

JONES EDMUNDS

August 8, 2008

Ms. Susan J. Pelz, P.E.
Florida Department of Environmental Protection
Southwest District
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

Dept of Environmental
Protection
AUG 08 2008
Southwest District

Subject: Southeast County Landfill, Class I Landfill
Operation Permit Renewal Application
Phases I-VI and Capacity Expansion Area (Sections 7/8/9)
Pending Permit No. 35435-014-SO, Hillsborough County
Supplemental Information to RAI No. 1

Dear Ms. Pelz:

On behalf of the Hillsborough County Solid Waste Management Department (SWMD), Jones Edmunds submits the following documents as supplemental information to RAI No. 1 dated May 16, 2007:

- Attachment 1. Responses to FDEP Geotechnical Comments (Part J) Memo dated February 16, 2007 (RAI No. 1) by Ardaman & Associates, Inc. and supplemental memo from Jones Edmunds.
- Attachment 2. Responses to FDEP Groundwater (Part I and M) Memo dated June 5, 2008.
- Attachment 3. Revised Operations Plan Sections L.2.f.(2), L.2.f.(3), and L.7.h.
- Attachment 4. Monitoring Well Completion Reports and Surveys for TH-69A, TH-70A, and TH-71A.
- Attachment 5. Financial Assurance Section 9 Compliance Letter.

Attachments 1 and 2 are responses to FDEP's comments dated February 16, 2007 and June 5, 2008, respectively. Attachment 1 also includes additional information from Jones Edmunds to supplement the Ardaman & Associates responses. As part of the revisions provided in Attachment 2 for Part I and M, we have included a revised monitoring well location map. Due to some noted field discrepancies, mapped locations of monitoring wells TH-65, TH-66, P-11D, TH-35A, and the mine cut staff gauges have been shifted to more accurately represent the locations based on survey data. These changes have been evaluated and do not significantly change groundwater potentiometric interpretations. The well location maps and potentiometric maps provided in Attachment 2 have been revised to reflect the new well locations. The survey information used to relocate the monitoring wells is provided in Attachment 4B.

324 South Hyde Park Avenue
Suite 250
Tampa, FL 33606

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www.jonesedmunds.com

Ms. Susan Pelz, P.E.
August 8, 2008
Page 2

We have revised the Operations Plan to update the temporary side slope completion plans for Section 7 and 8 [L.2.f.(2) and L.2.f.(3)] and to include the method for mixing the soil and mulch (L.7.h) for use as cover material. The Operations Plan pages which changed due to these revisions are provided in Attachment 3.

In addition, in compliance with Construction Permit 35435-011-SC/01 issued by FDEP on March 12, 2006, we are submitting Well Completion Reports and Well Construction Logs for the newly installed wells at the Southeast County Landfill.

Jones Edmunds installed and pre-developed three groundwater monitoring wells on May 15, 2008 as part of the groundwater monitoring network for the newly constructed Section 9. This new monitoring network was installed to permit specifications and includes groundwater monitoring wells TH-69A, TH-70A, and TH-71A.

The driller's logs (Attachment 4A), monitoring well completion reports (Attachment 4A), and signed and sealed survey (Attachment 4B) for TH-69A, TH-70A, and TH-71A, in accordance with Rule 62-701.510(3)(d)(1), are provided in Attachment 4. Part I and M have been revised to include these wells as replacements for TH-69, TH-70, and TH-71, which were previously installed. These wells were replaced to increase the depth of monitoring to ensure monitoring within the water column throughout the year.

Finally, Attachment 5 contains the financial assurance compliance letter for Section 9. The last financial test submitted by Hillsborough County included Section 9. Therefore, the financial assurance for Section 9 is in place and has been approved.

Please contact me at 813/258-0703 if you have any questions or comments regarding the attached documents.

Sincerely,

Jason Simmons
Project Engineer

cc: Patricia V. Berry, SWMD
Megan Miller, SWMD
Larry E. Ruiz, SWMD
Ron Cope, EPC

ATTACHMENT 4

Monitoring Well Completion Reports and Surveys for
TH-69A, TH-70A, and TH-71A

ATTACHMENT 4A

Well Completion Reports
and
Well Construction Logs

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

DEP Form # 62-522,900(3)
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No. _____ (Filled in by DEP)

MONITOR WELL COMPLETION REPORT

DATE: 05/27/2008

INSTALLATION NAME: Hillsborough County SE Landfill

DEP PERMIT NUMBER: 35435-011-SC/01 GMS NUMBER: _____ WACS ID NUMBER: SWD/29/41193

WELL NUMBER: 69A WELL NAME: TH-69A

DESIGNATION: Background _____ Detection _____ Compliance X

LATITUDE/LONGITUDE: 27° 46' 37.95289" LATITUDE / 82° 10' 46.89833" LONGITUDE

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Hollow-Stem Auger

INSTALLED BY: Huss Drilling, Inc. Specifications provided by Jones Edmunds & Associates, Inc.

TOTAL DEPTH: 31.8 ft DEPTH OF SCREEN: 16.8 to 31.8 ft
(bls) (bls)

SCREEN LENGTH: 15 ft SCREEN SLOT SIZE: 0.010 in SCREEN TYPE: sch. 40 PVC slotted

CASING DIAMETER: 2 in CASING TYPE: sch. 40 PVC

LENGTH OF CASING: 16.8 ft (does not include stickup) - ~ 19.8 ft. w/stickup FILTER PACK MATERIAL: 20/30 silica sand

TOP OF CASING ELEVATION (MSL): 144.97 ft NGVD 1929

GROUND SURFACE ELEVATION (MSL): 141.69 ft NGVD 1929

COMPLETION DATE: 05/15/2008

DESCRIBE WELL DEVELOPMENT: Initial development was conducted by the drillers using a handheld submersible pump for approximately 34 minutes.

Water never completely cleared, but was much lighter brown than when began (very dark brown with a lot of fines). Lithologic unit has much fine, carbonaceous (organic) material.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Post initial development~26.4 ft bls from ground surface - ~29.4 ft bls w/stickup.

DATE AND TIME MEASURED: 05/15/08, 10:44 a.m.

REMARKS: (soils information, stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY: Angela K. Owen (Geologist), Jones Edmunds & Associates, Inc., (352) 377-5821
(name, company, phone number)

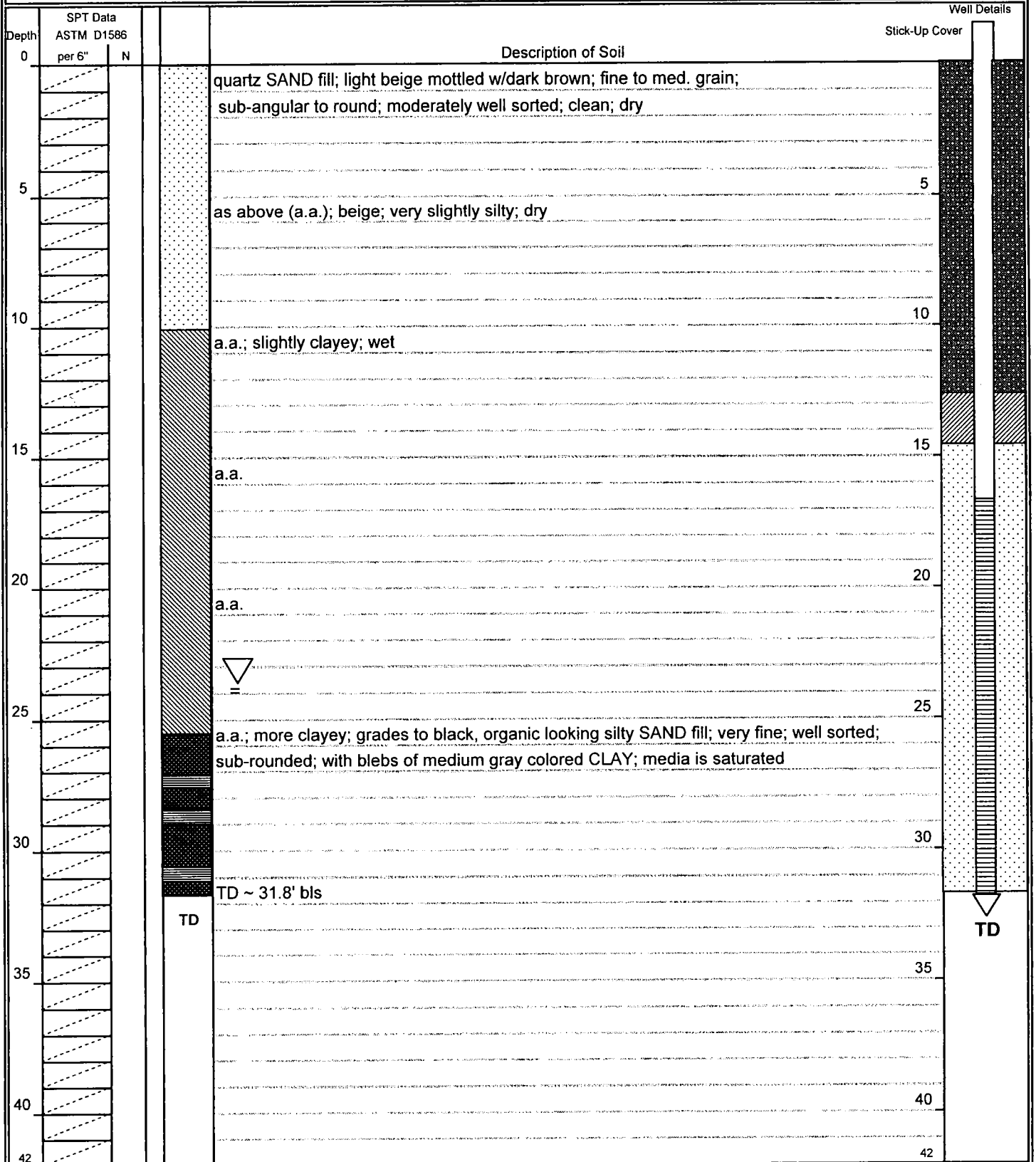
NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

TEST BORING FIELD REPORT

Project Name: Hillsborough Co SE LF Cell 9 Constr.
 Project Number: 08449-030-02-1110
 Drilling Contractor: Huss Drilling
 Drilling/Sampling Methods: Hollow Stem Auger

Boring Number: TH-69A Page 1 of 1
 Test Boring Completed: 05/15/08, Well Completed: 05/15/08
 Jones Edmunds Field Geologist: Angela K. Owen
 Reviewed By/Date: _____
 Elevations: Ground: (NA) ft NGVD 29, Top of Slab: (NA) ft NGVD 29
 Top of Casing: 144.97ft NGVD 29 (Hillsborough Co. Survey Dept.)



Notes and Additional Data/Info. (Specify if Other Materials Used):

Total Well Depth = 31.8 ft bls
 Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 16.8 ft bls; Screen = 15 ft, 0.010-in
 Sand Filter Pack = 9 50-lb Bags; Type = 20/30 Silica; Placed from 14.8 to 31.8 ft bls (measured)
 Annular Seal: Type = Bentonite Pellets; Thickness = 2 ft; Placed from 12.8 to 14.8 ft bls (measured)
 Grout = 2 94-lb Bags of Cement Grout to Surface; Pad = 2x2-ft Concrete; Cover = 6-in Aluminum Cylinder Stick-Up



WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT #: 774326.1 CUP/WUP#: _____ DID#: _____
 Indicate the number of wells drilled/abandoned for this report: 1
 Indicate the number of wells permitted but not drilled/abandoned that are being cancelled: _____

WATER WELL CONTRACTOR'S
 SIGNATURE Digitally Signed License # 9342

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (ft.)	To (ft.)
Neat Cement:	4	0	17
Bentonite:	1	17	32
(Other)			

WELL LOCATION: County Hillsborough
1/4 of 1/4 of Section 27, Township 31, Range 21
 Latitude: 27° 45' 45.06", Longitude: -82° 12' 8.32"

DATE STAMP
May 20 2008
 Official Use Only

Sketch of well location on property
 Give distances from septic tank and house, or other reference points

CHEMICAL ANALYSIS WHEN REQUIRED
 Iron: _____ ppm Sulfate: _____ ppm
 Chlorides: _____ ppm TDS _____ mg/l
 Conductivity _____ umhos/cm
 Lab Test Field Test Kit
 Pump Type
 Centrifugal Jet Submersible Turbine
 Horsepower: _____ Capacity: _____ GPM: _____
 Pump Depth: _____ ft. Intake Depth: _____ ft.
 Form LEG-R.005.00(10/05)

OWNER'S NAME: Hillsborough County TH-69A
 COMPLETION DATE: 05/15/2008 Florida Unique I.D.: _____
 Parcel # (Pin): _____
 WELL USE:

- Public Supply Irrigation Domestic Monitor
 Injection Other OBSERVATION OR MONITOR WE

- DRILL METHOD:
 Rotary Cable Tool Combination
 Jet Auger Other _____

Measured Static Water Level: _____		Measured Pumping Water Level: _____	
After _____ Hours at _____ GPM.		Measuring Pt. (Describe): _____	
Which is _____ ft. <input type="checkbox"/> above <input checked="" type="checkbox"/> below land surface			
Casing: <input type="checkbox"/> Black Steel <input type="checkbox"/> Galvanized <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Other: _____			
Casing Diameter and Depth (ft.)	Depth (feet)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material
	From	To	
Diameter: <u>2</u>	0	15	brown fine sand
From: <u>0</u>	15	30	green not applicable sandy clay
To: <u>17</u>	30	32	brown not applicable sand
Diameter: <u>2</u>			
From: <u>17</u>			
To: <u>32</u>			
Liner <input type="checkbox"/> or Casing <input type="checkbox"/>			
Diameter: _____			
From: _____			
To: _____			

Driller's Name (print or type): Kevin Refuse

DEP Form # 62-522.900(3)
Form Title MONITOR WELL COMPLETION REPORT
Effective Date _____
DEP Application No. _____
(Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 05/27/2008

INSTALLATION NAME: Hillsborough County SE Landfill

DEP PERMIT NUMBER: 35435-011-SC/01 GMS NUMBER: WACS ID NUMBER: SWD/29/41193

WELL NUMBER: 70A WELL NAME: TH-70A

DESIGNATION: Background _____ Detection _____ Compliance X

LATITUDE/LONGITUDE: 27° 46' 40.85739" LATITUDE / 82° 10' 44.46189" LONGITUDE

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Hollow-Stem Auger

INSTALLED BY: Huss Drilling, Inc. Specifications provided by Jones Edmunds & Associates, Inc.

TOTAL DEPTH: 33.4 ft DEPTH OF SCREEN: 18.4 to 33.4 ft
(bls) (bls)

SCREEN LENGTH: 15 ft SCREEN SLOT SIZE: 0.010 in SCREEN TYPE: sch. 40 PVC slotted

CASING DIAMETER: 2 in CASING TYPE: sch. 40 PVC

LENGTH OF CASING: 18.4 ft (does not include stickup) - ~21.4 ft.w/stickup FILTER PACK MATERIAL: 20/30 silica sand

TOP OF CASING ELEVATION (MSL): 146.63 ft NGVD 1929

GROUND SURFACE ELEVATION (MSL): 143.17 ft NGVD 1929

COMPLETION DATE: 05/15/2008

DESCRIBE WELL DEVELOPMENT: Initial development was conducted by the drillers using a handheld submersible pump for approximately 25 minutes.

Water cleared to a light 'tea' color from a very dark brown with a lot of fines. Lithologic unit has much fine, carbonaceous (organic) material.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Post initial development~23.74 ft bls from ground surface - ~26.74 ft bls w/stickup.

DATE AND TIME MEASURED: 05/15/08, 10:57 a.m.

REMARKS: (soils information, stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY: Angela K. Owen (Geologist), Jones Edmunds & Associates, Inc., (352) 377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG. (bls)= Below Land Surface

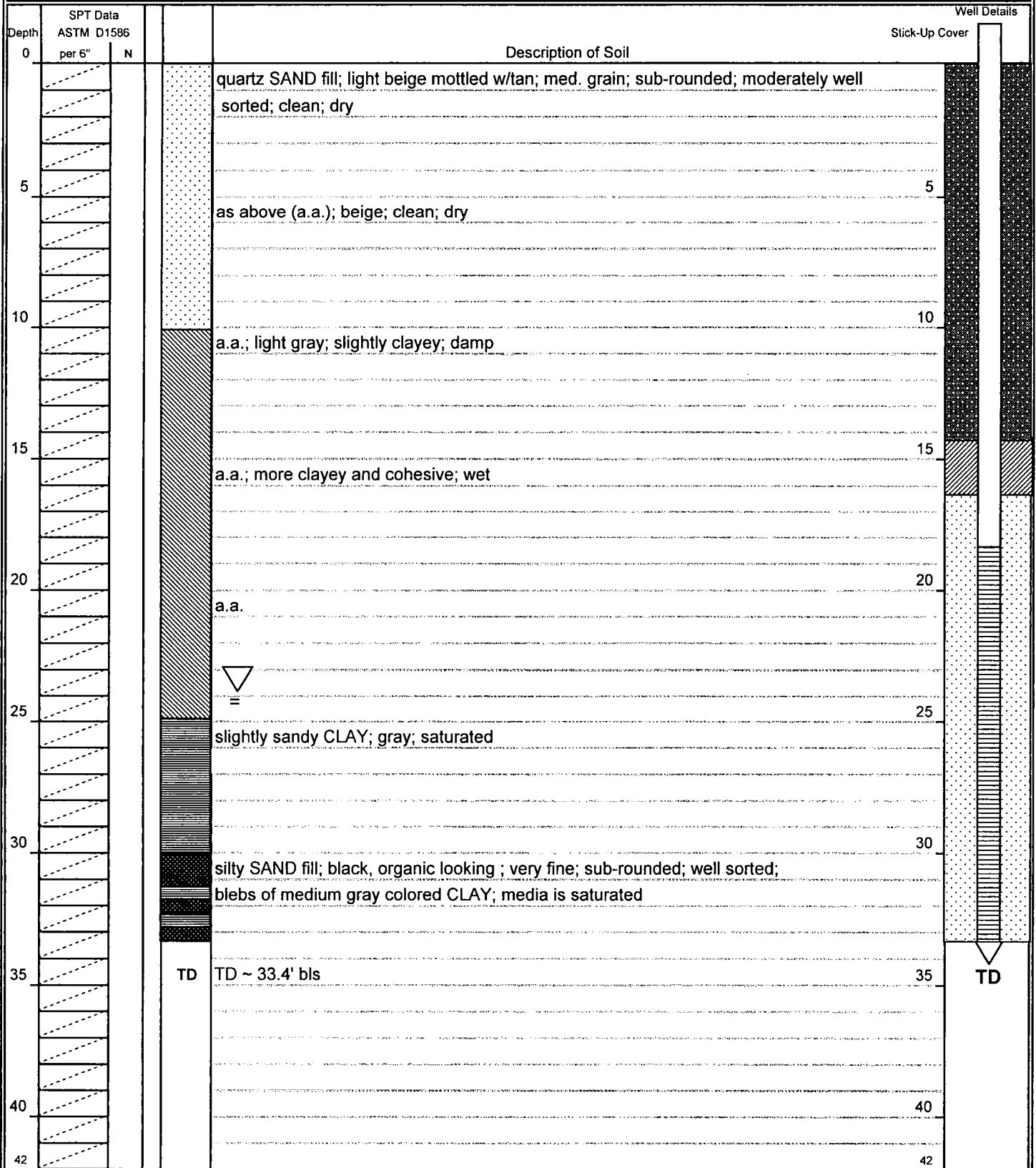
TEST BORING FIELD REPORT

Project Name: Hillsborough Co SE LF Cell 9 Constr.
 Project Number: 08449-030-02-1110
 Drilling Contractor: Huss Drilling
 Drilling/Sampling Methods: Hollow Stem Auger

Boring Number: TH-70A

Page 1 of 1

Test Boring Completed: 05/15/08, Well Completed: 05/15/08
 Jones Edmunds Field Geologist: Angela K. Owen
 Reviewed By/Date: _____
 Elevations: Ground: (NA) ft NGVD 29, Top of Slab: (NA) ft NGVD 29
 Top of Casing: 146.63 ft NGVD 29 (Hillsborough Co. Survey Dept.)



Notes and Additional Data/Info. (Specify if Other Materials Used):

Total Well Depth = 33.4 ft bls
 Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 18.4 ft bls; Screen = 15 ft, 0.010-in Sand Filter Pack = 10 50-lb Bags; Type = 20/30 Silica; Placed from 16.4 to 33.4 ft bls (measured)
 Annular Seal: Type = Bentonite Pellets; Thickness = 2 ft; Placed from 14.4 to 16.4 ft bls (measured)
 Grout = 2 94-lb Bags of Cement Grout to Surface; Pad = 2x2-ft Concrete; Cover = 6-in Aluminum Cylinder Stick-Up



WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT #: 774326.2 CUP/WUP#: _____ DID#: _____

Indicate the number of wells drilled/abandoned for this report: 1

Indicate the number of wells permitted but not drilled/abandoned that are being cancelled: _____

WATER WELL CONTRACTOR'S

SIGNATURE Digitally Signed License # 9342

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (ft.)	To (ft.)
Neat Cement:	4	0	18.5
Bentonite:	1	18.5	33.5
(Other)			

WELL LOCATION: County Hillsborough
_____ 1/4 of _____ 1/4 of Section 27, Township 31, Range 21
 Latitude: 27° 45' 45.06", Longitude: -82° 12' 8.32"

DATE STAMP
May 20 2008
 Official Use Only

Sketch of well location on property
 Give distances from septic tank and house, or other reference points

CHEMICAL ANALYSIS WHEN REQUIRED
 Iron: _____ ppm Sulfate: _____ ppm
 Chlorides: _____ ppm TDS _____ mg/l
 Conductivity _____ umhos/cm
 Lab Test Field Test Kit

Pump Type
 Centrifugal Jet Submersible Turbine
 Horsepower: _____ Capacity: _____ GPM: _____
 Pump Depth: _____ ft. Intake Depth: _____ ft.
 Form LEG-R.005.00(10/05)

OWNER'S NAME: Hillsborough County **TH-70A**
 COMPLETION DATE: 05/15/2008 Florida Unique I.D.: _____
 Parcel # (Pin): _____
 WELL USE:

Public Supply Irrigation Domestic Monitor
 Injection Other OBSERVATION OR MONITOR WE

DRILL METHOD:
 Rotary Cable Tool Combination
 Jet Auger Other _____

Measured Static Water Level: _____ Measured Pumping Water Level: _____		After _____ Hours at _____ GPM. Measuring Pt. (Describe): _____	
Which is _____ ft. <input type="checkbox"/> above <input checked="" type="checkbox"/> below land surface			
Casing: <input type="checkbox"/> Black Steel <input type="checkbox"/> Galvanized <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Other: _____			
<input type="checkbox"/> Open Hole <input type="checkbox"/> Screen	Depth (feet)	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones. Color Grain Size Type of Material	
Casing Diameter and Depth (ft.)	From	To	
Diameter: <u>2</u>	0	15	brown fine sand
From: <u>0</u>	15	30	green not applicable sandy clay
To: <u>18.5</u>	30	33.5	brown not applicable sand
Diameter: <u>2</u>			
From: <u>18.5</u>			
To: <u>33.5</u>			
Liner <input type="checkbox"/> or Casing <input type="checkbox"/>			
Diameter: _____			
From: _____			
To: _____			

Driller's Name (print or type): Kevin Reffuse

DEP Form # <u>62-522,900(3)</u>
Form Title <u>MONITOR WELL COMPLETION REPORT</u>
Effective Date _____
DEP Application No. _____ (Filled in by DEP)

Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road Tallahassee, Florida 32399-2400

MONITOR WELL COMPLETION REPORT

DATE: 05/27/2008

INSTALLATION NAME: Hillsborough County SE Landfill

DEP PERMIT NUMBER: 35435-011-SC/01 GMS NUMBER: _____ WACS ID NUMBER: SWD/29/41193

WELL NUMBER: 71A WELL NAME: TH-71A

DESIGNATION: Background _____ Detection _____ Compliance X

LATITUDE/LONGITUDE: 27° 46' 44.41878" LATITUDE / 82° 10' 41.46297" LONGITUDE

AQUIFER MONITORED: Surficial

INSTALLATION METHOD: Hollow-Stem Auger

INSTALLED BY: Huss Drilling, Inc. Specifications provided by Jones Edmunds & Associates, Inc.

TOTAL DEPTH: 33.9 ft DEPTH OF SCREEN: 18.9 to 33.9 ft
(bls) (bls)

SCREEN LENGTH: 15 ft SCREEN SLOT SIZE: 0.010 in SCREEN TYPE: sch. 40 PVC slotted

CASING DIAMETER: 2 in CASING TYPE: sch. 40 PVC

LENGTH OF CASING: 18.9 ft (does not include stickup) - ~21.9 ft. w/finished FILTER PACK MATERIAL: 20/30 silica sand
stickup

TOP OF CASING ELEVATION (MSL): 146.95 ft NGVD 1929

GROUND SURFACE ELEVATION (MSL): 143.2 ft NGVD 1929

COMPLETION DATE: 05/15/2008

DESCRIBE WELL DEVELOPMENT: Initial development was conducted by the drillers using a handheld submersible pump for approximately 25 minutes.

Water cleared to a light 'tea' color from a very dark brown with a lot of fines. Lithologic unit has much fine, carbonaceous (organic) material.

POST DEVELOPMENT WATER LEVEL ELEVATION (MSL): Post initial development~24 ft bls from ground surface - ~27 ft bls w/finished stickup.

DATE AND TIME MEASURED: 05/15/08, 2:33 p.m.

REMARKS: (soils information, stratigraphy, etc.): See attached boring log.

REPORT PREPARED BY: Angela K. Owen (Geologist), Jones Edmunds & Associates, Inc., (352) 377-5821
(name, company, phone number)

NOTE: PLEASE ATTACH BORING LOG.

(bls)= Below Land Surface

TEST BORING FIELD REPORT

Project Name: Hillsborough Co SE LF Cell 9 Constr.
 Project Number: 08449-030-02-1110
 Drilling Contractor: Huss Drilling
 Drilling/Sampling Methods: Hollow Stem Auger

Boring Number: TH-71A Page 1 of 1
 Test Boring Completed: 05/15/08, Well Completed: 05/15/08
 Jones Edmunds Field Geologist: Angela K. Owen
 Reviewed By/Date: _____
 Elevations: Ground: (NA) ft NGVD 29, Top of Slab: (NA) ft NGVD 29
 Top of Casing: (NA) ft NGVD 29 (Hillsborough Co. Survey Dept.)

Depth	SPT Data ASTM D1586		Description of Soil	Well Details Stick-Up Cover
	per 6"	N		
0			slightly silty quartz SAND fill; dark brown mottled w/tan, some iron stained veins; loamy looking; fine to med. grain; sub-rounded; moderately well sorted; dry	
5			as above (a.a.); very dark brown; muddy matrix and carbonaceous coating on grains; med grain; damp	5
10			a.a.; dark brown/beige to gray	10
15			a.a.; fine, more silty	15
20			clayey SAND (mud); dark gray; very fine to fine grain; sub-rounded; moderately well sorted; wet	20
25			a.a.; some limestone grains; very wet	25
30			silty SAND fill; dark gray brown, organic looking ; fine; sub-rounded; well sorted; few small blebs of medium gray colored CLAY; media is saturated	30
35			TD ~ 33.9' bls	35
40				40
42				42

Notes and Additional Data/Info. (Specify if Other Materials Used):

Total Well Depth = 33.9 ft bls
 Well Casing/Pipe: Diam. and Type = 2-in Sch. 40 PVC; Solid Length = 18.9 ft bls; Screen = 15 ft, 0.010-in
 Sand Filter Pack = 10 50-lb Bags; Type = 20/30 Silica; Placed from 16.9 to 33.9 ft bls (measured)
 Annular Seal: Type = Bentonite Pellets; Thickness = 2 ft; Placed from 14.9 to 16.9 ft bls (measured)
 Grout = 2 94-lb Bags of Cement Grout to Surface; Pad = 2x2-ft Concrete; Cover = 6-in Aluminum Cylinder Stick-Up



WELL COMPLETION REPORT (Please complete in black ink or type.)

PERMIT #: 774326.3 CUP/WUP#: _____ DID#: _____

Indicate the number of wells drilled/abandoned for this report: 1

Indicate the number of wells permitted but not drilled/abandoned that are being cancelled: _____

WATER WELL CONTRACTOR'S

SIGNATURE Digitally Signed License # 9342

I certify that the information provided in this report is accurate and true.

Grout	No. of Bags	From (ft.)	To (ft.)
Neat Cement:	5	0	19
Bentonite:	1	19	34
(Other)			

WELL LOCATION: County Hillsborough

 1/4 of 1/4 of Section 27, Township 31, Range 21

Latitude: 27° 45' 45.06" Longitude: -82° 12' 8.32"

DATE STAMP May 20 2008 Official Use Only

Sketch of well location on property Give distances from septic tank and house, or other reference points

CHEMICAL ANALYSIS WHEN REQUIRED

Iron: _____ ppm Sulfate: _____ ppm

Chlorides: _____ ppm TDS _____ mg/l

Conductivity _____ umhos/cm

Lab Test Field Test Kit

Pump Type

Centrifugal Jet Submersible Turbine

Horsepower: _____ Capacity: _____ GPM: _____

Pump Depth: _____ ft. Intake Depth: _____ ft.

Form LEG-R.005.00(10/05)

OWNER'S NAME: Hillsborough County

COMPLETION DATE: 05/15/2008 Florida Unique I.D.: _____

Parcel # (Pin): _____

WELL USE: _____

Public Supply Irrigation Domestic Monitor
 Injection Other OBSERVATION OR MONITOR WE

DRILL METHOD:

Rotary Cable Tool Combination
 Jet Auger Other _____

Measured Static Water Level: _____		Measured Pumping Water Level: _____	
After _____ Hours at _____ GPM.		Measuring Pt. (Describe): _____	
Which is _____ ft. <input type="checkbox"/> above <input checked="" type="checkbox"/> below land surface			
Casing: <input type="checkbox"/> Black Steel <input type="checkbox"/> Galvanized <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Other: _____			
<input type="checkbox"/> Open Hole <input type="checkbox"/> Screen	Depth (feet)	DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes. Note cavities, depth to producing zones.	
Casing Diameter and Depth (ft.)	From	To	Color Grain Size Type of Material
Diameter: <u>2</u>	0	15	brown fine sand
From: <u>0</u>	15	30	green not applicable sandy clay
To: <u>19</u>	30	34	brown not applicable sand
Diameter: <u>2</u>			
From: <u>19</u>			
To: <u>34</u>			
Liner <input type="checkbox"/> or Casing <input type="checkbox"/>			
Diameter: _____			
From: _____			
To: _____			

Driller's Name (print or type): Kevin Reffuse

TH -71A 04

ST