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engineers, hydrogeologists, surveyors & management consultants

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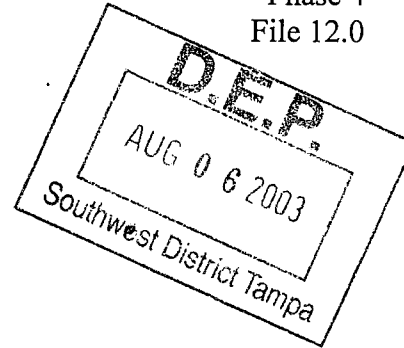
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August 5, 2003

HAI #99.0331.007

Phase 4

File 12.0



## Via UPS Overnight

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

**Subject: Cell 1 Construction Progress Report #4/CQA Plan  
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 this letter to update the Department on the construction activities and additional construction quality assurance (CQA) plan revisions at the above facility. The following information is provided as discussed during our conversations on August 1 and 5, 2003.

As requested, a rain gauge was installed at the site on August 4, 2003 for weekly data collection. At that time, water levels were measured in all existing monitor wells and piezometers. Water levels in the wells have generally increased since the last measurements. The water level table has been updated and is attached in Appendix A.

## Construction Activities

Enterprise Road paving is complete to Duck Lake Canal Road. The scalehouse and entrance grading is ongoing; Pond 1 is complete with the exception of sodding the side slopes; all monitor wells, gas probes, and piezometers are completed. All monitor wells have been sampled.

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## CQA PLAN

### Auger Borings

A total of 35 hand-auger borings (AS-1 through AS-35) have been completed in the base of Cell 1 to characterize the confining layer. All of the borings were abandoned with grout upon completion. Sieve analyses results for the boring locations are located in Appendix B for your convenience, along with a copy of Figure 3, indicating the surveyed boring locations. Approximately 90% of these borings show at least 30% pass 200 sieve, indicating good clayey sand to sandy clay. Results for the initial permeability test (ST-1) in Cell 1 and initial clay stockpile test (S-7) are attached for your review in Appendix C. These results show a permeability of  $3.3 \times 10^{-8}$  cm/s for the confining layer in Cell 1, and both tests indicate high clay content.

A total of 18 solid stem auger borings (SAA-1 through SAA-18) have been completed in the base of the cell within areas of weathered limestone fragments (visible at the surface), within the heavy machinery ramp, and at the top of the western slope of Cell 1. The borings were completed to various depths ranging from 4 feet to 29 feet. Each boring completed in the base of the cell encountered a minimum of 4 feet of clayey-sand to sandy-clay to clay below land surface (BLS), and a maximum of 14 feet of clayey sediments BLS. In general, each boring encountered weathered limestone pebbles and cobbles in a matrix of very firm to firm clayey sediments (clayey sand, sandy clay, or clay) from the surface to approximately 7 feet BLS, then transitioned into a semi firm to soft clayey-limestone marl. The shallowest boring (SSA-2) encountered hard limestone at a depth of 4 feet BLS. Initially we believed the hard limestone to possibly represent a competent limestone unit, but after excavating the area it was apparent we encountered a limestone boulder, since sandy clay was visible below the weathered limestone at a depth of about 5 feet. Another boring (SSA-9) encountered very firm to firm silty sandy clay from surface to a depth of 14 feet BLS, with a thin limestone lens of about 1"-2" thick at a depth of 9 feet BLS.

The solid stem auger borings on the top of the western slope were completed on 100-ft centers from about 50 feet south of the northwest cell marker towards the southwest cell marker. These borings were completed to depths ranging from 24 feet to 29 feet BLS. Only two (2) borings (SSA-14 and SSA-17) encountered the soft clayey limestone marl observed in the base of the cell 1 auger borings. The remainder of these borings were completed through very firm to firm clayey sediments (clayey sand, sandy clay, and clay) and semi firm to soft sandy (clayey sand and sand) sediments. All of the borings were abandoned with grout upon completion. The approximate locations of these solid stem auger borings are included in Figure 4 in Appendix D. Copies of the boring logs are provided in Appendix D for your review. The results of these borings confirm that the limestone fragments, boulders, etc., within the clay layer at the base of

Mr. Kim Ford, P.E.  
August 5, 2003  
Page 3

Cell 1 do not represent the top of the Floridan aquifer limestone unit, and in our opinion, do not significantly increase the permeability of the clay.

### **Permeability Tests**

Five additional permeability test samples were obtained (shelby tube samples) from Cell 1 as indicated on Figure 2, in Appendix C of our July 25, 2003 submittal (a copy is provided in Appendix D). These samples have been submitted to a laboratory for testing and results are expected by the end of the week. Three sieve analyses will be conducted on each of the collected samples, one at each one-foot interval in order to establish a correlation between permeability and percent fines. Results will be forwarded to the Department upon receipt. It is HAI's understanding that the Department requests to examine the shelby tube samples. We have contacted the laboratory and requested that the samples be returned to our office. HAI will hold these samples for the Department's examination. However, it is our opinion, and accepted geotechnical practice, that an average permeability of  $1 \times 10^{-6}$  cm/s for the soils within the 3-foot layer at the base of Cell 1 meets the permit condition.

Soil samples from two areas of the soil stockpiles were collected on August 5, 2003 for permeability and proctor testing (for optimum moisture content). Once acceptable results are received from the laboratory, these areas of the stockpile will be designated for use as tie-in material only. Use of soils with a maximum permeability of  $1 \times 10^{-6}$  cm/s with the optimum moisture content specified by the laboratory testing will be used for confining layer construction.

### **Confining Layer Tie-in**

Initial over-excavation of the limestone containing areas was completed on August 1, 2003; prior to the Department's site visit. Observation of these excavated areas by HAI's Geologist indicated that most of the locations are surrounded by sufficient sandy clays to perform the tie-ins. Any of the over-excavated limestone containing areas that are not completely surrounded by three feet of sandy clay or clay will be excavated further until there is competent material to construct the tie-ins. Sandy areas encountered will be excavated to a depth of three feet below grade outward until tie-ins can be constructed into competent material.

The contractor plans to use an excavator to slope the sides of the excavations to a 3H:1V slope all the way around. The designated clay material must be placed in 12-inch lifts and will be compacted by approximately four passes with a 40,000 lb, D-6 Dozer. The dozer will compact the material in the bottom of the excavation and up the side slopes into the excavator bucket marks. After the second lift is compacted with the dozer, a 12-ton, 84-inch vibratory roller will be used to roll the material. After compaction of the final lift, the vibratory roller will roll the extents of the filled and compacted area. HAI's field technician will be on-site during this

Mr. Kim Ford, P.E.

August 5, 2003

Page 4

process and will be logging the daily activities, including the tie-in locations, quantity of soil material used for each lift, thickness of each compacted lift, results of nuclear density testing, verification of equipment used for compaction, and verification of bucket marks at the tie-in surfaces (no smooth surfaces).

In accordance with ASTM specification D3017-96, Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth), a laboratory technician will use a nuclear density test/moisture content device on each 12-inch lift to ensure the proper density is achieved. Each compacted lift must be 12-inches in thickness with the appropriate density/moisture content to be acceptable.

This in-place field testing will eliminate the need for permeability testing of every 12-inch lift and waiting for each result prior to constructing the subsequent lifts. However, shelly tube samples will be collected for laboratory confirmation testing by a drill rig at the center of each lift in the first tie-in area (the excavated area in the southeast portion of Cell 1). This location will be used as a "test area" to verify that the in-field testing is adequate. Construction of the other tie-in areas will not wait for the laboratory results, as they are expected to be favorable.

Additional testing for soil liners (leachate compatibility), in accordance with FAC Rule 62-701.400(3)(f), is not proposed at this time based on the Department's issuance of a liner exemption and the thorough field testing described above. Also, 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.

### **Temporary Pond Area**

The Department has requested quality assurance testing in the temporary pond. Angelo's has decided not to certify these cells at this time. Instead, because of the Department's concern for Cell 1 runoff impacting the temporary pond and aquifer water quality, Angelo's is proposing to install three (3) additional monitor wells, one surficial and two Floridan, downgradient of the temporary pond. One Floridan well would be clustered with MW-6 (MW-6B). Monitor well MW-4, originally to be phased in, would be installed now along with a Floridan well (MW-4B) to the north of the temporary pond. The two new Floridan monitor wells would be added to the facility monitoring plan. The four Floridan wells around the pond, MW-4B, MW-5B, MW-6B, and MW-7B, would be sampled quarterly for the semi-annual groundwater parameters for the duration of the current permit. Locations of the new proposed monitor wells are shown on Figure 5 in Appendix E.

HAI performed an extensive hydrogeologic study of this site during the permitting process. In issuing the permit with a liner exemption, it is HAI's understanding that the Department

Mr. Kim Ford, P.E.  
August 5, 2003  
Page 5

acknowledges the existence of a natural confining layer at the site. The soil heterogeneity of Cell 1 was not encountered in the temporary pond area. Base grade observations by HAI's geologists indicated sandy clay in the temporary pond, with one sandy area near the northwest corner of Cell 16. This sandy area was addressed during the permitting process.

Soil test results collected from the pond after construction, indicating a sandy clay base, have been previously provided. HAI's Technician and Geologist's construction observations during the temporary pond excavation indicate a consistent sandy clay to clay at the base of the pond, with the exception of one location which was identified by the contractor as an area where a limestone boulder was identified during final grading of the temporary pond area and a sandy area. The location where the limestone boulder was sighted was inspected by HAI's Geologist and found to only contain clayey sand to sandy clay at the surface, the presence of limestone could not be visually confirmed during the site visit. The sandy area (clayey sand to sand) at the base of the pond was located south of the P-3 cluster. This area was also inspected by HAI's Geologist and the presence of clayey sand to sand was verified to exist in an area that was approximately 45 ft X 30 ft. Additional photographs of the temporary pond construction, showing the sandy clay material, are attached in Appendix F.

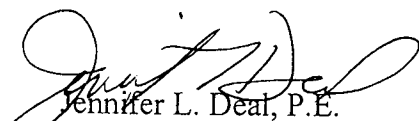
Three permeability tests have been collected and sent to a laboratory for testing. These results will be forwarded to the Department upon receipt. HAI will also hold these samples for the Department's examination. Once these cells are ready for quality assurance testing, HAI will proceed with the permeability and sieve testing discussed during the site visit on August 1, 2003.

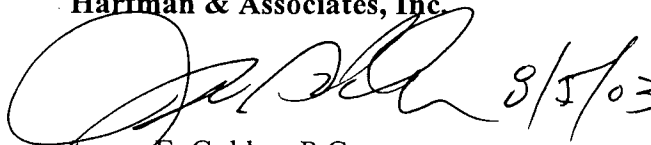
We respectfully request a prompt review of this submittal due to the extremely high cost of equipment rental and construction fees encountered during construction down times.

We trust this submittal will satisfy the Department. We are prepared to meet with you at your offices to resolve any outstanding issues. Please call us if you have any questions.

Very truly yours,

**Hartman & Associates, Inc.**

  
Jennifer L. Deal, P.E.  
Project Engineer

 8/5/03  
James E. Golden, P.G.  
Senior Hydrogeologist/Associate

JEG/JLD/cr/99.0331.007/corresp/Ford8.jeg

Mr. Kim Ford, P.E.  
August 5, 2003  
Page 6

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

# APPENDICES



# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

Mr. Dominic Iafrate  
Angelo's Aggregate Materials, Ltd.  
1755 20<sup>th</sup> Ave. S.E.  
Largo, Fl. 33771

August 5, 2003

RE: Enterprise Recycling & Disposal Class III Landfill  
Located west of Auton Road, Dade City, Fl.  
Financial Assurance Cost Estimates  
Permit Nos.: 177982-001-SC and 177982-002-SO, Pasco County

Dear Mr. Iafrate:

The Department is in receipt of a letter dated July 18, 2003 (received July 21, 2003) prepared by Hartman & Associates, Inc., concerning the active life of the facility as it relates to the financial assurance cost estimates. This letter requests a "pay-in" period over the projected 7.2 years of active life of Sequences 1 and 2. However, the cost estimates dated July 8, 2003 only include costs for the closing and long-term care of Cell 1 (approximately 6.08 acres). Based on the calculations included in the July 18, 2003 letter, Cell 1 has an area of approximately 6.8 acres. If the entirety of Sequences 1 and 2 are to be considered when determining the design life of the facility, then revised cost estimates which include the costs of closing and long-term care for Cells 1 through 8 (Sequences 1 and 2) must be provided for review. If Sequences 1 and 2 are to be included, the revised cost estimates will be reviewed in their entirety.

Additionally, based on discussions with Solid Waste staff in Tallahassee, the Southwest District Solid Waste Section has re-evaluated the revised cost estimates dated July 8, 2003 (received July 9, 2003), for closing and long-term care of the Enterprise Recycling Class III Landfill. Unfortunately, after a second review, it is clear that the estimates submitted were approved in error. The estimates submitted are more representative of the closing costs for a C&D debris disposal facility rather than the closing costs for a Class III landfill. Therefore, the cost estimates dated July 8, 2003 are not approved. Additional information is needed to fully evaluate the estimates submitted.

#### General:

1. Please be advised that Rule 62-701.630(3), F.A.C. and 40 CFR Part 264.142 as adopted by reference in Rule 62-701.630(6), F.A.C., says the closure cost estimate must:
  - a. Equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan;
  - b. Be based on the cost to the owner or operator of hiring a third party to close the facility; and
  - c. Not incorporate any salvage value that may be realized from the sale of hazardous (solid) waste, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

*"More Protection, Less Process"*



2. Please clarify the number of acres included. Please provide a reduced size (8 ½ x 11 or 11 x 17) plan sheet which shows the limits of all of the disposal areas and the acreage for each. All of the costs previously submitted will be re-evaluated based on the response to this item. Please clarify if only Cell 1, Phase 4 will be constructed during the first year.

**Closing:**

3. Slope & Fill. Please provide a quantity and cost for placement of a bedding layer. Since it is unreasonable to expect that all grades and slopes will be maintained exactly as required for closure on a daily basis, a quantity and cost for sloping, compacting and grading the waste must be included. Please specify if the quantities are for material "as-received" or "in-place." If the cost is not for "in-place" material, please account for compaction in the quantity. See also Comment #1.a., above.

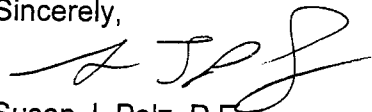
4. Cover Material (Barrier Layer), \$1.15/CY. This cost seems low. Although a quote from Goodwin Brothers construction was provided, the source of the material and permeability of the material was not specified. The clay barrier layer must meet the requirements of Rule 62-701.600(5)(g), F.A.C. Please specify the compaction technique included in the Goodwin Brothers quote. Please be reminded that the compaction and other construction methods must meet the requirements of Rules 62-701.400(7) and (8), F.A.C.

5. Gas Control. Rule 62-701.400(10)(a), F.A.C., requires that landfills that receive biodegradable wastes shall have a gas monitoring and control system designed to prevent explosions and fires and to minimize off-site odors and damage to vegetation. Since Class III landfills receive biodegradable wastes, please include a cost for installation of a gas monitoring and control system. It appears that the cost submitted is for 1 passive vent. Please specify the depth of the passive gas vents.

6. Professional Services. Please provide a detailed estimate which includes development and implementation of the CQA plan required by Rules 62-701.400(7) and (8), F.A.C. Please provide a detailed estimate for the testing cost listed. Please provide information which indicates that the Goodwin Brothers have successfully constructed this type of landfill closure, and that the cost they provided includes all of the activities required by Rules 62-701.400(7) and (8), F.A.C.

The Department requests that two copies, signed and sealed by a registered professional engineer, be provided to the Department's Solid Waste Section, FDEP, Tampa office **within thirty (30) days** of the date of this letter. **In order to expedite the review, please forward all responses concerning financial assurance directly to the writer.** If you have any questions, you may contact me at (813) 744-6100 ext. 386.

Sincerely,



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

sjp  
cc: Jennifer Deal, P.E., Hartman & Associates, 201 E. Pine St., Ste. 1000, Orlando, Fl. 32801  
Fred Wick, FDEP, Tallahassee  
Chris McGuire, FDEP OGC  
Kim Ford, P.E., FDEP Tampa

**Ford, Kim**

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**From:** Ford, Kim

**Sent:** [REDACTED]

**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