

FACILITY FILE: HILLSBOROUGH COUNTY  
CORRESPONDENCE  
Southeast Co. File

BOARD OF COUNTY COMMISSIONERS  
HILLSBOROUGH COUNTY, FLORIDA

Office of the County Administrator

Larry J. Brown  
County Administrator



P.O. Box 1110  
Tampa, Florida 33601

June 26, 1990

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S029-256427

Mr. Clabe R. Polk  
Program Administrator  
Division of Waste Management  
Florida Department of Environmental Regulation  
Southwest District  
4520 Oak Fair Boulevard  
Tampa, Florida 33610-7347

Re: Construction and Demolition Debris Disposal

Dear Mr. Polk:

On May 11, 1990, the County received a letter from the Florida Department of Environmental Regulation (DER) informing the County that a time variance to the August 1, 1990 deadline for segregated disposal of Construction and Demolition Debris (C&D) at the Southeast County Facility would not be granted. This letter is presented to bring you up to date on the County's proposed approach to the management of C&D and to receive your concurrence on this approach.

In order to explain the County's current situation with respect to C&D, it is necessary that a chronology of the events of the past year be provided:

-In May 1989, the County informed DER that it's plans for managing C&D material included the development of a County ordinance to permit the private operation of C&D landfills. The plan also included a public awareness program to encourage customers to segregate C&D along with tires and other material. Finally, the plan included a provision in which the County would evaluate an area at the Southeast County Facility for the segregated disposal of C&D material. At that point in time, it was the County's intention to locate the C&D landfill outside the Class I Landfill.

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DIVISION OF  
WASTE MANAGEMENT

Mr. Clabe Polk  
June 26, 1990  
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-In June 1989, the County informed DER that the off-site C&D landfill location appeared to pose problems with respect to foundation stability and stormwater management. That concern, coupled with the lack of tonnage information on C&D material, led the County to revise its C&D management program to include the use of one of the Phases of the Southeast County Landfill for C&D segregated disposal for a period of approximately one year. This program change was requested to permit the County to develop tonnage data and to further evaluate potential locations for a C&D landfill outside the Class I Landfill. The County intended to begin using Phase IV for C&D disposal in November 1989.

-Following the submittal of the County's revised C&D management program to DER, the C&D draft rule was finalized and much of the rule content was eliminated. Based on the revisions to 17-701, Florida Administrative Code (FAC), governing C&D disposal, the County interpreted the intent to prohibit C&D disposal in the Class I Southeast County Landfill. Concurrently, the County was experiencing stormwater management problems in Phase IV of the Southeast County Landfill which prohibited the placement of solid waste of any type in that Phase until a dewatering program could be reviewed and approved by DER and the Hillsborough County Environmental Protection Commission (EPC). These two circumstances led the County to reinstate the investigation of a C&D landfill outside the Class I Landfill.

-From August 1989 through the present, the County and its landfill consultants, SCS Engineers, have been working with the Southwest Florida Water Management District (SWFWMD) and DER on the C&D landfill design and required permit application documentation. In order to determine foundation stability in accordance with 17-701, FAC, SCS Engineers determined that further analysis of the subsurface clays would be necessary. From January through May 1990, the County developed the scope, obtained a work order, and contracted for the completion of a geotechnical study on the clay slimes.

-In April 1990, the County requested a time extension and a variance to the C&D deadline, based on the fact that a C&D disposal site outside the Class I Landfill would not be available by August 1, 1990. The additional geotechnical studies, permit approval, and Board of County Commissioners authorization to construct the facility would not be in-place in order to have a facility available for C&D by August 1990.

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-Upon receipt of your May 11, 1990 letter denying the County's time variance request, the County began to reevaluate its C&D management program. Due to the underlying site geology at the Southeast County Facility, the County cannot quickly proceed with the development of a C&D landfill outside of the Class I landfill, as DER Staff has suggested, without extensive geotechnical analysis (see attached Ardaman & Associates letter dated May 15, 1990). Rather than proceed hastily, the County requested a legal opinion from the Tallahassee office of DER concerning the feasibility of using a segregated area of the Southeast County Class I Landfill for C&D disposal. Attached is a copy of a letter from Richard Wilkins of DER stating that C&D material is permissible for disposal in a segregated area of a Class I lined landfill.

In light of the above and in order to comply with DER requirements, on August 1, 1990, the County proposes to proceed with the segregated disposal of C&D material in Phase I of the Southeast County Landfill. Both SCS Engineers and Ardaman and Associates recommend the use of this Phase for the disposal of C&D material (see attached documentation). It is the County's intention to use this site for C&D disposal indefinitely, while we continue to evaluate feasible locations outside of the Class I Landfill. Should a C&D landfill outside of the Class I Landfill be developed at a later date, the County would like to be in a position to place Class I materials over the segregated C&D material in Phase I in order to reach maximum landfill permit elevations.

Should C&D material be delivered to the Landfill mixed with other solid waste, it shall be classified other than C&D and will be disposed of along with the Class I solid waste in a separate disposal location.

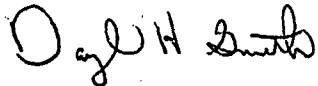
The part of the County's C&D management program dealing with the development of a C&D County ordinance to allow private operations is still in effect as stated in the County's April 17, 1990 letter to DER. Private operations could greatly reduce the amount of C&D tonnage being received at the Southeast County Landfill.

In addition, the County is evaluating the possible separation and recycling of components of C&D such as wood, land clearing and concrete material to reduce land disposal of such material. DER will be kept informed of any recycling program developments as part of the County's overall C&D management program.

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Should you require additional information at this time in order to evaluate the County's plan for compliance with the August 1, 1990 mandate for segregated C&D disposal, please contact Patricia Berry at 272-6674.

Sincerely,



Daryl H. Smith  
Director  
Department of Solid Waste

DHS/pb  
Attachments

cc: Patricia V. Berry, DSW  
— Richard G. Wilkins, DER  
Richard D. Garrity, Ph.D., DER  
Steve Morgan, DER  
Ernest G. Weeks, DER  
Paul Schipfer, EPC  
Gayle Farrer, SCS

**SCS ENGINEERS**

June 18, 1990  
File No. 985027.15

**RECEIVED**  
JUN 19 1990

Mrs. Patricia V. Berry  
Hillsborough County  
Department of Solid Waste  
410 Ware Blvd., Suite 800  
Tampa, Florida 33619

by Solid Waste Department

Subject: Construction and Demolition Debris Disposal

Dear Patty:

The purpose of this letter is to respond to the County's proposal to dispose of construction and demolition (C&D) debris within the Phase I area of the Southeast Landfill.

Based on our knowledge of the site and the landfill operation plans, it is our opinion that a segregated portion of Phase I for disposal of C&D debris will have little impact on the operations of the landfill. Landfilling in the proposed disposal area of Phase I-Stage 2 will be continuous during the entire Stage 2 filling which will not interfere with the remainder of the Stage 2 fill sequence. Landfilling will continue to following the proposed landfill operation plans by maintaining a maximum crest elevation of 180.00 feet and a 4H:1V side slope.

As mentioned in the attached letter from Ardaman & Associates, the consolidation of the clay layer within the Phase I area will be equal to or greater than 97 percent by August, 1990 (when the County anticipates disposal in this area) and should be close to 100 percent by April, 1991.

If you have any question, please do not hesitate to call.

Very truly yours,

*Bob Gardner*

60 Gayle A. Farrer, PE  
Senior Project Engineer

*Bob Gardner*

Robert B. Gardner, PE  
Vice President  
SCS ENGINEERS

GAF:RBG:gf

Attachment



Ardaman & Associates, Inc.

June 8, 1990  
File Number 89-036

Consultants in Soils, Hydrogeology,  
Foundations and Materials Testing

Received  
JUN 08 1990

SCS Engineers, Inc.  
3016 U.S. Highway 301 North  
Suite 100  
Tampa, Florida 33619

Attention: Ms. Gayle Farrer, P.E.

Subject: Disposal of Construction and Demolition Debris within the Southeast Sanitary Landfill, Hillsborough County, Florida

Dear Gayle:

As requested, we have evaluated your suggestion for the disposal of construction and demolition (C&D) debris within the Phase I area of the Southeast Sanitary Landfill beginning August, 1990. The C&D debris was originally contemplated for disposal within an existing 10-acre borrow area north of the Southeast Sanitary Landfill. However, because of the time required for study, design and construction of the proposed C&D landfill site and the immediate need of the County for an area to dispose of the C&D debris, the County wishes to examine the possibility of disposing the C&D debris, at least on a temporary basis, within the Phase I area of the Southeast Sanitary Landfill.

A hydrogeological survey and geotechnical investigation for the Southeast Sanitary Landfill was previously performed by Ardaman & Associates, Inc. in the early 1980's. The findings and conclusions from that study were documented in an engineering report titled "Hydrogeological and Geotechnical Investigation for Proposed Southeast Hillsborough County Sanitary Landfill", dated February 22, 1983 (Ardaman & Associates File Number 81-159). Based on updated information on landfill design sections and operation and the revised projected filling schedules for the landfill, another engineering study was conducted by Ardaman & Associates, Inc. in 1989 and the results were documented in an Ardaman & Associates' report titled "Evaluation of Filling Schedules and Stability Analyses for Southeast Sanitary Landfill, Hillsborough County, Florida", dated July 13, 1989.

The entire Southeast Sanitary Landfill is divided into six phases for filling. The Phase I area is located within the southern portion of the landfill site. Stage 1 filling was conducted in this area between November, 1984 and December, 1985 with approximately 1,020,000 tons of refuse having a compacted volume of about 1,517,600 cubic yards. Accordingly, the density of the refuse was computed to be about 50 pcf. As illustrated by the landfill cross sections in our July 13, 1989 report, Stage 1 filling within the Phase I area was constructed on a typical side slope of about 6 horizontal to 1 vertical (6H:1V) along the outside perimeter and reached a typical crest elevation of about +155 feet (NGVD). From +155 feet (NGVD), the landfill was constructed on a 2 percent slope that reached a peak elevation of approximately +160 feet (NGVD).


According to the proposed landfill operating plan, Stage 2 filling within the Phase I area will consist of a mixture of refuse and residue and was contemplated to begin in April, 1991 upon completion of the Stage 1 filling within the Phases I, II, III and IV areas. The original thickness of the underlying waste phosphatic clay within the Phase I area of the Southeast Sanitary Landfill site ranged from 4 feet along the southern edge to 12 feet along the northern edge of the subject area. Based on our previous analyses, the factor of safety for a critical landfill section was analyzed to be 1.7 by April, 1991, i.e., prior to the placement of the Stage II fill. The analyses considered the consolidation to be close to 100 percent at mid-depth of the phosphatic clay deposit and a landfill side slope of 4H:1V\*. The refuse from the Stage I filling was considered to have a total unit weight of 50 pounds per cubic foot (pcf) and an effective angle of internal friction of 26 degrees.

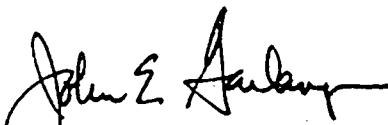
According to the proposed landfill operating plan, Stage II filling within the Phase I area will consist primarily of a mixture of refuse and residue and will raise the crest elevation to +160 feet (NGVD) along the perimeter slope. As documented in our July 13, 1989 report, the calculated factor of safety for the landfill section after the addition of the Stage II fill was 1.4. Our analyses were based on a total unit weight of 1,890 lbs per cubic yard (70 lbs per cubic foot) and an effective angle of internal friction of 28 degrees for the refuse/residue mixture.

Based on our previous calculations, the dissipation of the excess pore water pressure and the corresponding increase in undrained shear strength at mid-depth of the underlying phosphatic clay deposit resulting from the Stage I loading in this area have exceeded 95 percent in 1989 and should be close to 100 percent by April, 1991. Therefore, the consolidation of the clay layer is projected to be no less than 97 percent by August, 1990. The density of the C&D debris should be about the same as that of the refuse/residue mixture and the friction angle should be no less than what was used for the refuse/residue mixture in our previous analyses. On this basis, placement of the C&D debris within the Phase I area beginning August, 1990 should be acceptable provided the landfilling geometries (i.e., crest elevation, side slope etc.) are in accordance with the proposed landfill operating plan.

If you have any questions or need further assistance, please do not hesitate to contact us.

Very truly yours,  
ARDAMAN & ASSOCIATES, INC.

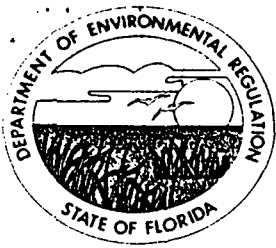
  
Francis K. Cheung, P.E.  
Senior Project Engineer

  
John E. Garlanger, Ph.D., P.E.  
Principal  
Florida Registration No. 19782

89036-9.SCS

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\* As indicated in our previous report, the county desired to bring the existing slope within the Phase I area from 6H:1V to 4H:1V prior to the placement of the Stage II fill to maximize the storage volume of the landfill.



# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachmann, Secretary

John Shearer, Assistant Secretary

May 29, 1990

RECEIVED

JUN 08 1990

by Solid Waste Department

Ms. Patricia Berry  
Hillsborough County  
Solid Waste Department  
410 Ware Boulevard, Suite 800  
Tampa, Florida 33619

Dear Ms. Berry: *Patty*

In response to your question about the requirement that construction and demolition debris be segregated from other solid waste:

1. Section 403.706(2)(a), F.S. states that construction and demolition debris must be separated from the solid waste stream and segregated in separate locations at a solid waste disposal facility or other permitted site.
2. Rule 17-701.061(2), F.A.C. states that construction and demolition debris may be disposed of in a permitted landfill. However, pursuant to Section 403.706(2), F.A.C. each county must initiate by July 1, 1989, a program to develop segregated disposal areas for construction and demolition debris. This program shall be designed to assure that all construction and demolition debris is disposed in segregated areas after August 1, 1990.

We believe the legislative intent was to discourage local governments from filling their valuable lined landfill space with material that does not require the protection of a liner.

However, neither the statute or rule require disposal in an unlined landfill or prohibit disposal in a lined landfill. Therefore, if Hillsborough County chooses to use a lined, segregated area of the Southeast Landfill for disposal of construction and demolition debris, they may do so.

Thank you for bringing this matter to our attention.

Sincerely,

*Richard G. Wilkins*

Richard G. Wilkins, Director  
Division of Waste Management

RGW/jrw

cc: Clabe Polk  
Chris McGuire  
Barry Swihart







Ardaman & Associates, Inc.

May 15, 1990  
File Number 90-078

Consultants in Soils, Hydrogeology,  
Foundations and Materials Testing

SCS Engineers, Inc.  
3016 U.S. Highway 301 North  
Suite 100  
Tampa, Florida 33619

Attention: Ms. Gayle Farrer, P.E.

Subject: Southeast Construction & Demolition Landfill, Hillsborough County, Florida

Dear Gayle:

It is our understanding that Hillsborough County is planning to operate a construction and demolition (C & D) debris landfill at the Southeast Sanitary Landfill site. Ardaman & Associates, Inc. is pleased to submit this letter to document the reasons and our recommendations for the geotechnical work required prior to design and operation of the proposed landfill.

The proposed C & D landfill will comprise an area of approximately 10 acres. Based on preliminary information provided to us by SCS Engineers, the proposed landfill will have a bottom elevation at +128 feet (NGVD) and will be raised on a side slope of 4 horizontal to 1 vertical (4H:1V) to a crest elevation at +190 feet (NGVD). From +190 feet (NGVD), the surface will be graded 20H:1V to a peak elevation at +194 feet (NGVD).

A hydrogeological survey and geotechnical investigation for the Southeast Landfill was previously performed by Ardaman & Associates, Inc. in the early 1980's. The findings and conclusions from that study were documented in an engineering report titled "Hydrogeological and Geotechnical Investigation for Proposed Southeast Hillsborough County Sanitary Landfill", dated February 22, 1983 (Ardaman & Associates's File Number 81-159). Based on the results documented in the report, the entire Southeast Landfill site is located above a waste clay settling area. The waste clay could have a thickness of as much as 20 feet and could be encountered close to existing ground surface. Groundwater at the site could also be at or near ground surface elevation.

Because the waste phosphatic clays have low undrained shear strength and potentially may experience significant settlements from landfill loadings, we strongly recommend that a geotechnical study, prior to design and construction of the landfill, be conducted to evaluate the stability of the foundations and to assess the settlement of the phosphatic clays based on the proposed landfill design cross section. Existing groundwater level elevations at the proposed landfill site should also be documented to determine the impacts, if any, of the groundwater on the design and/or construction of the landfill.

To accomplish the above objectives, Ardaman & Associates will prepare a proposal under separate cover to outline the scope of work and analyses required for this project. If you have any questions in the mean time, please do not hesitate to contact us.

Very truly yours,

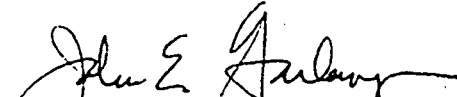
ARDAMAN & ASSOCIATES, INC.



Francis K. Cheung, P.E.

Senior Project Engineer

Florida Registration No. 36382



John E. Garlanger, Ph.D., P.E.

Principal