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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. 55 – March 2015

Dear Mr. Morris:

The Hillsborough County Public Utilities Department (County) is pleased to provide the analytical results from the March 2015 sampling event conducted as part of the continuation of the Initial Assessment Monitoring Plan (IAMP). The IAMP was developed to address the potential impacts to groundwater from the sinkhole on the edge of Phase 6 at the Southeast County Landfill (SCLF), which was discovered on December 14, 2010.

As part of the agreement between the County and Florida Department of Environmental Protection (Department) Southwest District Office, four (4) upper Floridan/Limestone aquifer monitoring wells, designated as TH-72, TH-76, TH-77, and TH-78 are sampled on a monthly schedule. Representative samples were collected from each of these four (4) monitoring wells on March 4-5, 2015 and analyzed for total dissolved solids (TDS), chloride, total ammonia, arsenic, iron, sodium, and five (5) field parameters. The samples collected were analyzed by our contracted laboratory, Advanced Environmental Laboratories, Inc. The following paragraphs summarize the parameter specific results pertinent to the evaluation of potential water quality impacts from the sinkhole at the SCLF.

April 28, 2015

### **pH**

pH was observed within the Secondary Drinking Water Standard (SDWS) acceptable range of 6.5-8.5 pH units in each of the four (4) upper Floridan/Limestone aquifer monitoring wells. The pH values in monitoring wells, TH-72, TH-76, TH-77, and TH-78 were recorded at 6.87, 7.58, 7.56, and 8.23 pH units, respectively, and the values are consistent with the historical data set.

### **Turbidity**

Turbidity values in the upper Floridan/Limestone aquifer monitoring wells TH-72, TH-76, TH-77, and TH-78 were recorded at 0.66, 0.68, 0.63, and 0.62 Nephelometric Turbidity Units (NTUs), respectively, and these values are consistent with the historical data set.

### **Conductivity**

The conductivity values in TH-72, TH-76, TH-77, and TH-78 were recorded at 2,486, 500, 490, and 605 umhos/cm, respectively. Monitoring well TH-72 is the closest upper Floridan/Limestone aquifer monitoring well to the sinkhole, and it continues to exhibit groundwater impacts similar to those observed over the past year. Conductivity values in TH-76, TH-77, and TH-78 are relatively low and consistent with the other unaffected deep wells across the site.

### **Total Dissolved Solids (TDS)**

The TDS in monitoring well TH-72 was observed at 1,300 mg/l, which continues to be above the SDWS of 500 mg/l. The remaining three (3) down gradient upper Floridan/Limestone aquifer monitoring wells, TH-76, TH-77, and TH-78 exhibited TDS values of 270, 250, and 300 mg/l, respectively. These values are consistent with the water quality of the unaffected deep wells across the site.

### **Chloride**

Chloride was observed at 450 mg/l in monitoring well TH-72, which is above the SDWS of 250 mg/l. Chloride values in the down gradient upper Floridan/Limestone aquifer monitoring wells TH-76, TH-77, and TH-78 were observed at 13, 7.6, and 28 mg/l. These values are consistent with the unaffected deep wells across the site.

### **Iron**

The total iron concentration in the upper Floridan/Limestone aquifer monitoring well TH-72 was 0.65 mg/l, which is above the SDWS of 0.3 mg/l. The remaining three monitoring wells, TH-76, TH-77, and TH-78 exhibited iron below the SDWS at 0.095, 0.11, and 0.24 mg/l, respectively. The concentrations of iron observed are consistent with the historical data sets for these wells.

### **Sodium**

Sodium was observed at a concentration of 190 mg/l in monitoring well TH-72, which is above the Primary Drinking Water Standard (PDWS) of 160 mg/l. Sodium values in down gradient monitoring wells TH-76, TH-77, and TH-78 were observed at 21, 18, and 36 mg/l, which is consistent with the unaffected deep wells across the site.

### **Groundwater Elevations and Direction of Flow**

On March, 2015, the County collected groundwater elevation data at eleven (11) locations along the western portion of Phases 1-6 at the landfill site, including seven (7) surficial aquifer wells and four (4) upper Floridan (limestone) aquifer wells. No significant changes to the patterns of flow in the surficial aquifer were noted in the data set, and the flow diagram for the surficial aquifer is provided. The elevations observed within the wells closest to the sinkhole indicate that the flow pattern continues to be affected by the feature, which has not been unexpected. However, the overall direction of flow within the surficial aquifer remains toward the west/northwest.

A contour diagram of the upper Floridan / Limestone aquifer has been prepared for the west side of the landfill around the sinkhole, and it is provided with this submittal. This diagram was generated manually in AutoCad™ utilizing the four data points closest to the sinkhole. During this sampling event, the changes in elevations between TH-72 and TH-76 is - 0.04 ft., and TH-72 and TH-77 is + 0.14 ft. Elevation of newly installed monitor well TH-78 indicated an elevation of approximately 8 feet higher than those elevations recorded at TH-72, TH-76, and TH-77. This anomaly in the groundwater elevation indicates that TH-78 may be influenced by the surface water body in this area, or some other geologic formation anomaly may be creating this potentiometric high. Based on the significant difference in elevations, the data from TH-78 was not utilized to prepare the contour diagram. However, the County maintains the position that the configuration of the three down gradient deep monitoring wells adequately addresses the potential for migration of the contamination observed in TH-72, and the three wells have not exhibited any impact to date.

### **Conclusions**

The water quality observed in the March 2015 IAMP sampling event indicates that the monitoring well TH-72 continues to exhibit impacts to water quality in the upper Floridan / Limestone aquifer. The impacts observed include elevated conductivity, TDS, chloride, iron, and sodium. The values have remained relatively stable, and do not appear to be migrating to any of the down gradient deep monitoring wells. Down gradient wells, TH-76 and TH-77, and TH-78 exhibit good water quality consistent with the unaffected deep wells at the site.

Mr. John Morris, P.G.

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### **Recommendations**

The County has submitted information to the FDEP Southwest District office that supports the discontinuation of the IAMP. Two select IAMP wells, TH-72 and TH-78, shall be included in the semi-annual sampling events conducted in accordance with the Landfill Operations Permit No. 35435-022-SO/01. The application for modification of that permit will be submitted to the FDEP in Tallahassee.

Enclosed for your review please find a site location map depicting the location of the monitoring wells sampled, the water quality data summary table for this sampling event, a groundwater elevation data table, groundwater contour and flow diagrams for the surficial and upper Floridan / Limestone aquifers, the historical data summary tables for the wells sampled this month, and the complete analytical data report from our contracted laboratory, Advanced Environmental Laboratories, Inc. Should you have any questions or require any additional information please feel free to call me at (813) 663-3221.

Respectfully submitted,

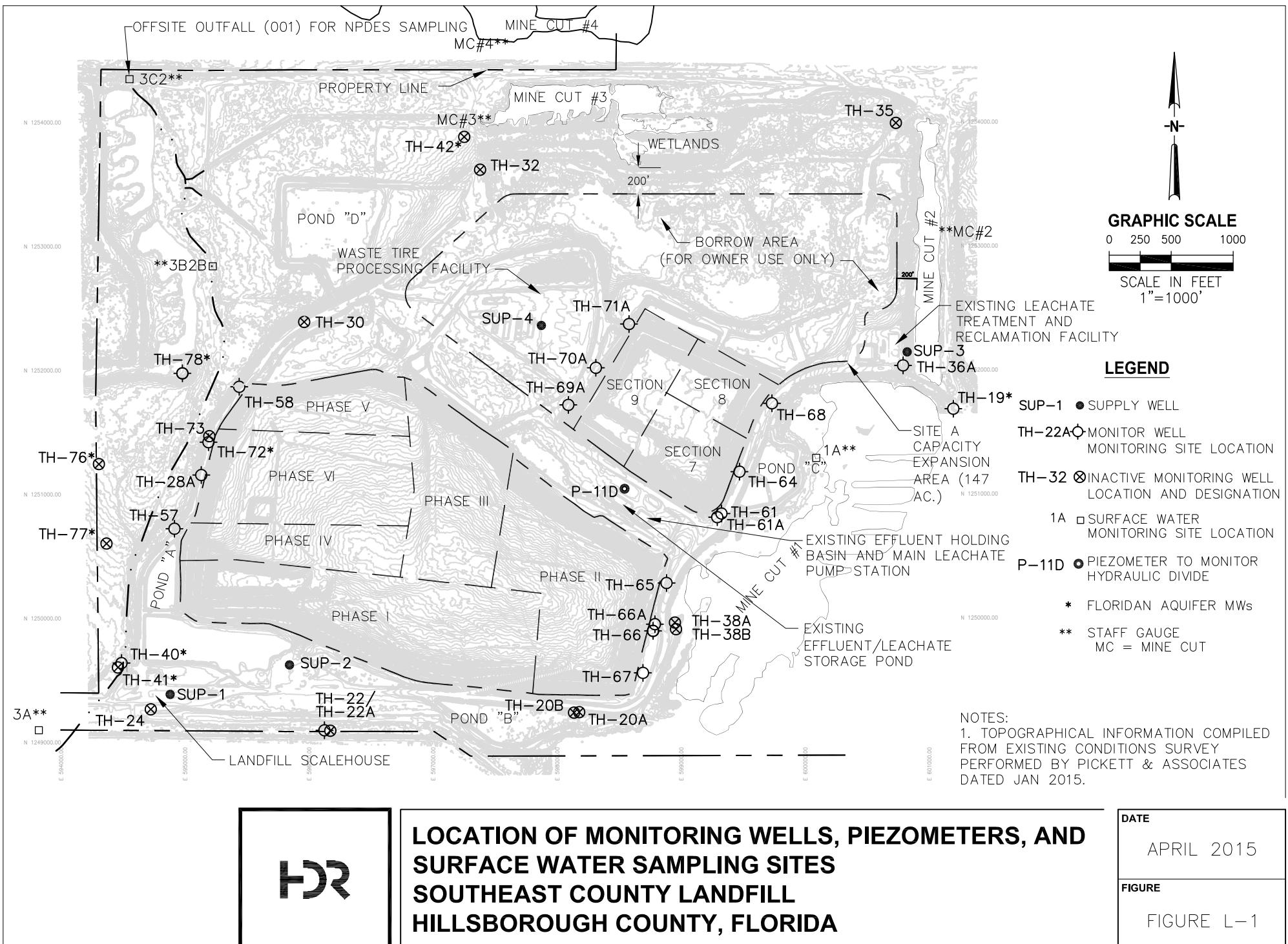


4/28/2015

David S. Adams, P.G.  
Environmental Manager  
Public Utilities Department



xc: John Lyons, Director, Public Works Department  
Kim Byer, Director, Solid Waste Division, Public Works  
Larry Ruiz, Landfill Manager, Solid Waste Division, Public Works  
Jeff Greenwell, GMIII, Environmental Services, Public Utilities  
Richard Tedder, FDEP Tallahassee  
Clark Moore, FDEP Tallahassee  
Steve Morgan, FDEP, Southwest District  
Andy Schipfer, EPC  
Ernest Ely, WMI  
Brian Miller, DOH  
Rich Siemering, HDR  
Bob Curtis, HDR  
Joe O'Neill, CDS

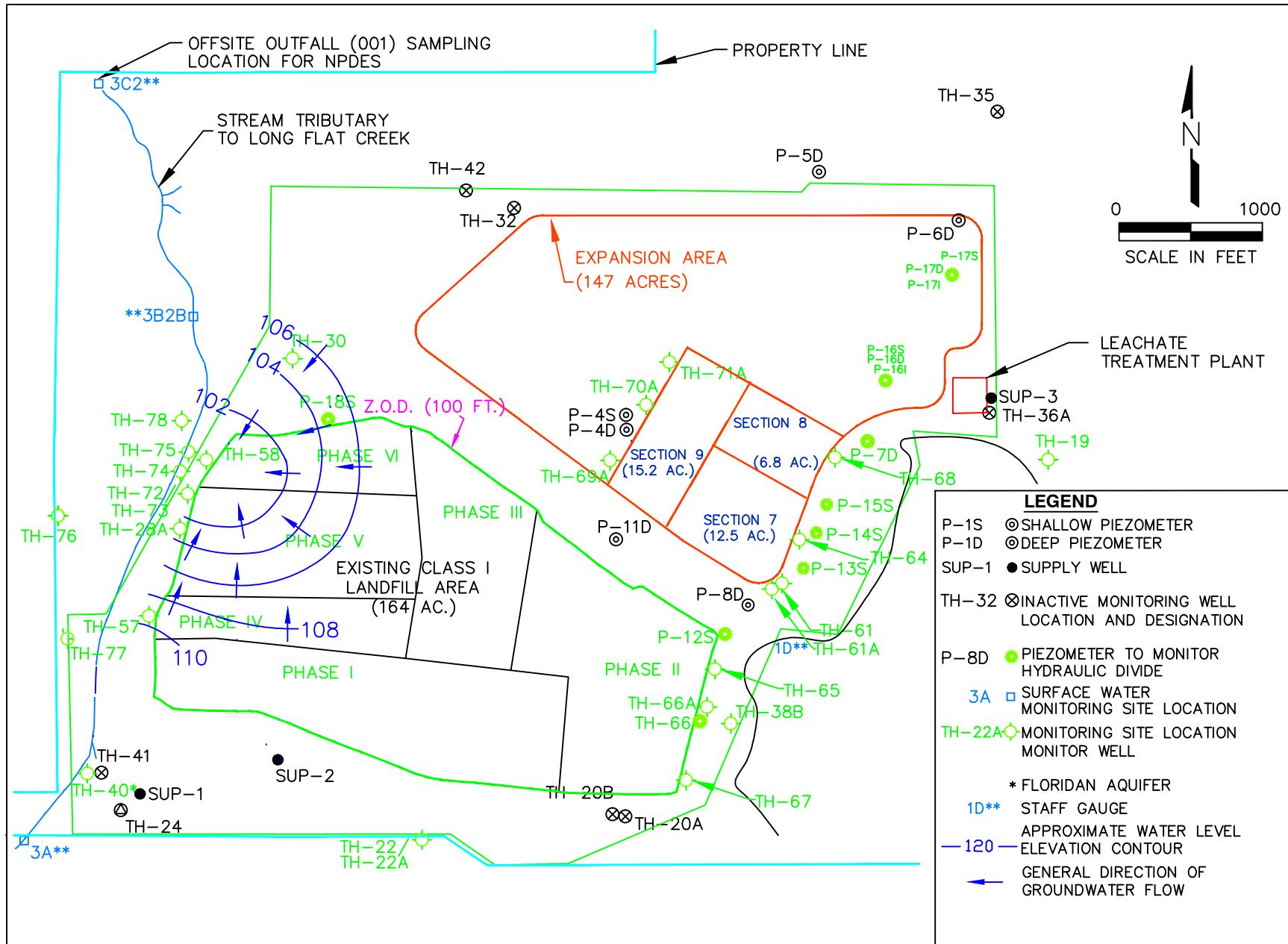


**Southeast County Landfill**  
**Laboratory Analytical Data**  
**Upper Floridan Aquifer Groundwater Monitoring Wells**  
**March 4-5, 2015**

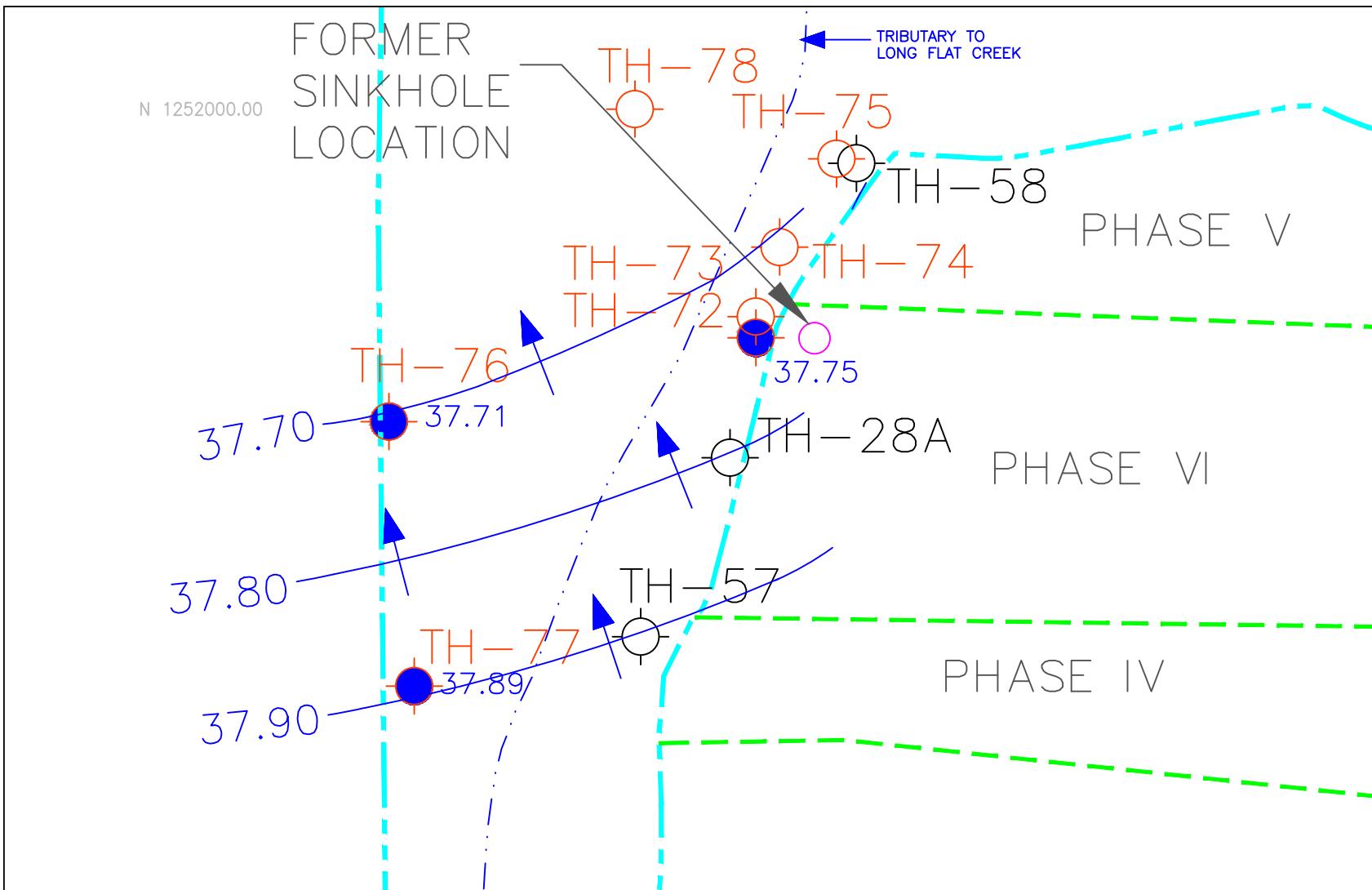
GENERAL PARAMETERS	Upper Floridan Wells				MCL STANDARD
	TH-72	TH-76	TH-77	TH-78	
conductivity (umhos/cm) (field)	2,486	500	490	605	NS
dissolved oxygen (mg/l) (field)	0.57	0.39	0.49	0.46	NS
pH (field)	6.87	7.58	7.56	8.23	(6.5 - 8.5)**
temperature (°C) (field)	23.50	22.99	23.52	23.50	NS
turbidity (NTU) (field)	0.66	0.68	0.63	0.62	NS
total dissolved solids (mg/l)	1,300	320	330	410	500**
chloride (mg/l)	450	13	7.6	28	250**
ammonia nitrogen (mg/l as N)	21	0.33	0.37	0.33	NS
METALS (mg/l)					MCL STANDARD
arsenic	0.0021 u	0.0021 u	0.0021 u	0.0021 u	0.01*
iron	0.65	0.095 i	0.11 i	0.24	0.3**
sodium	190	21	18	36	160*
Note: Ref. Groundwater Guidance Concentrations, FDEP 2012					
MCL = Maximum Contaminant Level					
NTU = Nephelometric Turbidity Units					
NS = No Standard					
u = parameter was analyzed but not detected.					
i = value was detected between the laboratory method detection limit and practical quantitation limit.					
* = Primary Drinking Water Standard					
** = Secondary Drinking Water Standard					
1,300					
ug/l = micrograms per liter					
mg/l = milligrams per liter					

**Southeast County Landfill**  
**Groundwater Elevations**  
**March 4, 2015**

Measuring Point	T.O.C. Elevations I.D. (NGVD)	W.L. B.T.O.C.	W.L. (NGVD)	Time
TH-28A	131.10	27.64	103.46	10:03 AM
TH-30	128.88	23.63	105.25	9:55 AM
TH-57	128.36	18.59	109.77	10:06 AM
TH-58	127.88	27.44	100.44	9:58 AM
TH-72*	130.96	93.21	37.75	10:01 AM
TH-73	131.07	30.15	100.92	10:00 AM
TH-74	109.08	8.82	100.26	9:48 AM
TH-75	106.92	7.41	99.51	9:50 AM
TH-76*	111.21	73.50	37.71	10:14 AM
TH-77*	119.88	81.99	37.89	10:11 AM
TH-78*	120.75	75.16	45.59	10:20 AM
<b>NGVD = National Geodetic Vertical Datum</b>				
<b>T.O.C. = Top of Casing</b>				
<b>B.T.O.C. = Below Top of Casing</b>				
<b>* = Floridan Well</b>				
<b>W.L. = Water Level</b>				



Southeast County Landfill  
Groundwater Elevation Contour Diagram – March 4, 2015



MARCH 2015  
 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	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)
01/27/2011	115.69	15.27	551	0.39	7.43	22.88	3.2	320	32	0.22	0.004 u	<b>0.52</b>	32
02/03/2011	112.18	18.78	565	1.09	7.38	22.95	9.9	300	32	0.21	0.004 u	<b>0.62</b>	27
02/10/2011	109.80	21.16	514	1.58	7.34	22.65	3.2	340	31	0.28	0.004 u	<b>0.54</b>	31
02/14/2011	108.18	22.78	483	1.15	7.36	22.7	3.5	320	32	0.24	0.0013 u	<b>0.58</b>	32
02/24/2011	111.71	19.25	513	0.19	7.34	22.85	1	350	32	0.22	0.004 u	<b>0.53</b>	31
03/03/2011	111.88	19.08	579	0.77	7.35	22.8	0.8	330	31	0.23	0.004 u	<b>0.43</b>	32
03/10/2011	113.65	17.31	551	1.26	7.41	22.73	0.9	320	30	0.18	0.004 u	<b>0.35</b>	31
03/17/2011	112.85	18.11	388	1.05	7.34	22.9	0.9	330	30	0.31	0.004 u	0.25	31
03/24/2011	114.33	16.63	1192	1.5	7.58	23.1	1.5	<b>1,100</b>	<b>350</b>	9	0.004 u	<b>0.64</b>	130
04/01/2011	115.70	15.26	928	0.16	7.41	22.8	3.6	<b>520</b>	110	2	0.004 u	0.24	59
04/08/2011	112.10	18.86	810	0.92	7.35	23.13	6.1	420	87	1.9	0.004 u	0.22	51
05/05/2011	116.21	14.75	609	0.71	7.67	23.01	6.6	320	33	0.3	0.004 u	0.27	37
06/08/2011	119.19	11.77	607	0.71	7.65	23.35	4.51	340	32	0.57	0.004 u	0.2	34
07/07/2011	113.30	17.66	606	0.72	7.4	23.25	3.94	150	64	2.1	0.004 u	<b>7.9</b>	27
08/04/2011	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	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	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	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	113.86	17.10	511	0.94	7.3	22.89	1.39	310	28	0.28	0.004 u	0.13 i	30
03/07/2012	121.00	9.96	575	0.27	7.15	23.23	0.5	310	25	0.22	0.004 u	0.11 i	31
04/05/2012	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	126.55	4.41	746	1.6	6.9	23.46	0.81	380	72	2.3	0.004 u	<b>0.54</b>	49
06/07/2012	120.46	10.50	641	0.72	7.07	23.4	0.26	370	46	1	0.004 u	0.23	37
07/05/2012	104.95	26.01	900	0.23	6.54	23.52	0.4	<b>650</b>	190	2.9 j3	0.004 u	<b>0.39</b>	70
08/03/2012	98.26	32.70	843	0.69	6.77	23.6	2.23	<b>730</b>	210	3	0.004 u	<b>0.48</b>	78
09/06/2012	91.18	39.66	2,357	0.2	6.51	23.62	1.05	<b>1,300</b>	<b>570</b>	12	0.004 u	1.1	<b>170</b>
10/04/2012	90.19	40.77	1,654	0.6	<b>6.43</b>	23.22	0.46	<b>1,500</b>	<b>650</b>	25	0.004 u	1.9	<b>210</b>
11/07/2012	99.29	31.67	2,488	0.76	6.58	23.03	0.74	<b>1,400</b>	<b>540</b>	15	0.004 u	1.4	<b>180</b>
12/05/2012	101.82	29.14	2,416	0.23	<b>6.49</b>	23.18	0.45	<b>1,300</b>	<b>540</b>	13	0.004 u	1.3	<b>180 j3</b>
01/03/2013	100.65	30.31	2,430	1.1	<b>6.44</b>	23.09	0.42	<b>1,400</b>	<b>500</b>	15	0.004 u	1.3	<b>170 j3</b>
02/07/2013	105.58	25.38	2,206	0.6	6.5	23.1	0.22	<b>1,100</b>	<b>470</b>	13	0.004 u	1.1	160
03/07/2013	110.00	20.96	1,234	0.3	6.61	22.85	0.41	<b>770</b>	<b>290</b>	11	0.004 u	1.1	110
04/04/2013	111.35	19.61	1,252	0.33	6.74	23.15	9.9	<b>870</b>	<b>260</b>	10	0.004 u	1	100
05/02/2013	109.56	21.40	1,615	0.18	6.83	23.16	0.45	<b>810</b>	<b>300</b>	8.6	0.004 u	<b>0.87</b>	110
06/04/2013	109.62	21.34	1,440	0.31	7.13	23.3	0.27	<b>850</b>	<b>290</b>	8.4	0.004 u	<b>0.82</b>	120
07/03/2013	98.72	32.24	1,450	0.18	7.03	23.5	0.41	<b>820</b>	<b>280</b>	8.8	0.004 u	<b>0.79</b>	120
08/02/2013	ND	ND	1,256	0.46	6.88	23.43	0.2	<b>800</b>	<b>290</b>	6.8	0.004 u	<b>0.72</b>	120
09/05/2013	87.92	43.04	1,001	0.61	6.98	23.45	1.17	<b>760</b>	<b>290</b>	7.6	0.004 u	<b>0.71</b>	110
10/02/2013	87.39	43.57	1,566	0.32	6.86	23.53	12.6	<b>1,000</b>	<b>350</b>	7.4 j3	0.004 u	<b>0.79</b>	120
11/06/2013	97.90	33.06	2,145	0.16	6.69	23.36	0.8	<b>1,200</b>	<b>450</b>	12	0.004 u	<b>0.64</b>	<b>170</b>
12/05/2013	98.50	32.46	2,615	0.39	6.74	23.45	0.58	<b>1,200</b>	<b>580</b>	16	0.004 u	<b>0.65</b>	200
01/03/2014	99.02	31.94	2,220	0.84	6.83	22.88	1.64	<b>1,200</b>	<b>580</b>	25	0.004 u	<b>0.67</b>	<b>230 j3</b>
02/06/2014	99.50	31.46	2,452	0.13	6.69	23.13	2.07	<b>1,300</b>	<b>580</b>	23 j3	0.004 u	<b>0.71</b>	<b>210</b>
03/04/2014	97.91	33.05	2,173	0.24	6.67	23.4	1.33	<b>1,500</b>	<b>580</b>	22	0.004 u	<b>0.74</b>	<b>220</b>
04/03/2014	96.22	34.74	1,992	0.22	6.74	23.35	1.33	<b>1,400</b>	<b>590</b>	27	0.0013 u	<b>0.71</b>	<b>220</b>
05/06/2014	100.22	30.74	2,247	0.46	6.81	23.5	1.22	<b>1,400</b>	<b>590</b>	24	0.004 u	<b>0.64</b>	<b>230</b>
06/03/2014	102.58	28.38	2,771	0.34	<b>6.45</b>	23.46	0.96	<b>1,400</b>	<b>570</b>	27	0.004 u	<b>0.73</b>	<b>220</b>
07/03/2014	97.64	33.32	2,388	0.29	6.86	23.54	1.34	<b>1,300&lt;/b</b>					

**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	<b>1.1</b>	20
06/04/2013	89.91	21.30	401	0.27	7.86	22.9	16.2	240	13	0.4	0.004 u	<b>0.66</b>	22
07/03/2013	79.04	32.17	398	0.19	8	23	28.6	210	12	0.34	0.004 u	<b>0.99</b>	22
08/02/2013	ND	ND	343	0.22	7.57	23.02	42.2	230	13	0.26	0.004 u	<b>1.6</b>	21
09/05/2013	68.22	42.99	278	0.21	7.74	22.97	46	240	12	0.32	0.004 u	<b>1.5</b>	20
10/02/2013	67.69	43.46	399	0.22	7.61	22.99	61.9	120	13	0.38	0.004 u	<b>1.7</b>	20
11/06/2013	78.19	33.02	446	0.64	7.54	22.84	29	260	13	0.36	0.004 u	<b>1.1</b>	20
12/05/2013	78.80	32.41	478	0.48	7.45	22.9	19.2	240	12	0.35	0.004 u	<b>0.96</b>	20
01/03/2014	79.38	31.83	398	0.58	7.67	22.35	19.4	190	12	0.23 j3	0.004 u	<b>1.1</b>	20
02/06/2014	79.87	31.34	446	0.14	7.54	22.57	18.1	230	12	0.45	0.004 u	<b>0.96</b>	20
03/04/2014	78.20	33.01	434	0.18	7.36	22.7	26.2	230	12	0.33	0.004 u	<b>0.69</b>	20
04/03/2014	76.54	34.67	441	0.18	7.46	22.82	24.7	210	12	0.6	0.0013 u	<b>0.34</b>	19
05/06/2014	80.52	30.69	427	0.24	7.56	22.85	12.7	220	12	0.38	0.004 u	<b>0.65</b>	21
06/03/2014	82.85	28.36	423	0.3	7.47	22.82	16.8	240	12	0.47	0.004 u	<b>0.64</b>	20
07/03/2014	77.98	33.23	421	0.3	7.46	22.83	19.5	230	12	0.49	0.004 u	<b>0.2</b>	20
08/13/2014	70.72	40.49	445	0.25	7.37	22.81	17	240	12	0.5	0.004 u	<b>0.7</b>	20
09/05/2014	71.05	40.16	596	0.2	7.28	22.92	19	240	12	0.72	0.004 u	<b>0.61</b>	20
10/07/2014	69.03	42.18	432	0.34	7.37	22.89	17.9	260	12	0.78	0.004 u	<b>0.77</b>	19
11/04/2014	75.84	35.37	502	0.27	7.19	22.9	16.4	280	11	0.37	0.0016 u	0.27	21
12/03/2014	74.87	36.34	517	0.27	7.34	22.82	18.7	250	8	0.34	0.0016 u	0.21	19
01/08/2015	73.38	37.83	516	0.54	7.4	22.49	0.84	270	8.4	0.18	0.0016 u	0.14	22
02/04/2015	74.46	36.75	525	0.27	7.44	22.65	0.67	280	9.8	0.34	0.0016 u	0.13	22

u = parameter was analyzed but not detected

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

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

1.1	EXCEEDS STANDARD
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**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/l)
05/02/2013	98.31	21.57	440	0.57	7.39	23.39	59.4	190	9.4	0.39	0.004 u	<b>1.2</b>	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	<b>0.89</b>	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	<b>1.1</b>	17
08/02/2013	ND	ND	334	0.47	7.44	23.66	42.9	230	9.2	0.36	0.004 u	<b>1.1</b>	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	<b>0.96</b>	16
10/02/2013	76.14	43.72	383	0.69	7.5	23.59	52.7	240	9.1	0.39	0.004 u	<b>1.3</b>	17
11/06/2013	86.68	33.20	423	0.74	7.43	23.51	25.1	230	9.7	0.36 j3	0.004 u	<b>0.68</b>	17
12/05/2013	87.29	32.59	451	0.9	7.44	23.6	16.4	220	9	0.36	0.004 u	<b>0.58</b>	17
01/03/2014	87.87	32.01	371	0.85	7.65	23.18	16.5	160	9.1	0.39	0.004 u	<b>0.63</b>	17
02/06/2014	88.30	31.58	424	0.09	7.53	23.39	4.62	250	9.2	0.27	0.004 u	0.26	16
03/04/2014	86.70	33.18	418	0.36	7.34	23.38	1.12	230	9.3	0.32	0.004 u	0.21	16
04/03/2014	85.02	34.86	430	0.28	7.45	23.47	1.97	220	9.4	0.61	0.0013 u	0.18	15
05/06/2014	89.02	30.86	414	0.34	7.52	23.47	1.01	220	9.7	0.59	0.004 u	0.19	17
06/03/2014	91.34	28.54	464	0.27	7.47	23.49	0.88	230	9.7	0.75	0.004 u	0.19	17
07/03/2014	86.40	33.48	409	0.34	7.44	23.65	1.56	230	9.6	0.48	0.004 u	0.14 i	17
08/13/2014	79.19	40.69	436	0.36	7.39	23.76	0.61	260	9.5	0.49	0.004 u	0.16 i	16
09/05/2014	79.52	40.36	578	0.37	7.31	23.62	1.02	240	12	0.72	0.004 u	0.61	20
10/07/2014	77.55	42.33	416	0.22	7.36	23.64	0.71	240	9.3	1.4 j3	0.004 u	0.16 i	16
11/04/2014	84.27	35.61	469	0.27	7.26	23.66	1.28	280	10	0.38	0.0016 u	0.16	17
12/03/2014	83.33	36.55	490	0.46	7.24	23.43	0.5	270	12	0.38	0.0016 u	0.15	16
01/08/2015	81.86	38.02	504	0.5	7.41	23.12	0.42	250	11	0.42	0.0016 u	0.14	18
02/04/2015	82.94	36.94	492	0.2	7.39	23.2	0.51	280	7 j3	0.39	0.0016 u	0.16	18

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.

**1.2** EXCEEDS STANDARD

**Hillsborough County Southeast Landfill**  
**Laboratory Analytical Results from IAMP Groundwater Monitoring**  
**TH-78**

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)
07/02/2014	ND	ND	363	0.41	<b>9.08</b>	23.89	19.3	210	43	0.44	0.0019 i	1	38
08/12/2014	75.51	45.24	467	0.4	<b>9.55</b>	23.56	7.37	240	38	0.42 j3	0.004 u	<b>0.48</b>	34
09/05/2014	75.12	45.63	680	0.15	8.18	23.46	3.86	270	36	0.40	0.004 u	0.27	35
10/07/2014	73.49	47.26	508	0.30	8.39	23.35	1.12	270	34	0.44	0.004 u	0.23	34
11/04/2014	77.73	43.02	555	0.44	7.92	23.33	1.58	320	37	0.3	0.0016 u	0.27	34
12/03/2014	79.04	41.71	584	0.49	7.86	23.3	0.5	290	29	0.31	0.0016 u	0.25	31
01/08/2015	76.39	44.36	595	0.76	7.98	22.81	1.25	300	31	0.34	0.0016 u	0.24	36
02/04/2015	76.21	44.54	601	0.32	8.25	22.95	0.96	310	29	0.32	0.0016 u	0.2	35

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 - survey data was not complete.

**1** EXCEEDS STANDARD



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March 20, 2015

David Adams  
Hillsborough Co Public Utilities  
332 North Falkenburg Rd  
Tampa, FL 33619

RE: Workorder: T1503041 Southeast County Landfill IAMP

Dear David Adams:

Enclosed are the analytical results for sample(s) received by the laboratory between Wednesday, March 04, 2015 and Thursday, March 05, 2015. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Heidi Brooks".

Heidi Brooks  
HBrooks@AELab.com

Enclosures

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## SAMPLE SUMMARY

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID	Sample ID	Matrix	Date Collected	Date Received
T1503041001	Field Blank	Water	3/4/2015 10:28	3/4/2015 15:15
T1503041002	TH-78	Water	3/4/2015 11:33	3/4/2015 15:15
T1503041003	TH-72	Water	3/4/2015 12:53	3/4/2015 15:15
T1503041004	Duplicate	Water	3/5/2015 00:00	3/5/2015 14:35
T1503041005	TH-76	Water	3/5/2015 11:52	3/5/2015 14:35
T1503041006	TH-77	Water	3/5/2015 10:37	3/5/2015 14:35

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## ANALYTICAL RESULTS

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: **T1503041001** Date Received: 03/04/15 15:15 Matrix: Water  
 Sample ID: **Field Blank** Date Collected: 03/04/15 10:28

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

### **METALS**

Analysis Desc: SW846 6010B Preparation Method: SW-846 3010A  
 Analysis,Water Analytical Method: SW-846 6010

Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:07	M
Iron	20	U	ug/L	1	200	20	3/16/2015 15:07	M
Sodium	0.10	U	mg/L	1	0.20	0.10	3/16/2015 15:07	M

### **WET CHEMISTRY**

Analysis Desc: Ammonia,E350.1,Water Analytical Method: EPA 350.1

Ammonia (N)	0.02	U	mg/L	1	0.10	0.02	3/5/2015 12:46	T
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Analysis Desc: Tot Dissolved Solids,SM2540C Analytical Method: SM 2540 C

Total Dissolved Solids	12	U	mg/L	1.25	12	12	3/9/2015 09:36	T
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Analysis Desc: Chlorides,SM4500-Cl-E,Water Analytical Method: SM 4500-Cl-E

Chloride	1.1	U	mg/L	1	5.0	1.1	3/9/2015 13:35	T
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Lab ID: **T1503041002** Date Received: 03/04/15 15:15 Matrix: Water

Sample ID: **TH-78** Date Collected: 03/04/15 11:33

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

### **FIELD PARAMETERS**

Analysis Desc: Data entry of field measurements Analytical Method: Field Measurements

Conductivity	605		umhos/cm	1	3/4/2015 11:33
Dissolved Oxygen	0.46		mg/L	1	3/4/2015 11:33
Temperature	23.5		°C	1	3/4/2015 11:33
Turbidity	0.62		NTU	1	3/4/2015 11:33
pH	8.23		SU	1	3/4/2015 11:33

### **METALS**

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Fax: (813)630-4327

## ANALYTICAL RESULTS

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID:	<b>T1503041002</b>	Date Received:	03/04/15 15:15	Matrix:	Water
Sample ID:	<b>TH-78</b>	Date Collected:	03/04/15 11:33		

Sample Description:	Location:
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Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		
Analysis Desc: SW846 6010B					Preparation Method: SW-846 3010A			
Analysis,Water					Analytical Method: SW-846 6010			
Arsenic	2.1	U	ug/L	1		10	2.1	3/16/2015 15:26 M
Iron	240		ug/L	1		200	20	3/16/2015 15:26 M
Sodium	36		mg/L	1		0.20	0.10	3/16/2015 15:26 M

### **WET CHEMISTRY**

Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	0.33		mg/L	1		0.10	0.02	3/5/2015 12:46 T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	410		mg/L	1.25		12	12	3/9/2015 09:36 T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	28		mg/L	1		5.0	1.1	3/9/2015 13:35 T

Lab ID:	<b>T1503041003</b>	Date Received:	03/04/15 15:15	Matrix:	Water
Sample ID:	<b>TH-72</b>	Date Collected:	03/04/15 12:53		

Sample Description:	Location:
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Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

### **FIELD PARAMETERS**

Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	2486		umhos/cm	1				3/4/2015 12:53
Dissolved Oxygen	0.57		mg/L	1				3/4/2015 12:53
Temperature	23.5		°C	1				3/4/2015 12:53
Turbidity	0.66		NTU	1				3/4/2015 12:53
pH	6.87		SU	1				3/4/2015 12:53

### **METALS**

Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A						
Analysis,Water	Analytical Method: SW-846 6010						

Report ID: 357746 - 5218199

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## ANALYTICAL RESULTS

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: **T1503041003** Date Received: 03/04/15 15:15 Matrix: Water  
 Sample ID: **TH-72** Date Collected: 03/04/15 12:53

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		
Arsenic	2.1	U	ug/L	1		10	2.1	3/16/2015 15:29 M
Iron	650		ug/L	1		200	20	3/16/2015 15:29 M
Sodium	190		mg/L	1		0.20	0.10	3/16/2015 15:29 M

### **WET CHEMISTRY**

Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	21		mg/L	10		1.00	0.25	3/5/2015 12:46 T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	1300		mg/L	1.25		12	12	3/9/2015 09:36 T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	450		mg/L	10		50	11	3/9/2015 13:35 T

Lab ID: **T1503041004** Date Received: 03/05/15 14:35 Matrix: Water  
 Sample ID: **Duplicate** Date Collected: 03/05/15 00:00

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

### **METALS**

Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Arsenic	2.1	U	ug/L	1		10	2.1	3/16/2015 15:33 M
Iron	110	I	ug/L	1		200	20	3/16/2015 15:33 M
Sodium	18		mg/L	1		0.20	0.10	3/16/2015 15:33 M

### **WET CHEMISTRY**

Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	0.38		mg/L	1		0.10	0.02	3/10/2015 12:00 T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	320		mg/L	1.25		12	12	3/9/2015 09:36 T

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## ANALYTICAL RESULTS

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: **T1503041004** Date Received: 03/05/15 14:35 Matrix: Water  
Sample ID: **Duplicate** Date Collected: 03/05/15 00:00

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: Chlorides,SM4500-Cl-E,Water								
Chloride	12		mg/L	1	5.0	1.1	3/9/2015 13:35	T

Lab ID: **T1503041005** Date Received: 03/05/15 14:35 Matrix: Water  
Sample ID: **TH-76** Date Collected: 03/05/15 11:52

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
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### FIELD PARAMETERS

Analysis Desc: Data entry of field measurements Analytical Method: Field Measurements

Conductivity	500	umhos/cm	1		3/5/2015 11:52
Dissolved Oxygen	0.39	mg/L	1		3/5/2015 11:52
Temperature	22.99	°C	1		3/5/2015 11:52
Turbidity	0.68	NTU	1		3/5/2015 11:52
pH	7.58	SU	1		3/5/2015 11:52

### METALS

Analysis Desc: SW846 6010B Preparation Method: SW-846 3010A  
Analysis,Water Analytical Method: SW-846 6010

Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:37	M
Iron	95	I	ug/L	1	200	20	3/16/2015 15:37	M
Sodium	21		mg/L	1	0.20	0.10	3/16/2015 15:37	M

### WET CHEMISTRY

Analysis Desc: Ammonia,E350.1,Water Analytical Method: EPA 350.1

Ammonia (N)	0.33		mg/L	1	0.10	0.02	3/10/2015 12:00	T
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Analysis Desc: Tot Dissolved Solids,SM2540C Analytical Method: SM 2540 C

Total Dissolved Solids	320		mg/L	1.25	12	12	3/9/2015 09:36	T
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Analysis Desc: Chlorides,SM4500-Cl-E,Water Analytical Method: SM 4500-Cl-E

Chloride	13		mg/L	1	5.0	1.1	3/9/2015 13:35	T
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## ANALYTICAL RESULTS

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: **T1503041006** Date Received: 03/05/15 14:35 Matrix: Water  
 Sample ID: **TH-77** Date Collected: 03/05/15 10:37

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
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### **FIELD PARAMETERS**

Analysis Desc: Data entry of field measurements Analytical Method: Field Measurements

Conductivity	490	umhos/cm	1				3/5/2015 10:37
Dissolved Oxygen	0.49	mg/L	1				3/5/2015 10:37
Temperature	23.52	°C	1				3/5/2015 10:37
Turbidity	0.63	NTU	1				3/5/2015 10:37
pH	7.56	SU	1				3/5/2015 10:37

### **METALS**

Analysis Desc: SW846 6010B Analysis,Water Preparation Method: SW-846 3010A  
 Analytical Method: SW-846 6010

Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:41	M
Iron	110	I	ug/L	1	200	20	3/16/2015 15:41	M
Sodium	18		mg/L	1	0.20	0.10	3/16/2015 15:41	M

### **WET CHEMISTRY**

Analysis Desc: Ammonia,E350.1,Water Analytical Method: EPA 350.1

Ammonia (N)	0.37		mg/L	1	0.10	0.02	3/10/2015 12:00	T
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Analysis Desc: Tot Dissolved Solids,SM2540C Analytical Method: SM 2540 C

Total Dissolved Solids	330		mg/L	1.25	12	12	3/9/2015 09:36	T
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Analysis Desc: Chlorides,SM4500-Cl-E,Water Analytical Method: SM 4500-Cl-E

Chloride	7.6		mg/L	1	5.0	1.1	3/9/2015 13:35	T
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## ANALYTICAL RESULTS QUALIFIERS

Workorder: T1503041 Southeast County Landfill IAMP

### PARAMETER QUALIFIERS

- U The compound was analyzed for but not detected.
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

### LAB QUALIFIERS

- M DOH Certification #E82535(AEL-M)(FL NELAC Certification)
- T DOH Certification #E84589(AEL-T)(FL NELAC Certification)
- T^ Not Certified

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## QUALITY CONTROL DATA

Workorder: T1503041 Southeast County Landfill IAMP

QC Batch: WCAt/2036 Analysis Method: EPA 350.1  
QC Batch Method: EPA 350.1 Prepared:  
Associated Lab Samples: T1503041001, T1503041002, T1503041003

METHOD BLANK: 1695561

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Ammonia (N)	mg/L	0.02	0.02	U

LABORATORY CONTROL SAMPLE: 1695562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Ammonia (N)	mg/L	1	1.0	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1695563 1695564 Original: T1503041002

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Ammonia (N)	mg/L	0.33	1	1.3	1.3	100	99	90-110	1	10	

QC Batch: WCAt/2063 Analysis Method: SM 2540 C

QC Batch Method: SM 2540 C Prepared:

Associated Lab Samples: T1503041001, T1503041002, T1503041003, T1503041004, T1503041005, T1503041006

METHOD BLANK: 1696038

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Total Dissolved Solids	mg/L	10	10	U

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## **QUALITY CONTROL DATA**

Workorder: T1503041 Southeast County Landfill IAMP

LABORATORY CONTROL SAMPLE: 1696039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
<b>WET CHEMISTRY</b>						
Total Dissolved Solids	mg/L	660	620	94	75-125	

SAMPLE DUPLICATE: 1696040 Original: T1502981001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
<b>WET CHEMISTRY</b>						
Total Dissolved Solids	mg/L	660	650	1	10	
QC Batch:	WCAt/2075		Analysis Method:		SM 4500-CI-E	
QC Batch Method:	SM 4500-CI-E		Prepared:			
Associated Lab Samples:	T1503041001, T1503041002, T1503041003, T1503041004, T1503041005, T1503041006					

METHOD BLANK: 1696894

Parameter	Units	Blank Result	Reporting	
			Limit	Qualifiers
<b>WET CHEMISTRY</b>				
Chloride	mg/L	1.1	1.1	U

LABORATORY CONTROL SAMPLE: 1696895

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
<b>WET CHEMISTRY</b>						
Chloride	mg/L	40	40	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696896 1696897 Original: T1503041002

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Max RPD Qualifiers
<b>WET CHEMISTRY</b>										
Chloride	mg/L	28	40	69	69	103	102	90-110	1	10

Report ID: 357746 - 5218199

Page 10 of 15

## **CERTIFICATE OF ANALYSIS**

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## QUALITY CONTROL DATA

Workorder: T1503041 Southeast County Landfill IAMP

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696898      1696899      Original: T1503184003

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Max Qualifiers
-----------	-------	-----------------	-------------	-----------	------------	----------	-----------	-------------	-----	---------	----------------

WET CHEMISTRY

Chloride      mg/L      94      40      140      140      102      103      90-110      0      10

QC Batch: WCAt/2082      Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1      Prepared:

Associated Lab Samples: T1503041004, T1503041005, T1503041006

METHOD BLANK: 1697182

Parameter	Units	Blank Result	Reporting Limit Qualifiers
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WET CHEMISTRY

Ammonia (N)      mg/L      0.02      0.02 U

LABORATORY CONTROL SAMPLE: 1697183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits Qualifiers
-----------	-------	-------------	------------	-----------	-------------------------

WET CHEMISTRY

Ammonia (N)      mg/L      1      1.0      100      90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1697184      1697185      Original: T1503041004

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Max Qualifiers
-----------	-------	-----------------	-------------	-----------	------------	----------	-----------	-------------	-----	---------	----------------

WET CHEMISTRY

Ammonia (N)      mg/L      0.38      1      1.3      1.3      96      95      90-110      0      10

QC Batch: DGMM/1073      Analysis Method: SW-846 6010

QC Batch Method: SW-846 3010A      Prepared: 03/13/2015 09:30

Associated Lab Samples: T1503041001, T1503041002, T1503041003, T1503041004, T1503041005, T1503041006

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## QUALITY CONTROL DATA

Workorder: T1503041 Southeast County Landfill IAMP

METHOD BLANK: 1701699

Parameter	Units	Blank	Reporting	
		Result	Limit	Qualifiers
<b>METALS</b>				
Arsenic	ug/L	2.1	2.1	U
Iron	ug/L	20	20	U
Parameter	Units	Blank	Reporting	
		Result	Limit	Qualifiers
<b>METALS</b>				
Sodium	mg/L	0.10	0.10	U

LABORATORY CONTROL SAMPLE: 1701700

Parameter	Units	Spike	LCS	LCS	% Rec
		Conc.	Result	% Rec	Limits Qualifiers
<b>METALS</b>					
Arsenic	ug/L	400	420	106	80-120
Iron	ug/L	25000	27000	106	80-120
Sodium	mg/L	50	54	107	80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701701      1701702      Original: T1502914001

Parameter	Units	Original	Spike	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Result	Result	% Rec	% Rec	Limit	RPD	RPD	Qualifiers
<b>METALS</b>											
Arsenic	ug/L	-0.17	400	420	430	106	107	75-125	1	20	
Iron	ug/L	200	25000	27000	27000	105	105	75-125	1	20	
Sodium	mg/L	25	50	79	79	106	107	75-125	0	20	

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1503041001	Field Blank			EPA 350.1	WCAt/2036
T1503041002	TH-78			EPA 350.1	WCAt/2036
T1503041003	TH-72			EPA 350.1	WCAt/2036
T1503041001	Field Blank			SM 2540 C	WCAt/2063
T1503041002	TH-78			SM 2540 C	WCAt/2063
T1503041003	TH-72			SM 2540 C	WCAt/2063
T1503041004	Duplicate			SM 2540 C	WCAt/2063
T1503041005	TH-76			SM 2540 C	WCAt/2063
T1503041006	TH-77			SM 2540 C	WCAt/2063
T1503041001	Field Blank			SM 4500-CI-E	WCAt/2075
T1503041002	TH-78			SM 4500-CI-E	WCAt/2075
T1503041003	TH-72			SM 4500-CI-E	WCAt/2075
T1503041004	Duplicate			SM 4500-CI-E	WCAt/2075
T1503041005	TH-76			SM 4500-CI-E	WCAt/2075
T1503041006	TH-77			SM 4500-CI-E	WCAt/2075
T1503041004	Duplicate			EPA 350.1	WCAt/2082
T1503041005	TH-76			EPA 350.1	WCAt/2082
T1503041006	TH-77			EPA 350.1	WCAt/2082
T1503041001	Field Blank	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041002	TH-78	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041003	TH-72	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041004	Duplicate	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041005	TH-76	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041006	TH-77	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041002	TH-78	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041003	TH-72	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041005	TH-76	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041006	TH-77	Field Measurements	FLDt/	Field Measurements	FLDt/

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JTSBOM

<sup>5</sup>JTSOBM

**Matrix Code:** WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge      **Preservation Code:** I = ice H = (HCl) S = (H<sub>2</sub>SO<sub>4</sub>) N = (HNO<sub>3</sub>) T = (Sodium Thiosulfate)

Yes    No    Temp taken from sample    Temp from blank

Where required, pH checked      Temperature when received 1 (in degrees celcius)

Form revised 09/19/2012

Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 8A G: LT-1 LT-2 T: 10A A: 3A M: 1A S: 1V

	Relinquished by:	Date	Time	Received by:	Date	Time
1	<i>Taylor</i>	3/4/15	1513	<i>Mica</i>	3/4/15	1515
2						
3						
4						

<b>FOR DRINKING WATER USE</b> (Where PWS Information not otherwise supplied)	
<b>PWS ID:</b>	
Contact Person:	Phone:
Supplier of Water:	
Site-Address:	



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  - Gainesville:** 4985 SW 41st Blvd. • Gainesville, FL 32608 • 352.377.2349 • Fax 352.395.6639
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  - Tallahassee:** 1288 Cedar Center Drive, Tallahassee, FL 32301 • 850.219.6274 • Fax 850.219.6275
  - Tampa:** 9610 Princess Palm Ave. • Tampa, FL 33619 • 813.630.9618 • Fax 813.630.4327

1150724

**Matrix Code:** WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge

Preservation Code: I = ice, H = (HCl), S = (H<sub>2</sub>SO<sub>4</sub>), N = (HNO<sub>3</sub>), T = (Sodium Thiosulfate)

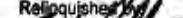
Received on ice  Yes  No  Temp taken from sample  Temp from blank

Where required, pH checked

Temperature when received 55° (in degrees celsius)

Form revised 09/18/2012

Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 9A G: LT-1 I: T-2 T: 1DA A: 3A M: 1A S: 1V

	Relinquisher by:	Date	Time	Received by:	Date	Time
1		3/5/15	1435		3/5/15	1435
2						
3						
4						

**FOR DRINKING WATER USE** (When PWS Information not otherwise supplied)

PWS ID:

**Contact Person:**

Phone:

Supplier of Water

**Site-Address:**

**Form FD 9000-24**

**GROUNDWATER SAMPLING LOG**

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:  $\pm 0.2^\circ\text{C}$  Specific Conductance:  $\pm 5\%$  Dissolved Oxygen: all readings  $\leq 20\%$  saturation (selectable optionally  $\pm 0.2\text{ mg/l}$  or  $\pm 10\%$  (whichever is greater)) Turbidity: all readings  $< 20\text{ NTU}$ ; optionally  $\pm 5\text{ NTU}$  or  $\pm 10\%$  (whichever is greater)

optionally,  $\pm 0.2 \text{ mg/L}$  or  $\pm 10\%$  (whichever is greater). **Turbidity:** all readings  $\leq 20 \text{ NTU}$ ; optionally  $\pm 5 \text{ NTU}$  or  $\pm 10\%$  (whichever is greater)

Revision Date: February 2009

**Form FD 9000-24**  
**GROUNDWATER SAMPLING LOG**

SITE NAME:	SELF IAMP	SITE LOCATION:	Lithia, Florida
WELL NO:	TH-78	SAMPLE ID:	TH-78 DATE: 3/4/15

## PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.5	WELL SCREEN INTERVAL DEPTH: 163.14 feet to 178.14 feet	STATIC DEPTH TO WATER (feet): 75.16	PURGE PUMP TYPE OR BAILER: DBP
------------------------------	----------------------------------	---	--	-----------------------------------

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

$$= (178.14 \text{ feet} - 75.16 \text{ feet}) \times .16 \text{ gallons/foot} = 16.48 \text{ gallons}$$

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): 177.14 FINAL PUMP OR TUBING DEPTH IN WELL (feet): 177.14 PURGING INITIATED AT: 10:33 PURGING ENDED AT: 11:33 TOTAL VOLUME PURGED (gallons): 34.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. µS/cm	DISSOLVED OXYGEN mg/L	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:06	16.5	16.5	.50	75.18	8.49	23.41	597	.51	.60	NONE	None
11:15	4.5	21.0	.50	75.18	8.38	23.46	600	.51	.86		
11:24	4.5	25.5	.50	75.18	8.28	23.46	604	.47	.77		
11:33	4.5	30.0	.50	75.18	8.23	23.50	605	.46	.62		

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

SEE C.O.C. FOR SAMPLE ANALYSIS

DBP =Dedicated Bladder Pump

**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.

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 ES 2212, SECTION 3)

**pH:**  $\pm 0.2$  units    **Temperature:**  $\pm 0.2^\circ\text{C}$     **Specific Conductance:**  $\pm 5\%$     **Dissolved Oxygen:** all readings  $\leq 20\%$  saturation (see Table FS 2200-2); optionally,  $\pm 0.2\text{ mg/L}$  or  $\pm 10\%$  (whichever is greater). **Turbidity:** all readings  $< 20\text{ NTU}$ ; optionally,  $\pm 5\text{ NTU}$  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: SELF IAMP				SITE LOCATION: Lithia, Florida							
WELL NO: TH-72		SAMPLE ID: TH-72				DATE: 3/4/15					
<b>PURGING DATA</b>											
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.5	WELL SCREEN INTERVAL DEPTH: 180 feet to 190 feet		STATIC DEPTH TO WATER (feet): 93.21		PURGE PUMP TYPE OR BAILER: DBP					
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
= ( 190 feet - 93.21 feet ) X .16 gallons/foot = 15.49 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): 189		FINAL PUMP OR TUBING DEPTH IN WELL (feet): 189		PURGING INITIATED AT: 12:06		PURGING ENDED AT: 12:53		TOTAL VOLUME PURGED (gallons): 25.5			
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. μS/cm	DISSOLVED OXYGEN mg/L	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:37	15.50	15.50	.50	93.21	6.89	23.63	2484	.50	1.06	none	none
12:45	4.0	19.50	.50	93.21	6.79	23.49	2487	.54	.84	↓	↓
12:53	4.0	23.50	.50	93.21	6.87	23.50	2486	.57	.66	↓	↓

## SAMPLING DATA

SEE C.O.C. FOR SAMPLE ANALYSIS

**DBP =Dedicated Bladder Pump**

**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.

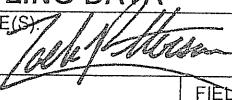
**2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE ES 2212 SECTION 3)**

pH:  $\pm 0.2$  units Temperature:  $\pm 0.2^\circ\text{C}$  Specific Conductance:  $\pm 5\%$  Dissolved Oxygen: all readings  $\leq 20\%$  saturation (see Table FS 2200-2); optionally  $\pm 0.2\text{ mg/L}$  or  $\pm 10\%$  (whichever is greater). Turbidity: all readings  $< 20\text{ NTU}$ ; optionally  $\pm 5\text{ NTU}$  or  $\pm 10\%$  (whichever is greater).

Revision Date: February 2009

Form FD 9000-24  
GROUNDWATER SAMPLING LOG

SITE NAME: <b>SELF JAMP</b>		SITE LOCATION:									
WELL NO: <b>Duplicate</b>	SAMPLE ID: <b>Duplicate</b>	DATE: <b>3/5/15</b>									
<b>PURGING DATA</b>											
WELL DIAMETER (inches): <b>N/A</b>	TUBING DIAMETER (inches): <b>N/A</b>	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): <b>N/A</b>								
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/foot = 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): <b>N/A</b>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <b>N/A</b>	PURGING INITIATED AT: <b>N/A</b>	PURGING ENDED AT: <b>N/A</b>								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos}/\text{cm}$ or $\mu\text{S}/\text{cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUS)	COLOR (describe)	ODOR (describe)
DUPLICATE											
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)											

SAMPLED BY (PRINT) / AFFILIATION: ANDREW BALLOON / ZACK PATTERSON			SAMPLER(S) SIGNATURE(S): 			SAMPLING INITIATED AT: <b>N/A</b>	SAMPLING ENDED AT: <b>N/A</b>	
PUMP OR TUBING DEPTH IN WELL (feet): <b>N/A</b>			TUBING MATERIAL CODE: <b>T</b>			FIELD-FILTERED: <b>Y</b> <input checked="" type="radio"/> <b>N</b> <input type="radio"/> Filtration Equipment Type:	FILTER SIZE: _____ $\mu\text{m}$	
FIELD DECONTAMINATION: PUMP <b>Y</b> <input checked="" type="radio"/> <b>N</b> Dedicated TUBING <b>Y</b> <input checked="" type="radio"/> <b>N</b> Dedicated						DUPLICATE: <b>Y</b> <input checked="" type="radio"/> <b>N</b>		
SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)			

**SEE COC FOR ANALYSIS**

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

Revision Date: February 2009

**Form FD 9000-24**

**GROUNDWATER SAMPLING LOG**

SITE NAME: SELF IAMP				SITE LOCATION: Lithia, Florida							
WELL NO: TH-76		SAMPLE ID: TH-76		DATE: 3/5/15							
PURGING DATA											
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.5	WELL SCREEN INTERVAL DEPTH: 163.35 feet to 178.35 feet			STATIC DEPTH TO WATER (feet): 73.48	PURGE PUMP TYPE OR BAILER: DBP					
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
$= (178.35 \text{ feet} - 73.48 \text{ feet}) \times .16 \text{ gallons/foot} = 16.80 \text{ gallons}$											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)											
$= \text{gallons} + (\text{gallons/foot} \times \text{feet}) + \text{gallons} = \text{gallons}$											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 177.35		FINAL PUMP OR TUBING DEPTH IN WELL (feet): 177.35		PURGING INITIATED AT: 11:00		PURGING ENDED AT: 11:52	TOTAL VOLUME PURGED (gallons): 26				
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. μS/cm	DISSOLVED OXYGEN mg/L	TURBIDITY (NTUS)	COLOR (describe)	ODOR (describe)
11:34	17.0	17.0	.50	74.23 7.58	22.97	500	.40	.32	.32	NONE	NONE
11:43	4.5	21.5	.50	74.24 7.57	22.91	500	.40	1.01	1.01	↓	↓
11:52	4.5	26	.50	74.24 7.58	22.99	500	.39	.68	.68		
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: ANDREW BALLOON / ZACK PATTERSON				SAMPLER(S) SIGNATURE(S) 				SAMPLING INITIATED AT: 11:52		SAMPLING ENDED AT: 11:58	
PUMP OR TUBING DEPTH IN WELL (feet): 177.35				TUBING MATERIAL CODE: T		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Filtration Equipment Type:		FILTER SIZE: _____ μm			
FIELD DECONTAMINATION: PUMP Y N <input checked="" type="checkbox"/> Dedicated				TUBING Y N <input checked="" type="checkbox"/> Dedicated		DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>					
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
SEE C.O.C. FOR SAMPLE ANALYSIS DBP = Dedicated bladder pump											
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)**

100% Dose-Response Curves at 50% Dose and 100% saturation (a)

pH:  $\pm$  0.2 units Temperature:  $\pm$  0.2 °C Specific Conductance:  $\pm$  5% Dissolved Oxygen: all readings  $\leq$  20% saturation (s)

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

Form FD 9000-24

**GROUNDWATER SAMPLING LOG**

SITE NAME:	SELF IAMP			SITE LOCATION:	Lithia, Florida						
WELL NO:	TH-77		SAMPLE ID:	TH-77			DATE: 3/5/15				
<b>PURGING DATA</b>											
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.5	WELL SCREEN INTERVAL DEPTH: 154.2 feet to 169.2 feet			STATIC DEPTH TO WATER (feet): 81.90		PURGE PUMP TYPE OR BAILER: DBP				
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
$= (169.2 \text{ feet} - 81.90 \text{ feet}) \times .16 \text{ gallons/foot} = \text{gallons } 13.97$											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY (only fill out if applicable) $X \text{ TUBING LENGTH}) + \text{FLOW CELL VOLUME}$											
$= \text{gallons} + (\text{gallons/foot} \times \text{feet}) + \text{gallons} = \text{gallons}$											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 168.2		FINAL PUMP OR TUBING DEPTH IN WELL (feet): 168.2			PURGING INITIATED AT: 9:55		PURGING ENDED AT: 10:37		TOTAL VOLUME PURGED (gallons): 21		
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. μS/cm	DISSOLVED OXYGEN mg/L	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:23	14.00	14.00	.50	82.08	7.55	23.50	489	.50	.61	none	none
10:30	3.5	17.5	.50	82.08	7.55	23.53	489	.50	.68		
10:37	3.5	21.0	.50	82.08	7.56	23.52	490	.49	.63	↓	↓
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)											

SEE C.O.C. FOR SAMPLE ANALYSIS

DBP= Dedicated bladder pump

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, Pump).

**OTES:** 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 + 5 NTU or + 10% (whichever is greater).

Revision Date: February 2009