FILE

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August 31, 2010

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

Dept. Of Environmental Protection

SEP 01 2010

Southwest District

RE: Executed Consent Order, OGC Case No. 08-1728
Central County Solid Waste Disposal Complex
Class I Landfill Permit No. 130542-002-SO
Permit No. 231674-001-SO
Sarasota County
Site Assessment Report – Additional Information

Dear Ms. Pelz:

On behalf of Sarasota County, PBS&J hereby submits one copy of a report entitled "Geotechnical Services: Soil and Groundwater Sampling Analysis; Sarasota County Central Landfill; Sarasota County Florida" dated July 12, 2010. This additional work was undertaken to better define the Arsenic plume along the southern and western portion of the site.

We look forward to your review of this report. If you have any questions or comments regarding this matter, please do not hesitate to contact me by phone at 407-806-4104 or by email at DEDeans@pbsj.com.

Very truly yours,

David E Deans

David E. Deans, P.E., BCEE
Vice President
Florida P.E. No. 31095

C L. Rose, Sarasota County
G. Bennett, Sarasota County
G. Thomas, PBS&J
B. Bayne, PBS&J
T. Townsend, IWCS
File: 100007910

Figure 1 – Arsenic Plume Map
Attachment 1 – Dunkelberger Report

u:\so\projects\sarasota\contract 2007-292\wa-23 sar report\lot august 31 2010.doc

NORTH

0 150 300 600

GRAPHIC SCALE
SCALE: 1" = 300'

LEGEND:

- GW-31 — TEMPORARY WELLS
- GW-6 — TEMPORARY WELLS ABANDONED IN PHASE II EXPANSION
- MW-12R — GROUNDWATER MONITORING WELLS ABANDONED IN PHASE II EXPANSION
- MW-10R — EXISTING GROUNDWATER MONITORING WELLS
- ISO-CONCENTRATION CONTOURS
- ISO-CONCENTRATION CONTOURS INFERRED

GW – DATA COLLECTED IN APRIL 2009

MW – DATA COLLECTED IN MAY 2010
CW –

PW – DATA COLLECTED IN JUNE 2010

PBS&J	SARASOTA COUNTY CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX	ARSENIC CONCENTRATION IN GROUNDWATER - ISOPLETH MAP FOR 2009 AND 2010	FIGURE 1

U:\SO\OldG\HAZARD\Sarasota\Central Disposal Complex\2009 SAR Report Figures\CENT_FIG_1_ARSENIC CONCENTRATIONS IN GROUNDWATER_8-12-10.dwg Aug31,2010 - 10:57am Plotted By: 22427

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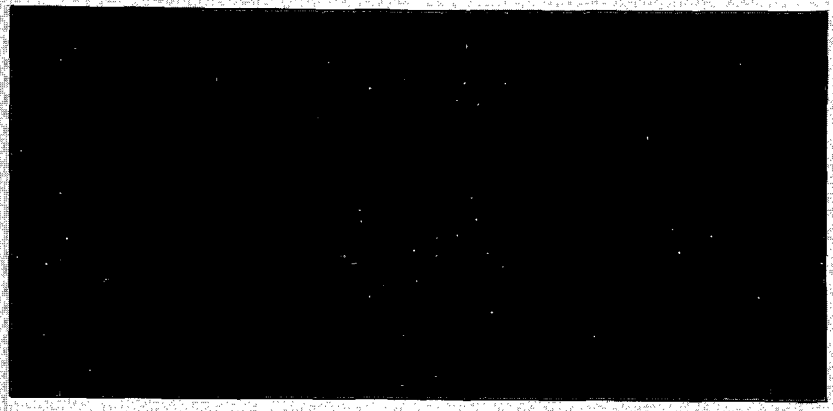
engineering & testing, inc.



- Fort Lauderdale (954) 730-9114
- Lakeland (863) 802-4901
- Port St. Lucie (772) 343-9787
- Sarasota (941) 379-0621
- West Palm Beach (561) 689-4299

(877) 643-6832

GEOTECHNICAL SERVICES

SOIL AND GROUNDWATER SAMPLING ANALYSIS
SARASOTA COUNTY CENTRAL LANDFILL
SARASOTA COUNTY, FLORIDA

Date: July 12, 2010

Prepared For:

PBS&J
101 Arthur Anderson Parkway, Suite 260
Sarasota, Florida 34232

Prepared By:

Dunkelberger Engineering and Testing, Inc.
8260 Vico Court, Unit B
Sarasota, Florida 34240

Dunkelberger Project No.: SAR-09-1145

PBS&J
101 Arthur Anderson Parkway, Suite 260
Sarasota, Florida 34232

July 12, 2010
Project No. SAR-09-1145

Attention: Mr. R. Christopher Sharek, P.E., B.C.E.E.

Subject: ***Soil and Groundwater Sampling and Analysis***
Sarasota County Central Landfill
Solid Waste Disposal Complex
Sarasota County, Florida

Dear Mr. Sharek:

INTRODUCTION

Dunkelberger Engineering & Testing, Inc. (Dunkelberger) has completed soil and groundwater sampling and analysis services at the above-referenced site. In general, the services involved soil sampling using standard penetration test (SPT) borings, soil sample classifications, laboratory analysis of soils samples for a regimen of parameters, monitoring well installation, groundwater sampling, laboratory analysis of the groundwater samples for a regimen of parameters, and preparation of this data report. The scope of work undertaken by Dunkelberger and summarized hereafter was developed by PBS&J.

SOIL SAMPLING AND ANALYSIS

Soil Sampling

From June 6 through 9, 2010, a representative of Dunkelberger collected soil samples from eight (8) SPT borings drilled within and around the periphery of the landfill complex. Refer to Sheet 1 for the boring locations. At each boring, soil samples were generally recovered from two feet above and two feet below the water table. Borings PW-1, PW-2, PW-3, PW-6 and PW-8, which had a water table of about 3 feet below the land surface (bls), samples were obtained from 1 foot bls and 5 feet bls. Borings PW-4 and PW-7, which had a water table at about 4 feet bls, samples were collected at 2 and 6 feet bls. At boring location PW-5 the water table was encountered at about 1.5 feet bls; therefore, soil samples were recovered from 1 and 2 feet bls.

The collection of the soil samples was accomplished utilizing two-foot long SPT stainless steel split spoons. The spoons were cleaned prior to and between successive sample locations and depth intervals using potable water and a reagent grade detergent solution and rinsed with potable water. Representative soil samples collected from each discrete depth were placed in laboratory

supplied containers, placed in an ice filled, thermally insulated cooler and transported to Palm Beach Environmental Laboratories, Inc. (PBEL's) facility in West Palm Beach, Florida for analysis.

Soil Analysis

As prescribed by PBS&J, the collected soil samples were analyzed for arsenic, iron, copper, chromium, lead, nitrate-nitrogen and ammonia (as nitrogen). A summary of the soil analysis results are provided in Table 1. The complete soil laboratory analytical report and associated chain-of-custody record are included in Appendix A.

Stratigraphy

The subsurface conditions at the boring/monitoring well locations were determined with SPT borings that were drilled to about 15 feet bls. In general, the borings encountered very loose to medium dense fine sands to depths of about 4 to 12 feet, and underlain by loose to very dense silty and clayey fine sand (SM, SC) to a borehole termination depth of 15 feet bls.

Borings PW-4 and PW-5 encountered a loose to very dense silt (ML) from 12 to 16 feet bls.

Boring PW-6 encountered medium stiff clay (CH) from 14 to 16 feet bls.

The boring results, including soil stratigraphy and classifications, SPT blowcount data (N-Values) and groundwater levels, are summarized as subsurface profiles on Sheet 2. This attachment should be consulted for details at any specific boring location.

GROUNDWATER SAMPLING AND ANALYSIS

Monitoring Well Installations

On June 7 through 10, 2010, eight shallow depth (water table) monitoring wells were installed within and around the periphery of the landfill complex (i.e. same locations as the SPT borings) by Dunkelberger (water well contractor license No. 11127). The monitoring wells, designated PW-1 through PW-8, are shown on Sheet 1. Prior to installation of the wells, well installation permits were acquired from Sarasota County.

The monitoring wells consisted of a pre-cleaned, factory packaged 2-inch diameter by 10-foot long 0.010 inch slotted PVC well screen flush joint coupled to a 2-inch diameter blank riser pipe of identical composition to bring the assembly approximately two feet above grade. The well screens were positioned so that they spanned the water table interface, which varied from about 2

to 4 feet bls. The screen intervals of the monitoring wells extended from about 2 to 12 feet bls or 3 to 13 feet bls. Construction details for the monitoring wells are shown on Sheets 3A to 3H.

The wells were installed using hollow-stem auger drilling methods. Augers with an outside diameter of 8 inches and an inside diameter of 4.25 inches were employed for the well installations. Prior to the installation of the wells, the augers and other drilling tools were cleaned using a high-pressure steam cleaner. A filter pack of 20/30 silica sand was placed around and to 1-foot above each well screen. The filter pack was followed by a 0.5-foot layer of 30/65 fine sand which was topped with native soils that extended to the land surface. Upon completion, the wells were developed by pumping at a low discharge rate until sediment free water was produced. The well heads were retrofitted with a protective aboveground aluminum covers and then surrounded by bollards to prevent damage.

Groundwater Sampling

On June 17 and 18, 2010, a representative of Dunkelberger collected groundwater samples from newly installed monitoring wells PW-1 through PW-8. A variable speed peristaltic pump was used to purge the wells at a slow rate until the water level and several field parameters had stabilized in accordance with the FDEP Standard Operating Procedures (SOPs) FS 2200. The groundwater samples were collected using the purge and trap method (for total organic carbon) and through the peristaltic pump (other parameters). Groundwater samples intended for dissolved metals analysis were filtered in the field prior to sample collection using a 1-micron in-line filter. The samples were transferred into laboratory supplied containers, placed in an iced filled cooler and transported to PBEL's facility for analysis. FDEP Groundwater Sampling Logs for the sampling event are included in Appendix B.

Groundwater Analysis

The groundwater samples collected from monitoring wells PW-1 through PW-2 were analyzed for total arsenic, total iron, dissolved (filtered) arsenic, dissolved (filtered) iron, total dissolved solids (TDS), total organic carbon (TOC), ammonia (as nitrogen), nitrate-nitrogen, sulfate, manganese, total alkalinity, sodium and chloride.

The complete groundwater laboratory analytical report and associated chain-of-custody record are included in Appendix A. A summary of the groundwater analysis results is presented in Table 2.

____oOo____

We trust that the information provided herein is clear and understandable. Should you have any questions concerning the report contents, please feel free to contact us.

Very truly yours,

DUNKELBERGER ENGINEERING & TESTING, INC.

Andrew Petric
Project Environmental Scientist

Scott N. Parrish, P.E.
Branch Manager 7/12/10
FL Registration No. 69091

Attachments: Table 1 - Summary of Soil Analytical Results
Table 2 - Summary of Groundwater Analytical Results
Sheet 1 - Boring and Monitoring Well Location Plan
Sheet 2 - Subsurface Profiles
Sheet 3A through 3H - Monitoring Well Construction Details
Appendix A - Laboratory Analytical Results
Appendix B - FDEP Groundwater Sampling Logs

TABLE 1
Summary of Soil Analytical Results
Sarasota County Central Landfill
Solid Waste Disposal Complex
Sarasota County, Florida
Dunkelberger Project No. SAR-09-1145

Sample Name	Sample Date	Sample Depth (feet)	Arsenic	Iron	Copper	Chromium	Lead	Nitrate-Nitrogen	Ammonia
Units	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SCTL - Leachability[1]	-	-	*	*	*	38	*	-	*
SCTL - Residential[2]	-	-	2.1	53,000	150	210	400	-	35,000
SCTL - Commercial[3]	-	-	12	**	89,000	470	1,400	-	880,000
PW-1	6/7/2010	1	1.02	1,490	<0.004	10.5	1.73	1.68	<0.110
		5	0.23	909	<0.004	1.3	<0.007	1.71	<0.110
PW-2	6/7/2010	1	0.42	2,640	<0.004	13.1	3.04	1.70	0.209 I
		5	3.60	6,390	<0.004	12.2	2.52	1.69	<0.110
PW-3	6/8/2010	1	<0.003	290	<0.004	1.2	0.046 I	1.66	0.469
		5	0.19 I	2,230	<0.004	11.4	2.55	2.07	0.129 I
PW-4	6/9/2010	2	0.50	1,250	<0.004	4.1	0.797	1.98	<0.110
		6	<0.003	72.0	<0.004	0.9	<0.008	<0.510	<0.110
PW-5	6/9/2010	1	<0.003	149	<0.004	7.5	<0.007	1.74	0.350
		2	0.23	1,380	<0.004	13.2	3.72	2.12	<0.110
PW-6	6/8/2010	1	<0.003	32.4	<0.004	1.3	<0.007	1.45 I	<0.110
		5	<0.003	891	<0.004	8.8	2.33	1.79	<0.110
PW-7	6/9/2010	2	0.99	2,000	<0.004	24.5	2.50	2.32	8.25
		6	0.43	508	<0.004	2.2	0.169 I	1.53	3.72
PW-8	6/9/2010	1	0.48	1,590	<0.004	11.1	1.44	2.48	0.381
		5	<0.003	57.4	<0.004	1.4	<0.008	<0.510	0.178 I

Notes
mg/kg indicates milligrams of constituent per kilogram of soil
SCTL = Soil Cleanup Target Level
* = Leachability values may be derived using the SPLP Test to calculate the site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.
** = Direct exposure value based in acute toxicity considerations
[1]SCTL for leachability based on groundwater criteria as provided in Table 2, Chapter 62-777, F.A.C., February 2005
[2]SCTL for residential exposure as provided in Table 2, Chapter 62-777, F.A.C., February 2005
[3]SCTL for commercial/industrial exposure as provided in Table 2, Chapter 62-777, F.A.C., February 2005
I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

TABLE 2
Summary of Groundwater Analytical Results
Sarasota County Central Landfill
Solid Waste Disposal Complex
Sarasota County, Florida
Dunkelberger Project No. SAR-09-1145

Well ID	Date	Total Arsenic	Dissolved Arsenic	Total Iron	Dissolved Iron	Total Dissolved Solids	Ammonia	Nitrate-Nitrogen	Sulfate	Manganese	Total Organic Carbon	Total Alkalinity	Sodium	Chloride
MCL/ GCTL (mg/L)		**0.01**	**0.01**	**0.3**	**0.3**	**500**	**2.8**	**NA**	**250**	**0.05**	**NA**	**NA**	**160**	**250**
NADC (mg/L)		**0.1**	**0.1**	**3.0**	**3.0**	**5,000**	**28**	**NA**	**2,500**	**0.5**	**NA**	**NA**	**1600**	**2,500**
PW-1	06/17/10	0.009	0.005	4.83	1.99	1,000	<0.01	<0.05	11.9	0.02	51.1	556	154	160
PW-2	06/17/10	0.007	0.006	3.37	2.45	600	0.06	0.8	11.6	0.03	23.9	378	129	94
PW-3	06/17/10	0.005	0.005	3.97	2.65	450	0.02 I	<0.01	3.8	0.02	24.5	336	97.3	26
PW-4	06/18/10	0.002 I	<0.0004	12.0 E	0.950	630	1.24	165	20	0.06	17.4	334	15.4	<1.6
PW-4 (duplicate)	06/18/10	0.003 I	0.002 I	12.1 E	0.662	610	0.87	164	<0.2	0.06	16.6	326	15.6	<1.6
PW-5	06/17/10	0.006	0.006	16.8 E	13.6 E	2,100	0.2	<0.1	29.1	0.03	135	418	484	740
PW-6	06/17/10	0.006	0.004 I	3.63	1.93 E	400	0.04	<0.01	3.3	0.01	18.7	286	74.3	41
PW-7	06/17/10	0.02	0.019	26.5 E	25.1 E	1,400	3.7	<0.05	10.9	0.03	99.5	362	187	420
PW-8	06/18/10	0.016	0.016	18.2 E	17.8 E	630	2.25	<0.1	6.7	0.06	72.9	388	49.3	48

All concentrations are reported in milligrams per liter (mg/L)

ID = identification designation

TW = temporary wellpoint; MW = monitor well

NA = Not Available

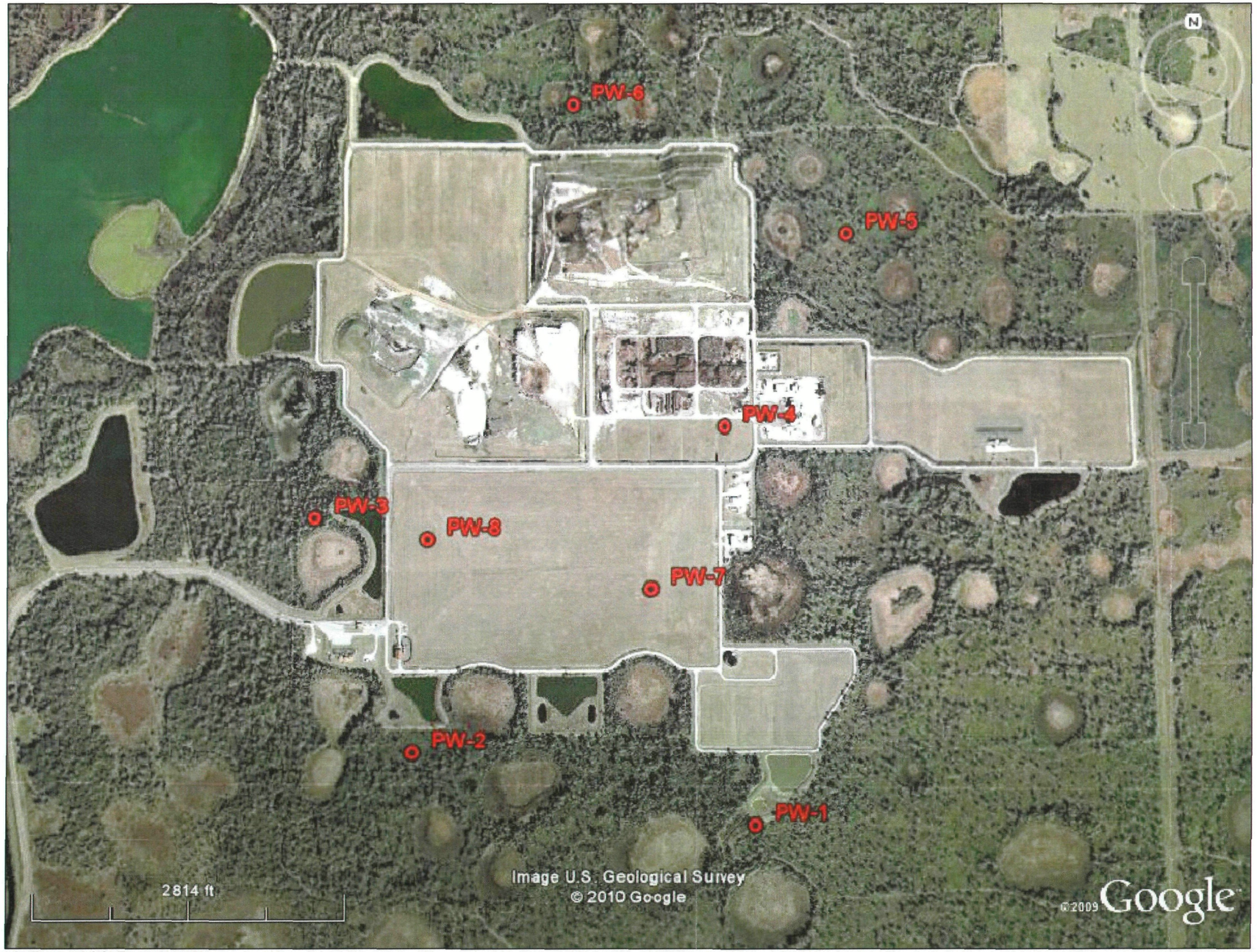
GCTL = Groundwater Cleanup Target Level as listed in Chapter 62-777, Florida Administrative Code (FAC)

MCL = Maximum Contaminant Level as listed in Chapter 62-550, Florida Administrative Code (FAC)

NADC = Natural Attenuation Default Concentration as listed in Chapter 62-777, FAC

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

E = The reported value is an estimated concentration above the calibration range of the instrument.



SOURCE: GOOGLE EARTH.COM

LEGEND

PW-1 - BORING AND MONITORING WELL LOCATION AND NUMBER

Locations are approximate

0' 1000' 2000' 4000'

Scale: 1" = 2000'

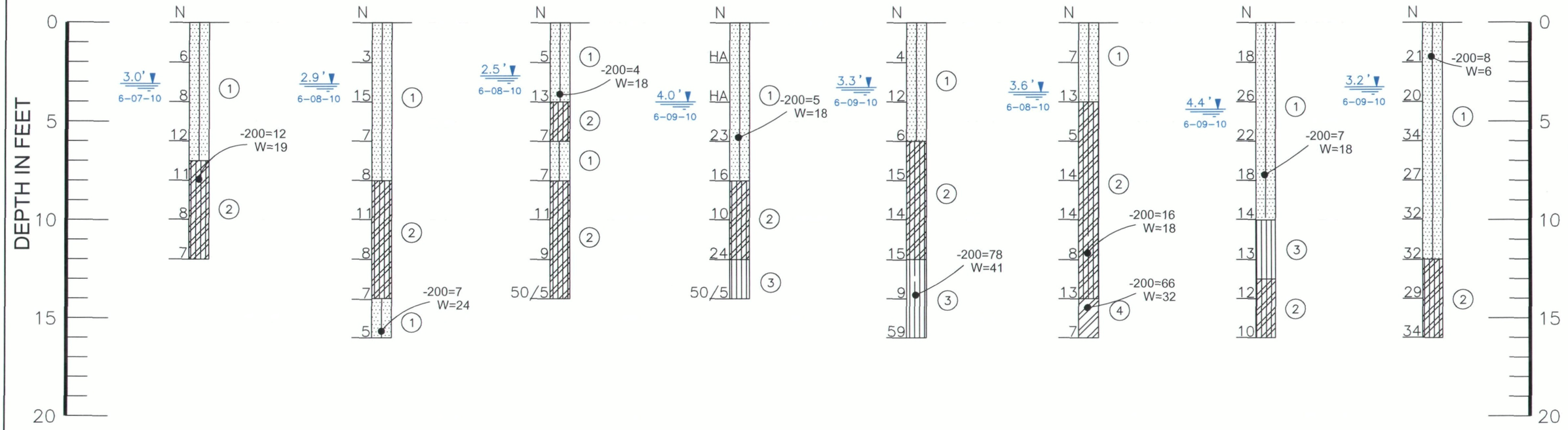
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	1"= 2000'
REVISED	

BORING AND MONITORING WELL LOCATION PLAN
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	1

BORING NO.	PW-1	PW-2	PW-3	PW-4	PW-5	PW-6	PW-7	PW-8
LONGITUDE	82° 23.054′	82° 23.633′	82° 23.805′	82° 23.106′	82° 22.891′	82° 23.366′	82° 23.231′	82° 23.612′
LATITUDE	27° 11.269′	27° 11.376′	27° 11.731′	27° 11.860′	27° 12.173′	27° 12.376′	27° 11.623′	27° 11.698′



LEGEND

- (1) Gray to brown fine SAND with trace silt to slightly silty (SP, SP-SM)
- (2) Gray to brown silty or clayey fine SAND (SM, SC)
- (3) Pale brown SILT (ML)
- (4) Blue-gray CLAY (CH)

N – Indicates the number of blows of a 140 pound hammer, freely falling a distance of 30 inches, required to drive a 2-inch diameter sampler 12 inches (ASTM D 1586)

HA – Indicates hand auger first four feet to avoid conflict with underground utilities

-200 – Amount Passing U.S. Standard No. 200 Sieve (%)

MC – Moisture Content (%)

OC – Organic Content (%)

SP – Unified Soil Classification System Group Symbol (ASTM D 2487)

PW-1 – Standard Penetration Test (SPT) boring and number

3.0′ 6-07-10 – Depth of groundwater (feet) & date measured

50/5 – Indicates fifty SPT hammer blows were required to drive the sampler 5 inches

NOTES

(1) Borings were drilled on June 7, 8 and 9, 2010 using a Central Mine Equipment Model 55 (CME 55) drilling rig.

(2) Strata boundaries are approximate and represent soil strata at each test hole location only. Soil transitions may be more gradual than implied.

(3) Groundwater depths shown on the subsurface profiles represent groundwater surfaces on the dates shown. Groundwater level fluctuations should be anticipated throughout the year.

DRAWN	GD
CHECKED	JMJ
APPROVED	SNP
SCALE	1" = 5'
REVISED	

SUBSURFACE PROFILES
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

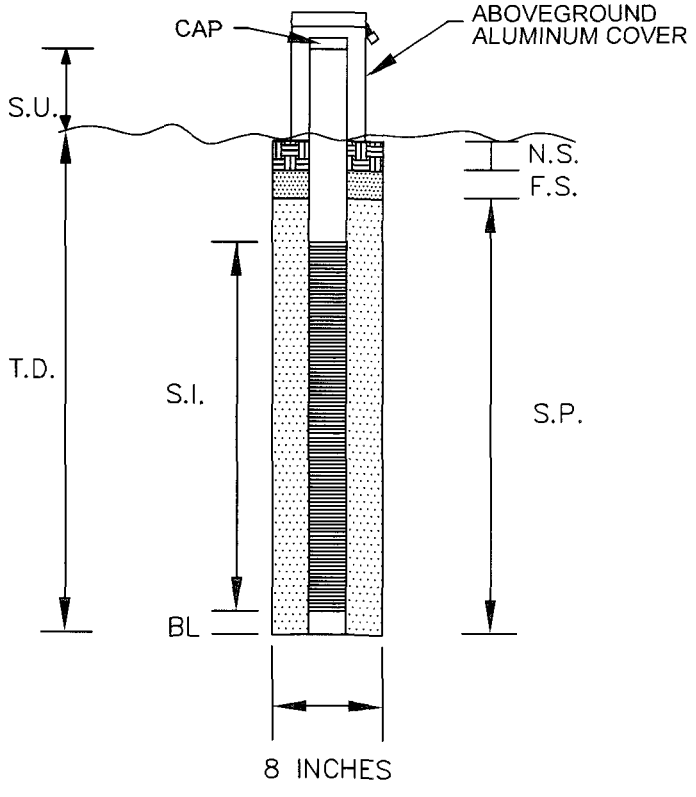
DATE	PROJ. NO.	SHEET
6-14-10	SAR-09-1145	2

WELL ID NO. PW-1

WELL DIAMETER 2"

SLOT WIDTH 0.10"

INSTALLATION DATE: 6/07/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT

BL. (BLIND) = 0.5 FT

S.I. (SCREENED INTERVAL) = 10 FT

S.P. (20/30 SAND PACK) = 11 FT

F.S (30/65 FINE SAND) = 0.5 FT

N.S. (NATIVE SOIL) = 0.5 FT

S.U. (STICK UP) = 2 FT

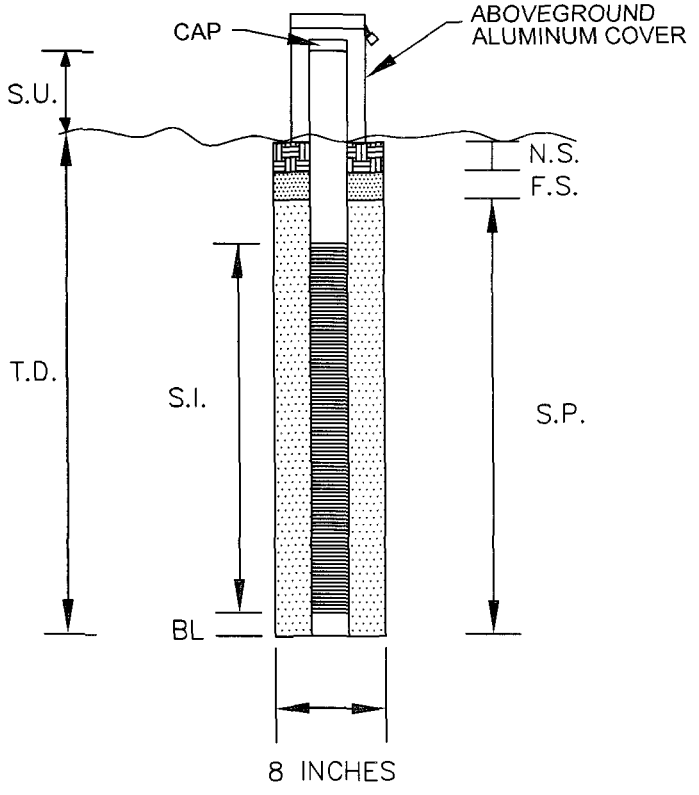
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3A

WELL ID NO. PW-2
WELL DIAMETER 2"
SLOT WIDTH 0.10"
INSTALLATION DATE: 6/08/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT
BL. (BLIND) = 0.5 FT
S.I. (SCREENED INTERVAL) = 10 FT
S.P. (20/30 SAND PACK) = 11 FT
F.S (30/65 FINE SAND) = 0.5 FT
N.S. (NATIVE SOIL) = 0.5 FT
S.U. (STICK UP) = 2 FT

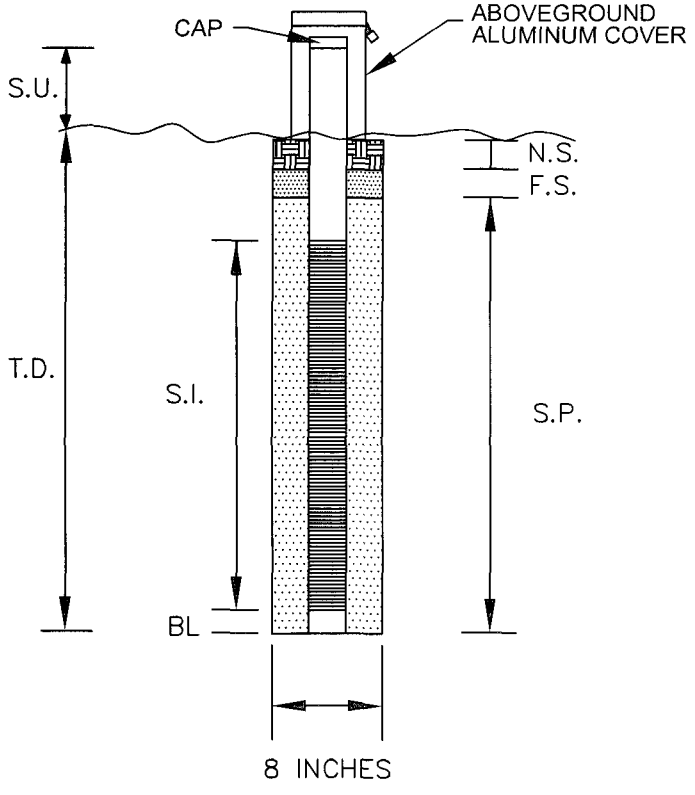
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3B

WELL ID NO. PW-3
WELL DIAMETER 2"
SLOT WIDTH 0.10"
INSTALLATION DATE: 6/08/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT
BL. (BLIND) = 0.5 FT
S.I. (SCREENED INTERVAL) = 10 FT
S.P. (20/30 SAND PACK) = 11 FT
F.S (30/65 FINE SAND) = 0.5 FT
N.S. (NATIVE SOIL) = 0.5 FT
S.U. (STICK UP) = 2 FT

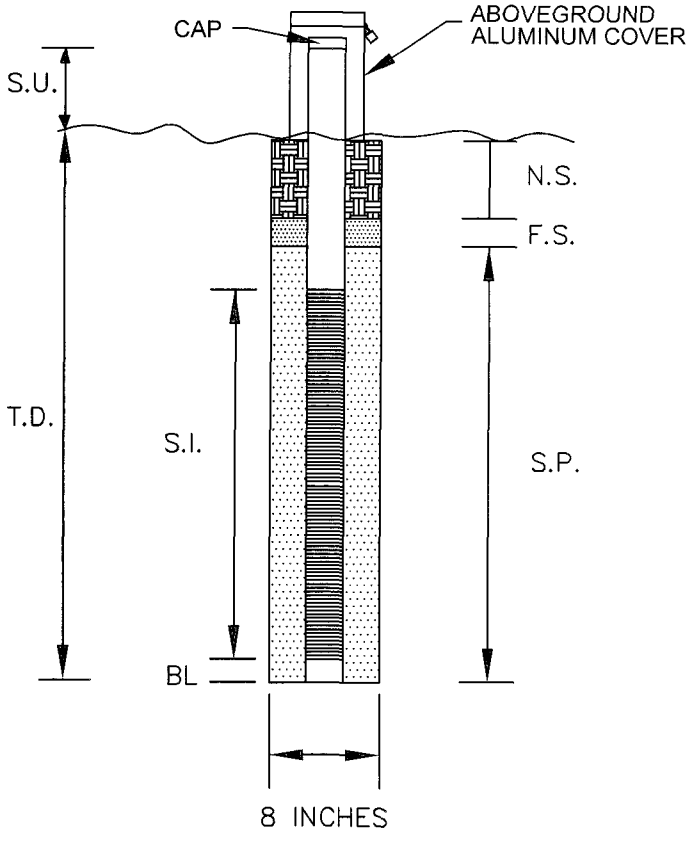
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3C

WELL ID NO. PW-4
WELL DIAMETER 2"
SLOT WIDTH 0.10"
INSTALLATION DATE: 6/10/10



GEOMETRY

T.D. (TOTAL DEPTH) = 13.5 FT
BL. (BLIND) = 0.5 FT
S.I. (SCREENED INTERVAL) = 10 FT
S.P. (20/30 SAND PACK) = 11 FT
F.S (30/65 FINE SAND) = 0.5 FT
N.S. (NATIVE SOIL) = 1.5 FT
S.U. (STICK UP) = 2 FT

DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

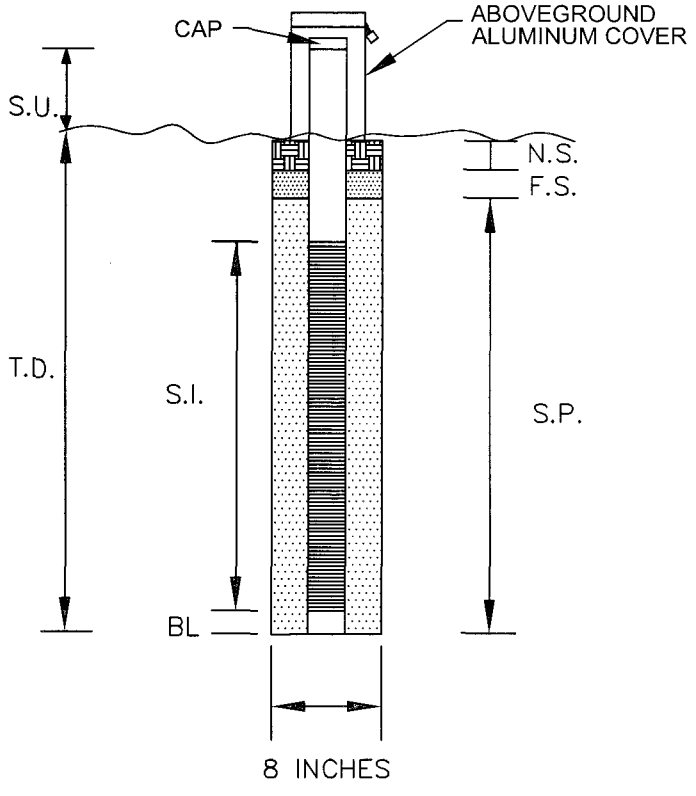
DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3D

WELL ID NO. PW-5

WELL DIAMETER 2"

SLOT WIDTH 0.10"

INSTALLATION DATE: 6/09/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT

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S.U. (STICK UP) = 2 FT

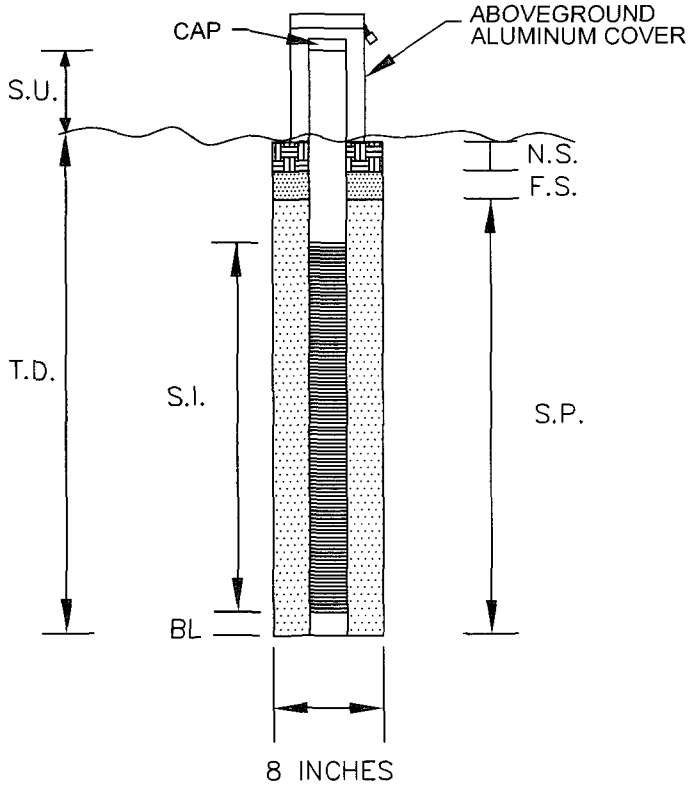
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3E

WELL ID NO. PW-6
WELL DIAMETER 2"
SLOT WIDTH 0.10"
INSTALLATION DATE: 6/08/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT
BL. (BLIND) = 0.5 FT
S.I. (SCREENED INTERVAL) = 10 FT
S.P. (20/30 SAND PACK) = 11 FT
F.S (30/65 FINE SAND) = 0.5 FT
N.S. (NATIVE SOIL) = 0.5 FT
S.U. (STICK UP) = 2 FT

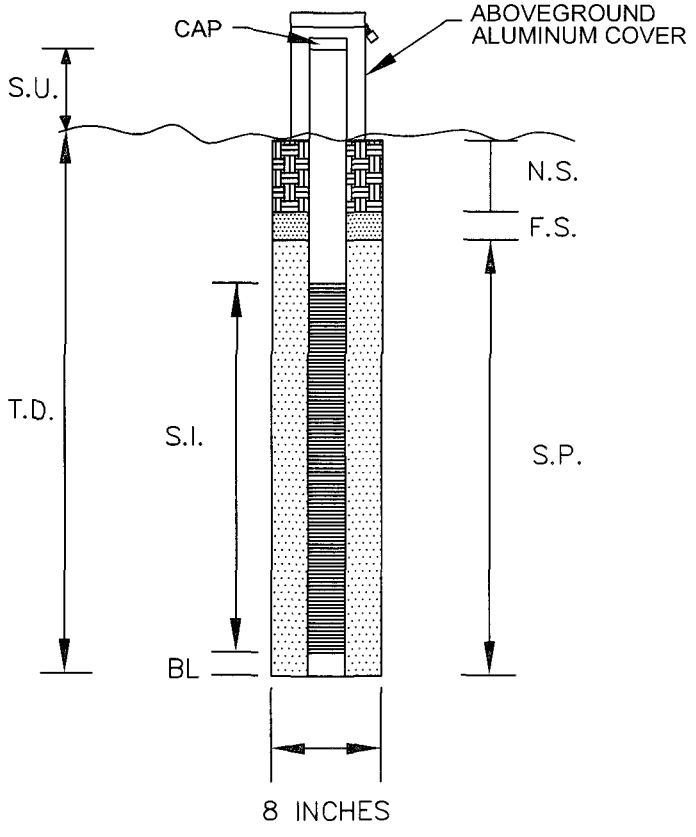
DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3F

WELL ID NO. PW-7
WELL DIAMETER 2"
SLOT WIDTH 0.10"
INSTALLATION DATE: 6/09/10



GEOMETRY

T.D. (TOTAL DEPTH) = 13.5 FT
BL. (BLIND) = 0.5 FT
S.I. (SCREENED INTERVAL) = 10 FT
S.P. (20/30 SAND PACK) = 11 FT
F.S (30/65 FINE SAND) = 0.5 FT
N.S. (NATIVE SOIL) = 1.5 FT
S.U. (STICK UP) = 2 FT

DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

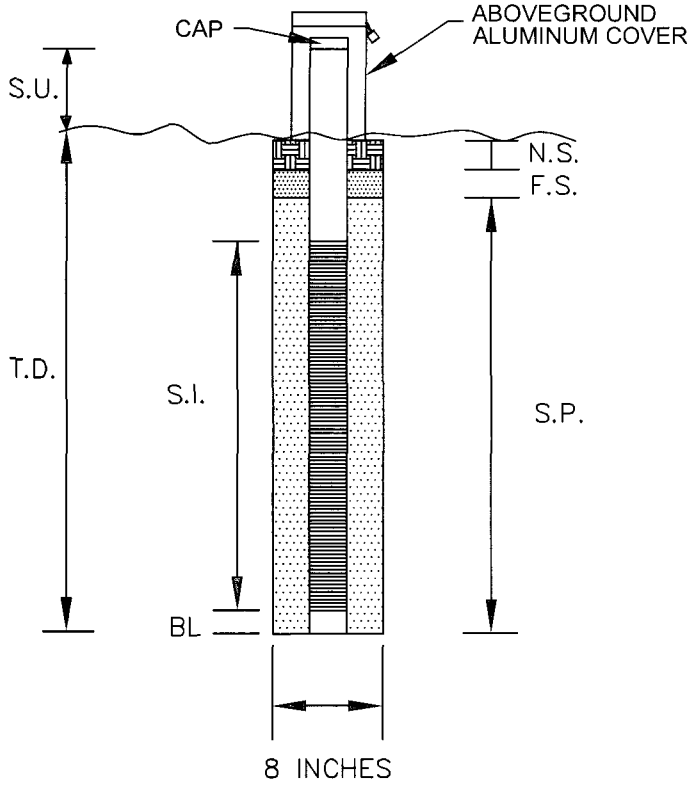
DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3G

WELL ID NO. PW-8

WELL DIAMETER 2"

SLOT WIDTH 0.10"

INSTALLATION DATE: 6/09/10



GEOMETRY

T.D. (TOTAL DEPTH) = 12.5 FT

BL. (BLIND) = 0.5 FT

S.I. (SCREENED INTERVAL) = 10 FT

S.P. (20/30 SAND PACK) = 11 FT

F.S (30/65 FINE SAND) = 0.5 FT

N.S. (NATIVE SOIL) = 0.5 FT

S.U. (STICK UP) = 2 FT

DRAWN	GD
CHECKED	AP
APPROVED	SNP
SCALE	N.T.S.
REVISED	

MONITORING WELL CONSTRUCTION DETAIL
SARASOTA COUNTY CENTRAL LANDFILL
SOLID WASTE DISPOSAL COMPLEX
SARASOTA COUNTY, FLORIDA

DUNKELBERGER
engineering & testing, inc.

DATE	PROJ. NO.	SHEET
6-25-10	SAR-09-1145	3H

APPENDIX A

LABORATORY ANALYTICAL RESULTS

Palm Beach Environmental
Laboratories Inc.

Andrew Petric
Dunkelberger Engineering & Testing
West Palm Beach, FL 33405
(561) 689-4299
LOG #: 0007370

July 01, 2010

Enclosed is the laboratory report for your project. All results meet the requirements of the NELAC standards.

Please note the following:

(1) The samples were received as stated on the chain of custody, correctly labeled and at the proper temperature unless otherwise noted. The results contained in this report relate only to the items tested or to the samples as received by the laboratory.

(2) This report may not be reproduced except in full, without the written approval of the laboratory. Any anomalies are noted in the case narrative.

(3) Results for all solid matrices are reported in dry weight unless otherwise noted.

(4) Results for all liquid matrices are analyzed as received in the laboratory unless otherwise noted.

(5) Samples are disposed of within 30 days of their receipt by the laboratory.

(6) A statement of Qualifiers is available upon request.

(7) Certain analyses are subcontracted to outside NELAC certified laboratories and are designated on your report.

(8) Precision & Accuracy will be provided when clients require a measure of estimated uncertainty.

(9) The issuance of the final Certificate of Analysis takes precedence over any previous Preliminary Report Preliminary Data should not be used for regular purposes. Authorized signature(s) is provided on final report only

Please contact me if you have any questions or concerns regarding this report.

Sincerely,

Pamela Shore
QA Officer

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-1 (1) **Lab ID:** 0007370-01 **Sampled:** 06/07/10 13:52
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	***Nitrate as N***	***1.68***		*mg/kg*	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	***Arsenic***	**1.02**		*mg/kg dry*	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**10.5**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.879	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**1490**		mg/kg dry	EPA 6020B	1	0.00110	0.0549	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**1.73**		mg/kg dry	EPA 6020B	1	0.007	0.220	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**91.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-1 (5) **Lab ID:** 0007370-02 **Sampled:** 06/07/10 13:52
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.71**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.23**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**1.3**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.889	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**909**		mg/kg dry	EPA 6020B	1	0.00111	0.0556	06/16/10	06/21/10	MH
7439-92-1	Lead	0.007	U	mg/kg dry	EPA 6020B	1	0.007	0.222	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**90.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-2 (1) **Lab ID:** 0007370-03 **Sampled:** 06/08/10 09:00
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.209**	I	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.70**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.41**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**13.1**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.899	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**2640**		mg/kg dry	EPA 6020B	1	0.00112	0.0562	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**3.04**		mg/kg dry	EPA 6020B	1	0.007	0.225	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**89.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental
Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-2 (5) **Lab ID:** 0007370-04 **Sampled:** 06/08/10 09:07
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.69**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**3.60**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**12.2**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.899	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**6930**		mg/kg dry	EPA 6020B	1	0.00112	0.0562	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**2.52**		mg/kg dry	EPA 6020B	1	0.007	0.225	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**89.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental
Laboratories Inc.

CERTIFICATE OF ANALYSIS

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PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-3 (1) **Lab ID:** 0007370-05 **Sampled:** 06/08/10 11:22
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.469**		mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.66**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.23	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**1.2**		mg/kg dry	EPA 6020B	1	0.003	0.05	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.909	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**290**		mg/kg dry	EPA 6020B	1	0.00114	0.0568	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**0.046**	I	mg/kg dry	EPA 6020B	1	0.008	0.227	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**88.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-3 (5) **Lab ID:** 0007370-06 **Sampled:** 06/08/10 11:32
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.129**	I	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**2.07**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.19**	I	*mg/kg dry*	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**11.4**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.889	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**2230**		mg/kg dry	EPA 6020B	1	0.00111	0.0556	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**2.55**		mg/kg dry	EPA 6020B	1	0.007	0.222	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**90.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-6 (1) **Lab ID:** 0007370-07 **Sampled:** 06/08/10 13:48
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.45**	I	mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**1.3**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.889	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**32.4**		mg/kg dry	EPA 6020B	1	0.00111	0.0556	06/16/10	06/21/10	MH
7439-92-1	Lead	0.007	U	mg/kg dry	EPA 6020B	1	0.007	0.222	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**90.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
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PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-6 (5) **Lab ID:** 0007370-08 **Sampled:** 06/08/10 14:12
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.79**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.21	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**8.8**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.842	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**891**		mg/kg dry	EPA 6020B	1	0.00105	0.0526	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**2.33**		mg/kg dry	EPA 6020B	1	0.007	0.211	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**95.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-5 (1) **Lab ID:** 0007370-09 **Sampled:** 06/09/10 08:52
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.350**		mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.74**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	***Chromium***	***7.5***		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.899	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**149**		mg/kg dry	EPA 6020B	1	0.00112	0.0562	06/16/10	06/21/10	MH
7439-92-1	Lead	0.007	U	mg/kg dry	EPA 6020B	1	0.007	0.225	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**89.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-5 (5) **Lab ID:** 0007370-10 **Sampled:** 06/09/10 09:02
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**2.12**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.23**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**13.2**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.889	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**1380**		mg/kg dry	EPA 6020B	1	0.00111	0.0556	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**3.72**		mg/kg dry	EPA 6020B	1	0.007	0.222	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**90.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-7 (2) **Lab ID:** 0007370-11 **Sampled:** 06/09/10 11:47
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**8.25**		mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**2.32**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.99**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**24.5**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.879	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**2000**		mg/kg dry	EPA 6020B	1	0.00110	0.0549	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**2.50**		mg/kg dry	EPA 6020B	1	0.007	0.220	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**91.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-7 (6) **Lab ID:** 0007370-12 **Sampled:** 06/09/10 12:15
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**3.72**		mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	***Nitrate as N***	***1.53***		mg/kg	*EPA 300.0*	*1*	*0.510*	*1.53*	*06/12/10*	*06/12/10*	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.43**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	***Chromium***	**2.2**		mg/kg dry	*EPA 6020B*	*1*	*0.003*	*0.04*	*06/16/10*	*06/21/10*	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.879	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**508**		mg/kg dry	EPA 6020B	1	0.00110	0.0549	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**0.169**	I	mg/kg dry	EPA 6020B	1	0.007	0.220	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**91.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental
Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
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West Palm Beach, FL 33405
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PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-8 (1) **Lab ID:** 0007370-13 **Sampled:** 06/09/10 13:20
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.381**		mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	***Nitrate as N***	**2.48**		*mg/kg*	*EPA 300.0*	1	*0.510*	*1.53*	*06/12/10*	*06/12/10*	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.48**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	***Chromium***	**11.1**		*mg/kg dry*	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.860	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**1590**		mg/kg dry	EPA 6020B	1	0.00108	0.0538	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**1.44**		mg/kg dry	EPA 6020B	1	0.007	0.215	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**93.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-8 (5) **Lab ID:** 0007370-14 **Sampled:** 06/09/10 13:29
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.178**	I	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	Nitrate as N	0.510	U	mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.23	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**1.4**		mg/kg dry	EPA 6020B	1	0.003	0.05	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.909	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**57.4**		mg/kg dry	EPA 6020B	1	0.00114	0.0568	06/16/10	06/21/10	MH
7439-92-1	Lead	0.008	U	mg/kg dry	EPA 6020B	1	0.008	0.227	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**88.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-4 (2) **Lab ID:** 0007370-15 **Sampled:** 06/09/10 14:34
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.110	U	mg/kg	EPA 350.1	1	0.110	0.330	06/14/10	06/14/10	SL
NA	**Nitrate as N**	**1.98**		mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.50**		mg/kg dry	EPA 6020B	1	0.003	0.22	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**4.1**		mg/kg dry	EPA 6020B	1	0.003	0.04	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.860	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**1250**		mg/kg dry	EPA 6020B	1	0.00108	0.0538	06/16/10	06/21/10	MH
7439-92-1	**Lead**	**0.797**		mg/kg dry	EPA 6020B	1	0.007	0.215	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**93.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007370
COC#: 11162
REPORTED: 7/1/2010 3:13:25PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-4 (6) **Lab ID:** 0007370-16 **Sampled:** 06/09/10 14:44
Matrix: Soil **Sampled By:** Randall Murphy **Received:** 06/11/10 08:52

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	*Ammonia as N*	*0.110*	U	*mg/kg*	*EPA 350.1*	1	*0.110*	*0.330*	*06/14/10*	*06/14/10*	SL
NA	Nitrate as N	0.510	U	mg/kg	EPA 300.0	1	0.510	1.53	06/12/10	06/12/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.003	U	mg/kg dry	EPA 6020B	1	0.003	0.23	06/16/10	06/21/10	MH
7440-47-3	**Chromium**	**0.9**		mg/kg dry	EPA 6020B	1	0.003	0.05	06/16/10	06/21/10	MH
7440-50-8	Copper	0.004	U	mg/kg dry	EPA 6020B	1	0.004	0.909	06/16/10	06/21/10	MH
7439-89-6	**Iron**	**72.0**		mg/kg dry	EPA 6020B	1	0.00114	0.0568	06/16/10	06/21/10	MH
7439-92-1	Lead	0.008	U	mg/kg dry	EPA 6020B	1	0.008	0.227	06/16/10	06/21/10	MH

Percent Dry Weight

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**% Solids**	**88.0**		%	Calculation	1	1.0	1.0	06/14/10	06/14/10	AT

Notes and Definitions

U	Analyte included in the analysis, but not detected
I	The reported value is between the laboratory Method Detction Limit & the laboratory Practical Quantitaion Limit
JEE	Analysis performed by Florida Environmental Cert#E86006

Palm Beach Environmental Laboratories, Inc.

PBEL

CHAIN OF CUSTODY RECORD

Log #: ____
PO #: ____
Quote #: ____
FDEP : ____

Company Name: DUNCKELBERGER ENGINEERING

Address: 1226 OMNIC ROAD

City: WPB State: FL Zip: 33405

Attn: ANDREW PETRAC Phone#: 689-4299

email: ANDREWP@DDEENG.NET Fax#: 689 5955

Project Name: SARASOTA CO CENTRAL LANDFILL Proj#: SAR 09 1145

Sampler Signature / Name: Randall Murphy / Randall Murphy

LAB ANALYSIS

#	Sample Label (Client ID)	Collect Date	Collect Time	Matrix	Field Filtered	Integrity OK	Total # of containers	Arsenic	Iron	Copper	Chromium	Lead	Nitrate-Nitrogen	Ammonia-Nitrogen		
pH																
PRES CODE																
1	PW-~~ (1)	6/7/10	1352	SO			1	✓	✓	✓	✓	✓	✓	✓		
2	PW-1 (5)	"	1413	"			1	✓	✓	✓	✓	✓	✓	✓		
3	PW-2 (1)	6/8/10	0900	"			1	✓	✓	✓	✓	✓	✓	✓		
4	PW 2 (5)	"	0907	"			1	✓	✓	✓	✓	✓	✓	✓		
5	PW 3-(1)	"	1122	"			1	✓	✓	✓	✓	✓	✓	✓		
6	PW 3 (5)	"	1132	"			1	✓	✓	✓	✓	✓	✓	✓		
7	PW 6 (1)	"	1345	"			1	✓	✓	✓	✓	✓	✓	✓		
8	PW 6 (5)	"	1412	"			1	✓	✓	✓	✓	✓	✓	✓		
9	PW 5 (1)	6/9/10	0852	"			1	✓	✓	✓	✓	✓	✓	✓		
10	PW 5 (2)		0902	"			1	✓	✓	✓	✓	✓	✓	✓		

Matrix Codes

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water		
SW	Surface Water	O	Other ____ (Please Specify)

Press Codes

A. None	E. HCL	O. Other
B. HNO3	F. MeOH	
C. H2SO4	G. Na2S2O3	
D. NaOH	I. Ice	

T.A.T. Request

Standard	RUSH
(Y)/N	__24 Hour __48 Hour Date Due:

QA/QC Report Level: None___ 1___ 2___ 3___ Other___

COC OK: Y N

Initials:

Item	Relinquished by	Affiliation	Date	Time	Received By	Affiliation	Date	Time
All	Randall Murphy	DDE	6/11/10	852	M	PBEL	6/11/10	852

Lab Use Only

	Yes	No	N/A
Sample INTACT upon arrival?	___	___	___
Received on Wet Ice? Temp___°C	___	___	___
Proper Preservatives Indicated?	___	___	___
Received within holding time?	___	___	___
Custody seals intact?	___	___	___
Volatile rec'd without headspace?	___	___	___
Proper Containers Used?	___	___	___

COC# 11162

Palm Beach Environmental Laboratories, Inc.

PBEL

CHAIN OF CUSTODY RECORD

Log #: 7340
PO #:
Quote #:
FDEP :

Company Name: DUNKELBERGER ENGINEERING
Address: 1226 OMAR ROAD
City: WPB State: FL Zip: 33405
Attn: ANDREW PETRIE Phone#: 689-4299
email: ANDREWP@DETINC.NET Fax#: 689-5755
Project Name: SARASOTA CO CENTRAL LANDFILL Proj#: SAR-09 1145
Sampler Signature / Name: [signature] / RANDALL MURPHY

LAB ANALYSIS

#	Sample Label (Client ID)	Collect Date	Collect Time	Matrix	Field Filtered	Integrity OK	Total # of containers	Arsenic	Iron	Copper	Chromium	Lead	Nitrate - Nitrogen	Ammonia - Nitrogen		
pH																
PRES CODE																
1	PW7 (2)	6/9/10	1147	SO			1	✓	✓	✓	✓	✓	✓	✓		
2	PW7 (6)	"	1215	"			1	✓	✓	✓	✓	✓	✓	✓		
3	PW8 (1)	"	1320	"			1	✓	✓	✓	✓	✓	✓	✓		
4	PW8 (5)	"	1329	"			1	✓	✓	✓	✓	✓	✓	✓		
5	PW4 (2)	"	1434	"			1	✓	✓	✓	✓	✓	✓	✓		
6	PW4 (6)	"	1444	"			1	✓	✓	✓	✓	✓	✓	✓		
7																
8																
9																
0																

Matrix Codes

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water		
SW	Surface Water	O	Other ____ (Please Specify)

Press Codes

A. None	E. HCL	O. Other
B. HNO3	F. MeOH	
C. H2SO4	G. Na2S2O3	
D. NaOH	I. Ice	

T.A.T. Request: Standard (Y)/N — RUSH: __24 Hour __48 Hour Date Due:

QA/QC Report Level: None___ 1___ 2___ 3___ Other___

COC OK: Y N

Initials:

Item	Relinquished by	Affiliation	Date	Time	Received By	Affiliation	Date	Time
ALL	[signature]	DET	6/11/10	852	[signature]	PBEL	6/11/10	852

Lab Use Only

	Yes	No	N/A
Sample INTACT upon arrival?			
Received on Wet Ice? Temp___°C			
Proper Preservatives Indicated?			
Received within holding time?			
Custody seals intact?			
Volatile rec'd without headspace?			
Proper Containers Used?			

Palm Beach Environmental
Laboratories Inc.

Andrew Petric
Dunkelberger Engineering & Testing
West Palm Beach, FL 33405
(561) 689-4299
LOG #: 0007391

July 01, 2010

Enclosed is the laboratory report for your project. All results meet the requirements of the NELAC standards.

Please note the following:

(1) The samples were received as stated on the chain of custody, correctly labeled and at the proper temperature unless otherwise noted. The results contained in this report relate only to the items tested or to the samples as received by the laboratory.

(2) This report may not be reproduced except in full, without the written approval of the laboratory. Any anomalies are noted in the case narrative.

(3) Results for all solid matrices are reported in dry weight unless otherwise noted.

(4) Results for all liquid matrices are analyzed as received in the laboratory unless otherwise noted.

(5) Samples are disposed of within 30 days of their receipt by the laboratory.

(6) A statement of Qualifiers is available upon request.

(7) Certain analyses are subcontracted to outside NELAC certified laboratories and are designated on your report.

(8) Precision & Accuracy will be provided when clients require a measure of estimated uncertainty.

(9) The issuance of the final Certificate of Analysis takes precedence over any previous Preliminary Report Preliminary Data should not be used for regular purposes. Authorized signature(s) is provided on final report only

Please contact me if you have any questions or concerns regarding this report.

Sincerely,

Pamela Shore
QA Officer

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-1 **Lab ID:** 0007391-01 **Sampled:** 06/17/10 08:43
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.01	U	mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**51.1**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**556**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.05	U	mg/L -N	EPA 300.0	1	0.05	0.2	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**11.9**		mg/L	EPA 300.0	1	0.4	1.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.005**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**1.99**		mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**154**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.009**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**4.83**		mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.02**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**160**		mg/L	EPA 300.0	1	3.1	9.3	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**1000**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-2 **Lab ID:** 0007391-02 **Sampled:** 06/17/10 09:42
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Ammonia as N	0.06		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	Total Organic Carbon	23.9	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	378		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.8		mg/L -N	EPA 300.0	1	0.02	0.08	06/18/10	06/18/10	SL
148-08-79 8	Sulfate as SO4	11.6		mg/L	EPA 300.0	1	0.2	0.6	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.006		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	Iron	2.45		mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	Sodium	129		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.007		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	Iron	3.37		mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	Manganese	0.03		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	Chloride	94		mg/L	EPA 300.0	1	1.6	4.6	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	Total Dissolved Solids	600		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-3 **Lab ID:** 0007391-03 **Sampled:** 06/17/10 11:15
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.02**	I	mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**24.5**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**336**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.01	U	mg/L -N	EPA 300.0	1	0.01	0.03	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**3.8**		mg/L	EPA 300.0	1	0.08	0.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.005**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**2.65**		mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**97.3**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.005**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**3.97**		mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.02**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**26**		mg/L	EPA 300.0	1	0.62	1.9	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**450**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-6 **Lab ID:** 0007391-04 **Sampled:** 06/17/10 12:39
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.04**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**18.7**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**286**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.01	U	mg/L -N	EPA 300.0	1	0.01	0.03	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**3.3**		mg/L	EPA 300.0	1	0.08	0.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.004**	I	mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**1.93**	E	mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**74.3**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.006**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**3.63**		mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.01**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**41**		mg/L	EPA 300.0	1	0.62	1.9	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**400**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-5 **Lab ID:** 0007391-05 **Sampled:** 06/17/10 14:15
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.20**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**135**	JEE	mg/L	EPA 415.1	1	14.4	43.4	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**418**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.1	U	mg/L -N	EPA 300.0	1	0.1	0.3	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**29.1**		mg/L	EPA 300.0	1	0.08	0.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.006**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**13.6**	E	mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**484**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.006**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**16.8**	E	mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.03**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**740**		mg/L	EPA 300.0	1	6.2	19	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**2100**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-7 **Lab ID:** 0007391-06 **Sampled:** 06/17/10 15:54
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**3.70**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**99.5**	JEE	mg/L	EPA 415.1	1	14.4	43.4	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**362**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.05	U	mg/L -N	EPA 300.0	1	0.05	0.2	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**10.9**		mg/L	EPA 300.0	1	0.4	1.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.019**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**25.1**	E	mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**187**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.020**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**26.5**	E	mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.03**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**420**		mg/L	EPA 300.0	1	3.1	9.3	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**1400**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-8 **Lab ID:** 0007391-07 **Sampled:** 06/18/10 07:13
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**2.25**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**72.9**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**388**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	Nitrate as N	0.1	U	mg/L -N	EPA 300.0	1	0.1	0.3	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**6.7**		mg/L	EPA 300.0	1	0.08	0.2	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.016**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**17.8**	E	mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**49.3**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.016**		mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**18.2**	E	mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.06**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	**Chloride**	**48**		mg/L	EPA 300.0	1	0.62	1.9	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**630**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

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LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-4 **Lab ID:** 0007391-08 **Sampled:** 06/18/10 08:41
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**1.24**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**17.4**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**334**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	**Nitrate as N**	**165**		mg/L -N	EPA 300.0	1	0.02	0.08	06/18/10	06/18/10	SL
148-08-79 8	**Sulfate as SO4**	**20.0**		mg/L	EPA 300.0	1	0.2	0.6	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	Arsenic	0.0004	U	mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**0.950**		mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**15.4**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.002**	I	mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**12.0**	E	mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.06**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	Chloride	1.6	U	mg/L	EPA 300.0	1	1.6	4.6	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**630**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

Palm Beach Environmental Laboratories Inc.

CERTIFICATE OF ANALYSIS

Dunkelberger Engineering & Testing
1225 Omar Road
West Palm Beach, FL 33405
ATTN: Andrew Petric
PHONE: (561) 689-4299 **FAX:** (561) 689-5955

LOG #: 0007391
COC#: 11219
REPORTED: 7/1/2010 3:22:24PM
PROJECT #: SAR 091145
PROJECT: Sarasota Central Landfill

Description: PW-4 Dup **Lab ID:** 0007391-09 **Sampled:** 06/18/10 08:41
Matrix: Water **Sampled By:** Randall Murphy **Received:** 06/18/10 12:30

Classical Chemistry Parameters

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Ammonia as N**	**0.87**		mg/L -N	EPA 350.1	1	0.01	0.03	06/21/10	06/21/10	SL
NA	**Total Organic Carbon**	**16.6**	JEE	mg/L	EPA 415.1	1	2.9	8.7	06/21/10	06/21/10	SL
	Alkalinity, Phenolthalein	**326**		mg/L	EPA 310.1	1	0.100	0.300	06/21/10	06/21/10	SL
NA	**Nitrate as N**	**164**		mg/L -N	EPA 300.0	1	0.02	0.08	06/18/10	06/18/10	SL
148-08-798	Sulfate as SO4	0.2	U	mg/L	EPA 300.0	1	0.2	0.6	06/18/10	06/18/10	SL

Filtered Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.002**	I	mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**0.662**		mg/L	EPA 6020B	1	0.00295	0.0200	06/21/10	06/29/10	MH

Metals by EPA 200.7/200.8

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-23-5	**Sodium**	**15.6**		mg/L	EPA 200.7	1	0.003	0.009	06/18/10	06/21/10	SL

Metals by EPA 6000/7000 Series Methods

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
7440-38-2	**Arsenic**	**0.003**	I	mg/L	EPA 6020B	1	0.0004	0.005	06/21/10	06/29/10	MH
7439-89-6	**Iron**	**12.1**	E	mg/L	EPA 6020B	1	0.000856	0.0100	06/21/10	06/29/10	MH
7439-96-5	**Manganese**	**0.06**		mg/L	EPA 6020B	1	0.003	0.01	06/21/10	06/29/10	MH

SM4500CL-B

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
16887-00-6	Chloride	1.6	U	mg/L	EPA 300.0	1	1.6	4.6	06/18/10	06/18/10	SL

Total Dissolved Solids

Subcontract Lab Abbreviation: FEE

CAS #	Parameter	Results	Q	Units	Method	DF	MDL	PQL	Extraction Date	Analysis Date	Analyst
NA	**Total Dissolved Solids**	**610**		mg/L	SM 2540C	1	1.0	3.0	06/21/10	06/21/10	SL

Notes and Definitions

U	Analyte included in the analysis, but not detected
I	The reported value is between the laboratory Method Detction Limit & the laboratory Practical Quantitaion Limit
JEE	Analysis performed by Florida Environmental Cert#E86006
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.This could also be due to the presence of matrix interference. This value is considered an estimate (CLP E-flag).

Log #: 7391
PO #:
Quote #:
FDEP :

Palm Beach Environmental Laboratories, Inc.

PBEL

CHAIN OF CUSTODY RECORD

Company Name: DUNKELBERGER ENGINEERING
Address: 1226 OMAR RD
City: WPB State: FL Zip: 33405
Attn: ANDREW PETTIT Phone#: 689 4299
email: ANDREW P@DET INC. NET Fax#: 689 5955
Project Name: SARASOTA Co Central Landfill Proj#: SAR 09 1145
Sampler Signature / Name: [signature] / RANDALL MURPHY

LAB ANALYSIS

									pH										
									PRES CODE	E	B	I	B	C	I				
#	Sample Label (Client ID)	Collect Date	Collect Time	Matrix	Field Filtered	Integrity OK	Total # of containers	Parameters		TOC	TOTAL METALS	DISS FILTER METALS	SODIUM	NH3	TDS, CHL, ALK				
1	PW-1	6/17/10	0843	GW	✓		7			✓	✓	✓	✓	✓	✓				
2	PW-2	"	0942	"	✓		7			✓	✓	✓	✓	✓	✓				
3	PW-3	"	1115	"	✓		7			✓	✓	✓	✓	✓	✓				
4	PW-6	"	1239	"	✓		7			✓	✓	✓	✓	✓	✓				
5	PW-5	"	1415	"	✓		7			✓	✓	✓	✓	✓	✓				
6	PW-7		1534	"	✓		7			✓	✓	✓	✓	✓	✓				
7	PW-8	6/18/10	0713	"	✓		7			✓	✓	✓	✓	✓	✓				
8	PW-4	"	0841	"	✓		7			✓	✓	✓	✓	✓	✓				
9	PW-4 DUP	"	0841	"	✓		7			✓	✓	✓	✓	✓	✓				
0																			

Matrix Codes

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water		
SW	Surface Water	O	Other ____ (Please Specify)

Press Codes

A. None	E. HCL	O. Other
B. HNO3	F. MeOH	
C. H2SO4	G. Na2S2O3	
D. NaOH	I. Ice	

T.A.T. Request

Standard	RUSH
Y/N	__24 Hour __48 Hour Date Due:

QA/QC Report Level: None___ 1___ 2___ 3___ Other___

COC OK: Y N

Initials:

Item	Relinquished by	Affiliation	Date	Time	Received By	Affiliation	Date	Time
All	[signature]	DET	6/18/10	1220	[signature]	PBEL	6/18/10	1220

Lab Use Only

	Yes	No	N/A
Sample INTACT upon arrival?			
Received on Wet Ice? Temp___°C			
Proper Preservatives Indicated?			
Received within holding time?			
Custody seals intact?			
Volatile rec'd without headspace?			
Proper Containers Used?			

COC# 11219

APPENDIX B

FDEP GROUNDWATER SAMPLING LOGS

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-1	SAMPLE ID: PW-1	DATE: 6/17/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet 15 feet	STATIC DEPTH TO WATER (feet): 6.3	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet – 6.3 feet) X 0.16 gallons/foot = 1.5 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 0755	PURGING ENDED AT: 0835	TOTAL VOLUME PURGED (gallons): 7.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0815	3.6	3.6	0.18	6.57	6.93	26.0	1414	7.1	17	Clear	None
0820	2.7	6.3	0.18	6.57	6.94	26.0	1414	5.5	8	"	"
0835	0.9	7.2	0.18	6.57	6.94	26.3	1415	5.2	5	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 0835	SAMPLING ENDED AT: 0843
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type: Peristaltic	FILTER SIZE: 1.0 µm

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW1	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS: 2.5' SHEEN

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-2	SAMPLE ID: PW-2	DATE: 6/17/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 5.58	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet − 5.58 feet) X 0.16 gallons/foot = 1.5 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 0904	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (gallons): 5.58

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or %saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0922	3.24	3.24	0.18	5.89	6.68	24.4	945	5.0	11	Clear	None
0928	1.08	4.32	0.18	5.89	6.45	24.4	947	3.8	8	"	"
0935	1.26	5.58	0.18	5.89	6.91	24.4	953	2.9	7	"	"
~~0940~~											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 0935	SAMPLING ENDED AT: 0942
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type: Cartridges	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW2	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS: 2.5' Stickup

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; T = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-3	SAMPLE ID: PW3	DATE: 6/17/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 4.95	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet – 4.95 feet) X 0.16 gallons/foot = 1.6 gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 1006	PURGING ENDED AT: 1108	TOTAL VOLUME PURGED (gallons): 10.81

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or ~~mS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or ~~% saturation~~	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1026	3.6	3.6	0.18	6.14	6.94	25.8	699	4.9	29	Cloudy	None
1036	1.8	5.4	0.18	6.14	6.97	25.7	678	3.1	305	"	"
1046	1.8	7.2	0.18	6.14	7.01	26.4	681	8.4	223	"	"
1050	0.72	7.92	0.18	6.14	6.96	26.1	691	5.3	130	"	"
1055	0.72	8.64	0.18	6.14	6.98	26.1	679	9.0	40	"	"
1100	0.72	9.36	0.18	6.14	6.97	25.9	679	6.3	24	Clear	"
1101	0.18	9.54	0.18	6.14	6.97	25.8	680	6.1	21	"	"
1105	0.72	10.27	0.18	6.14	6.97	25.9	681	6.8	16	"	"
1106	0.18	10.45	0.18	6.14	6.97	25.9	682	6.1	14	"	"
1108	0.36	10.81	0.18	6.14	6.97	25.9	683	6.8	12	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 1108	SAMPLING ENDED AT: 1115
PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE:	FIELD-FILTERED: (Y) N Filtration Equipment Type: Centrifuge	FILTER SIZE: 1.0 µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW3	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
2.5' Shell up

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW 4	SAMPLE ID: PW 4	DATE: 6/15/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 7.26	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (16 feet – 7.26 feet) X 0.16 gallons/foot = 1.4 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0724	PURGING ENDED AT: 0824	TOTAL VOLUME PURGED (gallons): 9.9

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or ~~µS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0740	2.88	2.88	0.18	8.17	6.39	27.1	864	5.6	44	Cloudy	None
0750	1.8	4.68	0.18	8.17	6.47	27.1	888	6.3	33	Amber	"
0800	0.9	5.58	0.18	8.17	6.46	27.0	893	4.0	29	"	"
0805	0.9	6.48	0.18	8.17	6.40	27.6	965	2.6	34	Cloudy	"
0810	0.9	7.38	0.18	8.17	6.41	27.5	927	8.3	94	"	"
0820	1.8	9.18	0.18	8.17	6.42	26.9	916	3.6	15	Clear	"
0823	0.54	9.72	0.18	8.17	6.43	26.9	914	6.7	15	"	"
0824	0.18	9.90	0.18	8.17	6.43	26.9	913	5.3	10	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 0824	SAMPLING ENDED AT: 0841
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE:	FIELD-FILTERED: (Y) N Filtration Equipment Type:	FILTER SIZE: 1.0 µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
2.5' Stickup

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-5	SAMPLE ID: PW.5	DATE: 6/17/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 6.25	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet – 6.25 feet) X 0.16 gallons/foot = 1.4 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1301	PURGING ENDED AT: 1403	TOTAL VOLUME PURGED (gallons): 10.36

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1311	1.0	1.8	0.18	6.95	6.68	23.1	2931	1.7	999	cloudy	none
1345	6.12	7.92	0.18	6.95	6.68	23.1	2927	1.9	89	Amber	"
1350	0.9	8.82	0.18	6.95	6.67	23.1	2931	1.6	46	"	"
1355	0.9	8.92	0.18	6.95	6.68	23.1	2940	2.3	43	"	"
1400	0.9	9.82	0.18	6.95	6.68	23.1	2949	2.2	17	"	"
1401	0.18	10.00	0.18	6.95	6.69	23.0	2957	2.1	14	"	"
1403	0.36	10.36	0.18	6.95	6.68	23.0	2952	1.8	11	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 1403	SAMPLING ENDED AT: 1418
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type: Centrifuge	FILTER SIZE: 1.0 µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW5	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
2.5 Stickup 1311 Honey Road

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-6	SAMPLE ID: PW-6	DATE: 6/17/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 6.62	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet − 6.62 feet) X 0.16 gallons/foot = 1.34 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1145	PURGING ENDED AT: 1230	TOTAL VOLUME PURGED (gallons): 8.1

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm ~~or µS/cm~~	DISSOLVED OXYGEN (circle units) mg/l ~~or % saturation~~	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1155	1.8	1.8	0.18	8.3	7.08	25.4	638	19.6	118	Cloudy	none
1205	1.8	3.6	0.18	8.3	6.99	24.9	630	17.1	78	"	"
1210	0.9	4.5	0.18	8.8	6.95	24.7	628	8.6	64	"	"
1220	1.8	6.3	0.18	8.8	7.12	25.0	643	23.5	26	Clear	"
1225	0.9	7.2	0.18	8.8	7.11	24.4	651	18.2	17	"	"
1228	0.54	7.74	0.18	9.47	7.07	24.2	649	5.5	20	"	"
1230	0.36	8.10	0.18	9.47	7.09	24.3	649	4.7	14	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1239
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE:	FIELD-FILTERED: (Y) N Filtration Equipment Type: Cuno nozzle	FILTER SIZE: 1.0 µm

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW6	2	CG	40-mil	HCL			TOC	RFPP	250
↓	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
25' Shrimp

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW-7	SAMPLE ID: PW-7	DATE: 6/17/13

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 6.8	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (15 feet – 6.8 feet) X 0.16 gallons/foot = 1.3 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 1428	PURGING ENDED AT: 1538	TOTAL VOLUME PURGED (gallons): 12.60

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or ~~µS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or ~~% saturation~~	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1428	1.8	1.8	0.18	7.37	6.24	25.4	1440	2.4	1000	Cloudy	None
1448	1.8	3.6	0.18	7.37	6.34	25.2	1692	2.4	204	"	"
1459	1.8	5.4	0.18	7.37	6.38	25.0	1771	1.8	82	Amber	"
1505	1.26	6.66	0.18	7.37	6.39	24.9	1807	1.5	54	"	"
1515	1.8	8.46	0.18	7.37	6.40	24.9	1815	1.5	37	"	"
1520	0.9	9.36	0.18	7.37	6.40	24.9	1814	1.3	35	"	"
1525	0.9	10.26	0.18	7.37	6.40	24.9	1820	2.2	29	"	"
1530	0.9	11.16	0.18	7.37	6.40	24.9	1827	1.5	25	"	"
1535	0.9	12.06	0.18	7.37	6.40	24.9	1828	1.3	20	"	"
1536	0.18	12.24	0.18	7.37	6.40	24.9	1829	1.2	20	"	"
1538	0.36	12.60	0.18	7.37	6.40	24.9	1830	1.3	20	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1538	SAMPLING ENDED AT: 1554
PUMP OR TUBING DEPTH IN WELL (feet): 9	TUBING MATERIAL CODE:	FIELD-FILTERED: (Y) N Filtration Equipment Type: Cartridge	FILTER SIZE: 0.45 µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
PW7	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
2.5' Stickup Heavy Rain & Thunderstorms Lightning Strikes

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sarasota County Central Landfill	SITE LOCATION: Knights Trail Road, Nokomis, Florida	
WELL NO: PW 8	SAMPLE ID: PW 8	DATE: 6/18/10

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 5.4	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15 feet – 5.4 feet) X 0.16 gallons/foot = 1.53 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 0640	PURGING ENDED AT: 0708	TOTAL VOLUME PURGED (gallons): 5.04

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm ~~or µS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or %saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0650	1.8	Rinse 0.18	0.18	7.35	6.29	26.5	926	5.6	22	Amber	odors
0655	0.9	2.7	0.18	7.35	6.29	26.5	925	5.7	14	"	"
0700	0.9	3.6	0.18	7.35	6.28	26.5	914	4.1	11	"	"
0705	0.9	4.5	0.18	7.35	6.26	26.5	908	2.9	9	"	"
0708	0.54	5.04	0.18	7.35	6.26	26.4	905	2.4	9	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Randall Murphy/ Dunkelberger Eng.	SAMPLER(S) SIGNATURE(S): Randall Murphy	SAMPLING INITIATED AT: 0708	SAMPLING ENDED AT: 0713
PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE:	FIELD-FILTERED: (Y) N Filtration Equipment Type: Cartridge	FILTER SIZE: 1.0 µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINER	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	2	CG	40-mil	HCL			TOC	RFPP	250
	1	PP	125-mil	HNO3			Total metals	APP	250
	1	PP	125-mil	None			Diss. Filter Metals	APP	250
	1	PP	125-mil	HNO3			sodium	APP	250
	1	PP	125-mil	H2SO4			Ammonia (NH3)	APP	250
	1	PP	500-mil	None			TDS, chl. Alk	APP	250

REMARKS:
2.5' Stickup

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) Hach 2100P **INSTRUMENT #** _____

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP
☑ TURBIDITY ☐ RESIDUAL Cl ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A Gelex Col 20 NTU Solution

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/06/17	0808	A	20	21	5	Yes	Init	RLee

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 55 **INSTRUMENT #** _____

PARAMETER: *[check only one]*

☐ TEMPERATURE ☐ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL Cl ☑ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A _____

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/06/17	0800	A	100	99.1	1	NO	Cont	RLM

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 63 **INSTRUMENT #** _____

PARAMETER: *[check only one]*

☐ TEMPERATURE ☑ CONDUCTIVITY ☐ SALINITY ☐ pH ☐ ORP

☐ TURBIDITY ☐ RESIDUAL Cl ☐ DO ☐ OTHER _____

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard A Pure Environmental 1413 µS Solution

Standard B Pure Environmental 7.00 Buffer

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
10/06/17	0800	A	1413	1439	2	NO	Cont	RLM
10/06/17	0805	B	7.00	7.11	2	NO	Cont	RLM

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