

HYDROLOGIC ASSOCIATES U.S.A., INC.

ENVIRONMENTAL CONSULTANTS - HYDROGEOLOGIC TESTING
WELL DRILLING SERVICES - PETROLEUM CONTRACTOR

December 12, 2007

Mr. F. Thomas Lubozynski, P.E.
Waste Program Administrator
Florida Dept. of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

**RE: Supplement to Guerra Development Company (GDC) response to FDEP
November 9, 2007 correspondence regarding Friends Landfill (Permit
Application No. S042-0019600-007).**

Dear Mr. Lubozynski,

Hydrologic Associates USA, Inc. (HAI) submits this information in support of the above-referenced application originally submitted and since supplemented by GDC. The items here are those designated in the GDC correspondence for reply by HAI under separate cover.

The items that follow are referenced by Item number.

E-1(a): (Relates to the variable nature of groundwater flow at the monitor wells) – HAI related the inconsistent flow directions to variable pumpage in nearby groves. This is logical and reasonable, given that agriculture requires irrigation. No study was done (i.e., no “maps, graphs, and consumptive use data”), and it may or may not be possible to obtain accurate water use data for agricultural operations. The fact is that flow direction is variable, and it is not in any way attributable to operations at Friends. It is also possible that flow direction is variable due to the monitor wells monitoring both the surficial as well as the Floridan aquifers.

E-1(b): (Requires that Antimony, Vanadium, and Thallium be added to the routine sampling list) – No response necessary

E-1(c): (Relates to the Biennial Report conclusion that there has been no significant degradation of groundwater quality at the LF) - HAI based this conclusion on the observation that the exceedances of groundwater standards have not generally persisted at seriously high levels. Obviously, more investigation will occur, as the monitoring program is ongoing.

NASSAU
P.O. Box CB-12762, Suite # 186
Cable Beach, Nassau, Bahamas
Phone: (242) 324-3924

MAIN OFFICE MIAMI
9730 E. Hibiscus Street, Unit C
Miami, FL 33157
Phone: (305) 252-7118 Fax: (305) 254-0874

ORLANDO
109 Bayberry Road
Altamonte Springs, Florida 32714
Phone: (407) 788-1355 • Fax: (407) 788-1135

WEBSITE: WWW.HAIMIAMI.COM

E-1(d): (Disagrees that the current monitoring program is adequate) – Specific concerns are monitor wells surrounded by waste, sampling events missed, and the additional parameters (see (b) above, and Cumene). HAI and GDC will advise the facility owner about the need to keep the area surrounding the wells free from waste. The barriers recently constructed should help in this matter. Sampling events have been missed in the past due to a lack of timeliness in payment of the proceeding sampling events bill (there have been no such occurrences recently) or because wells have been damaged and not replaced in a timely fashion. We will emphasize to the facility operator that the wells must remain physically apart from site operations. Regarding the additional monitoring parameters, we will add all four parameters to the routine event list.

E-1(e): (Relates to an attached table which emphasizes the parameter standards exceedances, missed sampling events due to wells being buried/damaged and not being replaced in a timely fashion, and what will be done to preclude this from occurring at Cell 2) – See response to (d) above, but this is really an operations issue, especially regarding the security of the wells and keeping them free from being physically impacted by operations. Juan Guerra of GDC will discuss this with the facility operator.

E-2(a): HAI provides the original well depth data below (as of the time HAI became involved in the project), as well as those obtained in the most recent sampling. Bear in mind that 2 wells have been replaced and HAI personnel were not onsite to supervise replacement well installation. The initial installations were in existence when Friends Landfill commenced operations.

Original well depths (from the 12/2000 report) are as follows:

MW-1	44.4 (ft from TOC)
MW-2	36.9
MW-3	34.3
MW-4	45.8

Well depths reported in the 10/2007 report are:

MW-1	43.56
MW-2(R)	73.40
MW-3(R)	92.40
MW-4	62.30

HAI cannot comment as to the depth differences between MW-2 & MW-3 and the replacement wells MW-2R & MW-3R as we were not present during installation. Obviously, MW-4 has undergone some change, likely in the form of riser added as waste was deposited in the vicinity. Needless to say, this practice must stop if it has not already.

MW-1 appears to be relatively intact with respect to depth.

E-2(b): (Relates to the periodic added riser to monitor wells) – Once again, this is an operations-related problem. It must be emphasized to the site operator that whenever riser is added to a monitor well, the well must be re-surveyed to obtain accurate water levels.

E-2(c): The logical answer to this item is to ensure that waste does not physically encroach upon the monitor wells. Again, the barriers will help, but this is largely an operations issue.

E-3(a): HAI submits well completion forms (attached) for MW-2R and MW-3R with the new casing elevation data. Monitor wells MW-1 and MW-4 existed at the site when HAI became involved with the project, so we cannot file completion reports for these wells.

E-4: HAI did not supervise the installation of the replacement monitor wells for MW-2 and MW-3. We forward the information we received from the driller. We received “Well Completion Logs” for MW-2R & MW-3R. Unfortunately, no lithologic log was provided (possibly none was prepared). Perhaps the facility owner/operator who contracted with the driller can request additional data from this source.

E-5: HAI provides a table with groundwater elevations (attached). These are the values calculated and checked and presented on the groundwater contour maps. General procedure was (and is) for the water levels to be taken in the field by a Principal (T. Miller), contour maps to be prepared by a Senior Hydrogeologist (Labowski), checked by a Principal (Waller), and final checked and, if acceptable, sealed by a P.E. (J. Miller). These procedures are more than adequate to present accurate water level contour maps. Often (as was the case with the most recent event) we do not contour groundwater elevation maps if there is only a minimal difference in groundwater elevations between wells. In the case of the last event, there was no significant groundwater gradient, and providing contours would have been at best misleading and possibly inaccurate.

Hydrogeologic Considerations

I-1,2,& 3: The 2 exploratory wells installed by HAI (MW-1 and MW-2) for the Cell 1 Hydrogeology Report are not currently being utilized and they do not appear on the map of wells produced by GDC. The wells are located on the northern border of Cell 1 and possibly have been covered.

J: FDEP’s position is noted.

K: FDEP’s position is noted. Again, operations at the facility have no impact on local groundwater flow direction.

L: HAI notes FDEP’s position, but maintains that the proposed well locations are accurately placed to determine if there are problems occurring. Obviously, should any ensue, additional wells can be sited and installed, but in the interim the proposed program is a sound one.

Proposed Monitor Well Locations

M: HAI acknowledges FDEP's response, and will work with the Department and the Owner's Engineering Consultant to provide technical assistance to resolve this issue.

N: It is the recollection of HAI personnel that have been involved in the project from its onset that originally the wells were outside the footprint of the waste disposal area, but that the disposal area has expanded over time to encroach upon the wells.

O: HAI acknowledges FDEP's response, and if the site owner requests, we will be present to supervise any new well siting and installation.

Monitoring Well Depths and Construction

P: HAI interprets this as FDEP now requiring all wells to be screened in and monitor only the Floridan aquifer. HAI concurs.

Proposed Monitoring Well Parameters

Q: HAI acknowledges the Department's response, but still contends that the sporadic nature of the exceedances supports the original conclusion.

General

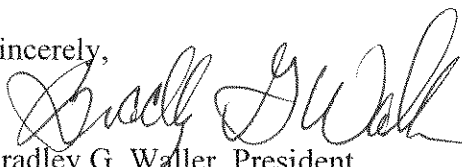
R: HAI will ensure that all future submittals will be signed and sealed by a P.E or a P.G.

S: HAI will discuss the issues brought up by FDEP with the site owner and his Engineering Consultant, and will submit a revised plan. We appreciate the opportunity to discuss our proposals with FDEP personnel.

HAI trusts that these responses are adequate for the items discussed to allay FDEP's concerns. Please note that responses to FDEP's December 5, 2007 review of HAI's Biennial Report (July, 2007) and of the Thirteenth Semi-Annual Report for Friends Landfill will be submitted shortly under separate cover. Should you have any question or require any additional detail, please call me at (305) 252-7118.

Cc: Juan Guerra
Nick Zalak

Sincerely,


Bradley G. Waller, President
Principal Hydrologist

Attachments: Well completion reports for MW-2R & 3R
Table showing water level elevations from 11/03 – 8/07
Drillers information for MW-2R & MW-3R

Florida Department of Environmental Protection

3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767

MONITORING WELL COMPLETION REPORT

DATE: 3/9/07

FACILITY NAME: Friends Recycling LLC-C&D Disposal and Recycling

DER PERMIT NO.: _____

WACS FACILITY: 12012

WACS MONITORING SITE_NUM.: _____

WACS WELL: MW-3R

WELL_TYPE: BACKGROUND _____

DETECTION _____

COMPLIANCE ☒

LATITUDE AND LONGITUDE (seconds to two decimal places): _____

AQUIFER MONITORED: FLORIDIAN

DRILLING METHOD: 3 7/8" HSA

DATE INSTALLED: 2-1-07

INSTALLED BY: Precision Sampling, Inc.

BORE HOLE DIAMETER: 4-inch

TOTAL DEPTH: 90 FT

(BLS)

CASING TYPE: PVC

CASING DIAMETER: 2 inch

CASING LENGTH: 80 FT

SCREEN TYPE: PVC

SCREEN SLOT SIZE: pre-pack

SCREEN LENGTH: 10 FT

SCREEN DIAMETER: 2 inch

SCREEN INTERVAL: 80

TO 90 FT

(BLS)

FILTER PACK TYPE: 20/30 Silica Sand

FILTER PACK GRAIN SIZE: 20/30 Sand (Silica)

INTERVAL COVERED: 78

TO 90 FT

SEALANT TYPE: 3P/65

SEALANT INTERVAL: 76

TO 78 FT

(BLS)

GROUT TYPE: Type I Neat Portland

GROUT INTERVAL: 0

TO 78 FT

(BLS)

TOP OF CASING ELEVATION (NGVD): 118.12 ft

GROUND SURFACE ELEVATION (NGVD): NA

DESCRIBE WELL DEVELOPMENT: ft. and with a centrifugal pump and a submersible "in-hole" pump for 1.5 hrs. with a sustained yield of approx. 1 gpm. Water remained somewhat cloudy/chalky.

POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): _____

DATE AND TIME MEASURED: _____

REMARKS: _____

NAME OF PERSON PREPARING REPORT: Jim Labowski

Hydrologic Associates, USA, Miami, FL (305) 252-7118

(Name, Organization, Phone No., E-mail)

NOTE ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.
(NGVD) NATIONAL GEODETIC VERTICAL DATUM OF 1929

(BLS) = BELOW LAND SURFACE

Florida Department of Environmental Protection

3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767

MONITORING WELL COMPLETION REPORT

DATE: 3/9/07

FACILITY NAME: Friends Recycling LLC-C&D Disposal and Recycling

DER PERMIT NO.: _____

WACS FACILITY: 12012

WACS MONITORING SITE_NUM.: _____

WACS WELL: MW-2R

WELL_TYPE: BACKGROUND _____

DETECTION _____

COMPLIANCE ☒

LATITUDE AND LONGITUDE (seconds to two decimal places): _____

AQUIFER MONITORED: FLORIDIAN

DRILLING METHOD: 10 INCH MR

DATE INSTALLED: 1-30-07

INSTALLED BY: PRECISION Sampling, Inc.

BORE HOLE DIAMETER: 10 INCH

TOTAL DEPTH: 70 ft

CASING TYPE: PVC

CASING DIAMETER: 4"

CASING LENGTH: 60 ft

(BLS)

SCREEN TYPE: PVC

SCREEN SLOT SIZE: 0.01

SCREEN LENGTH: 10 ft

SCREEN DIAMETER: 4 INCH

SCREEN INTERVAL: 60

TO

70 ft

FILTER PACK TYPE: 20/30 Silica Sand

FILTER PACK GRAIN SIZE: 20/30 Sand

(BLS)

INTERVAL COVERED: 58

TO

70 ft

SEALANT TYPE: 30/65

SEALANT INTERVAL: 56

TO

58 ft

(BLS)

GROUT TYPE: Type I Neat Portland

GROUT INTERVAL: 0

TO

56 ft

(BLS)

TOP OF CASING ELEVATION (NGVD): 97.83 ft

GROUND SURFACE ELEVATION (NGVD): NA

DESCRIBE WELL DEVELOPMENT: Run for 5 hrs with a submersible

"whale" pump with a sustained yield of approx 1 gpm. Water
removed somewhat cloudy/chalky.

POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): _____

DATE AND TIME MEASURED: _____

REMARKS: _____

NAME OF PERSON PREPARING REPORT: Jim Labowski

Hydrologic Associates USA, Miami, FL (305) 252-7118

(Name, Organization, Phone No., E-mail)

NOTE ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.
(NGVD) NATIONAL GEODETIC VERTICAL DATUM OF 1929

(BLS) = BELOW LAND SURFACE

GROUNDWATER ELEVATIONS, FRIENDS LANDFILL, 11/03 – 8/07
(in ft)

Date	MW-1	MW-2 (or 2R)	MW-3 (or 3R)	MW-4
11/03	52.03	52.06	51.47	50.75
5/04	50.39	50.77	42.54	43.45
2/05	19.56	19.06	19.23	19.40
8/05	28.58	NR	NR	44.93
2/06	19.26	24.36	NR	13.95
8/06	17.32	NR	5.31	NR
3/07	16.98	16.68	16.58	16.70
8/07	41.05	41.13	41.17	41.19

WELL COMPLETION LOG

Water Mgmt. Dist.:

Permit Number:

Work Order: 107047

Type of Well: MW

Well Number: 2R

Method Used: 10" MR

Borehole Dia. 10"

Site Information:

Name: Friends Landfill

Address: 2350 NW 27th Avenue

City, St, Zip: Ocala, FL

S/T/R:

Client / Consultant Information

Consultant: Hydrologic Asso.

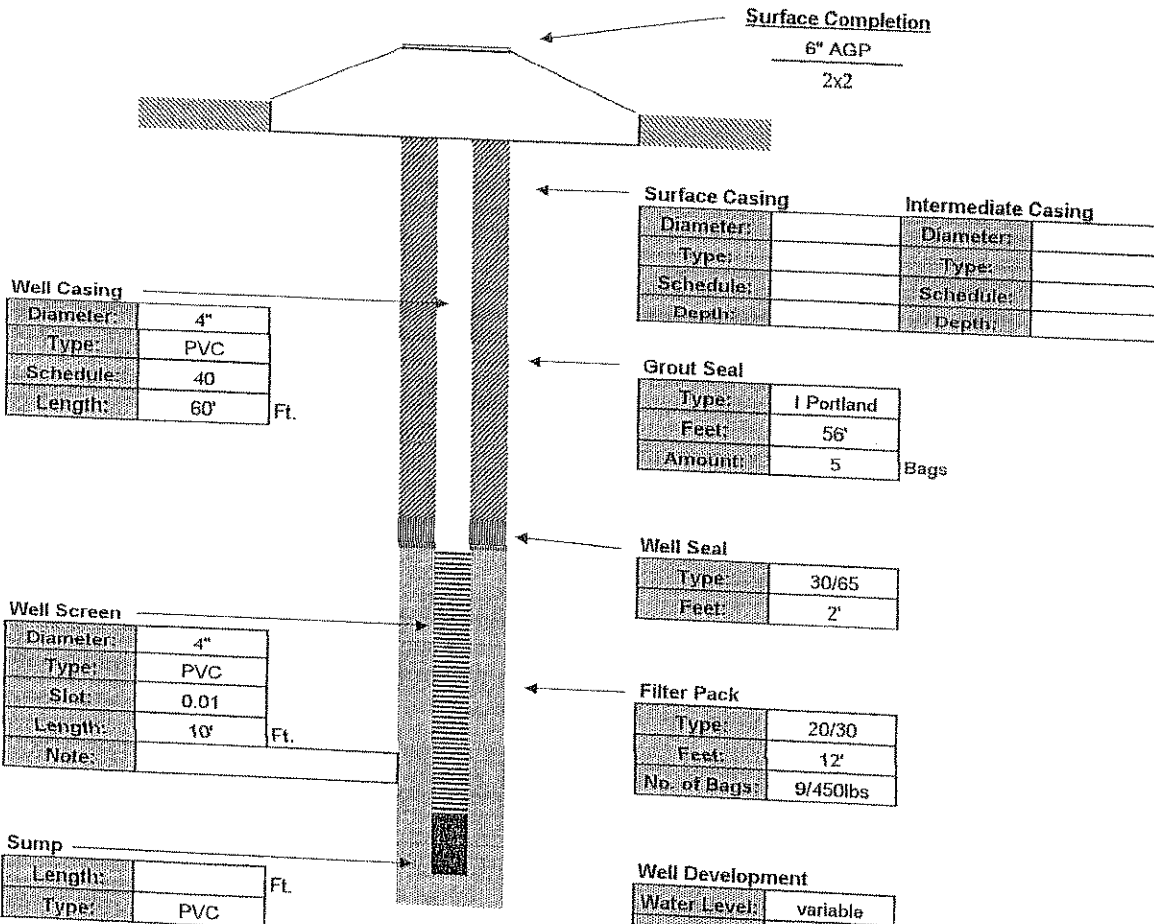
Field Rep: N/A

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
4"	PVC	70'	10'	60'	5	9/450lbs	20/30	30/65
40	Schedule	Slot Size:	0.01		56'	Feet	12'	2'

Surface Completion

6" AGP

2x2



Well Casing

Diameter:	4"
Type:	PVC
Schedule:	40
Length:	60' Ft.

Surface Casing

Diameter:		Intermediate Casing	Diameter:	
Type:		Type:		
Schedule:		Schedule:		
Depth:		Depth:		

Grout Seal

Type:	1 Portland
Feet:	56'
Amount:	5 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	4"
Type:	PVC
Slot:	0.01
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	9/450lbs

Sump

Length:		Ft.
Type:	PVC	

Well Development

Water Level:	variable		
Method:	whole		
Start:		Finish:	
Time:	5		
GPM:	1		

Contractor Information

Contractor #:	2638
Completion:	30-Jan-07
Driller:	Kevin Valentino
Lead Hand:	Nick Parlette
3rd Man:	Jeff Zeigler
Drill Rig:	D-120B

Company: Precision Sampling, Inc.
 Address: 2300 Silver Star Road
 City, St, Zip: Orlando, Florida 32804-3310
 Phone/FAX: (407) 206-0855 / (407) 206-0856

WELL COMPLETION LOG

Water Mgmt. Dist.:

Permit Number:

Work Order: 107047

Type of Well: MW

Well Number: 1R 3R BW

Method Used: 3 7/8" HSA

Borehole Dia. 4"

Site Information:

Name: Friends Landfill

Address: 2350 NW 27th Avenue

City, St, Zip: Ocala, FL

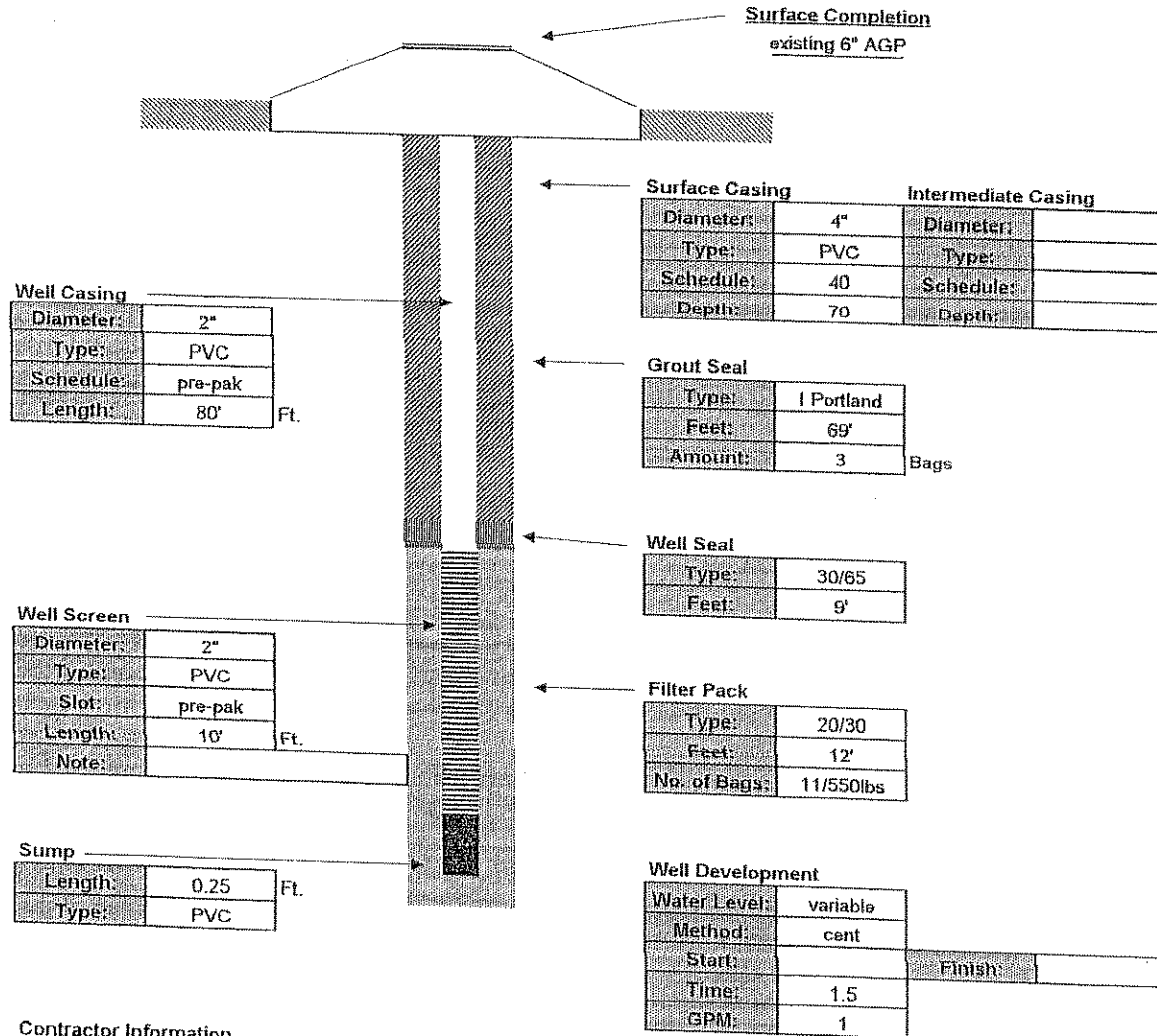
S/T/R:

Client / Consultant Information

Consultant: Hydrologic Asso.

Field Rep: N/A

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
2"	PVC	90'	10'	80'	3	11/550lbs	20/30	30/65
pre-pak	Schedule	Slot Size:	pre-pak	69'	Feet	12'	9'	



Contractor Information

Contractor #:	2638
Completion:	1-Feb-07
Driller:	Jeff Zeigler
Lead Hand:	Kevin Valentino
3rd Man:	Nick Paulette
Drill Rig:	D-120B

Company: Precision Sampling, Inc.

Address: 2300 Silver Star Road

City, St, Zip: Orlando, Florida 32804-3310

Phone/FAX: (407) 206-0855 / (407) 206-0856