cell), the following activities shall be completed:

a. The owner or operator shall submit a Certification of Construction Completion, Form 62-701.900(2) (attached), signed and sealed by the professional engineer in charge of construction to the Department for approval, and shall arrange for Department representatives to inspect the construction in the company of the facility operator.

b. The owner or operator shall submit Record Drawings showing all changes (i.e. additions, deletions, revisions to the plans previously approved by the Department including site grades and elevations). The Record Drawings shall include, but not be limited to, details such as the as-built elevations of the disposal area (cell).

c. The owner or operator shall submit a narrative indicating all changes in plans and the cause of the deviations, and a report by the engineer of record to the Department to verify conformance with the project specifications including all test results for the development of each cell. The maximum hydraulic conductivity below or as part of each cell floor shall be less than  $1 \times 10^{-6}$  cm/sec in a continuous layer of at least 36 inches in thickness, unless otherwise approved in writing by the Department.

d. The permittee shall provide financial assurance for the facility in accordance with F.A.C. 62-701.630. The financial assurance mechanism shall be initially established and appropriately funded for each new disposal area (Cell), at least sixty (60) days **prior to operation/acceptance of waste** for disposal into the new disposal area (Cell). All costs for closure shall be adjusted and submitted to: Solid Waste Manager, Solid Waste Section, Department of Environmental Protection, 3804 Coconut Palm Drive, Tampa, Florida 33619-8318. Proof that the financial mechanism has been adequately funded shall be submitted to: Financial Coordinator, Solid Waste Section, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

10. **Control of Access.** Access to, and use of, the facility shall be controlled as required by F.A.C. 62-701.500(5).