

## Lauridsen, Keld B - DNR

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**From:** Glander, Nick <Nick.Glander@foth.com>  
**Sent:** Thursday, March 30, 2017 1:41 PM  
**To:** Lauridsen, Keld B - DNR  
**Cc:** Kozicki, Sharon V F  
**Subject:** Better Brite WTP End of Year Documentation  
**Attachments:** Better Brite 2016&2017.pdf; 40146455\_frc.pdf; 40137547\_frc (2).pdf

Hello Keld;

In total, Foth processed 31 batches in the contract year - April 2016 through March 2017. An attached Better Brite WTP Summary Packet contains the following:

- ♦ A summary page showing the total volume of water treated per month in table & graph format with drum fill and analytical sample collection dates
- ♦ The tabulated WTP Process Log provides the individual batch detail
- ♦ Table showing when drums were filled and disposed of
- ♦ Summary table of the analytical results.

Also attached are both the August and March Pace Laboratory Analytical Reports.

Thank you;

Nick Glander, Project Environmental Scientist  
Foth Infrastructure & Environment, LLC  
2121 Innovation Court, Suite 300  
P.O. Box 5126  
De Pere, WI 54115-5126  
Ph: (920) 496-6758 / Fax (920) 497-8516  
Cell: (920) 362-8744  
<http://www.foth.com>

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**Better Brite 2016/2017 Treatment**

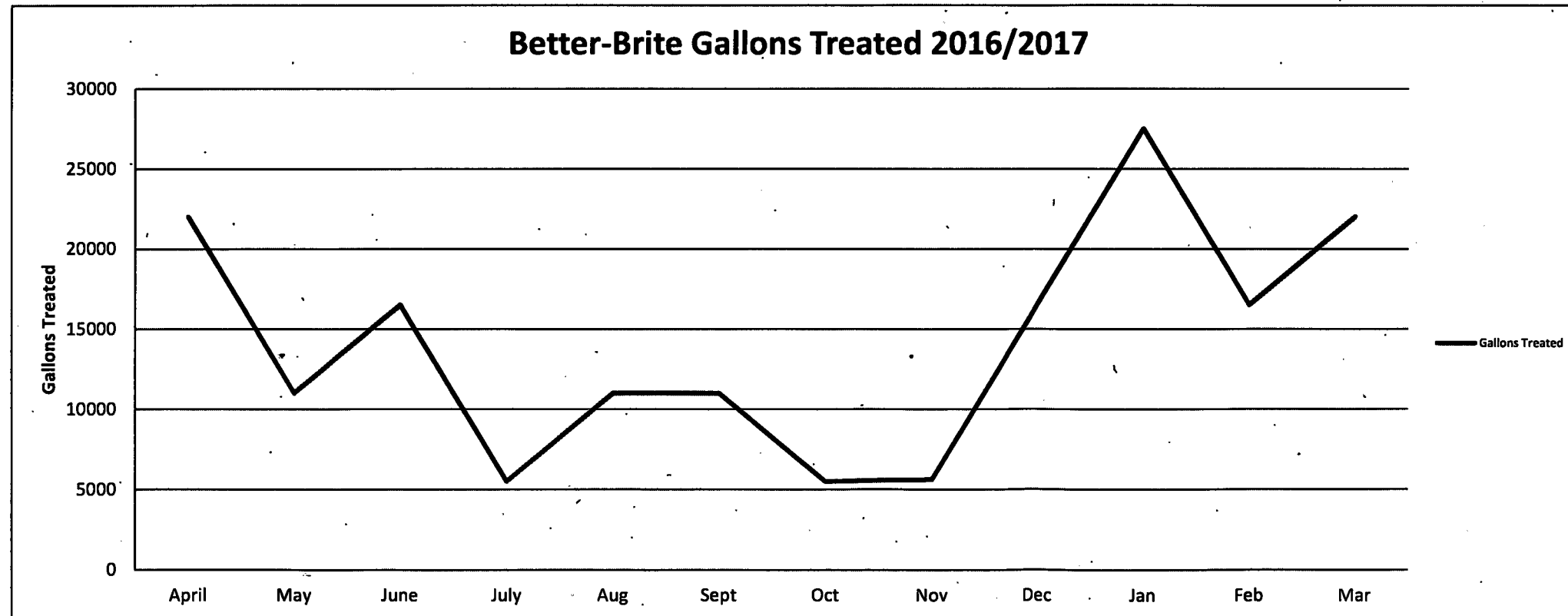
Month	Gallons Treated	Batches Ran
April	22000	4
May	11000	2
June	16500	3
July	5500	1
Aug	11000	2
Sept	11000	2
Oct	5500	1
Nov	5625	1
Dec	16500	3
Jan	27500	5
Feb	16500	3
Mar	22000	4
<b>TOTAL</b>		<b>31</b>

Drum #	Date Filled
1	
2	

\* 0 drum picked up in 2017

**Total Chrome Analytical Samples Collection Dates**

Sample Rd	Date Collected
1	8/30/2016
2	3/7/2017





## Better-Brite WTP Processing Log 2016/2017

16W004

Date	Operator	Batch #	Gal Processed	H <sub>2</sub> SO <sub>4</sub> - pH reduction to (s.u.)	NaHSO <sub>3</sub> - ORP reduction to (mv)	Mg(OH) <sub>2</sub> /NaOH - pH raised to (s.u.)	Polymer feed (sec)	Batch Test Results Cr+6	Press Run Time (min)	Recycled Water (gal)	Sludge drum fill or Press cleaned / Comments
04/04/16	AXP5	1	5500	3.37	303	8.65	30	0.02	26	350	
04/08/16	AXP5	2	5500	3.29	298	8.63	30	0.02	28	350	
04/14/16	NMG1	3	5500	3.11	300	8.62	30	0.00	29	350	NWTC Class
04/18/16	NMG1	4	5500	3.32	296	8.63	30	0.00	28	350	Calibrated Sensors
05/02/16	NMG1	5	5500	3.00	290	8.65	30	0.01	30	350	
05/19/16	NMG1	6	5500	3.24	300	8.59	30	0.00	35	350	
06/03/16	NMG1	7	5500	3.26	300	8.54	30	0.02	28	350	Cleaned Press
06/17/16	AXP5	8	5500	3.41	300	8.51	30	0.02	28	350	
06/30/16	NMG1	9	5500	3.35	300	8.65	30	0.00	30	350	
07/14/16	NMG1	10	5500	3.13	300	8.60	30	0.01	30	350	
08/03/16	NMG1	11	5500	3.23	302	8.36	30	0.01	28	350	Calibrated Sensors
08/30/16	NMG1	12	5500	3.18	297	8.57	30	0.02	30	350	Cleaned Press / T. Chrome Samples Collected
09/16/16	NMG1	13	5500	3.13	300	8.59	30	0.01	30	350	
09/28/16	NMG1	14	5500	3.23	301	8.65	30	0.00	30	350	
10/06/16	NMG1	15	5500	3.20	298	8.58	30	0.01	35	350	
11/16/16	NMG1	16	5625	3.34	301	8.68	30	0.01	35	350	
12/01/16	NMG1	17	5500	3.09	300	8.54	30	0.00	35	350	
12/15/16	NMG1	18	5500	3.25	300	8.67	30	0.00	35	350	
12/27/16	NMG1	19	5500	3.13	305	8.61	30	0.01	28	350	Cleaned Press
01/09/17	NMG1	20	5500	3.04	296	8.59	30	0.00	30	350	Calibrated Sensors
01/11/17	NMG1	21	5500	3.21	300	8.68	30	0.00	30	350	
01/13/17	NMG1	22	5500	3.07	308	8.66	30	0.01	30	350	
01/19/17	NMG1	23	5500	3.33	300	8.61	30	0.00	30	350	
01/27/17	NMG1	24	5500	3.45	302	8.64	30	0.03	32	350	
02/01/17	NMG1	25	5500	3.41	310	8.63	30	0.03	26	350	Cleaned Press
02/21/17	AXP5	26	5500	3.28	304	8.65	30	0.01	26	350	Calibrated Sensors
02/28/17	NMG1	27	5500	3.18	300	8.56	30	0.00	27	350	



**Better-Brite Sludge Generation Data**  
**Calendar Year 2016**

<b>MONTH</b>	<b>Drum(s) Filled</b>	<b>Date Filled</b>	<b>Date Transported</b>	<b>Small Q + 180 days</b>
January	0			
February	1	2/26/2016	3/4/2016	8/24/2016
March	0			
April	0			
May	0			
June	0			
July	0			
August	0			
September	0			
October	0			
November	0			
December	0			
<b>TOTAL</b>	<b>1</b>			

Notes - One drum filled on 2/26/2016 were transported for disposal on 3/4/2016 were included in the 2015/2016 contract.

**Summary of Effluent and Influent Analytical Data  
Better Brite Waste Treatment Plant  
De Pere, WI 54115**

Sample ID	Date	Total Chromium (ug/L)	Total Zinc (ug/L)	Total Cyanide (mg/L)	Hexavalent Chromium (mg/L)
Lot Trench	11/12/2010	4,380	NS	NS	NS
Grass Trench	11/12/2010	17,100	NS	NS	NS
Influent	06/23/2011	4,520	34.0 J	0.34	4.4
Effluent	06/23/2011	231	1.8 J	0.32	<0.0039
Influent	06/27/2011	4,810	21.2 J	0.30	4.4
Effluent	06/27/2011	974	2.5 J	0.21	<0.0039
Influent	06/28/2011	4,460	16.9 J	0.31	4.1
Effluent	06/28/2011	1,070	<1.6	0.25	<0.0039
Influent	06/29/2011	4,230	10.7 J	0.29	3.9
Effluent	06/29/2011	998	<1.6	0.23	<0.039
Influent	12/23/2011	6,850	NS	NS	NS
Effluent	12/23/2011	765	NS	NS	NS
Influent	08/03/2012	7,220	NS	NS	NS
Effluent	08/03/2012	513	NS	NS	NS
Influent	02/08/2013	7,140	NS	NS	NS
Effluent	02/08/2013	876	NS	NS	NS
Influent	08/29/2013	5,810	NS	NS	NS
Effluent	08/29/2013	1,190	NS	NS	NS
Influent	03/03/2014	9,050	NS	NS	NS
Effluent	03/03/2014	901	NS	NS	NS
Influent	08/07/2014	8,190	NS	NS	NS
Effluent	08/07/2014	1,110	NS	NS	NS
Influent	03/11/2015	7,430	NS	NS	NS
Effluent	03/11/2015	900	NS	NS	NS
Influent	07/30/2015	10,300	NS	NS	NS
Effluent	07/30/2015	934	NS	NS	NS
Influent	02/03/2016	7,050	NS	NS	NS
Effluent	02/03/2016	1,310	NS	NS	NS
Influent	08/30/2016	7,580	NS	NS	NS
Effluent	08/30/2016	1,910	NS	NS	NS
Influent	03/07/2017	4,150	NS	NS	NS
Effluent	03/07/2017	727	NS	NS	NS

Notes:

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

NS = No Sample

Prepared By: NMG1  
Checked By: SVF



March 14, 2017

Nick Glander  
Foth Infrastructure & Environment, LLC  
2121 Innovation Court  
Suite 300  
De Pere, WI 54115

RE: Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Dear Nick Glander:

Enclosed are the analytical results for sample(s) received by the laboratory on March 08, 2017. 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,

*Tod Noltemeyer*

Tod Noltemeyer  
tod.noltemeyer@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures



### REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302  
Florida/NELAP Certification #: E87948  
Illinois Certification #: 200050  
Kentucky UST Certification #: 82  
Louisiana Certification #: 04168  
Minnesota Certification #: 055-999-334  
New York Certification #: 12064  
North Dakota Certification #: R-150

Virginia VELAP ID: 460263  
South Carolina Certification #: 83006001  
Texas Certification #: T104704529-14-1  
Wisconsin Certification #: 405132750  
Wisconsin DATCP Certification #: 105-444  
USDA Soil Permit #: P330-16-00157  
Federal Fish & Wildlife Permit #: LE51774A-0

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40146455001	INFLUENT_201703	Water	03/07/17 14:15	03/08/17 08:30
40146455002	EFFLUENT_201703	Water	03/07/17 16:30	03/08/17 08:30

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**SAMPLE ANALYTE COUNT**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40146455001	INFLUENT_201703	EPA 6010	DLB	1	PASI-G
40146455002	EFFLUENT_201703	EPA 6010	DLB	1	PASI-G

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**SUMMARY OF DETECTION**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>40146455001</b>	<b>INFLUENT_201703</b>					
EPA 6010	Chromium	4150	ug/L	10.0	03/09/17 15:52	
<b>40146455002</b>	<b>EFFLUENT_201703</b>					
EPA 6010	Chromium	727	ug/L	10.0	03/09/17 15:55	

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## PROJECT NARRATIVE

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

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Method: EPA 6010  
Description: 6010 MET ICP  
Client: FOTH INFRASTRUCTURE & ENVIRONMENT  
Date: March 14, 2017

### General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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**ANALYTICAL RESULTS**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Sample: INFLUENT\_201703 Lab ID: 40146455001 Collected: 03/07/17 14:15 Received: 03/08/17 08:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Chromium	4150	ug/L	10.0	2.5	1	03/09/17 08:15	03/09/17 15:52	7440-47-3	

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**ANALYTICAL RESULTS**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Sample: EFFLUENT\_201703 Lab ID: 40146455002 Collected: 03/07/17 16:30 Received: 03/08/17 08:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Chromium	727	ug/L	10.0	2.5	1	03/09/17 08:15	03/09/17 15:55	7440-47-3	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

QC Batch: 249922 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
Associated Lab Samples: 40146455001, 40146455002

METHOD BLANK: 1475378 Matrix: Water  
Associated Lab Samples: 40146455001, 40146455002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium	ug/L	<2.5	10.0	03/09/17 15:29	

LABORATORY CONTROL SAMPLE: 1475379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	500	487	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1475380 1475381

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		40146425001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Chromium	ug/L	<2.5	500	500	485	501	97	100	75-125	3	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.

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## QUALIFIERS

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

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### 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 LOD.  
J - Estimated concentration at or above the LOD and below the LOQ.  
LOD - Limit of Detection adjusted for dilution factor and percent moisture.  
LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.  
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 at or above the adjusted LOD.  
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-G Pace Analytical Services - Green Bay

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40146455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40146455001	INFLUENT_201703	EPA 3010	249922	EPA 6010	249982
40146455002	EFFLUENT_201703	EPA 3010	249922	EPA 6010	249982

**REPORT OF LABORATORY ANALYSIS**

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Sample Condition Upon Receipt

Pace Analytical Services, Inc.  
1241 Bellevue Street, Suite 9  
Green Bay, WI 54302

**Pace Analytical**  
Client Name: Foth

Project #: **WO# : 40146455**



40146455

Courier:  Fed Ex  UPS  Client  Pace Other: \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no    Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used N/A    Type of Ice:  Wet  Blue  Dry  None     Samples on ice, cooling process has begun

Cooler Temperature    Uncorr: RDF /Corr: \_\_\_\_\_    Biological Tissue is Frozen:  yes

Temp Blank Present:  yes  no     no

Temp should be above freezing to 6°C for all sample except Biota.  
Frozen Biota Samples should be received ≤ 0°C.

Comments:

Person examining contents:  
Date: 3-9-17  
Initials: SKW

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis    Matrix: <u>W</u>			
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	<input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
(HNO3, H2SO4, NaOH+ZnAct ≥9, NaOH ≥12)			
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>SKW</u>	Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: \_\_\_\_\_    If checked, see attached form for additional comments   
 Person Contacted: \_\_\_\_\_    Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

Project Manager Review: John TN    Date: 3-8-17

September 07, 2016

Nick Glander  
Foth Infrastructure & Environment, LLC  
2121 Innovation Court  
Suite 300  
De Pere, WI 54115

RE: Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Dear Nick Glander:

Enclosed are the analytical results for sample(s) received by the laboratory on August 31, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,



Tod Noltemeyer  
tod.noltemeyer@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302  
Florida/NELAP Certification #: E87948  
Illinois Certification #: 200050  
Kentucky Certification #: 82  
Louisiana Certification #: 04168  
Minnesota Certification #: 055-999-334  
Virginia VELAP ID: 460263  
North Dakota Certification #: R-150

South Carolina Certification #: 83006001  
Texas Certification #: T104704529-14-1  
US Dept of Agriculture #: S-76505  
Virginia VELAP Certification ID: 460263  
Virginia VELAP ID: 460263  
Wisconsin Certification #: 405132750  
Wisconsin DATCP Certification #: 105-444

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40137547001	INFLUENT_201608	Water	08/30/16 13:50	08/31/16 15:35
40137547002	EFFLUENT_201608	Water	08/30/16 16:25	08/31/16 15:35

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

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Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40137547001	INFLUENT_201608	EPA 6010	DLB	1	PASI-G
40137547002	EFFLUENT_201608	EPA 6010	DLB	1	PASI-G

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>40137547001</b>	<b>INFLUENT_201608</b>					
EPA 6010	Chromium	7580	ug/L	10.0	09/02/16 17:51	
<b>40137547002</b>	<b>EFFLUENT_201608</b>					
EPA 6010	Chromium	1910	ug/L	10.0	09/02/16 17:53	

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## PROJECT NARRATIVE

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

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Method: EPA 6010  
Description: 6010 MET ICP  
Client: FOTH INFRASTRUCTURE & ENVIRONMENT  
Date: September 07, 2016

### General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Sample: INFLUENT\_201608 Lab ID: 40137547001 Collected: 08/30/16 13:50 Received: 08/31/16 15:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Chromium	7580	ug/L	10.0	1.5	1	09/02/16 09:37	09/02/16 17:51	7440-47-3	

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### ANALYTICAL RESULTS

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Sample: EFFLUENT\_201608 Lab ID: 40137547002 Collected: 08/30/16 16:25 Received: 08/31/16 15:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Chromium	1910	ug/L	10.0	1.5	1	09/02/16 09:37	09/02/16 17:53	7440-47-3	

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**QUALITY CONTROL DATA**

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

QC Batch: 233992 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
Associated Lab Samples: 40137547001, 40137547002

METHOD BLANK: 1386210 Matrix: Water  
Associated Lab Samples: 40137547001, 40137547002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium	ug/L	<1.5	10.0	09/02/16 16:54	

LABORATORY CONTROL SAMPLE: 1386211

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	500	486	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1386212 1386213

Parameter	Units	1386212		1386213		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
		40137596001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chromium	ug/L	0.0026J mg/L	500	500	485	484	96	96	75-125	0	20

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

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### 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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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-G Pace Analytical Services - Green Bay

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 16W004 BETTER BRITE  
Pace Project No.: 40137547

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40137547001	INFLUENT_201608	EPA 3010	233992	EPA 6010	234059
40137547002	EFFLUENT_201608	EPA 3010	233992	EPA 6010	234059

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Pace Analytical Services, Inc.  
1241 Bellevue Street, Suite 9  
Green Bay, WI 54302

**Pace Analytical**

Project #:

**WO#: 40137547**



Client Name: Fath

Courier:  Fed Ex  UPS  Client  Pace Other: \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used SR47 Type of Ice:  Wet  Blue  Dry  None  Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 2.5 / Corr: 2.5 Biological Tissue is Frozen:  yes  no

Temp Blank Present:  yes  no

Person examining contents:  
Date: 8/31/16  
Initials: PL

Temp should be above freezing to 6°C for all sample except Biota.  
Frozen Biota Samples should be received ≤ 0°C.

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>PL</u> Lab Std #/ID of preservative _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review:

*[Signature]*

Date: 8-31-16