

The Underline - Segment 6

BUILD Grant FY 2018

Appendix N

**Underline Limited Groundwater
Assessment**



LIMITED GROUNDWATER ASSESSMENT REPORT

THE BRICKELL BACKYARD OF THE UNDERLINE

Miami River to SW 13th Street along US-1
Miami, Florida

PREPARED FOR:

**MIAMI-DADE COUNTY DEPARTMENT OF
REGULATORY AND ECONOMIC RESOURCES,
DIVISION OF ENVIRONMENTAL RESOURCES MANAGEMENT (DERM)**

701 N.W. 1st Court; 4th Floor
Miami, FL 33136

PREPARED BY:

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.

5845 N.W. 158th Street
Miami Lakes, Florida 33014

Amec Foster Wheeler Project Number 6783-17-2970.02

February 28, 2018



February 28, 2018

Ms. Julie Balogh
**MIAMI-DADE COUNTY DEPARTMENT OF
REGULATORY AND ECONOMIC RESOURCES,
DIVISION OF ENVIRONMENTAL RESOURCES MANAGEMENT (DERM)**
701 N.W. 1st Court; 4th Floor
Miami, FL 33136

Subject: **LIMITED GROUNDWATER ASSESSMENT REPORT
BRICKELL BACKYARD AREA OF THE UNDERLINE**
Miami River to SW 13th Street along US-1, Miami, Florida
Amec Foster Wheeler Project Number 6783-17-2970.02

Dear Ms. Balogh:

Based on the results of the July 21, 2017 Limited Phase II Environmental Site Assessment (ESA) for the Underline Brickell Backyard project area, Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) on behalf of the Miami-Dade County Department of Transportation and Public Works (DTPW) and Division of Environmental Resources Management (DERM) has completed an assessment of the groundwater located within the aforementioned project site. This Limited Groundwater Assessment was performed in accordance with email communications between DERM and Amec Foster Wheeler as well as our final proposal dated February 7, 2018.

BACKGROUND

In June 2017, Amec Foster Wheeler performed a Limited Phase II ESA to evaluate soils within construction areas of the site that may have been impacted by adjacent and surrounding properties. As noted in the Phase I ESA the historical business practices in the area included the operation of dry cleaners as well as various commercial/industrial sites that could have led to the petroleum contamination of either the groundwater or soil. Amec Foster Wheeler personnel from June 14, 2017 thru June 27, 2017 installed twenty five soil borings (SB-1 through SB-25) along the Underline within the Miami-Dade Metrorail right-of-way. Of the 25 soil borings, 7 soil borings (SB-1 through SB-7) were installed in the Brickell Backyard area. The soil analytical results showed arsenic, lead and Benzo(a)pyrene concentrations exceeding the cleanup target levels.

Amec Foster Wheeler E&I, Inc.
5845 N.W. 158th Street
Miami Lakes, Florida 33014
Tel (305) 826-5588
Fax (305) 826-1799

www.amecfw.com



The initial Underline development will occur within the area referred to as the Brickell Backyard which is bounded to the west by SW 1st Court and east by SW 1st Ave. The approximate southern boundary is SW 13th Street and the approximate northern boundary is Miami River. This groundwater assessment was performed within the boundaries of the Brickell Backyard project area.

GROUNDWATER SAMPLING

Amec Foster Wheeler on January 31, 2018 installed eight temporary pre-packed one-inch diameter shallow monitoring wells in the proposed exfiltration trench areas of the Brickell Backyard project area using a Geoprobe Direct Push Technology. The well locations were selected based on the 90% construction drawings provided to Amec Foster Wheeler. Prior to the well installation, underground utilities were located using the services of subcontractor, Ground Penetrating Radar Services (GPRS). The temporary monitoring wells (TMW-1, TMW-2, TMW-2A, TMW-3, TWM-3A, TMW-4, TWM-5, and TMW-6) were installed using one-inch pre-packed well screen and a solid riser. Temporary monitoring wells TMW-1, TMW-2, TMW-5, and TMW-6 were finished with PVC stickups attached to the risers whereas, TMW-3, TMW-3A, and TMW-4 were completed flush with the ground due to their proximity to highly traffic areas. The monitoring wells, TMW-3 and TMW-3A located in the street were finished with traffic bearing flush mounted manhole covers and TWM-4 located in a landscaped area by the Bus shelter was completed flush to the surface without a stickup and covered with sand. TMW-4 was relocated from the original proposed location in the paved area due to hard layer of concrete encountered. The new location (TMW-4) is approximately 20 feet away from the proposed original location near the proposed drainage well. We also performed second round of utility clearance using GPRS due to the relocation of TMW-4. Copies of the soil boring logs developed during the installation of the eight temporary monitoring wells are provided as **Attachment A**.

A site plan of the temporary well locations is provided as **Figures 1 through 5**. Even though temporary monitoring wells TMW-3 and TMW-3A were finished with manhole covers, each of the 8 total monitoring wells are considered to be temporary and as such, well permits were not obtained. Amec Foster Wheeler on February 2, 2018 and February 8, 2018 collected groundwater samples using low-flow/low-volume sampling technique for analysis.

Groundwater sampling was performed pursuant to the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for Field Activities. Prior to sampling, the monitoring wells were purged with a low flow peristaltic pump until the required parameters (pH, temperature, specific conductance, turbidity and dissolved oxygen) had stabilized. Copies of the groundwater sampling logs are presented in **Attachment B** and the associated calibration logs for the monitoring instruments are presented in **Attachment C**. The samples were collected from the appropriate interval of the water column, transferred to the appropriate sample containers, sealed and immediately stored in an ice-filled cooler and delivered under chain-of-custody to Pace



Analytical Services LLC, a State of Florida certified laboratory. All samples with the exception of Dioxins were analyzed with 48 hours. The analysis of dioxins was also expedited and completed within one week of their submittal. Samples collected from temporary monitoring wells TMW-1, TMW-2, TMW-3, TMW-3A, TMW-4, TMW-5 for analysis of arsenic and lead by only EPA Method 6010B. Groundwater samples collected from TMW-6 were analyzed for the following:

Test Method	Analysis
EPA Test Method 8082	polychlorinated biphenyl (PCBs)
EPA Test Method 6010	Aluminum, Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Selenium, Silver,
EPA Test Method 7470	Mercury
EPA 8270 SIM	Polycyclic Aromatic Hydrocarbons (PAHs)
EPA 1613	Dioxins

List of parameter analyzed from groundwater samples collected from TMW-6

Once it has been determined that no additional samples need to be collected as part of the Limited Groundwater Assessment, the well material will be removed and the borehole will be filled with sand. The drill cuttings and purge water was stored in 55-gallon steel drums and left on-site for disposal. The assessment generated one drum of soil and two drums of purge water.

GROUNDWATER ANALYTICAL RESULTS

A summary of the groundwater analytical results are presented in **Tables 1 thru 5**. Groundwater analytical results from the February 2, 2018 sampling event indicate no target concentrations above the applicable FDEP Groundwater Cleanup Target Levels (GCTLs) with the exception of samples collected from temporary monitoring wells TMW-1, TMW-5, and TMW-6.

Arsenic was detected in TMW-1 at a concentration of 14.9 micrograms per liter ($\mu\text{g/l}$) slightly above the FDEP GCTL of 10.0 $\mu\text{g/l}$ and 23.4 $\mu\text{g/l}$ in groundwater sampled from TMW-5. All other samples tested for arsenic and lead were not detected above laboratory method detection limit or GCTL. On February 8, 2018, temporary monitoring wells TMW-1 and TMW-5 were resampled for arsenic to confirm the results. The results from the resampling event indicated similar concentrations as displayed during initial February 2, 2018 assessment. Arsenic was detected in the February 8, 2018 sampling event from TMW-1 at 17.4 $\mu\text{g/l}$ and TMW-5 at 18.3 $\mu\text{g/l}$ above the GCTL.



Parameters analyzed from groundwater samples collected from TMW-6 from the February 2, 2018 sampling event were not detected above the laboratory detectable limit except for the following list of analytes:

Test Method	Analysis	Reported Value (ug/L)	FDEP GCTL Limit
EPA Test Method 6010	Antimony	13.9 I	6
	Barium	18.1	2000
	Copper	3.2 I	1000
	Iron	69.9	300
EPA 8270 SIM	Acenaphthene	0.12 I	20
	Benzo(a)anthracene	0.099 I	0.05
	Chrysene	0.10 I	4.8

List of laboratory detectable parameters for samples collected TMW-6 on February 2, 2018.
 Highlight = FDEP Groundwater Cleanup Target Level (GCTL) Exceedance
 I = Estimated value between the MDL and PQL

The groundwater laboratory analytical results and chain of custody forms are included in **Attachment D**.

CONCLUSIONS

Amec Foster Wheeler on January 31, 2018 installed eight (8) temporary monitoring wells at the proposed Brickell Backyard project site. Groundwater samples collected from the temporary monitoring wells: TMW-1, TMW-2, TMW-2A, TMW-3, TMW-3A, TMW-4, and TWM-5) were analyzed for arsenic and lead and ground water samples collected from TMW-6 were analyzed for PCBs, metals (Aluminum, Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Selenium, Silver, and Mercury), PAH's, and Dioxins.

The groundwater analytical results from the February 2, 2018 sampling event indicated arsenic concentrations above the applicable GCTLs at temporary monitoring wells TMW-1 and TMW-5. All other samples tested for arsenic and lead were not detected above laboratory method detection limit or applicable GCTL. Temporary monitoring wells TMW-1 and TMW-5 were resampled on February 8, 2018 to confirm the observed exceedances. The results for the re-sampling event confirmed the previously displayed arsenic exceedances. The analysis of groundwater samples collected from TMW-6 indicated no FDEP GCTL exceedances with the exception of antimony and PAH parameter benzo(a)anthracene.



Based on these results, installation of permanent monitoring wells and delineation of groundwater plume at the site is recommended.

If you require additional information, please contact Ashok Aitharaju at (305) 818-8478.

Sincerely,

AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.


Jeremy Paris
Senior Scientist


Ashok Aitharaju, PMP
Project Manager

Distributions: Addressee (2 hard copies & emailed)
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P:\Projects\Environmental Projects\2017 Projects\17-2970 DERM-14 Underline Ph IITask 2 SMP, Soil and GW Reports\GW\Report\Underline Groundwater Assessment Report.docx



TABLES

Table 1
 Limited Groundwater Assessment
 The Underline (Brickell Backyard) Project Area
 Arsenic and Lead

Sample		Total Arsenic	Total Lead
Location	Date	(ug/L)	(ug/L)
TMW-1	02/02/2018	14.9	5.0 U
TMW-1	2/8/2018	17.4	NA
TMW-2	02/02/2018	5.0 U	5.0 U
TMW-2A	02/02/2018	5.0 U	5.0 U
TMW-3	02/02/2018	5.0 U	5.0 U
TMW-3A	02/02/2018	5.0 U	5.0 U
TMW-4	02/02/2018	5.0 U	5.0 U
TMW-5	02/02/2018	23.4	5.0 U
TMW-5	2/8/2018	18.3	NA
TMW-6	02/02/2018	5.0 U	5.0 U
GCTLs		10	15
NADCs		100	150

Notes:

NA = Not Available

NS = Not Sampled

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.

NADCs = Natural Attenuation Default Source Concentrations specified in Table I of Chapter 62-777, F.A.C.

Exceeds GCTL Limit

Exceeds NADC Limit

Table 2
 Limited Groundwater Assessment
 The Underline (Brickell Backyard) Project Area
 TMW-6 Metals

Sample		Cadmium	Total Chromium	Aluminum	Antimony	Barium	Copper	Iron	Mercury	Selenium	Silver
Test Method		EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 7470	EPA 6010	EPA 6010
Location	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
TMW-6	02/02/2018	0.50 U	2.5 U	50.0 U	13.9 I	18.1	3.2 I	69.9	0.10 U	7.5 U	2.5 U
GCTLs		5	100	200	6	2000	1000	300	2	50	100
NADCs		50	1000	2000	60	20000	10000	3000	20	500	1000

Notes:

NA = Not Available

Prepared by:

NS = Not Sampled

Checked by:

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.

NADCs = Natural Attenuation Default Source Concentrations specified in Table I of Chapter 62-777, F.A.C.

Exceeds GCTL Limit

Exceeds NADC Limit

Table 3
 Limited Groundwater Assessment
 The Underline (Brickell Backyard) Project Area
 PCB's

Sample		PCB-1016 (Aroclor 1016)	PCB-1221 (Aroclor 1221)	PCB-1232 (Aroclor 1232)	PCB-1242 (Aroclor 1242)	PCB-1248 (Aroclor 1248)	PCB-1254 (Aroclor 1254)	PCB-1260 (Aroclor 1260)
Location	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
TMW-6	02/02/2018	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U
GCTLs		NA	NA	NA	NA	NA	NA	NA
NADCs		NA	NA	NA	NA	NA	NA	NA

Notes:

NA = Not Available

NS = Not Sampled

** = As provided in Chapter 62-550, F.A.C.

Prepared by:

Checked by:

Exceeds GCTL Limit

Exceeds NADC Limit

Table 4
 Limited Groundwater Assessment
 The Underline (Brickell Backyard)
 PAH's

Sample		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo (g,h,i) perylene	Fluoranthene	Fluorene	Phenanthrene	Pyrene	Benzo (a) pyrene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Chrysene	Dibenz (a,h) anthracene	Indeno (1,2,3-cd) pyrene
Location	Date	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
TMW-6	02/02/2018	0.048 U	0.032 U	0.11 U	0.12 I	0.012 U	0.012 U	0.042 U	0.018 U	0.016 U	0.018 U	0.019 U	0.020 U	0.099 I	0.027 U	0.023 U	0.10 I	0.13 U	0.12 U
GCTLs		14	28	28	20	210	2100	210	280	280	210	210	.2**	.05a	.05a	.5	4.8	.005a	.05a
NADCs		140	280	280	200	2100	21000	2100	2800	2800	2100	2100	20	5	5	50	480	.5	5

Notes:

NA = Not Available

NS = Not Sampled

GCTLs = Groundwater Cleanup Target Levels specified in Table I of Chapter 62-777, F.A.C.

NADCs = Natural Attenuation Default Source Concentrations specified in Table I of Chapter 62-777, F.A.C.

** = As provided in Chapter 62-550, F.A.C.

a = See the October 12, 2004 "Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits" to determine how to evaluate data when the CTL is lower than the PQL.

Exceeds GCTL Limit

Exceeds NADC Limit

Prepared by:

Checked by:

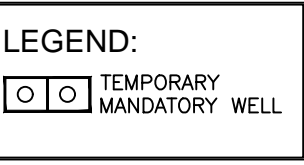
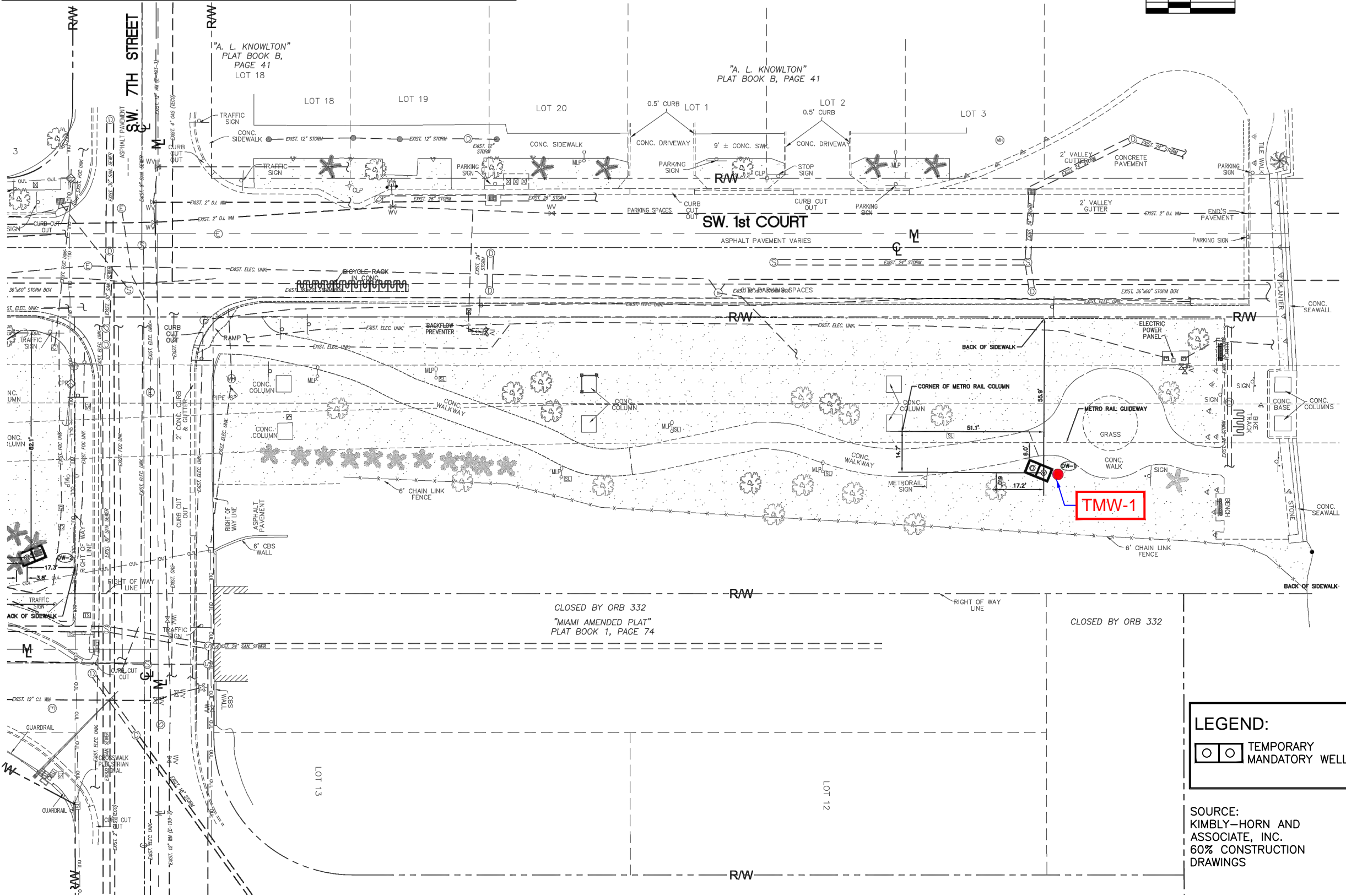
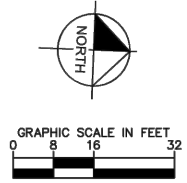
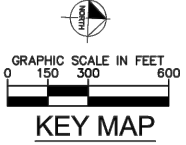
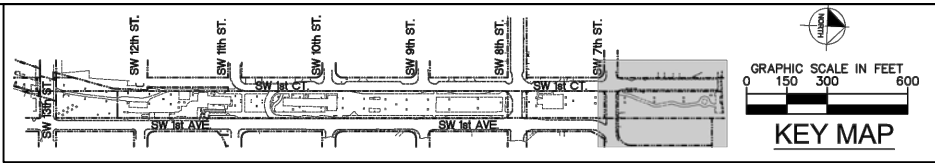
Table 5
Limited Groundwater Assessment
The Underline (Brickell Backyard) Project Area
Method 1613B Dioxin Analysis

Sample ID	Analyte	Result (pg/L)
TMW-6	Total TCDF	2.5 U
TMW-6	Total TCDD	2.1 U
TMW-6	Total PeCDF	0.57 U
TMW-6	Total PeCDD	0.93 U
TMW-6	Total HxCDF	0.60 U
TMW-6	Total HxCDD	1.0 U
TMW-6	Total HpCDF	1.2 U
TMW-6	Total HpCDD	1.3 U

prepared by: JMP
checked by: AA

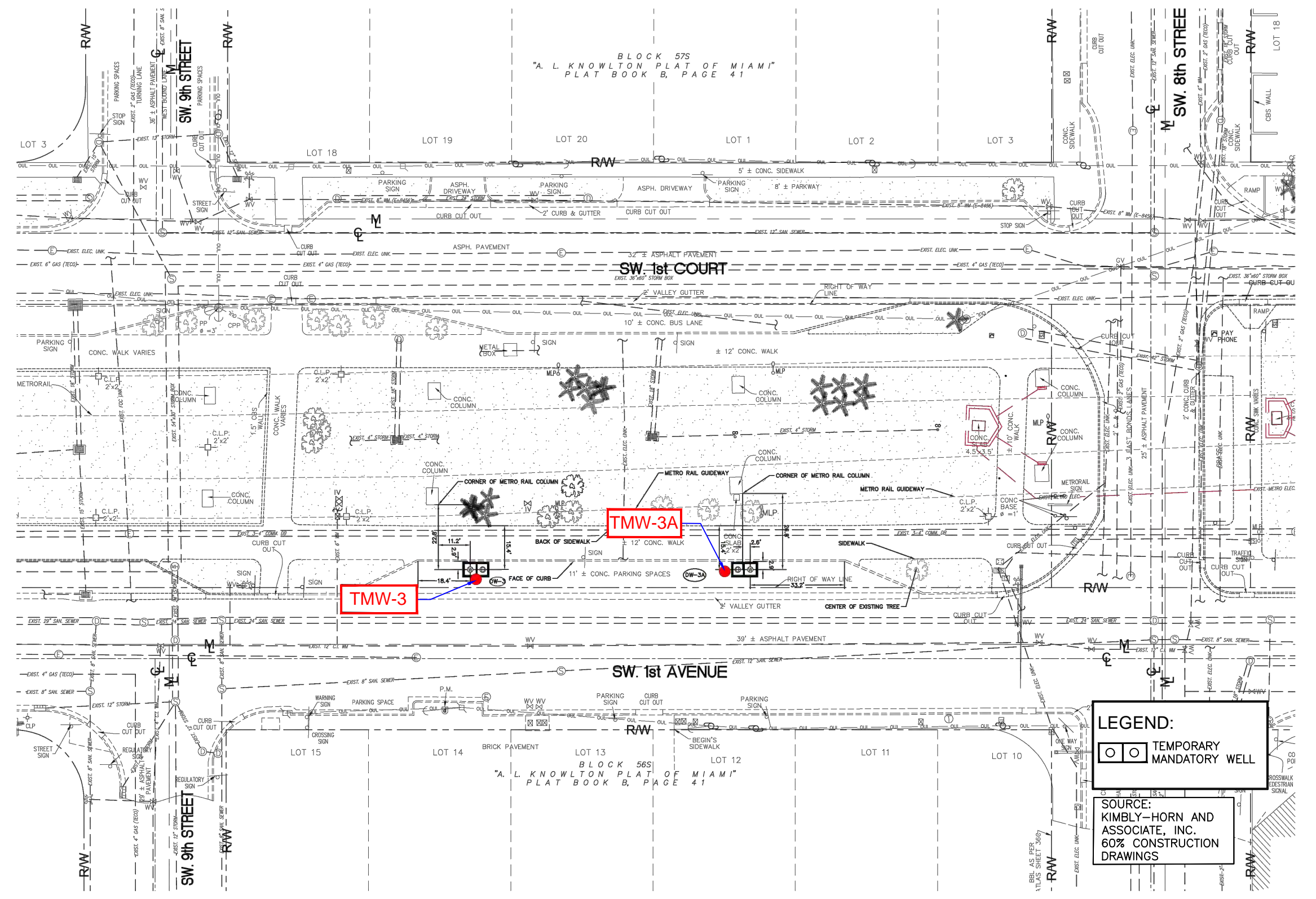
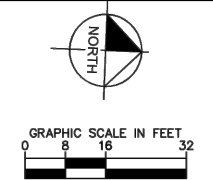
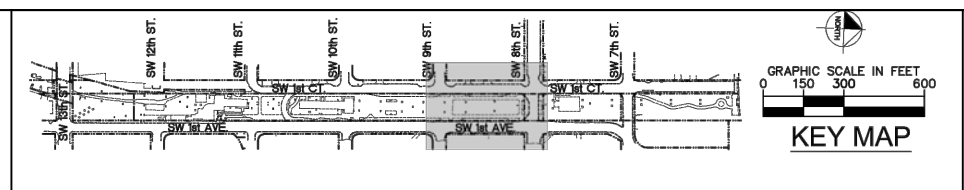


FIGURES



SOURCE:
KIMBLY-HORN AND
ASSOCIATE, INC.
60% CONSTRUCTION
DRAWINGS

 AMEC FOSTER WHEELER 5845 N.W. 158th Street Miami, Florida 33014 Tel: (305) 826-5688 / Fax: (305) 826-1799		APPROVED BY	6783-17-2970.02
		DRAWN BY	G.TRIANA
REVISOR BY	APPROVED BY	FIGURE 1-A N.T.S.	
CHECKED BY	A.A.		
BRICKELL BACKYARD OF THE UNDERLINE		DATE	2/28/18
GROUND WATER SAMPLE LOCATION MAP		SCALE	
CLIENT		REV. NO.	DESCRIPTION
PROJECT		DATE	BY

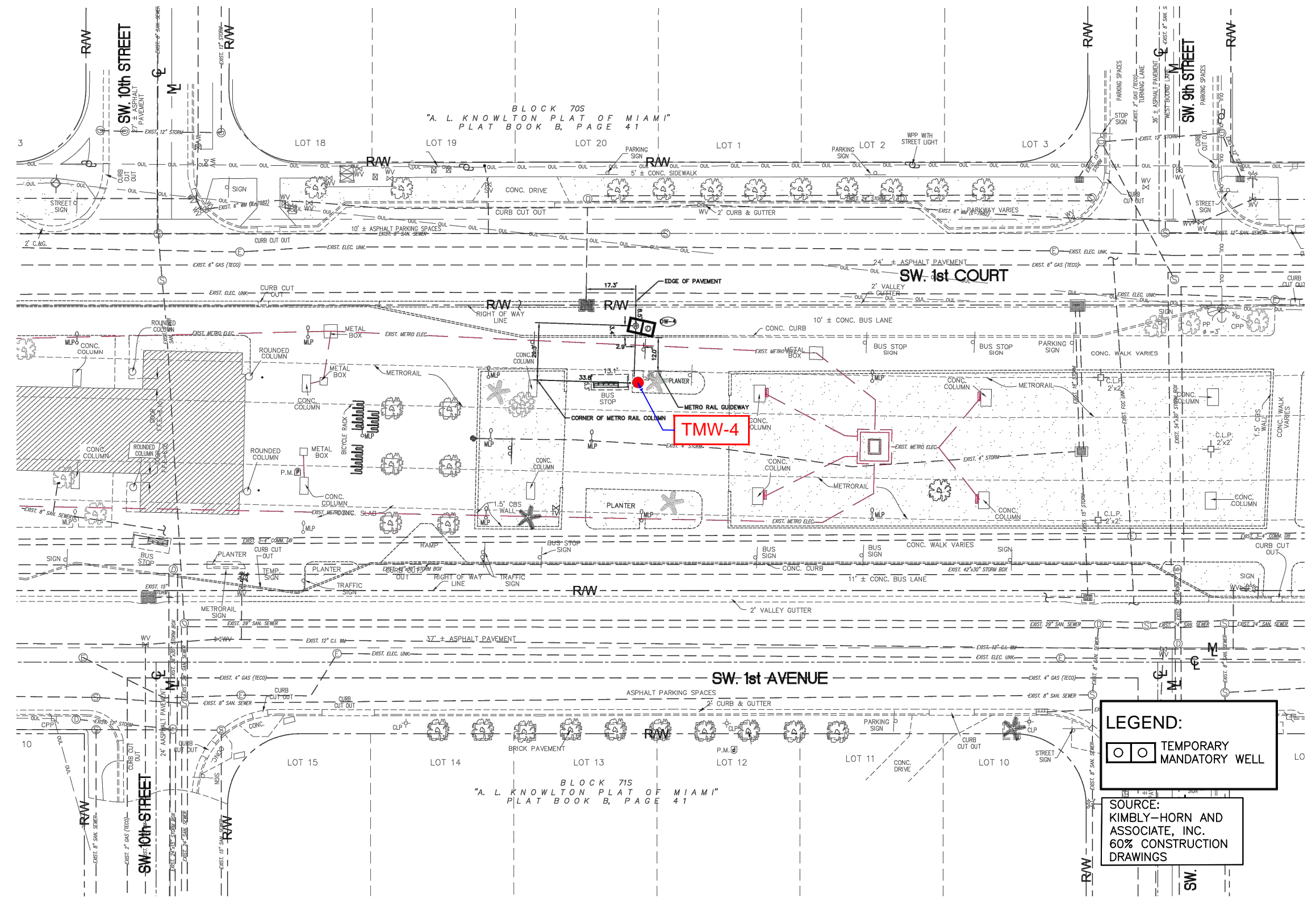
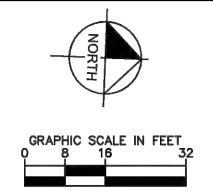
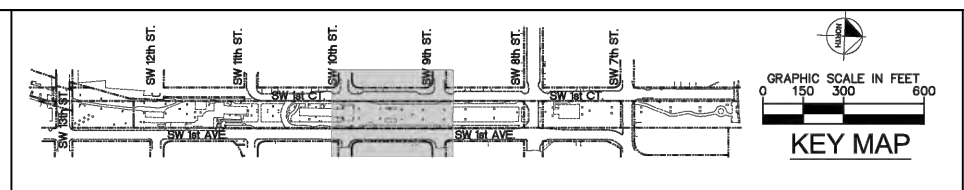


LEGEND:

○ ○ TEMPORARY MANDATORY WELL

SOURCE:
KIMBL-YHORN AND ASSOCIATE, INC.
60% CONSTRUCTION DRAWINGS

 AMEC FOSTER WHEELER 5845 N.W. 158th Street Miami, Florida 33014 Tel: (305) 826-5688 / Fax: (305) 826-1799	APPROVED BY	6783-17-2970.02	FIGURE 1-C
	REVISOR BY	G.TRIANA	
CLIENT	DRAWN BY	G.TRIANA	APPROVED BY
PROJECT	CHECKED BY	A.A.	SCALE
BRICKELL BACKYARD OF THE UNDERLINE GROUND WATER SAMPLE LOCATION MAP	DATE	2/28/18	N.T.S.
	REV. NO.	DATE	BY
DESCRIPTION			



LEGEND:

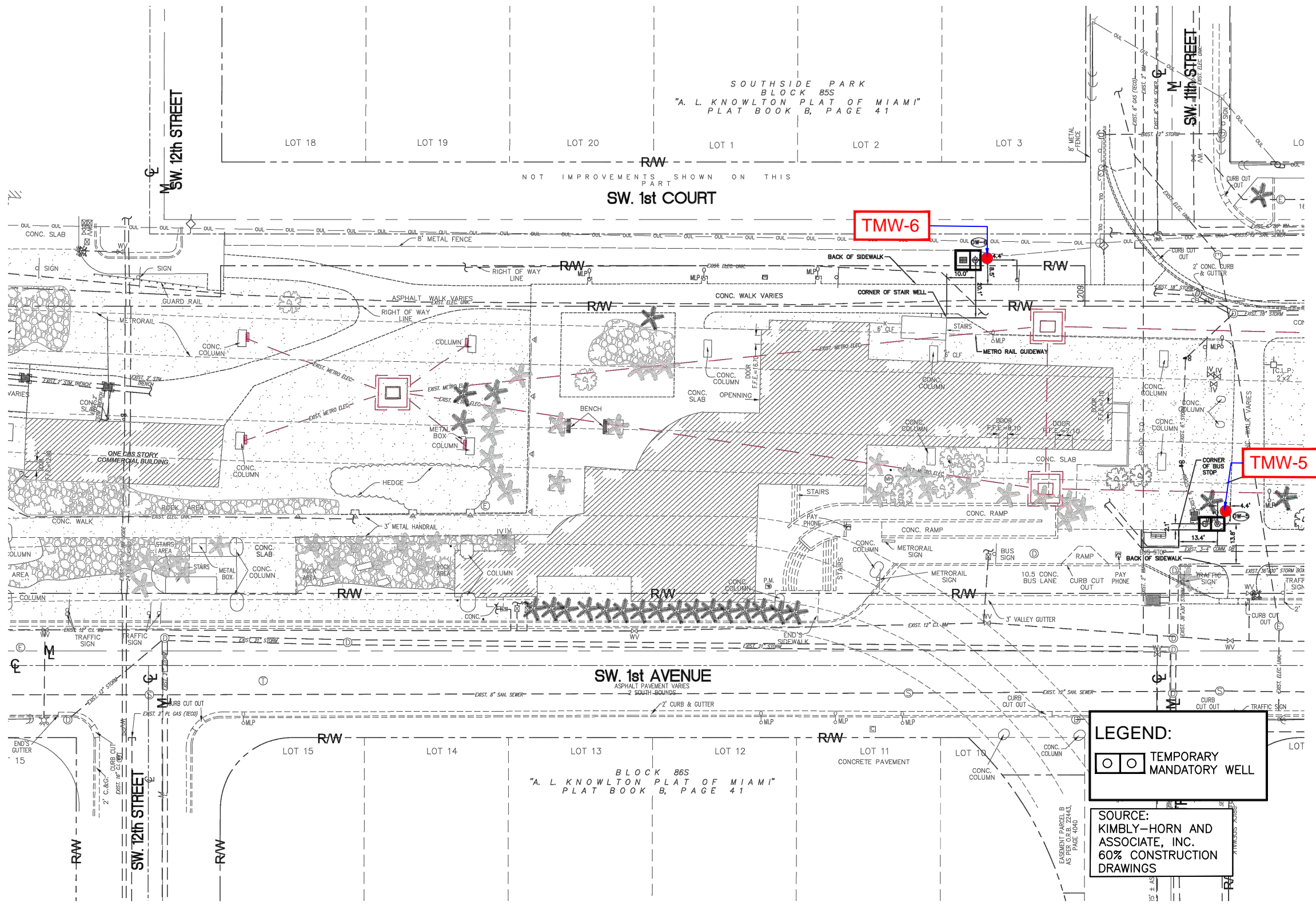
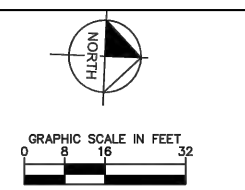
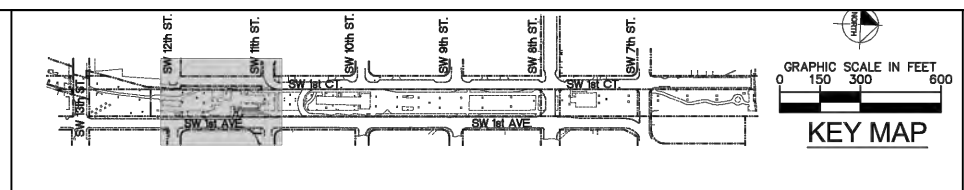
○ ○ TEMPORARY MANDATORY WELL

SOURCE:
KIMBLY-HORN AND ASSOCIATE, INC.
60% CONSTRUCTION DRAWINGS

CLIENT	AMEC FOSTER WHEELER 5845 N.W. 158th Street Miami, Florida 33014 Tel: (305) 826-5688 / Fax: (305) 826-1799		
	APPROVED BY	6783-17-2970.02	
PROJECT	BRICKELL BACKYARD OF THE UNDERLINE		
	DRAWN BY	G. TRIANA	
TITLE	CHECKED BY	A.A.	SCALE
	GROUND WATER SAMPLE LOCATION MAP		2/28/18
REV. NO.	DATE	BY	DESCRIPTION

FIGURE 1-D

N.T.S.



LEGEND:
 ○ ○ TEMPORARY MANDATORY WELL

SOURCE:
 KIMBLY-HORN AND ASSOCIATE, INC.
 60% CONSTRUCTION DRAWINGS

 AMEC FOSTER WHEELER 5845 N.W. 158th Street Miami, Florida 33014 Tel: (305) 826-5688 / Fax: (305) 826-1799	APPROVED BY	6783-17-2970.02	FIGURE 1-E
	REVISOR BY	SHEET NAME	
BRICKELL BACKYARD OF THE UNDERLINE	DRAWN BY	G. TRIANA	SCALE 2/28/18 N.T.S.
	CHECKED BY	A.A.	
GROUND WATER SAMPLE LOCATION MAP	DATE		
CLIENT			
PROJECT			
REV. NO.	DATE	BY	DESCRIPTION



ATTACHMENT A

SOIL BORING LOGS



Boring Log

Boring/Well ID: TMW-1		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 11/31/18	Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
		End Date:	End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAEE		Pavement Thickness (inches): Grass	Borehole Diameter (inches): 3.25	Borehole Depth (feet): 14	
Drilling Method(s): HA/DP	Apparent Borehole DTW (feet) (from soil moisture content): 5.5	Measured Well DTW (in feet after water recharges in well): 6.31		OVA (list model and check type): <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe) stick up					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1		Black, g-s-s (top soil)	GM	
					2		Gray, g-s-s (fill)	GM	M
HA		NA			3		Yellow/tan, limerock fill	GP	D
					4				M
DP	60	NA			5		Dark brown, g-s-s mix	GM	
					6		Whitish/tan, limestone	LS	W
					7				S
DP		NA			8				
					9			LS	S
	60	NA			10				
					11				
		NA			12			LS	

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: <i>TMW-1</i>		Project Name: <i>The Underline</i>			Project Number: <i>6783172970.02</i>		Borehole Start Date: <i>1/31/18</i>		End Date:	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
<i>DP</i> ↓	<i>NA</i>			<i>13</i>		<i>same as above</i>	<i>LS</i>	<i>S</i>		
				<i>14</i>		<i>Boring terminated @ 14'</i>				
				<i>15</i>						
				<i>16</i>						
				<i>17</i>						
				<i>18</i>						
				<i>19</i>						
				<i>20</i>						
				<i>21</i>						
				<i>22</i>						
				<i>23</i>						
				<i>24</i>						
				<i>25</i>						
				<i>26</i>						
				<i>27</i>						
				<i>28</i>						

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-2		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: End Date: 11/31/18		Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAEE		Pavement Thickness (inches): Grass		Borehole Diameter (inches): 3.25	
Drilling Method(s): HA/DP		Apparent Borehole DTW (feet) (from soil moisture content): 6		Borehole Depth (feet): 14	
		Measured Well DTW (in feet after water recharges in well): 6.83		OVA (list mode and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1		Black, g-s-s mix	GM D	
					2		Gray, g-s-s mix sm-large gravel	GM	
HA		NA			3		Tan/white, limerock fill	GP	M
					4		Dark Brown, g-s-s	GM	
DP	60	NA			5		Orange/Lt. Br, limestone	LSM	
					6				W
		NA			7		Whitish/Tan, limestone	LS	S
					8				
DP	60	NA			9				
					10			LS	S
		NA			11		Same as above		
					12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____

Boring Log

Boring/Well ID: <u>TMW-2</u>		Project Name: <u>The Underline</u>			Project Number: <u>6783172970.02</u>		Borehole Start Date: <u>1/31/18</u>		End Date:	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
DP ↓	NA			13		same as above	LS	S		
				14						
				15		Boring terminated @ 14'				
				16						
				17						
				18						
				19						
				20						
				21						
				22						
				23						
				24						
				25						
				26						
				27						
				28						

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-2A		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 1/31/18		Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	
		End Date:		End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAE		Pavement Thickness (inches): Grass		Borehole Diameter (inches): 3.25	
				Borehole Depth (feet): 14	
Drilling Method(s): HA/DP		Apparent Borehole DTW (feet) (from soil moisture content): 6.5		Measured Well DTW (in feet after water recharges in well): 6.97	
				OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1	Black, g-s-s mix (top soil)	GM	D
						Gray, g-s-s mix, sm-large gravel	GM	
					2			M
HA		NA			3	Orange/Brown, limerock fill	GP	
					4	Dark Brown, g-s-s mix	GM	M
DP	60	NA			5	Orange/Lt. Br, limestone	LS	
					6			W
		NA			7	Tan/Whitish, limestone	LS	S
					8			
DP	60	NA			9			
					10		LS	S
		NA			11	Same as above		
					12			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____

Boring Log

Boring/Well ID: TMW-2A		Project Name: The Underline			Project Number: 0783172970.02		Borehole Start Date: 1/31/18		End Date:	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
DP ↓	NA			13		same as above	LS	S		
				14						
				15						
				16						
				17						
				18						
				19						
				20						
				21						
				22						
				23						
				24						
				25						
				26						
				27						
				28						

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____

Boring/Well ID: TMW-3		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 1/31/18	Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	End Date:	End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAEE		Pavement Thickness (inches): 12	Borehole Diameter (inches): 3.25	Borehole Depth (feet): 14	
Drilling Method(s): HA/DP	Apparent Borehole DTW (feet) (from soil moisture content): 6.5	Measured Well DTW (in feet after water recharges in well): 3.21	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1	Concrete		
					2	Gray, gravel-sand-silt mix (fill)	GM	D
HA		NA			3	Light Brown/Orange, g-ss mix	GM	M
					4	Brown, medium sand Lt. Brown/Tan, limestone	SP LS	M
DP	SS	NA			5			W
					6	Whitish/Tan, limestone	LS	S
		NA			7			
					8			
DP	↓	NA			9			
	GO				10	same as above	LS	S
	↓	NA			11			
					12			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



amec
foster
wheeler

Boring Log

Boring/Well ID: TMW-3		Project Name: The Underline			Project Number: 678317-2970.02		Borehole Start Date: 1/31/18		End Date:	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
DP ↓	NA			13		same as above	LS	S		
				14						
				15		Boring terminated @ 14' Pulled well up to 12'				
				16						
				17						
				18						
				19						
				20						
				21						
				22						
				23						
				24						
				25						
				26						
				27						
				28						

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-03A		Project Name: The Underline - Brickell Backyard Area		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 1/31/18	Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
		End Date:	End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAE		Pavement Thickness (inches): Concrete 6	Borehole Diameter (inches): 3.25	Borehole Depth (feet): 15	
Drilling Method(s): HA/DP		Apparent Borehole DTW (feet) (from soil moisture content): 6	Measured Well DTW (in feet after water recharges in well): 4.31	OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1		Concrete		
					2		Gray, gravel-sand-silt mix (fill)	GM	D
					2		Brown, g-s-s mix sm-large gravel	GM	
					3		Brown/gray, medium sand	SP	M
HA		NA			3		Orange/Brown, medium sand + fractured limestone gravel	GP	M
					4		Tan/whitish, limestone	LS	
DP	ST	NA			5				W
					6				S
		NA			7				
					8		Same as above	LS	
DP	↓	NA			9				S
	59				10				
	↓	NA			11		Same as above	LS	S
					12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____

Boring Log

Boring/Well ID:		Project Name:			Project Number:		Borehole Start Date:	
TMW 3A		The Underline			6783172990.02		End Date: 4/31/18	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
DP ↓	NA			13		Same as above	LS	
				14			S	
	NA			15			LS	
				16		1" Well installed Boring terminated @ 15' Well pulled up to 14'		
				17				
				18				
				19				
				20				
				21				
				22				
				23				
				24				
				25				
				26				
				27				
				28				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-4		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 2/1/18	Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
		End Date: 2/1/18	End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAE		Pavement Thickness (inches): Grass	Borehole Diameter (inches): 3.25	Borehole Depth (feet): 14	
Drilling Method(s): HA/DP	Apparent Borehole DTW (feet) (from soil moisture content): 5	Measured Well DTW (in feet after water recharges in well): 4.38		OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1	Dark brown, g-s-s mix	GM	
HA		NA			2	Gray, g-s-s med-large gravel	GM	
					3	trash debris, pieces of metal, tie downs		
					4			W
DP	52	NA			5	Tan/whitish limestone	LS	S
					6			
		NA			7			
					8			
DP	60	NA			9	Same as above	LS	S
					10			
		NA			11			S
					12			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-4		Project Name: The Underline			Project Number: 678317297002		Borehole Start Date: 2/1/18		End Date:	
Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
DP ↓	NA			13		same as above	LS	S		
				14						
				15		Boring terminated @ 14' Well pulled up to 12'				
				16						
				17						
				18						
				19						
				20						
				21						
				22						
				23						
				24						
				25						
				26						
				27						
				28						

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TMW-5		Project Name: The Underline		Project Number: 6783172970.02	
Logged By: Mark Kearns		Borehole Start Date: 2/1/15	Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
		End Date:	End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr		
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAE		Pavement Thickness (inches): Grass	Borehole Diameter (inches): 3.25	Borehole Depth (feet): 14	
Drilling Method(s): HA/DP	Apparent Borehole DTW (feet) (from soil moisture content): 4.5	Measured Well DTW (in feet after water recharges in well): 5.18		OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1		Dark Brown, g-s-s mix, SM-med. gravel	GM	D
					2		Gray, g-s-s mix Yellowish/Orange, g-s-s mix, med-large limestone gravel	GM	M
HA		NA			3				M
					4				W
DP		NA			5		Yellowish/tan, limestone	LS	S
					6				
		NA			7				
					8		Whitish/Tan, limestone	LS	S
DP		NA			9				
					10				
		NA			11			LS	S
					12				

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



amec
foster
wheeler

Boring Log

Boring/Well ID: TMW-5		Project Name: The Underline			Project Number: 6783172970.02		Borehole Start Date: 2/1/18		End Date: 2/1/18	
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
DP	↓	NA			13	same as above	LS	S		
					14					
					15	Boring terminated @ 14' Well pulled up to 12'				
					16					
					17					
					18					
					19					
					20					
					21					
					22					
					23					
					24					
					25					
					26					
					27					
					28					

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



Boring Log

Boring/Well ID: TW-6		Project Name: The Underline		Project Number: 6783-17-2970.02	
Logged By: Mark Kearns		Borehole Start Date: 2/1/18		Borehole Start Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	
		End Date:		End Time: <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 24hr	
Operator: Carl		Permit Number:		FDEP Facility Identification Number:	
Drilling Company: JAEE		Pavement Thickness (inches): Grass		Borehole Diameter (inches): 3.25	
				Borehole Depth (feet): 19	
Drilling Method(s): HA/DP		Apparent Borehole DTW (feet) (from soil moisture content): 12		Measured Well DTW (in feet after water recharges in well): 11.21	
				OVA (list model and check type): NA <input type="checkbox"/> FID <input type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input checked="" type="checkbox"/> Drum <input type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
HA		NA			1		^{DATE} Brown, g-s-s mix, sm-med gravel	GM	D
					2		Yellowish/Light brown, limerock fill	GM	
					3		fin-med sand w/sm-large gravel		
HA		NA			4				D
DP	60	NA			5		same as above	GM	M
					6				
		NA			7				M
					8				
DP	57	NA			9		Whitish/Tan, limestone	LS	M
					10				AW W
		NA			11			LS	W
					12				S

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____

Boring Log

Boring/Well ID: <u>TMW-6</u>		Project Name: <u>The Underline</u>			Project Number: <u>6783172970.02</u>		Borehole Start Date: <u>2/1/18</u>		End Date: <u>2/1/18</u>	
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content		
<u>DP</u>	<u>↓</u>	<u>NA</u>			<u>13</u>					
	<u>↓</u>				<u>14</u>				<u>S</u>	
	<u>60</u>	<u>NA</u>			<u>15</u>					
<u>DP</u>	<u>↓</u>				<u>16</u>	<u>Same as above</u>				
	<u>↓</u>	<u>NA</u>			<u>17</u>				<u>S</u>	
	<u>↓</u>	<u>NA</u>			<u>18</u>					
	<u>↓</u>	<u>NA</u>			<u>19</u>					
						<u>Boring terminated @ 19'</u>				
					<u>20</u>					
					<u>21</u>					
					<u>22</u>					
					<u>23</u>					
					<u>24</u>					
					<u>25</u>					
					<u>26</u>					
					<u>27</u>					
					<u>28</u>					

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

Checked By: _____



ATTACHMENT B

GROUNDWATER SAMPLING LOGS

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-1</u>	SAMPLE ID: <u>TMW-1</u> DATE: <u>2/2/18</u>

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>4</u> feet to <u>14</u> feet	STATIC DEPTH TO WATER (feet): <u>5.09</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>14</u> feet - <u>5.09</u> feet) X <u>0.04</u> gallons/foot = <u>0.4</u> 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): <u>6</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	PURGING INITIATED AT: <u>1200</u>	PURGING ENDED AT: <u>1210</u>	TOTAL VOLUME PURGED (gallons): <u>1.3</u>
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1204	0.5	0.5	0.13	5.11	7.44	24.0	23716	9.1	18.4	Clear	None
1207	0.4	0.9	0.13	5.11	7.45	23.9	23783	7.2	14.9	Clear	None
1210	0.4	1.3	0.13	5.11	7.45	24.0	23385	6.8	9.6	Clear	None

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: <u>Mark Kearns / AmelFW</u>	SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>	SAMPLING INITIATED AT: <u>1211</u>	SAMPLING ENDED AT: <u>1213</u>
PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	TUBING MATERIAL CODE: <u>HDPE</u>	FIELD-FILTERED: Y <u>(N)</u> Filtration Equipment Type: _____	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>	TUBING Y <u>(N (replaced))</u>	DUPLICATE: Y <u>(N)</u>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
TMW-1	1	PP	250ml	HNO3	—	—	As, Pb 6010	APP	125

REMARKS: _____

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-2</u>	SAMPLE ID: <u>TMW-2</u>
DATE: <u>2/2/18</u>	

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>4</u> feet to <u>14</u> feet	STATIC DEPTH TO WATER (feet): <u>6.91</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
= (<u>14</u> feet - <u>6.91</u> feet) X <u>0.04</u> gallons/foot = <u>0.3</u> 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): <u>7.5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7.5</u>	PURGING INITIATED AT: <u>0920</u>	PURGING ENDED AT: <u>0933</u>	TOTAL VOLUME PURGED (gallons): <u>1.6</u>

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>0924</u>	<u>0.5</u>	<u>0.5</u>	<u>0.13</u>	<u>6.92</u>	<u>7.66</u>	<u>25.7</u>	<u>8125</u>	<u>18.6</u>	<u>59.1</u>	<u>clear whitish</u>	<u>None</u>
<u>0927</u>	<u>0.83</u>	<u>0.8</u>	<u>0.1</u>	<u>6.92</u>	<u>7.66</u>	<u>25.7</u>	<u>8130</u>	<u>10.5</u>	<u>17.1</u>	<u>clear</u>	<u>None</u>
<u>0930</u>	<u>0.3</u>	<u>1.1</u>	<u>0.1</u>	<u>6.92</u>	<u>7.67</u>	<u>25.7</u>	<u>8133</u>	<u>8.9</u>	<u>12.8</u>	<u>clear</u>	<u>None</u>
<u>0933</u>	<u>0.5</u>	<u>1.6</u>	<u>0.17</u>	<u>6.92</u>	<u>7.66</u>	<u>25.7</u>	<u>8138</u>	<u>7.4</u>	<u>5.25</u>	<u>clear</u>	<u>None</u>

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: <u>Mark Kearns / AmecFW</u>			SAMPLER(S) SIGNATURE(S):			SAMPLING INITIATED AT: <u>0934</u>		SAMPLING ENDED AT: <u>0936</u>	
PUMP OR TUBING DEPTH IN WELL (feet): <u>7.5</u>			TUBING MATERIAL CODE: <u>HDPE</u>			FIELD-FILTERED: Y <input checked="" type="radio"/> <u>N</u>		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> <u>N</u>			TUBING Y <input checked="" type="radio"/> <u>N (replaced)</u>			DUPLICATE: Y <input checked="" type="radio"/> <u>N</u>			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-2</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>—</u>	<u>—</u>	<u>As, Pb 6010</u>	<u>RPP</u>	<u>125</u>

REMARKS: .7

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-2A</u>	SAMPLE ID: <u>TMW-2A</u> DATE: <u>2/2/18</u>

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>4</u> feet to <u>14</u> feet	STATIC DEPTH TO WATER (feet): <u>7.05</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>14</u> feet - <u>7.05</u> feet) X <u>0.04</u> gallons/foot = <u>0.3</u> 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): <u>8</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>8</u>	PURGING INITIATED AT: <u>0951</u>	PURGING ENDED AT: <u>1001</u>	TOTAL VOLUME PURGED (gallons): <u>1.3</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>0955</u>	<u>0.5</u>	<u>0.5</u>	<u>0.13</u>	<u>7.07</u>	<u>7.67</u>	<u>26.2</u>	<u>17081</u>	<u>11.4</u>	<u>14.1</u>	<u>clear/whitish</u>	<u>None</u>
<u>0958</u>	<u>0.4</u>	<u>0.9</u>	<u>0.13</u>	<u>7.07</u>	<u>7.67</u>	<u>26.2</u>	<u>17049</u>	<u>8.6</u>	<u>11.7</u>	<u>clear</u>	<u>None</u>
<u>1001</u>	<u>0.4</u>	<u>1.3</u>	<u>0.13</u>	<u>7.07</u>	<u>7.65</u>	<u>26.2</u>	<u>16300</u>	<u>6.5</u>	<u>10.5</u>	<u>clear</u>	<u>None</u>
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: <u>Mark Kearns/AmecFW</u>			SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1002</u>		SAMPLING ENDED AT: <u>1004</u>	
PUMP OR TUBING DEPTH IN WELL (feet): <u>8</u>			TUBING MATERIAL CODE: <u>HDPE</u>			FIELD-FILTERED: Y <u>(N)</u>		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>			TUBING Y <u>(N(replaced))</u>			DUPLICATE: Y <u>(N)</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-2A</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>---</u>	<u>---</u>	<u>As, Pb 6010</u>	<u>APP</u>	<u>125</u>
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>		SITE LOCATION: <u>Miami, FL</u>	
WELL NO: <u>TMW-3</u>	SAMPLE ID: <u>TMW-3</u>	DATE: <u>2/2/18</u>	

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>2</u> feet to <u>12</u> feet	STATIC DEPTH TO WATER (feet): <u>2.65</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>12</u> feet - <u>2.65</u> feet) X <u>0.04</u> gallons/foot = <u>4</u> 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): <u>3.5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>3.5</u>	PURGING INITIATED AT: <u>1035</u>	PURGING ENDED AT: <u>1045</u>	TOTAL VOLUME PURGED (gallons): <u>1.3</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1039	.5	.5	0.13	2.65	8.19	25.6	5892	14.7	8.8	Clear	None
1042	.4	.9	0.13	2.65	8.18	25.7	5899	10.1	5.11	Clear	None
1045	.4	1.3	0.13	2.65	8.20	25.7	5899	8.2	4.8	Clear	None
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: <u>Mark Kearns/AmecFW</u>			SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1046</u>	SAMPLING ENDED AT: <u>1048</u>		
PUMP OR TUBING DEPTH IN WELL (feet): <u>3.5</u>			TUBING MATERIAL CODE: <u>HDPE</u>		FIELD-FILTERED: Y <u>(N)</u> Filtration Equipment Type: _____	FILTER SIZE: _____ μm			
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>			TUBING Y <u>(N replaced)</u>			DUPLICATE: Y <u>(N)</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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	<u>Pb,As 6010</u>	<u>APP</u>	<u>125</u>
<u>TMW-3</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>—</u>	<u>—</u>			
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

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

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

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

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-3A</u>	SAMPLE ID: <u>TMW-3A</u>
DATE: <u>2/2/18</u>	

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>4</u> feet to <u>14</u> feet	STATIC DEPTH TO WATER (feet): <u>4.10</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>14</u> feet - <u>4.10</u> feet) X <u>0.04</u> gallons/foot = <u>0.4</u> 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): <u>5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>5</u>	PURGING INITIATED AT: <u>1016</u>	PURGING ENDED AT: <u>1027</u>	TOTAL VOLUME PURGED (gallons): <u>1.3</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) <u>µmhos/cm</u> or <u>µS/cm</u>	DISSOLVED OXYGEN (circle units) <u>mg/L</u> or <u>% saturation</u>	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1021</u>	<u>0.5</u>	<u>0.5</u>	<u>0.1</u>	<u>4.12</u>	<u>7.88</u>	<u>25.9</u>	<u>6336</u>	<u>15.4</u>	<u>19.5</u>	<u>clear</u>	<u>None</u>
<u>1024</u>	<u>0.4</u>	<u>0.9</u>	<u>0.13</u>	<u>4.12</u>	<u>7.87</u>	<u>26.0</u>	<u>6340</u>	<u>16.4</u>	<u>12</u>	<u>clear</u>	<u>None</u>
<u>1027</u>	<u>0.4</u>	<u>1.3</u>	<u>0.13</u>	<u>4.12</u>	<u>7.84</u>	<u>26.0</u>	<u>6345</u>	<u>15.1</u>	<u>11.45</u>	<u>Clear</u>	<u>None</u>
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: <u>Mark Kearns/AmecFW</u>			SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1028</u>	SAMPLING ENDED AT: <u>1030</u>		
PUMP OR TUBING DEPTH IN WELL (feet): <u>5</u>			TUBING MATERIAL CODE: <u>HDPE</u>		FIELD-FILTERED: Y <input checked="" type="checkbox"/> <u>N</u>	FILTER SIZE: _____ µm			
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> <u>N</u>			TUBING Y <input checked="" type="checkbox"/> <u>N (replaced)</u>		DUPLICATE: Y <input checked="" type="checkbox"/> <u>N</u>				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-3A</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>—</u>	<u>—</u>	<u>As, Pb 6010</u>	<u>APP</u>	<u>125</u>
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-4</u>	SAMPLE ID: <u>TMW-4</u> DATE: <u>2/2/18</u>

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>2</u> feet to <u>12</u> feet	STATIC DEPTH TO WATER (feet): <u>3.95</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>12</u> feet - <u>3.95</u> feet) X <u>0.4</u> gallons/foot = <u>0.3</u> 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): <u>4.5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>4.5</u>	PURGING INITIATED AT: <u>1052</u>	PURGING ENDED AT: <u>1102</u>	TOTAL VOLUME PURGED (gallons): <u>1.3</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1056</u>	<u>0.5</u>	<u>0.5</u>	<u>0.13</u>	<u>3.96</u>	<u>7.57</u>	<u>26.6</u>	<u>1711</u>	<u>10.3</u>	<u>14.6</u>	<u>Clear</u>	<u>None/Organic</u>
<u>1059</u>	<u>0.4</u>	<u>0.9</u>	<u>0.13</u>	<u>3.96</u>	<u>7.57</u>	<u>26.7</u>	<u>1718</u>	<u>8.2</u>	<u>13.7</u>	<u>Clear</u>	<u>Organic</u>
<u>1102</u>	<u>0.4</u>	<u>1.3</u>	<u>0.13</u>	<u>3.96</u>	<u>7.56</u>	<u>26.7</u>	<u>1724</u>	<u>5.7</u>	<u>12.8</u>	<u>Clear</u>	<u>Organic</u>
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: <u>Mark Kearns/AmecFW</u>			SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1103</u>	SAMPLING ENDED AT: <u>1105</u>		
PUMP OR TUBING DEPTH IN WELL (feet): <u>4.5</u>			TUBING MATERIAL CODE: <u>HDPE</u>		FIELD-FILTERED: Y <u>(N)</u>	FILTER SIZE: _____ μm			
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>			TUBING Y <u>(N (replaced))</u>		DUPLICATE: Y <u>(N)</u>				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-4</u>	<u>1</u>	<u>PP</u>	<u>250mL</u>	<u>HNO3</u>	<u>—</u>	<u>—</u>	<u>As, Pb 6010</u>	<u>APP</u>	<u>125</u>
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: The Underline SITE LOCATION: Miami, FL
WELL NO: TMW-5 SAMPLE ID: TMW-5 DATE: 2/2/18

PURGING DATA

WELL DIAMETER (inches): 1 TUBING DIAMETER (inches): 3/8 WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet STATIC DEPTH TO WATER (feet): 5.04 PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6 FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6 PURGING INITIATED AT: 1111 PURGING ENDED AT: 1121 TOTAL VOLUME PURGED (gallons): 1.3
TIME VOLUME PURGED (gallons) CUMUL. VOLUME PURGED (gallons) PURGE RATE (gpm) DEPTH TO WATER (feet) pH (standard units) TEMP. (°C) COND. (circle units) μmhos/cm or μS/cm DISSOLVED OXYGEN (circle units) mg/L or % saturation TURBIDITY (NTUs) COLOR (describe) ODOR (describe)
1115 0.5 0.5 0.13 5.04 7.35 25.1 657 17.2 6.6 Clear None
1118 0.4 0.9 0.13 5.04 7.34 25.1 657 15.3 2.35 Clear None
1121 0.4 1.3 0.13 5.04 7.34 25.1 656 13.3 1.11 Clear None
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: Mark Kearns/AmecFW SAMPLER(S) SIGNATURE(S): [Signature] SAMPLING INITIATED AT: 1122 SAMPLING ENDED AT: 1124
PUMP OR TUBING DEPTH IN WELL (feet): 6 TUBING MATERIAL CODE: HDPE FIELD-FILTERED: Y (N) FILTER SIZE: ___ μm
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced)) DUPLICATE: Y (N)
SAMPLE CONTAINER SPECIFICATION SAMPLE PRESERVATION (including wet ice) 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
TMW-5 1 PP 250ml HNO3 - - As, Pb 6010 APP 125
REMARKS:
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-6</u>	SAMPLE ID: <u>TMW-6</u>
DATE: <u>2/2/18</u>	

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>9</u> feet to <u>19</u> feet	STATIC DEPTH TO WATER (feet): <u>11.71</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>19</u> feet - <u>11.71</u> feet) X <u>0.04</u> gallons/foot = <u>0.3</u> 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): <u>12.5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>12.5</u>	PURGING INITIATED AT: <u>1129</u>	PURGING ENDED AT: <u>1139</u>	TOTAL VOLUME PURGED (gallons): <u>1.6</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1133</u>	<u>0.6</u>	<u>0.6</u>	<u>0.15</u>	<u>11.71</u>	<u>6.89</u>	<u>26.9</u>	<u>1316</u>	<u>19.8</u>	<u>19.4</u>	<u>Clear</u>	<u>None</u>
<u>1136</u>	<u>0.5</u>	<u>1.1</u>	<u>0.17</u>	<u>11.71</u>	<u>6.89</u>	<u>26.9</u>	<u>1321</u>	<u>15.5</u>	<u>13.4</u>	<u>Clear</u>	<u>None</u>
<u>1139</u>	<u>0.5</u>	<u>1.6</u>	<u>0.17</u>	<u>11.71</u>	<u>6.88</u>	<u>26.9</u>	<u>1320</u>	<u>13.4</u>	<u>11.5</u>	<u>Clear</u>	<u>None</u>
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: <u>Mark Kearns/AmecFW</u>				SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>				SAMPLING INITIATED AT: <u>1140</u>		SAMPLING ENDED AT: <u>1155</u>	
PUMP OR TUBING DEPTH IN WELL (feet): <u>12.5</u>				TUBING MATERIAL CODE: <u>HDPE</u>				FIELD-FILTERED: Y <u>(N)</u>		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>				TUBING Y <u>(replaced)</u>				DUPLICATE: Y <u>(N)</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)				INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH					
<u>TMW-6</u>	<u>3</u>	<u>AG</u>	<u>250ml</u>	<u>None</u>	<u>---</u>	<u>---</u>	<u>PAH SIM</u>		<u>APP</u>		
<u>TMW-6</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>---</u>	<u>---</u>	<u>As, Pb, Cd, Ni</u>		<u>APP</u>		
<u>TMW-6</u>	<u>1</u>	<u>AG</u>	<u>1L</u>	<u>None</u>	<u>---</u>	<u>---</u>	<u>PCB</u>		<u>APP</u>		
<u>TMW-6</u>	<u>1</u>	<u>AG</u>	<u>1L</u>	<u>Sodium Thio.</u>	<u>---</u>	<u>---</u>	<u>Dioxin 1316</u>		<u>APP</u>		
REMARKS:											
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)											
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)											

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: $\pm 5\%$ Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>	SITE LOCATION: <u>Miami, FL</u>
WELL NO: <u>TMW-1</u>	SAMPLE ID: <u>TMW-1</u> DATE: <u>2/8/18</u>

PURGING DATA

WELL DIAMETER (inches): <u>7</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>4</u> feet to <u>14</u> feet	STATIC DEPTH TO WATER (feet): <u>6.09</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>14</u> feet - <u>6.09</u> feet) X <u>.04</u> gallons/foot = <u>0.3</u> 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): <u>7</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>	PURGING INITIATED AT: <u>1031</u>	PURGING ENDED AT: <u>1040</u>	TOTAL VOLUME PURGED (gallons): <u>1.1</u>

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1034</u>	<u>0.5</u>	<u>0.5</u>	<u>0.13</u>	<u>6.09</u>	<u>7.48</u>	<u>23.4</u>	<u>23471</u>	<u>10.0</u>	<u>4.81</u>	<u>Clear</u>	<u>None</u>
<u>1037</u>	<u>0.3</u>	<u>0.8</u>	<u>0.1</u>	<u>6.09</u>	<u>7.48</u>	<u>23.4</u>	<u>23444</u>	<u>9.2</u>	<u>3.55</u>	<u>Clear</u>	<u>None</u>
<u>1040</u>	<u>0.3</u>	<u>1.1</u>	<u>0.1</u>	<u>6.09</u>	<u>7.47</u>	<u>23.4</u>	<u>23423</u>	<u>6.5</u>	<u>3.12</u>	<u>Clear</u>	<u>None</u>

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: <u>Mark Kearns/AmecFW</u>	SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>	SAMPLING INITIATED AT: <u>1041</u>	SAMPLING ENDED AT: <u>1043</u>
PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>	TUBING MATERIAL CODE: <u>HDPE</u>	FIELD-FILTERED: Y <input checked="" type="radio"/> N <input type="radio"/>	FILTER SIZE: <u> </u> μm
FIELD DECONTAMINATION: PUMP Y <input checked="" type="radio"/> N <input type="radio"/>	TUBING Y <input checked="" type="radio"/> N (replaced) <input type="radio"/>	DUPLICATE: Y <input checked="" type="radio"/> N <input type="radio"/>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-1</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u> </u>	<u> </u>	<u>As 6010</u>	<u>APP</u>	<u>125</u>

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

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

- NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: <u>The Underline</u>		SITE LOCATION: <u>Miami, FL</u>	
WELL NO: <u>TMW-5</u>		SAMPLE ID: <u>TMW-5</u>	
DATE: <u>2/8/18</u>			

PURGING DATA

WELL DIAMETER (inches): <u>1</u>	TUBING DIAMETER (inches): <u>3/8</u>	WELL SCREEN INTERVAL DEPTH: <u>2</u> feet to <u>12</u> feet	STATIC DEPTH TO WATER (feet): <u>5.68</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (<u>12</u> feet - <u>5.68</u> feet) X <u>0.04</u> gallons/foot = <u>0.25</u> 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): <u>6.5</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6.5</u>	PURGING INITIATED AT: <u>1102</u>	PURGING ENDED AT: <u>1112</u>	TOTAL VOLUME PURGED (gallons): <u>1.1</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) <u>μmhos/cm</u> or <u>μS/cm</u>	DISSOLVED OXYGEN (circle units) <u>mg/L</u> or <u>% saturation</u>	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1106</u>	<u>0.5</u>	<u>0.5</u>	<u>0.13</u>	<u>5.68</u>	<u>7.31</u>	<u>25.8</u>	<u>673</u>	<u>14.7</u>	<u>2.61</u>	<u>Clear</u>	<u>None</u>
<u>1109</u>	<u>0.3</u>	<u>0.8</u>	<u>0.11</u>	<u>5.68</u>	<u>7.31</u>	<u>25.8</u>	<u>673</u>	<u>13.3</u>	<u>1.94</u>	<u>Clear</u>	<u>None</u>
<u>1112</u>	<u>0.3</u>	<u>1.1</u>	<u>0.1</u>	<u>5.68</u>	<u>7.31</u>	<u>25.9</u>	<u>671</u>	<u>12.9</u>	<u>1.86</u>	<u>Clear</u>	<u>None</u>
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: <u>Mark Kearns / AmecFW</u>			SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>			SAMPLING INITIATED AT: <u>1113</u>		SAMPLING ENDED AT: <u>1115</u>	
PUMP OR TUBING DEPTH IN WELL (feet): <u>6.5</u>			TUBING MATERIAL CODE: <u>HDPE</u>			FIELD-FILTERED: Y <u>(N)</u>		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>			TUBING Y <u>(N replaced)</u>			DUPLICATE: Y <u>(N)</u>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			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			
<u>TMW-5</u>	<u>1</u>	<u>PP</u>	<u>250ml</u>	<u>HNO3</u>	<u>—</u>	<u>—</u>	<u>As 6010</u>	<u>APP</u>	<u>125</u>
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)



ATTACHMENT C

CALIBRATION LOGS

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS **INSTRUMENT #** 2

PARAMETER: *[check only one]*

- TEMPERATURE CONDUCTIVITY SALINITY pH ORP
 TURBIDITY RESIDUAL CI DO OTHER _____

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

Standard A pH 7 Exp 2/28/19 Lot # 76B792

Standard B pH 10 Exp 10/18 Lot # 665351

Standard C 1.413 mS/cm Exp 4/18 Lot # 760052

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
18/2/2	0850	A	7.0	7.01	—	Yes	INIT	MMK
↓	0852	B	10.0	9.91	—	↓	↓	MMK
	0856	C	1.413	1.413	—			MMK
	1240	A	7.0	7.00	—			MMK
↓	1242	B	10.0	9.94	—	↓	↓	MMK
	1247	C	1.413	1.413	—			MMK

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS **INSTRUMENT #** 2

PARAMETER: [check only one]

- TEMPERATURE CONDUCTIVITY SALINITY pH ORP
 TURBIDITY RESIDUAL CI DO OTHER _____

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

Standard A Ambient Air 100%

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
18/2/2	0859	A	100	100	—	Yes	INIT	MMK
18/2/2	1254	A	100	100	—	Yes	INIT	MMR

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # 2

PARAMETER: [check only one]

- TEMPERATURE CONDUCTIVITY SALINITY pH ORP
 TURBIDITY RESIDUAL CI DO OTHER _____

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

Standard A pH 7 Exp. 2/28/19 Lot# 76B792
 Standard B pH 10 Exp. 10/18 Lot# 66J351
 Standard C 1.413 MS/CM Exp. 4/18 Lot# 760052

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
18/2/8	1005	A	7.0	6.94	—	YES	INIT	MMK
18/2/8	1007	B	10.0	10.03	—	YES	INIT	MMK
18/2/8	1010	C	1.413	1.413	—	YES	INIT	MMK
18/2/8	1130	A	7.0	6.96	—	YES	INIT	MMK
18/2/8	1132	B	10.0	9.94	—	YES	INIT	MMK
18/2/8	1138	C	1.413	1.413	—	YES	INIT	MMK

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

INSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # 2

PARAMETER: [check only one]

- TEMPERATURE CONDUCTIVITY SALINITY pH ORP
 TURBIDITY RESIDUAL CI DO OTHER _____

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

Standard A Ambient Air 100%

Standard B _____

Standard C _____

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
18/2/8								
18/2/8	1014	A	100	100	—	YES	INIT	MMK
18/2/8								
18/2/8	1142	A	100	100	—	YES	INIT	MMK



ATTACHMENT D

GROUNDWATER LABORATORY ANALYTICAL RESULTS & CHAIN OF CUSTODY FORM

February 06, 2018

Ash Aitharaju
AMEC Foster Wheeler Environment &
Infrastructure
5845 NW 158th Street
Miami Lakes, FL 33014

RE: Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

Dear Ash Aitharaju:

Enclosed are the analytical results for sample(s) received by the laboratory on February 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Christina Raschke
christina.raschke@pacelabs.com
(954)582-4300
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35371725001	TMW-1	Water	02/02/18 12:11	02/02/18 17:30
35371725002	TMW-2	Water	02/02/18 09:34	02/02/18 17:30
35371725003	TMW-2A	Water	02/02/18 10:02	02/02/18 17:30
35371725004	TMW-3	Water	02/02/18 10:46	02/02/18 17:30
35371725005	TMW-3A	Water	02/02/18 10:28	02/02/18 17:30
35371725006	TMW-4	Water	02/02/18 11:03	02/02/18 17:30
35371725007	TMW-5	Water	02/02/18 11:22	02/02/18 17:30

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SAMPLE ANALYTE COUNT

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35371725001	TMW-1	EPA 6010	SC1	2	PASI-O
35371725002	TMW-2	EPA 6010	SC1	2	PASI-O
35371725003	TMW-2A	EPA 6010	SC1	2	PASI-O
35371725004	TMW-3	EPA 6010	SC1	2	PASI-O
35371725005	TMW-3A	EPA 6010	SC1	2	PASI-O
35371725006	TMW-4	EPA 6010	SC1	2	PASI-O
35371725007	TMW-5	EPA 6010	SC1	2	PASI-O

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SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35371725001	TMW-1					
EPA 6010	Arsenic	14.9	ug/L	10.0	02/06/18 01:35	
35371725007	TMW-5					
EPA 6010	Arsenic	23.4	ug/L	10.0	02/06/18 02:17	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Sample: TMW-1 **Lab ID: 35371725001** Collected: 02/02/18 12:11 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	14.9	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:35	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:35	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Sample: TMW-2 **Lab ID: 35371725002** Collected: 02/02/18 09:34 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:41	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:41	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Sample: TMW-2A **Lab ID: 35371725003** Collected: 02/02/18 10:02 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:46	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 01:46	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Sample: TMW-3 **Lab ID: 35371725004** Collected: 02/02/18 10:46 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:01	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:01	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

Sample: TMW-3A **Lab ID: 35371725005** Collected: 02/02/18 10:28 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:07	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:07	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

Sample: TMW-4 **Lab ID: 35371725006** Collected: 02/02/18 11:03 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:12	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:12	7439-92-1	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Sample: TMW-5 **Lab ID: 35371725007** Collected: 02/02/18 11:22 Received: 02/02/18 17:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	23.4	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:17	7440-38-2	
Lead	5.0 U	ug/L	10.0	5.0	1	02/03/18 07:07	02/06/18 02:17	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

QC Batch: 423339 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 35371725001, 35371725002, 35371725003, 35371725004, 35371725005, 35371725006, 35371725007

METHOD BLANK: 2304493 Matrix: Water
Associated Lab Samples: 35371725001, 35371725002, 35371725003, 35371725004, 35371725005, 35371725006, 35371725007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	5.0 U	10.0	5.0	02/06/18 17:56	
Lead	ug/L	5.0 U	10.0	5.0	02/06/18 17:56	

LABORATORY CONTROL SAMPLE: 2304494

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	250	262	105	80-120	
Lead	ug/L	250	272	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2304495 2304496

Parameter	Units	35370982001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Arsenic	ug/L	<5.0	250	264	261	106	105	75-125	1	20		
Lead	ug/L	<5.0	250	269	268	108	107	75-125	0	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371725

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

U Compound was analyzed for but not detected.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35371725001	TMW-1	EPA 3010	423339	EPA 6010	423385
35371725002	TMW-2	EPA 3010	423339	EPA 6010	423385
35371725003	TMW-2A	EPA 3010	423339	EPA 6010	423385
35371725004	TMW-3	EPA 3010	423339	EPA 6010	423385
35371725005	TMW-3A	EPA 3010	423339	EPA 6010	423385
35371725006	TMW-4	EPA 3010	423339	EPA 6010	423385
35371725007	TMW-5	EPA 3010	423339	EPA 6010	423385

REPORT OF LABORATORY ANALYSIS

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MO#: 35371725
 35371725

Request Document
 ant fields must be completed accurately.

Company: AMEC Foster Wheeler Environment & Infrastructure
 Address: 5845 NW 158th Street
 Miami Lakes, FL 33014
 Phone: (954)695-6796 Fax: ashok.altharaju@woodpic.com
 Email: ashok.altharaju@woodpic.com
 Requested Due Date: 48 HR

Report To: Ash Altharaju
 Copy To:
 Project Name: The Underline
 Project #: 61785-117-2970.02
 Purchase Order #: Pace Profile #: 5651
 Attention: christina.raschke@paceelabs.com
 Company Name: Pace Project Manager:
 Address: christina.raschke@paceelabs.com
 Pace Quote:
 State / Location: FL

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, /, -) Sample IDs must be unique	MATRIX Drinking Water Waste Water Process Water Surface Oil Wipe Air Other Tissue	CODE DW WW PW SL OI WIP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	48 HR DERM Rates			
						START	END							Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol						Other		
1	TMW-1							2/2/18	1211				1															
2	TMW-2							2/2/18	0934				1															
3	TMW-2A							2/2/18	1002				1															
4	TMW-3							2/2/18	1046				1															
5	TMW-3A							2/2/18	1028				1															
6	TMW-4							2/2/18	1103				1															
7	TMW-5							2/2/18	1122				1															
8																												
9																												
10																												
11																												
12																												

REINQUISHED BY / AFFILIATION: Mark Kearns/Amecfwi
 DATE: 2/2/18
 TIME: 1430

ACCEPTED BY / AFFILIATION: [Signature]
 DATE: 2/2/18
 TIME: 1430

ADDITIONAL COMMENTS:

TEMP in C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (Y/N): _____

Samples Intact (Y/N): _____

SAMPLER NAME AND SIGNATURE: Mark Kearns
 PRINT Name of SAMPLER: Mark Kearns
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 2/2/18

Sample ID: (CUR)

Project #
Project Manager:
Client:

WO#: 35371725

PM: CTR Due Date: 02/09/18
CLIENT: 36-MACTEC

Date and Initials of person:
Examining contents: _____
Label: _____
Deliver: DMF
pH: _____

Thermometer Used: T-324 Date: 2/2/18 Time: 1730 Initials: DMF

State of Origin: FL

Cooler #1 Temp.°C <u>3.0</u> (Visual) <u>0.0</u> (Correction Factor) <u>3.0</u> (Actual)	<input checked="" type="checkbox"/> Samples on ice, cooling process has begun <input type="checkbox"/> Samples on ice, cooling process has begun <input type="checkbox"/> Samples on ice, cooling process has begun <input type="checkbox"/> Samples on ice, cooling process has begun <input type="checkbox"/> Samples on ice, cooling process has begun <input type="checkbox"/> Samples on ice, cooling process has begun
Cooler #2 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	
Cooler #3 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	
Cooler #4 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	
Cooler #5 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	
Cooler #6 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority
 Other _____

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # _____

Custody Seal on Cooler/Box Present: Yes No **Seals intact:** Yes No **Ice:** Wet Blue Dry None

Packing Material: Bubble Wrap Bubble Bags None Other _____

Samples shorted to lab (If Yes, complete) Shorted Date: N/A Shorted Time: NA Qty: NA

Comments:

Chain of Custody Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody Filled Out	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Relinquished Signature & Sampler Name COC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples Arrived within Hold Time	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush TAT requested on COC	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient Volume	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA Vials? (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____ Date: _____

February 14, 2018

Ash Aitharaju
AMEC Foster Wheeler Environment &
Infrastructure
5845 NW 158th Street
Miami Lakes, FL 33014

RE: Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371933

Dear Ash Aitharaju:

Enclosed are the analytical results for sample(s) received by the laboratory on February 02, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Christina Raschke
christina.raschke@pacelabs.com
(954)582-4300
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174

Alabama Certification #: 41320

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079

Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity

Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Louisiana Certification #: FL NELAC Reciprocity

Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14

Nevada Certification: FL NELAC Reciprocity

New Jersey Certification #: FL022

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710

Oklahoma Certification #: D9947

Pennsylvania Certification #: 68-00547

Puerto Rico Certification #: FL01264

South Carolina Certification: #96042001

Tennessee Certification #: TN02974

Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

Wyoming Certification: FL NELAC Reciprocity

West Virginia Certification #: 9962C

Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35371933001	TMW-6	Water	02/02/18 11:40	02/02/18 14:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35371933001	TMW-6	EPA 8082	PKS	8	PASI-C
		EPA 6010	SC1	11	PASI-O
		EPA 7470	MLO	1	PASI-O
		EPA 8270 by SIM	CB1	20	PASI-O

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SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35371933001	TMW-6					
EPA 6010	Antimony	13.9 I	ug/L	15.0	02/07/18 07:30	
EPA 6010	Barium	18.1	ug/L	10.0	02/07/18 07:30	
EPA 6010	Copper	3.2 I	ug/L	5.0	02/07/18 07:30	
EPA 6010	Iron	69.9	ug/L	40.0	02/07/18 07:30	
EPA 8270 by SIM	Acenaphthene	0.12 I	ug/L	0.50	02/14/18 04:20	
EPA 8270 by SIM	Benzo(a)anthracene	0.099 I	ug/L	0.10	02/14/18 04:20	
EPA 8270 by SIM	Chrysene	0.10 I	ug/L	0.50	02/14/18 04:20	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Sample: TMW-6 **Lab ID: 35371933001** Collected: 02/02/18 11:40 Received: 02/02/18 14:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3510									
PCB-1016 (Aroclor 1016)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	12674-11-2	
PCB-1221 (Aroclor 1221)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	11104-28-2	
PCB-1232 (Aroclor 1232)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	11141-16-5	
PCB-1242 (Aroclor 1242)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	53469-21-9	
PCB-1248 (Aroclor 1248)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	12672-29-6	
PCB-1254 (Aroclor 1254)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	11097-69-1	
PCB-1260 (Aroclor 1260)	0.48 U	ug/L	0.48	0.48	1	02/08/18 14:29	02/09/18 17:59	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	58	%	10-132		1	02/08/18 14:29	02/09/18 17:59	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Aluminum	50.0 U	ug/L	100	50.0	1	02/06/18 09:57	02/07/18 07:30	7429-90-5	
Antimony	13.9 I	ug/L	15.0	7.5	1	02/06/18 09:57	02/07/18 07:30	7440-36-0	
Arsenic	5.0 U	ug/L	10.0	5.0	1	02/06/18 09:57	02/07/18 07:30	7440-38-2	
Barium	18.1	ug/L	10.0	5.0	1	02/06/18 09:57	02/07/18 07:30	7440-39-3	
Cadmium	0.50 U	ug/L	1.0	0.50	1	02/06/18 09:57	02/07/18 07:30	7440-43-9	
Chromium	2.5 U	ug/L	5.0	2.5	1	02/06/18 09:57	02/07/18 07:30	7440-47-3	
Copper	3.2 I	ug/L	5.0	2.5	1	02/06/18 09:57	02/07/18 07:30	7440-50-8	
Iron	69.9	ug/L	40.0	20.0	1	02/06/18 09:57	02/07/18 07:30	7439-89-6	
Lead	5.0 U	ug/L	10.0	5.0	1	02/06/18 09:57	02/07/18 07:30	7439-92-1	
Selenium	7.5 U	ug/L	15.0	7.5	1	02/06/18 09:57	02/07/18 07:30	7782-49-2	
Silver	2.5 U	ug/L	5.0	2.5	1	02/06/18 09:57	02/07/18 07:30	7440-22-4	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	0.10 U	ug/L	0.20	0.10	1	02/08/18 11:46	02/08/18 16:01	7439-97-6	
8270 MSSV PAHLV by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510									
Acenaphthene	0.12 I	ug/L	0.50	0.013	1	02/07/18 08:35	02/14/18 04:20	83-32-9	
Acenaphthylene	0.012 U	ug/L	0.50	0.012	1	02/07/18 08:35	02/14/18 04:20	208-96-8	
Anthracene	0.012 U	ug/L	0.50	0.012	1	02/07/18 08:35	02/14/18 04:20	120-12-7	
Benzo(a)anthracene	0.099 I	ug/L	0.10	0.055	1	02/07/18 08:35	02/14/18 04:20	56-55-3	
Benzo(a)pyrene	0.020 U	ug/L	0.10	0.020	1	02/07/18 08:35	02/14/18 04:20	50-32-8	
Benzo(b)fluoranthene	0.027 U	ug/L	0.10	0.027	1	02/07/18 08:35	02/14/18 04:20	205-99-2	
Benzo(g,h,i)perylene	0.042 U	ug/L	0.50	0.042	1	02/07/18 08:35	02/14/18 04:20	191-24-2	
Benzo(k)fluoranthene	0.023 U	ug/L	0.50	0.023	1	02/07/18 08:35	02/14/18 04:20	207-08-9	
Chrysene	0.10 I	ug/L	0.50	0.026	1	02/07/18 08:35	02/14/18 04:20	218-01-9	
Dibenz(a,h)anthracene	0.13 U	ug/L	0.15	0.13	1	02/07/18 08:35	02/14/18 04:20	53-70-3	
Fluoranthene	0.018 U	ug/L	0.50	0.018	1	02/07/18 08:35	02/14/18 04:20	206-44-0	
Fluorene	0.016 U	ug/L	0.50	0.016	1	02/07/18 08:35	02/14/18 04:20	86-73-7	
Indeno(1,2,3-cd)pyrene	0.12 U	ug/L	0.15	0.12	1	02/07/18 08:35	02/14/18 04:20	193-39-5	
1-Methylnaphthalene	0.032 U	ug/L	2.0	0.032	1	02/07/18 08:35	02/14/18 04:20	90-12-0	
2-Methylnaphthalene	0.11 U	ug/L	2.0	0.11	1	02/07/18 08:35	02/14/18 04:20	91-57-6	
Naphthalene	0.048 U	ug/L	2.0	0.048	1	02/07/18 08:35	02/14/18 04:20	91-20-3	
Phenanthrene	0.018 U	ug/L	0.50	0.018	1	02/07/18 08:35	02/14/18 04:20	85-01-8	
Pyrene	0.019 U	ug/L	0.50	0.019	1	02/07/18 08:35	02/14/18 04:20	129-00-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Sample: TMW-6 **Lab ID: 35371933001** Collected: 02/02/18 11:40 Received: 02/02/18 14:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAHLV by SIM		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
<i>Surrogates</i>									
2-Fluorobiphenyl (S)	54	%	33-101		1	02/07/18 08:35	02/14/18 04:20	321-60-8	
p-Terphenyl-d14 (S)	58	%	38-115		1	02/07/18 08:35	02/14/18 04:20	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371933

QC Batch: 424397 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 35371933001

METHOD BLANK: 2309482 Matrix: Water
Associated Lab Samples: 35371933001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.10 U	0.20	0.10	02/08/18 15:27	

LABORATORY CONTROL SAMPLE: 2309483

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2	2.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2309484 2309485

Parameter	Units	35370382001		2309484		2309485		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Mercury	ug/L	0.10 U	2	2	1.2	1.2	62	62	75-125	1	20 J(M1)

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371933

QC Batch: 423799 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 35371933001

METHOD BLANK: 2306243 Matrix: Water
Associated Lab Samples: 35371933001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	ug/L	50.0 U	100	50.0	02/07/18 05:19	
Antimony	ug/L	7.5 U	15.0	7.5	02/08/18 00:20	
Arsenic	ug/L	5.0 U	10.0	5.0	02/08/18 00:20	
Barium	ug/L	5.0 U	10.0	5.0	02/08/18 00:20	
Cadmium	ug/L	0.50 U	1.0	0.50	02/08/18 00:20	
Chromium	ug/L	2.5 U	5.0	2.5	02/08/18 00:20	
Copper	ug/L	2.5 U	5.0	2.5	02/08/18 00:20	
Iron	ug/L	20.0 U	40.0	20.0	02/07/18 05:19	
Lead	ug/L	5.0 U	10.0	5.0	02/08/18 00:20	
Selenium	ug/L	7.5 U	15.0	7.5	02/08/18 00:20	
Silver	ug/L	2.5 U	5.0	2.5	02/08/18 00:20	

LABORATORY CONTROL SAMPLE: 2306244

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	2500	2510	100	80-120	
Antimony	ug/L	250	245	98	80-120	
Arsenic	ug/L	250	250	100	80-120	
Barium	ug/L	250	270	108	80-120	
Cadmium	ug/L	25	25.0	100	80-120	
Chromium	ug/L	250	254	102	80-120	
Copper	ug/L	250	258	103	80-120	
Iron	ug/L	2500	2610	104	80-120	
Lead	ug/L	250	254	102	80-120	
Selenium	ug/L	250	255	102	80-120	
Silver	ug/L	25	26.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2306245 2306246

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		35370794001 Result	Spike Conc.	Spike Conc.	MS Conc.							
Aluminum	ug/L	50.0 U	2500	2500	2640	2600	106	104	75-125	2	20	
Antimony	ug/L	7.5 U	250	250	256	253	102	101	75-125	1	20	
Arsenic	ug/L	5.0 U	250	250	267	262	105	103	75-125	2	20	
Barium	ug/L	31.6	250	250	312	305	112	109	75-125	2	20	
Cadmium	ug/L	0.50 U	25	25	25.6	25.1	102	101	75-125	2	20	
Chromium	ug/L	10.6	250	250	272	266	105	102	75-125	3	20	
Copper	ug/L	2.5 U	250	250	274	268	110	107	75-125	2	20	

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Parameter	Units	2306245		2306246		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		35370794001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Iron	ug/L	169	2500	2500	2870	2810	108	105	75-125	2	20	
Lead	ug/L	5.0 U	250	250	257	254	103	101	75-125	1	20	
Selenium	ug/L	7.5 U	250	250	257	256	102	101	75-125	1	20	
Silver	ug/L	2.5 U	25	25	26.0	25.5	104	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

QC Batch: 397293

Analysis Method: EPA 8082

QC Batch Method: EPA 3510

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 35371933001

METHOD BLANK: 2203138

Matrix: Water

Associated Lab Samples: 35371933001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1221 (Aroclor 1221)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1232 (Aroclor 1232)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1242 (Aroclor 1242)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1248 (Aroclor 1248)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1254 (Aroclor 1254)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
PCB-1260 (Aroclor 1260)	ug/L	0.50 U	0.50	0.50	02/09/18 12:19	
Decachlorobiphenyl (S)	%	67	10-132		02/09/18 12:19	

LABORATORY CONTROL SAMPLE & LCSD: 2203139

2203140

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.8	3.9	75	78	50-150	4	30	
PCB-1260 (Aroclor 1260)	ug/L	5	4.2	4.1	83	82	50-150	1	30	
Decachlorobiphenyl (S)	%				74	70	10-132			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371933

QC Batch: 423957 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water PAHLV by SIM MSSV
Associated Lab Samples: 35371933001

METHOD BLANK: 2307078 Matrix: Water
Associated Lab Samples: 35371933001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	0.032 U	2.0	0.032	02/14/18 00:16	
2-Methylnaphthalene	ug/L	0.11 U	2.0	0.11	02/14/18 00:16	
Acenaphthene	ug/L	0.013 U	0.50	0.013	02/14/18 00:16	
Acenaphthylene	ug/L	0.012 U	0.50	0.012	02/14/18 00:16	
Anthracene	ug/L	0.012 U	0.50	0.012	02/14/18 00:16	
Benzo(a)anthracene	ug/L	0.055 U	0.10	0.055	02/14/18 00:16	
Benzo(a)pyrene	ug/L	0.020 U	0.10	0.020	02/14/18 00:16	
Benzo(b)fluoranthene	ug/L	0.027 U	0.10	0.027	02/14/18 00:16	
Benzo(g,h,i)perylene	ug/L	0.042 U	0.50	0.042	02/14/18 00:16	
Benzo(k)fluoranthene	ug/L	0.023 U	0.50	0.023	02/14/18 00:16	
Chrysene	ug/L	0.026 U	0.50	0.026	02/14/18 00:16	
Dibenz(a,h)anthracene	ug/L	0.13 U	0.15	0.13	02/14/18 00:16	
Fluoranthene	ug/L	0.018 U	0.50	0.018	02/14/18 00:16	
Fluorene	ug/L	0.016 U	0.50	0.016	02/14/18 00:16	
Indeno(1,2,3-cd)pyrene	ug/L	0.12 U	0.15	0.12	02/14/18 00:16	
Naphthalene	ug/L	0.048 U	2.0	0.048	02/14/18 00:16	
Phenanthrene	ug/L	0.018 U	0.50	0.018	02/14/18 00:16	
Pyrene	ug/L	0.019 U	0.50	0.019	02/14/18 00:16	
2-Fluorobiphenyl (S)	%	61	33-101		02/14/18 00:16	
p-Terphenyl-d14 (S)	%	56	38-115		02/14/18 00:16	

LABORATORY CONTROL SAMPLE: 2307079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	5	2.5	51	33-118	
2-Methylnaphthalene	ug/L	5	2.5	50	34-104	
Acenaphthene	ug/L	5	2.6	53	38-109	
Acenaphthylene	ug/L	5	2.3	45	31-115	
Anthracene	ug/L	5	2.8	56	38-111	
Benzo(a)anthracene	ug/L	5	3.2	65	36-110	
Benzo(a)pyrene	ug/L	5	2.5	50	27-107	
Benzo(b)fluoranthene	ug/L	5	3.0	60	32-119	
Benzo(g,h,i)perylene	ug/L	5	2.8	56	10-109	
Benzo(k)fluoranthene	ug/L	5	3.2	64	28-118	
Chrysene	ug/L	5	3.8	77	33-130	
Dibenz(a,h)anthracene	ug/L	5	2.7	53	10-104	
Fluoranthene	ug/L	5	3.0	61	45-115	
Fluorene	ug/L	5	2.7	55	41-114	
Indeno(1,2,3-cd)pyrene	ug/L	5	2.7	53	10-104	
Naphthalene	ug/L	5	2.6	52	38-100	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

LABORATORY CONTROL SAMPLE: 2307079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	5	3.2	65	41-106	
Pyrene	ug/L	5	3.1	61	45-115	
2-Fluorobiphenyl (S)	%			53	33-101	
p-Terphenyl-d14 (S)	%			56	38-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2307622 2307623

Parameter	Units	MS 35371841004		MSD 2307623		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result								
1-Methylnaphthalene	ug/L	0.032	U	5	5	2.4	2.6	48	52	33-118	9	40	
2-Methylnaphthalene	ug/L	0.11	U	5	5	2.4	2.6	48	52	34-104	10	40	
Acenaphthene	ug/L	0.013	U	5	5	2.4	2.8	49	56	38-109	13	40	
Acenaphthylene	ug/L	0.012	U	5	5	2.1	2.4	42	49	31-115	14	40	
Anthracene	ug/L	0.012	U	5	5	2.5	3.0	51	59	38-111	16	40	
Benzo(a)anthracene	ug/L	0.055	U	5	5	3.1	3.4	63	69	36-110	9	40	
Benzo(a)pyrene	ug/L	0.020	U	5	5	2.4	2.6	47	53	27-107	11	40	
Benzo(b)fluoranthene	ug/L	0.027	U	5	5	3.0	3.3	59	65	32-119	9	40	
Benzo(g,h,i)perylene	ug/L	0.042	U	5	5	2.5	3.1	51	62	10-109	21	40	
Benzo(k)fluoranthene	ug/L	0.023	U	5	5	2.9	3.2	57	63	28-118	10	40	
Chrysene	ug/L	0.026	U	5	5	3.6	3.9	71	78	33-130	9	40	
Dibenz(a,h)anthracene	ug/L	0.13	U	5	5	2.3	2.9	46	59	10-104	24	40	
Fluoranthene	ug/L	0.018	U	5	5	2.9	3.3	58	66	45-115	13	40	
Fluorene	ug/L	0.016	U	5	5	2.4	2.9	49	58	41-114	17	40	
Indeno(1,2,3-cd)pyrene	ug/L	0.12	U	5	5	2.4	3.0	48	59	10-104	20	40	
Naphthalene	ug/L	0.048	U	5	5	2.5	2.7	50	53	38-100	6	40	
Phenanthrene	ug/L	0.018	U	5	5	2.9	3.4	58	68	41-106	16	40	
Pyrene	ug/L	0.019	U	5	5	2.9	3.3	58	66	45-115	13	40	
2-Fluorobiphenyl (S)	%							47	54	33-101			
p-Terphenyl-d14 (S)	%							51	57	38-115			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

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

U Compound was analyzed for but not detected.

J(M1) Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35371933

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35371933001	TMW-6	EPA 3510	397293	EPA 8082	397406
35371933001	TMW-6	EPA 3010	423799	EPA 6010	423876
35371933001	TMW-6	EPA 7470	424397	EPA 7470	424457
35371933001	TMW-6	EPA 3510	423957	EPA 8270 by SIM	424930

REPORT OF LABORATORY ANALYSIS

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WO#: 35371933



35371933

N-OF-CUSTODY / Analytical Request Document

n-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company: AMEC Foster Wheeler Environment & Infrastructure Report To: Ash Altharaju Copy To: Miami Lakes, FL 33014 Email: ashok.altharaju@woodplc.com Fax: (954)895-6796 Requested Due Date: Project Name: The Underline Project #: G783-17-2990.02

Section C Invoice Information:

Attention: Company Name: Address: Pace Project Manager: christina.raschke@pccelabs.com, State / Location: FL

Table with columns: ITEM #, MATRIX, SAMPLE ID, COLLECTED, MATRIX CODE, SAMPLE TYPE, DATE, TIME, PRESERVATIVES, ANALYSES TEST, REQUESTED ANALYSIS FILTERED, DATE, TIME, SAMPLE CONDITIONS.

Table with columns: ADDITIONAL COMMENTS, RELINQUISHED BY / AFFILIATION, DATE, TIME, ACCEPTED BY / AFFILIATION, DATE, TIME, SAMPLE CONDITIONS.

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: Mark Kearns, SIGNATURE of SAMPLER: [Signature], DATE Signed: 2/2/18



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 12

Document Revised:
August 2, 2017
Issuing Authority:
Pace Florida Quality Office

WO#: 35371933

SCUR)

Project #
Project Manager:
Client:

PM: CTR Due Date: 02/13/18
CLIENT: 36-MACTEC

Date and Initials of person:

Examining contents:
Label: _____
Deliver: _____
pH: _____
Initials: SBA

Thermometer Used: T315

Date: 2/2/18

Time: 2345

Initials: SBA

State of Origin:

Cooler #1 Temp. °C 3.8 (Visual) -1.1 (Correction Factor) 5.7 (Actual)
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)

- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun

Courier: Fed Ex UPS USPS Client Commercial Pace Other S.F.
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority
 Other _____

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # _____

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet Blue Dry None

Packing Material: Bubble Wrap Bubble Bags None Other _____

Samples shorted to lab (If Yes, complete) Shorted Date: _____ Shorted Time: _____ Qty: _____

	Chain of Custody Present	Chain of Custody Filled Out	Relinquished Signature & Sampler Name COC	Samples Arrived within Hold Time	Rush TAT requested on COC	Sufficient Volume	Correct Containers Used	Containers Intact	Sample Labels match COC (sample IDs & date/time of collection)	All containers needing acid/base preservation have been checked.	All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	Headspace in VOA Vials? (>6mm):	Trip Blank Present:	Comments:
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
														Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____

Date: _____

Report Prepared for:

Christina Raschke
PASI Florida
3610 Park Central Blvd N
Pompano Beach FL 33064

**REPORT OF
LABORATORY
ANALYSIS FOR
PCDD/PCDF**

Report Information:

Pace Project #: 10419522
Sample Receipt Date: 02/06/2018
Client Project #: 35371933
Client Sub PO #: N/A
State Cert #: E87605

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Megan McCabe, your Pace Project Manager.

This report has been reviewed by:



February 12, 2018

Megan McCabe, Project Manager
612-607-6429
(612) 607-6444 (fax)
megan.mccabe@pacelabs.com

Report Prepared Date:

February 12, 2018



Report of Laboratory Analysis

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The results relate only to the samples included in this report.



DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Pace Analytical Services, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using USEPA Method 1613B. The reporting limits were based on signal-to-noise measurements. Estimated Maximum Possible Concentration (EMPC) values were treated as positives in the toxic equivalence calculations. Per request, estimated detection limit (EDL) values were reported and flagged "U" where the target analyte was not detected.

The recovery of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 65-96%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained. Values below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range of the method. Also, the affected congeners were not detected in the field samples.

Laboratory spike samples were also prepared with the sample batch using clean reference matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 91-108% with relative percent differences of 0.0-8.7%. These results were within the target ranges for the method. Matrix spikes were not prepared with the sample batch.

REPORT OF LABORATORY ANALYSIS

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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Montana	CERT0092
Alaska	MN00064	Nebraska	NE-OS-18-06
Alaska	UST-078	Nevada	MN00064
Arizona	AZ0014	New Jersey (NE	MN002
Arkansas	88-0680	New York (NEL	11647
CNMI Saipan	MP0003	New hampshire	2081
California	MN00064	North Carolina	27700
Colorado	MN00064	North Carolina	530
Connecticut	PH-0256	North Dakota	R-036
EPA Region 8	8TMS-L	Ohio	41244
Florida (NELAP	E87605	Ohio VAP	CL101
Georgia (EDP)	959	Oklahoma	9507
Guam EPA	959	Oregon (ELAP)	MN200001
Hawaii	MN00064	Oregon (OREL	MN300001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200011	Puerto Rico	MN00064
Indiana	C-MN-01	South Carolina	74003001
Iowa	368	Tennessee	TN02818
Kansas	E-10167	Texas	T104704192
Kentucky	90062	Utah (NELAP)	MN00064
Louisiana	03086	Virginia	460163
Louisiana	MN00064	Washington	C486
Maine	MN00064	West Virginia #	9952C
Maryland	322	West Virginia D	382
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-L

REPORT OF LABORATORY ANALYSIS

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Appendix A

Sample Management

Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

Workorder: 35371933 Workorder Name: The Underline Owner Received Date: 2/2/2018 Results Requested By: 2/13/2018

Christina Raschke
 Pace Analytical South Florida
 3610 Park Central Blvd N
 Pompano Beach, FL 33064
 Phone (954)582-4300

Pace Analytical Minnesota
 1700 Elm Street SE
 Suite 200
 Minneapolis, MN 55414
 Phone (612)607-1700

WO# : 10419522

PM: MEM1 Due Date: 02/13/18

CLIENT: PASI-FL

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	or	Samples Intact	Y	or	N
1	PSK Pace	2-5-18 1:00 PM	Mark Pace	2/6/18 10:30						
2										
3										
4										
5										


Sample ID	Sample Description	Volume	Container	Preservation	Notes
1	Water	1		Unpreserved	EPA 1613

LAB USE ONLY

COI

Cooler Temperature on Receipt: 1.5 °C Custody Seal Y or N Received on Ice or Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt	Client Name: <u>Pace F1</u>	Project #: WO# : 10419522
Courier: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client		
<input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> SpeeDee <input type="checkbox"/> Other: _____		
Tracking Number: <u>4278 3966 6710</u>	 10419522	

Custody Seal on Cooler/Box Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Seals Intact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Optional: Proj. Due Date: _____ Proj. Name: _____
Packing Material: <input type="checkbox"/> Bubble Wrap <input checked="" type="checkbox"/> Bubble Bags <input type="checkbox"/> None <input type="checkbox"/> Other: _____	Temp Blank? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Thermometer Used: <input checked="" type="checkbox"/> 151401163 <input type="checkbox"/> G87A9155100842	Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> None <input type="checkbox"/> Dry <input type="checkbox"/> Melted	
Cooler Temp Read (°C): <u>1.7</u> Cooler Temp Corrected (°C): <u>1.5</u>	Biological Tissue Frozen? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Temp should be above freezing to 6°C Correction Factor: <u>-0.2</u>	Date and Initials of Person Examining Contents: <u>ME 2/6/18</u>	
USDA Regulated Soil (<input checked="" type="checkbox"/> N/A, water sample) Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? <input type="checkbox"/> Yes <input type="checkbox"/> No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.		

	COMMENTS:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and/or Signature on COC? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____	

CLIENT NOTIFICATION/RESOLUTION		Field Data Required? <input type="checkbox"/> Yes <input type="checkbox"/> No
Person Contacted: <u>Christina Raschke</u>	Date/Time: <u>2/6/18</u>	
Comments/Resolution: <u>Method 1613 full list</u>		

Project Manager Review: Mega McCalve Date: 2/6/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 12

Document Revised:
August 2, 2017
Issuing Authority:
Pace Florida Quality Office

WO#: 35371933

SCUR)

Project #
Project Manager:
Client:

PM: CTR Due Date: 02/13/18
CLIENT: 36-MACTEC

Date and Initials of person:
Examining contents:
Label:
Deliver:
pH:
Initials: SB2

Thermometer Used: T315 Date: 2/2/18 Time: 2345

State of Origin:
Cooler #1 Temp. °C 3.8 (Visual) -1.1 (Correction Factor) 5.7 (Actual)
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)

- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun

Courier: Fed Ex UPS USPS Client Commercial Pace
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground Other S.F.
 International Priority

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # _____

Custody Seal on Cooler/Box Present: Yes No
Seals intact: Yes No Ice: Wet Blue Dry None

Packing Material: Bubble Wrap Bubble Bags None Other _____
Samples shorted to lab (If Yes, complete) Shorted Date: _____ Shorted Time: _____ Qty: _____

	Yes	No	N/A	Comments:
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chain of Custody Filled Out	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Relinquished Signature & Sampler Name COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Samples Arrived within Hold Time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rush TAT requested on COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sufficient Volume	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Correct Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sample Labels match COC (sample IDs & date/time of collection)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All containers needing acid/base preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Caliform, TOC, O&G, Carbamates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Headspace in VOA Vials? (>8mm):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____

Reporting Flags

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Interference present
- J = Estimated value
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- * = See Discussion

REPORT OF LABORATORY ANALYSIS

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Appendix B

Sample Analysis Summary



Method 1613B Sample Analysis Results

Client - PASI Florida

Client's Sample ID	TMW-6		
Lab Sample ID	35371933001		
Filename	F180210A_04		
Injected By	BAL		
Total Amount Extracted	1040 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	02/02/2018 11:40
ICAL ID	F180205	Received	02/06/2018 10:30
CCal Filename(s)	F180209B_17	Extracted	02/07/2018 13:20
Method Blank ID	BLANK-60298	Analyzed	02/10/2018 06:56

Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	2.5 U	----	2.5	2,3,7,8-TCDF-13C	2.00	65
Total TCDF	2.5 U	----	2.5	2,3,7,8-TCDD-13C	2.00	70
				1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	2.1 U	----	2.1	2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	2.1 U	----	2.1	1,2,3,7,8-PeCDD-13C	2.00	82
				1,2,3,4,7,8-HxCDF-13C	2.00	72
1,2,3,7,8-PeCDF	0.49 U	----	0.49	1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	0.65 U	----	0.65	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	0.57 U	----	0.57	1,2,3,7,8,9-HxCDF-13C	2.00	70
				1,2,3,4,7,8-HxCDD-13C	2.00	78
1,2,3,7,8-PeCDD	0.93 U	----	0.93	1,2,3,6,7,8-HxCDD-13C	2.00	67
Total PeCDD	0.93 U	----	0.93	1,2,3,4,6,7,8-HpCDF-13C	2.00	67
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73
1,2,3,4,7,8-HxCDF	1.2 U	----	1.2	1,2,3,4,6,7,8-HpCDD-13C	2.00	96
1,2,3,6,7,8-HxCDF	0.75 U	----	0.75	OCDD-13C	4.00	71
2,3,4,6,7,8-HxCDF	0.26 U	----	0.26			
1,2,3,7,8,9-HxCDF	0.21 U	----	0.21	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.60 U	----	0.60	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.87 U	----	0.87	2,3,7,8-TCDD-37Cl4	0.20	72
1,2,3,6,7,8-HxCDD	0.96 U	----	0.96			
1,2,3,7,8,9-HxCDD	1.2 U	----	1.2			
Total HxCDD	1.0 U	----	1.0			
1,2,3,4,6,7,8-HpCDF	1.6 U	----	1.6	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	0.85 U	----	0.85	Equivalence: 0.00 pg/L		
Total HpCDF	1.2 U	----	1.2	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	1.3 U	----	1.3			
Total HpCDD	1.3 U	----	1.3			
OCDF	2.7 U	----	2.7			
OCDD	3.8 U	----	3.8			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
 EMPC = Estimated Maximum Possible Concentration
 EDL = Estimated Detection Limit

ND = Not Detected
 NA = Not Applicable
 NC = Not Calculated

REPORT OF LABORATORY ANALYSIS

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Method 1613B Blank Analysis Results

Lab Sample ID	BLANK-60298	Matrix	Water
Filename	F180209B_08	Dilution	NA
Total Amount Extracted	1000 mL	Extracted	02/07/2018 13:20
ICAL ID	F180205	Analyzed	02/09/2018 21:36
CCal Filename(s)	F180209A_09	Injected By	BAL

Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.89 U	----	0.89	2,3,7,8-TCDF-13C	2.00	67
Total TCDF	0.89 U	----	0.89	2,3,7,8-TCDD-13C	2.00	73
				1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	0.87 U	----	0.87	2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	0.87 U	----	0.87	1,2,3,7,8-PeCDD-13C	2.00	81
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	0.90 U	----	0.90	1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	0.61 U	----	0.61	2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	0.75 U	----	0.75	1,2,3,7,8,9-HxCDF-13C	2.00	73
				1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	0.72 U	----	0.72	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	0.72 U	----	0.72	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	73
1,2,3,4,7,8-HxCDF	0.84 U	----	0.84	1,2,3,4,6,7,8-HpCDD-13C	2.00	80
1,2,3,6,7,8-HxCDF	0.78 U	----	0.78	OCDD-13C	4.00	72
2,3,4,6,7,8-HxCDF	0.62 U	----	0.62			
1,2,3,7,8,9-HxCDF	0.71	----	0.57 J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.71	----	0.70 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.74 U	----	0.74	2,3,7,8-TCDD-37Cl4	0.20	89
1,2,3,6,7,8-HxCDD	0.75 U	----	0.75			
1,2,3,7,8,9-HxCDD	0.75 U	----	0.75			
Total HxCDD	0.75 U	----	0.75			
1,2,3,4,6,7,8-HpCDF	----	0.81	0.64 U	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.1 U	----	1.1	Equivalence: 0.081 pg/L		
Total HpCDF	0.86 U	----	0.86	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.85 U	----	0.85			
Total HpCDD	0.85 U	----	0.85			
OCDF	1.0 U	----	1.0			
OCDD	----	1.5	1.2 U			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

J = Estimated value
I = Interference present

REPORT OF LABORATORY ANALYSIS

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Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-60299	Matrix	Water
Filename	F180209B_01	Dilution	NA
Total Amount Extracted	1020 mL	Extracted	02/07/2018 13:20
ICAL ID	F180205	Analyzed	02/09/2018 16:35
CCal Filename	F180209A_09	Injected By	BAL
Method Blank ID	BLANK-60298		

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	9.6	7.5	15.8	96
2,3,7,8-TCDD	10	10	6.7	15.8	102
1,2,3,7,8-PeCDF	50	53	40.0	67.0	106
2,3,4,7,8-PeCDF	50	46	34.0	80.0	92
1,2,3,7,8-PeCDD	50	49	35.0	71.0	97
1,2,3,4,7,8-HxCDF	50	50	36.0	67.0	99
1,2,3,6,7,8-HxCDF	50	50	42.0	65.0	101
2,3,4,6,7,8-HxCDF	50	46	35.0	78.0	92
1,2,3,7,8,9-HxCDF	50	49	39.0	65.0	98
1,2,3,4,7,8-HxCDD	50	51	35.0	82.0	103
1,2,3,6,7,8-HxCDD	50	51	38.0	67.0	101
1,2,3,7,8,9-HxCDD	50	53	32.0	81.0	107
1,2,3,4,6,7,8-HpCDF	50	52	41.0	61.0	103
1,2,3,4,7,8,9-HpCDF	50	47	39.0	69.0	93
1,2,3,4,6,7,8-HpCDD	50	46	35.0	70.0	91
OCDF	100	99	63.0	170.0	99
OCDD	100	98	78.0	144.0	98
2,3,7,8-TCDD-37Cl4	10	7.9	3.1	19.1	79
2,3,7,8-TCDF-13C	100	62	22.0	152.0	62
2,3,7,8-TCDD-13C	100	69	20.0	175.0	69
1,2,3,7,8-PeCDF-13C	100	73	21.0	192.0	73
2,3,4,7,8-PeCDF-13C	100	71	13.0	328.0	71
1,2,3,7,8-PeCDD-13C	100	86	21.0	227.0	86
1,2,3,4,7,8-HxCDF-13C	100	76	19.0	202.0	76
1,2,3,6,7,8-HxCDF-13C	100	79	21.0	159.0	79
2,3,4,6,7,8-HxCDF-13C	100	83	22.0	176.0	83
1,2,3,7,8,9-HxCDF-13C	100	80	17.0	205.0	80
1,2,3,4,7,8-HxCDD-13C	100	79	21.0	193.0	79
1,2,3,6,7,8-HxCDD-13C	100	75	25.0	163.0	75
1,2,3,4,6,7,8-HpCDF-13C	100	72	21.0	158.0	72
1,2,3,4,7,8,9-HpCDF-13C	100	77	20.0	186.0	77
1,2,3,4,6,7,8-HpCDD-13C	100	84	26.0	166.0	84
OCDD-13C	200	150	26.0	397.0	74

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCSD-60300	Matrix	Water
Filename	F180209B_02	Dilution	NA
Total Amount Extracted	990 mL	Extracted	02/07/2018 13:20
ICAL ID	F180205	Analyzed	02/09/2018 17:17
CCal Filename	F180209A_09	Injected By	BAL
Method Blank ID	BLANK-60298		

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	10	7.5	15.8	101
2,3,7,8-TCDD	10	11	6.7	15.8	107
1,2,3,7,8-PeCDF	50	53	40.0	67.0	107
2,3,4,7,8-PeCDF	50	48	34.0	80.0	96
1,2,3,7,8-PeCDD	50	49	35.0	71.0	99
1,2,3,4,7,8-HxCDF	50	54	36.0	67.0	108
1,2,3,6,7,8-HxCDF	50	52	42.0	65.0	104
2,3,4,6,7,8-HxCDF	50	49	35.0	78.0	98
1,2,3,7,8,9-HxCDF	50	51	39.0	65.0	103
1,2,3,4,7,8-HxCDD	50	52	35.0	82.0	103
1,2,3,6,7,8-HxCDD	50	52	38.0	67.0	104
1,2,3,7,8,9-HxCDD	50	53	32.0	81.0	106
1,2,3,4,6,7,8-HpCDF	50	54	41.0	61.0	107
1,2,3,4,7,8,9-HpCDF	50	50	39.0	69.0	100
1,2,3,4,6,7,8-HpCDD	50	47	35.0	70.0	94
OCDF	100	100	63.0	170.0	104
OCDD	100	110	78.0	144.0	105
2,3,7,8-TCDD-37Cl4	10	9.0	3.1	19.1	90
2,3,7,8-TCDF-13C	100	78	22.0	152.0	78
2,3,7,8-TCDD-13C	100	82	20.0	175.0	82
1,2,3,7,8-PeCDF-13C	100	86	21.0	192.0	86
2,3,4,7,8-PeCDF-13C	100	85	13.0	328.0	85
1,2,3,7,8-PeCDD-13C	100	96	21.0	227.0	96
1,2,3,4,7,8-HxCDF-13C	100	81	19.0	202.0	81
1,2,3,6,7,8-HxCDF-13C	100	85	21.0	159.0	85
2,3,4,6,7,8-HxCDF-13C	100	88	22.0	176.0	88
1,2,3,7,8,9-HxCDF-13C	100	83	17.0	205.0	83
1,2,3,4,7,8-HxCDD-13C	100	86	21.0	193.0	86
1,2,3,6,7,8-HxCDD-13C	100	83	25.0	163.0	83
1,2,3,4,6,7,8-HpCDF-13C	100	78	21.0	158.0	78
1,2,3,4,7,8,9-HpCDF-13C	100	79	20.0	186.0	79
1,2,3,4,6,7,8-HpCDD-13C	100	89	26.0	166.0	89
OCDD-13C	200	140	26.0	397.0	72

Cs = Concentration Spiked (ng/mL)
 Cr = Concentration Recovered (ng/mL)
 Rec. = Recovery (Expressed as Percent)
 Control Limit Reference: Method 1613, Table 6, 10/94 Revision
 R = Recovery outside of control limits
 Nn = Value obtained from additional analysis
 * = See Discussion

REPORT OF LABORATORY ANALYSIS

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Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client PASI Florida

Spike 1 ID LCS-60299
 Spike 1 Filename F180209B_01

Spike 2 ID LCSD-60300
 Spike 2 Filename F180209B_02

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDF	96	101	5.1
2,3,7,8-TCDD	102	107	4.8
1,2,3,7,8-PeCDF	106	107	0.9
2,3,4,7,8-PeCDF	92	96	4.3
1,2,3,7,8-PeCDD	97	99	2.0
1,2,3,4,7,8-HxCDF	99	108	8.7
1,2,3,6,7,8-HxCDF	101	104	2.9
2,3,4,6,7,8-HxCDF	92	98	6.3
1,2,3,7,8,9-HxCDF	98	103	5.0
1,2,3,4,7,8-HxCDD	103	103	0.0
1,2,3,6,7,8-HxCDD	101	104	2.9
1,2,3,7,8,9-HxCDD	107	106	0.9
1,2,3,4,6,7,8-HpCDF	103	107	3.8
1,2,3,4,7,8,9-HpCDF	93	100	7.3
1,2,3,4,6,7,8-HpCDD	91	94	3.2
OCDF	99	104	4.9
OCDD	98	105	6.9

%REC = Percent Recovered

RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

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February 13, 2018

Ash Aitharaju
AMEC Foster Wheeler Environment &
Infrastructure
5845 NW 158th Street
Miami Lakes, FL 33014

RE: Project: 6783-17-2970.02/The Underline
Pace Project No.: 35372893

Dear Ash Aitharaju:

Enclosed are the analytical results for sample(s) received by the laboratory on February 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Christina Raschke
christina.raschke@pacelabs.com
(954)582-4300
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35372893

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35372893001	TMW-1	Water	02/08/18 10:41	02/08/18 18:00
35372893002	TMW-5	Water	02/08/18 11:13	02/08/18 18:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35372893001	TMW-1	EPA 6010	BTS	1	PASI-O
35372893002	TMW-5	EPA 6010	BTS	1	PASI-O

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35372893001	TMW-1					
EPA 6010	Arsenic	17.4	ug/L	10.0	02/12/18 12:33	
35372893002	TMW-5					
EPA 6010	Arsenic	18.3	ug/L	10.0	02/12/18 12:45	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Sample: TMW-1 **Lab ID: 35372893001** Collected: 02/08/18 10:41 Received: 02/08/18 18:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Arsenic	17.4	ug/L	10.0	5.0	1	02/10/18 01:32	02/12/18 12:33	7440-38-2	

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ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Sample: TMW-5 **Lab ID: 35372893002** Collected: 02/08/18 11:13 Received: 02/08/18 18:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Arsenic	18.3	ug/L	10.0	5.0	1	02/10/18 01:32	02/12/18 12:45	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

QC Batch:	424877	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET
Associated Lab Samples:	35372893001, 35372893002		

LABORATORY CONTROL SAMPLE: 2312843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	250	260	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2312844 2312845

Parameter	Units	35372377001		2312845		MS % Rec	MSD % Rec	% Rec Limits	Max			
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result				RPD	RPD	Qual	
Arsenic	ug/L	5.0 U	250	250	264	266	105	106	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

U Compound was analyzed for but not detected.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline
Pace Project No.: 35372893

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35372893001	TMW-1	EPA 3010	424877	EPA 6010	424892
35372893002	TMW-5	EPA 3010	424877	EPA 6010	424892

REPORT OF LABORATORY ANALYSIS

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MO# : 35372893

:CORD

Page 1 of 1

Company Name: **Avec Foster Wheeler PO#**

Address: **5845 NW 158th St**

City: **Miami Lakes** State: **FL** Zip: **33014**

Attn: **Ashok Aitharaju** Fax#

email: **Ash.Aitharaju@avec.com** Phone: **305-826-5588** Codes

Project Name: **The Underline** Proj # **6783-17-29170**

Sampler Signature: *[Signature]* Circle One Event: Daily Weekly Monthly Quarterly Semi-Annual Annual

Field Filtered Integrity OK(Y/N) Total # of containers

LAB ANALYSIS

Sample #	Sample ID	Collect Date	Collect Time	Matrix Code*	Field Filtered	Integrity OK(Y/N)	Total # of containers	Parameters
1	THW-1	2/8/18	1041	GM			1	As by 6010
2	THW-5	2/8/18	1113	GM			1	
3								
4								
5								
6								
7								
8								
9								
10								

EXAMPLE
Diss. Lead 6010

Container Type Codes	Matrix Codes	Preservative Type Codes	REMARKS
AV Amber Vial CV Clear Vial P Plastic AL Amber Litr CL Clear Litr AP Amber Plastic AG Amber Glass SB Seal Jar S Other	ES Encore Sampler PPV Prepreserved Mail PLC Plastic container PLJ Plastic Jar Z Ziploc bag TB Tedlar bag WP Whirl pak TG Gallon Jug TC Terra-core	A. None B. HNO3 C. H2SO4 D. NaOH E. HCL F. MeOH G. Na2S2O3 H. NaHSO4 I. Ice J. MCAA K. Zn Acetate L. Other	48 hr

Item	Relinquished by	Affiliation	Date	Time	Received by	Affiliation	Date	Time	Required State Certification	Lab Use Only
1	<i>[Signature]</i>	Avec EMD	2/8/18	1147	<i>[Signature]</i>	avec	2/8/18	11:47	FL GA SC NC NJ	1 2 3 4 5
2	<i>[Signature]</i>	avec	2/8/18	1430	<i>[Signature]</i>	avec	2/8/18	16:00		
3	<i>[Signature]</i>	avec	2/8/18	18:00	<i>[Signature]</i>	avec	2/8/18	18:00		
4										

Pompano Lab 954-582-4300

Revision: FALL-C-007-Rev.00

C.O.C. Serial # 135397



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 12

Document Revised:
August 2, 2017
Issuing Authority:
Pace Florida Quality Office

WO# : 35372893

h (SCUR)

Project # PM: CTR **Due Date:** 02/13/18
Project Manager CLIENT: 36-MACTEC
Client:

Date and Initials of person:
Examining contents: _____
Label: _____
Deliver: _____
pH: _____

Thermometer Used: 9-324 Date: 2/8/18 Time: _____ Initials: _____

State of Origin: _____

Cooler #1 Temp. °C (4.1) (Visual) 0.0 (Correction Factor) 4.1 (Actual)
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)

- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun
- Samples on ice, cooling process has begun

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority
 Other _____
Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # _____

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet Blue Dry None

Packing Material: Bubble Wrap Bubble Bags None Other _____

Samples shorted to lab (If Yes, complete) Shorted Date: _____ Shorted Time: _____ Qty: _____

Comments:

Chain of Custody Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Chain of Custody Filled Out	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Relinquished Signature & Sampler Name COC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples Arrived within Hold Time	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush TAT requested on COC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient Volume	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All Containers needing preservation are found to be in compliance with EPA recommendation:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, O&G, Carbamates		
Headspace in VOA Vials? (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____

Date: _____