



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.



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 (μ g/l) slightly above the FDEP GCTL of 10.0 μ g/l and 23.4 μ 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 μ g/l and TMW-5 at 18.3 μ 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	1000
	Iron	69.9	300
EPA 8270 SIM	Acenaphthene	0.12 l	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.

Jeremey Paris Senior Scientist Ashok Aitharaju, PMP Project Manager

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Brickell Backyard Area of The Underline Groundwater Assessment Report Amec Foster Wheeler Project Number 6783-17-2970.02 February 28, 2018



TABLES

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

San	nple	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
GC	TLs	10	15
NA	DCs	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 Chro- mium	Aluminum Antimony		Barium	Copper	Iron	Mercury	Selenium	Silver
Test M	lethod	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 l	18.1	3.2 l	69.9	0.10 U	7.5 U	2.5 U
GC	TLs	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

San	nple	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)						
TMW-6 02/02/201		0.48 U						
GCTLs		NA						
NAI	DCs	NA						

Notes:

NA = Not Available

Prepared by:

NS = Not Sampled

Checked by:

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

Exceeds GCTL Limit

Exceeds NADC Limit

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

Sar	nple	Naph- thalene	1-Methyl- naph- thalene	2-Methyl- naph- thalene	Acenaph- thene	Acenaph- thylene	Anthra-cene	Benzo (g,h,i) perylene	Fluoran- thene	Fluorene	Phenan- threne	Pyrene	Benzo (a) pyrene	Benzo (a) anthra-cene	Benzo (b) fluoran- thene	Benzo (k) fluoran- thene	Chrysene	Dibenz (a,h) anthra-cene	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 l	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
GC	TLs	14	28	28	20	210	2100	210	280	280	210	210	.2**	.05a	.05a	.5	4.8	.005a	.05a
NA	DCs	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

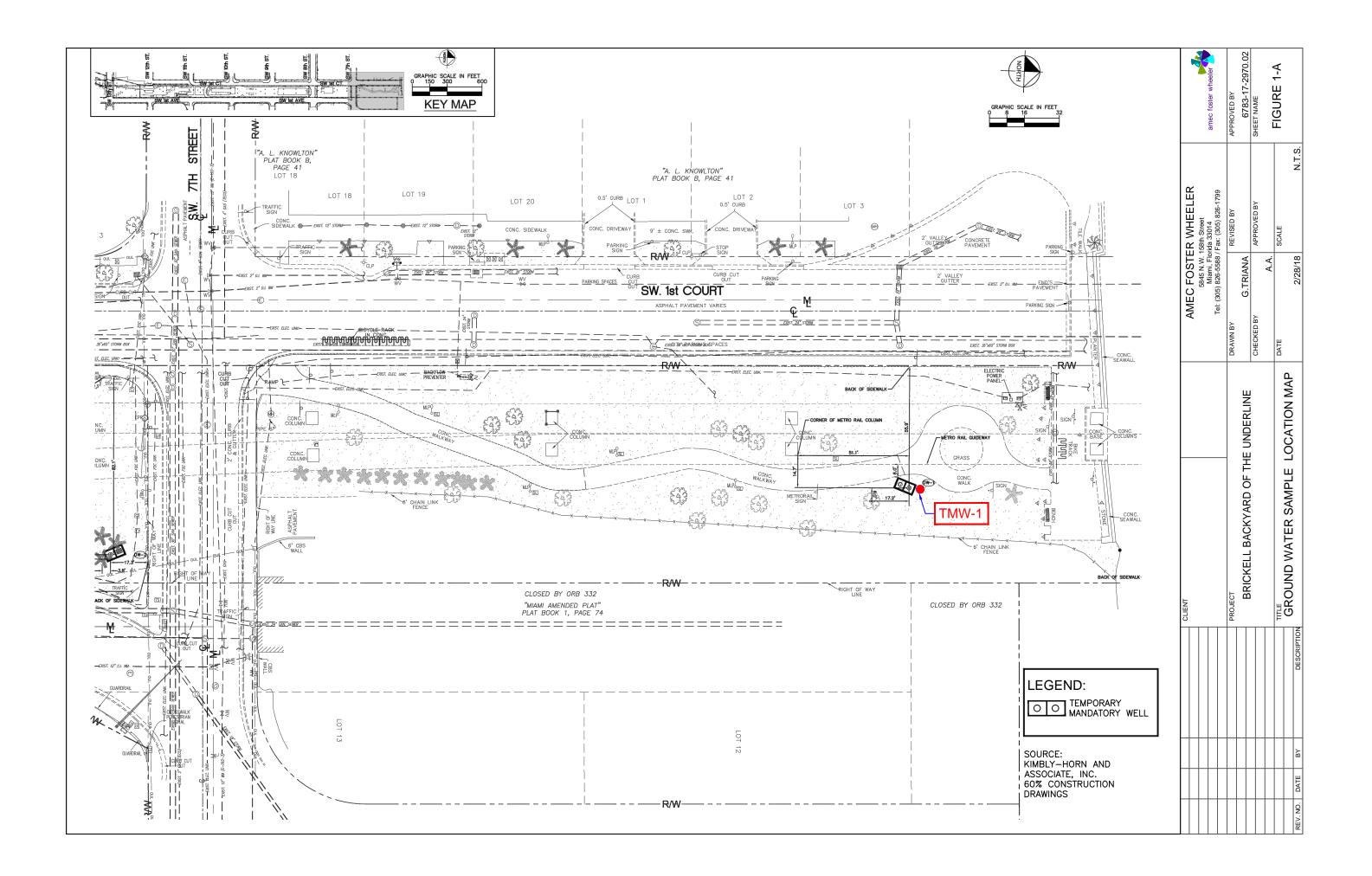
Sample ID	Analyte	Result (pg/L)
TMW-6	Total TCDF	2.5 U
TMW-6	Total TCDD	2.1 U
TMW-6	Total PeCDF	0.57 U
TMW-6	Total PeCDD	0.93 U
TMW-6	Total HxCDF	0.60 U
TMW-6	Total HxCDD	1.0 U
TMW-6	Total HpCDF	1.2 U
TMW-6	Total HpCDD	1.3 U

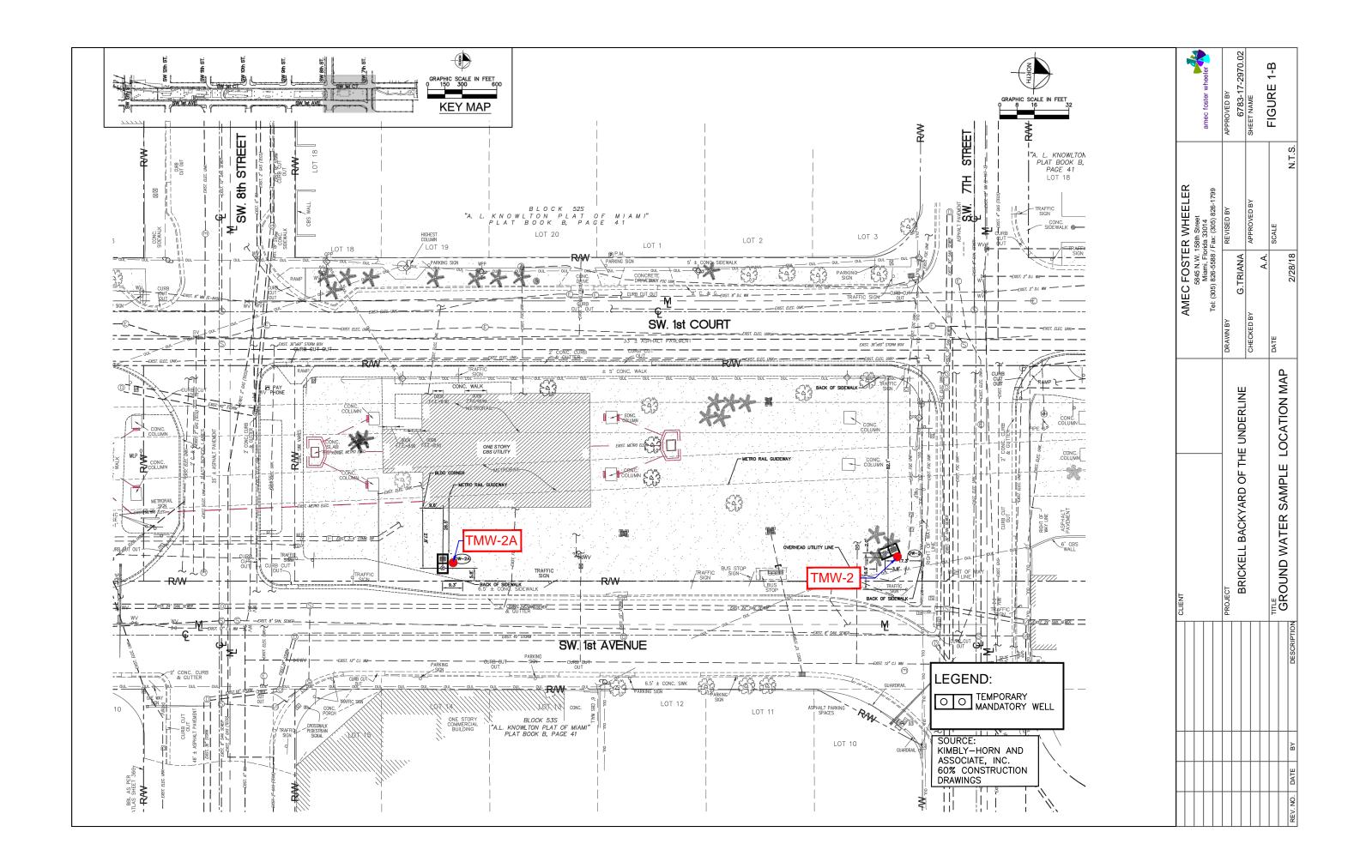
prepared by: JMP checked by: AA

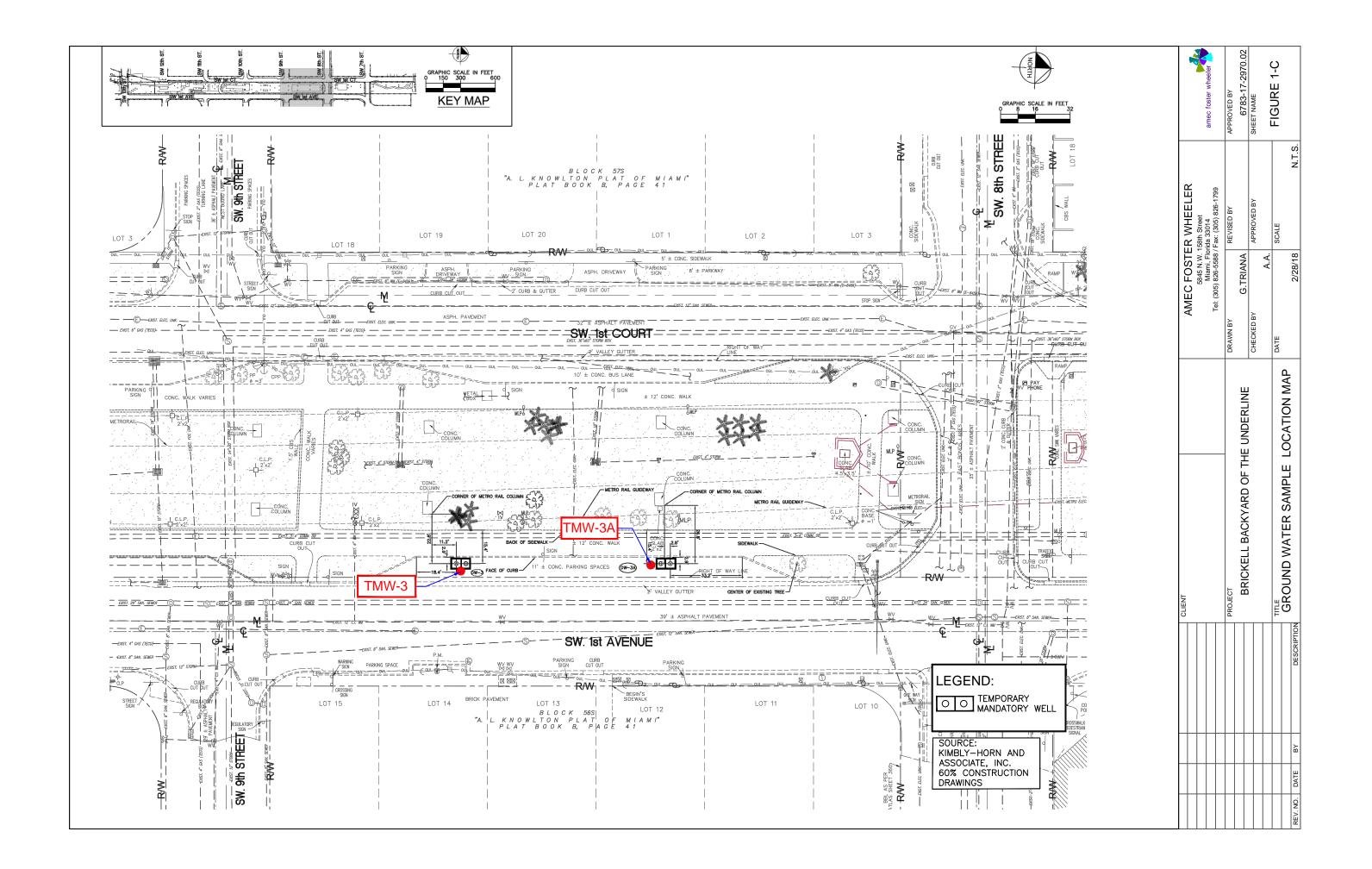
Brickell Backyard Area of The Underline Groundwater Assessment Report Amec Foster Wheeler Project Number 6783-17-2970.02 February 28, 2018

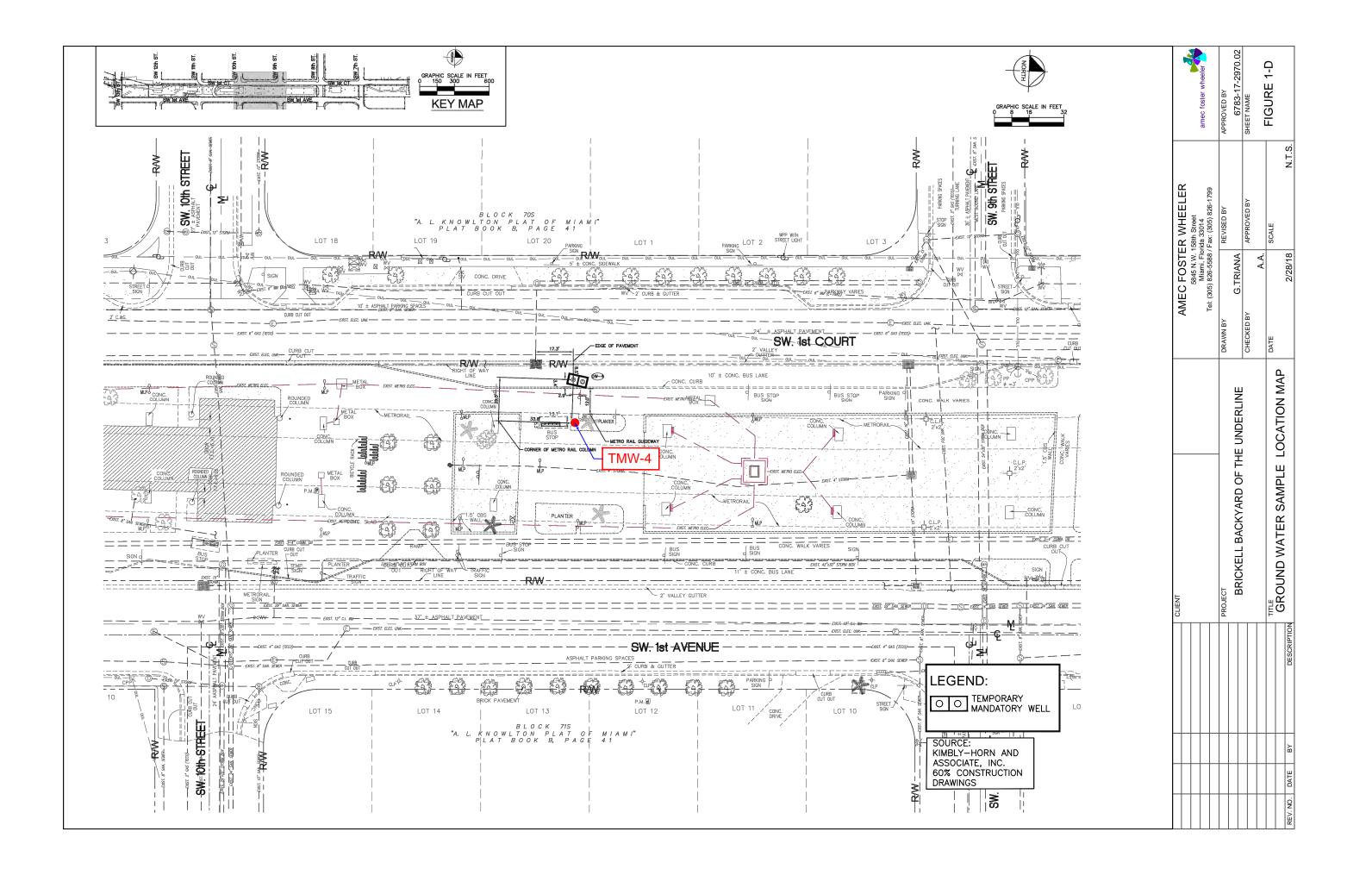


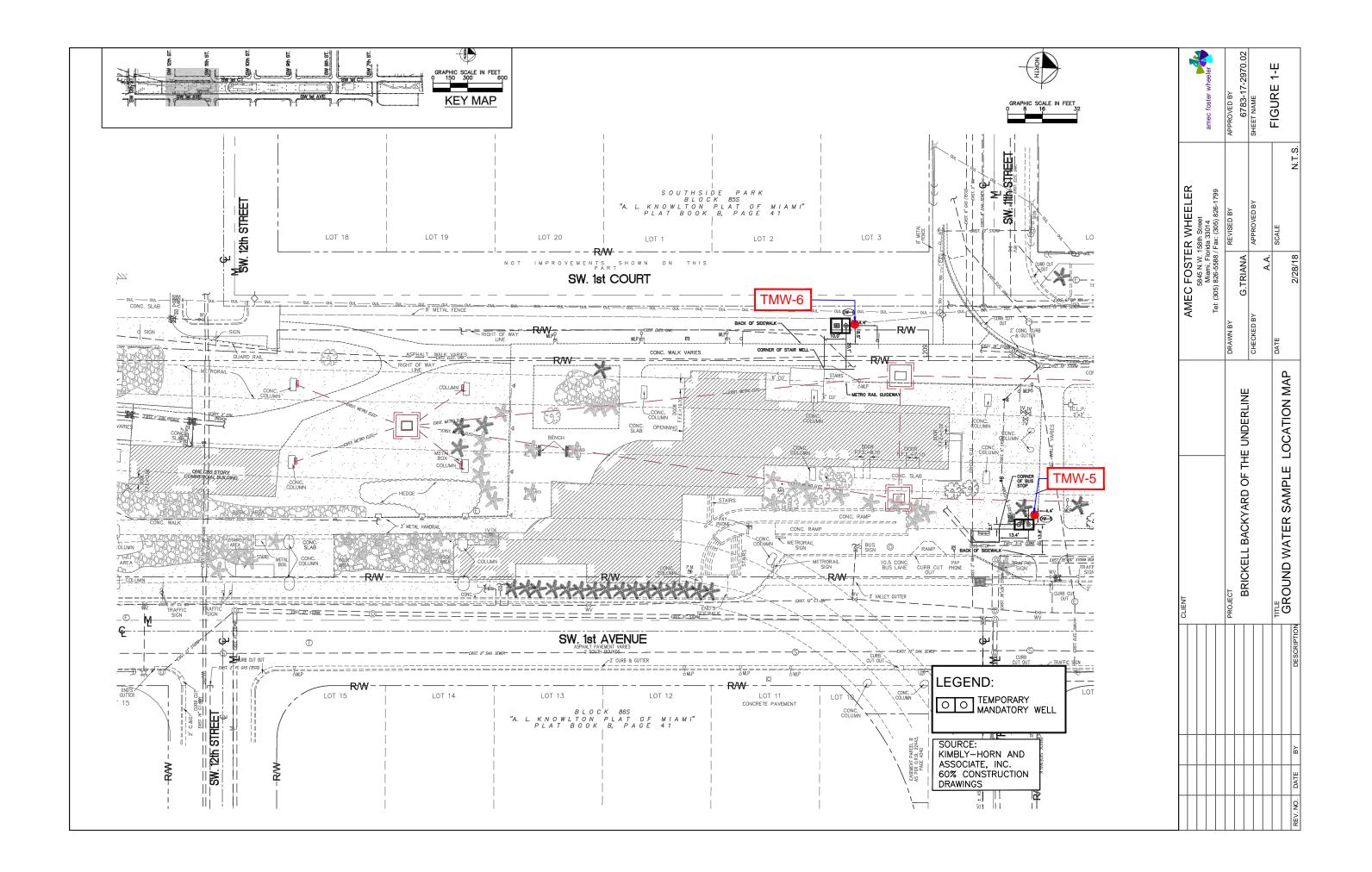
FIGURES













ATTACHMENT A

SOIL BORING LOGS



Page I of 2

Boring/	Well ID			Project Name: Project Number										
_	MW			The		Ur	nderline			67	83-	17-2	970.	OZ
Logged				Borehole Sta	rt D	ate:	unilid	Boreh	ole Start Time:			M	PM [24hr
		k Kearr	15	EI	iu L	ate:	1131110	-7.	End Time:		ı A	M	РМ 📗	
Operato	r: Co	rl		Permit Number	:				FDEP Facility	Identific	cation N	lumber:		
Drilling		ny:		Pavement Thick		s (in			neter (inches):		Boreho	le Depth	(feet):	
Drilling	Method		Apparent Boreho	e DTW (feet)	2_		Measured Well D	3 0 2 TW (in		OVA (Ji		and check	ctvne).	
H	A/DO	p'	(from soil moistu	recontent): 5	1	5	water recharges i			0 111 (11	or model	T T		PID
			heck method(s)]	Drum		pirois in	Spread F Ba	ckfill	Stoc	kpile	řine C	Other		
		or multiple item: letion (check or		Well	***************************************	g	Grout Be	ntonit	e	kfill		Other (de	ngonile a)	
Boreno	e comp	iction (check of	rc).	Stick	u		Glott (Be	пош	c i Bac	N I I I I		Jiner (de	escribe)	
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID		-	tion - include g staining, and ot) n	USCS Symbol	Moisture Content
HA		NA					Black, g-s Gray, g-						6M 6M	М
					2		Yellow/tan,	lim	erock	F1)	\		GP	D
HA		NA			3									Μ
					4									
DB	60	NA			5		Dark bro Whitish/to	wn, 1	g-s-si	ne ne			6M LS	W
	A THE PARTY OF THE				6									
	ARONOMOWERSHALL SERVICE SERVIC	NA			7									S
PB	-				8	-							10	
	V	NA			9	-							LS	5
	60				10									
	A CONTRACTOR OF THE PARTY OF TH	NA			11	_								
	V	, , , ,			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



Page 2 of 2

	Well ID: MW-		Project Name: The	Underli	ne	Project Number: Borehole Start Date 6783172970.02 End Date	Project Number: Borehole Start Date: 1/3 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	Boring terminated @ 14'						
					16							
					17							
					18							
					19							
					20							
			, ,		22							
					23							
					24							
					25							
					27							
					28							

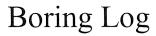


Page I of 2

Boring/	Well ID:			Project Name:					Project Number:			
T	MW	1-2		The	U	nd	lerline		6783-17-29	70.0	2	
Logged								Borehole Start Time:		РМ 🌅	24hr	
		r Kear	775	Er	nd D	ate:	1/31/18	End Time:		PM	24hr	
Operato	or: Ca	.rl		Permit Number				FDEP Facility	Identification Number:			
Drilling	Compa			Pavement Thick		s (in		le Diameter (inches): 3, 25	Borehole Depth	Borehole Depth (feet):		
Drilling	Method	IEE	Apparent Boreho	le DTW (feet)	OVA (list model and check	type):						
	4/DP		(from soil moistu	recontent):	D			DTW (in feet after n well): 6,83		ID [PID	
			heck method(s)]				Spread Ba		ckpile Other			
		or multiple item:		•								
Borehole Completion (check one): Well Grout Bentonite Backfill Other (describe												
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	_	escription – include ; odors, staining, and of		USCS Symbol	Moisture Content	
HA		NA			1		Black, g-	-5-5 MIX 5-5 MIX.SN	-lærge gravel	6M 6M	D	
HA		NA			3		Dark Brownia	limeroch f		6P	M	
Pb	60	NA			5	•	Orange/L	ti Br, lime	stone	LS	M	
	To the manufacture of the control of	NA			7		Whiteh/T	ian, limest	one	LS	, ,	
Pb	60	NA			9	-					5	
		NA			11	-	Same	as above				

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:





Page 2 of ______

		Project Number: Borehole Start Date:		*********	5	Project Name:		Wheeler Boring/Well ID:			
31/18	1/3	Project Number: Borehole Start Date: End Date:	3	٠ د ک	11.0.1.	rioject Name.					
770	7	6/83/1/29/10/02 End Date:	_	1// 6	<u>Underli</u>	ine i	·	1W-			
Moisture Content	USCS Symbol	Sample Description – include grain size based on USCS, odors, staining, and other remarks	Lab Sample ID	Depth (feet)	Net OVA (ppm)	Filtered OVA (ppm)	Unfiltered OVA (ppm)	Sample Recovery (inches)			
5	LS	same as above		13			NA	7	DP		
		Pain Land L. L. AU'	-	14							
		Boring terminated @14'	-	15							
	i			16					l		
		,	-	17							
			-	18							
)	19							
)	20							
				2					144000000000000000000000000000000000000		
			2	22							
			3_	23							
			<u> </u>	24					ļ		
			5_	2:							
			<u>6</u>	2							
			<u>7</u>	2							
			8	2							
		ST = Shalby Takes DD = Direct Purks SC = Socia Cores DC = Dell C	5 6 7 8	2.							



Page I of 2

	Well ID:	Maria de la companya		Project Name:					Project Number:		-		
Dornig/		N-2A			<i>i l</i>	2	lerline		6783-117-	7971	3.07		
Logged	By:	N-2A		Borehole Sta				Borehole Start Time:		PM T	24hr		
		k Keai	ms	1	nd D		1731110	End Time:	parant grant	PM	24hr		
Operato	r:	•		Permit Number	:			1	Identification Number:				
		<u>vr1</u>											
Drilling	Compa	AEE		Pavement Thick		ss (in		le Diameter (inches): 3, 25	Borehole Depth (feet):				
	Method	(s):	Apparent Boreho	le DTW (feet)	_ <			OTW (in feet after	OVA (list model and che	ck type): FID	DID.		
	HA/D	T	(from soil moistu	recontent): \bigcirc	_	gran		in well): 6,97	1 7071	HD I	FID		
		or multiple item.	heck method(s)]	: N Drum		2	Spread Ba	ackfill Stoo	ckpile Tother				
l		letion (check or		Well		graditor.	Grout B	entonite Bac	ekfill Other (describe)			
Boreno	e Comp	iction (check of	ic).	~ ······		; promotives	Glout ; p	emorne , but	other (deserroe)			
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	_	escription - include ; , odors, staining, and ot		USCS Symbol	Moisture Content		
HA		NA			1	-	Black, g- Gray, g-s	S-S MIX (to	oscillarge gravel	6M 6M	D		
HA		ıΛ			2	-	Orange/Bro	wn, limerock	Fill	6P	M		
		NA			4	Dar -	Brown, g-	5-3 Mix		6H	M		
DP	60	NA		3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	5	-	Orange/L	l, Br, limesto	sne	LS			
					6	-					$ \omega $		
		NA			7	•••	Tan/Whitie	sh, limestor	re	LS	S		
DP	V	NA			9								
	60				10	<u>)</u>	same as	- bario		LS	5		
		NA			11	•••	Sauce of	sauve					
					12	2							

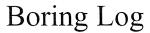
Sample Type Codes: PH = Post Holq, HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings

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



Page 2 of Z

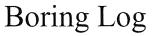
	Well ID: MW-	-2A	Project Name: The U	nderline			Project Number: Borehole Start Date (A) 83172970,02 End Date	e: 1/31	/18
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)		Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
DP		NA			13		same as above	LS	5
					15				
					16				
					18				
					20				
					21				
					23	•			
					24				
					25	•			
					27	•			





Page I of 2

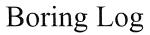
	HEERE		**********************	,								***************************************	-
Boring/V	Vell ID:			Project Name:						Projec	t Number:		
T	MW	-3		The	ĺ	ln	<u>derline</u> 1/31/18			67	83-17-29	10,C	2
Logged				Borehole Str	r+ D	ate.	Uzilid	Roreh	ole Start Time		AM F		24hr
		12	- 6				1/21/18	Doren				м Г	
		r Kean	15	Eı	id D	ate:			End Time			'M	24nr
Operator	r:	4		Permit Number	:				FDEP Facility	/ I dentif	ication Number:		I
	Ca	rl											
Drilling	Compai	ny:		Pavement Thic	knes	s (in	ches): Borehol	e Dian	neter (inches):		Borehole Depth (feet):	
	JAE			12				3,2			14		l
Drilling			Apparent Boreho	I			Measured Well I			OVA (list model and check	type):	
L		P	(from soil moistu	recontent):) (5	water recharges i			1		ID T	PID
	111/2	. 4											
Disposit	ion of E	Orill Cuttings [c	heck method(s)]	: Drum		negr.	Spread Ba	ckfill	Sto	ckpile	Other		
(describe	if other	or multiple item:	are checked):										
Borehol	e Comp	letion (check or	ie).	X Well		Yearis'	Grout Be	entonit	e 🗀 Ba	ckfill	Other (des	scribe)	
20.0	· comp	(0	,.	/ -								,	ŀ
		***************************************		_	T-								
	<u>7</u>					D						_	T I
Sample Type	Sample Recovery (inches)	Unfiltered	Filtered		Depth (feet)	Sample 1D						USCS Symbol	Moisture Content
L J	ple Reco (inches)	OVA	OVA	Net OVA	3	d E	Sample D	escrip	tion - include	grain siz	ze based on	Syr	Ü
I di	E E	(ppm)	(ppm)	(ppm)	ttd		USCS	, odors,	staining, and o	ther ren	narks	S	Ĭ
Sar		(Pp)	(Ppm)		Õ	Lab						Š	oist
	Š					-							Σ
							(oh -010		***************************************				
HA							Concrete				- ,		
וורי		AIA											
		NA					Gray, gro	أميما	-cond-	11.	MS, (811)	6M	\triangleright
							July, Gic	Cyel	Same	51.17	EUX(XIII)	011	
				*	2	-							
							Light Brown	laca	DOLL CO.	-	Liv	6H	M
HA							-9. 1.0.0.	1 C.V.C.	900				
		NA			3	-							
		. 4/ /					Brown	2diu	M <and< td=""><td></td><td></td><td>SP</td><td>M</td></and<>			SP	M
					4		Brown, M	Tan	limant	AN O		15	
			-		+	-	LINDIOWIN	iwij	111111111111111111111111111111111111111	0110		レン	
ρ_0	2												
UP	22	A I A			5								W
		IVA				_	211/21/18						
							Whitish/T.	an	limesto	one.			
					6		'					LS	
						•							5
l]	NA			7	_							
	Name of the last	100											
	100												
	l				8	_							
00	/												
DP	W												
		NA			9	_							
	128		-									ILS	S
	60	L.			1,6	1	same a		b				
	l				10	<u>, </u>	1301. Q	0 0	COVE				
1		No.											
		A I A			11	1							
	M	NA			+	<u>.</u>							
					1								
					12	2							





Page 2 of 2

Boring/			Project Name:			1		Dogobolo C4 13-1		
1		-	71.11	nderline	~		Project Number: 618317-22470.02	Borehole Start Date:	1 1 -	1/18
-	Sample Recovery X (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)		e Description - include gra		USCS Symbol	Moisture Content
DP	Sa	NA			13		es above		LS	SM
					15	Borin Pulled	g terminated Well up	l@ 14' to 12'		
					16					
					19					
					21					
					23					
					25					
					27					





Page I of 2

3oring/\	Well ID:			Project Name:				Project Number:		
7	MW	-03A		The U	nder	line - Br	ickell Backyara	larea 6783	-17-2	97020
Logged	Ву:			Borehole Sta	rt Date:	1/31/18	Borehole Start Time:	AM	PM	24hr
	Mo	irk Keai	rns	Er	nd Date:		End Time:		PM [24hr
Operato				Permit Number	•		FDEP Facility	Identification Numbe	r:	
Drilling	Compa	ıy:		Pavement Thicl	kness (in	ches): Bore	hole Diameter (inches):	Borehole Dep	th (feet):	
		AEE		Concre	te	6	3,25	15		
	$\mathcal{D}\mathcal{P}$	(s):	Apparent Boreho (from soil moistu		0	4	ll DTW (in feet after es in well): 4,3	OVA (list model and ch	eck type):	PID
		rill Cuttings [c	heck method(s)]					kpile Other		
		or multiple items		. , , , , , , , , , , , , , , , , , , ,	3	Spread	3,00	kpiic , Other		
		letion (check or		Well	jain.	Grout [Bentonite Bac	kfill \[Other	(describe)	
Doreno	ic Comp	iction (check of	ic).	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	3.000	Demonite , Date	, Other	(deserroe)	l
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet) Lab Sample ID	1 -	Description - include g CS, odors, staining, and ot		USCS Symbol	Moisture Content
HA		NA			<u>1</u>	Concret Gray, gr	re avel rsand-ci g-s-s mix sm	H Mix(Fill)	6M 1 6M	٦
					2	Brownfor	ay, Medium san rown, Medium	d	SP	М
11. ^						Orange/B	rown, medium	sand +	GP	
HA		NA	5.0		3	fracture	d limestone	grave)		M
		•								
				,,,	4	Tan Whit	ish, limeston		LS	
Pb	57	NA			5	*				W
					6					
					<u> </u>					5
		, .			7					
	NOSCHARISTER.	NA			Ė	Samo	as above		LS	
	BHCK/STREETING				8	34.60	as accord			
					-					5
DP	V	. ()			9					
U.		NA			19					
	159				1, ^					
l					10					
		NA			11	same a	us above		15	5
	$\mid \mathbb{V} \mid$									
					12					



Page 2 of _____

Boring/	eeler Well ID		Project Name:				Project Number: Borehole Start Date:	16-1	lie
71	1W-	3 A	The Ur	nderline	_		Borehole Start Date: 6083172970.02 End Date:	431	118
	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	\bigvee	NA			13		Same as above	LS	\$
	12	NA			1.5			LS	
					16	-	1" Well installed Boring terminated @ 15' Well pulled up to 14'		
					17	-			
					18	_			
					19	<u>-</u>			
					20	<u>)</u>			
					21				
					22	2_			
					23	3_			
					24	<u>1</u>			
					2:	5_			
					20	<u>5</u>			
					2	<u>7</u>			
					2	-	ST = Shellov Tube: DP = Direct Push: SC = Sonic Core: DC = Drill		

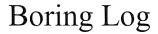


Page 1 of ______

Boring/\				Project Name:	11	0-	derline Project Number: 6783-17-297	0.0	7
Logged	1 1 1 By:	W-H		Borehole Star	u nt D	<i>i 10</i> ate:	Borehole Start Time: AM PM		24hr
		-k Kea	irns			ate:		м []	24hr
Operato	Co			Permit Number:			FDEP Facility Identification Number:		
	JAE	EE		Pavement Thick		s (in	3,25 14		
Drilling HA	Method IDP		Apparent Borehol (from soil moistu		ر د		Measured Well DTW (in feet after water recharges in well): 4,38 WA		PID
			heck method(s)]			A contract	Spread Backfill Stockpile Other		
		or multiple items		Δ/		9444			
Borehol	e Comp	letion (check on	e):	Well Well		and the second	Grout Bentonite Backfill Other (desc	cribe)	
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	-		5M 6M	
					2		Gray, g-s-s Med-lurge gravel trash debris, pieces of metal, tie downs		
HA.		NA			3	-			
					4	-		, ,	W
PB	52	NA			5	-	Tan/whitish, limestone	い	5
	particular desiration of the second s				6	_			
	Artening and Arten	NA			7	-			
					8	-	Same as above		5
DB	60	NA			9			しら	J
	100				10	<u>) </u>			
		NA			11	_			5
	V				12	<u>)</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





Page 2 of 2

Boring/	eeler Well ID	•	Project Name:			*****	Project Number: Borehole Start Date:		
	<u> 4W-</u>		The U	nderline	2		6783172970 ₆ 02 Borehole Start Date:	2/1/	18
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)		Lab Sample ID	Sample Description - include grain size based on USCS, odors, staining, and other remarks	USCS Symbol	Moisture Content
D8		NA			13		same as above	٤	S
					15		Boring terminated @ 14' Well pulled up to 12'		
					16	,			
					17				
					18				
					19	•			
					20	-			
					21	-			
					22	-			
					23	-			
					24	-			
					25	<u>-</u>			
					26	-			
					27	-			
	<u> </u>	D	<u> </u>	A 66 . 6	28	-	ST = Shelby Tube: DP = Direct Push: SC = Sonic Core: DC = Drill		

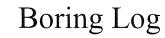


Page I of Z

Boring/	Well ID:			Project Name:				***************************************		Project Number:		
•	TMU	1-5		The I	Ur	ide	erline			678317291	70,0	2
Logged	By:			Borehole Sta	rt D	ate:	2/1/15	Boreho	ole Start Time:	AM T	РМ	24hr
		k Kear	ns	En	nd D	ate:	4/1/10		End Time:	f AM	РМ Г	24hr
Operato	Car			Permit Number					_	Identification Number:		
	Compa JA	EE		Pavement Thick		s (in	ches): Borehol	le Diamo	eter (inches):	Borehole Depth	(feet):	
Drilling	Method A/D	(s):	Apparent Boreho (from soil moistu	le DTW (feet)	1.5		Measured Well I	OTW (in	feet after	OVA (list model and check	type):	PID
			heck method(s)]					ackfill	· · · · · · · · · · · · · · · · · · ·	ckpile Other		
		or multiple items					· · · · · · · · · · · · · · · · · · ·					
Borehol	e Comp	letion (check on	e):	Well	,	Ja	Grout Be	entonite	e Bac	kfill Other (de	scribe)	
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID			tion - include ; staining, and ot	grain size based on her remarks	USCS Symbol	Moisture Content
ΗA		NA			1 2		Brown, g-s Gray, g-s Yellowish/Or Imerock	-5 1 -5 1 ange,	Mix, SM Mix , g - s - s avel	-med.gravel mix, med-large	GM GM GH	D M
HA		NA			3	,						M W
DP		NA			5		Yellowish/1	tan,	limesto	ne	LS	5
		NA			7							
DP		NA			9		Whitish/Ta	ın, li	meston	<u>e</u>	LS	5
					10	-					LS	
		NA			11	•						7

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: $\mathbf{D} = Dry$; $\mathbf{M} = Moist$; $\mathbf{W} = Wet$; $\mathbf{S} = Saturated$





Page 2 of ______

	eeler Well ID	•	Project Name:		***************************************		Project Number: Borehole Start Date:		
	MW.		The l	Inderlin	e		Project Number: Borehole Start Date: 6783172970.02 End Date:	2/1/	18
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)		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
					15		Boring terminated @ 14' Well pulled up to 12'		
					16	,			
					17				
					18				
					19	•			
					20				
					21				
					22	•			
					23	•			
					24	-			
					25	•			
					26	-			
					27	•			
L			<u> </u>		28				



Page 1 of 2

Boring/	Well ID:			Project Name:			· · · A · · · · · /		Project Number:		
		N-6					derline	y	6783-17-2	2970	200
Logged	-	n 8 -		Borehole Sta	ırt D	ate:	2/1/18	Borehole Start Time:		•	24hr
		rk Kec	2MS	Er	nd D	ate:		End Time:		PM	24hr
Operato	Ca			Permit Number			ψ		Identification Number:		
Drilling	Compa			Pavement Thick	knes	s (in		le Diameter (inches): 3, 25	Borehole Depth	(feet):	
Drilling	Method		Apparent Boreho	le DTW (feet)				OTW (in feet after	OVA (list model and chec	k type):	
H	HA/D	P	(from soil moist	ure content):	2		water recharges	in well): 2	NA	FID [PID
Disposi	tion of I	Orill Cuttings [c	heck method(s)]	: X Drum		l'ossisti.	Spread Ba	ackfill Sto	ckpile T Other		
(describ	e if other	or multiple item.	s are checked):								
Borehol	le Comp	letion (check or	ne):	Well		pristrani battan	Grout B	entonite Bac	ekfill Other (d	escribe)	
Sample Type	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Lab Sample ID	USCS	escription - include , odors, staining, and of	her remarks	USCS Symbol	Moisture Content
HA		NA			1 2	-	Brown, g Yellowish/Lij fin-med s	ght brown, lime and w/sm-lar	ч-меd gravel erock fill ge gravel	6M	D
HA		NA			3	-					P
DP	60	NA			5	•	same o	s above		6M	М
					6	-					M
	National Action Control of Contro	NA			7						
DP		1			9	-	Whitish/To	in, limeston	e	5	M
	57	NA			10	<u>)</u>					母
		NA			1	<u>i_</u>				LS	W
	$ \mathbb{V} $	5			12	2					<

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: $\mathbf{D} = \mathsf{Dry}; \ \mathbf{M} = \mathsf{Moist}; \ \mathbf{W} = \mathsf{Wet}; \ \mathbf{S} = \mathsf{Saturated}$



Page 2 of Z

	Well ID		Project Name:	Underl	ine	Project Number: Borehole Start Date: 2/1//8
	Sample Recovery (inches)	Unfiltered OVA (ppm)	Filtered OVA (ppm)	Net OVA (ppm)	Depth (feet)	Sample Description - include grain size based on USCS, odors, staining, and other remarks
DP		NA			13	
DP	60	NA			15	Same as above
		NA			17	
······································	\bigvee	NA			19	Boring terminated @ 19'
					20	
					22	
					24	
					25	
					27	



ATTACHMENT B

GROUNDWATER SAMPLING LOGS

SITE Th	ie Un	derlin	e		SI	TE CATION: 🖊	Yiami,	FL				
WELL NO:	TMN			SAMPLE		1W-1			DATE: 2	12/18		
						ING DA	TA			1-110		
WELL DIAMETER (in			ER (inches):	7/ % DEP		et to 14 f	STATIC I	ER (feet): \supset , O	9 OR	RGE PUMP TY BAILER:	P	
(only fill out if a	applicable)		= (14	feet -	5,09	feet) X	WELL CAPACI	ΙΥ	ot = 0.4	gallons	
EQUIPMENT (only fill out if a		IRGE: 1 EQU	PMENT VOL		UME + (TUB allons + (TY X T	UBING LENGTH) feet)	+ FLOW C	ELL VOLUME '		
INITIAL PUMP DEPTH IN WE		6	E	P OR TUBING WELL (feet):		PURGIN		PURGING		gallons TOTAL VOL		
ТІМЕ	TIME VOLUME PURGED (gallons) PURGE RATE (gpm) PURGE (feet) PURGED (gallons) S.11 7.44 24.0 23716 9,1 18,4 Clear None											
					4145			//=				
1210 0,4 1,3 0,13 5,11 7,45 24,0 23385 6,8 9,6 Clear None												
WELL CAPAC TUBING INSI					1.25" = 0.06 = 0.0014;	1/4" = 0.002			 5" = 1.02; 006; 1/2	6 " = 1.47; " = 0.010;	12" = 5.88 5/8" = 0.016	
PURGING EQ	UIPMENT C	ODES: B	= Bailer; I	3P = Bladder F			Submersible Pu	ımp; P P = Pe	ristaltic Pun	np; O = O	her (Specify)	
SAMPLED BY	(PRINT) / A	FEILIATION:		SAMPLER(S)		LING DA	ATA	ı				
Markk		£ .	FW	CVI	we Th	ine		SAMPLING INITIATED AT	:1211	SAMPLIN ENDED A	G T: 1213	
PUMP OR TU DEPTH IN WE	BING	6		TUBING MATERIAL C	ODE: HI)PE_		D-FILTERED: Y ion Equipment Typ		FILTER S	ZE: μm	
FIELD DECON	NTAMINATIO	N: PUMI	P Y (Ń	6	TUBING	Y N (re	eplaced)	DUPLICATE:	Y	N		
SAMPLE	#	R SPECIFICA MATERIAL	TION VOLUME	PRESERVAT	IVE 1	TION (includ	FINAL	INTENDE ANALYSIS AI METHO	ND/OR E	SAMPLING EQUIPMENT	SAMPLE PUMP FLOW RATE	
TMW-I	ONTAINERS	PP	250ml	HNO3	ADDE	D IN FIELD (mL) pH	AS, Pb 6		APP	(mL per minute)	
			- ; ; ;	111103				11110	· · · ·	, , , ,		
:												
REMARKS:												
REMARKS:												
MATERIAL CO		AG = Amber (S = Silicone;		Clear Glass; O = Other (S		High Density I	Polyethylene;	LDPE = Low De	nsity Polyeti	nylene; PP	= Polypropylene;	
SAMPLING E		R	FPP = Revers	nrough) Perista e Flow Perista	Itic Pump;		Method (Tubing	Gravity Drain);		Submersible F r (Specify)	Pump;	

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

SITE T	he Una	derline	•		SI ⁻	CATION:	Miami,	FL				
WELL NO:		_		SAMPLE	ID: TM				DATE: 2	12/18		
						ING DA	TA	L		<i>. ,</i>		
WELL DIAMETER	R (inches):	TUBING	ER (inches):	3/K WEL	L SCREEN	NTERVAL et to	STATIC D	EPTH R (feet): 6 ,9	PL	JRGE PUMP T R BAILER:	(PE	
WELL VOL		1 WELL VOL	UME = (TOT	AL WELL DEP		TIC DEPTH T	O WATER) X	WELL CAPACI	ΙY	<u> </u>		
	NT VOLUME PU	IBCE, 4 EOU	= (14	feet	6.91	feet) X	0.04	gallons/f	$oot = O_{\epsilon}$	3 gallons	
(only fill ou	t if applicable)		IFWIENT VOL.		allons + (JBING LENGTH)				
INITIAL PL	IMP OR TUBING WELL (feet):	SDE	FINAL PUN	P OR TUBING		PURGIN	ons/foot X	feet) PURGING		gallons TOTAL VOL	UME .	
DEPTH IN	WELL (feet):		DEPTH IN V	WELL (feet):	./12	INITIATE	D AT: 0920	PURGING ENDED AT: DISSOLVED	U933	PURGED (g	gallons): Le G	
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	OXYGEN (circle units) mg/L or % saturation	TURBID (NTUs			
0924	0,5	0,5	0.13	6,92	7.66	25,7	8125	18.60	59,	clear	in None	
0927	ACCO TO THE TOTAL CONTRACTOR OF THE PARTY OF											
0935	0933 0,5 1,6 0,17 6,92 7,66 25,7 8138 7,4 5,25 Clear None											

	PACITY (Gallon					3; 2 " = 0.1			5" = 1.02;	6" = 1.47;	12 " = 5.88	
	ISIDE DIA. CAF EQUIPMENT C			3P = Bladder f		1/4" = 0.002 SP = Electric	26; 5/16" = 0. Submersible Pur		eristaltic Pu	/2" = 0.010; mp; O = O	5/8" = 0.016 ther (Specify)	
						LING DA	ATA					
1	BY (PRINT) / A - Kearn	4	c.Ela)	SAMPLER(S)	1 1 1	(S):	A CONTRACTOR OF THE PROPERTY O	SAMPLING INITIATED A	r: 093	U SAMPLIN	GT: 0936	
PUMP OR	TUBING	7,5	0.10	TUBING		PE		-FILTERED: Y	(N)		IZE: μm	
	WELL (feet): CONTAMINATION		PYN	MATERIAL C	TUBING		eplaced)	DUPLICATE:	<u> </u>	N		
	PLE CONTAINE		$\overline{}$	<u> </u>		TION (includ	-	INTEND	ED	SAMPLING	SAMPLE PUMP	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVAT USED		TOTAL VOL	FINAL pH	ANALYSIS A METHO		EQUIPMENT CODE	FLOW RATE (mL per minute)	
TMW-2	.]		250ml	HN03		- INTICLO		As, Po 6	010	RPP	125	
								(
REMARKS	REMARKS: ,7											
MATERIA	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)											
SAMPLIN	G EQUIPMENT	CODES: A	PP = After (TI	nrough) Perista	altic Pump;	B = Bailer	; BP = Blado Method (Tubing			ic Submersible ner (Specify)	Pump;	
NOTES: 4	The chave						for 62 160 E A		J - O(I	.o. (openiy)		

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)

NAME: The Un	derline		SIT	E CATION:	Miami	FL						
WELL NO: TMW-2	_	SAMPLE I	D: TN	1W-21		1	ATE: 2/.	2/18				
				ING DA								
WELL DIAMETER (inches): WELL VOLUME PURGE: 1 V	TUBING DIAMETER (inche WELL VOLUME = (s): 🔰 🕖 DEPT	SCREEN I H: fee H - STA	et to)4 fe		R (feet): 1/10	S OR BA	E PUMP TYP IILER:	Ë			
(only fill out if applicable) EQUIPMENT VOLUME PURG	= (E: 1 EQUIPMENT)	OL. = PUMP VOLU	eet ME + (TUB	7,05 ING CAPACIT	feet) X	0004 BING LENGTH) +	gallons/foot FLOW CELL	= Oc	gallons			
(only fill out if applicable)			ons + (ns/foot X	feet) +	•	gallons =	gallons			
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	~	PUMP OR TUBING IN WELL (feet):	8	PURGING	⁹ D AT: 0951	PURGING ENDED AT: <i>l</i>	001	OTAL VOLU PURGED (gal				
TIME VOLUME V	CUMUL. VOLUME PURGED RAT (gallons) (gpr	E WATER	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)			
0955 6.5			7.67	26,2	17081	11.4	14,1	Whitist				
0958 0,4	0.9 0.15		1.67	26.2	17049	8.6	42	Clear	None			
1001 0.4	1.\$3 0.1	3 7.07	7.65	26.2	16300	615	10,5	Clear	- None			
WELL CAPACITY (Gallons Pe		,	1.25" = 0.06 = 0.0014;	5; 2 " = 0.10 1/4" = 0.002				,	2" = 5.88 8" = 0.016			
PURGING EQUIPMENT COD	ES: B = Bailer;	BP = Bladder Pu	!		Submersible Pur	mp; PP = Per	istaltic Pump;	O = Oth	er (Specify)			
SAMPLED BY (PRINT) / AFFI		SAMPLER(S) S			MA	SAMPLING INITIATED AT:	1002	SAMPLING				
Mark Kearns	<u>/AMECFW</u> V	TUBING	1110	PE_		FILTERED: Y	CO	FILTER SIZ	E:μm			
DEPTH IN WELL (feet): FIELD DECONTAMINATION:	PUMP Y	MATERIAL CO	TUBING		placed)	DUPLICATE:	e: Y	(N)				
SAMPLE CONTAINER S	SPECIFICATION	SAMPLE I	PRESERVA	TION (includi	ng wet ice)	INTENDE	D SA		SAMPLE PUMP			
ID CODE CONTAINERS	ATERIAL VOLUMI	USED		TOTAL VOL D IN FIELD (1	mL) FINAL	ANALYSIS AN METHOD) (CODE	FLOW RATE (mL per minute)			
TMW-2A 1	PP 250M	1 HNO3	-			As, Pb 60	DIO A	-PP	125			
REMARKS:												
	S = Amber Glass;	CG = Clear Glass; on; O = Other (Sp		High Density F	Polyethylene;	LDPE = Low Den	sity Polyethyk	ene; PP =	Polypropylene;			
SAMPLING EQUIPMENT CO	RFPP = Re	r (Through) Peristalt verse Flow Peristalt	ic Pump;		Method (Tubing	Gravity Drain);	P = Electric St O = Other (\$		mp;			

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

SITE The	NAME: The Underline LOCATION: Miani, FL											
	1W-3		SAMPLE ID:		1111-3		1	DATE: 2	12/18			
<u> </u>					SING DA				 			
WELL DIAMETER (inches):	TUBIN	G TER (inches):	3/8 WELL S	CREEN 2 fe	INTERVAL et to 12, f	STATIC D	EPTH R (feet): 2.6	5 PUR	RGE PUMP TY	F		
WELL VOLUME PUR	GE: 1 WELL VO		AL WELL DEPTH	- STA	TIC DEPTH T	O WATER) X	WELL CAPACI	TY	11			
EQUIPMENT VOLUM	•	= (UIP MENT VOL	12 fee . = PUMP VOLUM	t - #	2.65 BING CAPACI	feet) X	پ04 JBING LENGTH)	gallons/foo + FLOW CE		gallons		
(only fill out if applicat			= gallo	· ·	anlle	ons/foot X	feet)	+	gallons	= gallons		
INITIAL PUMP OR TU DEPTH IN WELL (fee		FINAL PUN	P OR TUBING - WELL (feet):	3,5	PURGIN	IG ED AT: 1035	PURGING ENDED AT:	1045	TOTAL VOL			
	_ CUMUL.		DEPTH	pН		COND.	DISSOLVED OXYGEN					
TIME VOLUM PURGE (gallon	D PURGED	PURGE RATE (gpm)		tandard units)	TEMP. (°C)	(circle units) μmhos/cm or μS/cm	(circle units) mg/L_er saturation	TURBIDIT (NTUs)	Y COLO (describ			
1039 ,5	.5	0,13		119	25.6	5892	1417	8.8	Clea			
1042 64	og	0.13		118	251	5899	10.1	5.11	Clea			
1045 04	1.3	0,13	2.65 8	120	2211	5879	8,2	4.8	Clea	s None		
WELL CAPACITY (G				25" = 0.0			,	5" = 1.02;	6 " = 1.47;	12" = 5.88		
PURGING EQUIPME			BP = Bladder Pun		1/4" = 0.002 SP = Electric	26; 5/16" = 0. Submersible Pu		eristaltic Pum		5/8" = 0.016 ther (Specify)		
					LING D	ATA						
SAMPLED BY (PRIN			SAMPLER(S) SI		E(S):		SAMPLING INITIATED A	T.1041	SAMPLIN	IG IT: 1048		
Mark Kear PUMP OR TUBING	05	CIN	TUBING				-FILTERED: Y	(N)		IZE: μm		
DEPTH IN WELL (fee	,	MP Y (ñ	MATERIAL COD	E: <u>M</u> UBING	DPE Y MU	eplaced)	on Equipment Ty DUPLICATE:		(N)			
	AINER SPECIFIC		J		ATION (includ		INTEND		SAMPLING	SAMPLE PUMP		
SAMPLE # ID CODE CONTAINE	MATERIAL RS CODE	VOLUME	PRESERVATIVE USED		TOTAL VOL ED IN FIELD (FINAL	ANALYSIS A METHO	ND/OR E	QUIPMENT CODE	FLOW RATE (mL per minute)		
TMW-3 1	PP	250m	HN03	-			Pb, As 6	010 1	4PP	125		
									·.···			
REMARKS:		<u>-</u>				1						
MATERIAL CODES:	AG = Amber	r Glass; CG =	= Clear Glass; O = Other (Spe		High Density	Polyethylene;	LDPE = Low De	ensity Polyeth	ylene; PP	= Polypropylene;		
SAMPLING EQUIPM	ENT CODES:	APP = After (T RFPP = Revers	hrough) Peristaltic	Pump; Pump;		Method (Tubing	Gravity Drain);		Submersible r (Specify)	Pump;		

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)

SITE ~	he Ur	nderli	ne_		SI LC	TE CATION:	Miami	,FL			
1	TMW-			SAMPLE	and the	W-3F		,	DATE: 2	12/18	
	· 1 (VO					SING DA		I		1-1-0	
WELL DIAMETER				70 DEF		et to 14 f	STATIC D	R (feet):	OR BA	E PUMP TYPE	
	if applicable)	1 WELL VO	LUME = (TOT = (AL WELL DEF 14	PTH - STA	TIC DEPTH T 4110	O WATER) X	WELL CAPACI	TY gallons/foot	= 0.4	gallons
	IT VOLUME PU if applicable)	JRGE: 1 EQ	JIPMENT VOL		UME + (TUB	ING CAPACI	TY X TU	JBING LENGTH)	+ FLOW CELL	VOLUME '	
I .	MP OR TUBIN	G 5	1	= g: IP OR TUBING WELL (feet):	allons + (PURGIN	G ED AT: 1016	feet) PURGING ENDED AT:		gallons = TOTAL VOLUM PURGED (gallo	
DEI IIIII	VVLLL (1661).	CUMUL.	DEFININ	DEPTH		INITIATE	COND.	DISSOLVED	1021	PORGED (gallo	ns): (1)
TIME	VOLUME PURGED (gallons)	VOLUME PURGED (gallons)	PURGE RATE (gpm)	TO WATER (feet)	pH (standard units)	TEMP. (°C)	(circle units) μmhos/cm or μS/cm	OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
102)	0.5	0.5	0.1	4,12	17.88	25,9	6336	7514	19,5	clear	
1024	0.4	0.9	0.13	4,12	7.87	26,0	6340	16.4	12	clear	
1027	0.4	1.3	0.13	4.12	7.84	26.0	6345	15.1	11,45	Clear	None
										*	
	ACITY (Gallon				1.25" = 0.00	6; 2 " = 0.1					' = 5.88
	SIDE DIA. CAF EQUIPMENT C			0006; 3/16 [.] BP = Bladder I		1/4" = 0.002 SP = Electric	6; 5/16" = 0. Submersible Pur		.006; 1/2" = eristaltic Pump;	0.010; 5/8 O = Other	' = 0.016 (Specify)
			· · · · · · · · · · · · · · · · · · ·		SAMP	LING DA					(0,00)
	BY (PRINT) / A		C()	SAMPLER(S)		E(S):		SAMPLING INITIATED AT	1028	SAMPLING	inzn
PUMP OR	<u>Kearns</u>	5/HMec	I-W	TUBING			E(E) D	-FILTERED: Y	(N)	ENDED AT:	
DEPTH IN	WELL (feet):			MATERIAL C		DPE	Filtration	on Equipment Ty			μπ
	ONTAMINATIO		<u>_</u>		TUBING		eplaced)	DUPLICATE:		$\binom{N}{}$	
SAMPLE ID CODE	# CONTAINE	MATERIAL CODE	VOLUME		IVE -	ATION (includ FOTAL VOL ED IN FIELD (FINAL	INTENDI ANALYSIS A METHO	ND/OR EQU	JIPMENT I	AMPLE PUMP FLOW RATE nL per minute)
TMW-3A	CONTAINEND	PP	250Ml	HNO		.D IIV I ILLD (mL) pH	AS,866	010 A		125
								/13/13			
REMARKS	:				<u> </u>						
MATERIAL	. CODES:	AG = Amber S = Silicone;	Glass; CG = T = Teflon;	Clear Glass; O = Other (High Density I	Polyethylene;	LDPE = Low De	ensity Polyethyle	ene; PP = P	olypropylene;
SAMPLING	EQUIPMENT		APP = After (TI RFPP = Revers			B = Bailer SM = Straw	; BP = Blado Method (Tubing		SP = Electric Su O = Other (S	ubmersible Pum Specify)	ıp;

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)

WELL NO:	- W	nderlii	15		LO	CATION: 🖊	Yiami,	FL					
WELL NO: 1 MW-4 DATE: 2/2/18 PURGING DATA													
WELL DIAMETER	R (inches):	TUBING DIAMET	; ER (inches):	3/8/ WEI	LL SCREEN II PTH: 2 fee		STATIC D et TOWATE	EPTH R (feet): 3,9	5 PUF	RGE PUMP TY BAILER: 🔑			
	UME PURGE:	1 WELL VOL	UME = (TO	TAL WELL DEF				WELL CAPACI	ΓY				
		IDOE 4 EOU	= (12	feet –	5,95	feet) X	604	gallons/fo	ot = O_{a}	3 gallons		
	NT VOLUME PU t if applicable)	JRGE: 1 EQU	IPMENT VOI		•			BING LENGTH)					
INITIAL DI	IMP OR TUBING	·	EINIAL DU	= ga	allons + (ns/foot X	feet) PURGING		gallons TOTAL VOL			
	WELL (feet):	4.5		WELL (feet):	4.5	INITIATE	DAT: 1052	ENDED AT:	1102	PURGED (g	gallons): 1.3		
	VOLUME	CUMUL. VOLUME	PURGE	DEPTH TO	pН	TEMP.	COND. (circle units)	DISSOLVED OXYGEN	TURRIDI	COLO	B ODOB		
TIME PURGED PURGED RATE WATER (standard units) (orcle units) (circle units) (circle units) (describe) (describe)													
(gallons) (gallons) (gpm) (reet)													
1059 0.4 0.9 0.13 3.96 7.57 26.7 1718 8.2 13.7 Clear Organic													
-				-				***************************************					
		:											
											12" = 5.88 5/8" = 0.016		
PLIBGING	EQUIPMENT C	WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)													
SAMPLED BY (PRINT) / AFFILIATION: SAMPLED BY (PRINT) / AFFILIATION:													
SAMPLED	BY (PRINT) / A	FFILIATION:		SAMPLER(S)	SAMPI SIGNATURE	LING DA	Submersible Pur	mp; PP = Pe		SAMPLIN	ther (Specify)		
SAMPLED Mark PUMP OR	BY (PRINT) / A L Kearn TUBING	FFILIATION:		SAMPLER(S)	SAMP SIGNATURE Thu	LING DA	Submersible Pur	mp; P P = Pe	:1103	SAMPLIN ENDED A	IG 1105		
SAMPLED Mark PUMP OR DEPTH IN	BY (PRINT) / A LEGIN TUBING WELL (feet):	FFILIATION: 15/Amer 4,5	:FW	SAMPLER(S) TUBING MATERIAL C	SAMP SIGNATURE SODE: HD	LING DA	Submersible Pur	SAMPLING INITIATED A -FILTERED: Y on Equipment Ty	r:1103	SAMPLIN ENDED A	ther (Specify)		
SAMPLED Mark PUMP OR DEPTH IN FIELD DEC	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATIO	S/Amed 4,5 DN: PUM	FW PY(SAMPLER(S) TUBING MATERIAL C	SAMPI SIGNATURE THE TUBING	LING DA (S): PE Y N (re	Submersible Pur TA FIELD Filtration	SAMPLING INITIATED AT FILTERED: Y on Equipment Ty DUPLICATE:	r:1103	SAMPLIN ENDED A FILTER S	IG 1105		
SAMPLED Mark PUMP OR DEPTH IN FIELD DEC	BY (PRINT) / A KEATT TUBING WELL (feet): CONTAMINATION	FFILIATION: S/Amed 4,5 DN: PUM ER SPECIFICA	FW PY (SAMPLER(S) TUBING MATERIAL C	SAMPI SIGNATURE TUBING TUBING	E(S): Y N (re	FIELD Filtration placed)	SAMPLING INITIATED A' FILTERED: Y ON Equipment Ty DUPLICATE: INTENDIANALYSIS A	r:1103 pe: Y ED ND/OR E	SAMPLING EQUIPMENT	IG 1105		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMPLE ID CODE	BY (PRINT) / A KEATT TUBING WELL (feet): CONTAMINATION	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	E(S): Y N (re	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG 110 S IZE: μm		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATION PLE CONTAINE	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY (SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED A' FILTERED: Y ON Equipment Ty DUPLICATE: INTENDIANALYSIS A	r:1103 pe: Y ED ND/OR D	SAMPLING EQUIPMENT	IG 1105 IZE: µm SAMPLE PUMP FLOW RATE		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATION PLE CONTAINE	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATION PLE CONTAINE	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATION PLE CONTAINE	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED Mark PUMP OR DEPTH IN FIELD DEC SAMI	BY (PRINT) / A Kearn TUBING WELL (feet): CONTAMINATION PLE CONTAINE	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED MONTH IN PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE MU-4	BY (PRINT) / A LEARTH TUBING WELL (feet): CONTAMINATION PLE CONTAINERS	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A LEARTH TUBING WELL (feet): CONTAMINATION PLE CONTAINERS	S/AMEG 4,5 DN: PUM ER SPECIFICA MATERIAL CODE	FW PY(SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED	SAMP SIGNATURE ODE: HE TUBING PRESERVA TIVE ADDE	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	r:1103 pe: Y ED ND/OR D	SAMPLING SAMPLING CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE	BY (PRINT) / A LEGY T TUBING WELL (feet): CONTAMINATION # CONTAINERS I S:	FFILIATION: S/Ame 4.5 DN: PUM ER SPECIFICA MATERIAL CODE PP	PY (INTION VOLUME 250M)	SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED HNO-3	SAMP SIGNATURE TODE:	LING DA E(S): Y N (re TION (includia OTAL VOL	FIELD Filtration placed) ng wet ice) FINAL pH	SAMPLING INITIATED AT The Equipment Ty DUPLICATE: INTENDI ANALYSIS A METHO	F:1103 De: Y ED ND/OR E	SAMPLING EQUIPMENT CODE	IG I I O S IZE: µm SAMPLE PUMP FLOW RATE (mL per minute)		
SAMPLED PUMP OR DEPTH IN FIELD DEC SAMI SAMPLE ID CODE ID CODE REMARKS	BY (PRINT) / A LEGY T TUBING WELL (feet): CONTAMINATION # CONTAINERS I S:	FFILIATION: S/Ame L/S DN: PUM ER SPECIFICA MATERIAL CODE PP AG = Amber of S = Silicone;	PY(ITION VOLUME 250M Glass; CG T = Teflon;	SAMPLER(S) TUBING MATERIAL C SAMPLE PRESERVAT USED HNO-3	SAMP SIGNATURE TODE:	Y N (re TION (includia OTAL VOL D IN FIELD (n	FIELD Filtration placed) In the property of t	SAMPLING INITIATED AT FILTERED: Y ON Equipment Ty DUPLICATE: INTEND: ANALYSIS A METHO AS, PO	Poe: Y ED ND/OR ED ND	SAMPLING EQUIPMENT CODE	IG 1105 IZE: μm SAMPLE PUMP FLOW RATE (mL per minute) 12-5 P = Polypropylene;		

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

SITE NAME:	IAME: The Underline LOCATION: MIAMI, FL												
WELL NO:	TMW-			SAMPLE				1	DATE: 2	2/2/18			
						ING DA	TA			1-1			
WELL DIAMETER ((inches):	TUBING DIAMET	ER (inches):	3/8 WEL	L SCREEN TH: 2 fe	et to 12 f	STATIC D	ER (feet): $S_I U$	9 0	JRGE PUMP TY R BAILER:	ا		
(only fill out i		1 WELL VOL	.UME = (TOTA = (17		TIC DEPTH T 5,04	feet) X	WELL CAPACI	TY gallons/f	oot = 0 .	3 gallons		
EQUIPMEN (only fill out i		IRGE: 1 EQU	IPMENT VOL.	= PUMP VOL	UME + (TUE	ING CAPACI	TY X TU	JBING LENGTH)	+ FLOW C	ELL VOLUME			
INITIAL PUN	MP OR TUBINO	G (0	1	P OR TUBING	allons + (PURGIN	ons/foot X IG ED AT:	PURGING ENDED AT:		gallons : TOTAL VOL PURGED (g	UME 7		
DEI IIIIII	FLEE (166t).	CUMUL.	DEFTITION	DEPTH			COND.	DISSOLVED		T Greeze (g	1		
TIME	(gallons) (gallons) (gpm) (feet) units) (°C) (imnos/cm mg/L or (NTOS) (describe) (describe) (describe)												
1115	1118 0.4 0.9 0.13 5.04 7.34 25,1 657 15,3 2.35 Clear Work												
1121	1121 0.4 1.3 0.13 5.04 7.34 25.1 656 13,3 1.11 Clear None												
								,					
													
WELL CAP	ACITY (Gallon SIDE DIA. CAF	l s Per Foot): (PACITY (Gal./I).75" = 0.02; =t.): 1/8" = 0.0	1" = 0.04; 0006; 3/16"	1.25" = 0.0 ' = 0.0014;	6; 2" = 0.1 1/4" = 0.002			5" = 1.02; .006; 1	6" = 1.47; /2" = 0.010;	12 " = 5.88 5/8" = 0.016		
PURGING E	QUIPMENT C	ODES: B	= Bailer; I	3P = Bladder F			Submersible Pu	mp; PP = Pe	eristaltic Pu	ımp; O = O	her (Specify)		
						LING DA	ATA						
1	BY (PRINT) / A	6 -	CII	SAMPLER(S)	1 1 11	E(S):		SAMPLING INITIATED A	-1177	SAMPLIN	G T: 1124		
PUMPORT	<u>Kearn</u>	S/HMe	CTW	TUBING			FIELD	-FILTERED: Y	(N)		ZE: μm		
DEPTH IN V		(o		MATERIAL C	ÓDE: H	DPE_		on Equipment Ty			μπ		
FIELD DEC	ONTAMINATIO	ON: PUM	IP Y (N	<u>) </u>	TUBING	Y (1(r	eplaced)	DUPLICATE:	Y	(W)			
	LE CONTAINE		ATION			ATION (includ	•	INTEND ANALYSIS A		SAMPLING EQUIPMENT	SAMPLE PUMP FLOW RATE		
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVAT USED	IVE ADDE	TOTAL VOL ED IN FIELD (METHO	D	CODE	(mL per minute)		
THW-5	L	PP	250M	HNOS	5 -		-	As, Pb	6010	APP	125		
	· · · · · · · · · · · · · · · · · · ·												
REMARKS:	*****												
NLIVIANIO.								,,					
MATERIAL	CODES:	AG = Amber S = Silicone;	Glass; CG = T = Teflon;	Clear Glass; O = Other (High Density	Polyethylene;	LDPE = Low De	ensity Polye	ethylene; PP	= Polypropylene;		
SAMPLING	EQUIPMENT	i	APP = After (T RFPP = Revers	se Flow Perista	altic Pump;		r; BP = Blad v Method (Tubing	Gravity Drain);		ric Submersible I her (Specify)	Pump;		

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)

SITE T	IAME: The Underline LOCATION: Miami, FL												
	WELL NO: TMW-6 SAMPLE ID: TMW-6 DATE: 2/2/18 PURGING DATA												
L		Ψ					TA						
WELL DIAMETER	(inches):	TUBING	ER (inches):	3K WE	LL SCREEN DETH: O fe	10	STATIC eet TO WAT	DEPTH ER (feet):		SE PUMP TYPE AILER: DP			
WELL VOL	.UME PURGE:						O WATER) X	WELL CAPACIT		AILEN. PP			
	if applicable)		= (19		1.71	feet) >	004	gallons/foot	<u>= (),3</u>	gallons		
	NT VOLUME PU tif applicable)	IRGE: 1 EQUI	PMENT VOL	. = ÞUMP VOL	.UME + (TUB	ING CAPACI	TY X T	rubing Length)	+ FLOW CEL	L VOLŪME			
INUTIAL DI	,	~			allons + (ons/foot X	feet)		gallons =	gallons		
1	MP OR TUBINO WELL (feet):	12,5		IP OR TUBINO WELL (feet):	12,5	PURGIN INITIATE	ED AT: 129	PURGING ENDED AT:		TOTAL VOLUM PURGED (gallo			
	TIME PURGED PURGE PATE WATER (standard (90)) TIME PURGED PURGE PATE WATER (standard (90)) TIME PURGED PURGED PURGED PATE WATER (standard (90)) TIME PURGED PURGED PURGED PURGED PATE (standard (90)) TIME PURGED PURGED PURGED PURGED PATE (standard (90))												
TIME PURGED PURGED RATE WATER (standard units) (°C) umhos/cm (circle units) (orcle units) (mg/L or (MTUs) (describe) (describe)													
1177	(gallons) (gpm) (reet) / gr μS/cm % saturation												
	1133 40.6 0.6 0.15 11.71 6.89 26.9 1316 2019.8 19.4 Clear None												
110	1139 0.5 1.6 0.17 11.71 6.88 26.9 1320 13.4 11.5 Clear None												
	PACITY (Gallon					6; 2" = 0.1					" = 5.88		
	ISIDE DIA. CAF EQUIPMENT C			0006; 3/16' BP = Bladder l			26; 5/16" = 0 Submersible P		006; 1/2": eristaltic Pump		" = 0.016 r (Specify)		
L					SAMP	LING DA				,	Сереснуу		
1 -	BY (PRINT) / A			SAMPLER(S		E(S):		SAMPLING INITIATED AT	. 1140	SAMPLING	1100		
PUMPOR	Kearn	1.	cru	TURING			FIEL	D-FILTERED: Y	(N)	FILTER SIZE	1133 : um		
DEPTH IN	WELL (feet):	12.5		MATERIAL C		-	Filtra	tion Equipment Typ	oe:		kiii		
	CONTAMINATIO		\	2	TUBING		eplaced)	DUPLICATE:	Υ (N			
SAMPLE	PLE CONTAINE #	MATERIAL				ATION (includ	ing wet ice)	INTENDE ANALYSIS A	ND/OR EQ	UIPMENT	AMPLE PUMP FLOW RATE		
ID CODE	CONTAINERS	CODE	VOLUME	USED	ADDE	D IN FIELD (METHO		1 '	mL per minute)		
THW-6	集		250M)	None				PAH SI	M A	PP 1	1661		
TMW-G	1	A6	250M) 1L	HNO3 None		***************************************		As, Pba	DUO A	PP 1	66.7		
THW-6		A6		Sodium Thic	1			Dioxin 13		PP /	66.7		
1100 0					21				,		4417		
REMARKS	5:												
MATERIA	L CODES:	AG = Amber (Clear Glass;		High Density	Polyethylene;	LDPE = Low De	nsity Polyethy	rlene; PP = I	Polypropylene;		
SAMPLIN	G EQUIPMENT	CODES: A	PP = After (T	hrough) Perist	altic Pump;	B = Bailer		dder Pump; ES	SP = Electric S O = Other	Submersible Pur	np;		
NOTES: 4	The charge						tor 62 160 E			/			

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

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

Revision Date: March 1, 2014

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

	SITE	The u	Inderli	ne		SIT LO	E CATION: /	Miami, 1	7			
	WELL NO:	THW.			SAMPLE		W-1			DATE: 2	18/18	
-			·			PURG	ING DA	TA	······································		1-1-	
	WELL DIAMETER	R (inches):	TUBING	ER (inches):		LL SCREEN I		STATIC D	EPTH R (feet): 6,0	9 6	URGE PUMP T R BAILER:	35 35
ľ	WELL VOL				TAL WELL DEP	TH - STA	TIC DEPTH T	OWATER) X	WELL CAPACIT	Y	N DAILLY.	
-	` .	NT VOLUME PU	IPGE: 1 FOLL	= (- PUMB VOL	feet -	6,09		JBING LENGTH)	gallons/		5 gallons
		t if applicable)	JRGE. FEQU	FINENT VOL		allons + (ons/foot X				
f		IMP OR TUBIN	G M	1	MP OR TUBINO		T =:.==:		feet) PURGING		gallons TOTAL VC	DLUME ; ;
-	DEPTH IN	WELL (feet):	CLIMILII.	DEPTH IN	WELL (feet):	/	INITIATE	ED AT: 1031	ENDED AT:	1040	PURGED (gallons): &
	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	OXYGEN (circle units) mg/L or % saturation	TURBIC (NTU		
ľ	1034	0.5	0,5	0.13	6.09	7.48	23,4	23471	10,6	4,8	1 Cle	ear Wone
	i03.7	0:3	0.8	0.1	6,09	7.48	23,4	23444	9,2	3,5		ar None
W	103	0.3	16	0.1	6,09	7,47	23,4	23423	615	3,1	2 Cle	or None
ŀ												
ŀ			*									
f				1								
-				<u> </u>								
-	WELL CAI	PACITY (Gallon	s Per Foot): 0	.75" = 0.02;	1" = 0.04;	1.25" = 0.06] 5; 2" = 0.1	 6; 3 " = 0.37;	4" = 0.65;	5" = 1.02;	6" = 1.47;	12 " = 5.88
-		NSIDE DIA. CAI EQUIPMENT O	***************************************	t.): 1/8" = 0 = Bailer;	.0006; 3/16' BP = Bladder F		1/4" = 0.002 SP = Electric	26; 5/16" = 0. Submersible Pu		006, 1	/2" = 0.010;	5/8" = 0.016 Other (Specify)
L	******			Danor,	Di Diaddori		LING D		тр, 11-10	instanto i	шпр, О-	other (opecity)
		BY (PRINT) / A			SAMPLER(S				SAMPLING INITIATED AT	JOU	SAMPLI	
	PUMP OR	L Kearn TUBING	15/AME	crw	TUBING	Jim	NO-	FIELD	-FILTERED: Y	N	ENDED FILTER	
-		WELL (feet):	_'/		MATERIAL C		SPE	Filtrati	on Equipment Typ	ne!		
ŀ		CONTAMINATI 	····		N)	TUBING E PRESERVA		eplaced)	DUPLICATE:	- <u>N</u> Y	SAMPLING	0.1.01.5.01.1.0
ŀ	SAMPLE ID CODE	#	MATERIAL	VOLUME	PRESERVAT	IVE T	OTAL VOL	FINAL	ANALYSIS AI	ND/OR	EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
٠	TMW-1	CONTAINERS	CODE	250ml	HNO3		D IN FIELD	(mL) pH	As 601		APP	125
Ĭ	•	7 10 10 10 10 10 10 10 10 10 10 10 10 10									7 10 7	•
ŀ							·					
												
	REMARKS	L 3:			l				1			1
	MATERIA	L CODES:	AG = Amber S = Silicone;		= Clear Glass; O = Other (High Density	Polyethylene;	LDPE = Low De	nsity Poly	ethylene; P	P = Polypropylene;
	SAMPLIN	G EQUIPMENT			Through) Perist		B = Baile				ric Submersible	Pump;
Į	IOTEC: 4	The above			rse Flow Perista			v Method (Tubing		U = Ot	her (Specify)	

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

SITE NAME:	he Ur	nderli	ne		SI LC	TE CATION:	Miamir	FL		2	
WELL NO:	TML	5-5		SAMPLE II	D: TM	W-5		1	DATE: 2/8	3/18	
					PURG	ING DA				7.0	
WELL DIAMETER	(inches):	TUBING DIAMET	ER (inches):	3/8 WELL	SCREEN H: 2 fe	INTERVAL et to 12 f	STATIC D	ER (feet): 5.4		E PUMP TYPI	≣ >
WELL VOLU (only fill out i		1 WELL VOL	UME = (TOT	AL WELL DEPT		TIC DEPTH T	,	WELL CAPACIT		0.2	
		RGE: 1 EQU	= (PMENT VOL.	= PUMP VOLU			feet) X TY X TU	JBING LENGTH)	gallons/foot + FLOW CELL	VOLUME	gallons
(only fill out i	f applicable)		y	= gall	lons + (gallo	ons/foot X	feet)	+	gallons =	gallons
INITIAL PUN DEPTH IN V	MP OR TUBINO VELL (feet):	6,5		IP OR TUBING WELL (feet):	6.5	PURGIN INITIATE	1 1 1 1 1	PURGING ENDED AT:	1112	TOTAL VOLUI PURGED (gall	
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)
1106	0,5	0,5	0.13		7.31	25,8	673	14.7	2.61	Clear	
1109	0.3	<u> </u>	011		7.31	25,8	673	13,3	1194	Clear	None
1112	0,3	<u>lol</u>	10.1	5,68	7,31	25,9	6'11	12.9	1,86	Clear	None
		· · · · · · · · · · · · · · · · · · ·									
					· · · · · · · · · · · · · · · · · · ·						
WELL CAP	ACITY (Gallon	s Per Foot): (9.75" = 0.02;	1" = 0.04;	1.25" = 0.0	6; 2" = 0.1	6; 3" = 0.37;	4" = 0.65;	5" = 1 .02; 6	" = 1.47; 12	2" = 5.88
	SIDE DIA. CAP EQUIPMENT C			0006; 3/16" : BP = Bladder Pi			26; 5/16" = 0 Submersible Pu		.006; 1/2" =		3" = 0.016 er (Specify)
		0020. 0	Dullot,	Di Diaddoi i i		LING D		inp, 11-10	ristante i dirip,	0 - 01116	ir (Opecity)
SAMPLEDE	BY (PRINT) / A		cFW	SAMPLER(S)	4 6 16	E(S):		SAMPLING INITIATED AT	:1113	SAMPLING ENDED AT:	1115
PUMP OR T	UBING	6,5	200	TUBING MATERIAL CC	DE HI	DRE			(N)	FILTER SIZE	
	ONTAMINATION		P Y N	MATERIAL CC	TUBING	Y N (r	eplaced	DUPLICATE:	ре: — Y /	N	
	LE CONTAINE		TION			ATION (includ	ling wet ice)	INTENDI			SAMPLE PUMP
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIV USED	-	TOTAL VOL ED IN FIELD (mL) FINAL	ANALYSIS A METHO		UIPMENT CODE (FLOW RATE mL per minute)
TMW-5		PP	250ml	HNOZ	-			AS 60	10 /	IPP	125
											
DEMARKS											
REMARKS:											
MATERIAL	CODES:	AG = Amber S = Silicone:		= Clear Glass; O = Other (S		High Density	Polyethylene;	LDPE = Low De	ensity Polyethyl	ene; PP =	Polypropylene;
SAMPLING	EQUIPMENT	CODES: A	APP = After (T	hrough) Peristal se Flow Peristal	tic Pump;	B = Bailer SM = Straw	r; BP = Blad v Method (Tubing		SP = Electric S O = Other (mp;

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)

Brickell Backyard Area of The Underline Groundwater Assessment Report Amec Foster Wheeler Project Number 6783-17-2970.02 February 28, 2018



ATTACHMENT C

CALIBRATION LOGS

				D INSTRUME!				
INSTRU	MENT (M	AKE/MOD	EL#)	SI 556 M	PS	INSTRUM	ENT#	
PARAM	ETER: [ci	heck only						
☐ TE	MPERATUR	RE 🔯	CONDUCT	IVITY S	ALINITY	Д рН	ORP	
	IRBIDITY	,	RESIDUAL			'□ отн	ER	
values, ar	d the date th	ne standards	were prepa	ndards used for ca ared or purchased]		standards, the	standard
Stan	dard A f	OH TE	xp/2/2	8/19 Lot #	<u> </u>	792		
Stan	dard B $\cancel{ ho}$	HIOE	xp 10/1	8 Lot# Exp 4/18 L	665	35/		
Stan	dard C <u> </u>	1413 MS	S/CM E	xp 4/18 L	ot#7	160052		
DATE (yy/mm/do	TIME	STD (A, B, C)	STD VALUE	NSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
18/2/2	- 0850	A	7.0	7.01		Yes	INIT	MMK
1	0852	B	10,0	9,91		Î	ľ	MMK
	0856	C	1,413	1,413				MMK
	1240	A	7,0	7.00				MMK
	1242	B	10,0	9,94				MMK
A	1247	C	1.413	1.413		V	V	MHK
								- 1 2 3 3 3

\$	1	1	1	1	t)	I .	1

INICTOLINA				DINSTRUMEN YSISS6	_			フ
PARAMET	•			13000	110	INSTRUM	ENI#	
	-	•	-	IVITY S	AL INUTV	Плн	☐ ORP	
				cı 💆 D		☐ OTH		
STANDAF	RDS: [Sp	ecify the typ	e(s) of star	ndards used for ca	alibration, t			
				ared or purchased	-			
				<u> </u>				
	ard C				1			
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
1 1								
18/2/2	1254	A	100	100		Yes	INIT	MMR
7-1	,					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1.0

				·				
				<u> </u>				
					,			
		 	+	 	+		 	

				DINSTRUMEN			ECORDS	
INSTRUM	ENT (M	AKE/MOD	EL#)	YSI 556	MPS	INSTRUM	ENT # <u>2</u>	
PARAME	TER: [cl		=					
□тем	PERATUF	RE 🔀	CONDUCT	IVITY S	ALINITY	ФН	ORP	
☐ TUR	BIDITY	. 🗆	RESIDUAL	CI D	0	□ ОТН	ER	
STANDAF	RDS: [S _l	pecify the typ	e(s) of star	ndards used for ca ared or purchased	libration, t	he origin of the	standards, the	standard
	ard A _ £					6B792		
	ard B 0	11	I = II	18 Lot#				
Standa		1,413 M	111			#760	052	
DATE	TIME	STD	STD	INSTRUMENT		CALIBRATED	TYPE	SAMPLER
(yy/mm/dd)	(hr:min) 1005	(A, B, C) A	7.0	RESPONSE 6,94	% DEV	(YES, NO)	(INIT, CONT) JWIT	INITIALS
18/2/8	1007	B	10,0	10:03		YES		MMK
10/0/0	1010	<u> </u>	1.413	1:413		YES	INIT	MMK
1940	1010		כודיו	11913		165	INIT	MAKE
10/2/0	1170	Λ	7.0	6,96		YEC	INIT	IAMI
10/2/8	1130	B	7.0	9,94		YES		MMR
18/2/8	 	0	10,0	1111		YES	INIT	MMR
18/2/0	1138		1,413	1,413		YES	INII	MMK
				and the state of t				
			T-L-					

				DINSTRUMEN				7			
INSTRUM	ENT (M	AKE/MODE	EL#) _	YSI 556	MPS	INSTRUM	ENT #				
PARAMET	TER: [cl	heck only d	one]								
□тем	PERATUF			IVITY S		□рН	ORP				
☐ TUR	BIDITY		RESIDUAL	cı Xb	0	☐ OTH	ER				
				ndards used for ca		he origin of the	standards, the	standard			
				ared or purchased	_						
						TO CONTRACT OF STREET, COLUMN STREET					
	Standard C										
Standa	Standard C DATE TIME STD STD INSTRUMENT CALIBRATED TYPE SAMPLER										
(yy/mm/dd)	(hr:min)	(A, B, C)	VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	(INIT, CONT)	SAMPLER INITIALS			
18/2/8	1014	A	100	100		YES	INIT	MMK			
18/2/8	-				WEAT TO THE TOTAL THE TOTAL TO THE TOTAL TOT						
18/2/8	1142	A	100	100		YES	INIT	MMK			
7 '		Ċ						***************************************			
10.010				***************************************							

				miconario managina di Companya da Managina							
						The second secon					
	<u> </u>										



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,

Christian Darable

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

Enclosures







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



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



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



SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Lab Sample ID	Client Sample ID					
Method	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	



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	ation Metho	od: EPA	A 3010			
Arsenic Lead	14.9 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 01:35 02/06/18 01:35		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	ation Metho	od: EP	A 3010			
Arsenic Lead	5.0 U 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1	02/03/18 07:07 02/03/18 07:07	02/06/18 01:41 02/06/18 01:41		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	tion Metho	od: EPA	A 3010			
Arsenic Lead	5.0 U 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 01:46 02/06/18 01:46		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	tion Metho	od: EPA	A 3010			
Arsenic Lead	5.0 U 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 02:01 02/06/18 02:01		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	ation Metho	od: EPA	A 3010			
Arsenic Lead	5.0 U 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 02:07 02/06/18 02:07		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepara	ation Metho	od: EP/	A 3010			
Arsenic Lead	5.0 U 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 02:12 02/06/18 02:12		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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 Prepar	ation Meth	od: EP/	A 3010			
Arsenic Lead	23.4 5.0 U	ug/L ug/L	10.0 10.0	5.0 5.0	1 1		02/06/18 02:17 02/06/18 02:17		



QUALITY CONTROL DATA

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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

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

LABORATORY CONTROL SAMPLE: 2304494 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Arsenic 250 262 105 80-120 ug/L Lead 250 272 109 80-120 ug/L

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2304495 2304496 MSD MS 35370982001 Spike Spike MS MSD MS MSD % Rec Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** RPD Qual Arsenic ug/L <5.0 250 250 264 261 106 105 75-125 20 Lead ug/L < 5.0 250 250 269 268 108 107 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.



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

Date: 02/06/2018 08:48 PM

U Compound was analyzed for but not detected.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371725

Date: 02/06/2018 08:48 PM

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

WO#:35371725

Required Project Information:

equest Document ant fields must be completed accurately.

Page: ç

Required Client Information:

Company: AMEC Foster Wheeler Environment & Infrastructur Requested Due Date: hone: Address: liami Lakes, FL 33014 ITEM # 11 10 12 9 8 6 5 w 2 ashok.aitharaju@woodplc.com TY E MWI MW Z E MW-U MWI MW-WA 5845 NW 158th Street (954)695-6796 Sample Ids must be unique One Character per box. (A-Z, 0-9 / , -) SAMPLE ID K W 1 ADDITIONAL COMMENTS u D 48 HR Fax MATRIX
Drinking Water
Water
Waste Water
Product
Soil/Soild
Oil
Wipe
Air
Other
Tissue Project #: 6785-17-2970,02 Project Name: Purchase Order #: Copy To: Report To: Ash Aitharaju lark Keurns RELINQUISHED BY I AFFILIATION MATRIX CODE (see valid codes to left) 2 SAMPLE TYPE (G=GRAB C=COMP) The Underline 2/2/18 2/2/18/1028 2/2/18/1046 31/212 1660811212 2/2/18/12/1 2/2/18/1002 DATE START 103 SAMPLER NAME AND SIGNATURE Ameckin TIME COLLECTED Sold SIGNATURE of SAMPLER: PRINT Name of SAMPLER: DATE END 221 DATE 12/18 00 SAMPLE TEMP AT COLLECTION Pace Project Manager:
Pace Profile #: 5651 Address: # OF CONTAINERS Pace Quote: Company Name: Attention: 1240 1430 Ĥ TIME Unpreserved 2/20 H2SO4 ниоз Preservatives HCI rearro NaOH Na2S2O3 christina.raschke@pacelabs.com ACCEPTED BY I AFFILIATION Methanol Other Y/N **Analyses Test** 6010 As, Pb DATE Signed: N DATE 18 Ø 1750 -TIME · · Regulatory Agency TEMP in C State / Location Residual Chlorine (Y/N) 48 HR Received on SAMPLE CONDITIONS DERM Rates (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)



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

	MO	#:3537	1725	CUR)
Projec	t# PM: C	TR Due	Date: 02/09/18	Date and Initials of person:
Project Manag		T: 36-MACTEC		Examining contents:
Clier				Label: Deliver:
			1	pH:
	T-324	Date: 2/	2/18 Time:	1730 Initials: DMF
State of Origin:	FL	,	20	
Cooler #1 Temp.°C 3, C				Samples on ice, cooling process has begur
Cooler #2 Temp.°C				Samples on ice, cooling process has begun
Cooler #3 Temp.°C				Samples on ice, cooling process has begui
Cooler #4 Temp.°C				Samples on ice, cooling process has begun
Cooler #5 Temp.°C				Samples on ice, cooling process has begun
Cooler #6 Temp.°C	(Visual)	(Correction Facto	r)(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex	□ UPS □ III	SPS Client	Commercial Pace	Other
Shipping Method: ☐ First (
☐ Other_			and overnight Oloc	and International Phonty
Billing:	☐ Sender	☐ Third Part	y Credit Card	Unknown
Tracking #		N		
Custody Seal on Cooler/Box	Present: Yes	□Mo s	eals intact: Yes	Ice: Web Blue Dry None
Packing Material: Bubble	Wrap 🗌 Bubble			
Samples shorted to lab (If Ye			NA Sho	orted Time: NA Qtv: NA
			Comments:	
Chain of Custody Present		yes □ No □	N/A	
Chain of Custody Filled Out		√Yes □ No □	N/A	
Relinquished Signature & Samp	oler Name COC	✓es □ No □	N/A	
Samples Arrived within Hold Tir	ne	Ves □ No □	N/A	3
Rush TAT requested on COC	*	□Yes No □	N/A	
Sufficient Volume		Mes □ No □	N/A	
Correct Containers Used		Yes □ No □	N/A	
Containers Intact Sample Labels match COC (sample	10.0.1.1	Yes □ No □	N/A	
collection)		√es □ No □	N/A	
All containers needing acid/base prochecked.	eservation have been	□Yes □ No □	Preserva	tion Information:
All Containers needing preservation	are found to be in	′ /	Lot #/Trace #:	
compliance with EPA recommendat	ion: Coliform, TOC, O&G,	Gerbamatas	N/A Date:	Time:
Headspace in VOA Vials? (>6n		□Yes □ No □	Initials:	
Trip Blank Present:	,.	□Yes □ No □		
Client Notification/ Resolution Person Contacted:	:		Date/Time:	
Comments/ Resolution (use b	ack for additional of	comments):	outo, rimo.	8
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,

Christin Rasable

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

Enclosures



954-582-4300



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





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



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



SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Lab Sample ID	Client Sample ID					
Method	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	



ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

Sample: TMW-6 Lab ID: 35371933001 Collected: 02/02/18 11:40 Received: 02/02/18 14:30 Matrix: Water PQL DF Results Units MDI Prepared CAS No. **Parameters** Analyzed Qual **8082 GCS PCB** Analytical Method: EPA 8082 Preparation Method: EPA 3510 PCB-1016 (Aroclor 1016) 0.48 U 0.48 0.48 02/08/18 14:29 02/09/18 17:59 12674-11-2 ug/L 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 0.48 PCB-1232 (Aroclor 1232) 0.48 U ug/L 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 0.48 PCB-1248 (Aroclor 1248) 0.48 U ug/L 0.48 1 02/08/18 14:29 02/09/18 17:59 12672-29-6 0.48 U 0.48 0.48 02/08/18 14:29 PCB-1254 (Aroclor 1254) ug/L 1 02/09/18 17:59 11097-69-1 PCB-1260 (Aroclor 1260) 0.48 U 0.48 02/08/18 14:29 ug/L 0.48 1 02/09/18 17:59 11096-82-5 Surrogates Decachlorobiphenyl (S) 10-132 02/08/18 14:29 02/09/18 17:59 2051-24-3 Analytical Method: EPA 6010 Preparation Method: EPA 3010 **6010 MET ICP** 50.0 U ug/L 100 50.0 02/06/18 09:57 02/07/18 07:30 7429-90-5 Aluminum 1 **Antimony** 13.9 I ug/L 15.0 7.5 1 02/06/18 09:57 02/07/18 07:30 7440-36-0 5.0 U 10.0 5.0 1 02/06/18 09:57 02/07/18 07:30 7440-38-2 Arsenic ug/L 10.0 02/07/18 07:30 7440-39-3 **Barium** 18.1 ug/L 5.0 1 02/06/18 09:57 02/06/18 09:57 02/07/18 07:30 7440-43-9 Cadmium 0.50 U 1.0 0.50 1 ug/L 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 02/06/18 09:57 02/07/18 07:30 7439-89-6 Iron 69.9 ug/L 40.0 20.0 1 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 2.5 U 2.5 02/06/18 09:57 02/07/18 07:30 7440-22-4 Silver ug/L 5.0 1 7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470 Mercury 0.10 U ug/L 0.20 0.10 Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510 8270 MSSV PAHLV by SIM Acenaphthene 0.12 I ug/L 0.50 0.013 02/07/18 08:35 02/14/18 04:20 83-32-9 Acenaphthylene 0.012 U ug/L 0.50 0.012 02/07/18 08:35 02/14/18 04:20 208-96-8 1 0.012 U 0.50 0.012 Anthracene ug/L 02/07/18 08:35 02/14/18 04:20 120-12-7 Benzo(a)anthracene 0.099 I ua/L 0.10 0.055 1 02/07/18 08:35 02/14/18 04:20 56-55-3 0.020 U ug/L 0.10 0.020 02/07/18 08:35 02/14/18 04:20 50-32-8 Benzo(a)pyrene 1 Benzo(b)fluoranthene 0.027 U ug/L 0.10 0.027 02/07/18 08:35 02/14/18 04:20 205-99-2 1 0.042 02/07/18 08:35 02/14/18 04:20 191-24-2 Benzo(g,h,i)perylene 0.042 U ug/L 0.50 1 0.023 U 0.50 0.023 Benzo(k)fluoranthene ug/L 1 02/07/18 08:35 02/14/18 04:20 207-08-9 0.50 0.026 02/14/18 04:20 218-01-9 Chrysene 0.10 I ug/L 1 02/07/18 08:35 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 02/07/18 08:35 02/14/18 04:20 86-73-7 1 Indeno(1,2,3-cd)pyrene 0.12 U 0.12 02/07/18 08:35 02/14/18 04:20 193-39-5 ug/L 0.15 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 0.019 U 0.50 0.019 1 02/07/18 08:35 02/14/18 04:20 129-00-0 Pyrene ug/L



ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

Sample: TMW-6	Lab ID:	35371933001	Collecte	ed: 02/02/1	18 11:40	Received: 02/	/02/18 14:30 Ma	atrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAHLV by SIM	Analytical	Method: EPA 8	270 by SIM	1 Preparat	ion Meth	od: EPA 3510			
Surrogates 2-Fluorobiphenyl (S)	54	%	33-101		1	02/07/19 09:35	02/14/18 04:20	221 60 8	
p-Terphenyl-d14 (S)	58	%	38-115		1		02/14/18 04:20		



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

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 Result Limit MDL Analyzed Qualifiers

Mercury ug/L 0.10 U 0.20 0.10 02/08/18 15:27

LABORATORY CONTROL SAMPLE: 2309483

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2309484 2309485

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

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.



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

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

		Blank	Reporting			
Parameter	Units	Result	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	

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% 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 S	SPIKE DUPLICA	ATE: 23062	45		2306246							
Parameter	3 Units	35370794001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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.



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

MATRIX SPIKE & MATRIX SP	IKE DUPLIC	ATE: 23062	45		2306246							
	;	35370794001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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	

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.



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

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

		Blank	Reporting			
Parameter	Units	Result	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		22	203140						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	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.



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

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

		Blank	Reporting			
Parameter	Units	Result	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					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
1-Methylnaphthalene	ug/L	5	2.5	51	33-118	
2-Methylnaphthalene	ug/L	5	2.5	50	34-104	
cenaphthene	ug/L	5	2.6	53	38-109	
cenaphthylene	ug/L	5	2.3	45	31-115	
nthracene	ug/L	5	2.8	56	38-111	
enzo(a)anthracene	ug/L	5	3.2	65	36-110	
enzo(a)pyrene	ug/L	5	2.5	50	27-107	
enzo(b)fluoranthene	ug/L	5	3.0	60	32-119	
enzo(g,h,i)perylene	ug/L	5	2.8	56	10-109	
nzo(k)fluoranthene	ug/L	5	3.2	64	28-118	
nrysene	ug/L	5	3.8	77	33-130	
oenz(a,h)anthracene	ug/L	5	2.7	53	10-104	
uoranthene	ug/L	5	3.0	61	45-115	
uorene	ug/L	5	2.7	55	41-114	
deno(1,2,3-cd)pyrene	ug/L	5	2.7	53	10-104	
aphthalene	ug/L	5	2.6	52	38-100	

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.



Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

LABORATORY CONTROL SAMPLE: 2307079 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers ug/L 41-106 Phenanthrene 5 3.2 65 45-115 Pyrene ug/L 5 3.1 61 2-Fluorobiphenyl (S) % 53 33-101 p-Terphenyl-d14 (S) % 56 38-115

MATRIX SPIKE & MATRIX S	PIKE DUPLIC <i>A</i>	TE: 23076	22		2307623							
			MS	MSD								
	3	5371841004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
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			

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.



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

Date: 02/14/2018 11:59 AM

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35371933

Date: 02/14/2018 11:59 AM

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

MO#:35371933

Pace Analytical

N-OF-CUSTODY / Analytical Request Document n-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required	35371933			
Compa	Company: AMEC Foster Wheeler Environment & Infrastructur Report To:	Jr Report To: Ash Aitharain	Attention:	-
Address:	s: 5845 NW 158th Street	l	Company Name	
Miami L	akes, FL 33014		Address:	\$100 MIN (\$100 MIN)
Email:	ashok.aitharaju@woodplc.com	Purchase Order #:	(te:	
Phone:	(954)695-6796 Fax	Underline	a	
eanhav		Project #: (21/83-11/-241/0,02	Pace Profile #. 5651	
		(AM)	Requested Analysis Filtered (YN)	
	MATRIX Drinking Wa	CODE COLECTED	Preservatives Y	
	Water	S § § €	1 BBa, C	
		S. C. C. C. C. START END	25 Ar, I 2, dec 2, dec 5 , dec 5 , dec	
# W3	One Character per box. Wipe (A-Z, 0-91, -) Sample Ids must be unique Tissue	RIX CODE TYPE	CONTAINER 3 4 5 5 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	
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۲	TMW-6	04118/114/2 MT	×××××××××××××××××××××××××××××××××××××××	
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12				T
No. of the	ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION DATE	TIME ACCEPTED BY / AFFILIATION DATE TIME SAMPLE CONDITIONS	
		Mark Kearns/Amer FW 2/2/18	1430 C 200 + Alex 0 541	
		N	11/2/10/10/10/10/10	
		Mh Manadalis	130 My WIT SONS 331- 32 V	>
				\
		SAMPLER NAME AND SIGNATURE		
Page		PRINT Name of SAMPLER:	Mark Kearns	t bles
e 16 of			Mond Morror DAIE Signed: 2/2/18 TEL REG (XI	
31				



Project Manager Review:

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#:353

SCUR)

Date:

Project #

PM: CTR

Due Date: 02/13/18

Date and Initials of person:

Project Manager: Examining contents: CLIENT: 36-MACTEC Client: Label: Deliver: pH: Thermometer Used: Time: 2345 Initials: State of Origin: -, (Correction Factor) 5.7 (Actual) Cooler #1 Temp. C 3.8 (Visual) Samples on ice, cooling process has begun Cooler #2 Temp. °C ____(Visual) ______(Correction Factor) ____ Samples on ice, cooling process has begun Cooler #3 Temp.°C____ _(Visual) _____(Correction Factor) ____ __(Actual) Samples on ice, cooling process has begun Cooler #4 Temp. °C___ _(Visual) __ (Actual) Samples on ice, cooling process has begun Cooler #5 Temp.°C___ _{Visual} _____(Correction Factor) _____(Actual) Samples on ice, cooling process has begun Cooler #6 Temp. °C_ _(Visual) _____(Correction Factor) ___ __(Actual) Samples on ice, cooling process has begun Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace 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 Seals intact: Yes No Ice: Web Blue Dry None Packing Material: Bubble Wrap Bubble Bags □None Other Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Comments: Chain of Custody Present Yes □ No □N/A Chain of Custody Filled Out □ No □N/A Relinquished Signature & Sampler Name COC □ No □N/A Samples Arrived within Hold Time □ No □N/A Rush TAT requested on COC DYes PNO DNA Sufficient Volume Yes □ No □N/A Correct Containers Used Yes □ No □N/A Containers Intact PYes □ No □N/A Sample Labels match COC (sample IDs & date/time of collection) **Z**Yes □ No □N/A All containers needing acid/base preservation have been checked. Preservation Information: Yes □ No □N/A All Containers needing preservation are found to be in Preservative: compliance with EPA recommendation: Lot #/Trace #: □yes □ No □N/A Exceptions: VOA, Coliform, TOC, O&G, Carbamates Date: Time: Initials: Headspace in VOA Vials? (>6mm): □Yes □ No □MA Trip Blank Present: □Yes □ No ANIA Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments):



Pace Analytical Services, Inc.

1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700

Fax: 612.607.6444

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 of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

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

Report Prepared Date:

February 12, 2018



Pace Analytical Services, Inc.

1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700

Fax: 612.607.6444

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 polychlorodibenzo-furans (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.



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

***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.

Received on Ice

Y

Custody Seal

ပ္

Cooler Temperature on Receipt /, う

Transfers

Samples Intact(Y gr

1020

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

ba Bad S Monday, February 05, 2018 12:33:06 PM

Pace Analytical®

Document Name:

Sample Condition Upon Receipt Form

Document No.: F-MN-L-213-rev.22 Document Revised: 14Dec2017 Page 1 of 2

Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt Client Name:			Project	#: WO#: 10419522
Pace F1				
Courier: Fed Ex UPS	USPS		Client	
Commercial Pace SpeeDee	Other:			
Tracking Number: 4278 3966 67	-10			
Custody Seal on Cooler/Box Present? Yes No	ı	Seals Int	act?	Yes No Optional: Proj. Due Date: Proj. Name:
Packing Material: Bubble Wrap Bubble Bags	□Non	e 🔲	Other:	Temp Blank? Yes
Thermometer	Тур	e of Ice:	₩ et	t Blue None Dry Melted
Cooler Temp Read (°C): 1,7 Cooler Temp Cor		: <u> </u>	. 5	Biological Tissue Frozen? Yes No
Temp should be above freezing to 6°C Correction Fact USDA Regulated Soil (N/A, water sample)	or:	-0.Z	Date	e and Initials of Person Examining Contents: ME 2/6/18
Did samples originate in a quarantine zone within the United S	itates: Al . 4	AR CA FI	ו מו בם	A MS Did complex existingto from a foreign account (to a control of
NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?		Y	′es 🗀	No including Hawaii and Puerto Rico)? Tyes TNo
If Yes to either question, fill out a Reg	ulated Soi	l Checkli	st (F-MN-	Q-338) and include with SCUR/COC paperwork.
	****			COMMENTS:
Chain of Custody Present?	Yes	□No		1.
Chain of Custody Filled Out?	Yes	□No	_	2.
Chain of Custody Relinquished?	Yes	□No		3.
Sampler Name and/or Signature on COC?	□Yes	□No	₩/A	4.
Samples Arrived within Hold Time?	Yes	□No		5.
Short Hold Time Analysis (<72 hr)?	□Yes	No		6.
Rush Turn Around Time Requested?		□No		7.
Sufficient Volume?	Yes	□No		8.
Correct Containers Used?	Yes	□No		9.
-Pace Containers Used?	Yes	□No		
Containers Intact?	₽ Yes	□No		10.
Filtered Volume Received for Dissolved Tests?	□Yes	□No	₽N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	√es	□No		12.
-Includes Date/Time/ID/Analysis Matrix: W				
All containers needing acid/base preservation have been				13. HNO ₃ H ₂ SO ₄ NaOH Positive for Res.
checked? All containers needing preservation are found to be in	□Yes	□No	⊡ N/A	Chlorine? Y N
compliance with EPA recommendation?				Sample #
(HNO ₃ , H ₂ SO ₄ , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Colifo <u>rm.</u> TOC/DOC Oil and Grease.	☐Yes	□No	■N/A	
DRO/8015 (water) and Dioxin.	₽Yes	□No	□N/A	Initial when Lot # of added completed: preservative:
Headspace in VOA Vials (>6mm)?	Yes	□No	N/A	14.
Trip Blank Present?	□Yes	□No	N/A	15.
Trip Blank Custody Seals Present?	□Yes	□No	N/A	
Pace Trip Blank Lot # (if purchased):		_		
CLIENT NOTIFICATION/RESOLUTION		<u>"</u>		Field Data Required? Yes No
Person Contacted: Christina Raschke				Date/Time: <u>2/6/18</u>
Comments/Resolution: Method 1613 full list				
		-		
	-		-	
Project Manager Review: Note: Whenever there is a discrepancy affecting North Larolina con	M/L npliance sai	mples, a c	opy of this	Date: 2/6/18 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

Project #

SCUR

Project Manager:

PM: CTR

Due Date: 02/13/18

Date and Initials of person: Examining contents

CLIENT: 36-MACTEC Client: Label: Deliver: Thermometer Used: Time: 2345 State of Origin: Cooler#1 Temp.*C 3.0 (Correction Factor) 5.9 (Actual) Cooler #2 Temp. "C_ Samples on ice, cooling process has begun (Visual) _(Correction Factor) ___ Cooler #3 Temp. °C_ Samples on ice, cooling process has begun (Visual) ____(Correction Factor) ___ Cooler #4 Temp.°C_ Samples on ice, cooling process has begun (Visual) ____(Correction Factor) ___ Samples on ice, cooling process has begun Cooler #5 Temp.°C (Visual) ____(Correction Factor) ___ ____(Actual) Cooler #6 Temp.*C_ Samples on ice, cooling process has begun (Visual) ____(Correction Factor) ___ Samples on ice, cooling process has begun ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other_ ☐ International Priority Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit Card □ Unknown Tracking # Custody Seal on Cooler/Box Present: Seals intact: ☐ Yes ☐ No ice: Web Blue Dry Packing Material: Bubble Wrap Bubble Bags □None Other Samples shorted to lab (if Yes, complete) Shorted Date: Shorted Time: Comments: Chain of Custody Present □ No □N/A Chain of Custody Filled Out □ No □N/A Relinquished Signature & Sampler Name COC DYes I No IN/A Samples Arrived within Hold Time ZYes ONO ON/A Rush TAT requested on COC DYes PNO DNA Sufficient Volume ZYes □ No □N/A Correct Containers Used **E**Yes □ No □N/A Containers Intact Sample Labels match COC (sample IDs & date/lime of Dres O No ONA **Z**Yes All containers needing acid/base preservation have been □ No □N/A checked, ÆYes □ No □N/A All Containers needing preservation are found to be in Preservation Information: Preservative. compliance with EPA recommendation: Lot #Trace #: Dyés 🗆 No DNA Exceptions: VOA, Coliform, TOC, O&G, Cardamates Date: Time: Headspace in VOA Vials? (>6mm): initials: □Yes □ No □MA Trip Blank Present: □Yes □ No ZNIA **Glient Notification/ Resolution:** Person Contacted: Date/Time:

Commants/ Resolution (use back for additional comments):

Project Manager Review:

Date:

Page 24 of 31



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 = Interferencepresent
- J = Estimated value
- Nn = Value obtained from additional analysis
- P = PCDEInterference
- 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
- * = SeeDiscussion

Appendix B

Sample Analysis Summary



Method 1613B Sample Analysis Results

Client - PASI Florida

Client's Sample ID TMW-6 Lab Sample ID 35371933001 F180210A_04 Filename 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 Received F180205 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

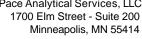
				•		
Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF Total TCDF	2.5 U 2.5 U		2.5 2.5	2,3,7,8-TCDF-13C 2,3,7,8-TCDD-13C 1,2,3,7,8-PeCDF-13C	2.00 2.00 2.00	65 70 71
2,3,7,8-TCDD Total TCDD	2.1 U 2.1 U		2.1 2.1	2,3,4,7,8-PeCDF-13C 1,2,3,7,8-PeCDD-13C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



Method 1613B Blank Analysis Results

Lab Sample ID Filename **Total Amount Extracted**

<u> Pace Analytical</u>

ICAL ID CCal Filename(s) BLANK-60298 F180209B_08 1000 mL F180205 F180209A_09

Matrix Dilution Extracted Analyzed

Water NA 02/07/2018 13:20

02/09/2018 21:36 Injected By BAL

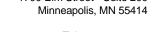
Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF Total TCDF	0.89 U 0.89 U		0.89 0.89	2,3,7,8-TCDF-13C 2,3,7,8-TCDD-13C 1,2,3,7,8-PeCDF-13C	2.00 2.00 2.00	67 73 71
2,3,7,8-TCDD Total TCDD	0.87 U 0.87 U		0.87 0.87	2,3,4,7,8-PeCDF-13C 1,2,3,7,8-PeCDD-13C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





Lab Sample ID LCS-60299
Filename F180209B_01
Total Amount Extracted ICAL ID F180205

<u> Pace Analytical</u>

CCal Filename F180209A_09
Method Blank ID BLANK-60298

1020 mL F180205 F180209A_09 BLANK-60298 Matrix Water Dilution NA

Extracted 02/07/2018 13:20 Analyzed 02/09/2018 16:35

Injected By BAL

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

Cs = Concentration Spiked (ng/mL)

Cr = Concentration Recovered (ng/mL)

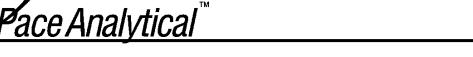
Rec. = Recovery (Expressed as Percent)

Control Limit Reference: Method 1613, Table 6, 10/94 Revision

R = Recovery outside of control limits

Nn = Value obtained from additional analysis

*=See Discussion



Method 1613B Laboratory Control Spike Results

Lab Sample ID LCSD-60300 Filename F180209B 02 **Total Amount Extracted** 990 mL **ICAL ID** F180205

CCal Filename F180209A_09

Method Blank ID BLANK-60298

Water Matrix Dilution NA

Extracted 02/07/2018 13:20 Analyzed 02/09/2018 17:17

Injected By **BAL**

			Lower	Upper	%
Compound	Cs	Cr	Limit	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





Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client PASI Florida

 Spike 1 ID
 LCS-60299
 Spike 2 ID
 LCSD-60300

 Spike 1 Filename
 F180209B_01
 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



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,

Christin Rassle

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

Enclosures







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





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



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



SUMMARY OF DETECTION

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Lab Sample ID	Client Sample ID					
Method	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	



ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Date: 02/13/2018 05:26 AM

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 CAS No. Analyzed Qual **6010 MET ICP** Analytical Method: EPA 6010 Preparation Method: EPA 3010 17.4 10.0 02/10/18 01:32 02/12/18 12:33 7440-38-2 Arsenic ug/L 5.0



ANALYTICAL RESULTS

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Date: 02/13/2018 05:26 AM

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 CAS No. Analyzed Qual **6010 MET ICP** Analytical Method: EPA 6010 Preparation Method: EPA 3010 10.0 02/10/18 01:32 02/12/18 12:45 7440-38-2 Arsenic ug/L 5.0



Project: 6783-17-2970.02/The Underline

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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

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2312845 2312844 MSD MS MS MSD MS MSD % Rec 35372377001 Spike Spike Max Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual 5.0 U 250 75-125 20 ug/L 250 264 266 105 106 Arsenic

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.



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

Date: 02/13/2018 05:26 AM

U Compound was analyzed for but not detected.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6783-17-2970.02/The Underline

Pace Project No.: 35372893

Date: 02/13/2018 05:26 AM

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

Pace Analytical® www.pacelabs.com

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35372893

CORD

AV Amber Vial

ES Encore Sampler
PPV Chear Vial

Example: 4ozP = 4oz Plastic.

But Steels: 20, 200 pr. 125 ml

Example: 4ozP = 4oz Plastic, 8oz Sul Jar

Example: 4ozP = 4oz Plastic, 8oz Sul Jar

Encore Samplor
Prepreserved vial
Plastic container
Plastic Jar
Ziploc bag
Tedlar bag
Whirl pak
Gallon Jug
Terra-core

Page 11 of 12

Container Type Codes

SD Solid Waste OL Oil GW Ground Water St. Sudge EFF Effluen AFW Analyte Free H20 AQ Aqueous WW Waste Water Na Nonaqueous DW Drinking Water PE Petroleum SW Surface Water Other,

EXAM Diss. Lea DUBY

Sampler Signature

Sample #

Sample ID

Collect Date

Collect

Matrix Code*

Field

Filtered

Integrity OK(Y/N)

Total # of containers

As

Project |

50

Underline Proj # 6783-17-2971

Circle One Event: Daily Weekly Monthly Quartely Semi-Annual Annual N/A

Parameters

by 6010

email: ASh, A HMAYON W DARCTW. COM 305-826-558 Codes

Address: S845 Company Name: AmeC

Foster WheelerPO#

1881

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State:

T

W 301

Sample TRC

LAB ANALYSIS

모

	None HNO3 H2SO4 NaOH
REMARKS	E. HCL F. MeOH G. Na2S2O3 H. NaHSO4
SS	J. MCAA J. MCAA K. zn Acetate O. Other

of Containers Size/Type

16ozP

Received within holding time? Custody seals Intact? Non-Conformance Found?
Samples INTACT upon arrival?
Received on Wet Ice? roper Preservatives Indicated? 2 ယ 5

35397

folatiles rec'd without headspace?

Revision: F+ALL+C+007- Rev.00 Proper Containers Used? C.O.C. Serial #

Pompano Lab 954-582-4300

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2020

ex! Date

Time 1)417

386 Affiliation

17:17 Time

Item

Relinquished by

Affiliation

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y 1D 2D 3D 4D

Short Hold

Circle QA/QC Report Level

1 2 3 4 C QAPP Other_

CLP AFCEE

ADAPT SEDD ERPIMS TSV CSV Other____ Received by

COC Condition

Required State

Certification FL GA SC NC PA LA TX IL

Coolers #'s - Temp

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Incomplete

10 9

6

7

5

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MW-S

2/8/18 2000

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Project Manager Review:

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

Date and Initials of person:

WO#: 35372

h (SCUR)

Date:

Project # PM: CTR **Project Manager**

Due Date: 02/13/18

CLIENT: 36-MACTEC

Examining contents: Label:

Client: Deliver: pH: Thermometer Used: 7-324 Date: 2/9/18Initials: State of Origin: (Visual) (Correction Factor) Cooler #1 Temp.°C/ Samples on ice, cooling process has begun Cooler #2 Temp.°C_____(Visual) _____(Correction Factor) _____(Actual) Samples on ice, cooling process has begun ____(Visual) _____(Correction Factor) _____(Actual) Cooler #3 Temp.°C____ Samples on ice, cooling process has begun ___(Visual) _____(Correction Factor) _____(Actual) Cooler #4 Temp.°C____ Samples on ice, cooling process has begun ____(Visual) _____(Correction Factor) _____(Actual) Cooler #5 Temp.°C___ Samples on ice, cooling process has begun Cooler #6 Temp.°C_____(Visual) _____(Correction Factor) _____(Actual) Samples on ice, cooling process has begun ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Courier: Other___ Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ International Priority ☐ Other □ Recipient □ Sender ☐ Third Party Billing: ☐ Credit Card ☐ Unknown Tracking # _ Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet Blue Dry None Packing Material: UBubble Wrap Bubble Bags None Other_ Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty: ___ Comments: Chain of Custody Present ☐Yes ☐ No ☐N/A Chain of Custody Filled Out ØYes □ No □N/A Relinquished Signature & Sampler Name COC Samples Arrived within Hold Time ØYes □ No □N/A Rush TAT requested on COC ☑Yes □ No □N/A Sufficient Volume ☑Yes ☐ No ☐N/A Correct Containers Used ØYes □ No □N/A Containers Intact ØYes □ No □N/A Sample Labels match COC (sample IDs & date/time of □Yes collection) □ No □N/A All containers needing acid/base preservation have been Preservation Information: ✓Yes □ No □N/A Preservative: All Containers needing preservation are found to be in Lot #/Trace #: compliance with EPA recommendation: ∐Yes □ No □N/A Date: Exceptions: VOA, Coliform, TOC, O&G, Carbamates Initials: Headspace in VOA Vials? (>6mm): □Yes □ No □N/A Trip Blank Present: □Yes □ No □N/A Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution (use back for additional comments):