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November 21, 2013

Mr. John Morris, P.G. Florida Department of Environmental Protection Waste Permitting Section 13051 Telecom Parkway Temple Terrace, FL 33637

RE: Southeast County Landfill
Laboratory Analytical Results
Initial Assessment Monitoring Plan
Report No. 38 – October 2013

Dear Mr. Morris:

The Hillsborough County Public Utilities Department (County) is pleased to provide the analytical results from the October 2013 sampling event conducted as part of the Initial Assessment Monitoring Plan (IAMP). The IAMP was developed to address the potential impacts to groundwater from the sinkhole in Phase VI of the Southeast County Landfill (SCLF), which was discovered on December 14, 2010.

As agreed by the County and the Florida Department of Environmental Protection (FDEP) Southwest District Office, three (3) upper Floridan / Limestone aquifer monitoring wells, TH-72, TH-76 and TH-77 are sampled on a monthly schedule. Representative samples were collected on October 2, 2013 by the County's Field Sampling Team, and the five (5) field parameters were recorded during the sample collection process. The samples collected were analyzed by our contracted laboratory, Test America, Inc. for total dissolved solids (TDS), chloride, total ammonia, arsenic, iron, and sodium. The following paragraphs summarize the parameter specific results pertinent to the evaluation of potential water quality impacts from the former sinkhole at the SCLF.

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Turbidity

During the September sampling event, turbidity values in Upper Floridan / Limestone aquifer wells TH-72, TH-76, and TH-77 were at 2.6, 61.9 and 52.7 Nephelometric Turbidity Units (NTUs), respectively. The elevated turbidity observed in TH-76 and TH-77 is not unexpected for recently installed monitoring wells, and the County believes that turbidity values will gradually decrease over the next few sampling events. The County will continue to direct the Field Sampling Team to reduce the pumping rates to help achieve lower turbidity values prior to sample collection.

Conductivity

The conductivity values observed in TH-72, TH-76, and TH-77 were 1,566, 399, and 383 micromhos per centimeter (umhos/cm), respectively. Monitoring well TH-72 is the closest well to the sinkhole and continues to exhibit groundwater impacts similar to those observed over the last year. The elevated conductivity observed is likely attributable to the waste in the throat of the sinkhole and the large amounts of grout materials injected into subsurface as part of the sinkhole remediation process. The conductivity values observed in TH-76 and TH-77 are consistent with the unaffected deep wells across the site.

Total Dissolved Solids (TDS)

The TDS in TH-72 was observed at 1,000 mg/l and continues to be above the Secondary Drinking Water Standard (SDWS) of 500 mg/l. The two down gradient monitoring wells, TH-76 and TH-77 exhibited TDS values of 120 mg/l and 240 mg/l, respectively, which is consistent with the unaffected deep wells across the site.

Chloride

The chloride in TH-72 was observed at 350 mg/l, which is above the Primary Drinking Water Standard (PDWS) of 250 mg/l. The two down gradient monitoring wells, TH-76 and TH-77 exhibited chloride values of 13 mg/l and 9.1 mg/l, respectively, which is consistent with the unaffected deep wells across the site.

Total Ammonia

The well closest to the source, TH-72 continues to exhibit ammonia above the former groundwater cleanup target level (GCTL) of 2.8 mg/l, at a concentration of 7.4 mg/l. The two down gradient monitoring wells, TH-76 and TH-77 were observed at 0.38 and 0.39 mg/l, respectively, which is consistent with the unaffected deep wells across the site.

Iron

Total iron concentrations in each of the three (3) upper Floridan/Limestone aquifer monitoring wells were observed above the SDWS of 0.3 mg/l. TH-72, TH-76 and TH-77 exhibited iron at 0.79, 1.7, and 1.3 mg/l, respectively. The elevated iron concentrations observed in these wells are consistent with historical data set, and are likely naturally occurring in the formation, and/or the result of past strip mining activities at the site.

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Groundwater Elevations and Direction of Flow

On October 4, 2013, the County collected groundwater and surface water elevation data at sixty-five (65) points across the site, including twenty eight (28) surficial aquifer wells, seven (7) upper Floridan (limestone) aquifer wells, twenty three (23) piezometers, and seven (7) surface water sites.

No significant changes to the patterns of flow in the surficial aquifer were noted in the September data set and the diagram is consistent with the observations over the period of record. The general direction of flow within the surficial aquifer has historically been to the west northwest across the Southeast County Landfill site. The elevations observed within the wells closest to the sinkhole indicate that flow patterns may be somewhat affected in the area, which would not be unexpected. However, the overall direction of flow within the surficial aquifer remains toward the west/northwest across the site.

A contour diagram of the upper Floridan / Limestone aquifer has been prepared for the general area around the sinkhole and is included with this submittal. This diagram was generated manually in AutoCad TM utilizing only the three data points closest to the sinkhole. For the month of October, the elevation change between TH-72 and TH-76 is again only 0.03 ft., and the change between TH-72 and TH-77 is only 0.21 ft. The diagram indicates that flow within the UFA in the area of the former sinkhole continues to be in a north/northwest direction, but at what appears to be a very slow rate. We will continue to evaluate the direction of flow within the upper Floridan / Limestone aquifer in the vicinity of the sinkhole, and a more comprehensive understanding of this system will be developed over time. However, based on the consistency of the gradient over the period of record, and what appears to be a very consistent direction of flow, an additional down gradient UFA monitoring well may be warranted.

Conclusions

The upper Floridan / Limestone aquifer monitoring well, TH-72, which is located closest to the source, continues to exhibit impacts that are likely attributable to the waste within the sinkhole and/or the fluids introduced during the extensive grouting activities conducted as part of the remedial actions. Consistent concentrations of TDS, chloride, ammonia, iron, sodium, and conductivity have been observed, and no apparent trends are evident. However, the impacts, which were not unexpected, have only been observed in the immediate vicinity of the sinkhole within both the surficial and upper Floridan aquifers over the period of record.

The two new upper Floridan / Limestone aquifer monitoring wells TH-76 and TH-77 exhibit good water quality with no evidence of impact from the sinkhole. Conductivity, TDS, chloride and ammonia are all very low and consistent with the historical data set for the other unaffected deep monitoring wells at the SCLF.

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Recommendations

The County recommends continued implementation of the optimized IAMP, which includes the monthly sampling of the three upper Floridan / Limestone aquifer monitoring wells, TH-72, TH-76, and TH-77, and the quarterly sampling of the three surficial aquifer monitoring wells, TH-73, TH-74, and TH-75. The County will continue to evaluate any water quality changes in both the surficial and upper Floridan aquifer monitoring wells, and present the findings within the monthly IAMP reports.

Enclosed for your review please find a site location map depicting the network of IAMP monitoring wells the water quality data summary table for the October 2013 sampling event, a groundwater elevation data table, groundwater contour and flow diagrams for the surficial and upper Floridan / Limestone aquifers, the historical data tables for each well sampled this month, and the complete analytical data report from our contracted laboratory, Test America, Inc.

Should you have any questions or require any additional information please feel free to call me at (813) 663-3221.

Respectfully submitted,

David S. Adams, P.G Environmental Manager Environmental Services Section

Public Utilities Department

xc: George Cassidy, Director, Public Utilities Department

Patricia Berry, Solid Waste Division Manager, Public Works Department

Andy Berry, Environmental Services, Public Utilities Department

Larry Ruiz, Landfill Manager, Public Works Department

Michelle Van Dyk, Public Utilities Department

Richard Tedder, FDEP Tallahassee

Clark Moore, FDEP Tallahassee

Jeff Greenwell, FDEP Southwest District

Susan Pelz, FDEP Southwest District

Steve Morgan, FDEP, Southwest District

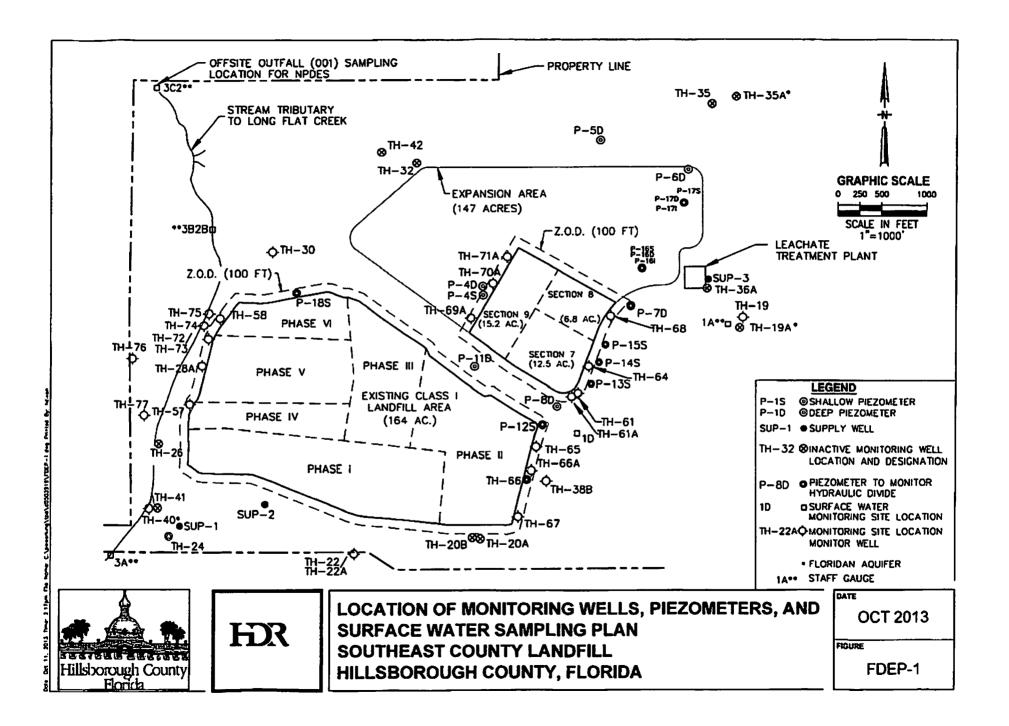
Andy Schipfer, EPC

Ernest Ely, WMI

Brian Miller, DOH

Rich Siemering, HDR

Joe O'Neill, CDS



Southeast County Landfill Laboratory Analytical Data Upper Floridan Groundwater Monitoring Wells October 2, 2013

GENERAL	Upp	er Floridan Wells	T	(MCL) STANDARD
PARAMETERS	TH-72	TH-76	TH-77	, ,
conductivity (umhos/cm) (field)	1566	399	383	NS
dissolved oxygen (mg/l) (field)	0.32	0.22	0.69	NS
pH (field)	6.86	7.61	7.50	(6.5 - 8.5)**
temperature (°C) (field)	23.53	22.99	23.59	NS
turbidity (NTU) (field)	12.6	61.9	52.7	NS
total dissolved solids (mg/l)	1000	120	240	500**
chloride (mg/l)	350	13	9.1	250**
ammonia nitrogen (mg/i as N)	7.4 J3	0.38	0.39	2.8***
				(MCL) STANDARD
Metals: (mg/l)	TH-72	TH-76	TH-77	(MOL) STANDAND
arsenic	0.004 u	0.004 u	0.004 u	0.01*
iron	0.79	1.7	1.3	0.3**
sodium	120	20	17	160*
Note: Ref. Groundwater Guidance Co MCL=MAXIMUM CONTAMINANT LE		2012		
BDL=BELOW DETECTION LIMIT	VLL			
NTU=NEPHELOMETRIC TURBIDITY	LIMITS			
u = parameter was analyzed but not d			•	
a - parameter was analyzed but not a	ciccica.			
13 = Estimated value Snike recovery		ritoria	•	
	of RPD outside of d		•	
*=DENOTES PRIMARY DRINKING V	of RPD outside of over the order of the outside outside of the outside outside of the outside)	•	• •
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*=DENOTES PRIMARY DRINKING V **=DENOTES SECONDARY DRINKII ***=DENOTES GROUNDWATER CLI	of RPD outside of a VATER STANDARD NG WATER STAND) DARD		
J3 = Estimated value Spike recovery of *=DENOTES PRIMARY DRINKING V**=DENOTES SECONDARY DRINKING***=DENOTES GROUNDWATER CLI 1000	of RPD outside of a VATER STANDARD NG WATER STAND) DARD		
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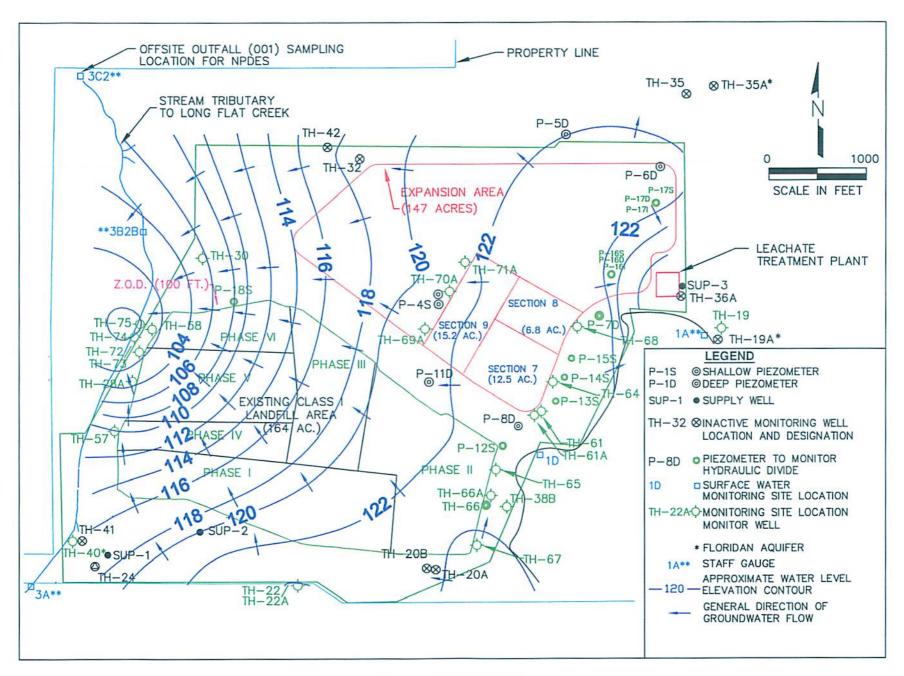
Southeast County Landfill **Groundwater and Surface Water Elevations** October 4, 2013

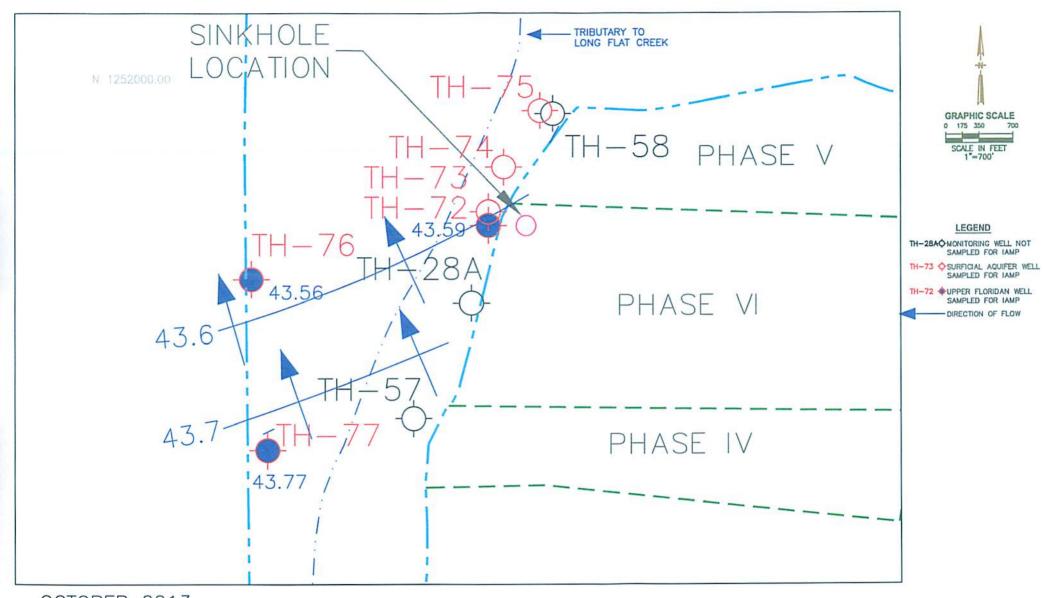
Measuring	T.O.C.	l		
Point	Elevations	W.L.	W.L.	Time
I.D.	(NGVD)	B.T.O.C.	(NGVD)	
P-4D	140.78	20.84	119.94	12:53
P-4S P-5D	1 <u>40.95</u> 151.94	9.72 ND	131.23	12:54
P-6D-A	148.01	23.40	ND 124.61	11:29 13:00
P-7D	138.92	15.51	123.41	12:17
P-8D	138.34	16.62	121.72	12:33
P-11D	138.02	15.70	122.32	12:36
P-12S	134.97	12.60	122.37	12:31
P-13S P-14S	140.21	16.87	123.34	12:25
P-15S	138.56 139.19	15.03 18.12	123.53 121.07	12:23 12:21
P-16S	143.38	15.63	127.75	13:20
P-16I	144.15	22.34	121.81	13:19
P-16D	143.84	22.02	121.82	13:18
P-17S	137.35	ND	ND	13:25
P-17I P-17D	137.32 137.22	13.79	123.53	13:26
P-18S	129.86	14.14 17.10	123.08 112.76	13:24 12:04
P-19	133.36	7.89	125.47	13:32
P-20	132.38	10.08	122.30	13:15
P-21	122.79	1.50	121.29	13:05
P-22	128.35	6.79	121.56	13:07
P-23	143.13	21.38	121.75	13:11
TH-19* TH-20A	130.27 131.86	87.93 8.34	42.34 123.52	13:49 14:08
TH-20B	132.57	9.24	123.32	14:09
TH-22	128.82	4.42	124.40	10:17
TH-22A	129.27	5.03	124.24	10:16
TH-24A	128.23	4.04	124.19	10:23
TH-28A	131.10	27.43	103.67	10:45
TH-30 TH-32	128.88 129.90	23.60 11.58	105.28 118.32	10:36
TH-35	145.98	26.54	119.44	11:59 13:41
TH-36A	152.70	37.89	114.81	13:52
TH-38A	130.68	8.90	121.78	14:00
TH-38B	131.81	ND	ND	14:02
TH-40*	124.99	82.70	42.29	10:30
TH-41*	125.00 116.74	87.64 65.69	37.36 51.05	10:28 11:54
TH-57	128.36	18.29	110.07	10:47
TH-58	127.88	27.41	100.47	10:38
TH-61	138.73	15.78	122.95	12:30
TH-61A	139.45	15.72	123.73	12:29
TH-64 TH-65	139.64	15.36	124.28	12:25
TH-66	135.40 130.58	7.22	122.43	13:56 14:02
TH-66A	130.66	7.62	123.04	14:02
TH-67	129.51	4.98	124.53	14:04
TH-68	140.01	15.60	124.41	12:19
TH-69A	144.97	23.96	121.01	12:40
TH-70A TH-71A	1 <u>46</u> .63 146.95	25.62	121.01	12:43
TH-71A	130.96	25.26 87.37	121.69 43.59	12:55 10:41
TH-73	131.07	29.74	101.33	10.40
TH-74	109.08	8.87	100.21	10:53
TH-75	106.92	7.45	99.47	10:56
TH-76	111.21	67.65	43.56	11:29
TH-77 SW-3A	119.88 3.0'=125.53'	76.11 0.70	43.77 123.23	11:17 10:10
SW-3B2B	3.0'=97.97'	0.70	95.67	11:06
SW-3C2	6.0'=92.33'	1.68	88.01	11:39
Mine Cut #1	4.0'=122.14'	ND	ND	ND
Mine Cut #2	6.0'=123.47'	3.20	120.67	13:45
Mine Cut #3 Mine Cut #4	4.0'=112.27' 5.0'=97.54'	ND 1.58	ND 04.12	ND 11:48
	= National Geode	1.58 tic Vertical Datus	94.12	11:46
	= Top of Casing	NA Antioal Pathi	"	
	= Below Top of C	asing	1	

• = Floridan Well

ND =No Data

Mine Cut #1 and #3 - unable to read due to thick vegetation.
W.L. = Water Level





OCTOBER 2013

UPPER FLORIDAN / LIMESTONE AQUIFER CONTOUR DIAGRAM IN THE VICINITY OF THE FORMER SINKHOLE SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

Hillsborough County Southeast Landfill Laboratory Analytical Results from IAMP Groundwater Monitoring TH-72

Date ((01/27/2011 1 02/03/2011 1 02/10/2011 1 02/14/2011 1	epth to Vater (feet) 115.69 112.18 109.80 108.18	Water Table Elevation (NGVD) 15.27 18.78 21.16	conductivity (umhos/cm) (field) 551	dissolved oxygen (mg/l) (field)	pH (field)	temperature		total dissolved		ammonia			
Date ((01/27/2011 1 02/03/2011 1 02/10/2011 1 02/14/2011 1	Vater (feet) 115.69 112.18 109.80 108.18	Elevation (NGVD) 15.27 18.78	(umhos/cm) (field) 551	oxygen (mg/l) (field)	n∐ (field)	temperature		dissolved		ammonia			1
Date (I 01/27/2011 1 02/03/2011 1 02/10/2011 1 02/14/2011 1	(feet) 115.69 112.18 109.80 108.18	(NGVD) 15.27 18.78	(field) 551	(field)	n∐ /field)	temperature							1
01/27/2011 1 02/03/2011 1 02/10/2011 1 02/14/2011 1	115.69 112.18 109.80 108.18	15.27 18.78	551		nH /field)		turbidity	solids	chloride	nitrogen (mg/l	arsenic		sodium
02/03/2011 1 02/10/2011 1 02/14/2011 1	112.18 109.80 108.18	18.78			hi i (iieiu)	(°C) (field)	(NTU) (field)	(mg/l)	(mg/l)	as N)	(mg/l)	iron (mg/l)	(mg/l)
02/10/2011 1 02/14/2011 1	109.80 108.18			0.39	7.43	22.88	3.2	320	32	0.22	0.004 u	0.52	32
02/14/2011 1	108.18	21.16	565	1.09	7.38	22.95	9.9	300	32	0.21	0.004 u	0.62	27
		21.10 [514	1.58	7.34	22.65	3.2	340	31	0.28	0.004 u	0.54	31
02/24/2011 1	111 71	22.78	483	1.15	7.36	22.7	3.5	320	32	0.24	0.0013 u	0.58	32
	111.71	19.25	513	0.19	7.34	22.85	1:	350	32	0.22	0.004 บ	0.53	31
03/03/2011 1	111.88	19.08	579	0.77	7.35	22.8	8.0	330	31	0.23	0.004 u	0.43	32
03/10/2011 1	113.65	17.31	551	1.26	7.41	22.73	0.9	320	30	0.18	0.004 u	0.35	31
03/17/2011 1	112.85	18.11	388	1.05	7.34	22.9	0.9	330	30	0.31	0.004 u	0.25	31
	114.33	16.63	1192	1.5	7.58	23.1	1.5	1,100	350	9	0.004 u	0.64	130
04/01/2011 1	115.70	15.26	928	0.16	7.41	22.8	3.6	520	110	2	0.004 u	0.24	59
	112.10	18.86	810	0.92	7.35	23.13	6.1	420	87	1.9	0.004 u	0.22	51
	116.21	14.75	609	0.71	7.67	23.01	6.6	320	33	0.3	0.004 и	0.27	37
06/08/2011 1	119.19	11.77	607	0.71	7.65	23.35	4.51	340	32	0.57	0.004 น	0.2	34
07/07/2011 1	113.30	17.66	606	0.72	7.4	23.25	3.94	150	64	2.1	0.004 u	7.9	27
08/04/2011 1	103.31	27.65	564	0.33	7.29	23.18	0.4	360	33	0.21	0.004 u	0.18 i	34
09/08/2011	97.99	32.97	536	1.11	7.29	23.2	0.6	340	34	0.41	0.004 u	0.18 i	36
10/04/2011	99.45	31.51	471	1.69	7.31	23.13	1.1	290	31	0.3	0.004 u	0.14 i	34
11/03/2011 1	103.37	27.59	550	1.8	7.28	23.04	1.51	290	32	0.29	0.004 u	0.15 i	34
12/08/2011 1	106.80	24.16	528	1.92	7.31	22.9	0.73	320	29	0.32	0.004 u	0.13 i	33
01/05/2012 1	113.08	17.88	535	0.2	7.23	22.74	0.44	330	32	0.29	0.004 u	0.097 i	31
02/10/2012 1	113.86	17.10	511	0.94	7.3	22.89	1.39	310	28	0.28	0.004 u	0.13 i	30
	121.00	9.96	575	0.27	7.15	23.23	0.5	310	25	0.22	0.004 u	0.11 i	31
	124.96	6.00	522	1.09	7.08	23.18	0.65	280	28	0.41	0.004 u	0.11 i	29
05/03/2012 1	126.55	4.41	746	1.6	6.9	23.46	0.81	380	72	2.3	0.004 и	0.54	49
06/07/2012 1	120.46	10.50	641	0.72	7.07	23.4	0.26	370	46	1	0.004 บ	0.23	37
	104.95	26.01	900	0.23	6.54	23.52	0.4	650	190	2.9 j3	0.004 u	0.39	70
	98.26	32.70	843	0.69	6.77	23.6	2.23	730	210	3	0.004 u	0.48	78
	91.18	39.66	2,357	0.2	6.51	23.62	1.05	1,300	570	12	0.004 u	1.1	170
10/04/2012	90.19	40.77	1,654	0.6	6.43	23.22	0.46	1,500	650	25	0.004 u	1.9	210
11/07/2012	99.29	31.67	2,488	0.76	6.58	23.03	0.74	1,400	540	15	0.004 u	1.4	180
12/05/2012 1	101.82	29.14	2,416	0.23	6.49	23.18	0.45	1,300	540	13	0.004 u	1.3	180 j3
01/03/2013 1	100.65	30.31	2,430	1.1	6.44	23.09	0.42	1,400	500	15	0.004 u	1.3	170]3
02/07/2013 1	105.58	25.38	2,206	0.6	6.5	23.1	0.22	1,100	470	13	0.004 u	1.1	160
03/07/2013 1	110.00	20.96	1,234	0.3	6.61	22.85	0.41	770	290	11	0.004 u	1.1	110
04/04/2013 1	111.35	19.61	1,252	0.33	6.74	23.15	9.9	870	260	10	0.004 u	1	100
05/02/2013 1	109.56	21.40	1,615	0.18	6.83	23.16	0.45	810	300	8.6	0.004 u	0.87	110
06/04/2013 1	109.62	21.34	1,440	0.31	7.13	23.3	0.27	850	290	8.4	0.004 u	0.82	120
07/03/2013	98.72	32.24	1,450	0.18	7.03	23.5	0.41	820	280	8.8	0.004 u	0.79	120
08/02/2013	ND	ND	1,256	0.46	6.88	23.43	0.2	800	290	6.8	0.004 u	0.72	120
09/05/2013	87.92	43.04	1,001	0.61	6.98	23.45	1.17	760	290	7.6	0.004 u	0.71	110

New survey data beginning with 10/4/2012.

u = parameter was analyzed but not detected

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

j3 = estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

ND = No Data - water levels collected during quarterly ADR.

Hillsborough County Southeast Landfill Laboratory Analytical Results from IAMP Groundwater Monitoring TH-76

Date	Depth to Water (feet)	Water Table Elevation (NGVD)	conductivity (umhos/cm) (field)	dissolved oxygen (mg/l) (field)	pH (field)	temperature (°C) (field)	turbidity (NTU) (field)	total dissolved solids (mg/l)	chloride (mg/l)	ammonia nitrogen (mg/l as N)	arsenic (mg/l)	iron (mg/l)	sodium (mg/l)
05/02/2013	89.83	21.38	450	0.22	7.63	22.81	36.9	220	13	0.4	0.004 u	1.1	20
06/04/2013	89.91	21.30	401	0.27	7.86	22.9	16.2	240	13	0.4	0.004 u	0.66	22
07/03/2013	79.04	32.17	398	0.19	8	23	28.6	210	12	0.34	0.004 u	0.99	22
08/02/2013	ND	ND	343	0.22	7.57	23.02	42.2	230	13	0.26	0.004 u	1.6	21
09/05/2013	68.22	42.99	278	0.21	7.74	22.97	46	240	12	0.32	0.004 u	1.5	20

u = parameter was analyzed but not detected

ND = No Data - water levels collected during quarterly ADR.

1.1 EXCEEDS STANDARD

Hillsborough County Southeast Landfill Laboratory Analytical Results from IAMP Groundwater Monitoring TH-77

Date	Depth to Water (feet)	Water Table Elevation (NGVD)	conductivity (umhos/cm) (field)	dissolved oxygen (mg/l) (field)	pH (field)	temperature (°C) (field)	turbidity (NTU) (field)	total dissolved solids (mg/l)	chloride (mg/l)	ammonia nitrogen (mg/l as N)	arsenic (mg/l)	iron (mg/l)	sodium (mg/i)
05/02/2013	98.31	21.57	440	0.57	7.39	23.39	59.4	190	9.4	0.39	0.004 u	1.2	_ 17
06/04/2013	98.38	21.50	384	0.56	7.86	23.59	35.4	230	8.9	0.42	0.004 u	0.89	18
07/03/2013	87.48	32.40	388	0.41	7.8	23.7	38.4	210	8.9	0.4	0.004 u	1.1	. 17
08/02/2013	ND	ND	334	0.47	7.44	23.66	42.9	230	9.2	0.36	0.004 u	1.1	18
09/05/2013	76.66	43.22	269	0.83	7.61	23.68	47.1	230	8.9	0.35	0.004 u	0.96	16

u = parameter was analyzed but not detected

ND = No Data - water levels collected during quarterly ADR.

1.2 EXCEEDS STANDARD



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Tampa 6712 Benjamin Road Suite 100 Tampa, FL 33634

Tel: (813)885-7427

TestAmerica Job ID: 660-56863-1

Client Project/Site: SELF-IAMP Monitoring Wells

For:

Hillsborough Co Public Utilities Dept Environmental Services Group Brandon Support Operations Complex 332 North Falkenburg Rd, 2nd Floor Tampa, Florida 33619

Attn: David Adams

Authorized for release by:

Authorized for release by: 10/11/2013 3:51:56 PM

Nancy Robertson, Project Manager II (813)885-7427

nancy.robertson@testamericainc.com

·····LINKS ······

Review your project results through

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Have a Question?



Visit us at:www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
660-56863-1	TH-72	Ground Water	10/02/13 12:10	10/02/13 14:15
660-56863-2	TH-76	Ground Water	10/02/13 11:26	10/02/13 14:15
660-56863-3	TH-77	Ground Water	10/02/13 10:14	10/02/13 14:15
660-56863-4	BLANK FIELD 56863	Ground Water	10/02/13 10:00	10/02/13 14:15
660-56863-5	DUPLICATE NOT BLANK	Ground Water	10/02/13 00:00	10/02/13 14:15

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Case Narrative

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Job ID: 660-56863-1

Laboratory: TestAmerica Tampa

Narrative

Job Narrative 660-56863-1

Comments

No additional comments.

Receipt

The samples were received on 10/2/2013 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.1° C.

Metals

Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 142009 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

General Chemistry

Method 350.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 297308 were outside control limits with the parent sample 4 times greater than the spike amount. The associated laboratory control sample (LCS) recovery met acceptance criteria. The sample is flagged with J3.

No other analytical or quality issues were noted.

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Definitions/Glossary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

General Chemistry

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.
1	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

ND

PQL

QC

RER

RL RPD

TEF TEQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.							
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis							
%R	Percent Recovery							
CNF	Contains no Free Liquid							
DER	Duplicate error ratio (normalized absolute difference)							
Dil Fac	Dilution Factor							
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample							
DLC	Decision level concentration							
MDA	Minimum detectable activity							
EDL	Estimated Detection Limit							
MDC	Minimum detectable concentration							
MDL	Method Detection Limit							
ML	Minimum Level (Dioxin)							
NC	Not Calculated							

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Relative error ratio

TestAmerica Tampa

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

12.60

61.9

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-1

Field Sampling

Field Sampling

Lab Sample ID: 660-56863-3

Lab Sample ID: 660-56863-4

Lab Sample ID: 660-56863-2

Client Sample ID: TH-72

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	350		5.0	2.5	mg/L	10	_	300.0	Total/NA
Iron	790		200	50	ug/L	1		6010B	Total
									Recoverable
Sodium	120		0.50	0.31	mg/L	1		6010B	Total
									Recoverable
Ammonia as N	7.4	J3	0.25	0.13	mg/L	5		350.1	Total/NA
Total Dissolved Solids	1000		25	25	mg/L	1		SM 2540C	Total/NA
Field pH	6.86				SU	1		Field Sampling	Total/NA
Field Temperature	23.53				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.32				mg/L	1		Field Sampling	Total/NA
Specific Conductance	1566				uS/cm	1		Field Sampling	Total/NA

NTU

NTU

Client Sample ID: TH-76

Turbidity

Turbidity

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		0.50	0.25	mg/L	1	_	300.0	Total/NA
Iron	1700		200	50	ug/L	1		6010B	Total
									Recoverable
Sodium	20		0.50	0.31	mg/L	1		6010B	Total
									Recoverable
Ammonia as N	0.38		0.050	0.026	mg/L	1		350.1	Total/NA
Total Dissolved Solids	120		10	10	mg/L	1		SM 2540C	Total/NA
Field pH	7.61				SU	1		Field Sampling	Total/NA
Field Temperature	22.99				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.22				mg/L	1		Field Sampling	Total/NA
Specific Conductance	399				uS/cm	1		Field Sampling	Total/NA

Client Sample ID: TH-77

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.1		0.50	0.25	mg/L	1	_	300.0	Total/NA
Iron	1300		200	50	ug/L	1		6010B	Total
									Recoverable
Sodium	17		0.50	0.31	mg/L	1		6010B	Total
									Recoverable
Ammonia as N	0.39		0.050	0.026	mg/L	1		350.1	Total/NA
Total Dissolved Solids	240		10	10	mg/L	1		SM 2540C	Total/NA
Field pH	7.50				SU	1		Field Sampling	Total/NA
Field Temperature	23.59				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.69				mg/L	1		Field Sampling	Total/NA
Specific Conductance	383				uS/cm	1		Field Sampling	Total/NA
Turbidity	52.7				NTU	1		Field Sampling	Total/NA

Client Sample ID: BLANK FIELD 56863

_							
Analyte	Result Qualifier	PQL	MDL	Unit	Dil Fac I) Method	Prep Type
Sodium	0.52	0.50	0.31	mg/L		6010B	Total
							Recoverable
Ammonia as N	0.034 I	0.050	0.026	mg/L	1	350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Total/NA

Total/NA

Detection Summary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-5

Client Sample ID: DUPLICATE NOT BLANK Analyte Possult Qualifier

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		0.50	0.25	mg/L	1	_	300.0	Total/NA
Iron	1700		200	50	ug/L	1		6010B	Total
									Recoverable
Sodium	21		0.50	0.31	mg/L	1		6010B	Total
									Recoverable
Ammonia as N	0.35		0.050	0.026	mg/L	1		350.1	Total/NA
Total Dissolved Solids	260		10	10	mg/L	1		SM 2540C	Total/NA

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Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-1

Matrix: Ground Water

Client Sample ID: TH-72

Date Collected: 10/02/13 12:10

Date Received: 10/02/13 14:15

Method: 300.0 - Anions, Ion Cl	hromatography								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350		5.0	2.5	mg/L			10/08/13 16:53	10
- Method: 6010B - Metals (ICP) -	- Total Recoverab	le							
Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 10:57	1
Iron	790		200	50	ug/L		10/03/13 13:11	10/04/13 10:57	1
Sodium	120		0.50	0.31	mg/L		10/03/13 13:11	10/04/13 10:57	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	7.4	J3	0.25	0.13	mg/L			10/07/13 19:49	5
Total Dissolved Solids	1000		25	25	mg/L			10/07/13 11:46	1
- Method: Field Sampling - Field	d Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	6.86				SU			10/02/13 12:10	1
Field Temperature	23.53				Degrees C			10/02/13 12:10	1
Oxygen, Dissolved	0.32				mg/L			10/02/13 12:10	1
Specific Conductance	1566				uS/cm			10/02/13 12:10	1
Turbidity	12.60				NTU			10/02/13 12:10	1

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-2

Matrix: Ground Water

Client Sample ID: TH-76	
Date Collected: 10/02/13 11:26	
Date Received: 10/02/13 14:15	

Method: 300.0 - Anions, Ion Cl Analyte		Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		0.50	0.25	mg/L			10/08/13 17:05	1
- Method: 6010B - Metals (ICP) -	· Total Recoverab	ole							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 11:00	1
Iron	1700		200	50	ug/L		10/03/13 13:11	10/04/13 11:00	1
Sodium	20		0.50	0.31	mg/L		10/03/13 13:11	10/04/13 11:00	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.38		0.050	0.026	mg/L			10/07/13 18:28	1
Total Dissolved Solids	120		10	10	mg/L			10/07/13 11:46	1
- Method: Field Sampling - Field	l Sampling								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.61				SU			10/02/13 11:26	1
Field Temperature	22.99				Degrees C			10/02/13 11:26	1
Oxygen, Dissolved	0.22				mg/L			10/02/13 11:26	1
Specific Conductance	399				uS/cm			10/02/13 11:26	1
Turbidity	61.9				NTU			10/02/13 11:26	

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Client Sample ID: TH-77

Date Collected: 10/02/13 10:14

Date Received: 10/02/13 14:15

Turbidity

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-3

10/02/13 10:14

Matrix: Ground Water

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.1		0.50	0.25	mg/L			10/08/13 17:18	1
Method: 6010B - Metals (IC	P) - Total Recoverab	ole							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 11:03	1
Iron	1300		200	50	ug/L		10/03/13 13:11	10/04/13 11:03	1
Sodium	17		0.50	0.31	mg/L		10/03/13 13:11	10/04/13 11:03	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Ammonia as N	0.39	0.050	0.026	mg/L			10/07/13 18:28	1
Total Dissolved Solids	240	10	10	mg/L			10/07/13 11:46	1
Method: Field Sampling - Field	l Sampling							
Analyte	Result Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.50			SU			10/02/13 10:14	1
Field Temperature	23.59			Degrees C			10/02/13 10:14	1
Oxygen, Dissolved	0.69			mg/L			10/02/13 10:14	1
Specific Conductance	383			uS/cm			10/02/13 10:14	1

52.7

NTU

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Client Sample ID: BLANK FIELD 56863

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-4

Matrix: Ground Water

Date Collected: 10/02/13 10:00 Date Received: 10/02/13 14:15

Method: 300.0 - Anions, Ion C	Chromatography								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.25	U	0.50	0.25	mg/L			10/08/13 17:30	1
- Method: 6010B - Metals (ICP)	- Total Recoverat	ole							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 11:07	1
Iron	50	U	200	50	ug/L		10/03/13 13:11	10/04/13 11:07	1
Sodium	0.52		0.50	0.31	mg/L		10/03/13 13:11	10/04/13 11:07	1
- General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.034	T	0.050	0.026	mg/L			10/07/13 18:28	1
Total Dissolved Solids	5.0	U	5.0	5.0	ma/l			10/07/13 11:46	1

TestAmerica Tampa

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Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

2-----I- ID- 000 50000 5

Client Sample ID: DUPLICATE NOT BLANK

Date Collected: 10/02/13 00:00 Date Received: 10/02/13 14:15 Lab Sample ID: 660-56863-5

Matrix: Ground Water

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		0.50	0.25	mg/L			10/08/13 17:43	1
Method: 6010B - Metals (ICP)	- Total Recoverab	ole							
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 11:10	1
Iron	1700		200	50	ug/L		10/03/13 13:11	10/04/13 11:10	1
Sodium	21		0.50	0.31	mg/L		10/03/13 13:11	10/04/13 11:10	1
General Chemistry									
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.35		0.050	0.026	mg/L			10/07/13 18:28	1
Total Dissolved Solids	260		10	10	mg/L			10/07/13 11:46	1

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4 4

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 680-297351/2 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 297351

мв мв Result Qualifier PQL MDL Unit D Analyzed Dil Fac Analyte Prepared 0.50 10/08/13 13:44 Chloride 0.25 U 0.25 mg/L

Lab Sample ID: LCS 680-297351/3 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 297351

LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit %Rec Limits Chloride 10.0 10.0 mg/L 100 90 - 110

Lab Sample ID: LCSD 680-297351/4 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 297351

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit Chloride 10.0 10.0 100 mg/L

Lab Sample ID: 660-56858-E-1 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

Matrix: Water

Analysis Batch: 297351

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Chloride 49 20.0 mg/L 69.2 99 80 - 120

Lab Sample ID: 660-56858-E-1 MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 297351

Sample Sample Spike MSD MSD %Rec. RPD Added RPD Limit Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Chloride 20.0 69.4 80 - 120 49 mg/L 100 30

Lab Sample ID: 680-94528-C-5 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

Matrix: Water

Analysis Batch: 297351

Sample Sample Spike MS MS %Rec. Result Qualifier Result Qualifier Added Analyte Unit %Rec Limits 10.0 101 Chloride 10 20.3 mg/L 80 - 120

Lab Sample ID: 680-94528-C-5 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

Matrix: Water

Analysis Batch: 297351

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 10 10.0 20.4 mg/L 102 80 - 120

TestAmerica Tampa

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 660-141976/1-A

Matrix: Water

Analysis Batch: 142009

Client Sample ID: Method Blank **Prep Type: Total Recoverable**

Prep Batch: 141976

	MB	MB						-	
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		10/03/13 13:11	10/04/13 09:33	1
Iron	50	U	200	50	ug/L		10/03/13 13:11	10/04/13 09:33	1
Sodium	0.31	U	0.50	0.31	mg/L		10/03/13 13:11	10/04/13 09:33	1

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Lab Sample ID: LCS 660-141976/2-A **Matrix: Water**

Analysis Batch: 142009

Prep Batch: 141976 Cnika 100 100

mg/L

	Spike	LOS	LUS				MEC.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	1000	970		ug/L	_	97	80 - 120	
Iron	1000	1070		ug/L		107	80 - 120	
Sodium	10.0	10.1		mg/L		101	80 - 120	

Lab Sample ID: 660-56865-E-7-B MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Total Recoverable Analysis Batch: 142009 Prep Batch: 141976**

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Arsenic 4.0 U 1000 985 ug/L 99 80 - 120 2000 J3 1000 3690 J3 ug/L 80 - 120 Iron 173

10.0

24

MR MR

Lab Sample ID: 660-56865-E-7-C MSD

Matrix: Water

Sodium

Analysis Batch: 142009

Client Sample ID: Matrix Spike Duplicate **Prep Type: Total Recoverable**

80 - 120

98

Prep Batch: 141976

Analysis Batom 142000									1.00	Duton. I	11010	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Arsenic	4.0	U	1000	993		ug/L		99	80 - 120	1	20	
Iron	2000	J3	1000	3780	J3	ug/L		182	80 - 120	2	20	
Sodium	24		10.0	34.1		mg/L		103	80 - 120	2	20	

33.5

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-297308/35

Matrix: Water

Analysis Batch: 297308

Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte Result Qualifier PQL MDL Unit Dil Fac Prepared Analyzed Ammonia as N 0.026 U 0.050 0.026 mg/L 10/07/13 19:56

Lab Sample ID: LCS 680-297308/27

Matrix: Water

Analysis Batch: 297308

,, c.c = a.c = c. c.c								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ammonia as N	 1.00	0.987		mg/L		99	90 - 110	 _

TestAmerica Tampa

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Method: 350.1 - Nitrogen, Ammo	onia (Continued)
--------------------------------	------------------

Lab Sample ID: 660-56863-1 MS Client Sample ID: TH-72 **Matrix: Ground Water** Prep Type: Total/NA

Analysis Batch: 297308

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier %Rec Limits Unit D 1.00 63 90 - 110 Ammonia as N 7.4 J3 8.06 J3 mg/L

Lab Sample ID: 660-56863-1 MSD Client Sample ID: TH-72 **Matrix: Ground Water** Prep Type: Total/NA

Analysis Batch: 297308

%Rec. RPD Sample Sample Spike MSD MSD Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits RPD Limit Ammonia as N 7.4 J3 1.00 7.88 J3 mg/L 90 - 110

Lab Sample ID: 660-56863-2 DU Client Sample ID: TH-76 **Matrix: Ground Water** Prep Type: Total/NA

Analysis Batch: 297308

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit **RPD** Limit Ammonia as N 0.38 0.360 mg/L

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 660-142040/1 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 142040

MB MB

Result Qualifier **PQL** MDL Unit Analyzed Dil Fac Prepared Total Dissolved Solids 5.0 U 5.0 10/07/13 11:46 5.0 ma/L

Lab Sample ID: LCS 660-142040/2 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 142040

Spike LCS LCS %Rec. Added Result Qualifier Analyte Limits Unit %Rec Total Dissolved Solids 10000 10000 mg/L 100 80 - 120

Lab Sample ID: 660-56863-5 DU **Client Sample ID: DUPLICATE NOT BLANK** Prep Type: Total/NA

Matrix: Ground Water Analysis Batch: 142040

DU DU RPD Sample Sample Result Qualifier RPD Analyte Result Qualifier Unit Limit **Total Dissolved Solids** 260 260 mg/L 20

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

HPLC/IC

Analysis Batch: 297351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-56858-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
660-56858-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
660-56863-1	TH-72	Total/NA	Ground Water	300.0	
660-56863-2	TH-76	Total/NA	Ground Water	300.0	
660-56863-3	TH-77	Total/NA	Ground Water	300.0	
660-56863-4	BLANK FIELD 56863	Total/NA	Ground Water	300.0	
660-56863-5	DUPLICATE NOT BLANK	Total/NA	Ground Water	300.0	
680-94528-C-5 MS	Matrix Spike	Total/NA	Water	300.0	
680-94528-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 680-297351/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-297351/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-297351/2	Method Blank	Total/NA	Water	300.0	

Metals

Prep Batch: 141976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-56863-1	TH-72	Total Recoverable	Ground Water	3005A	-
660-56863-2	TH-76	Total Recoverable	Ground Water	3005A	
660-56863-3	TH-77	Total Recoverable	Ground Water	3005A	
660-56863-4	BLANK FIELD 56863	Total Recoverable	Ground Water	3005A	
660-56863-5	DUPLICATE NOT BLANK	Total Recoverable	Ground Water	3005A	
660-56865-E-7-B MS	Matrix Spike	Total Recoverable	Water	3005A	
660-56865-E-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
LCS 660-141976/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 660-141976/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 142009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-56863-1	TH-72	Total Recoverable	Ground Water	6010B	141976
660-56863-2	TH-76	Total Recoverable	Ground Water	6010B	141976
660-56863-3	TH-77	Total Recoverable	Ground Water	6010B	141976
660-56863-4	BLANK FIELD 56863	Total Recoverable	Ground Water	6010B	141976
660-56863-5	DUPLICATE NOT BLANK	Total Recoverable	Ground Water	6010B	141976
660-56865-E-7-B MS	Matrix Spike	Total Recoverable	Water	6010B	141976
660-56865-E-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	141976
LCS 660-141976/2-A	Lab Control Sample	Total Recoverable	Water	6010B	141976
MB 660-141976/1-A	Method Blank	Total Recoverable	Water	6010B	141976

General Chemistry

Analysis Batch: 142040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
660-56863-1	TH-72	Total/NA	Ground Water	SM 2540C	
660-56863-2	TH-76	Total/NA	Ground Water	SM 2540C	
660-56863-3	TH-77	Total/NA	Ground Water	SM 2540C	
660-56863-4	BLANK FIELD 56863	Total/NA	Ground Water	SM 2540C	
660-56863-5	DUPLICATE NOT BLANK	Total/NA	Ground Water	SM 2540C	
660-56863-5 DU	DUPLICATE NOT BLANK	Total/NA	Ground Water	SM 2540C	
LCS 660-142040/2	Lab Control Sample	Total/NA	Water	SM 2540C	

TestAmerica Tampa

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QC Association Summary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

General Chemistry (Continued)

Analysis Batch: 142040 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 660-142040/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 297308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-56863-1	TH-72	Total/NA	Ground Water	350.1	
660-56863-1 MS	TH-72	Total/NA	Ground Water	350.1	
660-56863-1 MSD	TH-72	Total/NA	Ground Water	350.1	
660-56863-2	TH-76	Total/NA	Ground Water	350.1	
660-56863-2 DU	TH-76	Total/NA	Ground Water	350.1	
660-56863-3	TH-77	Total/NA	Ground Water	350.1	
660-56863-4	BLANK FIELD 56863	Total/NA	Ground Water	350.1	
660-56863-5	DUPLICATE NOT BLANK	Total/NA	Ground Water	350.1	
LCS 680-297308/27	Lab Control Sample	Total/NA	Water	350.1	
MB 680-297308/35	Method Blank	Total/NA	Water	350.1	

Field Service / Mobile Lab

Analysis Batch: 142084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-56863-1	TH-72	Total/NA	Ground Water	Field Sampling	
660-56863-2	TH-76	Total/NA	Ground Water	Field Sampling	
660-56863-3	TH-77	Total/NA	Ground Water	Field Sampling	

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Client: Hillsborough Co Public Utilities Dept

Project/Site: SELF-IAMP Monitoring Wells

Lab Sample ID: 660-56863-1

Matrix: Ground Water

Date Collected: 10/02/13 12:10 Date Received: 10/02/13 14:15

Client Sample ID: TH-72

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	297351	10/08/13 16:53	CMB	TAL SAV
Total Recoverable	Prep	3005A			141976	10/03/13 13:11	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	142009	10/04/13 10:57	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	142040	10/07/13 11:46	TKO	TAL TAM
Total/NA	Analysis	350.1		5	297308	10/07/13 19:49	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	142084	10/02/13 12:10		TAL TAM

Client Sample ID: TH-76 Lab Sample ID: 660-56863-2

Date Collected: 10/02/13 11:26 **Matrix: Ground Water**

Date Received: 10/02/13 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0			297351	10/08/13 17:05	CMB	TAL SAV
Total Recoverable	Prep	3005A			141976	10/03/13 13:11	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	142009	10/04/13 11:00	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	142040	10/07/13 11:46	TKO	TAL TAM
Total/NA	Analysis	350.1		1	297308	10/07/13 18:28	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	142084	10/02/13 11:26		TAL TAM

Client Sample ID: TH-77 Lab Sample ID: 660-56863-3 **Matrix: Ground Water**

Date Collected: 10/02/13 10:14 Date Received: 10/02/13 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	297351	10/08/13 17:18	СМВ	TAL SAV
Total Recoverable	Prep	3005A			141976	10/03/13 13:11	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	142009	10/04/13 11:03	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	142040	10/07/13 11:46	TKO	TAL TAM
Total/NA	Analysis	350.1		1	297308	10/07/13 18:28	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	142084	10/02/13 10:14		TAL TAM

Client Sample ID: BLANK FIELD 56863 Lab Sample ID: 660-56863-4

Date Collected: 10/02/13 10:00 Date Received: 10/02/13 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0			297351	10/08/13 17:30	CMB	TAL SAV
Total Recoverable	Prep	3005A			141976	10/03/13 13:11	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	142009	10/04/13 11:07	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	142040	10/07/13 11:46	TKO	TAL TAM
Total/NA	Analysis	350.1		1	297308	10/07/13 18:28	JME	TAL SAV

Matrix: Ground Water

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Lab Chronicle

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Lab Sample ID: 660-56863-5

Matrix: Ground Water

Client Sample ID: DUPLICATE NOT BLANK

Date Collected: 10/02/13 00:00 Date Received: 10/02/13 14:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	297351	10/08/13 17:43	СМВ	TAL SAV
Total Recoverable	Prep	3005A			141976	10/03/13 13:11	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	142009	10/04/13 11:10	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	142040	10/07/13 11:46	TKO	TAL TAM
Total/NA	Analysis	350.1		1	297308	10/07/13 18:28	JME	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Method Summary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL SAV
6010B	Metals (ICP)	SW846	TAL TAM
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL TAM
Field Sampling	Field Sampling	EPA	TAL TAM

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

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Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

Laboratory: TestAmerica Tampa

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40610	06-30-14
Florida	NELAP	4	E84282	06-30-14
Georgia	State Program	4	905	06-30-14
USDA	Federal		P330-11-00177	04-20-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Indiana	State Program	5	N/A	06-30-14
lowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14

TestAmerica Tampa

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Certification Summary

Client: Hillsborough Co Public Utilities Dept Project/Site: SELF-IAMP Monitoring Wells

TestAmerica Job ID: 660-56863-1

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

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SELF-IAMP Monitoring Wells

ESTAMERICA (LAB) PROJECT MANAGER

P.O. NUMBER PROJECT NO.

CONTRACT NO.

Lithia, FL

PROJECT LOCATION

MATRIX TYPE

ROJECT REFERENCE

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

(2)

6712 Benjamin Rd, Suite 100

Phone: (813) 885 7427 www.testamericainc.com

10/11/2013

Serial Number

Fax: (813) 885 7049

TestAmerica Tampa

Tampa, FL 33634

Alternate Laboratory Name/Location:

Phone: Fax:

PAGE

STANDARD REPORT

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lancy Robertson

JENT (SITE) PM

lichael Townsel

(813) 663-3222

(813) 274-6801

CLIENT FAX

CLIENT PHONE

townselm@hillsboroughcounty.org

COMPOSITE (C) OR GRAB (G) INDICATE

NONAQUEOUS LIQUID (OIL, SOLVENT...)

H2SO4 Ammonia-N

TDS

Chloride

As, Fe, Na

0

DATE DUE

AQUEOUS (WATER)

ice

lce

HNO3

NUMBER OF COOLERS

REMARKS

Page 23 of 31

NUMBER OF CONTAINERS SUBMITTED

SOLID OR SEMISOLID

Hills. County Public Utilities

332 North Falkenburg Road OMPANY CONTRACTING THIS WORK

SAMPLER'S SIGNATURE

SAMPLE IDENTIFICATION

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RECEIVED FOR LABORATORY BY:

DATE

HME

CUSTODY INTACT
YES O

SEAL NO.

STL LOG NO.

LABORATORY REMARKS:

LABORATORY USE ONLY

RELIN**OLH**SHED **BY**: (SIGNATURE)

DATE

TIME Sign

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

RELINQUISHED BY: (SIGNATURE)

DATE

TIME

660-56863 Chain of Custody

10-2-13

RECEIVED BY

(SIGNATURE)

21/2/21

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RECEIVED BY: (SIGNATURE)

DATE

TIME

RECEIVED BY: (SIGNATURE)

DATE

TIME

Original - Return to Laboratory with Sample(s)

Low

Test Are Period

Chain of Custody Record

Phone (813) 885-7427 Fax (813) 885-7049

6712 Benjamin Road Suite 100 TestAmerica Tampa

Fampa, FL 33634

Form FD 9000-24

			GR	COUNL)WAII	ER SA	WPLING	LOG				
SITE					SI	ITE						
NAME:		SELF IAMP			LC	OCATION:.	Li	thia, Florida	1			
WELL NO:		TH-72		SAMPLE	EID;				DATE:	0 -	2-13	
					PURC	SING DA	TA					
WELL		TUBING			LL SCREEN		STATIC I	DEPTH 07	20		PUMP TYPE	
DIAMETER	(inches): 2	DIAMETI	ER (inches): C	.5 DEF	этн: 180 fd	eet to 190 fe	et TO WATI	DEPTH ER (feet): 87.	2 ⁻ 1 C	OR BAI	LER: DBP	
(only fill out	UME PURGE: if applicable)	1 WELL VOL	,			TIC DEPTH 1	O WATER) X	4.0				
FOLUBRIEN	= (190 feet - feet) X .16 gallons/foot = gallons EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME											
	(only fill out if applicable) = 16 gallons + (.000 gallons/foot X 192 feet) + , 30 gallons = gallons											
INITIAL PLIMP OR TURING FINAL PLIMP OR TURING PURONG OF PURONG TOTAL VOLUME												
DEPTH IN V	NELL (feet):	189	DEPTH IN W	ELL (feet):	189	INITIATI	פסיון :TA D∃	ENDED AT:	12.1	O	URGED (gallons): 7.20
TIME	VOLUME PURGED	CUMUL. VOLUME PURGED	PURGE RATE	DEPTH TO WATER	pH (standard	TEMP.	COND. µS/cm	DISSOLVED OXYGEN	TURBI (NTU		COLOR (describe)	ODOR (describe)
	(gallons)	(gallons)	(gpm)	(feet)	units)	1 ' '	'	mg/L			(4000)	(40001150)
12.06	5.28	5.28	ુનાજ	87.35	6.86	23.55	1560	.34	19.4	4	NONE	None
12.08	,96	6.24	,48	87.38	6.87	23.65	1564	. 32	13.	69	1	4
12.10	.୩५	7.20	.48	87.39	6.86	23.63	1566	. 32	12.	60	4	
							-			Name of the last	ALL CONTRACTOR OF THE PARTY OF	<u>)</u>
									Market Market S	Marie Carlotte		/
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MELLCAD	ACITY (Caller	Box Footh: 0	758 - 0 00:	1" = 0.04:	1.25" = 0.0	6: 2" = 0.1	6: 3" = 0.37:	4" = 0.65;	F" = 4.00	<u> </u>	= 1.47; 12" =	E 00
TUBING IN	SIDE DIA, CAI	s Per Foot): 0.: PACITY (Gal./Ft	.): 1/8" = 0.02;		= 0.0014;	1/4" = 0.002			5 " = 1.02; 0.006;	1/2" = (
PURGING E	QUIPMENT C	CODES: B=	Bailer; BF	P = Bladder f	oump; E	SP = Electric	Submersible Pu	mp; PP≂P	eristaltic P	ump;	O = Other (S	pecify)
					SAMP	LING DA	ATA ,					
	SAMPLED BY (PRINT) / AFFILIATION: ANDREW BALLOON / ZACK PATTERSON SAMPLER(S) SIGNATURE(S): SAMPLING INITIATED AT: 12.10 SAMPLING INITIATED AT: 12.10											
PUMP OR T	UBING		T	UBING			FIELD	FILTERED: Y	(N)		FILTER SIZE: _	μm
DEPTH IN V	VELL (feet):	189		ATERIAL C		T		on Equipment Ty				
FIELD DEC	OTAMIMATIC	ON: PUMP	YNCI	edicated)	TUBING	Y 10(1	Dedicated)	DUPLICATE:	: Y		N	

				5	AMPLING DAI)				
	BY (PRINT) / A BALLOON / ZA			SAMPLER(S) SIGN	VATURE(S). OELY E	llerson	SAMPLING 12	SAMPLIN ENDED		
PUMP OR DEPTH IN	TUBING WELL (feet):	189		TUBING MATERIAL CODE:	TERIAL CODE: T Filtration Equipment Type:					
FIELD DECONTAMINATION: PUMP Y N Dedicated TUBING Y N Dedicated DUPLICATE: Y							\bigcirc			
SAM	PLE CONTAINE	R SPECIFIC	CATION	SAM	PLE PRESERVATION		INTENDED	SAMPLING	SAMPLE PUMP	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	ANALYSIS AND/OR METHOD	EQUIPMENT CODE	(mL per minute)	
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							1			
					!					
		L	l	L		l	[<u></u>	- O(t 1	

SEE C.O.C. FOR SAMPLE ANALYSIS DBP =Dedicated Bladder Pump Junny 50% claudy O = Other (Specify)

MATERIAL CODES:

CG = Clear Glass; AG = Amber Glass;

PE = Polyethylene;

PP = Polypropylene;

S = Silicone;

T = Teflon;

SAMPLING EQUIPMENT CODES: B = Baiter; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain);

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 2009

Revision Date: February 1, 2004

10/11/2013

Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE	SITE NAME: SELF IAMP SITE Location: Lithia, Florida												
WELL NO		TH-76	VII	SAMPLE		OOATION	Hal KI II	14, 1 1011		DATE:	10-	2-13	ζ,
WELL WO						GING DA	TA		I			<u> </u>	
WELL		TUBING			CREEN INT	ERVAL DEPTI		STATIC I	DEPTH CE	<u></u>		E PUMP TY	
DIAMETE	R (inches): 2	DIAMETER	(inches): 0.5	163.35	5 feet to	178.35 fe	et Lava T	TO WATE	ER (feet): 67.	W-1	OR BA	ALER: DB	<u>P</u>
	LUME PURGE: it if applicable)	1 WELL VOL	UME = (IOIA	E MELL DEL	'IH - 51		`			111		17	7 0
EOLIDME	NT VOLUME P	URGE: 1 FOU	= (178.35	feet -	67.69		eet) X X TU	.16 BING LENGTH)	gallo	ons/foot	YOUME	gallons
	it if applicable)	onoe. Tead			allons + (ons/foot		feet)			gallons =	: gallons
INITIAL PL	JMP OR TUBIN		FINAL PUMF		<u>`</u>)/. 1	TOTAL VOLU	15.500
DEPTH IN	WELL (feet):	177,35	DEPTH IN W		177.35	INITIATE	ED AT:	10.34	PURGING ENDED AT: DISSOLVED	11.00	(6 F	PURGED (ga	allons): 27.56
TIME	VOLUME	CUMUL. VOLUME	PURGE	DEPTH TO	pH (standard	ТЕМР.		NÐ.	OXYGEN		BIDITY	COLO	
(),,,,,	PURGED (gallons)	PURGED (gallons)	RATE (gpm)	WATER (feet)	units)	(°C)		i/cm	mg/L	(N.	TUs)	(describ	e) (describe)
11.08	18.02	18.02	, 53	68.80	7.64	22.94	3	15	.23		2,00	cloude	(NOWE
16-17	4.77	22.79		68.88			3	77	· 23	69		1	
11.26 497 27.56 .53 68.85 7.61 2299 399 .22 61.9 4													
		1					/			<u> </u>	AND AND ADDRESS OF THE PARTY OF	at the same of the	
	1									1			
						 / - 				ļ		<u> </u>	
-+						 				<u> </u>			+($-$
-										 		-	
WELL CA	PACITY (Gallon	l is Per Foot): 0.	75" = 0.02;	1" = 0.04;	1.25" = 0.0			' = 0.37;		<u>i</u> 5" = 1.0			12" = 5.88
	ISIDE DÍA. CAI EQUIPMENT O			006; 3/16" P = Bladder F	= 0.0014;	1/4" = 0.002 ESP = Electric		//16" ≈ 0.0 reible Pum		· · ·			i/8" = 0.016 ner (Specify)
FUNGING	EGOIFMENT	,ODE3, B	- Daller, Di	- Diagger 1		PLING DA		,	191 - 1 c	3113tallic	i ump,	0-01	ier (Opcony)
	BY (PRINT) / A			SAMPLER(S)			1.1/	11_	SAMPLING	11/	20	SAMPLING	1125
PUMP OR	BALLOON / ZA			UBING		1000		Willer	INITIATED AT	F: 11 - 2	16	ENDED AT	11.38
	WELL (feet):	177.35	I '	OBING MATERIAL CO	ODE:	T	'		LTERED: Y Equipment Type	(N)	. 6	FILTER SIZE 9	<u>μ</u> μm
FIELD DE	CONTAMINATIO		- 40	edicated	TUBING	3 Y N	Dedic	cated)	DUPLICATE:	C	14	OK)	
SAM	PLE CONTAINE	ER SPECIFICAT	ПОИ		SAMPLE P	RESERVATIO	N	AND DESCRIPTION OF THE PERSON	INTENDE			/PLING	SAMPLE PUMP
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME F	RESERVATI USED		TOTAL VOL ED IN FIELD	(mL)	FINAL pH	ANALYSIS AI METHO			IPMENT ODE	FLOW RATE (mL per minute)
ID OODL	OOMININERO	300L		OOLD	1,02	, , , , , , , , , , , , , , , , , , , ,	···						
						CTT,	/	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7				
						DII		$\mathcal{O}($					
SEE C.O.C. FOR SAMPLE ANALYSIS DBP = Dedicated bladder pump Sonny 40% clouds,													
MATERIAL		AG = Amber G		Clear Glass;		yethylene;		olypropyle	ne; S = Silico	ne; T	= Teflor		her (Specify)
SAMPLING	EQUIPMENT		PP = After Peris		B ≃ Ba			r Pump;	ESP = Electri Gravity Drain);		ersible I		
IOTEO. 4		rsr	FF - Neverse	TIOW PENSION	no rump,	JIM - STIRW		(Tubing G		U - 1	Cf 1911/9	-pacity)	

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

Revision Date: February 2009

DEP-SOP-001/01 FS 2200 Groundwater Sampling

Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE											
NAME:		F IAMP		1		LOCATION:		Lithia, Flori			
WELL NO:	TI	⊣-77		SAMPLE					DATE:	0-2-13	<u> </u>
<u> </u>		T		1		GING DA					V-
WELL DIAMETER (inc	ches): 2	TUBING DIAMETER	(inches): 0.5	154.2	feet to	NTERVAL DEPT 169.2 feet	TO WATE	ER (feet): /(o	OR	RGE PUMP T BAILER: DB	
WELL VOLUME (only fill out if ap	E PURGE:	1 WELL VOL	ÙME = (TOTAL	WELL DEP	TH - \$1	ATIC DEPTH T	O WATER) X	WELL CAPAC	ITY	14	90
EQUIPMENT V			= (1	69.2 fee	et –	76.14	feet) X	.16	gallons/foc	t = gallons	
(only fill out if ag		RGE: 1 EQUI						JBING LENGTH	•		
	. ,							722 feet) Ŧ . 30	T	<u>-</u>
DEPTH IN WEL		168.2	FINAL PUMP DEPTH IN WI		, 168,2	PURGIN INITIATE	G AT: 9.35	PURGING ENDED AT:	10.14	PURGED (LUME gallons): 23.4
PURGED PURGED RATE WATER (standard (°C) μS/cm Mg/L (NTUs) (describe) (describe) (describe)											
	15.00	15.0		76.62	7.41	23.65	384	.75	49.1	cloud	y nous
	4.2	19.2	.60	Ko.CH	7.49	23.57	383	74	52.4		
10.14	4.2	23.4	.60	760.601	7.50	73.59	383	- 60°	52.	7 1	<u> </u>
		/_						}			
		/						/			
	-/										
										THE REAL PROPERTY AND ADDRESS OF THE PARTY AND	1
		NEW CONTRACTOR OF THE PARTY OF						والمستعدد المستعدد ال	THE STATE OF THE PARTY OF THE P		
								The same of the sa			1
WELL CAPACI TUBING INSIDE									5" = 1.02; 0.006; 1/2	6" = 1.47; " = 0.010;	12" = 5.88 5/8" = 0.016
PURGING EQU	IPMENT CO	DDES: B	Bailer; BP	= Bladder P		ESP = Electric		mp; PP = P	eristaltic Pun	np; O = O	ther (Specify)
SAMPLED BY (PRINT) / AF	FILIATION	l S/	AMPLER(S)		PLING DA	1/ 1/	T			
ANDREW BALL	OON / ZAC	K PATTERSO	N	wiii EEI ((O)		/ack	Merin	SAMPLING INITIATED A	T: 10.14	SAMPLIN ENDED A	10.26
PUMP OR TUB		1600	1	JBING		т		FILTERED: Y		FILTER S	IZE:μm
DEPTH IN WEL	1,7	168.2 N: PUMP		ATERIAL CO		ING Y N		DUPLICATE:		(N)	
		R SPECIFICAT		The Party of the P		PRESERVATION	***************************************	INTEND	· · · · · · · · · · · · · · · · · · ·	SAMPLING	SAMPLE PUMP
SAMPLE	#	MATERIAL		RESERVATI	VE	TOTAL VOL	FINAL		ND/OR E	QUIPMENT CODE	FLOW RATE (mL per minute)
ID CODE CON	NTAINERS	CODE	7 (2 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1	USED	ADD	DED IN FIELD (n	nL) PH	,,,,,,,		0022	(III por IIIII ato)
				•							
					SF	P CO					-
										·	
SEE C.O.C. FOR SAMPLE ANALYSIS DBP= Dedicated bladder pump Sunny 30% clouds.											
MATERIAL COL		AG = Amber G	 	ear Glass;			PP = Polypropyl	ene; S = Silico			Other (Specify)
SAMPLING EQU	UIPMENT C		PP = After Perist PP = Reverse F		B ≃ B tic Pump;		Bladder Pump; Vlethod (Tubing	ESP = Electr Gravity Drain);		le Pump; (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: \pm 0.2 units Temperature: \pm 0.2 °C Specific Conductance: \pm 5% Dissolved Oxygen; all readings \leq 20% saturation (see Table FS 2200-2); optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater) Turbidity: all readings \leq 20 NTU; optionally \pm 5 NTU or \pm 10% (whichever is greater)

Revision Date: February 2009

Revision Date: February 1, 2004 10/11/2013 3

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Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE NAME: SELF TAMP					SITE LOCATION:. LITTING, PL										
WELL NO: Field Blank			SA	SAMPLE ID:					•	DATE: 10-2-13					
PURGING DATA															
WELL TUBING DIAMETER (inches): DIAMETER (inches):					WELL SCF					STATIC DEPTH TO WATER (feet):			PURGE PUMP TYPE OR BAILER:		
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY															
(only fill out if applicable) = (feet								ga	llons						
	ut if applicable)	URGE: 1 EQU	JIPWEN LVOL.	= PUIVII	(•				·	<u></u>	V CELL V			
INITIAL P	UMP OR TUBIN	G	FINAL PUM	P OR T	gallone_t JBING	The second of the second	gallons/foot X PURGING			feet) + - PURGING			gallons OTAL VOI	<u>.</u>	allons
DEPTH IN	INITIAL PUMP OR TUBING DEPTH IN WELL (feet): PURGING PURGING PURGING PURGING PURGING PURGING PURGED (gallons): PURGED (gallons):														
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEP TO WAT (fee	ER (stan	dard	EMP.	CON circle (pmhos or µS	units) s/cm	OXYGEN (circle units) mg/L_or % saturation		BIDITY 'Us)	COLO (descri		DOR scribe)
				<u></u>	\rightarrow							\rightarrow			
\vdash				1	_/					_/			!	_	
-/-				 	1			1)	1						
						FELI	$) \perp$	5	LAN	υK	Ĺ.,				
											/				-
			 	1						/	1			and the same of th	-/
			1-{-	ļ											\dashv
				-									ć.,,		
	PACITY (Gallon NSIDE DIA. CAI			1" = 0. 006;	04; 1.25" 3/16" = 0.00		2" = 0.16; = 0.0026;		= 0.37; 6" = 0.0		5" = 1.02 .006;	2; 6" = 1/2" = 0	= 1.47;).010;	12" = 5.88 5/8" = 0.01	
PURGING	EQUIPMENT O	ODES: B	= Bailer; E	P = Bla	dder Pump;		Electric S		ible Pur	np; PP = Pe	eristaltic	Pump;	0 = 0	ther (Specif	y)
	BY (PRINT) / A			SAMPLE	ER(S) SIGNA	MPLIN TURE(S):	G DA	. ///	II-	SAMPLING	***	0 0	SAMPLIN	G	
	BALLOON / ZA	CK PATTERS					100	uja.	evi-	INITIATED AT			ENDED A	T:	
PUMP OR TUBING TUBING DEPTH IN WELL (feet): TUBING FIELD-FILTERED: Y N FILTER SIZE: MATERIAL CODE: T Filtration Equipment Type:							μm								
FIELD DE	CONTAMINATIO	ON: PUMP	YN	Dedica	ted	TUBING	Y N	Dedi	cated	DUPLICATE:	Y		N)		
SAM SAMPLE	PLE CONTAINE	R SPECIFICA		DDECE	SAMPI RVATIVE	LE PRESE		l E	INAL	INTENDE ANALYSIS AN			PLING PMENT	SAMPLE FLOW F	
ID CODE	CONTAINERS	CODE	VOLUME			ADDED IN			pH	METHO	D	CC	DE	(mL per m	ilnute)
			1					-							
						SE	FO							.	
							<u> </u>								
						· · · · · · · · · · · · · · · · · · ·		1.				1	0/ .	 	
MATCH		AO - A L - : 1		Olar - C'	DF	- Dah45. 4		n = P-4		Sum			% cler		E.)
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;										y)					
		R	FPP = Reverse	Flow P	eristaltic Pum	np; SM				Gravity Drain);		ther (Sp			į

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

Revision Date: February 2009

Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE NAME:		SELF :	TAMP			SITE LOCATION:.		LITHIA	, PL			,	
WELL NO	:	Pube		SAMP	LE ID;					DATE:	10-2	1-13	
PURGING DATA													
WELL DIAMETE	/ D	EPTH: fee		ERVAL STATIC DEPTH TO WATER (feet):			PURGE PUMP TYPE OR BAILER:						
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH = STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (feet - feet) X gallons/fcot = gallons													
	NT VOLUME P	URGE: 1 EC	UIPMENT VOL		eet – DLUME + (TUBING CAPA	CITY	feet) X	BING LENGTH			LUME	gallons
(only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = (gallons				
			/IP OR TUBI WELL (feet)		PURO INITIA	SING ATED A	т: /	PURGING ENDED AT:	DED AT:		AL VOLUME GED (gallons);	
TIME.	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)		DEPTH TO WATER (feet)	pH (standa units		(ch µr	COND. role units) mhos/cm r µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBII (NTU		COLOR (describe)	ODOR (describe)
							-						
			 			+							
				4			1	•					
					ΔL	\mathcal{M}	 		_/			/	/
					1/		1					/_	
				سالے			4					_/_	
				/	-							/	
				-/-			_				/	<i></i>	
,				+			_						
	 PACITY (Gallon NSIDE DIA. CAI			1" = 0.04; 0006; 3/1	1.25" = 6" = 0.0014	0.06; 2" = 0 4; 1/4" = 0.0		3" = 0.37; 5/16" = 0.0		5" = 1.02; 0.006; 1	6" = 1 1/2" = 0.0		5.88 0,016
PURGING	EQUIPMENT C	ODES:	B = Bailer;	BP = Bladde		ESP = Elect			np; PP = P	eristaltic P	ump;	O = Other (S	pecify)
SAMPLED	RV /DDINT\ / A	EEII IATION	· · · · · · · · · · · · · · · · · · ·	SAMDI ER/		VIPLING I	DATE	7.1	T				····
SAMPLED BY (PRINT) / AFFILIATION: ANDREW BALLOON / ZACK PATTERSON				SAMPLER(S) SIGNATURE(S); JOEL HUTTIN					SAMPLING SAMPLING ENDED AT:				
PUMP OR DEPTH IN	TUBING WELL (feet):			TUBING MATERIAL	CODE: T				FILTERED: Y n Equipment Ty	pe:	FIL.	TER SIZE: _	μ m
FIELD DEC	CONTAMINATIO	ON; PUM	IP Y N	Dedicated	Ţl	UBING Y	NΓ	Dedicated	DUPLICATE:	_(Y)	N		
SAM! SAMPLE	PLE CONTAINE	R SPECIFIC		PRESERVA		E PRESERVAT TOTAL VOI		FINAL	INTENDI ANALYSIS A	ND/OR	SAMPLI EQUIPM	IENT FLO	PLE PUMP OW RATE
ID CODE	CONTAINERS	CODE	VOLUME	USED		ODED IN FIELD		рΗ	METHO	D	CODI	E (mL	per minute)
								 					
						SEE (00	,			,		
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										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)

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Revision Date: February 2009

Login Sample Receipt Checklist

Client: Hillsborough Co Public Utilities Dept Job Number: 660-56863-1

Login Number: 56863 List Source: TestAmerica Tampa

List Number: 1

Creator: Snead, Joshua

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Login Sample Receipt Checklist

Client: Hillsborough Co Public Utilities Dept

Job Number: 660-56863-1

Login Number: 56863
List Source: TestAmerica Savannah
List Number: 1
List Creation: 10/04/13 08:27 AM

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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