Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

10316268

Page: 2 of 2

Section A
Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	~~brian.mcginnis@fmc.com~~
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA

Section C
Invoice Information:

Attention:	Brian McGinnis
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	26442 line# 4

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER

Site Location STATE: ID

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	**WQP	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOS by ICP	Ammonia	Ortho Phos	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	507 114B	WT	G	--	--	7/29/15	11:10		4	X	X	X							X	X	X	X		X	X		
2	507 114C	WT	G	--	--		11:10		4										X	X	X	X		X	X		
3	507 115	WT	G	--	--		12:00		3																		001
4	507 166	WT	G	--	--		12:40		3																		002
5	507 113	WT	G	--	--		13:20		3																		003
6	507 168	WT	G	--	--		14:50		3																		004
7	507 CDI	WT	G	--	--		15:25		3																		005
8	507 701	WT	G	--	--		15:40		3																		006
9	507 104	WT	G	--	--		15:50		3																		007
10	507	WT	G	--	--																						~~008~~ 7/30/15
11	507	WT	G	--	--																						
12	507	WT	G	--	--																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Fed Ex Air Bill # 8058 1698 6093	Walter Crane / Hydrometrics	7/29/15	16:15	[signature] / Pace	7/30/15	1000	0.7, 2.3	Y	N	Y
**WQP: 300.0- Cl, SO4, Nitrate, F										
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos by ICP only on wells 108, 121, 122 & 123										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Walter Crane					
SIGNATURE of SAMPLER:	Walter Crane	DATE Signed (MM/DD/YY): 07/29/15				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-MN-L-213-rev.13	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO#: 10316268

10316268

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 8058 1698 6082 8058 1698 6093

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.7 2.3 **Cooler Temp Corrected (°C):** 0.7 2.3 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +NE **Date and Initials of Person Examining Contents:** JM 7/29 7/30/15 JM 7/30/15

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6. Ortho Phos
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☑ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container JM 7/30/15
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 2/2 ☑ H_2SO_4 1/1 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-18
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added 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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Kelly Xiong **Date:** July 30, 2015

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

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

10316268

Page: 1 of 2

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	brian.mcginnis@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA

Section C Invoice Information:

Attention:	Brian McGinnis
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	26442 line# 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): **WQP	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOS by ICP	Ammonia	Ortho Phos					Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	507 165	WT	G	--	--	7/29/15	1740		3	X	X	X						X	X	X		X	X	X						008
2	507 167	WT	G	--	--	↓	1820		3	↓	↓	↓						↓	↓	↓		↓	↓	↓						009
3	507 158	WT	G	--	--	↓	1905		3	↓	↓	↓						↓	↓	↓		↓	↓	↓						010
4	507 183	WT	G	--	--	7/30/15	08:05		3	↓	↓	↓						↓	↓	↓		↓	↓	↓						011
5	507 121A	WT	G	--	--	↓	08:50		4	↓	↓	↓						↓	↓	↓		X	↓	↓						012
6	507 108A	WT	G	--	--	↓	09:30		4	↓	↓	↓						↓	↓	↓		X	↓	↓						013
7	507 123A	WT	G	--	--	↓	10:15		4	↓	↓	↓						↓	↓	↓		X	↓	↓	Sample					014
8	507 123B	WT	G	--	--	↓	10:15		4	↓	↓	↓						↓	↓	↓		X	↓	↓	Matrix Spike			MS		014
9	507 123C	WT	G	--	--	↓	10:15		4	↓	↓	↓						↓	↓	↓		X	↓	↓	Matrix Spike Dup.			MSD		014
10	507 122	WT	G	--	--	↓	11:00		4	↓	↓	↓						↓	↓	↓		X	↓	↓						015
11	507	WT	G	--	--																									
12	507	WT	G	--	--																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Fed Ex Air Bill # 8058 1698 6108	Walter Crane / Hydrometrics	7/30/15	1500	PACE	7/31/15	1000	4.5	Y	Y	Y
**WQP: 300.0- Cl, SO4, Nitrate, F O										
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos by ICP only on wells 108, 121, 122 & 123										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Walter Crane					
SIGNATURE of SAMPLER:	Walter Crane	DATE Signed (MM/DD/YY): 07/30/15				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	brian.mcginnis@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA

Section C Invoice Information:

Attention:	Brian McGinnis
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	26442 line# 4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	**WQP	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOS by ICP	Ammonia	Ortho Phos					Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	507155	WT	G	--	--	7/30/15	1200		5	3	X	X							X	X	X	2		X	X	extra for				lab QA/QC	016
2	507156	WT	G	--	--		1240		5	3												2				"				" "	017
3	507601	WT	G	--	--		1305		5	3												2				"				" "	018
4	507157A	WT	G	--	--		1330		5	3												2				"				" " ~~MS~~ KF 7/31	018
5	507157B	WT	G	--	--		1330		5	3												2				"				" " MS	019
6	507157C	WT	G	--	--		1330		5	3												2				"				" " MSD	019
7	507BTS	WT	G	--	--		1400		3	X																					020
8	507	WT	G	--	--																										
9	507	WT	G	--	--																										
10	507	WT	G	--	--																										
11	507	WT	G	--	--																										
12	507	WT	G	--	--																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Fed Ex Air Bill # 8053 9728 9792	Walter Crane/Hydrometrics	7/30/15	1500	[signature] Pace	7/31/15	1000	6.7	Y	Y	Y
**WQP: 300.0- Cl, SO4, Nitrate, F										
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos by ICP only on wells 108, 121, 122 & 123										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Walter Crane					
SIGNATURE of SAMPLER:	Walter Crane	DATE Signed (MM/DD/YY): 07/30/15				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-MN-L-213-rev.13	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: PMC

Project #: WO# : 10316268

10316268

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 8058 1698 6108

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other PB **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☐ B88A912167504 ☑ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 4.4 **Cooler Temp Corrected (°C):** 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** KG 7/31/15

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	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? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☐ NaOH ☐ HCl Sample # 1-4 1/1 1/1 5-10 2/2 1/1
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added 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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Kristin Xiong **Date:** Aug 3, 2015

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

Chain of Custody

WO#: 1251081

PM: MMW Due Date: 08/12/15
CLIENT: PACE MPLS

Workorder: 10316268 **Workorder Name:** FMC RCRA **Owner Received Date:** 7/31/2015 **Results Requested By:** 8/12/2015

Report To	Subcontract To
Kabor Xiong Pace Analytical Services, Inc. 1700 Elm Street, Suite 200 Minneapolis, MN 55414 Phone (612)607-1700 Fax (612)607-6444	Pace Analytical Virginia MN 315 Chestnut Street Virginia, MN 55792 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Total phos by 6010												LAB USE ONLY
1	507121A	PS	7/30/2015 08:50	10316268012	Water	1						X												0012
2	507108A	PS	7/30/2015 09:30	10316268013	Water	1						X												003
3	507123 A,B,C	RQS	7/30/2015 10:15	10316268014	Water	2						X												004
4	507122	PS	7/30/2015 11:00	10316268015	Water	1						X												005
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kabor Xiong	8/3/15 9:00	[illegible]	8/4/15 1145
2				
3				

Comments:
L4 data pkg due 8/20
X10316268014 RQS sample

Cooler Temperature on Receipt 4.4°C **Custody Seal** (Y) or N **Received on Ice** (Y) or N **Samples Intact** (Y) or N

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

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-VM-C-001-Rev.09**	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace-MN

Project #: WO#: 1251081

1251081

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: Hazpnd

Temp Blank? ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 4.1 **Cooler Temp Corrected °C:** 4.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 **Date and Initials of Person Examining Contents:** 8/4/15 CP

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] **Date:** 8/5/15

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

DATA VALIDATION/USABILITY SUMMARY

November 2015
RCRA Groundwater Sampling
Metals and Wet Chemistry Parameters

Prepared for:

FMC Corporation
Pocatello, Idaho Plant
P.O. Box 4111
Pocatello, ID 83202

Prepared by:

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31 December 2015

TABLE OF CONTENTS

Page

LIST OF TABLES ii

LIST OF APPENDICES iii

LIST OF DATA PACKAGES iii

1. INTRODUCTION 1-2

2. SUMMARY OF USABILITY ISSUES 2-1

3. DATA VALIDATION RESULTS 3-1

3.1 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILIITY, COMPLETENESS AND CONSISTENCY 3-1

3.1.1 PRECISION 3-1

3.1.2 ACCURACY 3-3

3.1.3 REPRESENTATIVENESS 3-6

3.1.4 COMPARABILITY 3-7

3.1.5 COMPLETENESS 3-7

3.1.6 CONSISTENCY 3-8

4. REFERENCES 4-1

LIST OF TABLES

Page

TABLE 1-1. FOURTH QUARTER 2015 RCRA MONITORING EVENT-PARAMETERS AND ANALYTICAL METHODS 1-3

TABLE 2-1. DATA QUALITY SUMMARY: FMC GROUNDWATER MONITORING PROGRAM 2-2

LIST OF APPENDICES

APPENDIX A	TECHNICAL REVIEW REPORTS
APPENDIX B	DEFINITION OF DATA QUALIFIERS
APPENDIX C	GLOSSARY OF ACRONYMS

LIST OF DATA PACKAGES

SDG 10328875

SDG 10329150

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

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Data Validation/Usability Report

Groundwater Samples

FMC Corporation, Pocatello, Idaho

RCRA Groundwater Monitoring Program

Fourth Quarter 2015

SDGs 10328875 and 10329150

31 December 2015

Prepared by: Bruce K. Wallin, PhD

1. INTRODUCTION

This memo summarizes the Site Chemist's usability evaluation of the technically reviewed groundwater results generated by Pace Analytical Services, Inc., Minneapolis, MN (PASI-M) and Pace Analytical Services, Inc., Virginia, MN (PASI-V) for FMC's fourth quarter 2015 Resource Conservation and Recovery Act (RCRA) sampling event for the laboratory sample SDGs listed above. The samples were collected from 4-6 November 2015. All samples were analyzed for elements and wet chemistries.

For elements, laboratory analyses were performed on all samples in accordance with the U.S. Environmental Protection Agency (USEPA) SW-846 Methods 6010B (cadmium, potassium, and phosphorus (PASI-V)) and 6020 (arsenic and selenium), for chloride, fluoride, nitrate, and sulfate by Method 9056A, orthophosphate by SM4500P-E from Standard Methods for the Examination of Water and Wastewater, ammonia by Method 350.1, and fluoride from wells providing evidence of interference in method 9056A that were also analyzed by Method SM4500-F-C. All of the above methods are hereafter referred to as "Methods". A list of the parameters and associated methods utilized is provided in Table 1-1.

TABLE 1-1. FOURTH QUARTER 2015
RCRA MONITORING EVENT PARAMETERS AND ANALYTICAL METHODS

PARAMETER	SM (1) METHOD	MCAWW(2) METHOD	SW-846(3) METHOD
Cd, P, and K			6010B
As, Se			6020
ammonia - N		350.1	
chloride			9056A
fluoride	4500-F-C		9056A
nitrate			9056A
ortho-phosphate	4500-P E		
sulfate			9056A

NOTES:

(1) "Standard Methods for the Examination of Water and Wastewater",

(2) "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

(3) "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", Third Edition, November 1996 and subsequent revisions.

The data were technically reviewed based on method specifications, and laboratory-developed performance criteria by adapting the procedures set forth in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, USEPA Office of Solid Waste and Emergency Response, EPA-540-R-04-004, October 2004, and USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, Final, OSWER 9240.1-34, EPA540-R-00-006, June 2001 (Guidelines).

For all parameters, a Level III technical review was performed for these SDGs, which included a review/evaluation of all quality control summary forms. Raw data, preparation logs, instrument printouts, notebook records and forensic deliverables provided by the laboratory were not evaluated.

A detailed description and summary of these efforts is provided in the Technical Review Reports in Appendix A.

The following validation/usability report is the result of a collective assessment of all information associated with the analytical results available. The information includes the project-specific data quality objectives (DQOs) specified in the RCRA Interim Status Groundwater Monitoring Plan, as updated in the RCRA Post Closure Plans (FMC, 1999), as well as historical data, site knowledge, and the technical review results.

2. SUMMARY OF USABILITY ISSUES

The data technical review reports indicate which laboratory results are considered non-compliant when compared to the requirements set forth in the relevant documents. However, most of these exceptions are minor quality control problems and do not affect data usability. The cases where the exceptions may impact data usability are discussed in the following sections. In most cases these problems are typical analytical difficulties or are the result of sample matrix problems. A summary of data quality goals and observations is provided in Table 2-1.

DATA USABILITY SUMMARY

For samples 511131, 511114, 511156,511157, and 511601 only the fluoride result from the ISE method should be used since they were significantly higher than the IC result.

For this event no additional data were considered unusable.

TABLE 2-1 DATA QUALITY SUMMARY: FMC GROUNDWATER MONITORING PROGRAM
FOURTH QUARTER 2015 RCRA SAMPLING EVENT

DATA QUALITY INDICATOR	PURPOSE	METHOD OF MEASUREMENT & EVALUATION	GOAL	SUMMARY OF RESULTS
Precision	Reproducibility of results	1. Collocated samples	S & D >5RL, RPD <30, S &/or D <5RL, S-D <2RL	*All criteria were met - no flagging was required or deemed necessary.*
		2. Laboratory replicates	S & D >5RL, RPD <20, S &/or D <5RL, S-D <RL	*All criteria were met - no flagging was required or deemed necessary.*
Accuracy	Proximity of result to true value	1. Calibration	Meet method/guidance criteria	*SDG 10328875 CRI cadmium >110%. Positive result <2PQL in 511180 (J+). SDG 10328875 CRI selenium <90%. Result <2PQL in 511131 (J+).*
		2. Laboratory control samples	Meet lab-developed or method criteria	*All criteria were met - no flagging was required or deemed necessary.*
		3. Matrix spikes/Serial Dilutions	Meet lab-developed or method criteria	*Both SDGs all IC MS/MSD low. All results (J-). SDG 10329150 MS/MSD o-PO4 high. Positive results (J+). SDG 10329150 serial dilution K high. All results (J).*
Representativeness	Sample integrity and sampling precision	1. Collocated samples	S & D >5RL, RPD <30, S &/or D <5RL, S-D <2RL	*See Item 1 above.*
		2. Blanks	Sample results ND or >5X blank	*Positive results for NH3 in some samples flagged as not-detected (U) due to blank contamination Should be considered maximum potential concentrations.*
		3. Holding times	Per method	*No deviations requiring actions.*
		4. Preservation	Per method	*All criteria were met - no flagging was required or deemed necessary.*
Comparability	Consistent practices	Use of and adherence to appropriate analytical methods	Compliance with required USEPA methods	*Method compliance achieved, goal met for all samples.*
Completeness	Obtain intended information from the event	Comparison of planned vs usable data obtained	>90% of planned	*Completeness 100%*
Consistency	Expansion of historical database	Comparison with historical statistics	Meet completeness objective	*Modest outliers, no significant trends apparent. Continue evaluation.*

3. DATA VALIDATION RESULTS

To determine the ultimate utility of data, the following indicators were evaluated:

3.1 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILIITY, COMPLETENESS AND CONSISTENCY

3.1.1 PRECISION

Precision is a quantitative determination of the reproducibility of an analytical value. For this program, collocated samples are collected to assess overall precision of the sampling, preparation and analytical process, and matrix spike/matrix spike duplicates are required to address aliquoting reproducibility in order to provide information on matrix reproducibility otherwise unobtainable from samples reported below the reporting limits. Matrix spikes also provide an indication of the accuracy of native results: this will be discussed in the accuracy section.

The collocated samples further address the ability to obtain a representative sample of the medium studied, this will be discussed further in the representativeness section. For elemental parameters, the methods require the preparation of laboratory replicates at a specified frequency to address aliquoting precision.

For laboratory replicates the Guidelines specify the utilization of difference criteria for samples providing values below a limiting value and relative percent difference (RPD) criteria for samples providing values above a limiting value. The Guidelines utilize 5X the contract required detection limit (CRDL). These specifications are as follows:

When either one or both of the analyses provide results below the limiting value, the following criteria apply:

$$|S - R| \leq CRDL$$

Where: S = sample value
R = replicate sample value

When both of the analyses provide results above or equal to the limiting value, the following criteria apply:

$$RPD = (|S - R|/S + R)200 \leq 20$$

Where: RPD = Relative Percent Difference

The QAPjP provides an RPD specification of 20 percent for laboratory replicates for elements, but does not provide specific criteria for low level results or collocated samples. The Guidelines do not provide precision criteria for collocated samples. The technical reviewer utilized the 20 percent RPD criteria specified in the QAPjP and Guidelines and the low-level criteria above specified in the Guidelines with the substitution of the laboratory reporting limit (RL) for the CRDL where they differed. For collocated samples, the technical reviewer utilized the 2 RL and RPD <30 criteria specified in the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses, June 13, 1988.

For this event all replicate sample precision was within specification.

For this event the following are collocated samples:

SDG	SAMPLE	COLLOCATED SAMPLE
10328875	511124	511600
10329150	511156	511601

Note: All parameters were reported to standard laboratory reporting limits (PQL) which approximate estimated quantitation limits (EQL) specified in the methods. The technical reviewer utilized the PQL values to conduct the precision analysis.

For this event all collocated sample precision was within specification.

For all parameters, the laboratories reported to their practical quantitation limits (PQL) and for levels below the PQL to the method detection limit (MDL) flagged with a "J" qualifier. The MDL described in 40 CFR Part 136, Appendix B and incorporated by reference in SW-846, provides a precision of ± 100 percent. With some exceptions the PQL values used by the laboratory, approximate the estimated quantitation limit (EQL) which is established at approximately 5-10X the MDL in SW-846. At 5X the MDL the EQL precision is approximately ± 30 percent. As a result reported positive but below the PQL, but above the MDL should be considered estimates. ***The project manager is cautioned that the imprecision associated with the project-required reporting conventions must be taken into consideration when utilizing the data below the PQL.***

3.1.2 ACCURACY

Accuracy is the proximity of the reported analytical value to the true concentration in the sample. To estimate the proximity factor, laboratory control, laboratory blank and environmental samples are fortified with the parameter of interest, and for organics analysis, each sample is also fortified with surrogate indicators, and the level recovered, expressed as a percentage of the spiking level, is utilized. For laboratory control samples (LCS), the analytical values must be within either a published range or within laboratory or method established windows about the true concentration.

If these conditions are not met, the method is to be considered out of control, corrective action taken, and the entire process repeated with compliant LCS before the associated data can be reported. For elements, laboratory blanks are spiked with low-level reference materials for ICP (CRI). According to the Guidelines associated analytical values must fall within ± 20 percent of the true value or all the potential impact on all environmental sample results associated with the non-compliant CRI must be evaluated during technical review using professional judgment. The technical reviewer has considered that all

associated sample results reported at values <2PQL are evaluated for CRI recoveries <80 percent, both positive results and non-detects are flagged as estimated with the potential for low bias (J-), and for CRI recoveries >120 percent, positive results only are flagged as estimated with the potential for high bias (J+).

For the recovery of spiked parameter from environmental samples, the quantity of parameter matrix spiked (MS) must be large enough to be uniquely distinguishable from the level of native analyte present in the sample. When this condition exists, if the recovery value is outside established values, all associated environmental samples are flagged as estimated (J) with an indication of bias direction during technical review. The Guidelines establish that the native level of analyte must be less than four times the spiking level for valid accuracy estimation.

The formula utilized is as follows:

Percent Recovery = ((SSC - USC)/CS))100

Where: SSC = Spiked Sample Concentration
USC = Unspiked Sample Concentration
CS = Concentration Spiked

For elements, the QAPjP establishes acceptance criteria at 70-130 percent that are less stringent than the 75-125 percent specified in the Guidelines. The QAPjP does not specify accuracy criteria for water quality parameters. The technical reviewer has utilized the laboratory-derived limits, as required by SW-846 methods, and the more stringent 75-125 percent criteria specified in the Guidelines where laboratory-established limits were not provided for the water quality parameters.

For elements analyzed by ICP, the method requires assessment of matrix interference by performing serial dilution analyses in addition to the matrix spike indicated above. The Guidelines suggest that, for samples containing sufficient signal in the undiluted sample

(>50IDL) that the diluted result should be within 10 percent of the undiluted value to verify absence of interference.

Initial and continuing calibrations are performed to verify instrument performance and stability prior to and during the analysis of environmental samples. The Methods require that the initial calibration linearity coefficients are $\geq$ 0.995, the continuing calibration stabilities are within 90-110 percent and, for elements, the Guidelines require consideration of blanks indicating a negative instrument drift >|IDL|. The technical reviewer has utilized the flagging criteria suggested in the Guidelines for lack of linearity and continuing calibration stability, and has utilized professional judgment for actions for non-compliant instrument drift associated with samples with levels reported at <5 IDL.

For both SDGs several samples provided MS/MSD recoveries of all IC parameters below the lower limit. The results reported for these parameters in all environmental samples associated with the SDGs are flagged as estimated with the potential for low bias (J-). ***These results are considered usable when the bias factors are taken into account. Doing so will have no impact on the decision since no Standards are established for these parameters.***

For SDG 10329150 samples 511121 and 511108 provided MS/MSD recoveries of o-phosphate-P above the upper limit. The positive results reported for this parameter in all samples associated with the SDG are flagged as estimated with the potential for high bias (J+). ***These results are considered usable when the bias factors are taken into account. Doing so will have no impact on the decision since no Standard is established for this parameter.***

For SDG 10329150 sample 511123 provided an ICP serial dilution result for potassium 13.5% larger than the undiluted value. The results reported for this element in all environmental samples associated with the SDG are flagged as estimated (J). ***These***

results are considered usable when the bias factor is taken into account. Doing so will have no impact on the decision since no Standard is established for this element.

For SDG 10328875 the CRI provided a recovery of cadmium in excess of 110%. The positive result reported <2 PQL in sample 511180 is flagged as estimated with the potential for high bias (J+). ***This result is considered usable when the bias factor is taken into account. Doing so will have no impact on the decision since the un-adjusted value is below the Standard.***

For SDG 10328875 the CRI provided a recovery of selenium below 90%. The result reported <2 PQL in sample 511131 is flagged as estimated with the potential for low bias (J-). ***This result is considered usable when the bias factor is taken into account. Doing so will have no impact on the decision since the adjusted value is below the Standard.***

For this event all additional accuracy criteria were met.

3.1.3 REPRESENTATIVENESS

To perform a valid environmental assessment, the samples, when analyzed, must be representative of the media under study. Factors influencing representativeness include preparation of wells prior to sampling to obtain aliquots of the groundwater strata of interest. This is accomplished through purging of standing water to constant temperature, conductivity and pH prior to collecting the sample. Collocated samples are also collected to provide information regarding the ability to reproducibly collect a sample. If reproducibility is not obtained, representativeness is not verified. The sample must be collected with uncontaminated equipment, placed in uncontaminated containers, and not contaminated throughout the transport, receipt, storage, preparation and analytical processes. Evaluation of the potential for contamination is conducted through collection of field blanks, and utilization of laboratory process blanks. Once the sample has been collected, it is maintained in such a state that changes are not expected to occur in its

concentration of target parameters. This is accomplished by chemical and physical preservation, and minimization of time from collection to analysis.

A review of the sample receipt logs indicate that preservation requirements were met, therefore, no action was taken.

Blanks were reported with ammonia-N present at concentrations that generated action levels resulting in the flagging of the positive values reported for several samples as not-detected (U) at the reported values. ***These results are considered usable as maximum potential concentrations.***

3.1.4 COMPARABILITY

The characteristic of comparability reflects both the internal consistency of measurements and the expression of results in units that are consistent with other organizations reporting similar data. Each value reported for a given measurement should be similar to other values within the same data set and with other related data sets. Comparability was assured through the use of standardized sampling procedures and USEPA analytical methods.

3.1.5 COMPLETENESS

Completeness is a measure of the extent of attainment of usable data points from an investigation. For this program a completeness goal of 85 percent is established in the QAPjP. The ability to obtain a sample, (human) error and sample characteristics are major contributors to reduced completeness. For this investigation, all intended samples were collected and received by the laboratory. The laboratory analyzed all of the samples for all of the intended parameters. Completeness for this event is, therefore, 100 percent.

3.1.6 CONSISTENCY

Consistency is a measure of the reasonableness of data to those that have been previously generated. For this program, an extensive data base has been developed that allows the evaluation of analytical results that may represent historical outliers. Based on a comparison to the historical results, a few sporadic differences were noted for this monitoring event; however, the overall results are within the existing variance.

4. REFERENCES

FMC, 1999. "RCRA Interim Status Groundwater Monitoring Plan", Bechtel Environmental, August 1999; as updated in the RCRA Post-Closure Plans as follows:

- Pond 9E post-closure plan, January 2000;
- Slag Pit Sump post-closure plan, September 2001;
- Pond 8E, Phase IV Ponds and Pond 15S post-closure plans, May 2002;
- Pond 16S post-closure plan, July 2003; and,
- Pond 17 and Pond 18 Cell A post-closure plans, August 2004.

USEPA, 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, Final, USEPA, OSWER, EPA 540-R-04-004, October 2004.

USEPA, Contract Laboratory Program Statement of Work for Inorganics Analysis, Document Number ILM02.0 and latest revisions.

USEPA, 1989. Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses, USEPA Region I, June 13, 1988, Modified by Deborah Szaro, et. al. February 1989.

USEPA, 1983. Methods for Chemical Analysis of Water and Wastes, EMSL, EPA-600/4-79-020, Revised March 1983.

USEPA, 1986. Test Methods for Evaluating Solid Waste, OSWER, SW-846, Third Edition, November 1986.

APPENDIX A

TECHNICAL REVIEW REPORTS

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

10146 Banner Rd., S.E.
Olalla, WA 98359

Tel: (253) 509-4568

Data Technical Review Report

Groundwater Samples

FMC Corporation, Pocatello, Idaho

East Michaud Flats RFI

Fourth Quarter 2015

SDGs 10328875 and 10329150

31 December 2015

Prepared by: Bruce K. Wallin, PhD

This memo summarizes the technical review of groundwater results generated by PASI-M and PASI-V for FMC's fourth quarter 2015 Resource Conservation and Recovery Act (RCRA) sampling event for the laboratory SDGs listed above. The samples associated with all SDGs were analyzed for elements and wet chemistries.

For elements laboratory analyses were performed in accordance with the U.S. Environmental Protection Agency (USEPA) SW-846 Methods, and for wet chemistries, methods from Standard Methods for Examining Water and Wastewater and Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983. All of the above methods are hereafter referred to as "Methods". A list of the parameters and associated methods utilized is provided in Table 1-1.

TECHNICAL REVIEW REPORT

SDG 10328875

ELEMENTAL PARAMETERS

TECHINCAL REVIEW REPORT

SDG 10328875

ELEMENTAL PARAMETERS

The data evaluation was based on USEPA SW-846 Method 6010B for cadmium, and potassium, and 6020 for arsenic and selenium (Methods) and included the following parameters:

- calibration
- blanks
- * ICP interference check sample
- * matrix spike analysis
- duplicate sample analysis
- * laboratory control sample analysis
- * ICP serial dilution analysis
- * ICPMS internal standard analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Table A-1 summarizes the technical review actions that are detailed below.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

CALIBRATION:

Low-level check standards (CRI) providing recoveries not within 90-110% are tabulated below:

CRI DATE/TIME	ELEMENT	% RECOVERY
11-06/16:36	cadmium	115.2
11-13/15:02	potassium	88.7
11-16/21:30	selenium	85.0

Associated samples requiring action:

CRI DATE/TIME	ELEMENT	ASSOCIATED SAMPLES
11-06/16:36	cadmium	511180
11-16/21:30	selenium	511131

Action:

- For recovery above the upper limit positive result reported <2PQL is flagged as estimated with the potential for high bias (J+).
- For recovery below the lower limit result reported <2PQL is flagged as estimated with the potential for low bias (J-).

Comments:

Only calibrations bracketing samples associated with this SDG are evaluated.

BLANKS:

Comments:

Only calibration blanks bracketing the samples associated with the SDG were evaluated.

DUPLICATE SAMPLE ANALYSIS:

Comments:

For this SDG sample 511600 is collocated with sample 511124. For this collocated sample pair all precision limits specified in the QAPP were met.

DETECTION LIMITS:

For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of ± 100 percent. The Estimated Quantitation Limit (EQL), is established at 5-10X the MDL in SW-846.

Action:

- Positive results reported between the MDL and PQL are flagged as estimated (J).

Comments:

The data user is cautioned that these results may not be analytically reproducible or statistically valid.

OVERALL ASSESSMENT:

The positive result reported <2PQL for cadmium in sample 511180 is flagged as estimated with the potential for high bias (J+) due to non-compliant CRI recovery.

The result reported <2PQL for selenium in sample 511131 is flagged as estimated with the potential for low bias (J-) due to non-compliant CRI recovery.

Positive results reported between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low level.

All additional QC results reviewed were within specification and no further actions or qualifiers were necessary.

TABLE A-1.

TECHNICAL REVIEW ACTION SUMMARY

SDG 10328875

Arsenic	
Cadmium	J1, J+1
Potassium	
Selenium	J1, J-1

If the field is left blank no actions or qualifications were necessary.

J1	-	Positive result is flagged as estimated (J) due to uncertainty at the low level.
J-1	-	Result <2PQL is flagged as estimated with the potential for low bias (J-) due to non-compliant CRI recovery.
J+1	-	Positive result <2PQL is flagged as estimated with the potential for high bias (J+) due to non-compliant CRI recovery.

TECHNICAL REVIEW REPORT

SDG 10329150

ELEMENTAL PARAMETERS

TECHINCAL REVIEW REPORT

SDG 10329150

ELEMENTAL PARAMETERS

The data evaluation was based on USEPA SW-846 Method 6010B for cadmium, potassium, and selected samples for phosphorus, and 6020 for arsenic and selenium (Methods) and included the following parameters:

- calibration
- blanks
- * ICP interference check sample
- matrix spike analysis
- duplicate sample analysis
- * laboratory control sample analysis
- ICP serial dilution analysis
- * ICPMS internal standard analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Table A-2 summarizes the technical review actions that are detailed below.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

<u>CALIBRATION</u>:

Comments:

Only calibrations bracketing samples associated with this SDG are evaluated.

BLANKS:

Blanks providing positive results and their associated 5X action levels are tabulated below:

BLANK ID.	ELEMENT	CONC. (mg/L)	ACTION LEVEL (mg/L)
CCB 11-16/19:10	potassium	0.191	0.955

Associated samples with positive results reported below the action level: NONE

Comments:

Only calibration blanks bracketing samples associated with the SDG were evaluated.

MATRIX SPIKE ANALYSIS:

Samples providing matrix spike (MS)/MS duplicate (MSD) recoveries or precision not within the laboratory-derived limits when the native level is reported at less than four times the spiking level are tabulated below:

SAMPLE ID.	ELEMENT	MS/MSD RECOVERY (%)
511123	potassium	/35

Action:

- None, see comments.

Comments:

For recovery no action is applied when only one of the MS/MSD pairs is out of specification.

Sample 511157 was also matrix spiked in duplicate and the native level of potassium exceeded four times the spiking level, therefore, this parameter could not be evaluated.

DUPLICATE SAMPLE ANALYSIS:

Comments:

For this SDG sample 511601 is collocated with sample 511156. For this collocated sample pair all precision limits specified in the QAPP were met.

For those samples analyzed for phosphorus by Methods 6010 and SM4500-P-E acceptable precision values were reported.

ICP SERIAL DILUTION ANALYSIS:

Samples with levels of element reported >50 PQL providing 5X serial dilution results differing by more than 10% (%D) are tabulated below:

SAMPLE ID.	ELEMENT	%D
511123	potassium	13.7

Action:

- Sample results reported for the element are flagged as estimated (J).

Comments:

The above action is applied to all environmental samples associated with the SDG.

The diluted value was larger than the undiluted value, therefore, low bias is indicated.

DETECTION LIMITS:

For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by

reference in SW-846), provides an error band, by definition, of ± 100 percent. The Estimated Quantitation Limit (EQL) is established at 5-10X the MDL in SW-846.

Action:

- Positive results reported between the MDL and PQL are flagged as estimated (J).

Comments:

The data user is cautioned that these results may not be analytically reproducible or statistically valid.

For phosphorus by method 6010 the laboratory reported results in units of µg/L rather than mg/L which was used for the remainder of the elements.

OVERALL ASSESSMENT:

The results reported for potassium in all environmental samples associated with the SDG are flagged as estimated (J) due to non-compliant serial dilution reproducibility.

Positive results reported between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low level.

All additional QC results reviewed were within specification and no further actions or qualifiers were necessary.

TABLE A-2.

TECHNICAL REVIEW ACTION SUMMARY

SDG 10329150

Arsenic	
Cadmium	J1
Potassium	J2
Selenium	J1

If the field is left blank no actions or qualifications were necessary.

J1	-	Positive result is flagged as estimated (J) due to uncertainty at the low level.
J2	-	Result is flagged as estimated (J) due to non-compliant serial dilution reproducibility.

TECHNICAL REVIEW REPORT

SDG 10328875

WET CHEMISTRIES

TECHNICAL REVIEW REPORT

SDG 10328875

WET CHEMISTRIES

The data evaluation was based on the procedures set forth in the Methods and included the following parameters:

* - holding times
* - calibration
  - blanks
  - matrix spike sample analysis
* - standard reference material analysis
  - duplicate sample analysis
* - detection limits
  - overall assessment

* All criteria were met for this parameter.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

A glossary of data qualifier definitions is presented in Appendix B.

BLANKS:

Blanks reported with positive values and their associated 5X action levels are tabulated below:

BLANK ID.	PARAMETER	CONC. (mg/L)	ACTION LEVEL
CCB 11-18/18:16	ammonia-N	0.020	0.10
511CDI	ammonia-N	0.085	0.43
	o-PO_4 - P	0.0042	0.021

Associated samples with values reported positive but below the action level:

BLANK ID.	PARAMETER	ASSOCIATED SAMPLES
511CDI	ammonia-N	511131

Action:

- Positive result reported for the parameter in the associated sample is changed to not-detected at the reported value (U).

Comments:

Only calibration blanks bracketing samples in the SDG were evaluated.

The DI blank is reviewed in SDG 10329150.

MATRIX SPIKE SAMPLE ANALYSIS:

Samples providing matrix spike (MS) or MS duplicate (MSD) recoveries or precision not within the laboratory default limits when the native level is reported at less than four times the spiking level are tabulated below:

SAMPLE ID.	PARAMETER	MS/MSD RECOVERY (%)
511174	chloride	81/81
	fluoride (IC)	85/80
511127	chloride	74/74
	fluoride (IC)	84/89
	sulfate	80/80
511114	chloride	/87
	fluoride (IC)	87/86
	nitrate-N	88/88
	sulfate	89/89
	ammonia-N	116/

Action:

- For both MS and MSD recoveries below the lower limit sample results reported for the parameter are flagged as estimated with the potential for low bias (J-).

Comments:

The above actions are applied to all environmental samples associated with the SDG.

For sample 511174 the native levels of nitrate-N and sulfate and for sample 511127 the native level of nitrate-N exceeded four times the spiking level, therefore this parameter could not be evaluated.

DUPLICATE SAMPLE ANALYSIS:

Field Duplicates:

Comments:

For this SDG sample 511600 is collocated with sample 511124. For this collocated sample pair all precision limits specified in the QAPP were met.

Samples analyzed for fluoride by IC and ISE:

Samples 511178, 511131, and 511114 were analyzed by both methods and for samples 511131 and 511114 the ISE results were significantly lower than the IC method. Only the ISE results should be used for samples 511131 and 511114.

OVERALL ASSESSMENT:

For o-phosphate-P the laboratory filtered the samples prior to analysis.

The positive result reported for ammonia-N in sample 511131 is changed to not-detected at the reported value (U) due to blank contamination.

The results reported for all IC parameters in all environmental samples associated with the SDG are flagged as estimated with the potential for low bias (J-) due to non-compliant MS/MSD recoveries.

All additional QC criteria evaluated were within specification and no further actions or flagging were required or deemed necessary.

TECHNICAL REVIEW REPORT

SDG 10329150

WET CHEMISTRIES

TECHNICAL REVIEW REPORT

SDG 10329150

WET CHEMISTRIES

The data evaluation was based on the procedures set forth in the Methods and included the following parameters:

* - holding times
* - calibration
- blanks
- matrix spike sample analysis
* - standard reference material analysis
- duplicate sample analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

A glossary of data qualifier definitions is presented in Appendix B.

BLANKS:

Blanks reported with positive values and their associated 5X action levels are tabulated below:

BLANK ID.	PARAMETER	CONC. (mg/L)	ACTION LEVEL
CCB 11-23/15:01	ammonia-N	0.028	0.14
511CDI	ammonia-N	0.085	0.43
	o-PO_4 - P	0.0042	0.021
511701	ammonia-N	0.023	0.12

Associated samples with values reported positive but below the action level:

BLANK ID.	PARAMETER	ASSOCIATED SAMPLES	
511CDI	ammonia-N	511168	511165
		511BTS	
511701	ammonia-N	511165	511BTS

Action:

- Associated positive sample results are flagged as not-detected at the reported value (U).

Comments:

The data user is cautioned that for the field blanks the actions may not apply directly to the indicated samples (e.g. the contamination is in the blank water per-se).

MATRIX SPIKE SAMPLE ANALYSIS:

Samples providing matrix spike (MS)/MS duplicate (MSD) recoveries or precision not within the laboratory default limits when the native level is reported at less than four times the spiking level are tabulated below:

SAMPLE ID.	PARAMETER	MS/MSD RECOVERY (%)
511121	chloride	77/76
	fluoride (IC)	88/84
	nitrate-N	65/65
	sulfate	81/81
	o-phosphate-P	151/155

SAMPLE ID.	PARAMETER	MS/MSD RECOVERY (%)
511108	chloride	80/80
	fluoride (IC)	/88
	nitrate-N	58/57
	sulfate	82/83
	o-phosphate-P	205/204
511123	fluoride (IC)	76/82
	nitrate-N	68/67
	sulfate	78/78
511157	chloride	79/80
	fluoride (IC)	/87
	nitrate-N	86/88
	sulfate	72/73

Action:

- For both MS and MSD recoveries below the lower limit sample results reported for the parameter are flagged as estimated with the potential for low bias (J-).
- For both MS and MSD recoveries above the upper limit positive sample results reported for the parameter are flagged as estimated with the potential for high bias (J+).

Comments:

The above action is applied to all environmental samples associated with the SDG.

For sample 511123 the native level of sulfate exceeded four times the spiking level, therefore, this parameter could not be evaluated.

For recovery no action is taken when only one of the MS/MSD pairs is out of specification or mixed bias is indicated.

DUPLICATE SAMPLE ANALYSIS:

Field Duplicates.

Comments:

For this SDG sample 511601 is collocated with sample 511156. For this collocated sample pair all precision limits specified in the QAPP were met.

Samples analyzed for fluoride by IC, and ISE Methods:

Samples 511123, 511155, 511156, 511601, and 511157 were analyzed by both Methods. For samples 511123 and 511155 similar results were obtained from both Methods. For samples 511156, 511601, and 511157 the ISE Method provided lower results than the IC Method. For these samples only the results from the ISE Method should be used.

Samples analyzed for phosphorus by both ICP and SM 4500-P E Methods:

Samples 511121, 511122, 511108, and 511123 were analyzed by both Methods and similar results were obtained.

DETECTION LIMITS:

For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of $\pm$ 100 percent. The Estimated Quantitation Limit (EQL) is established at 5-10X the MDL in SW-846.

Action:

- Positive values reported between the MDL and PQL are flagged as estimated (J).

Comments:

Any positive values below the PQL contain inherently increasing error bands as the numbers become smaller. It is essential that the data user considers these statistical impacts on data quality at the low levels.

OVERALL ASSESSMENT:

For o-phosphate-P the laboratory filtered the samples prior to analysis.

The Field Rinse Blank and Culligan deionized water blanks were reported with ammonia-N present at concentrations that generated action levels resulting in the flagging of the positive results reported in samples 511168, 511165, and 511BTS as not-detected at the reported value (U).

Several samples provided MS/MSD recoveries of all IC parameters below the lower limit. The results reported for these parameter in all environmental samples associated with the SDG are flagged as estimated with the potential for low bias (J-).

Sample 511121 provided MS/MSD recoveries of o-phosphate-P above the upper limit. The positive results reported for this parameter in all environmental samples associated with the SDG are flagged as estimated with the potential for high bias (J+).

For samples 511156, 511157, and 511601 only the ISE results reported for fluoride should be used since they are significantly lower than the IC results.

Any values reported positive between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low levels.

All additional QC criteria evaluated were within specification and no further actions or flagging were required or deemed necessary.

APPENDIX B

DEFINITION OF DATA QUALIFIERS

GLOSSARY OF DATA QUALIFIERS

J	-	The associated value is an estimated quantity.
R	-	The data are unusable.
U	-	The parameter is not detected at the reported value.
B	-	The value is above the MDL or IDL but below the RL, or CRDL

APPENDIX C

GLOSSARY OF ACRONYMS

GLOSSARY OF ACRONYMS

SDG	-	Sample Delivery Group
USEPA	-	Unites States Environmental Protection Agency
DQO	-	Data Quality Objectives
QAPjP	-	Quality Assurance Project Plan
RPD	-	Relative Percent Difference
CRDL	-	Contract Required Detection Limit
RL	-	Reporting Limit
IDL	-	Instrument Detection Limit
MDL	-	Method Detection Limit
CLP	-	Contract Laboratory Program
ICP	-	Ion Coupled Plasma
MS	-	Matrix Spike
MSD	-	Matrix Spike Duplicate

Pace Analytical Services, Inc.
150 N Ninth Street
Billings, MT 59101
(406)254-7226

November 19, 2015

Ericka Vallance
Hydrometrics
3020 Bozeman Ave
Helena, MT 59601

RE: Project: RCRA FMC
Pace Project No.: 10328875

Dear Ericka Vallance:
Enclosed are the analytical results for sample(s) received by the laboratory between November 05, 2015 and November 06, 2015. 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,

Kabor Xiong

Kabor Xiong
kabor.xiong@pacelabs.com
Project Manager

Enclosures

cc: Rob Hartman, MWH Americas, Inc.
Bradly Maddock, FMC
Carrie Ross, FMC
Bruce Wallin, ECCI

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CERTIFICATIONS

Project: RCRA FMC
Pace Project No.: 10328875

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10328875001	**511174**	Water	11/04/15 08:30	11/05/15 09:50
10328875002	**511177**	Water	11/04/15 09:25	11/05/15 10:54
10328875003	**511154**	Water	11/04/15 10:05	11/05/15 09:50
10328875004	**511178**	Water	11/04/15 10:45	11/05/15 09:50
10328875005	**511173**	Water	11/04/15 11:35	11/05/15 09:50
10328875006	**511171**	Water	11/04/15 12:15	11/05/15 09:50
10328875007	**511180**	Water	11/04/15 13:05	11/05/15 09:50
10328875008	**511172**	Water	11/04/15 13:55	11/05/15 09:50
10328875009	**511147**	Water	11/04/15 15:25	11/05/15 09:50
10328875010	**511700**	Water	11/04/15 16:15	11/05/15 09:50
10328875011	**511148**	Water	11/04/15 16:50	11/06/15 10:00
10328875012	**511149**	Water	11/04/15 17:35	11/06/15 10:00
10328875013	**511124**	Water	11/04/15 18:15	11/06/15 10:00
10328875014	**511600**	Water	11/04/15 18:55	11/06/15 10:00
10328875015	**511126**	Water	11/04/15 19:00	11/06/15 10:00
10328875016	**511127**	Water	11/05/15 07:50	11/06/15 10:00
10328875017	**511128**	Water	11/05/15 08:30	11/06/15 10:00
10328875018	**511131**	Water	11/05/15 09:30	11/06/15 10:00
10328875019	**511114**	Water	11/05/15 10:25	11/06/15 10:00

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10328875001	**511174**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	MWD	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875002	**511177**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875003	**511154**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875004	**511178**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875005	**511173**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875006	**511171**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875007	**511180**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875008	**511172**	EPA 6010	IP	2	PASI-M

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875009	**511147**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875010	**511700**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875011	**511148**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875012	**511149**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875013	**511124**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875014	**511600**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875015	**511126**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875016	**511127**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875017	**511128**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875018	**511131**	EPA 6010	IP	2	PASI-M
		EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10328875019	**511114**	EPA 6010	IP	2	PASI-M
		EPA 6020	RJS	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 6010**
Description: 6010 MET ICP
Client: FMC
Date: November 19, 2015

General Information:
19 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 6010**
Description: 6010 MET ICP, Dissolved
Client: FMC
Date: November 19, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: FMC
Date: November 19, 2015

General Information:
19 samples were analyzed for EPA 6020. 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 3020 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.

Internal Standards:
All internal standards were within QC limits 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 6020**
Description: 6020 MET ICPMS, Dissolved
Client: FMC
Date: November 19, 2015

General Information:
1 sample was analyzed for EPA 6020. 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 3020 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.

Internal Standards:
All internal standards were within QC limits 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **SM 4500F/C**
Description: SM4500F-C Fluoride
Client: FMC
Date: November 19, 2015

General Information:
3 samples were analyzed for SM 4500F/C. 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.

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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: FMC
Date: November 19, 2015

General Information:
19 samples were analyzed for EPA 300.0. 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.

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.

QC Batch: WETA/25444

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875001

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

- MS (Lab ID: 2127601)
  - Fluoride
  - Nitrate as N
  - Sulfate
- MSD (Lab ID: 2127602)
  - Fluoride
  - Nitrate as N
  - Sulfate

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2127601)
  - Chloride
- MSD (Lab ID: 2127602)
  - Chloride

QC Batch: WETA/25466

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875016,10328875019

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

- MS (Lab ID: 2129316)
  - Fluoride

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: FMC
Date: November 19, 2015

QC Batch: WETA/25466

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875016,10328875019

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

- Nitrate as N
- MS (Lab ID: 2129318)
  - Nitrate as N
- MSD (Lab ID: 2129317)
  - Fluoride
  - Nitrate as N
- MSD (Lab ID: 2129319)
  - Nitrate as N

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2129316)
  - Chloride
  - Sulfate
- MS (Lab ID: 2129318)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 2129317)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2129319)
  - Chloride
  - Fluoride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **EPA 350.1**
Description: 350.1 Ammonia
Client: FMC
Date: November 19, 2015

General Information:
19 samples were analyzed for EPA 350.1. 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.

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.

QC Batch: WETA/25554

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10329154001,10329205001

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

- MSD (Lab ID: 2133280)
  - Nitrogen, Ammonia

QC Batch: WETA/25627

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875019,10329424001

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

- MS (Lab ID: 2137664)
  - Nitrogen, Ammonia

Additional Comments:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10328875

Method: **SM 4500-P E**
Description: Phosphate, Ortho Low Level
Client: FMC
Date: November 19, 2015

General Information:
19 samples were analyzed for SM 4500-P E. 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.

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: RCRA FMC
Pace Project No.: 10328875

Sample: 511174 **Lab ID: 10328875001** Collected: 11/04/15 08:30 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 17:55	7440-43-9	
Potassium	**11.3**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 17:55	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0033**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:16	7440-38-2	
Selenium	**0.0047**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:16	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**211**	mg/L	12.0	6.0	10		11/06/15 10:46	16887-00-6	M6
Fluoride	**0.72**	mg/L	0.050	0.0036	1		11/06/15 00:56	16984-48-8	M1
Nitrate as N	**4.6**	mg/L	0.10	0.050	1		11/06/15 00:56	14797-55-8	M1
Sulfate	**95.4**	mg/L	1.2	0.60	1		11/06/15 00:56	14808-79-8	M1
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/13/15 13:14	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.028**	mg/L	0.0050	0.0017	1		11/05/15 19:15		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511177 **Lab ID: 10328875002** Collected: 11/04/15 09:25 Received: 11/05/15 10:54 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 17:59	7440-43-9	
Potassium	**11.8**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 17:59	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0041**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:21	7440-38-2	
Selenium	**0.0041**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:21	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**180**	mg/L	2.4	1.2	2		11/06/15 11:35	16887-00-6	
Fluoride	**0.68**	mg/L	0.050	0.0036	1		11/06/15 01:41	16984-48-8	
Nitrate as N	**4.2**	mg/L	0.10	0.050	1		11/06/15 01:41	14797-55-8	
Sulfate	**71.3**	mg/L	1.2	0.60	1		11/06/15 01:41	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 15:58	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.026**	mg/L	0.0050	0.0017	1		11/05/15 19:17		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511154 **Lab ID: 10328875003** Collected: 11/04/15 10:05 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:03	7440-43-9	
Potassium	**12.2**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:03	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0042**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:25	7440-38-2	
Selenium	**0.0029**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:25	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**191**	mg/L	2.4	1.2	2		11/06/15 11:53	16887-00-6	
Fluoride	**0.98**	mg/L	0.050	0.0036	1		11/06/15 01:56	16984-48-8	
Nitrate as N	**2.7**	mg/L	0.10	0.050	1		11/06/15 01:56	14797-55-8	
Sulfate	**54.6**	mg/L	1.2	0.60	1		11/06/15 01:56	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:02	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.028**	mg/L	0.0050	0.0017	1		11/05/15 19:18		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511178 **Lab ID: 10328875004** Collected: 11/04/15 10:45 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:08	7440-43-9	
Potassium	**15.3**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:08	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.010**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:30	7440-38-2	
Selenium	**0.0038**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:30	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.34**	mg/L	0.10	0.050	1		11/15/15 13:27	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**321**	mg/L	6.0	3.0	5		11/06/15 12:11	16887-00-6	
Fluoride	**0.30**	mg/L	0.050	0.0036	1		11/06/15 02:11	16984-48-8	
Nitrate as N	**3.5**	mg/L	0.10	0.050	1		11/06/15 02:11	14797-55-8	
Sulfate	**227**	mg/L	6.0	3.0	5		11/06/15 12:11	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:02	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.038**	mg/L	0.0050	0.0017	1		11/05/15 19:19		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511173 **Lab ID: 10328875005** Collected: 11/04/15 11:35 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:12	7440-43-9	
Potassium	**12.4**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:12	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0032**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:34	7440-38-2	
Selenium	**0.0042**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:34	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**238**	mg/L	6.0	3.0	5		11/06/15 12:59	16887-00-6	
Fluoride	**0.82**	mg/L	0.050	0.0036	1		11/06/15 02:26	16984-48-8	
Nitrate as N	**3.1**	mg/L	0.10	0.050	1		11/06/15 02:26	14797-55-8	
Sulfate	**70.2**	mg/L	1.2	0.60	1		11/06/15 02:26	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:03	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.024**	mg/L	0.0050	0.0017	1		11/05/15 19:20		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511171 **Lab ID: 10328875006** Collected: 11/04/15 12:15 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:24	7440-43-9	
Potassium	**18.9**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:24	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.017**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:39	7440-38-2	
Selenium	**0.0027**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:39	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**202**	mg/L	6.0	3.0	5		11/06/15 13:17	16887-00-6	
Fluoride	**0.52**	mg/L	0.050	0.0036	1		11/06/15 02:41	16984-48-8	
Nitrate as N	**5.8**	mg/L	0.10	0.050	1		11/06/15 02:41	14797-55-8	
Sulfate	**89.2**	mg/L	1.2	0.60	1		11/06/15 02:41	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:04	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.11**	mg/L	0.0050	0.0017	1		11/05/15 19:21		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511180 **Lab ID: 10328875007** Collected: 11/04/15 13:05 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.00086J**	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:28	7440-43-9	
Potassium	**33.4**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:28	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.040**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:43	7440-38-2	
Selenium	**0.0031**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:43	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**105**	mg/L	6.0	3.0	5		11/06/15 10:07	16887-00-6	
Fluoride	**0.92**	mg/L	0.050	0.0036	1		11/06/15 03:27	16984-48-8	
Nitrate as N	**17.8**	mg/L	0.50	0.25	5		11/06/15 10:07	14797-55-8	
Sulfate	**74.9**	mg/L	1.2	0.60	1		11/06/15 03:27	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:05	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.40**	mg/L	0.025	0.0087	5		11/05/15 19:25		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511172 **Lab ID: 10328875008** Collected: 11/04/15 13:55 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:33	7440-43-9	
Potassium	**22.6**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:33	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.021**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 00:48	7440-38-2	
Selenium	**0.0035**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 00:48	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**129**	mg/L	2.4	1.2	2		11/06/15 10:31	16887-00-6	
Fluoride	**0.54**	mg/L	0.050	0.0036	1		11/06/15 03:42	16984-48-8	
Nitrate as N	**9.0**	mg/L	0.20	0.10	2		11/06/15 10:31	14797-55-8	
Sulfate	**72.2**	mg/L	1.2	0.60	1		11/06/15 03:42	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:07	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.30**	mg/L	0.025	0.0087	5		11/05/15 19:26		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511147 **Lab ID: 10328875009** Collected: 11/04/15 15:25 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:37	7440-43-9	
Potassium	**11.3**	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:37	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0043**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:02	7440-38-2	
Selenium	**0.0039**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:02	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**156**	mg/L	2.4	1.2	2		11/06/15 13:36	16887-00-6	
Fluoride	**0.66**	mg/L	0.050	0.0036	1		11/06/15 03:57	16984-48-8	
Nitrate as N	**4.3**	mg/L	0.10	0.050	1		11/06/15 03:57	14797-55-8	
Sulfate	**66.1**	mg/L	1.2	0.60	1		11/06/15 03:57	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:09	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.031**	mg/L	0.0050	0.0017	1		11/05/15 19:22		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511700 **Lab ID: 10328875010** Collected: 11/04/15 16:15 Received: 11/05/15 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/06/15 10:45	11/06/15 18:42	7440-43-9	
Potassium	ND	mg/L	2.5	0.13	1	11/06/15 10:45	11/06/15 18:42	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	ND	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:07	7440-38-2	
Selenium	ND	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:07	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.2	0.60	1		11/06/15 04:12	16887-00-6	
Fluoride	ND	mg/L	0.050	0.0036	1		11/06/15 04:12	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		11/06/15 04:12	14797-55-8	
Sulfate	ND	mg/L	1.2	0.60	1		11/06/15 04:12	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:09	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	ND	mg/L	0.0050	0.0017	1		11/05/15 19:22		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511148 **Lab ID: 10328875011** Collected: 11/04/15 16:50 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:09	7440-43-9	
Potassium	**13.1**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:09	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0059**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:12	7440-38-2	
Selenium	**0.0046**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:12	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**180**	mg/L	2.4	1.2	2		11/06/15 21:30	16887-00-6	
Fluoride	**0.69**	mg/L	0.050	0.0036	1		11/06/15 14:53	16984-48-8	
Nitrate as N	**3.9**	mg/L	0.10	0.050	1		11/06/15 14:53	14797-55-8	
Sulfate	**96.2**	mg/L	1.2	0.60	1		11/06/15 14:53	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:41	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.067**	mg/L	0.0050	0.0017	1		11/06/15 15:20		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511149 **Lab ID: 10328875012** Collected: 11/04/15 17:35 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:14	7440-43-9	
Potassium	**11.3**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:14	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0069**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:16	7440-38-2	
Selenium	**0.0023**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:16	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**142**	mg/L	2.4	1.2	2		11/06/15 23:19	16887-00-6	
Fluoride	**0.95**	mg/L	0.050	0.0036	1		11/06/15 15:54	16984-48-8	
Nitrate as N	**2.3**	mg/L	0.10	0.050	1		11/06/15 15:54	14797-55-8	
Sulfate	**66.5**	mg/L	1.2	0.60	1		11/06/15 15:54	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:41	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.060**	mg/L	0.0050	0.0017	1		11/06/15 15:22		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511124 **Lab ID: 10328875013** Collected: 11/04/15 18:15 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:18	7440-43-9	
Potassium	**11.9**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:18	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0085**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:21	7440-38-2	
Selenium	**0.0031**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:21	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**186**	mg/L	2.4	1.2	2		11/07/15 00:08	16887-00-6	
Fluoride	**0.74**	mg/L	0.050	0.0036	1		11/06/15 16:09	16984-48-8	
Nitrate as N	**3.0**	mg/L	0.10	0.050	1		11/06/15 16:09	14797-55-8	
Sulfate	**90.0**	mg/L	1.2	0.60	1		11/06/15 16:09	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:43	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.089**	mg/L	0.0050	0.0017	1		11/06/15 15:23		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511600 **Lab ID: 10328875014** Collected: 11/04/15 18:55 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:23	7440-43-9	
Potassium	**12.0**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:23	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0084**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:25	7440-38-2	
Selenium	**0.0033**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:25	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**185**	mg/L	2.4	1.2	2		11/07/15 00:27	16887-00-6	
Fluoride	**0.72**	mg/L	0.050	0.0036	1		11/06/15 16:24	16984-48-8	
Nitrate as N	**3.0**	mg/L	0.10	0.050	1		11/06/15 16:24	14797-55-8	
Sulfate	**90.1**	mg/L	1.2	0.60	1		11/06/15 16:24	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:43	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.088**	mg/L	0.0050	0.0017	1		11/06/15 15:24		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511126 **Lab ID: 10328875015** Collected: 11/04/15 19:00 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:27	7440-43-9	
Potassium	**8.7**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:27	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0073**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:30	7440-38-2	
Selenium	**0.0022**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:30	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**85.8**	mg/L	1.2	0.60	1		11/06/15 16:39	16887-00-6	
Fluoride	**0.88**	mg/L	0.050	0.0036	1		11/06/15 16:39	16984-48-8	
Nitrate as N	**2.1**	mg/L	0.10	0.050	1		11/06/15 16:39	14797-55-8	
Sulfate	**84.3**	mg/L	1.2	0.60	1		11/06/15 16:39	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:45	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.069**	mg/L	0.0050	0.0017	1		11/06/15 15:25		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511127 **Lab ID: 10328875016** Collected: 11/05/15 07:50 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:31	7440-43-9	
Potassium	**13.3**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:31	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0067**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:35	7440-38-2	
Selenium	**0.0058**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:35	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**298**	mg/L	12.0	6.0	10		11/06/15 21:45	16887-00-6	M6
Fluoride	**0.56**	mg/L	0.050	0.0036	1		11/06/15 15:23	16984-48-8	M1
Nitrate as N	**5.6**	mg/L	0.10	0.050	1		11/06/15 15:23	14797-55-8	M1
Sulfate	**227**	mg/L	12.0	6.0	10		11/06/15 21:45	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:45	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.081**	mg/L	0.0050	0.0017	1		11/06/15 15:26		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511128 **Lab ID: 10328875017** Collected: 11/05/15 08:30 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:43	7440-43-9	
Potassium	**15.3**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:43	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.013**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:39	7440-38-2	
Selenium	**0.0038**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:39	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**326**	mg/L	6.0	3.0	5		11/07/15 00:45	16887-00-6	
Fluoride	**0.40**	mg/L	0.050	0.0036	1		11/06/15 17:09	16984-48-8	
Nitrate as N	**6.9**	mg/L	0.10	0.050	1		11/06/15 17:09	14797-55-8	
Sulfate	**129**	mg/L	6.0	3.0	5		11/07/15 00:45	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 16:47	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.16**	mg/L	0.0050	0.0017	1		11/06/15 15:27		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511131 **Lab ID: 10328875018** Collected: 11/05/15 09:30 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0015J**	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:48	7440-43-9	
Potassium	**13.5**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:48	7440-09-7	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium, Dissolved	**0.0011J**	mg/L	0.0030	0.00065	1	11/10/15 20:51	11/11/15 10:16	7440-43-9	
Potassium, Dissolved	**12.9**	mg/L	2.5	0.13	1	11/10/15 20:51	11/11/15 10:16	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.044**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:44	7440-38-2	
Selenium	**0.00068**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:44	7782-49-2	
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic, Dissolved	**0.049**	mg/L	0.00050	0.00011	1	11/10/15 22:37	11/11/15 13:22	7440-38-2	
Selenium, Dissolved	**0.00071**	mg/L	0.00050	0.00020	1	11/10/15 22:37	11/11/15 13:22	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	ND	mg/L	0.10	0.050	1		11/15/15 13:32	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**200**	mg/L	6.0	3.0	5		11/07/15 01:02	16887-00-6	
Fluoride	**77.6**	mg/L	5.0	0.36	100		11/09/15 10:38	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		11/06/15 18:25	14797-55-8	
Sulfate	**168**	mg/L	6.0	3.0	5		11/07/15 01:02	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.042**	mg/L	0.040	0.020	1		11/18/15 16:47	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**6.1**	mg/L	0.25	0.087	50		11/06/15 15:33		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10328875

Sample: 511114 **Lab ID: 10328875019** Collected: 11/05/15 10:25 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0034**	mg/L	0.0030	0.00065	1	11/13/15 12:20	11/13/15 16:51	7440-43-9	
Potassium	**25.9**	mg/L	2.5	0.13	1	11/13/15 12:20	11/13/15 16:51	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.11**	mg/L	0.00050	0.00011	1	11/12/15 12:55	11/17/15 01:58	7440-38-2	
Selenium	**0.0018**	mg/L	0.00050	0.00020	1	11/12/15 12:55	11/17/15 01:58	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.92**	mg/L	0.10	0.050	1		11/15/15 13:34	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**135**	mg/L	12.0	6.0	10		11/06/15 22:31	16887-00-6	M6
Fluoride	**3.1**	mg/L	0.50	0.036	10		11/06/15 22:31	16984-48-8	M6
Nitrate as N	ND	mg/L	0.10	0.050	1		11/06/15 15:39	14797-55-8	M1
Sulfate	**99.5**	mg/L	12.0	6.0	10		11/06/15 22:31	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**2.1**	mg/L	0.080	0.040	2		11/18/15 18:09	7664-41-7	M1
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**2.0**	mg/L	0.10	0.035	20		11/06/15 15:34		FS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: MPRP/59431 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

METHOD BLANK: 2128714 — Matrix: Water
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium	mg/L	ND	0.0030	0.00065	11/06/15 16:47	
Potassium	mg/L	ND	2.5	0.13	11/06/15 16:47	

LABORATORY CONTROL SAMPLE: 2128715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/L	1	0.96	96	86-108	
Potassium	mg/L	10	9.3	93	85-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2128716 2128717

Parameter	Units	10328084001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	1	1	0.92	0.95	92	95	83-112	3	20	
Potassium	mg/L	3290 ug/L	10	10	12.3	12.8	90	95	82-118	4	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: MPRP/59494 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

METHOD BLANK: 2130823 | Matrix: Water
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium	mg/L	ND	0.0030	0.00065	11/13/15 16:01	
Potassium	mg/L	ND	2.5	0.13	11/13/15 16:01	

LABORATORY CONTROL SAMPLE: 2130824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/L	1	0.97	97	86-108	
Potassium	mg/L	10	9.2	92	85-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130825 2130826

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	0.0034	1	1	0.91	0.98	91	98	83-112	7	20	
Potassium	mg/L	25.9	10	10	35.5	37.4	95	115	82-118	5	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: MPRP/59508
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 10328875018

METHOD BLANK: 2131216
Matrix: Water
Associated Lab Samples: 10328875018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	mg/L	ND	0.0030	0.00065	11/11/15 09:22	
Potassium, Dissolved	mg/L	ND	2.5	0.13	11/11/15 09:22	

LABORATORY CONTROL SAMPLE: 2131217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	mg/L	1	0.97	97	86-108	
Potassium, Dissolved	mg/L	10	9.3	93	85-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2131218 2131219

Parameter	Units	10328309004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	mg/L	ND	1	1	1.0	1.0	104	103	83-112	1	20	
Potassium, Dissolved	mg/L	3510 ug/L	10	10	15.2	14.5	117	110	82-118	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: MPRP/59456 | Analysis Method: EPA 6020
QC Batch Method: EPA 3020 | Analysis Description: 6020 MET
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010, 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

METHOD BLANK: 2130068 | Matrix: Water
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010, 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00050	0.00011	11/17/15 00:06	
Selenium	mg/L	ND	0.00050	0.00020	11/17/15 00:06	

LABORATORY CONTROL SAMPLE: 2130069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.08	0.076	95	92-110	
Selenium	mg/L	.08	0.079	99	93-112	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130070 2130071

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.11	.08	.08	0.19	0.19	101	101	89-114	0	20	
Selenium	mg/L	0.0018	.08	.08	0.079	0.082	97	101	85-117	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: MPRP/59514 | Analysis Method: EPA 6020
QC Batch Method: EPA 3020 | Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 10328875018

METHOD BLANK: 2131249 | Matrix: Water
Associated Lab Samples: 10328875018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.00050	0.00011	11/11/15 13:17	
Selenium, Dissolved	mg/L	ND	0.00050	0.00020	11/11/15 13:17	

LABORATORY CONTROL SAMPLE: 2131250

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	.08	0.084	105	92-110	
Selenium, Dissolved	mg/L	.08	0.087	109	93-112	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2131251 2131252

Parameter	Units	30163558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.88 ug/L	.08	.08	0.085	0.084	105	105	89-114	0	20	
Selenium, Dissolved	mg/L	5.3 ug/L	.08	.08	0.091	0.092	107	108	85-117	1	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WET/45242 | Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C | Analysis Description: SM4500F-C Fluoride
Associated Lab Samples: 10328875004, 10328875018, 10328875019

METHOD BLANK: 2135500 | Matrix: Water
Associated Lab Samples: 10328875004, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	11/15/15 13:24	

LABORATORY CONTROL SAMPLE: 2135501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135502 2135503

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.92	5	5	5.2	5.4	86	89	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135504 2135505

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.26	5	5	4.9	5.1	93	98	80-120	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135506 2135507

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.97	5	5	5.4	5.8	90	96	80-120	6	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25444 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

METHOD BLANK: 2127599 | Matrix: Water
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	0.60	11/06/15 00:25	
Fluoride	mg/L	ND	0.050	0.0036	11/06/15 00:25	
Nitrate as N	mg/L	ND	0.10	0.050	11/06/15 00:25	
Sulfate	mg/L	ND	1.2	0.60	11/06/15 00:25	

LABORATORY CONTROL SAMPLE: 2127600

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.3	99	90-110	
Fluoride	mg/L	1	0.95	95	90-110	
Nitrate as N	mg/L	1	0.93	93	90-110	
Sulfate	mg/L	12.5	12.2	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2127601 2127602

Parameter	Units	10328875001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	211	125	125	312	312	81	81	90-110	0	20	M6
Fluoride	mg/L	0.72	1	1	1.6	1.5	85	80	90-110	3	20	M1
Nitrate as N	mg/L	4.6	1	1	5.1	5.1	50	51	90-110	0	20	M1
Sulfate	mg/L	95.4	12.5	12.5	98.0	98.1	21	21	90-110	0	20	M1

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25466 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

METHOD BLANK: 2129314 — Matrix: Water
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	0.60	11/06/15 16:54	
Fluoride	mg/L	ND	0.050	0.0036	11/06/15 16:54	
Nitrate as N	mg/L	ND	0.10	0.050	11/06/15 16:54	
Sulfate	mg/L	ND	1.2	0.60	11/06/15 16:54	

LABORATORY CONTROL SAMPLE: 2129315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Fluoride	mg/L	1	0.92	92	90-110	
Nitrate as N	mg/L	1	0.91	91	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129316 — 2129317

Parameter	Units	10328875016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	298	125	125	390	390	74	74	90-110	0	20	M6
Fluoride	mg/L	0.56	1	1	1.4	1.4	84	89	90-110	3	20	M1
Nitrate as N	mg/L	5.6	1	1	6.0	6.0	42	41	90-110	0	20	M1
Sulfate	mg/L	227	125	125	328	328	80	80	90-110	0	20	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129318 — 2129319

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	135	125	125	247	244	90	87	90-110	1	20	M6
Fluoride	mg/L	3.1	10	10	11.8	11.7	87	86	90-110	1	20	M6
Nitrate as N	mg/L	ND	1	1	0.92	0.91	88	88	90-110	1	20	M1
Sulfate	mg/L	99.5	125	125	211	211	89	89	90-110	0	20	M6

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25554 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10328875001

METHOD BLANK: 2133275 | Matrix: Water
Associated Lab Samples: 10328875001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.040	0.020	11/13/15 12:34	

LABORATORY CONTROL SAMPLE: 2133276

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2133277 2133278

Parameter	Units	10329205001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.13	1	1	1.2	1.2	110	110	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2133279 2133280

Parameter	Units	10329154001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.90	1	1	1.9	2.0	105	113	90-110	4	20	M1

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25626 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

METHOD BLANK: 2137654 | Matrix: Water
Associated Lab Samples: 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.040	0.020	11/18/15 17:48	

LABORATORY CONTROL SAMPLE: 2137655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.97	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137656 2137657

Parameter	Units	10328875002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	1	1	0.98	0.99	97	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137658 2137659

Parameter	Units	10329007007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.39	1	1	1.4	1.4	96	102	90-110	4	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25627 | Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 | Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

METHOD BLANK: 2137660 | Matrix: Water
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.040	0.020	11/18/15 16:23	

LABORATORY CONTROL SAMPLE: 2137661

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.99	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137662 2137663

Parameter	Units	10329424001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	1	1	0.99	1.0	98	102	90-110	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137664 2137665

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	2.1	1	1	3.2	3.1	116	103	90-110	4	20	M1

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25453 | Analysis Method: SM 4500-P E
QC Batch Method: SM 4500-P E | Analysis Description: SM4500P-E, Phosphate, Ortho
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

METHOD BLANK: 2128277 | Matrix: Water
Associated Lab Samples: 10328875001, 10328875002, 10328875003, 10328875004, 10328875005, 10328875006, 10328875007, 10328875008, 10328875009, 10328875010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.0050	0.0017	11/05/15 19:27	FS

LABORATORY CONTROL SAMPLE: 2128278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	.1	0.096	96	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2128279 2128280

Parameter	Units	10328875001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.028	.1	.1	0.12	0.13	97	98	80-120	1	30	FS

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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150 N Ninth Street
Billings, MT 59101
(406)254-7226

QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10328875

QC Batch: WETA/25470 | Analysis Method: SM 4500-P E
QC Batch Method: SM 4500-P E | Analysis Description: SM4500P-E, Phosphate, Ortho
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

METHOD BLANK: 2129349 | Matrix: Water
Associated Lab Samples: 10328875011, 10328875012, 10328875013, 10328875014, 10328875015, 10328875016, 10328875017, 10328875018, 10328875019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.0050	0.0017	11/06/15 15:47	FS

LABORATORY CONTROL SAMPLE: 2129350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	.1	0.10	103	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129351 2129352

Parameter	Units	10328875011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.067	.1	.1	0.16	0.17	98	99	80-120	1	30	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129353 2129354

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	2.0	2	2	3.8	3.8	88	90	80-120	1	30	FS

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: RCRA FMC
Pace Project No.: 10328875

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.

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

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-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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(406)254-7226

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10328875001	**511174**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875002	**511177**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875003	**511154**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875004	**511178**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875005	**511173**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875006	**511171**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875007	**511180**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875008	**511172**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875009	**511147**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875010	**511700**	EPA 3010	MPRP/59431	EPA 6010	ICP/25877
10328875011	**511148**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875012	**511149**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875013	**511124**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875014	**511600**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875015	**511126**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875016	**511127**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875017	**511128**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875018	**511131**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875019	**511114**	EPA 3010	MPRP/59494	EPA 6010	ICP/25960
10328875018	**511131**	EPA 3010	MPRP/59508	EPA 6010	ICP/25916
10328875001	**511174**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875002	**511177**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875003	**511154**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875004	**511178**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875005	**511173**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875006	**511171**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875007	**511180**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875008	**511172**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875009	**511147**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875010	**511700**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875011	**511148**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875012	**511149**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875013	**511124**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875014	**511600**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875015	**511126**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875016	**511127**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875017	**511128**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875018	**511131**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875019	**511114**	EPA 3020	MPRP/59456	EPA 6020	ICPM/27521
10328875018	**511131**	EPA 3020	MPRP/59514	EPA 6020	ICPM/27443
10328875004	**511178**	SM 4500F/C	WET/45242		
10328875018	**511131**	SM 4500F/C	WET/45242		
10328875019	**511114**	SM 4500F/C	WET/45242		
10328875001	**511174**	EPA 300.0	WETA/25444		
10328875002	**511177**	EPA 300.0	WETA/25444		
10328875003	**511154**	EPA 300.0	WETA/25444		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10328875004	**511178**	EPA 300.0	WETA/25444		
10328875005	**511173**	EPA 300.0	WETA/25444		
10328875006	**511171**	EPA 300.0	WETA/25444		
10328875007	**511180**	EPA 300.0	WETA/25444		
10328875008	**511172**	EPA 300.0	WETA/25444		
10328875009	**511147**	EPA 300.0	WETA/25444		
10328875010	**511700**	EPA 300.0	WETA/25444		
10328875011	**511148**	EPA 300.0	WETA/25466		
10328875012	**511149**	EPA 300.0	WETA/25466		
10328875013	**511124**	EPA 300.0	WETA/25466		
10328875014	**511600**	EPA 300.0	WETA/25466		
10328875015	**511126**	EPA 300.0	WETA/25466		
10328875016	**511127**	EPA 300.0	WETA/25466		
10328875017	**511128**	EPA 300.0	WETA/25466		
10328875018	**511131**	EPA 300.0	WETA/25466		
10328875019	**511114**	EPA 300.0	WETA/25466		
10328875001	**511174**	EPA 350.1	WETA/25554		
10328875002	**511177**	EPA 350.1	WETA/25626		
10328875003	**511154**	EPA 350.1	WETA/25626		
10328875004	**511178**	EPA 350.1	WETA/25626		
10328875005	**511173**	EPA 350.1	WETA/25626		
10328875006	**511171**	EPA 350.1	WETA/25626		
10328875007	**511180**	EPA 350.1	WETA/25626		
10328875008	**511172**	EPA 350.1	WETA/25626		
10328875009	**511147**	EPA 350.1	WETA/25626		
10328875010	**511700**	EPA 350.1	WETA/25626		
10328875011	**511148**	EPA 350.1	WETA/25627		
10328875012	**511149**	EPA 350.1	WETA/25627		
10328875013	**511124**	EPA 350.1	WETA/25627		
10328875014	**511600**	EPA 350.1	WETA/25627		
10328875015	**511126**	EPA 350.1	WETA/25627		
10328875016	**511127**	EPA 350.1	WETA/25627		
10328875017	**511128**	EPA 350.1	WETA/25627		
10328875018	**511131**	EPA 350.1	WETA/25627		
10328875019	**511114**	EPA 350.1	WETA/25627		
10328875001	**511174**	SM 4500-P E	WETA/25453		
10328875002	**511177**	SM 4500-P E	WETA/25453		
10328875003	**511154**	SM 4500-P E	WETA/25453		
10328875004	**511178**	SM 4500-P E	WETA/25453		
10328875005	**511173**	SM 4500-P E	WETA/25453		
10328875006	**511171**	SM 4500-P E	WETA/25453		
10328875007	**511180**	SM 4500-P E	WETA/25453		
10328875008	**511172**	SM 4500-P E	WETA/25453		
10328875009	**511147**	SM 4500-P E	WETA/25453		
10328875010	**511700**	SM 4500-P E	WETA/25453		
10328875011	**511148**	SM 4500-P E	WETA/25470		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10328875

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10328875012	**511149**	SM 4500-P E	WETA/25470		
10328875013	**511124**	SM 4500-P E	WETA/25470		
10328875014	**511600**	SM 4500-P E	WETA/25470		
10328875015	**511126**	SM 4500-P E	WETA/25470		
10328875016	**511127**	SM 4500-P E	WETA/25470		
10328875017	**511128**	SM 4500-P E	WETA/25470		
10328875018	**511131**	SM 4500-P E	WETA/25470		
10328875019	**511114**	SM 4500-P E	WETA/25470		

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SHORT HOLD LRC 11/5/15

CHAIN-OF-CUSTODY / Analytical Request Document

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

10328875

Page: 1 of 1

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA CERCLA-CALCINER

Section C Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☒ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): 300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	511174	WT	G	–	–	11/4/15	0830		3	1	1	1						X	X	X			X	X		Fed Ex Air Bill #
2	511177	WT	G	–	–		0925																			6413 7223 6949
3	511154	WT	G	–	–		1005		4																	
4	511178	WT	G	–	–		1045		4	2											X					
5	511173	WT	G	–	–		1135																			
6	511171	WT	G	–	–		1215																			
7	511180	WT	G	–	–		1305																			
8	511172	WT	G	–	–		1355																			
9	511147	WT	G	–	–		1525																			
10	11/5/15 WC 511~~CDE~~700	WT	G	–	–		1615																			
11	511	WT	G	–	–																					
12	511	WT	G	–	–																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
**300.0- Cl, SO4, Nitrate, F	Walter Crane / Hydrometrics	11/4/15	16:20	[signature]	11/5/15	9:50	4.5	Y	Y	Y
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Walter Crane					
SIGNATURE of SAMPLER:	Walter Crane	DATE Signed (MM/DD/YY): 11/04/15				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO#: 10328875

10328875

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 6413 7223 6949

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 4.6 **Cooler Temp Corrected (°C):** 4.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** -0.1 **Date and Initials of Person Examining Contents:** KAC 11/5/15

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9. ~~No sulfuric for sample 511178.~~ ~~Should have sulfuric for ammonia test~~ KAC 11/5/15
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	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? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 ☑ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-10 1/1 1/1
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added 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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Kathy Xiong **Date:** 11/5/15

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

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SHORT HOLD KAC 11/6/15

CHAIN-OF-CUSTODY / Analytical Request Document

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

10328875

Page: 1 of 2

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA-CERCLA-CALCINER

Section C Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus	Dis. Metals				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	511148	WT	G	–	–	11/4/15	1650		3	1	1	1							X	X	X			X	X						011 Fed Ex Air Bill #
2	511149	WT	G	–	–		1735																								6413 7223 6971012
3	511124	WT	G	–	–		1815																								013
4	511600	WT	G	–	–		1855																								014
5	511126	WT	G	–	–		1900																								015
6	511127	WT	G	–	–	11/5/15	0750		3																						016
7	511128	WT	G	–	–		0830		3																						017
8	511131	WT	G	–	–		0930		5	2		2										X				X					018
9	511114A	WT	G	–	–		1025		5	3												X					1 extra ISE				Fl for lab use/split on
10	511114B	WT	G	–	–		1025		4	2												X									019
11	511	WT	G	–	–																										
12	511	WT	G	–	–																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
**300.0- Cl, SO4, Nitrate, F	Walter Crane / Hydrometrics	11/5/15	1630	[illegible]	11/6/15	0900	2.0 3.0	Y	Y	Y
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane

SIGNATURE of SAMPLER: Walter Crane DATE Signed (MM/DD/YY): 11/05/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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www.pacelabs.com

KAC 11/6/15
SHORT HOLD

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA-CERCLA-CALCINER

Section C
Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER

Site Location STATE: ID

Section D
Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: 300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	511 114 C	WT	G	--	--	11/5/15	1025		4	2	1	1						X	X	X	X		X	X		019
2	511 115	WT	G	--	--		1115		3	1	1	1									ND					Fed Ex Air Bill #
3	511 166	WT	G	--	--		1200		3	1																6413 7223 6938
4	511 113	WT	G	--	--		1245		3	1																
5	511 168	WT	G	--	--		1425		3	1																
6	511 104	WT	G	--	--		1505		3	1																
7	511 167	WT	G	--	--		1545		3	1																
8	511 CDI	WT	G	--	--		1615		3	1																
9	511	WT	G	--	--																					
10	511	WT	G	--	--																					
11	511	WT	G	--	--																					
12	511	WT	G	--	--																					

ADDITIONAL COMMENTS
**300.0- Cl, SO4, Nitrate, F
6010: Cadmium, Potassium; 6020: Arsenic, Selenium
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Walter Crane / Hydrometrics	11/5/15	1630	[signature]	11/6/15	1000	3.0 3.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Walter Crane
SIGNATURE of SAMPLER: Walter Crane
DATE Signed (MM/DD/YY): 11/5/15

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO#: 10328875

10328875

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 6413 7223 6938
6413 7223 6971

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other: plastic bags **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☐ B88A912167504 ☑ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.0, 2.0 **Cooler Temp Corrected (°C):** 3.0, 2.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** KAC 11/6/15

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5. Few hours remaining on Orthophos
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests? KAC 11/6/15	☑ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13. ☑ HNO_3 1/1 2/2 ☑ H_2SO_4 1/1 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	Sample # 1-18
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added 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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: [signature] **Date:** 11/6/15

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

Pace Analytical Services, Inc.
150 N Ninth Street
Billings, MT 59101
(406)254-7226

November 23, 2015

Ericka Vallance
Hydrometrics
3020 Bozeman Ave
Helena, MT 59601

RE: Project: RCRA FMC
Pace Project No.: 10329150

Dear Ericka Vallance:
Enclosed are the analytical results for sample(s) received by the laboratory between November 06, 2015 and November 07, 2015. 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,

Kabor Xiong

Kabor Xiong
kabor.xiong@pacelabs.com
Project Manager

Enclosures

cc: Rob Hartman, MWH Americas, Inc.
Bradly Maddock, FMC
Carrie Ross, FMC
Bruce Wallin, ECCI

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Billings, MT 59101
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CERTIFICATIONS

Project: RCRA FMC
Pace Project No.: 10329150

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10329150001	**511115**	Water	11/05/15 11:15	11/06/15 10:00
10329150002	**511166**	Water	11/05/15 12:00	11/06/15 10:00
10329150003	**511113**	Water	11/05/15 12:45	11/06/15 10:00
10329150004	**511168**	Water	11/05/15 12:45	11/06/15 10:00
10329150005	**511104**	Water	11/05/15 15:05	11/06/15 10:00
10329150006	**511167**	Water	11/05/15 15:45	11/06/15 10:00
10329150007	**511CDI**	Water	11/05/15 16:15	11/06/15 10:00
10329150008	**511165**	Water	11/05/15 17:30	11/07/15 08:45
10329150009	**511183**	Water	11/05/15 18:40	11/07/15 08:45
10329150010	**511158**	Water	11/05/15 19:25	11/07/15 08:45
10329150011	**511122**	Water	11/05/15 20:15	11/07/15 08:45
10329150012	**511121A**	Water	11/06/15 08:00	11/07/15 08:45
10329150013	**511108A**	Water	11/06/15 08:40	11/07/15 08:45
10329150014	**511123ABC**	Water	11/06/15 09:25	11/07/15 08:45
10329150015	**511701**	Water	11/06/15 10:10	11/07/15 08:45
10329150016	**511155**	Water	11/06/15 10:35	11/07/15 08:45
10329150017	**511156**	Water	11/06/15 11:35	11/07/15 08:45
10329150018	**511601**	Water	11/06/15 12:00	11/07/15 08:45
10329150019	**511157ABC**	Water	11/06/15 12:35	11/07/15 08:45
10329150020	**511BTS**	Water	11/06/15 13:00	11/07/15 08:45

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10329150001	**511115**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150002	**511166**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150003	**511113**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150004	**511168**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150005	**511104**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150006	**511167**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150007	**511CDI**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150008	**511165**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150009	**511183**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150010	**511158**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150011	**511122**	EPA 6010	WBS	2	PASI-M
		EPA 6010C	MAR	1	PASI-V
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150012	**511121A**	EPA 6010	WBS	2	PASI-M
		EPA 6010C	MAR	1	PASI-V
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150013	**511108A**	EPA 6010	WBS	2	PASI-M
		EPA 6010C	MAR	1	PASI-V
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150014	**511123ABC**	EPA 6010	WBS	2	PASI-M
		EPA 6010C	MAR	1	PASI-V
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-P E	PH1	1	PASI-M
10329150015	**511701**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150016	**511155**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150017	**511156**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150018	**511601**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150019	**511157ABC**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		SM 4500F/C	JFP	1	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M
10329150020	**511BTS**	EPA 6010	WBS	2	PASI-M
		EPA 6020	TT3	2	PASI-M
		EPA 300.0	KEO	4	PASI-M
		EPA 350.1	PH1	1	PASI-M
		SM 4500-P E	PH1	1	PASI-M

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 6010**
Description: 6010 MET ICP
Client: FMC
Date: November 23, 2015

General Information:
20 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.

QC Batch: MPRP/59493

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10329150014,10329150019

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

- MS (Lab ID: 2130821)
  - Potassium
- MSD (Lab ID: 2130820)
  - Potassium
- MSD (Lab ID: 2130822)
  - Potassium

R1: RPD value was outside control limits.

- MSD (Lab ID: 2130820)
  - Potassium

Additional Comments:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: FMC
Date: November 23, 2015

General Information:
4 samples were analyzed for EPA 6010C. 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: FMC
Date: November 23, 2015

General Information:
20 samples were analyzed for EPA 6020. 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 3020 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.

Internal Standards:
All internal standards were within QC limits 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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **SM 4500F/C**
Description: SM4500F-C Fluoride
Client: FMC
Date: November 23, 2015

General Information:
5 samples were analyzed for SM 4500F/C. 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.

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:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: FMC
Date: November 23, 2015

General Information:
20 samples were analyzed for EPA 300.0. 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.

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.

QC Batch: WETA/25466

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875016,10328875019

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

- MS (Lab ID: 2129316)
  - Fluoride
  - Nitrate as N
- MS (Lab ID: 2129318)
  - Nitrate as N
- MSD (Lab ID: 2129317)
  - Fluoride
  - Nitrate as N
- MSD (Lab ID: 2129319)
  - Nitrate as N

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2129316)
  - Chloride
  - Sulfate
- MS (Lab ID: 2129318)
  - Fluoride
  - Sulfate
- MSD (Lab ID: 2129317)
  - Chloride

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: FMC
Date: November 23, 2015

QC Batch: WETA/25466

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10328875016,10328875019

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- Sulfate
- MSD (Lab ID: 2129319)
  - Chloride
  - Fluoride
  - Sulfate

QC Batch: WETA/25482

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10329150012,10329150013,10329150014,10329150019

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

- MS (Lab ID: 2129879)
  - Fluoride
  - Nitrate as N
- MS (Lab ID: 2129881)
  - Nitrate as N
- MS (Lab ID: 2129883)
  - Chloride
  - Fluoride
  - Nitrate as N
- MS (Lab ID: 2129885)
  - Nitrate as N
- MSD (Lab ID: 2129880)
  - Fluoride
  - Nitrate as N
- MSD (Lab ID: 2129882)
  - Fluoride
  - Nitrate as N
- MSD (Lab ID: 2129884)
  - Chloride
  - Fluoride
  - Nitrate as N
- MSD (Lab ID: 2129886)
  - Nitrate as N

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 2129879)
  - Chloride
  - Sulfate
- MS (Lab ID: 2129881)
  - Chloride
  - Sulfate
- MS (Lab ID: 2129883)
  - Sulfate
- MS (Lab ID: 2129885)

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 300.0**
Description: 300.0 IC Anions
Client: FMC
Date: November 23, 2015

QC Batch: WETA/25482

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10329150012,10329150013,10329150014,10329150019

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- Chloride
- Sulfate

- MSD (Lab ID: 2129880)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2129882)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2129884)
  - Sulfate
- MSD (Lab ID: 2129886)
  - Chloride
  - Fluoride
  - Sulfate

Additional Comments:

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **EPA 350.1**
Description: 350.1 Ammonia
Client: FMC
Date: November 23, 2015

General Information:
20 samples were analyzed for EPA 350.1. 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.

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.

QC Batch: WETA/25680

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10329150014,10329150019,10329722004

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

- MS (Lab ID: 2142229)
  - Nitrogen, Ammonia
- MSD (Lab ID: 2142230)
  - Nitrogen, Ammonia

Additional Comments:

Analyte Comments:

QC Batch: WETA/25680

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2142225)
  - Nitrogen, Ammonia
- MSD (Lab ID: 2142226)
  - Nitrogen, Ammonia

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PROJECT NARRATIVE

Project: RCRA FMC
Pace Project No.: 10329150

Method: **SM 4500-P E**
Description: Phosphate, Ortho Low Level
Client: FMC
Date: November 23, 2015

General Information:
20 samples were analyzed for SM 4500-P E. 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.

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.

QC Batch: WETA/25483

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s):
10329150012,10329150013,10329150014,10329150019

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

- MS (Lab ID: 2129891)
  - Orthophosphate as P
- MS (Lab ID: 2129893)
  - Orthophosphate as P
- MSD (Lab ID: 2129892)
  - Orthophosphate as P
- MSD (Lab ID: 2129894)
  - Orthophosphate as P

Additional Comments:

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

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511115 **Lab ID: 10329150001** Collected: 11/05/15 11:15 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0051**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 16:49	7440-43-9	
Potassium	**13.7**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 16:49	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.25**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:00	7440-38-2	
Selenium	**0.0037**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:00	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**145**	mg/L	6.0	3.0	5		11/07/15 01:20	16887-00-6	
Fluoride	**0.57**	mg/L	0.050	0.0036	1		11/06/15 19:11	16984-48-8	
Nitrate as N	**65.7**	mg/L	2.0	1.0	20		11/07/15 01:38	14797-55-8	
Sulfate	**347**	mg/L	6.0	3.0	5		11/07/15 01:20	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 17:03	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**3.4**	mg/L	0.10	0.035	20		11/06/15 15:37		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511166 **Lab ID: 10329150002** Collected: 11/05/15 12:00 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 16:54	7440-43-9	
Potassium	**29.3**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 16:54	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.019**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:03	7440-38-2	
Selenium	**0.0057**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:03	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**215**	mg/L	12.0	6.0	10		11/07/15 01:55	16887-00-6	
Fluoride	**0.67**	mg/L	0.050	0.0036	1		11/06/15 19:26	16984-48-8	
Nitrate as N	**34.4**	mg/L	1.0	0.50	10		11/07/15 01:55	14797-55-8	
Sulfate	**192**	mg/L	12.0	6.0	10		11/07/15 01:55	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 17:03	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.26**	mg/L	0.010	0.0035	2		11/06/15 15:43		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511113 **Lab ID: 10329150003** Collected: 11/05/15 12:45 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 16:58	7440-43-9	
Potassium	**16.6**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 16:58	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.028**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:05	7440-38-2	
Selenium	**0.0034**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:05	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**121**	mg/L	2.4	1.2	2		11/07/15 02:14	16887-00-6	
Fluoride	**0.42**	mg/L	0.050	0.0036	1		11/06/15 19:41	16984-48-8	
Nitrate as N	**9.0**	mg/L	0.20	0.10	2		11/07/15 02:14	14797-55-8	
Sulfate	**86.7**	mg/L	1.2	0.60	1		11/06/15 19:41	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 17:05	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.21**	mg/L	0.010	0.0035	2		11/06/15 15:44		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511168 **Lab ID: 10329150004** Collected: 11/05/15 12:45 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:03	7440-43-9	
Potassium	**16.1**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:03	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.023**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:08	7440-38-2	
Selenium	**0.074**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:08	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**52.6**	mg/L	1.2	0.60	1		11/06/15 19:56	16887-00-6	
Fluoride	**3.7**	mg/L	0.25	0.018	5		11/07/15 02:32	16984-48-8	
Nitrate as N	**23.0**	mg/L	0.50	0.25	5		11/07/15 02:32	14797-55-8	
Sulfate	**1370**	mg/L	24.0	12.0	20		11/07/15 02:49	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.31**	mg/L	0.040	0.020	1		11/18/15 17:05	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.095**	mg/L	0.0050	0.0017	1		11/06/15 15:41		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511104 **Lab ID: 10329150005** Collected: 11/05/15 15:05 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:07	7440-43-9	
Potassium	**193**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:07	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.038**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:11	7440-38-2	
Selenium	**0.0032**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:11	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**107**	mg/L	6.0	3.0	5		11/07/15 03:37	16887-00-6	
Fluoride	**2.7**	mg/L	0.25	0.018	5		11/07/15 03:37	16984-48-8	
Nitrate as N	**18.2**	mg/L	0.50	0.25	5		11/07/15 03:37	14797-55-8	
Sulfate	**125**	mg/L	6.0	3.0	5		11/07/15 03:37	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**3.1**	mg/L	0.080	0.040	2		11/18/15 18:22	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**1.1**	mg/L	0.050	0.017	10		11/06/15 15:48		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511167 **Lab ID: 10329150006** Collected: 11/05/15 15:45 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:12	7440-43-9	
Potassium	**11.6**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:12	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.048**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:13	7440-38-2	
Selenium	**0.0021**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:13	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**142**	mg/L	2.4	1.2	2		11/07/15 03:56	16887-00-6	
Fluoride	**1.0**	mg/L	0.10	0.0073	2		11/07/15 03:56	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		11/06/15 20:56	14797-55-8	
Sulfate	**148**	mg/L	2.4	1.2	2		11/07/15 03:56	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/18/15 17:07	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**4.2**	mg/L	0.20	0.070	40		11/06/15 15:54		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511CDI **Lab ID: 10329150007** Collected: 11/05/15 16:15 Received: 11/06/15 10:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:17	7440-43-9	
Potassium	ND	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:17	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	ND	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:26	7440-38-2	
Selenium	ND	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:26	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.2	0.60	1		11/06/15 21:12	16887-00-6	
Fluoride	ND	mg/L	0.050	0.0036	1		11/06/15 21:12	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		11/06/15 21:12	14797-55-8	
Sulfate	ND	mg/L	1.2	0.60	1		11/06/15 21:12	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.085**	mg/L	0.040	0.020	1		11/18/15 17:08	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.0042J**	mg/L	0.0050	0.0017	1		11/06/15 15:46		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511165 **Lab ID: 10329150008** Collected: 11/05/15 17:30 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:21	7440-43-9	
Potassium	**10.7**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:21	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.026**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:29	7440-38-2	
Selenium	**0.0049**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:29	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**206**	mg/L	6.0	3.0	5		11/09/15 10:56	16887-00-6	
Fluoride	**0.18**	mg/L	0.050	0.0036	1		11/07/15 14:18	16984-48-8	
Nitrate as N	**3.6**	mg/L	0.10	0.050	1		11/07/15 14:18	14797-55-8	
Sulfate	**129**	mg/L	6.0	3.0	5		11/09/15 10:56	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.029J**	mg/L	0.040	0.020	1		11/23/15 13:33	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.25**	mg/L	0.025	0.0087	5		11/07/15 14:00		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511183 **Lab ID: 10329150009** Collected: 11/05/15 18:40 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:33	7440-43-9	
Potassium	**11.9**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:33	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.016**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:31	7440-38-2	
Selenium	**0.0044**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:31	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**98.7**	mg/L	6.0	3.0	5		11/08/15 03:19	16887-00-6	
Fluoride	**0.29**	mg/L	0.050	0.0036	1		11/07/15 15:21	16984-48-8	
Nitrate as N	**1.7**	mg/L	0.10	0.050	1		11/07/15 15:21	14797-55-8	
Sulfate	**215**	mg/L	6.0	3.0	5		11/08/15 03:19	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/23/15 13:34	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.055**	mg/L	0.0050	0.0017	1		11/07/15 14:01		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511158 **Lab ID: 10329150010** Collected: 11/05/15 19:25 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:37	7440-43-9	
Potassium	**17.8**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:37	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.012**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:34	7440-38-2	
Selenium	**0.0052**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:34	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**105**	mg/L	2.4	1.2	2		11/08/15 03:38	16887-00-6	
Fluoride	**0.14**	mg/L	0.050	0.0036	1		11/07/15 15:36	16984-48-8	
Nitrate as N	**3.0**	mg/L	0.10	0.050	1		11/07/15 15:36	14797-55-8	
Sulfate	**584**	mg/L	12.0	6.0	10		11/08/15 03:55	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/23/15 13:35	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.088**	mg/L	0.0050	0.0017	1		11/07/15 14:02		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511122 **Lab ID: 10329150011** Collected: 11/05/15 20:15 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
Phosphorus	**9890**	ug/L	100	12.9	1	11/19/15 10:02	11/20/15 08:33	7723-14-0	
Cadmium	**0.0010J**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:42	7440-43-9	
Potassium	**106**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:42	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.051**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:36	7440-38-2	
Selenium	**0.0091**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:36	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**292**	mg/L	12.0	6.0	10		11/07/15 18:07	16887-00-6	
Fluoride	**0.074**	mg/L	0.050	0.0036	1		11/07/15 15:51	16984-48-8	
Nitrate as N	**16.2**	mg/L	1.0	0.50	10		11/07/15 18:07	14797-55-8	
Sulfate	**339**	mg/L	12.0	6.0	10		11/07/15 18:07	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/23/15 13:36	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**8.7**	mg/L	0.50	0.17	100		11/07/15 14:03		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511121A **Lab ID: 10329150012** Collected: 11/06/15 08:00 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
Phosphorus	**793**	ug/L	100	12.9	1	11/19/15 10:02	11/20/15 08:36	7723-14-0	
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:46	7440-43-9	
Potassium	**52.2**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:46	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0096**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:39	7440-38-2	
Selenium	**0.015**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:39	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**498**	mg/L	24.0	12.0	20		11/07/15 21:44	16887-00-6	M6
Fluoride	**0.16**	mg/L	0.050	0.0036	1		11/07/15 12:48	16984-48-8	M1
Nitrate as N	**15.0**	mg/L	0.50	0.25	5		11/07/15 20:28	14797-55-8	M1
Sulfate	**403**	mg/L	24.0	12.0	20		11/07/15 21:44	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/23/15 13:36	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.72**	mg/L	0.025	0.0087	5		11/07/15 14:03		FS,M1

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511108A **Lab ID: 10329150013** Collected: 11/06/15 08:40 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
Phosphorus	**673**	ug/L	100	12.9	1	11/19/15 10:02	11/20/15 08:40	7723-14-0	
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:51	7440-43-9	
Potassium	**124**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:51	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.023**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:42	7440-38-2	
Selenium	**0.015**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:42	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**425**	mg/L	24.0	12.0	20		11/07/15 23:15	16887-00-6	M6
Fluoride	**0.42**	mg/L	0.050	0.0036	1		11/07/15 13:03	16984-48-8	M1
Nitrate as N	**18.4**	mg/L	0.50	0.25	5		11/07/15 22:29	14797-55-8	M1
Sulfate	**357**	mg/L	24.0	12.0	20		11/07/15 23:15	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		11/23/15 13:38	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.64**	mg/L	0.025	0.0087	5		11/07/15 14:06		FS,M1

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511123ABC **Lab ID: 10329150014** Collected: 11/06/15 09:25 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
Phosphorus	**513**	ug/L	100	12.9	1	11/19/15 10:02	11/20/15 08:43	7723-14-0	
Cadmium	**0.0031**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 17:55	7440-43-9	
Potassium	**24.0**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 17:55	7440-09-7	M1,R1
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.16**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:44	7440-38-2	
Selenium	**0.16**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:44	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.97**	mg/L	0.10	0.050	1		11/15/15 13:51	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**88.6**	mg/L	1.2	0.60	1		11/07/15 13:18	16887-00-6	M1
Fluoride	**0.93**	mg/L	0.050	0.0036	1		11/07/15 13:18	16984-48-8	M1
Nitrate as N	**2.7**	mg/L	0.10	0.050	1		11/07/15 13:18	14797-55-8	M1
Sulfate	**487**	mg/L	24.0	12.0	20		11/08/15 00:30	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**3.6**	mg/L	0.080	0.040	2		11/23/15 15:13	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**0.52**	mg/L	0.025	0.0087	5		11/07/15 14:10		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511701 **Lab ID: 10329150015** Collected: 11/06/15 10:10 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 18:22	7440-43-9	
Potassium	ND	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 18:22	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	ND	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 19:57	7440-38-2	
Selenium	ND	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 19:57	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.2	0.60	1		11/07/15 18:43	16887-00-6	
Fluoride	ND	mg/L	0.050	0.0036	1		11/07/15 18:43	16984-48-8	
Nitrate as N	ND	mg/L	0.10	0.050	1		11/07/15 18:43	14797-55-8	
Sulfate	ND	mg/L	1.2	0.60	1		11/07/15 18:43	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.023J**	mg/L	0.040	0.020	1		11/23/15 13:43	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	ND	mg/L	0.0050	0.0017	1		11/07/15 14:13		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511155 **Lab ID: 10329150016** Collected: 11/06/15 10:35 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0022J**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 18:27	7440-43-9	
Potassium	**361**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 18:27	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.12**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 20:00	7440-38-2	
Selenium	**0.0060**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 20:00	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.050J**	mg/L	0.10	0.050	1		11/15/15 13:56	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**157**	mg/L	6.0	3.0	5		11/08/15 04:13	16887-00-6	
Fluoride	**0.084**	mg/L	0.050	0.0036	1		11/07/15 18:58	16984-48-8	
Nitrate as N	**6.2**	mg/L	0.10	0.050	1		11/07/15 18:58	14797-55-8	
Sulfate	**215**	mg/L	6.0	3.0	5		11/08/15 04:13	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.47**	mg/L	0.040	0.020	1		11/23/15 13:44	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**16.1**	mg/L	1.0	0.35	200		11/07/15 14:14		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511156 **Lab ID: 10329150017** Collected: 11/06/15 11:35 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0030J**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 18:31	7440-43-9	
Potassium	**1090**	mg/L	12.5	0.63	5	11/16/15 11:55	11/16/15 19:14	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.16**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 20:02	7440-38-2	
Selenium	**0.00090**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 20:02	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.073J**	mg/L	0.10	0.050	1		11/15/15 13:59	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**318**	mg/L	24.0	12.0	20		11/08/15 04:31	16887-00-6	
Fluoride	**45.8**	mg/L	2.5	0.18	50		11/08/15 13:44	16984-48-8	
Nitrate as N	**0.070J**	mg/L	0.10	0.050	1		11/07/15 19:13	14797-55-8	
Sulfate	**234**	mg/L	24.0	12.0	20		11/08/15 04:31	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**10.0**	mg/L	0.40	0.20	10		11/23/15 15:51	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**172**	mg/L	1.0	0.35	200		11/07/15 14:15		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511601 **Lab ID: 10329150018** Collected: 11/06/15 12:00 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0032**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 18:36	7440-43-9	
Potassium	**1080**	mg/L	12.5	0.63	5	11/16/15 11:55	11/16/15 19:19	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.15**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 20:05	7440-38-2	
Selenium	**0.00087**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 20:05	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.064J**	mg/L	0.10	0.050	1		11/15/15 14:01	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**317**	mg/L	24.0	12.0	20		11/08/15 04:48	16887-00-6	
Fluoride	**44.6**	mg/L	2.5	0.18	50		11/08/15 14:01	16984-48-8	
Nitrate as N	**0.27**	mg/L	0.10	0.050	1		11/07/15 19:28	14797-55-8	
Sulfate	**232**	mg/L	24.0	12.0	20		11/08/15 04:48	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**10.6**	mg/L	0.40	0.20	10		11/23/15 15:51	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**170**	mg/L	1.0	0.35	200		11/07/15 14:16		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511157ABC **Lab ID: 10329150019** Collected: 11/06/15 12:35 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	**0.0015J**	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 18:41	7440-43-9	
Potassium	**222**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 18:41	7440-09-7	M1
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.094**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 20:10	7440-38-2	
Selenium	**0.00036J**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 20:10	7782-49-2	
SM4500F-C Fluoride	Analytical Method: SM 4500F/C								
Fluoride	**0.26**	mg/L	0.10	0.050	1		11/15/15 13:43	16984-48-8	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**224**	mg/L	12.0	6.0	10		11/08/15 01:16	16887-00-6	M6
Fluoride	**24.6**	mg/L	5.0	0.36	100		11/08/15 02:01	16984-48-8	M6
Nitrate as N	ND	mg/L	0.10	0.050	1		11/07/15 13:33	14797-55-8	M1
Sulfate	**302**	mg/L	12.0	6.0	10		11/08/15 01:16	14808-79-8	M6
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.9**	mg/L	0.040	0.020	1		11/23/15 13:47	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**37.8**	mg/L	1.0	0.35	200		11/07/15 14:16		FS

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ANALYTICAL RESULTS

Project: RCRA FMC
Pace Project No.: 10329150

Sample: 511BTS **Lab ID: 10329150020** Collected: 11/06/15 13:00 Received: 11/07/15 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Cadmium	ND	mg/L	0.0030	0.00065	1	11/16/15 11:55	11/16/15 19:02	7440-43-9	
Potassium	**7.7**	mg/L	2.5	0.13	1	11/16/15 11:55	11/16/15 19:02	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020								
Arsenic	**0.0094**	mg/L	0.00050	0.00011	1	11/15/15 21:58	11/16/15 20:08	7440-38-2	
Selenium	**0.0027**	mg/L	0.00050	0.00020	1	11/15/15 21:58	11/16/15 20:08	7782-49-2	
300.0 IC Anions	Analytical Method: EPA 300.0								
Chloride	**39.5**	mg/L	1.2	0.60	1		11/07/15 20:13	16887-00-6	
Fluoride	**0.40**	mg/L	0.050	0.0036	1		11/07/15 20:13	16984-48-8	
Nitrate as N	**4.2**	mg/L	0.10	0.050	1		11/07/15 20:13	14797-55-8	
Sulfate	**83.7**	mg/L	1.2	0.60	1		11/07/15 20:13	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.063**	mg/L	0.040	0.020	1		11/23/15 13:49	7664-41-7	
Phosphate, Ortho Low Level	Analytical Method: SM 4500-P E								
Orthophosphate as P	**1.8**	mg/L	0.10	0.035	20		11/07/15 14:21		FS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: MPRP/6188 Analysis Method: EPA 6010C
QC Batch Method: EPA 3010 Analysis Description: 6010C MET
Associated Lab Samples: 10329150011, 10329150012, 10329150013, 10329150014

METHOD BLANK: 269579 Matrix: Water
Associated Lab Samples: 10329150011, 10329150012, 10329150013, 10329150014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Phosphorus	ug/L	ND	100	12.9	11/20/15 08:26	

LABORATORY CONTROL SAMPLE: 269580

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	ug/L	5000	5000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 269581 269582

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	ug/L	513	5000	5000	5540	5480	101	99	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 269583 269584

Parameter	Units	10329722004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	ug/L	6500	5000	5000	11500	11400	100	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: MPRP/59493 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007, 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

METHOD BLANK: 2130817 — Matrix: Water
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007, 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium	mg/L	ND	0.0030	0.00065	11/16/15 16:40	
Potassium	mg/L	ND	2.5	0.13	11/16/15 16:40	

LABORATORY CONTROL SAMPLE: 2130818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/L	1	0.99	99	86-108	
Potassium	mg/L	10	9.5	95	85-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130819 — 2130820

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	0.0031	1	1	0.96	0.93	95	93	83-112	2	20	
Potassium	mg/L	24.0	10	10	34.1	27.5	100	35	82-118	21	20	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130821 — 2130822

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	0.0015J	1	1	0.99	0.94	99	94	83-112	5	20	
Potassium	mg/L	222	10	10	245	237	230	153	82-118	3	20	M1

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: MPRP/59490 — Analysis Method: EPA 6020
QC Batch Method: EPA 3020 — Analysis Description: 6020 MET
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007, 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

METHOD BLANK: 2130803 — Matrix: Water
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007, 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00050	0.00011	11/16/15 18:55	
Selenium	mg/L	ND	0.00050	0.00020	11/16/15 18:55	

LABORATORY CONTROL SAMPLE: 2130804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.08	0.086	108	92-110	
Selenium	mg/L	.08	0.085	107	93-112	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130805 — 2130806

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.16	.08	.08	0.24	0.24	99	99	89-114	0	20	
Selenium	mg/L	0.16	.08	.08	0.23	0.23	97	95	85-117	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130807 — 2130808

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.094	.08	.08	0.17	0.17	95	99	89-114	2	20	
Selenium	mg/L	0.00036J	.08	.08	0.091	0.084	114	105	85-117	8	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WET/45242 — Analysis Method: SM 4500F/C
QC Batch Method: SM 4500F/C — Analysis Description: SM4500F-C Fluoride
Associated Lab Samples: 10329150014, 10329150016, 10329150017, 10329150018, 10329150019

METHOD BLANK: 2135500 — Matrix: Water
Associated Lab Samples: 10329150014, 10329150016, 10329150017, 10329150018, 10329150019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	11/15/15 13:24	

LABORATORY CONTROL SAMPLE: 2135501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135502 — 2135503

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.92	5	5	5.2	5.4	86	89	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135504 — 2135505

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.26	5	5	4.9	5.1	93	98	80-120	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2135506 — 2135507

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.97	5	5	5.4	5.8	90	96	80-120	6	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25466 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

METHOD BLANK: 2129314 Matrix: Water
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	0.60	11/06/15 16:54	
Fluoride	mg/L	ND	0.050	0.0036	11/06/15 16:54	
Nitrate as N	mg/L	ND	0.10	0.050	11/06/15 16:54	
Sulfate	mg/L	ND	1.2	0.60	11/06/15 16:54	

LABORATORY CONTROL SAMPLE: 2129315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Fluoride	mg/L	1	0.92	92	90-110	
Nitrate as N	mg/L	1	0.91	91	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129316 2129317

Parameter	Units	10328875016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	298	125	125	390	390	74	74	90-110	0	20	M6
Fluoride	mg/L	0.56	1	1	1.4	1.4	84	89	90-110	3	20	M1
Nitrate as N	mg/L	5.6	1	1	6.0	6.0	42	41	90-110	0	20	M1
Sulfate	mg/L	227	125	125	328	328	80	80	90-110	0	20	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129318 2129319

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	135	125	125	247	244	90	87	90-110	1	20	M6
Fluoride	mg/L	3.1	10	10	11.8	11.7	87	86	90-110	1	20	M6
Nitrate as N	mg/L	ND	1	1	0.92	0.91	88	88	90-110	1	20	M1
Sulfate	mg/L	99.5	125	125	211	211	89	89	90-110	0	20	M6

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25482 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

METHOD BLANK: 2129877 — Matrix: Water
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.2	0.60	11/07/15 13:48	
Fluoride	mg/L	ND	0.050	0.0036	11/07/15 13:48	
Nitrate as N	mg/L	ND	0.10	0.050	11/07/15 13:48	
Sulfate	mg/L	ND	1.2	0.60	11/07/15 13:48	

LABORATORY CONTROL SAMPLE: 2129878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.5	12.2	98	90-110	
Fluoride	mg/L	1	0.98	98	90-110	
Nitrate as N	mg/L	1	0.94	94	90-110	
Sulfate	mg/L	12.5	11.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129879 — 2129880

Parameter	Units	10329150012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	498	250	250	690	689	77	76	90-110	0	20	M6
Fluoride	mg/L	0.16	1	1	1.0	1.0	88	84	90-110	4	20	M1
Nitrate as N	mg/L	15.0	5	5	18.2	18.2	65	65	90-110	0	20	M1
Sulfate	mg/L	403	250	250	606	605	81	81	90-110	0	20	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129881 — 2129882

Parameter	Units	10329150013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	425	250	250	624	624	80	80	90-110	0	20	M6
Fluoride	mg/L	0.42	1	1	1.3	1.3	90	88	90-110	1	20	M1
Nitrate as N	mg/L	18.4	5	5	21.3	21.2	58	57	90-110	0	20	M1
Sulfate	mg/L	357	250	250	563	564	82	83	90-110	0	20	M6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129883 2129884

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	88.6	12.5	12.5	91.7	91.7	25	25	90-110	0	20	M1
Fluoride	mg/L	0.93	1	1	1.7	1.8	76	82	90-110	4	20	M1
Nitrate as N	mg/L	2.7	1	1	3.4	3.4	68	67	90-110	0	20	M1
Sulfate	mg/L	487	250	250	683	682	78	78	90-110	0	20	M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129885 2129886

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	224	125	125	323	324	79	80	90-110	0	20	M6
Fluoride	mg/L	24.6	100	100	118	112	93	87	90-110	5	20	M6
Nitrate as N	mg/L	ND	1	1	0.90	0.91	86	88	90-110	1	20	M1
Sulfate	mg/L	302	125	125	392	393	72	73	90-110	0	20	M6

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25628 — Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 — Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

METHOD BLANK: 2137666 — Matrix: Water
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.040	0.020	11/18/15 16:52	

LABORATORY CONTROL SAMPLE: 2137667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137668 2137669

Parameter	Units	10329085001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	2.3	1	1	3.3	3.3	107	105	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2137670 2137671

Parameter	Units	10329150007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.085	1	1	0.99	1.0	90	93	90-110	2	20	

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25680 — Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 — Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

METHOD BLANK: 2142223 — Matrix: Water
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.040	0.020	11/23/15 13:31	

LABORATORY CONTROL SAMPLE: 2142224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2142225 — 2142226

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	3.6	1	1	4.7	4.6	105	97	90-110	2	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2142227 — 2142228

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	1.9	1	1	2.9	3.0	101	104	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2142229 — 2142230

Parameter	Units	10329722004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.46	1	1	1.0	0.96	54	50	90-110	5	20	M1

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25470 | Analysis Method: SM 4500-P E
QC Batch Method: SM 4500-P E | Analysis Description: SM4500P-E, Phosphate, Ortho
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

METHOD BLANK: 2129349 | Matrix: Water
Associated Lab Samples: 10329150001, 10329150002, 10329150003, 10329150004, 10329150005, 10329150006, 10329150007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.0050	0.0017	11/06/15 15:47	FS

LABORATORY CONTROL SAMPLE: 2129350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	.1	0.10	103	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129351 2129352

Parameter	Units	10328875011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.067	.1	.1	0.16	0.17	98	99	80-120	1	30	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129353 2129354

Parameter	Units	10328875019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	2.0	2	2	3.8	3.8	88	90	80-120	1	30	FS

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QUALITY CONTROL DATA

Project: RCRA FMC
Pace Project No.: 10329150

QC Batch: WETA/25483 | Analysis Method: SM 4500-P E
QC Batch Method: SM 4500-P E | Analysis Description: SM4500P-E, Phosphate, Ortho
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

METHOD BLANK: 2129889 | Matrix: Water
Associated Lab Samples: 10329150008, 10329150009, 10329150010, 10329150011, 10329150012, 10329150013, 10329150014, 10329150015, 10329150016, 10329150017, 10329150018, 10329150019, 10329150020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.0050	0.0017	11/07/15 14:23	FS

LABORATORY CONTROL SAMPLE: 2129890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	.1	0.10	102	90-110	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129891 2129892

Parameter	Units	10329150012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.72	.5	.5	1.5	1.5	151	155	80-120	1	30	FS,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129893 2129894

Parameter	Units	10329150013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.64	.5	.5	1.7	1.7	205	204	80-120	0	30	FS,M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129895 2129896

Parameter	Units	10329150014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.52	.5	.5	1.1	1.1	107	107	80-120	0	30	FS

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129909 2129910

Parameter	Units	10329150019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	37.8	20	20	59.4	59.2	108	107	80-120	0	30	FS

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QUALIFIERS

Project: RCRA FMC
Pace Project No.: 10329150

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.

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

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-M	Pace Analytical Services - Minneapolis
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
FS	The sample was filtered in the laboratory prior to analysis.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10329150001	**511115**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150002	**511166**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150003	**511113**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150004	**511168**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150005	**511104**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150006	**511167**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150007	**511CDI**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150008	**511165**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150009	**511183**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150010	**511158**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150011	**511122**	EPA 3010	MPRP/6188	EPA 6010C	ICP/4772
10329150011	**511122**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150012	**511121A**	EPA 3010	MPRP/6188	EPA 6010C	ICP/4772
10329150012	**511121A**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150013	**511108A**	EPA 3010	MPRP/6188	EPA 6010C	ICP/4772
10329150013	**511108A**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150014	**511123ABC**	EPA 3010	MPRP/6188	EPA 6010C	ICP/4772
10329150014	**511123ABC**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150015	**511701**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150016	**511155**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150017	**511156**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150018	**511601**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150019	**511157ABC**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150020	**511BTS**	EPA 3010	MPRP/59493	EPA 6010	ICP/25980
10329150001	**511115**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150002	**511166**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150003	**511113**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150004	**511168**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150005	**511104**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150006	**511167**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150007	**511CDI**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150008	**511165**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150009	**511183**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150010	**511158**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150011	**511122**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150012	**511121A**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150013	**511108A**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150014	**511123ABC**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150015	**511701**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150016	**511155**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150017	**511156**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150018	**511601**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150019	**511157ABC**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518
10329150020	**511BTS**	EPA 3020	MPRP/59490	EPA 6020	ICPM/27518

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10329150014	**511123ABC**	SM 4500F/C	WET/45242		
10329150016	**511155**	SM 4500F/C	WET/45242		
10329150017	**511156**	SM 4500F/C	WET/45242		
10329150018	**511601**	SM 4500F/C	WET/45242		
10329150019	**511157ABC**	SM 4500F/C	WET/45242		
10329150001	**511115**	EPA 300.0	WETA/25466		
10329150002	**511166**	EPA 300.0	WETA/25466		
10329150003	**511113**	EPA 300.0	WETA/25466		
10329150004	**511168**	EPA 300.0	WETA/25466		
10329150005	**511104**	EPA 300.0	WETA/25466		
10329150006	**511167**	EPA 300.0	WETA/25466		
10329150007	**511CDI**	EPA 300.0	WETA/25466		
10329150008	**511165**	EPA 300.0	WETA/25482		
10329150009	**511183**	EPA 300.0	WETA/25482		
10329150010	**511158**	EPA 300.0	WETA/25482		
10329150011	**511122**	EPA 300.0	WETA/25482		
10329150012	**511121A**	EPA 300.0	WETA/25482		
10329150013	**511108A**	EPA 300.0	WETA/25482		
10329150014	**511123ABC**	EPA 300.0	WETA/25482		
10329150015	**511701**	EPA 300.0	WETA/25482		
10329150016	**511155**	EPA 300.0	WETA/25482		
10329150017	**511156**	EPA 300.0	WETA/25482		
10329150018	**511601**	EPA 300.0	WETA/25482		
10329150019	**511157ABC**	EPA 300.0	WETA/25482		
10329150020	**511BTS**	EPA 300.0	WETA/25482		
10329150001	**511115**	EPA 350.1	WETA/25628		
10329150002	**511166**	EPA 350.1	WETA/25628		
10329150003	**511113**	EPA 350.1	WETA/25628		
10329150004	**511168**	EPA 350.1	WETA/25628		
10329150005	**511104**	EPA 350.1	WETA/25628		
10329150006	**511167**	EPA 350.1	WETA/25628		
10329150007	**511CDI**	EPA 350.1	WETA/25628		
10329150008	**511165**	EPA 350.1	WETA/25680		
10329150009	**511183**	EPA 350.1	WETA/25680		
10329150010	**511158**	EPA 350.1	WETA/25680		
10329150011	**511122**	EPA 350.1	WETA/25680		
10329150012	**511121A**	EPA 350.1	WETA/25680		
10329150013	**511108A**	EPA 350.1	WETA/25680		
10329150014	**511123ABC**	EPA 350.1	WETA/25680		
10329150015	**511701**	EPA 350.1	WETA/25680		
10329150016	**511155**	EPA 350.1	WETA/25680		
10329150017	**511156**	EPA 350.1	WETA/25680		
10329150018	**511601**	EPA 350.1	WETA/25680		
10329150019	**511157ABC**	EPA 350.1	WETA/25680		
10329150020	**511BTS**	EPA 350.1	WETA/25680		
10329150001	**511115**	SM 4500-P E	WETA/25470		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RCRA FMC
Pace Project No.: 10329150

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10329150002	**511166**	SM 4500-P E	WETA/25470		
10329150003	**511113**	SM 4500-P E	WETA/25470		
10329150004	**511168**	SM 4500-P E	WETA/25470		
10329150005	**511104**	SM 4500-P E	WETA/25470		
10329150006	**511167**	SM 4500-P E	WETA/25470		
10329150007	**511CDI**	SM 4500-P E	WETA/25470		
10329150008	**511165**	SM 4500-P E	WETA/25483		
10329150009	**511183**	SM 4500-P E	WETA/25483		
10329150010	**511158**	SM 4500-P E	WETA/25483		
10329150011	**511122**	SM 4500-P E	WETA/25483		
10329150012	**511121A**	SM 4500-P E	WETA/25483		
10329150013	**511108A**	SM 4500-P E	WETA/25483		
10329150014	**511123ABC**	SM 4500-P E	WETA/25483		
10329150015	**511701**	SM 4500-P E	WETA/25483		
10329150016	**511155**	SM 4500-P E	WETA/25483		
10329150017	**511156**	SM 4500-P E	WETA/25483		
10329150018	**511601**	SM 4500-P E	WETA/25483		
10329150019	**511157ABC**	SM 4500-P E	WETA/25483		
10329150020	**511BTS**	SM 4500-P E	WETA/25483		

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KAC 11/6/15
SHORT HOLD

CHAIN-OF-CUSTODY / Analytical Request Document

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

10329150

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA-CERCLA-CALCINER

Section C Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): 300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. (WO 10328875 01 ZK 11/6)
1	511 114 C	WT	G	–	–	11/5/15	1025		4	2	1	1						X	X	X	X		X	X		Fed Ex Air Bill #
2	511 115	WT	G	–	–		1115		3	1	1	1														6413 7223 6938 001
3	511 166	WT	G	–	–		1200		3	1																002
4	511 113	WT	G	–	–		1245		3	1																003
5	511 168	WT	G	–	–		1425		3	1																004
6	511 104	WT	G	–	–		1505		3	1																005
7	511 167	WT	G	–	–		1545		3	1																006
8	511 CDI	WT	G	–	–		1615		3	1																007
9	511	WT	G	–	–																					
10	511	WT	G	–	–																					
11	511	WT	G	–	–																					
12	511	WT	G	–	–																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
**300.0- Cl, SO4, Nitrate, F	Walter Crane / Hydrometrics	11/5/15	1630	[illegible]	11/6/15	1000	3.0 3.0	Y	Y	Y
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane

SIGNATURE of SAMPLER: Walter Crane

DATE Signed (MM/DD/YY): 11/5/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO#: 10329150 (10329150)

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 6413 7223 6938 6413 7223 6971

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other: plastic bags **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☐ B88A912167504 ☑ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.0, 2.0 **Cooler Temp Corrected (°C):** 3.0, 2.0

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Date and Initials of Person Examining Contents: KAC 11/6/15

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☑ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes ☐ No ☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes ☐ No ☐ N/A	5. few hours remaining on Orthophos
Short Hold Time Analysis (<72 hr)?	☑ Yes ☐ No ☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes ☑ No ☐ N/A	7.
Sufficient Volume?	☑ Yes ☐ No ☐ N/A	8.
Correct Containers Used?	☑ Yes ☐ No ☐ N/A	9.
-Pace Containers Used?	☑ Yes ☐ No ☐ N/A	
Containers Intact?	☑ Yes ☐ No ☐ N/A	10.
Filtered Volume Received for Dissolved Tests? KAC 11/6/15	☑ Yes ☐ No ☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes ☐ No ☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes ☐ No ☐ N/A	13. ☑ HNO_3 1/2 2/12 ☑ H_2SO_4 4/1 ☐ NaOH ☐ HCl Sample # 1-18
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes ☐ No ☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes ☐ No ☑ N/A	Initial when completed: Lot # of added 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

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Kathy Xiong **Date:** 11/6/15

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

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

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

SHORT HOLD 8m 11/7/15

Page: 1 of 2

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA-CERCLA-CALCINER

Section C Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus					Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	511165	WT	G	--	--	11/5/15	1730		3	1	1	1							X	X	X			X	X						Fed Ex Air Bill #
2	511183	WT	G	--	--		1840		3																						8713 2040 9264
3	511158	WT	G	--	--		1925		3																						010
4	511122	WT	G	--	--		2015		4			2											X								011
5	511121A	WT	G	--	--	11/6/15	0800		4			2											X								012
6	511108A	WT	G	--	--		0840		4	1		2											X								013
7	511123A	WT	G	--	--		0925		5	2		2											X				S				014
8	511123B	WT	G	--	--		0925		5	2		2											X				MS				014
9	511123C	WT	G	--	--		0925		5	2		2											X				MSD				014
10	511701	WT	G	--	--		1010		3	1		1																			015
11	511	WT	G	--	--																										
12	511	WT	G	--	--																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
**300.0- Cl, SO4, Nitrate, F	Walter Crane / Hydrometrics	11/6/15	14:00	Pace	11/7/15	845	1.3	Y	Y	Y
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane

SIGNATURE of SAMPLER: Walter Crane DATE Signed (MM/DD/YY): 11/06/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:

Company:	FMC
Address:	PO BOX 4111
	POCATELLO, ID 83202
Email To:	Rachel.Greengas@fmc.com
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Ericka Vallance, Hydrometrics
Copy To:	Rob Hartman, MWH
	Bruce Wallin, ECCI
Purchase Order No.:	
Project Name:	FMC
Project Number:	RCRA CERCLA-CALCINER

Section C Invoice Information:

Attention:	Rachel Greengas
Company Name:	FMC
Address:	PO BOX 4111 POCATELLO ID 83202
Pace Quote Reference:	
Pace Project Manager:	Kabor Xiong
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☑ RCRA ☐ OTHER _____

Site Location STATE: ID

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): 300.0IC **	TOTAL METALS 6020	TOTAL METALS 6010	FLUORIDE (ISE)	TOTAL PHOSPHORUS	Ammonia	Ortho Phosphorus					Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	511 155	WT	G	–	–	11/6/15	1035		5	3	1	1						X	X	X	2		X	X	1 extra	Fl	for lab		Fed Ex Air Bill #	016
2	511 156	WT	G	–	–		1135		5	3		1									2					"	"	" use "		017
3	511 601	WT	G	–	–		1200		4	2		1									1								87132040 9264	018
4	Sample 511 157A	WT	G	–	–		1235		5	3											2				1 extra for lab use					019
5	Matrix Spike 511 BTS	WT	G	–	–		1300		3	1																				020
6	Matrix Spike Dup 511 157B	WT	G	–	–		1235		4	2											1									019
7	511 157C	WT	G	–	–		1235		4	2											1									019
8	511	WT	G																											
9	511	WT	G	–	–																									
10	511	WT	G	–	–																									
11	511	WT	G	–	–																									
12	511	WT	G	–	–																									

End of RCRA Sampling

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
**300.0- Cl, SO4, Nitrate, F	Walter Crane / Hydrometrics	11/6/15	1400	[illegible] Race	11/7/15	845	4.0	Y	Y	Y
6010: Cadmium, Potassium; 6020: Arsenic, Selenium										
Total Phos sub to Pace-VM by 6010 only on wells 108, 121, 122 & 123										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane

SIGNATURE of SAMPLER: Walter Crane DATE Signed (MM/DD/YY): 11/06/15

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO# : 10329150

10329150

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7816 6665 3415/8713 2040 9264

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☐ B88A912167504 ☒ B88A0143310098 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.3/4.0 **Cooler Temp Corrected (°C):** 1.3/4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.0 **Date and Initials of Person Examining Contents:** BM 11/9/15

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☒ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	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? -includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☒ Yes	☐ No	☐ N/A	13. ☒ HNO_3 ☒ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☒ Yes	☐ No	☐ N/A	Sample # 1/1 01-03, 10-17 2/2 04-09 1/1 01-17
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added 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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Karla Xiong **Date:** 11/9/15

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

Chain of Custody

WO#: 1256908
PM: HRZ Due Date: 11/20/15
CLIENT: PACE MPLS

Pace Analytical®
www.pacelabs.com

Workorder: 10329150 **Workorder Name:** RCRA FMC **Owner Received Date:** 11/7/2015 **Results Requested By:** 11/20/2015

Report To
Kabor Xiong
Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone (612)607-1700
Fax (612)607-6444

Subcontract To
Pace Analytical Virginia MN
315 Chestnut Street
Virginia, MN 55792
Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: H2SO4	Requested Analysis: T.Phos by 6010	LAB USE ONLY
1	511122	PS	11/5/2015 20:15	10329150011	Water	1	X	
2	511121A	PS	11/6/2015 08:00	10329150012	Water	1	X	
3	511108A	PS	11/6/2015 08:40	10329150013	Water	1	X	
4	511123ABC	RQS	11/6/2015 09:25	10329150014	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	PACE-MN	11/9/15 1500	[illegible]	11/10 nsc
2				
3				

Comments
L4 Data Pkg due 12/01/15

Cooler Temperature on Receipt 5.4 °C **Custody Seal** Y or (N) **Received on Ice** (Y) or N **Samples Intact** (Y) or N

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

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-VM-C-001-Rev.09**	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace Mn

Project #: WO#: 1256908

1256908

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other: Hazpad **Temp Blank?** ☒ Yes ☒ No

Thermometer Used: ☒ 140792808 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 5.1 **Cooler Temp Corrected °C:** 5.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: -0.3 **Date and Initials of Person Examining Contents:** 11/10/15 aas

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☒ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: wt				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☒ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Heather Zee **Date:** 11/10/15

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

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10329150 **Workorder Name:** RCRA FMC **Owner Received Date:** 11/7/2015 **Results Requested By:** 11/20/2015

Report To

Kabor Xiong
Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone (612)607-1700
Fax (612)607-6444

Subcontract To

Pace Analytical Virginia MN
315 Chestnut Street
Virginia, MN 55792
Phone (218)742-1042

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	T. Phos by 6010	LAB USE ONLY
1	511122	PS	11/5/2015 20:15	10329150011	Water	1	X	
2	511121A	PS	11/6/2015 08:00	10329150012	Water	1	X	
3	511108A	PS	11/6/2015 08:40	10329150013	Water	1	X	
4	511123ABC	RQS	11/6/2015 09:25	10329150014	Water	2	X	
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	PACE-MN	11/18/15 1500		11/18/15 [illegible]
2		11/18/15 2100	GM	11-19-15 0800
3				

Comments

L4 due 12/01/15

Cooler Temperature on Receipt 1.8 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

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

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Pace-MN

Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 140792808 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.8 **Cooler Temp Corrected °C:** 2.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 **Date and Initials of Person Examining Contents:** JPK 11/18/15

Comments:

Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☑ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☑ Yes	☐ No	☐ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☑ N/A	13.
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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

sent correct bottles 11/19/15 HZ

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [signature] **Date:** 11/19/15

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

TECHNICAL DATA REVIEW REPORT

5 and 6 November 2015
Groundwater Sampling
Elemental Phosphorus (P4) Analyses

Prepared for:
FMC Idaho LLC

Pocatello, Idaho Plant

Prepared by:
Ordway and Associates
and
Environmental Chemistry Consultants, Inc.

11 January 2015

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

10146 Banner Rd., S.E. Tel: (253) 509-4568
Olalla, WA 98359

e-mail:

Technical: brucekw327@live.com

Data Validation/Usability Report

Groundwater Samples

5 and 6 November, 2015 RCRA Event

FMC Idaho LLC, Pocatello, Idaho

ALS Work Order #: 34-1531446

Prepared by: Frederick S. Ordway

11 January 2014

INTRODUCTION

This memo summarizes the Site Chemistôs usability evaluation of the technically reviewed groundwater results generated by ALS Laboratory Group, for the SDG listed above. The samples were collected on 5 and 6 November 2015. Elemental Phosphorous (P4) laboratory analyses were performed in accordance with the U.S. Environmental Protection Agency (USEPA) SW-846 Method 7580 as described in the laboratory SOP.

The laboratory has modified Method 7580. Method 7580 provides for two different levels of sensitivity for determining P4 in water samples. One method has a sensitivity of 0.01 ug/L and consists of extracting a 500 mL water sample into 50 mL of diethyl ether and then back extracting with water to a final volume of 1.0 mL of diethyl ether. The other method provides sensitivity on the order of 0.1 ug/L and consists of extracting 30 mL of water into 3 mL of isooctane. The laboratory has modified the method to extract 120 mL of water into 3 mL of isooctane with a reported sensitivity of 0.016 ug/L based on the reported MDL with a concomitant reporting limit of 0.050 ug/L. The impacts of the modifications performed by the laboratory are detailed below.

A Level II technical review was performed for this SDG, which included a review/evaluation of all laboratory reporting forms, raw data, preparation logs, instrument printouts, notebook records and forensic deliverables provided by the laboratory. The data were technically reviewed based on method specifications, and laboratory-developed performance criteria by adapting the procedures set forth in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, USEPA Office of Solid Waste and Emergency Response, EPA-540/R-94-013, February 1994 and USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, USEPA office of Solid Waste and Emergency Response, EPA540/R-94/012, February 1994 (Guidelines).

For elemental phosphorous, the data were evaluated for USEPA SW-846 Method 7580 which included the following parameters:

- data completeness
- holding times**
- calibration
- blanks**
- laboratory control sample**
- matrix spike/matrix spike duplicate
- compound quantitation and reported detection limits, and
- overall assessment

** Denotes all criteria for this parameter were met

COMPLETENESS

Not all of the pages in the report are paginated and the laboratory did not report the presence or absence of headspace (bubbles) in the samples upon receipt. All samples received were analyzed, reported and qualified as described below.

CALIBRATION:

Initial Calibration:

The laboratory performed the initial calibration on 27 October 2015 and utilized a second order 1/x regression model based on peak height for evaluating the data. The samples were analyzed beginning 11 November 2015 or approximately 20 days after calibration. Therefore the samples were not analyzed within the 12-hour time limit specified in the method[1] and all samples are qualified as estimated (J).

Regarding the choice of calibration model[2], per the method if the RSD is less than or equal to 20% over the calibration range then linearity through the origin may be assumed and the laboratory is to use this approach unless a priori knowledge is the basis for not assuming linearity through the origin. The RSD for the calibration curve associated with this analysis is 1.44% indicating support for assuming linearity through the origin. A comparison of results is provided in the Sample Result Verification section below; no action is required.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

Sample 511157 B and C; Lab I.D.s 1531446013 and 153144014, respectively, were analyzed as the matrix spike and matrix spike duplicate and reported with compliant accuracy. The relative percent difference of 30.5% exceeded the 20% control limit and all samples are qualified as estimated (J).

SAMPLE RESULT VERIFICATION:

The validator obtained similar results to the laboratory when utilizing a seconded order 1/x weighted calibration model. As noted in the table below, slight differences were obtained using the average calibration factor calibration model.

Sample ID	Laboratory ID	Average RF Validator Calculated Result (ug/L)	2nd Order 1/x Validator Calculated Result (ug/L)	Laboratory Calculated Result (ug/L)	Lab Reported Result (ug/L)
511122	1531446004	0.645	0.6526	0.6524	0.65
511121A	1531446005	0.0165	0.0159	0.0160	0.016
511108A	1531446006	0.3499	0.3542	0.3543	0.35
511123	1531446007	0.0164	0.0157	0.0158	0.016

OVERALL ASSESSMENT:

All samples were extracted in isooctane utilizing a modified less sensitive extraction procedure.

[1] SW-846 Method 7580, Section 7.2, Revison 0, December 19960.016

[2] SW-846 Method 8000B, Section 7.5.1 and 7.5.2, Revision 2, December 1996

The sample results are qualified as estimated (J) due to use of a non-contemporaneous initial calibration and the use of a second order 1/x weighed calibration model as opposed to a linear average response factor model.

All samples are qualified as estimated (J) due to the imprecision (RPD = 30.5%) demonstrated in the matrix spike and matrix spike duplicate analysis.

Sample ID 511CDI, Laboratory ID 1531446001 is a Culligan DI Water Blank. Results were less than 0.016 ug/L; no action is required.

Sample ID 511701, Lab ID 1531446008 is a Rinse Blank. Results were less than 0.016 ug/L; no action is required.

Sample ID 511156, Laboratory ID 1531446010 and sample ID 511601, Laboratory ID 1531446011 are field duplicates, which had laboratory reported concentrations of less than 0.016 ug/L; no action is required.

APPENDIX A
DEFINITION OF DATA QUALIFIERS

GLOSSARY OF DATA QUALIFIERS

J	-	The associated value is an estimated quantity.
R	-	The data are unusable.
U	-	The parameter is not detected at the reported value.

APPENDIX B
GLOSSARY OF ACRONYMS

GLOSSARY OF ACRONYMS

SDG	-	Sample Delivery Group
USEPA	-	Unites States Environmental Protection Agency
DQO	-	Data Quality Objectives
QAPjP	-	Quality Assurance Project Plan
RPD	-	Relative Percent Difference
CRDL	-	Contract Required Detection Limit
RL	-	Reporting Limit
GFAA	-	Graphite Furnace Atomic Absorption
IDL	-	Instrument Detection Limit
MDL	-	Method Detection Limit
CLP	-	Contract Laboratory Program
ICP	-	Ion Coupled Plasma
MS	-	Matrix Spike
MSD	-	Matrix Spike Duplicate

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

Case Narrative

Method:	EPA 7580-White Phosphorus	**Client:**	Hydrometrics, Inc.
Analyst:	Christopher Winter	**Account:**	8001
Preparation SOP #:	OP-SW-7580	**Matrix:**	Water
Analysis SOP #:	OP-SW-7580		
Batch: EGC/6033	**HBN:159282**		
ALS Work Order: 1531466			

General Set Information: The field samples were received and batched for analysis.

Method Summary: This method was used to determine the concentration of white phosphorus in water and soil using a GC equipped with a DB-1 column and a F.P. detector with phosphorus lens.

Sample Preparation: **Water:** A 120 mL sample aliquot was extracted using 3.0 mL Iso-octane. Lot:U19A132 Horizon ID:25604.

Hold Times: Samples were extracted and analyzed within hold times.

Dilution(s): None.

Method QC (MB, LCS/LCSD): *Method Blank(s):* White phosphorus was not detected in the method blank greater than ½ the CRDL.

Laboratory Control Samples: All recoveries were within established limits.

Matrix QC (MS, MD, MSD): MS/MSD were prepared using client selected samples.

Instrument QC (ICV, CCV, etc): *Continuing Calibration Verification:* All continuing calibration verification standards passed the percent difference criteria. See the Continuing Calibration Verification Forms.

NC/CAR: None.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES
Environmental Division

Case Narrative

Sample Calculation: The analyte concentrations in the sample extract were determined by interpolation from 2nd order regressions of standard responses (peak height) vs. concentrations. Final concentrations in ug/L were determined from the equation:

$$C_S = \frac{C_E \bullet V_E \bullet DF}{V_S}$$

Where:

C_S	=	Analyte concentration in sample (ug/L)
C_E	=	Analyte concentration in extract (ug/mL)
V_E	=	Final volume of extract (mL)
DF	=	Dilution Factor
V_S	=	Initial volume of sample taken for preparation (L)

Miscellaneous Comments: Samples 1531446008, 009, 010, 011, and 012 results showed possible trace amount of P4 results less than the current method detection limits.

ANALYTICAL REPORT

Report Date: November 23, 2015

Ericka Vallance
Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

Phone: (406) 443-4150 x 187

E-mail: evallance@hydrometrics.com

Workorder: **34-1531446**

Project ID: FMC/Pocatello ID
Purchase Order: FMC/Pocatello ID
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
511CDI	1531446001	11/05/15	11/10/15	FMC/Pocatello ID
511183	1531446002	11/05/15	11/10/15	FMC/Pocatello ID
511158	1531446003	11/05/15	11/10/15	FMC/Pocatello ID
511122	1531446004	11/05/15	11/10/15	FMC/Pocatello ID
511121A	1531446005	11/06/15	11/10/15	FMC/Pocatello ID
511108A	1531446006	11/06/15	11/10/15	FMC/Pocatello ID
511123	1531446007	11/06/15	11/10/15	FMC/Pocatello ID
511701	1531446008	11/06/15	11/10/15	FMC/Pocatello ID
511155	1531446009	11/06/15	11/10/15	FMC/Pocatello ID
511156	1531446010	11/06/15	11/10/15	FMC/Pocatello ID
511601	1531446011	11/06/15	11/10/15	FMC/Pocatello ID
511157A	1531446012	11/06/15	11/10/15	FMC/Pocatello ID

Client QC ID *	Lab ID	Collect Date	Receive Date	Sampling Site
511157B	1531446013	11/06/15	11/10/15	FMC/Pocatello ID
511157C	1531446014	11/06/15	11/10/15	FMC/Pocatello ID

***Client QC is reported as part of the Quality Control results report, if requested.**

ANALYTICAL REPORT

Workorder: 34-1531446
Client: Hydrometrics, Inc.
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **511CDI** | Sampling Site: FMC/Pocatello ID | Collected: 11/05/2015
Lab ID: 1531446001 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 13:47	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511183** | Sampling Site: FMC/Pocatello ID | Collected: 11/05/2015
Lab ID: 1531446002 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 13:59	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511158** | Sampling Site: FMC/Pocatello ID | Collected: 11/05/2015
Lab ID: 1531446003 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 14:10	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511122** | Sampling Site: FMC/Pocatello ID | Collected: 11/05/2015
Lab ID: 1531446004 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 14:21	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	**0.65**	0.016	0.050	1	

ANALYTICAL REPORT

Workorder: 34-1531446
Client: Hydrometrics, Inc.
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **511121A** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446005 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 14:33	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	0.016	0.016	0.050	1	J

Sample ID: **511108A** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446006 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/12/2015 14:44	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	**0.35**	0.016	0.050	1	

Sample ID: **511123** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446007 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 12:51	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	0.016	0.016	0.050	1	J

Sample ID: **511701** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446008 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 13:02	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

ANALYTICAL REPORT

Workorder: 34-1531446
Client: Hydrometrics, Inc.
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **511155** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446009 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 13:14	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511156** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446010 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 13:26	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511601** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446011 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 13:37	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

Sample ID: **511157A** | Sampling Site: FMC/Pocatello ID | Collected: 11/06/2015
Lab ID: 1531446012 | Media: 125 mL Amber Glass | Received: 11/10/2015
Matrix: Water | Sampling Parameter: NA

Analysis Method - EPA 7580

Preparation:	EPA 7580, Water Prep	**Weight/Volume**	**Analysis:**	EPA 7580, Water	**Instrument ID:** GCE24
Batch:	EGC/6030 (HBN: 159179)	**Initial:** 120 mL	**Batch:**	EGC/6033 (HBN: 159282)	**Percent Solid:** NA
Prepared:	11/10/2015	**Final:** 120 mL	**Analyzed:**	11/13/2015 13:49	**Report Basis:** Wet

Analyte	Result (ug/L)	MDL (ug/L)	RL (ug/L)	Dilution	Qual
White Phosphorus	ND	0.016	0.050	1	U

ANALYTICAL REPORT

Workorder: 34-1531446
Client: Hydrometrics, Inc.
Project Manager: Kevin W. Griffiths

Comments

Quality Control: EPA 7580 - (HBN: 159282)

EPA7580: RPD outside of established limits for MS/MSD due to unstable nature of aqueous P4 spiking solution. MS/MSD recoveries are within limits individually. No further action was taken.

EPA7580: Samples 1531446008, 009, 010, 011, and 012 results show possible trace amounts of P4 in water samples which the results of are less than the current reporting limit.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 7580	/S/ Christopher Winter 11/23/2015 11:56	/S/ Mila V. Potekhin 11/23/2015 13:17

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	ACLASS (DoD ELAP)	ADE-1420	http://www.aclasscorp.com
	Utah (NELAC)	DATA1	http://health.utah.gov/lab/labimp/
	Nevada	UT00009	http://ndep.nv.gov/bsdw/labservice.htm
	Oklahoma	UT00009	http://www.deq.state.ok.us/CSDnew/
	Iowa	IA# 376	http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
	Florida (TNI)	E871067	http://www.dep.state.fl.us/labs/bars/sas/qa/
	Texas (TNI)	T104704456-11-1	http://www.tceq.texas.gov/field/qa/lab_accred_certif.html
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP/ELLAP)	101574	http://www.aihaaccreditedlabs.org
Lead Testing:			
CPSC	ACLASS (ISO 17025, CPSC)	ADE-1420	http://www.aclasscorp.com
Soil, Dust, Paint ,Air	AIHA (ISO 17025, AIHA ELLAP and NLLAP)	101574	http://www.aihaaccreditedlabs.org
Dietary Supplements	ACLASS (ISO 17025)	ADE-1420	http://www.aclasscorp.com

ANALYTICAL REPORT

Workorder: 34-1531446
Client: Hydrometrics, Inc.
Project Manager: Kevin W. Griffiths

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< This testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample
Batch Report

Analysis Information

Workorder: 1531446

Limits:	Historical/Performance	**Preparation:**	EPA 7580, Water Prep	**Analysis:**	EPA 7580
Basis:	ALS Laboratory Group	**Batch:**	EGC/6030 (HBN: 159179)	**Batch:**	EGC/6033 (HBN: 159282)
		Prepared By:	Christopher Winter	**Analyzed By:**	Christopher Winter

Blank

MB: 474898
Analyzed: 11/12/2015 13:25
Units: ug/L

Analyte	Result	MDL	RL
White Phosphorus	ND	0.016	0.0500

Laboratory Control Sample - Laboratory Control Sample Duplicate

LCS: 474899
Analyzed: 11/12/2015 13:36
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
White Phosphorus	0.353	0.370	95.2	62.0	128.6

Matrix Spike - Matrix Spike Duplicate

Sample: 1531446012	**MS:** 1531446013	**MSD:** 1531446014
Analyzed: 11/13/2015 13:49	**Analyzed:** 11/13/2015 14:00	**Analyzed:** 11/13/2015 14:12
Dilution: 1	**Dilution:** 1	**Dilution:** 1
Units: ug/L	**Units:** ug/L	**Units:** ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
White Phosphorus	ND	0.453	0.37	122	65.0	135.0	0.333	90.0	* 30.5	0.0	20.0

Quality Control Sample
Batch Report

Analysis Information

Workorder: **1531446**

Limits:	Historical/Performance	**Preparation:**	EPA 7580, Water Prep	**Analysis:**	EPA 7580
Basis:	ALS Laboratory Group	**Batch:**	EGC/6030 (HBN: 159179)	**Batch:**	EGC/6033 (HBN: 159282)
		Prepared By:	Christopher Winter	**Analyzed By:**	Christopher Winter

Comments

EPA7580: RPD outside of established limits for MS/MSD due to unstable nature of aqueous P4 spiking solution. MS/MSD recoveries are within limits individually. No further action was taken.

EPA7580: Samples 1531446008, 009, 010, 011, and 012 results show possible trace amounts of P4 in water samples which the results of are less than the current reporting limit.

QC Data Approved and Reviewed by

Christopher Winter	Mila V. Potekhin	11/23/2015
Analyst	**Peer Review**	**Date**

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
● - Sample and Matrix Duplicate less than 5 times the reporting limit

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

4474/#1

1531446

Record

CoC #: 1531446

Page 1 of 2

Client Name & Address:	Project Name & No.:
Hydrometrics 3020 Bozeman Ave. Helena, MT 59601	FMC/Pocatello ID.
	ALS Quote No:
	Report to: Ericka Vallance
Phone: 406 438-2188 Walter	Report to e-mail: RVallance@hydrometrics.com
e-mail:	Bill to: same

Matrix Codes: W) Water B) Bulk L) Liquid F) Filter S) Soil G) Wipe C) Solid M) Media

Preservation Codes: 1) Cool to 4°C 2) HCl to pH<2, 4°C 3) H_2SO_4 to pH<2, 4°C 4) HNO_3 to pH<2, 4°C 5) NaOH to pH>12, 4°C 6) ZnOAc/NaOH to pH>9, 4°C

Field Sample Number	Date	Time	Depth	ALS Sample Number	No. of Containers	Sample for Matrix QC	Analyses Requested: Py/Elem Phos	Analyses Requested: Checked for zero headspace						Preservation Code	Sample Matrix Code	Remarks
511CDI	11/5/15	16:15			1	W	X	X								
511183	↓	18:40			↓	↓	↓	X								
511158		19:25						X								
511122		20:15						X								
511121A	11/6/15	08:00						X								
511108A	↓	08:40						X								
511123A		09:25						X	~~Sample~~							
~~511123B~~ WR 11/6/15		~~09:25~~						X	~~matrix spike~~							
~~511123C~~		~~09:25~~						X	~~matrix spikedup~~							
511701	↓	10:10			↓	↓	↓	X								

Possible Hazard Identification
☒ Non-Hazard ☐ Skin Irritant ☐ Rad
☐ Flammable ☐ Poison ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Archive _____ Months
☐ Disposal by Lab
(fees assessed for samples retained > 3 months)

Data Deliverable:
☐ Level 1 ☐ Level 3
☐ Level 2 ☐ Level 4
EDD Type:

Requested Turn Around Time
☐ 2 Days (Rush) ☐ 7 Days (Rush)
☐ 3 Days (Rush) ☐ 14 Days
Normal
(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #: Fed Ex 8713 2040 9275

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Walter Crane	11/9/15	1600	[illegible]	11/10/15	0952

Shipped to:
ALS Environmental
960 West LeVoy Drive
Salt Lake City, UT 84123
Phone: (800) 356-9135
Phone: (801) 266-7700
FAX: (801) 268-9992
WEB:www.alsglobal.com

White - Laboratory Copy *Yellow - Client Copy*

ALS Environmental
Field Chain-of-Custody Record

CoC #:

Client Name & Address: same

Project Name & No.: same

ALS Quote No:

Report to: same

Phone: same

Report to e-mail: same

e-mail:

Bill to:

Field Sample Number	Date	Time	Depth	ALS Sample Number	No. of Containers	Sample for Matrix QC	Py / Elem Phos	Checked for zero headspace						Preservation Code	Sample Matrix Code	Remarks
511155	11/6/15	10:35			1	W	X	X								
511156		11:35						X								
511601		12:00						X								
511157A		12:35						X		sample						
511157B		12:35						X		matrix spike						
511157C		12:35						X		matrix spike dup.						

Analyses Requested

Matrix Codes:
W) Water B) Bulk
L) Liquid F) Filter
S) Soil G) Wipe
C) Solid M) Media

Preservation Codes:
1) Cool to 4°C
2) HCl to pH<2, 4°C
3) H_2SO_4 to pH<2, 4°C
4) HNO_3 to pH<2, 4°C
5) NaOH to pH>12, 4°C
6) ZnOAc/NaOH to pH>9, 4°C

Possible Hazard Identification
- [x] Non-Hazard
- [ ] Skin Irritant
- [ ] Rad
- [ ] Flammable
- [ ] Poison
- [ ] Unknown

Sample Disposal
- [ ] Return to Client
- [ ] Archive _____ Months
- [ ] Disposal by Lab

(fees assessed for samples retained > 3 months)

Data Deliverable:
- [ ] Level 1
- [ ] Level 3
- [ ] Level 2
- [ ] Level 4

EDD Type:

Requested Turn Around Time
- [ ] 2 Days (Rush)
- [ ] 7 Days (Rush)
- [ ] 3 Days (Rush)
- [ ] 14 Days

Normal

(Rush = email data by COB on day due. Surcharges assessed.)

Carrier/Airbill #: Fed Ex 8713 2040 9275

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Walter Crane	11/9/15	16:00	[illegible]	11/10/2015	09:52

Shipped to:
ALS Environmental
960 West LeVoy Drive
Salt Lake City, UT 84123
Phone: (800) 356-9135
Phone: (801) 266-7700
FAX: (801) 268-9992
WEB:www.alsglobal.com

White - Laboratory Copy *Yellow - Client Copy*

ALS - SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle) 1531446

Client Name: Hydrometrics

Project/Task/Site: FMC / Pocatello

Date/Time of Receipt: 11/10/2015 09:52

Number of Coolers Received: 4

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	TOC Preserved	Yes/No/NA
					Gross A B, Gamma Spec	Yes/No/NA
Residual Chlorine Check Performed:	8270	Yes/No/NA	8310	Yes/No/NA	8330	Yes/No/NA
	8081	Yes/No/NA	8151	Yes/No/NA		

Cooler Received	ALS Cooler No.	Temp.	Cooler Received	ALS Cooler No.	Temp.	Cooler Received	ALSL Cooler No.	Temp.
1	C15 7002	4 °C	4	C15	°C	7	C15	°C
2	C15	°C	5	C15	°C	8	C15	°C
3	C15	°C	6	C15	°C	9	C15	°C

Taken By: [signature] (Signature) Thomas Carlson (Printed Name) 11/10/2015 (Date)

CLIENT-RELATED INFORMATION

- ☐ Missing Cooler
- ☐ Cooler Conditions
- ☐ Missing Paperwork
- ☐ Missing/Incorrect Bottle Labels
- ☐ Missing Samples/Bottles
- ☐ Broken/Leaking Samples
- ☐ Incorrect Bottle Type
- ☐ Cooler Temperatures Out of Range
- ☐ Incorrect Preservation
- ☐ pH Criteria Not Met
- ☐ Residual Chlorine Present
- ☐ Head Space in Bottles
- ☐ Insufficient Sample Volume
- ☐ Chain of Custody Problems
- ☐ Other:

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

E-mailed to Client? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

CRIR.dot

Revised 1/1/15

FedEx Express US Airbill 8713 2040 9275 0200 Form ID No. FedEx Retrieval Copy

1 From

Date 11/9/15 Sender's FedEx Account Number 113705582

Sender's Name Walter Crane Phone 406 438-2188

Company Hydrometrics

Address 3020 Bozeman Ave Dept./Floor/Suite/Room

City Helena State MT ZIP 59601

2 Your Internal Billing Reference 1303-120

3 To

Recipient's Name Sample Receiving/Kevin Phone 801 266-7700

Company ALS Environmental 1 ☐ HOLD Weekday Print FedEx location address below. NOT available for FedEx First Overnight. 31 ☐ HOLD Saturday Print FedEx location address below. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address 960 West LeVoy Drive Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Print FedEx location address here if a HOLD option is selected.

City Salt Lake City State UT ZIP 84123

8713 2040 9275

4a Express Package Service * To most locations. *Packages up to 150 lbs.*

1 ☒ FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

5 ☐ FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.

6 ☐ FedEx First Overnight Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

3 ☐ FedEx 2Day Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver Third business day.* Saturday Delivery NOT available.

4b Express Freight Service ** To most locations. *Packages over 150 lbs.*

7 ☐ FedEx 1Day Freight Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx 1Day Freight Booking No.

8 ☐ FedEx 2Day Freight Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

83 ☐ FedEx 3Day Freight Third business day.** Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

6 ☐ FedEx Envelope* 2 ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. 3 ☐ FedEx Box 4 ☐ FedEx Tube 1 ☒ Other

6 Special Handling and Delivery Signature Options

3 ☐ **SATURDAY DELIVERY**

☐ No Signature Required Package may be left without obtaining a signature for delivery. 10 ☐ Direct Signature Someone at recipient's address may sign for delivery. *Fee applies.* 34 ☐ Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 4 ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. 6 ☐ Dry Ice Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. 11/10/2015 Obtain Recip. Acct. No. ☐

1 ☒ Sender Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

[redacted]

Total Packages 1 Total Weight ____ lbs. [redacted] Credit Card Auth.

Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

554

Rev. Date 2/08•Part #158281•©1994–2008 FedEx•PRINTED IN U.S.A. SRY

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fedex.com 1.800.GoFedEx 1.800.463.3339

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:38 AM
Sample Name	: 1531446001	Data Acquisition Time	: 11/12/2015 1:47:43 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/10	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 6		

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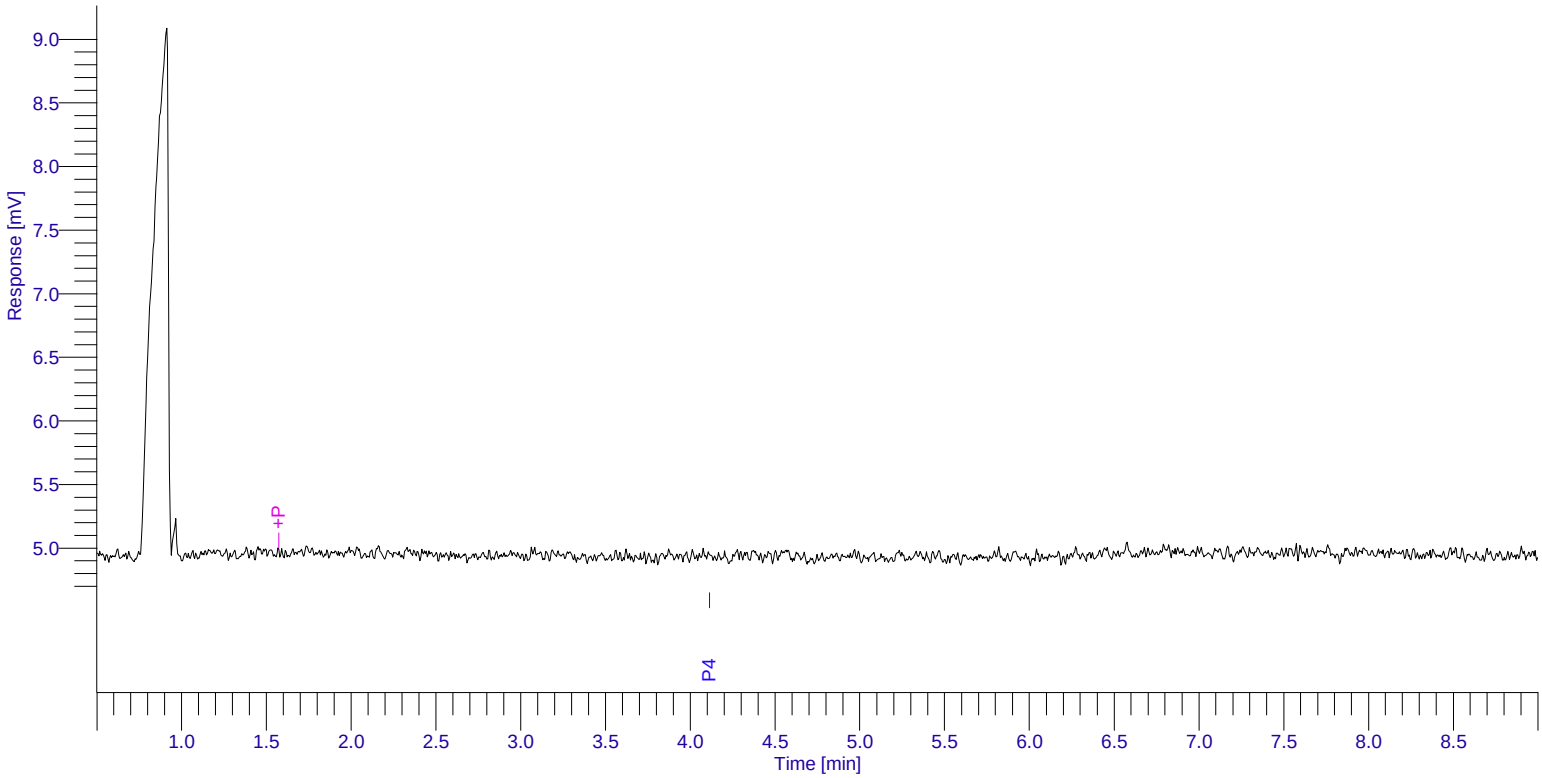

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:40 AM
Sample Name	: 1531446002	Data Acquisition Time	: 11/12/2015 1:59:06 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/11	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 7		

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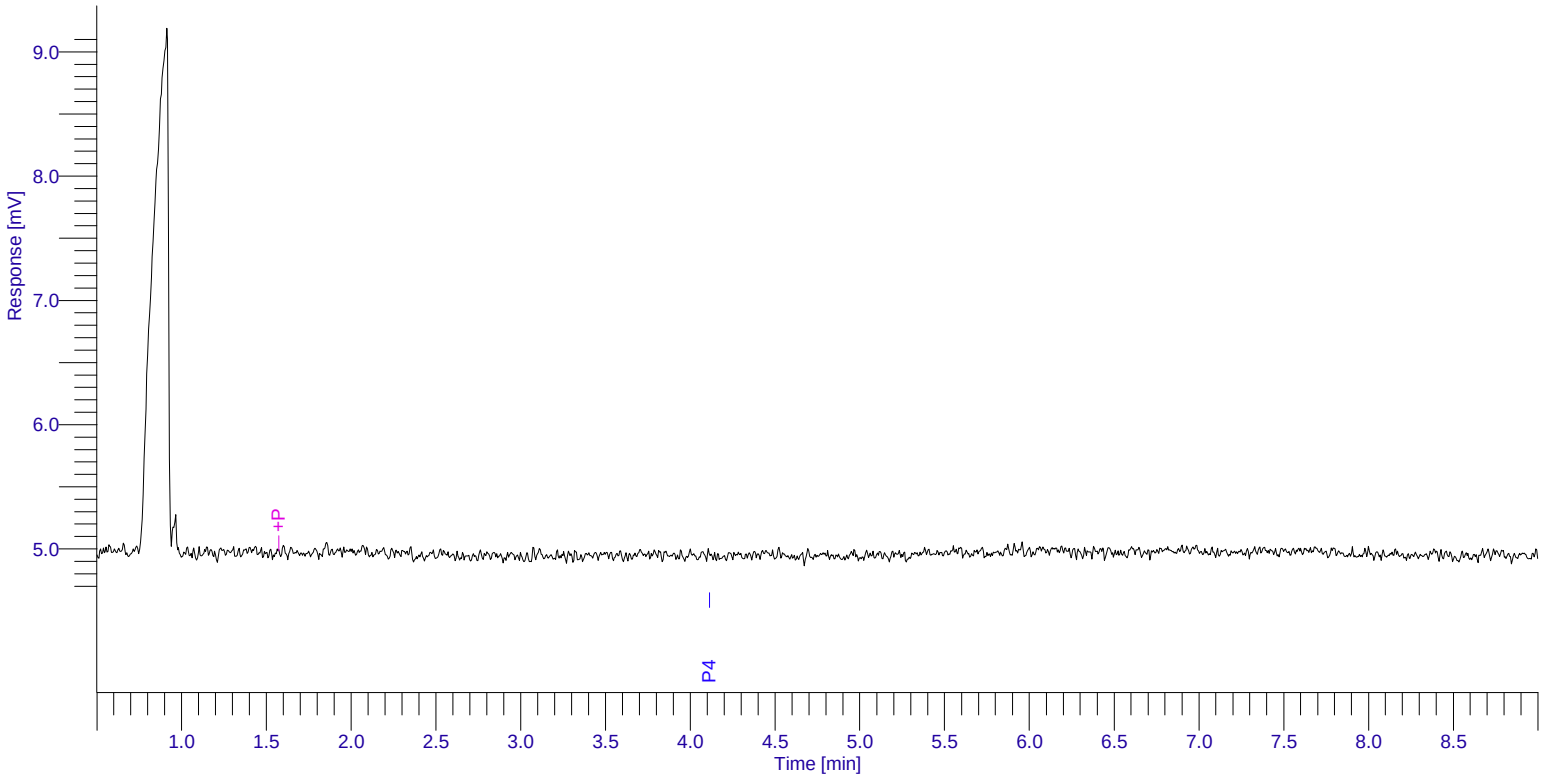

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:43 AM
Sample Name	: 1531446003	Data Acquisition Time	: 11/12/2015 2:10:29 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/12	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 8		

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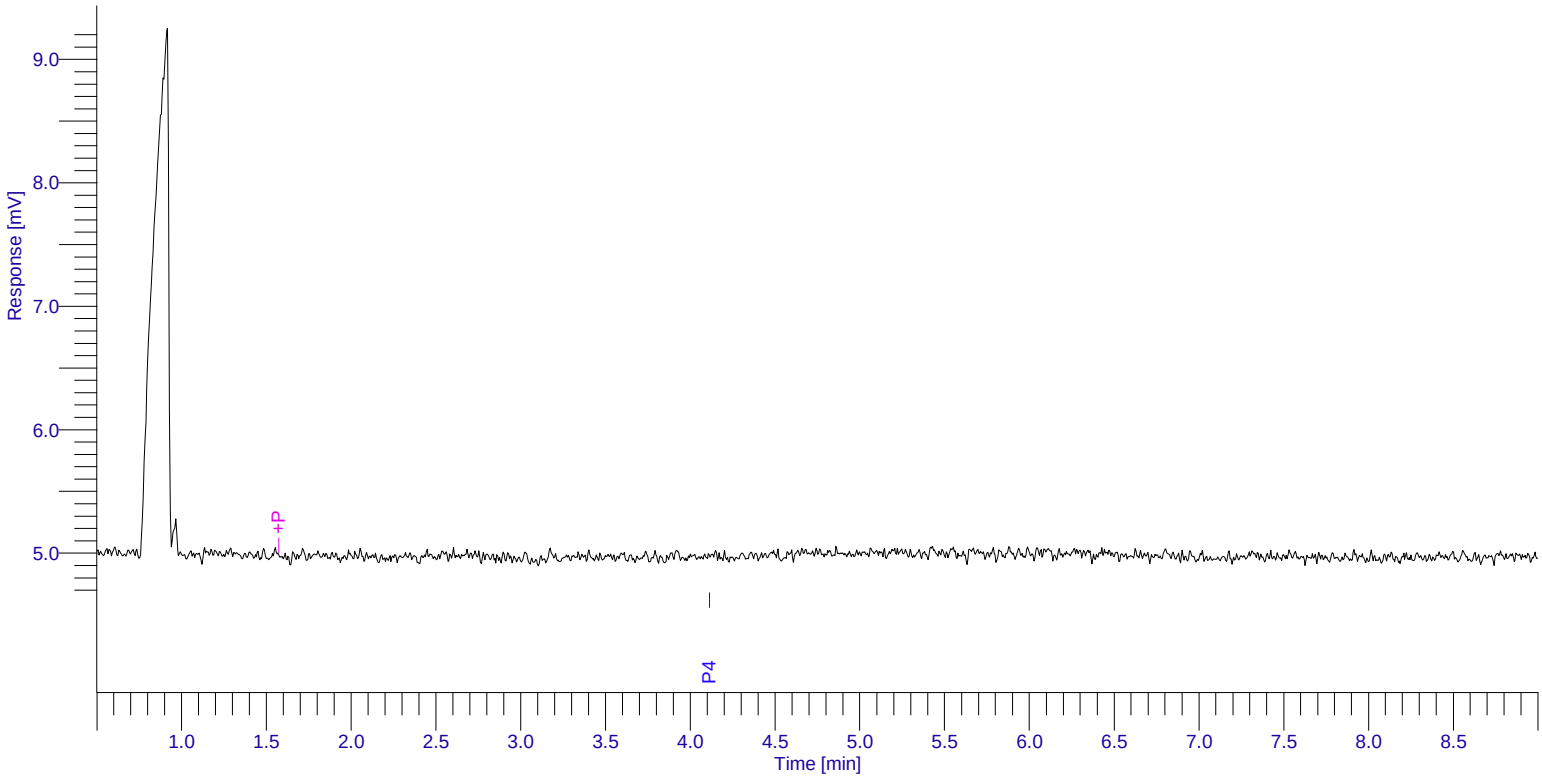

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:45 AM
Sample Name	: 1531446004	Data Acquisition Time	: 11/12/2015 2:21:54 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/13	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 9		

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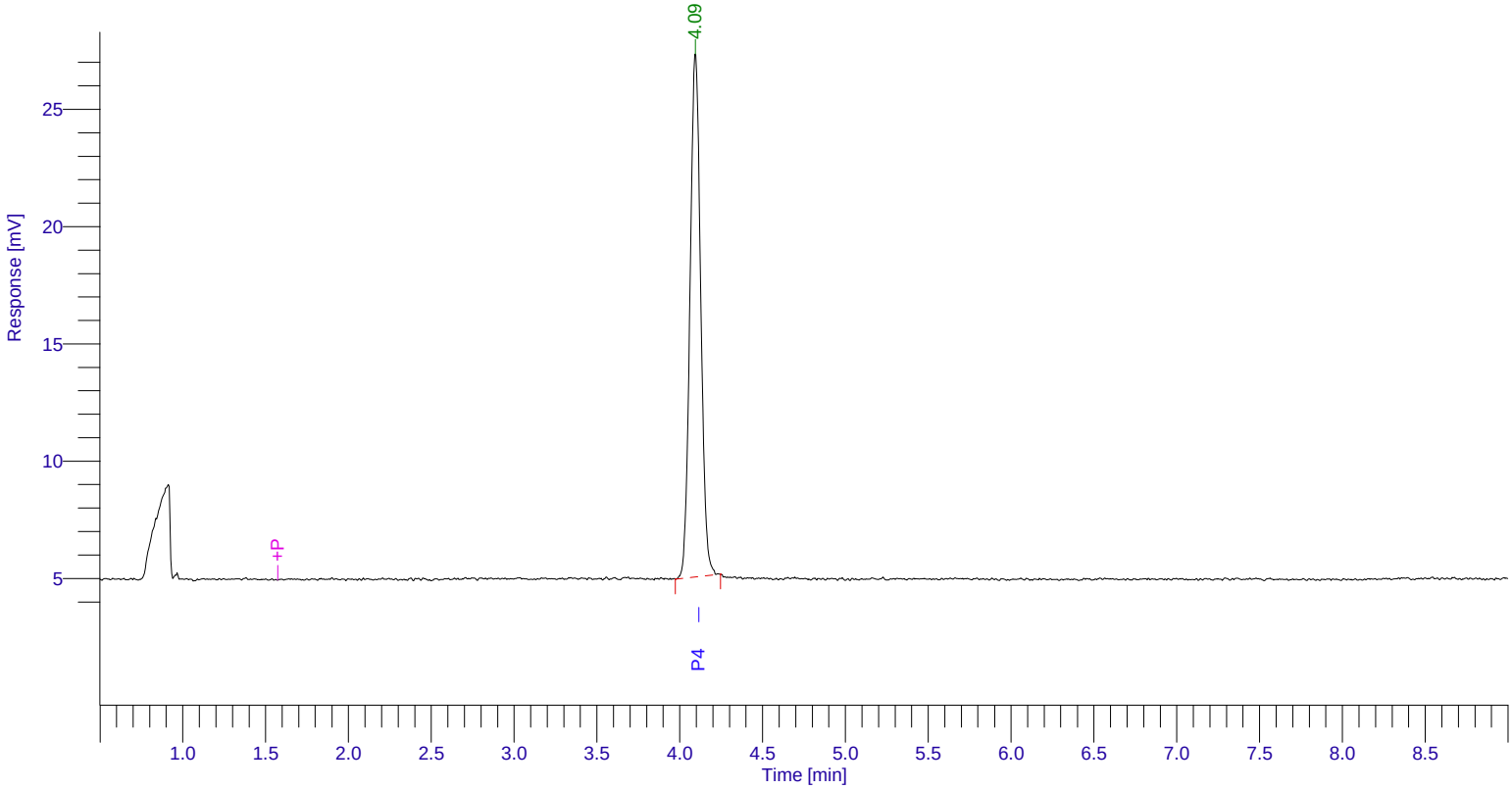

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.09	P4	22367	99874	0.026095	1	3.0	0.1200	1.000	0.0200	0.0500	0.6524

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:47 AM
Sample Name	: 1531446005	Data Acquisition Time	: 11/12/2015 2:33:19 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/14	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 10		

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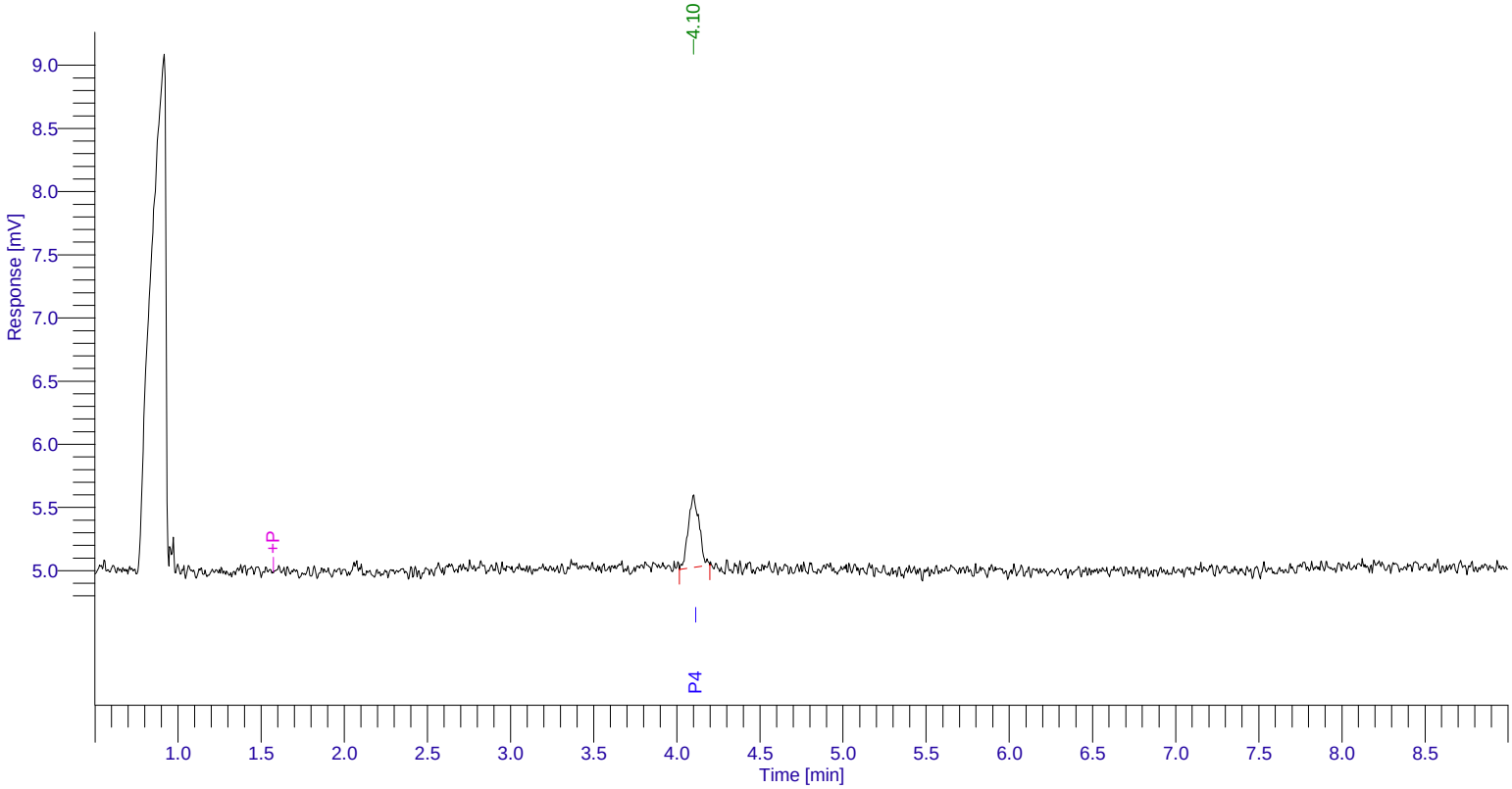

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.10	P4	573	2606	6.381e-04	1	3.0	0.1200	1.000	0.0200	0.0500	0.0160

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:50 AM
Sample Name	: 1531446006	Data Acquisition Time	: 11/12/2015 2:44:44 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/15	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 11		

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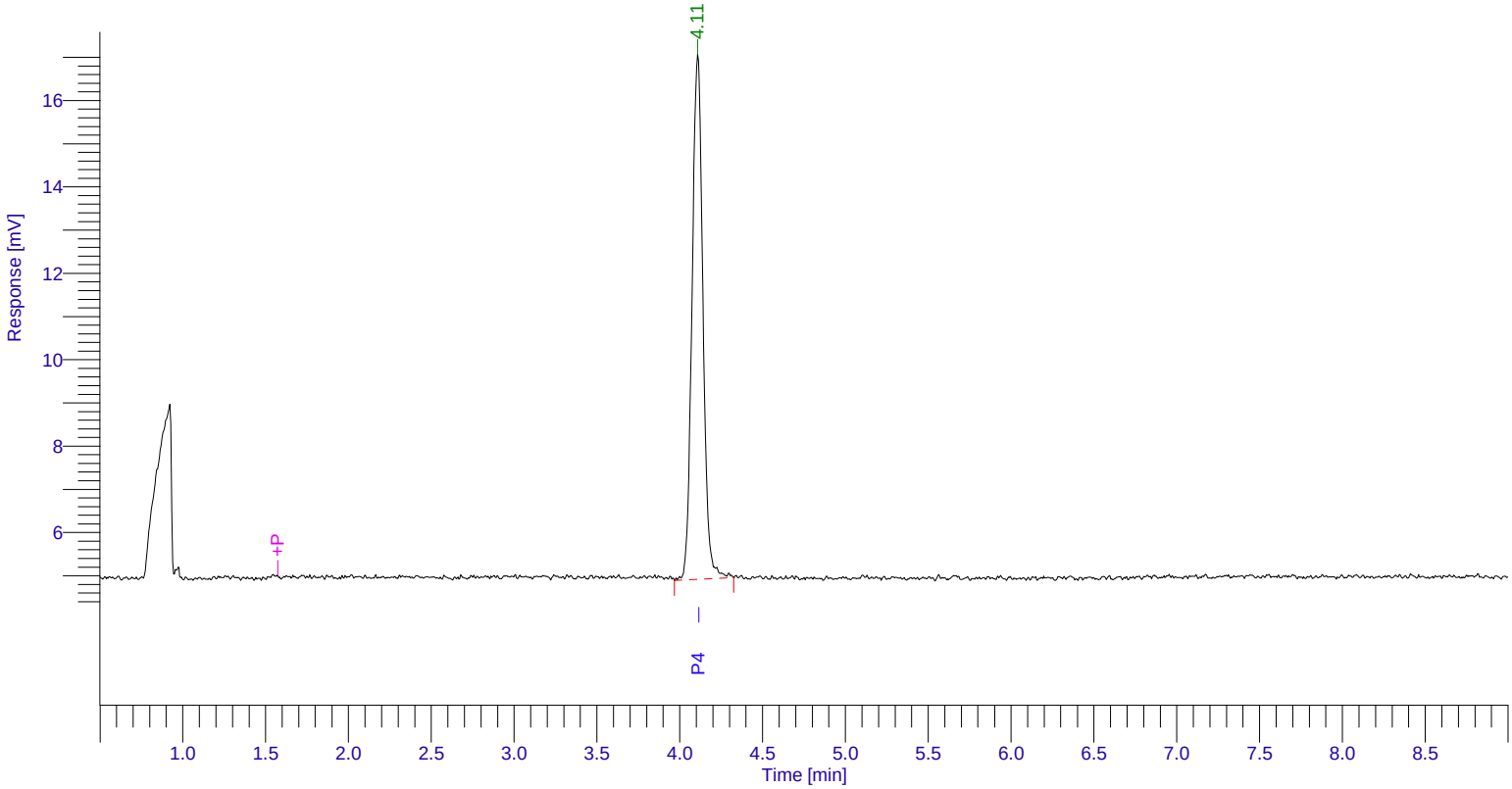

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	12137	55700	0.014171	1	3.0	0.1200	1.000	0.0200	0.0500	0.3543

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:03 AM
Sample Name	: 1531446007	Data Acquisition Time	: 11/13/2015 12:51:17 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/33	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 29		

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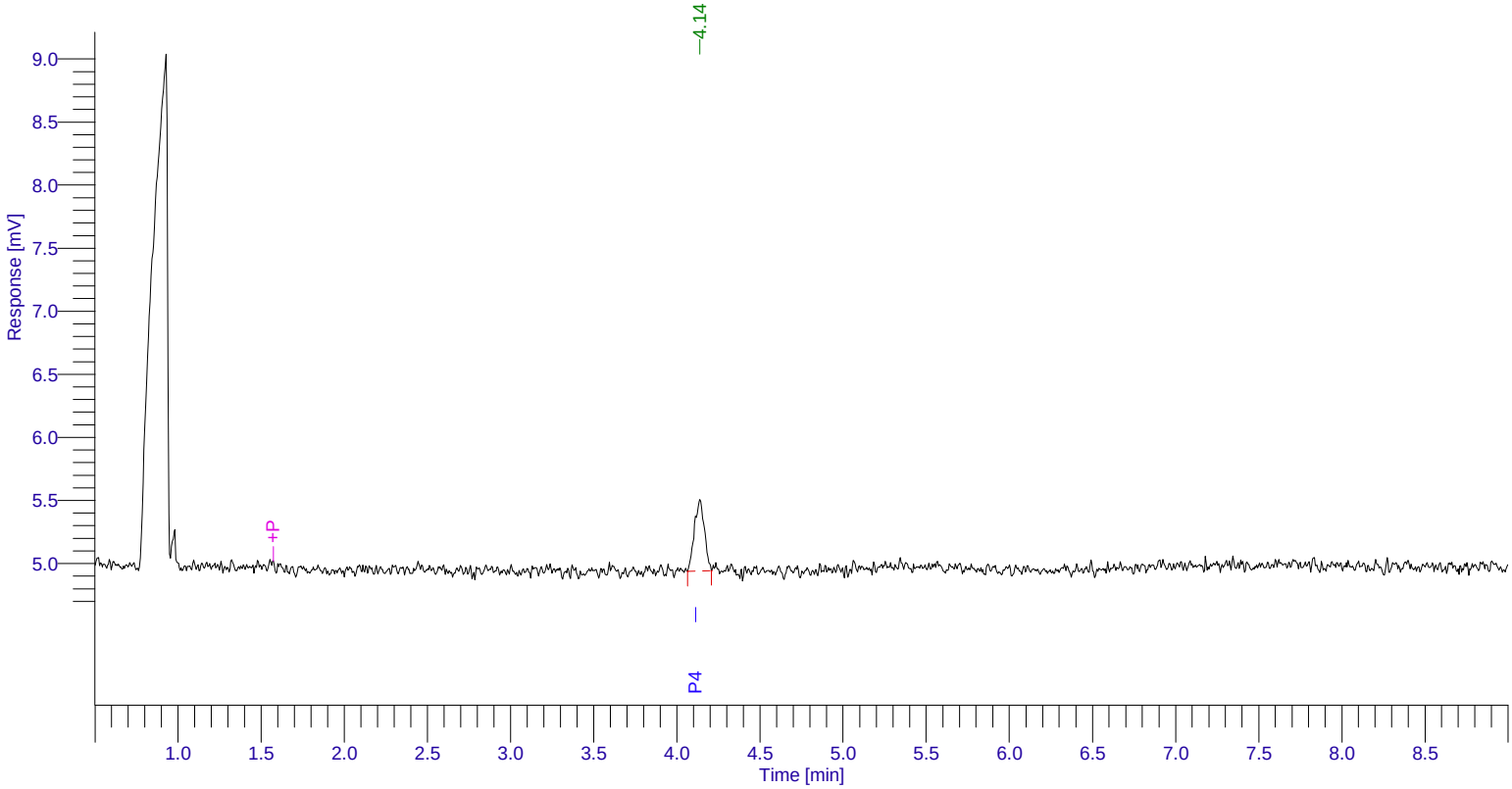

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.14	P4	568	2367	6.321e-04	1	3.0	0.1200	1.000	0.0200	0.0500	0.0158

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:06 AM
Sample Name	: 1531446008	Data Acquisition Time	: 11/13/2015 1:02:54 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/34	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 30		

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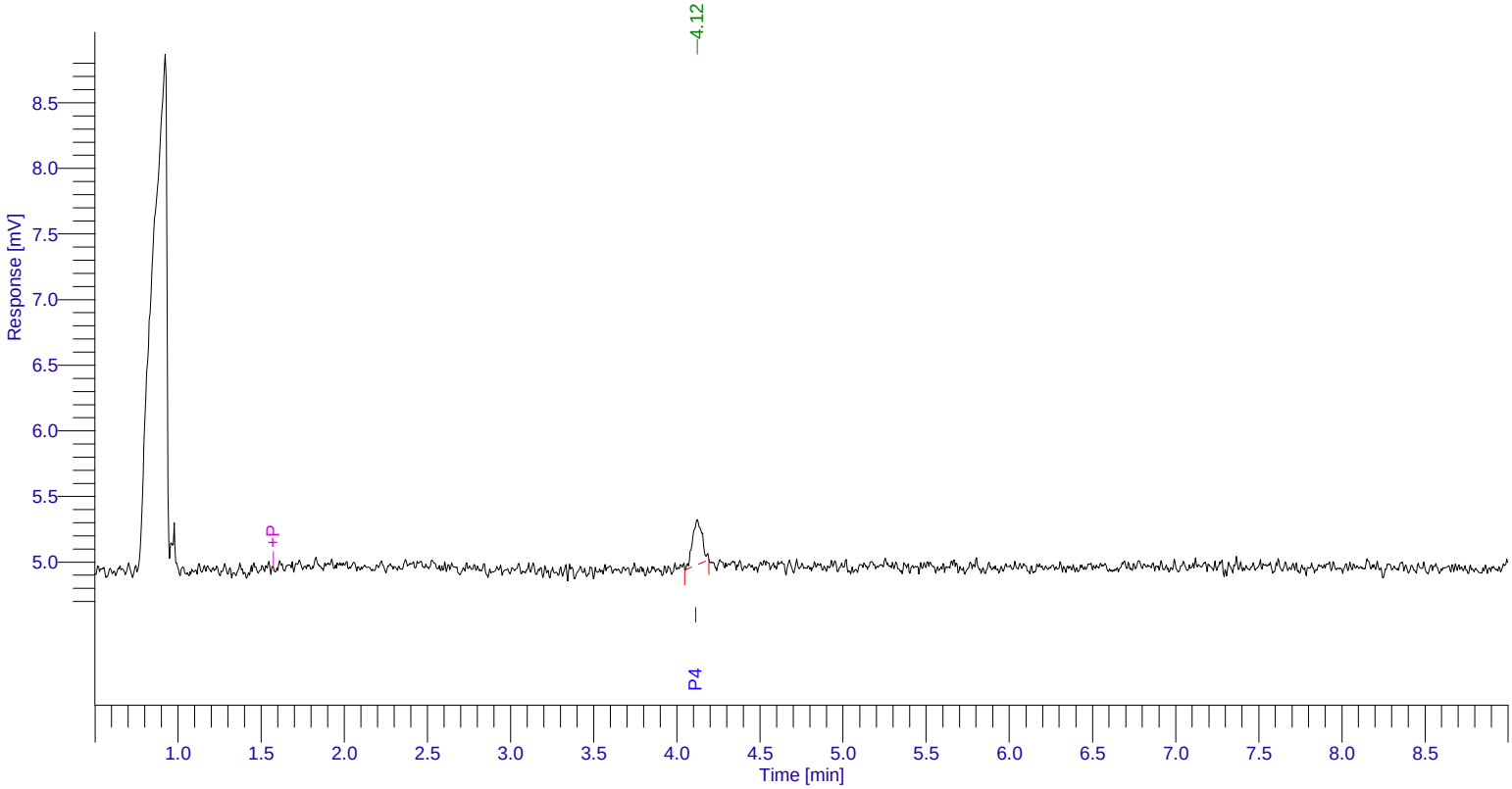
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151112_7580_P4_Wseq.seq



P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.12	P4	341	1369	3.664e-04	1	3.0	0.1200	1.000	0.0200	0.0500	0.0092

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:08 AM
Sample Name	: 1531446009	Data Acquisition Time	: 11/13/2015 1:14:34 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/35	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 31		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_035.rst
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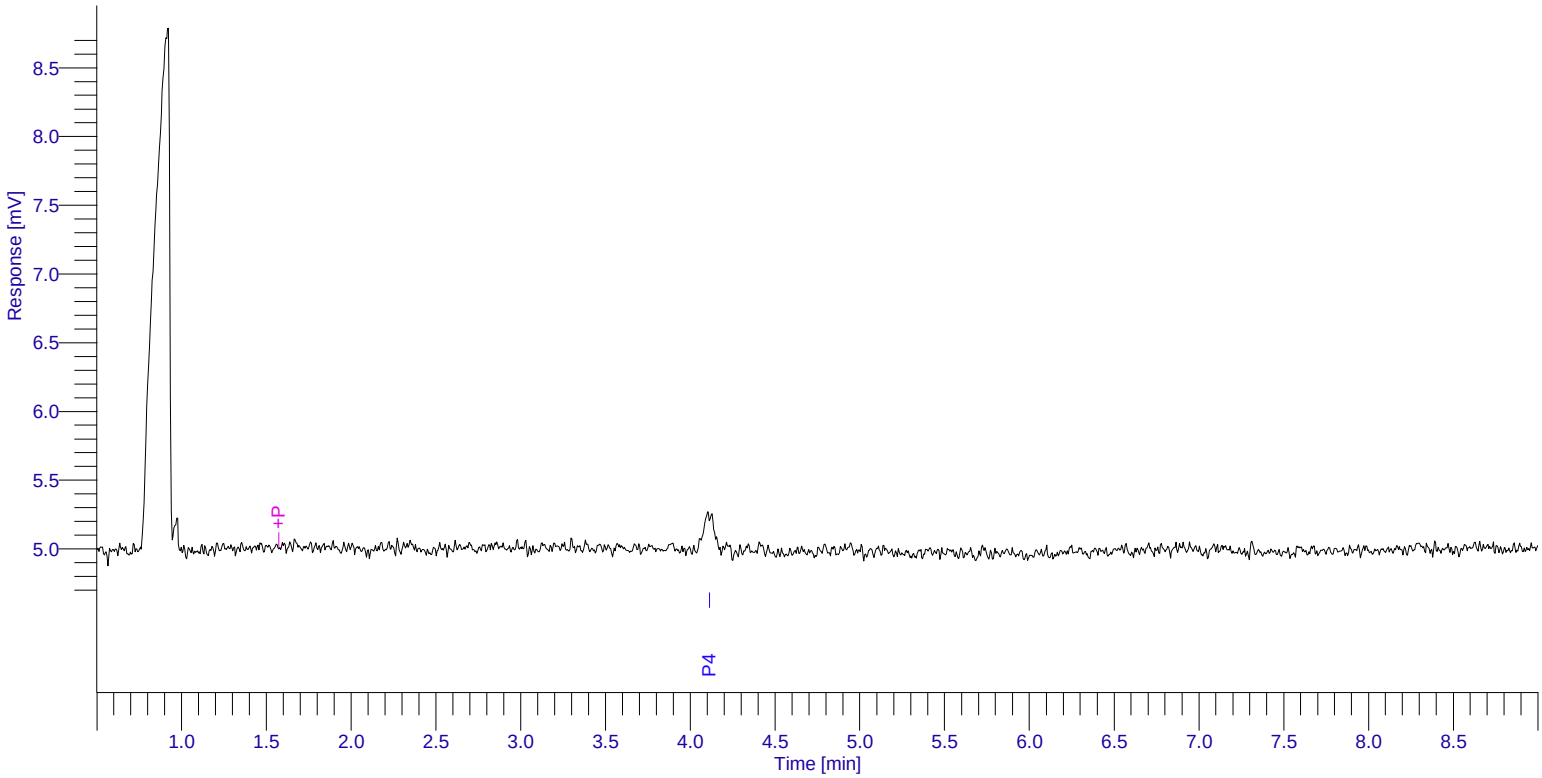

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:10 AM
Sample Name	: 1531446010	Data Acquisition Time	: 11/13/2015 1:26:11 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/36	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 32		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_036.rst
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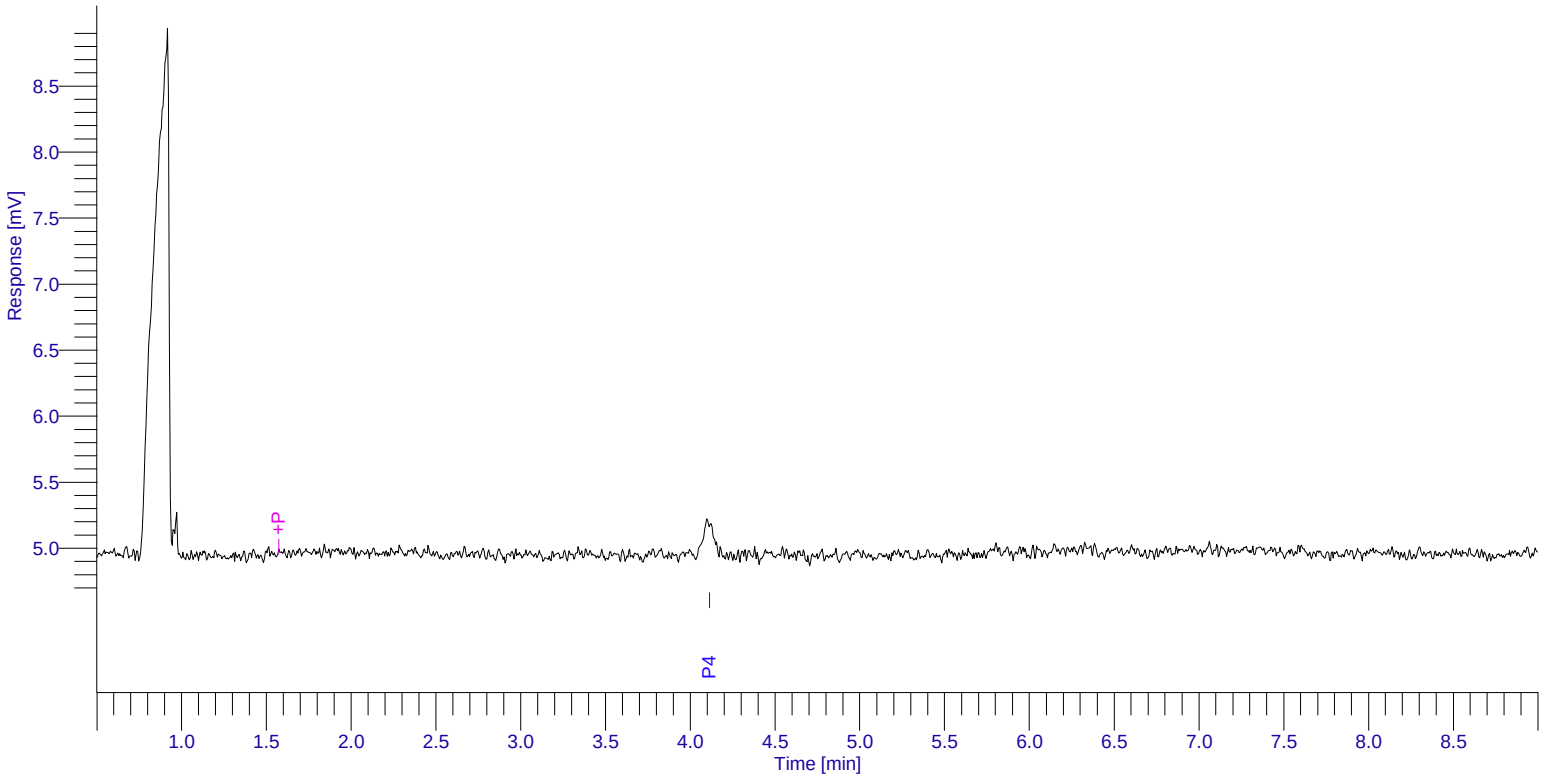


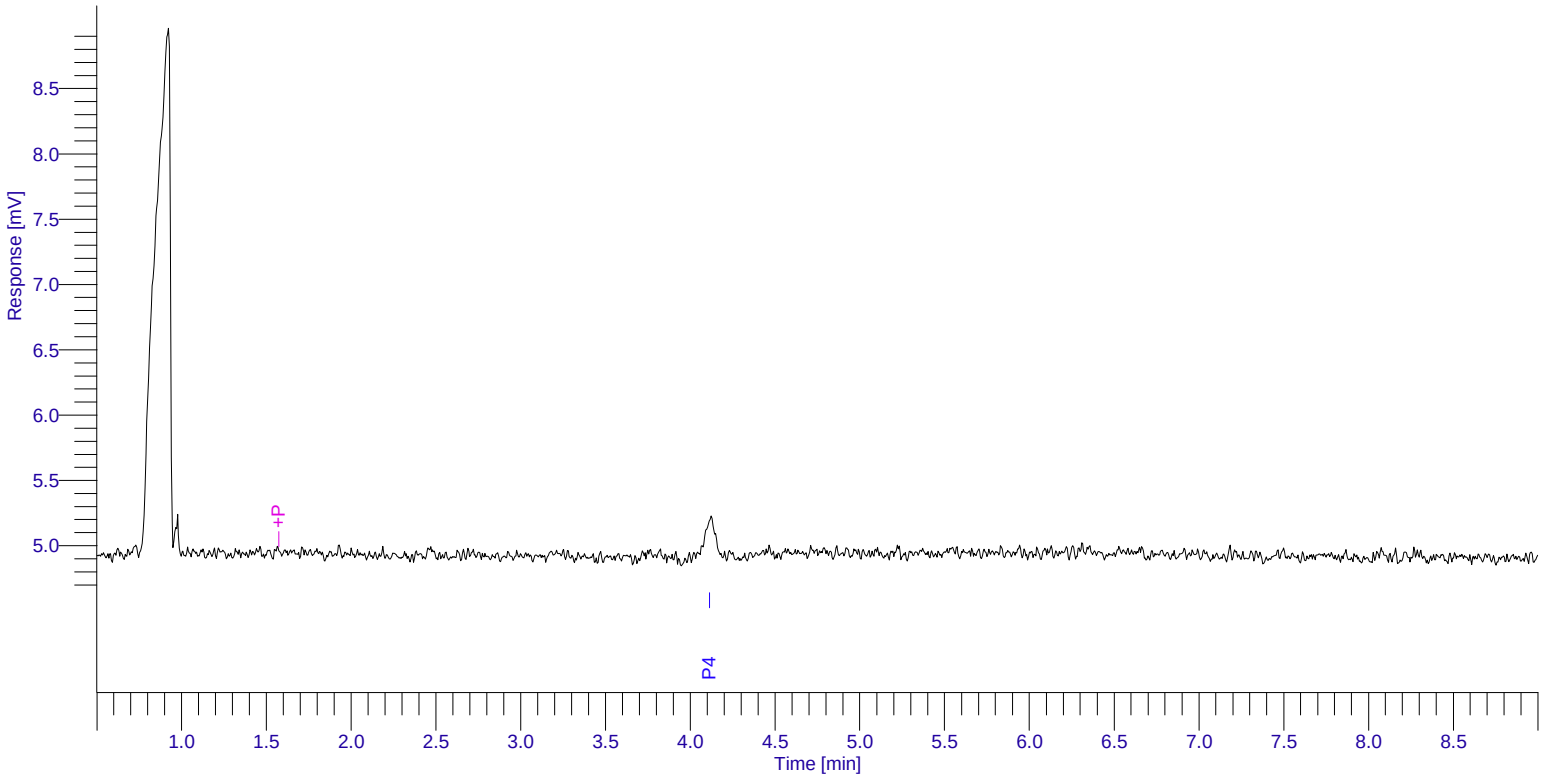
P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:15 AM
Sample Name	: 1531446011	Data Acquisition Time	: 11/13/2015 1:37:45 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/37	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 33		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_037.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151112_7580_P4_Wseq.seq



P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:17 AM
Sample Name	: 1531446012	Data Acquisition Time	: 11/13/2015 1:49:18 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/38	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 34		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_038.rst
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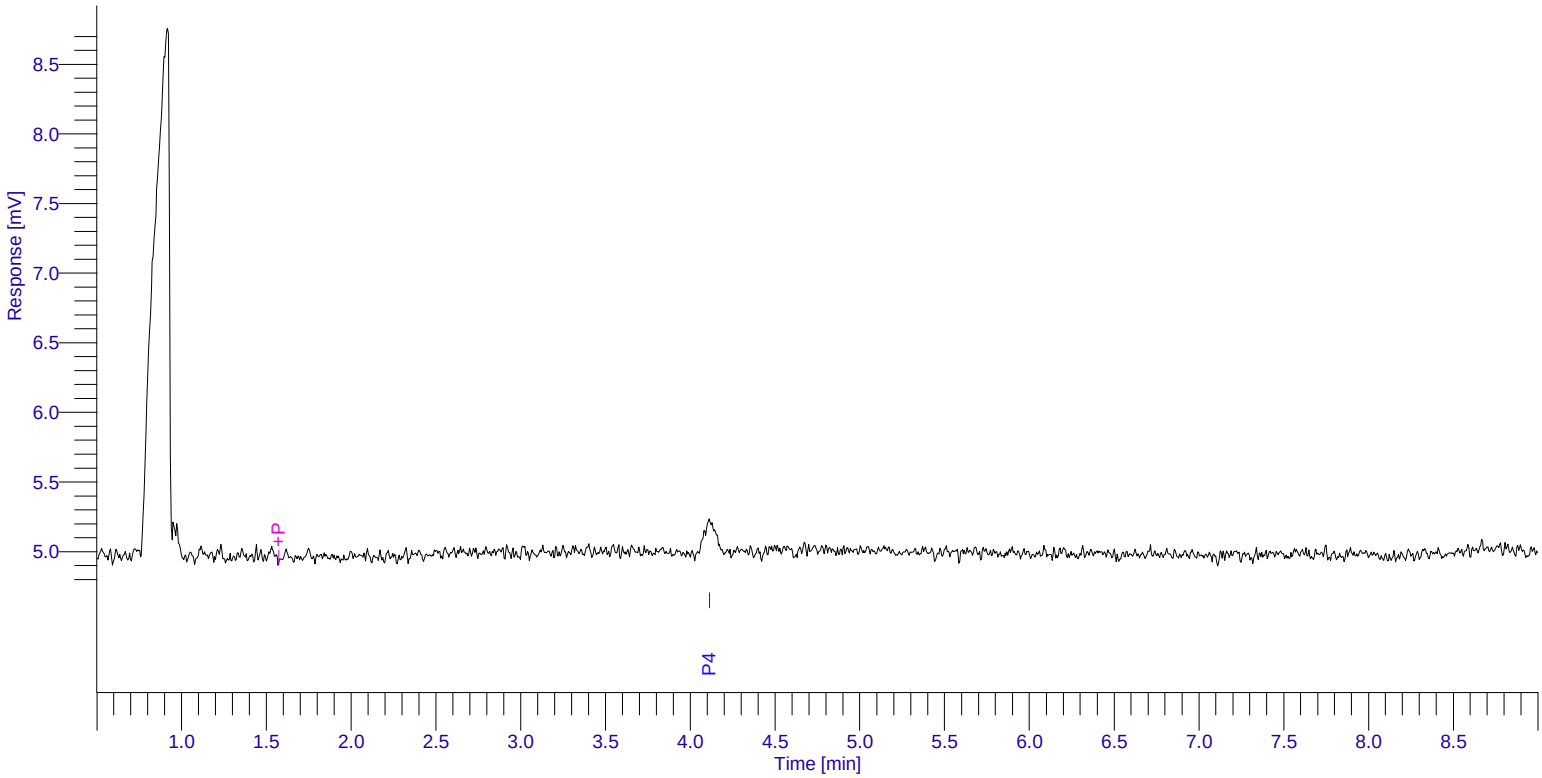

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:19 AM
Sample Name	: 1531446013 MS	Data Acquisition Time	: 11/13/2015 2:00:50 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/39	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 35		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_039.rst
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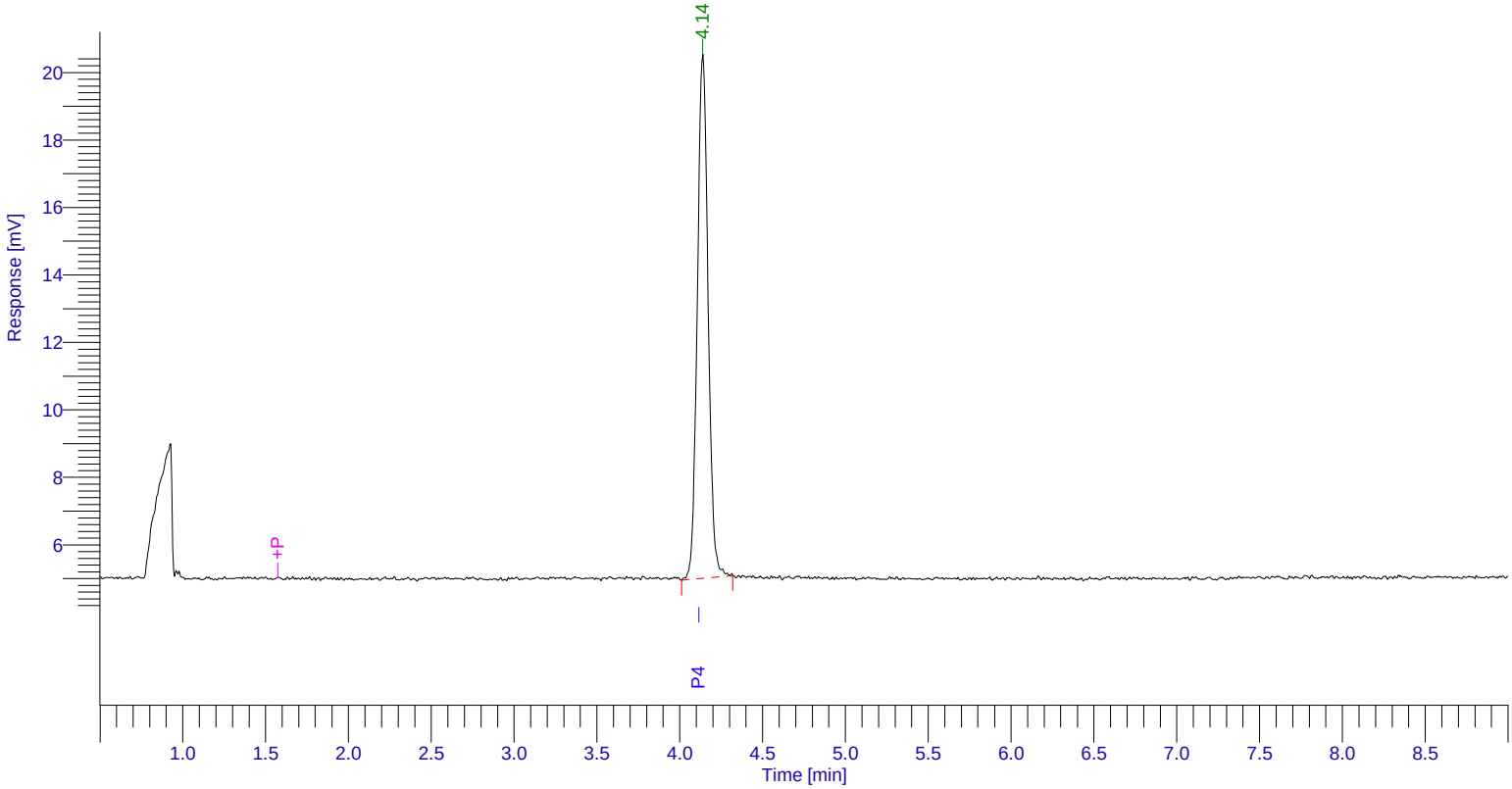

P4 WATER QC REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L	Spike Targ ug/L	Rec %
4.14	P4	15526	70504	0.018126	1	3.0	0.120	1.000	0.0200	0.0500	0.4531	~~1.418~~ 0.37	~~32.0~~ 122%

CRW 11/23/2015

P4 recovery 65 to 135% for MS/MSD? ✓YES NO

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:21 AM
Sample Name	: 1531446014 MSD	Data Acquisition Time	: 11/13/2015 2:12:22 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/40	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 36		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_040.rst
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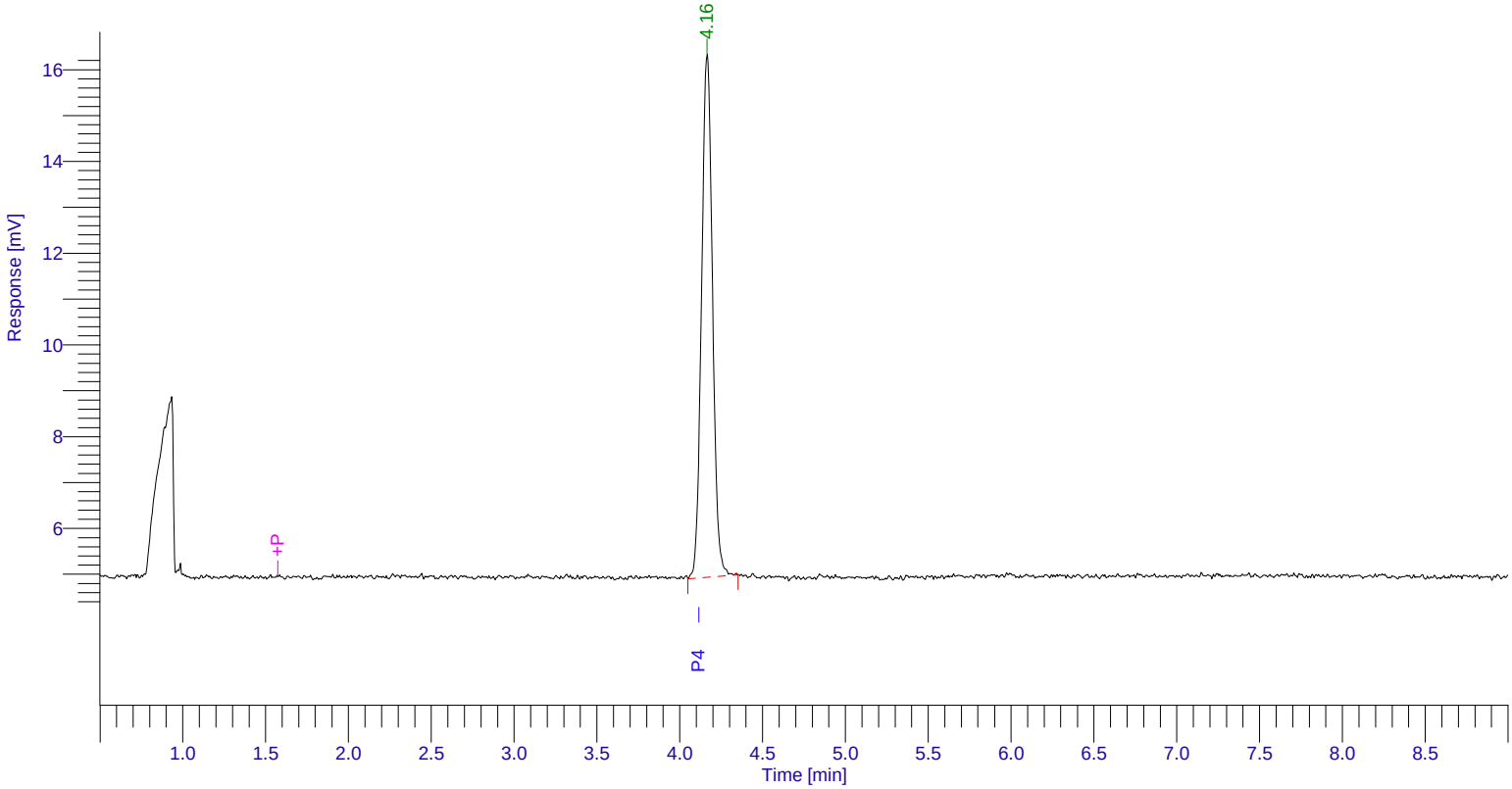

P4 WATER QC REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L	Spike Targ ug/L	Rec %
4.16	P4	11420	52424	0.013334	1	3.0	0.120	1.000	0.0200	0.0500	0.3333	~~1.418~~	~~23.5~~
												0.37	90.0%
												CRW	11/23/2015

P4 recovery 65 to 135% for MS/MSD? YES ✓ NO

Batch Worklist

Batch: EGC/ 6033 **Created:** 11/11/2015 15:32 **Instrument:** **HBN:** 159282

Rule: EPA 7580, Water **Analyst:** C. Winter **Status:** WP

Workorder: 1531446

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	474897	RLVS for HBN 159179 [EGC/6030]	120 mL	120 mL		RLVS	3		E7580...3Q	6112		11/24/2015	
2	474898	MB for HBN 159179 [EGC/6030]	120 mL	120 mL		MB	3		E7580...3Q	6112		11/24/2015	
3	474899	LCS for HBN 159179 [EGC/6030]	120 mL	120 mL		LCS	3		E7580...3Q	6112		11/24/2015	
4	1531446001	511CDI	120 mL	120 mL		SAMPLE	3	1531446001-A	E7580....3	5480	11/10/2015	11/24/2015	
5	1531446002	511183	120 mL	120 mL		SAMPLE	3	1531446002-A	E7580....3	5480	11/10/2015	11/24/2015	
6	1531446003	511158	120 mL	120 mL		SAMPLE	3	1531446003-A	E7580....3	5480	11/10/2015	11/24/2015	
7	1531446004	511122	120 mL	120 mL		SAMPLE	3	1531446004-A	E7580....3	5480	11/10/2015	11/24/2015	
8	1531446005	511121A	120 mL	120 mL		SAMPLE	3	1531446005-A	E7580....3	5480	11/11/2015	11/24/2015	
9	1531446006	511108A	120 mL	120 mL		SAMPLE	3	1531446006-A	E7580....3	5480	11/11/2015	11/24/2015	
10	1531446007	511123	120 mL	120 mL		SAMPLE	3	1531446007-A	E7580....3	5480	11/11/2015	11/24/2015	
11	1531446008	511701	120 mL	120 mL		SAMPLE	3	1531446008-A	E7580....3	5480	11/11/2015	11/24/2015	
12	1531446009	511155	120 mL	120 mL		SAMPLE	3	1531446009-A	E7580....3	5480	11/11/2015	11/24/2015	
13	1531446010	511156	120 mL	120 mL		SAMPLE	3	1531446010-A	E7580....3	5480	11/11/2015	11/24/2015	
14	1531446011	511601	120 mL	120 mL		SAMPLE	3	1531446011-A	E7580....3	5480	11/11/2015	11/24/2015	
15	1531446012	511157A	120 mL	120 mL		SAMPLE	3	1531446012-A	E7580....3	5480	11/11/2015	11/24/2015	
16	1531446013	511157B	120 mL	120 mL		MS	3	1531446013-A	E7580...3Q	5480		11/10/2015	
17	1531446014	511157C	120 mL	120 mL		MSD	3	1531446014-A	E7580...3Q	5480		11/10/2015	

Batch Worklist

Batch: EGC/ 6030 **Created:** 11/10/2015 13:17 **Instrument:** **HBN:** 159179

Rule: EPA 7580, Water Prep **Analyst:** C. Winter **Status:** NA

Workorder: 1531446

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	474897	RLVS for HBN 159179 [EGC/6030]	120mL	120mL		RLVS	3		E7580...3P	6112		11/24/2015	
2	474898	MB for HBN 159179 [EGC/6030]				MB	3		E7580...3P	6112		11/24/2015	
3	474899	LCS for HBN 159179 [EGC/6030]				LCS	3		E7580...3P	6112		11/24/2015	
4	1531446001	511CDI				SAMPLE	3	1531446001-A	E7580...3P	5480		11/24/2015	
5	1531446002	511183				SAMPLE	3	1531446002-A	E7580...3P	5480		11/24/2015	
6	1531446003	511158				SAMPLE	3	1531446003-A	E7580...3P	5480		11/24/2015	
7	1531446004	511122				SAMPLE	3	1531446004-A	E7580...3P	5480		11/24/2015	
8	1531446005	511121A				SAMPLE	3	1531446005-A	E7580...3P	5480		11/24/2015	
9	1531446006	511108A				SAMPLE	3	1531446006-A	E7580...3P	5480		11/24/2015	
10	1531446007	511123				SAMPLE	3	1531446007-A	E7580...3P	5480		11/24/2015	
11	1531446008	511701				SAMPLE	3	1531446008-A	E7580...3P	5480		11/24/2015	
12	1531446009	511155				SAMPLE	3	1531446009-A	E7580...3P	5480		11/24/2015	
13	1531446010	511156				SAMPLE	3	1531446010-A	E7580...3P	5480		11/24/2015	
14	1531446011	511601				SAMPLE	3	1531446011-A	E7580...3P	5480		11/24/2015	
15	1531446012	511157A				SAMPLE	3	1531446012-A	E7580...3P	5480		11/24/2015	
16	1531446013	511157B				MS	3	1531446013-A	E7580...3P	5480		11/24/2015	
17	1531446014	511157C				MSD	3	1531446014-A	E7580...3P	5480		11/24/2015	

Ext with 3mL iso-octane
Lot: U19A132 Horizon ID: 25604

QC Spike: exp: 11-15-15 @ 23:59
STK1110
Horizon ID: 29848

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:30 AM
Sample Name	: 474897 RLVS	Data Acquisition Time	: 11/12/2015 1:13:40 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/7	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 3		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_007.rst
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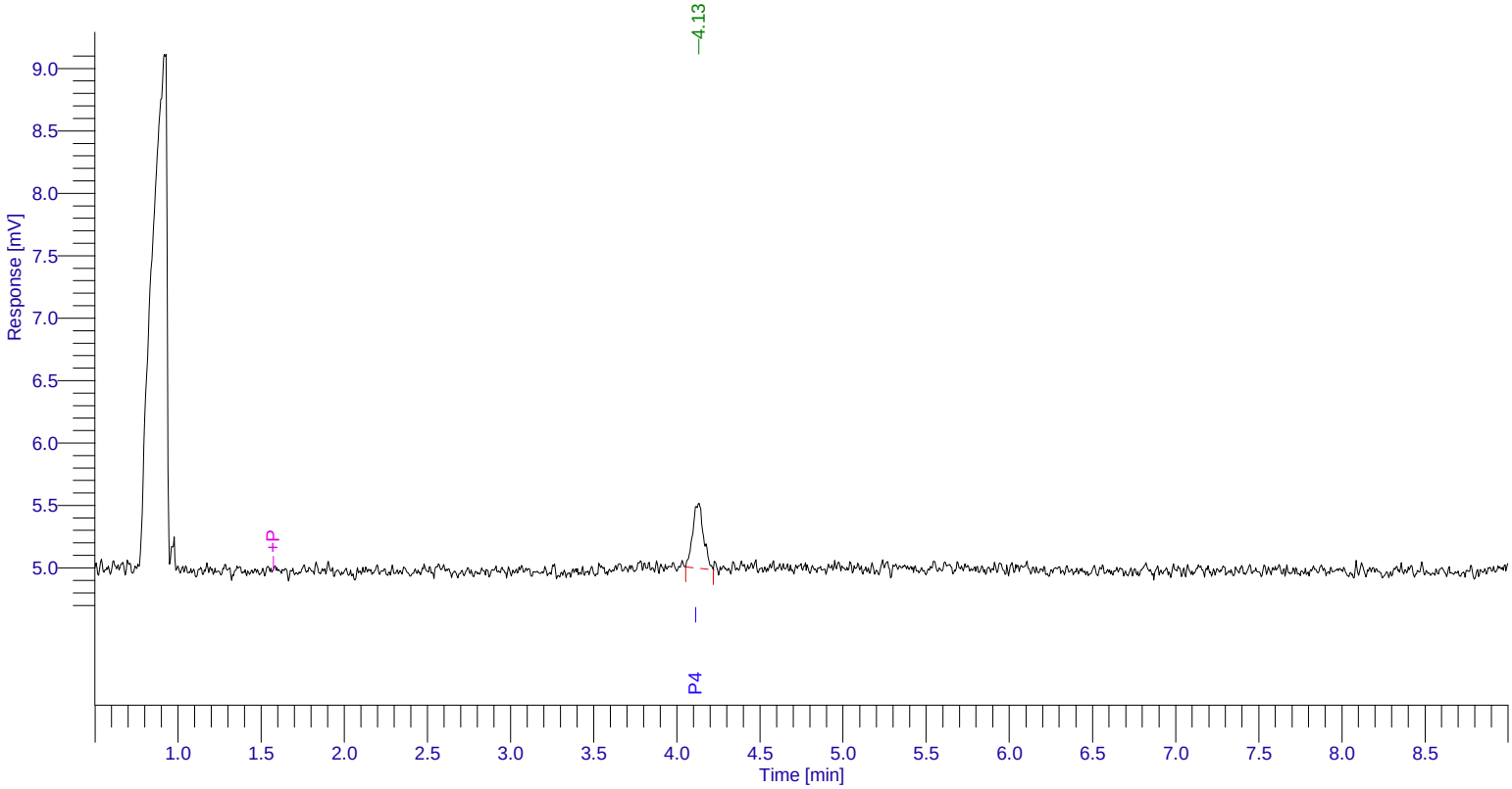

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.13	P4	517	2338	5.726e-04	1	3.0	0.1200	1.000	0.0200	0.0500	0.0143

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:33 AM
Sample Name	: 474898 MB	Data Acquisition Time	: 11/12/2015 1:25:01 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/8	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 4		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_008.rst
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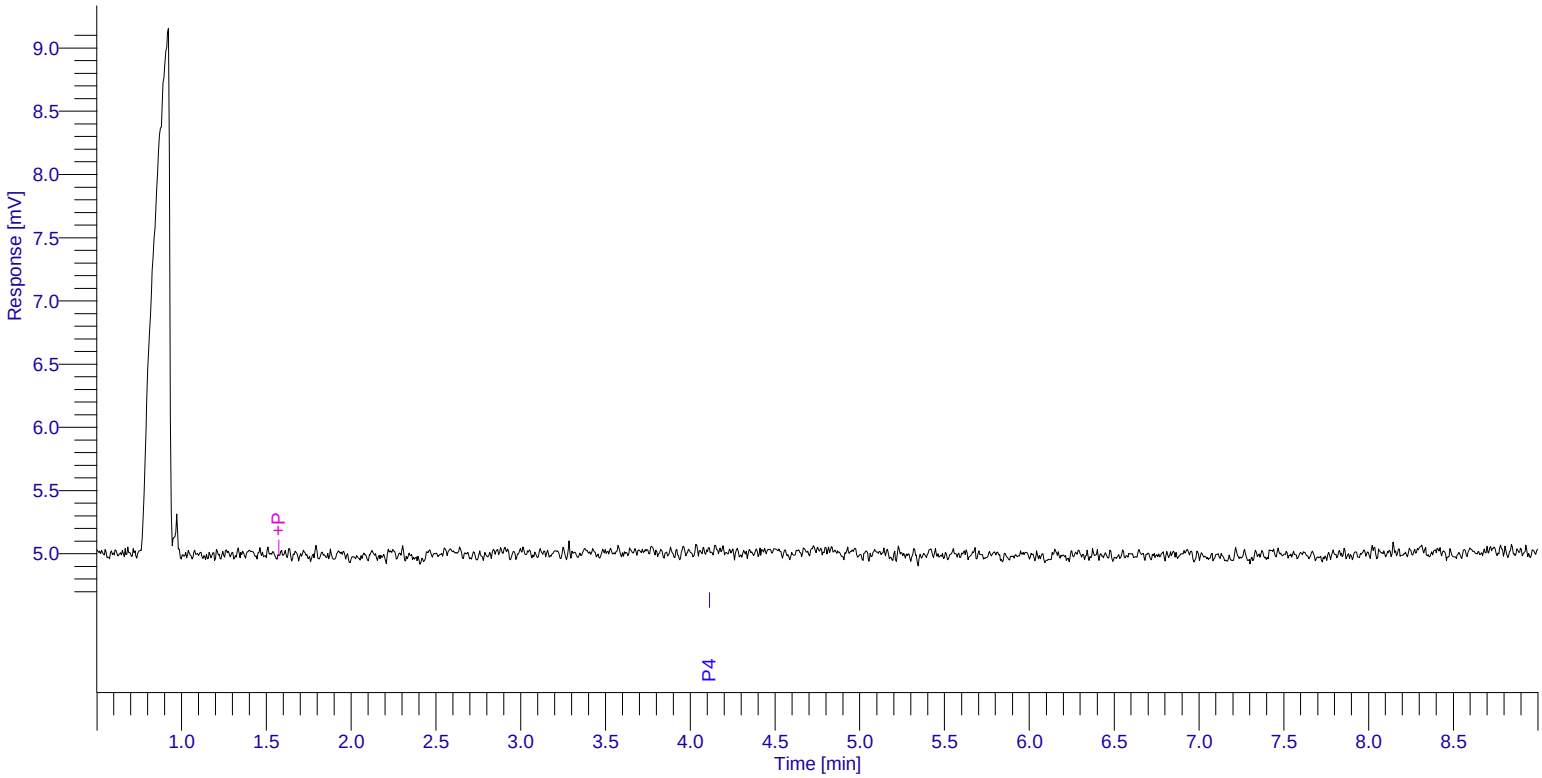

P4 WATER SAMPLE REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L
4.11	P4	0	0	0.000000	1	3.0	0.1200	1.000	----------	----------	0.0000

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:36 AM
Sample Name	: 474899 LCS	Data Acquisition Time	: 11/12/2015 1:36:22 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/9	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 5		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_009.rst
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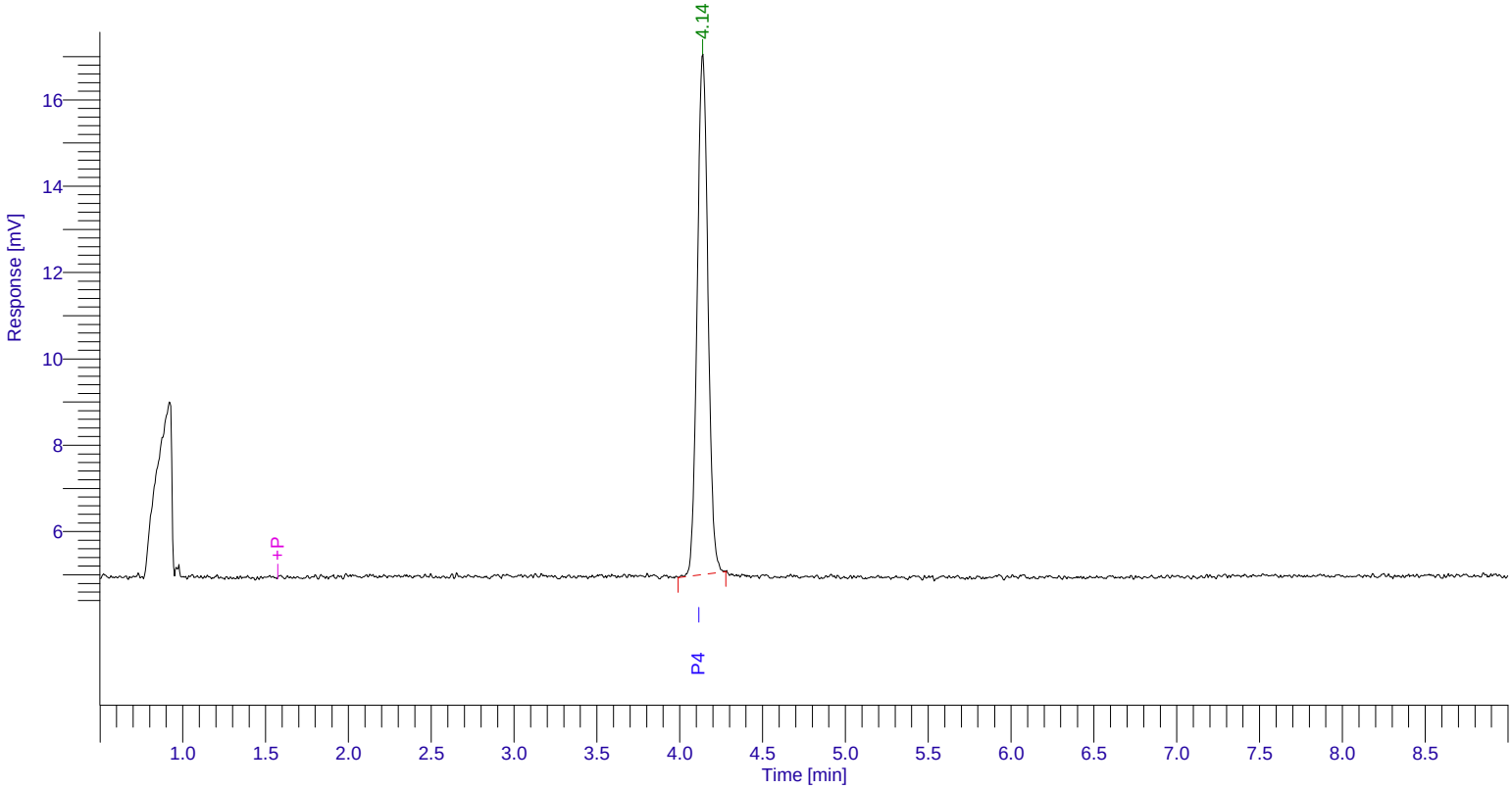

P4 WATER QC REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	DF	Extract mL	Sample L	Method DF	MDL ug/L	PQL ug/L	Adj Amt ug/L	Spike Targ ug/L	Rec %
4.14	P4	12078	54616	0.014102	1	3.0	0.120	1.000	0.0200	0.0500	0.3525	~~--1.418~~	~~-24.9 ---~~
												0.37	95.2%
												CRW	11/23/2015

P4 recovery 75 to 125% for LCS/LCSD ? ~~YES~~ ✓ NO

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:23 AM
Sample Name	: CCV1 0.05 ug/mL	Data Acquisition Time	: 11/12/2015 12:51:02 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/5	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 1		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_005.rst
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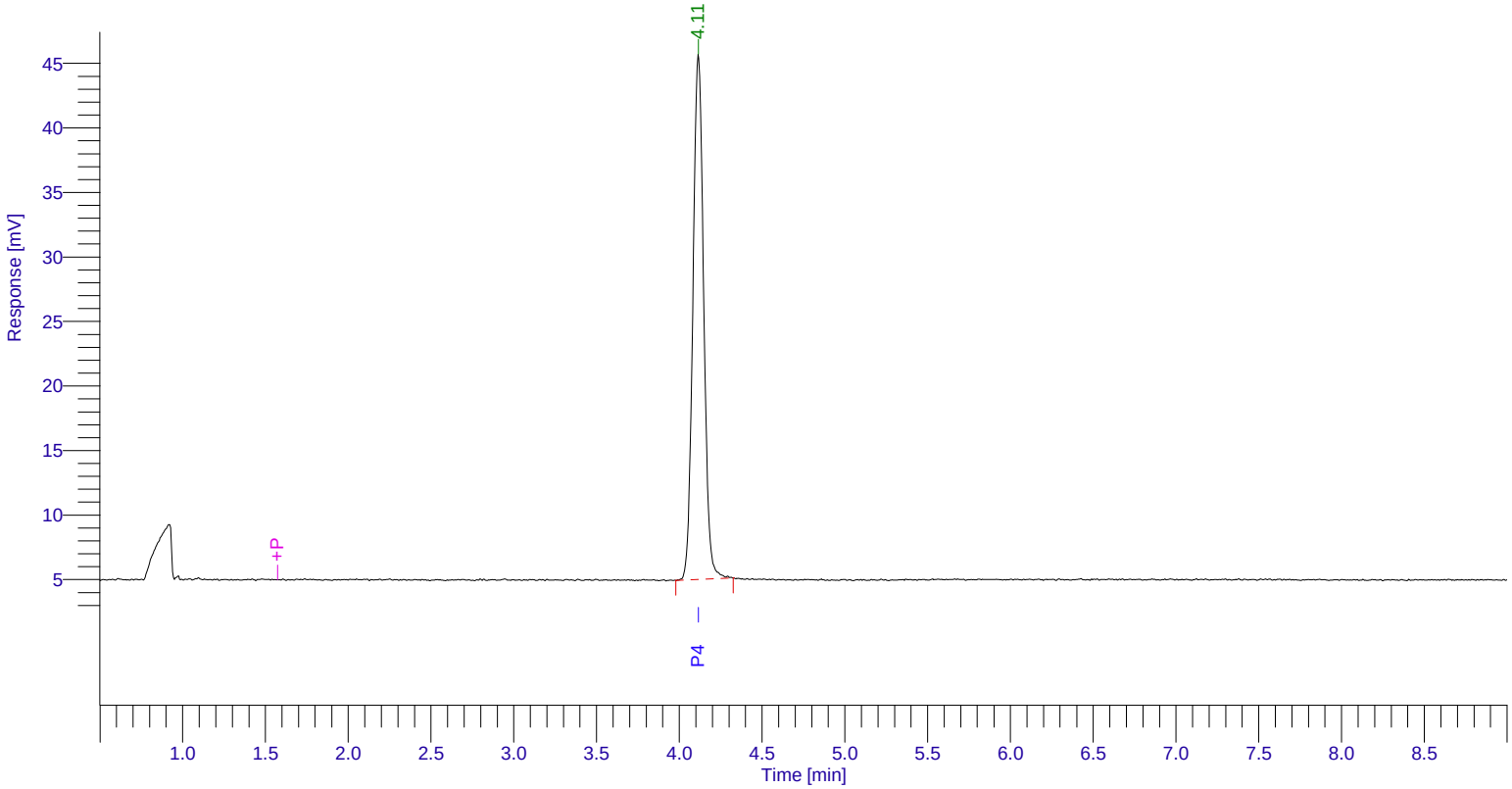

P4 CCV REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	Target Amt ug/mL	Rec %
4.11	P4	40760	184650	0.04742	0.05000	94.8
						94.8

P4 recovery 85 to 115%? YES NO

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:56 AM
Sample Name	: CCV2 0.05 ug/mL	Data Acquisition Time	: 11/12/2015 3:07:40 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/17	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 13		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_017.rst
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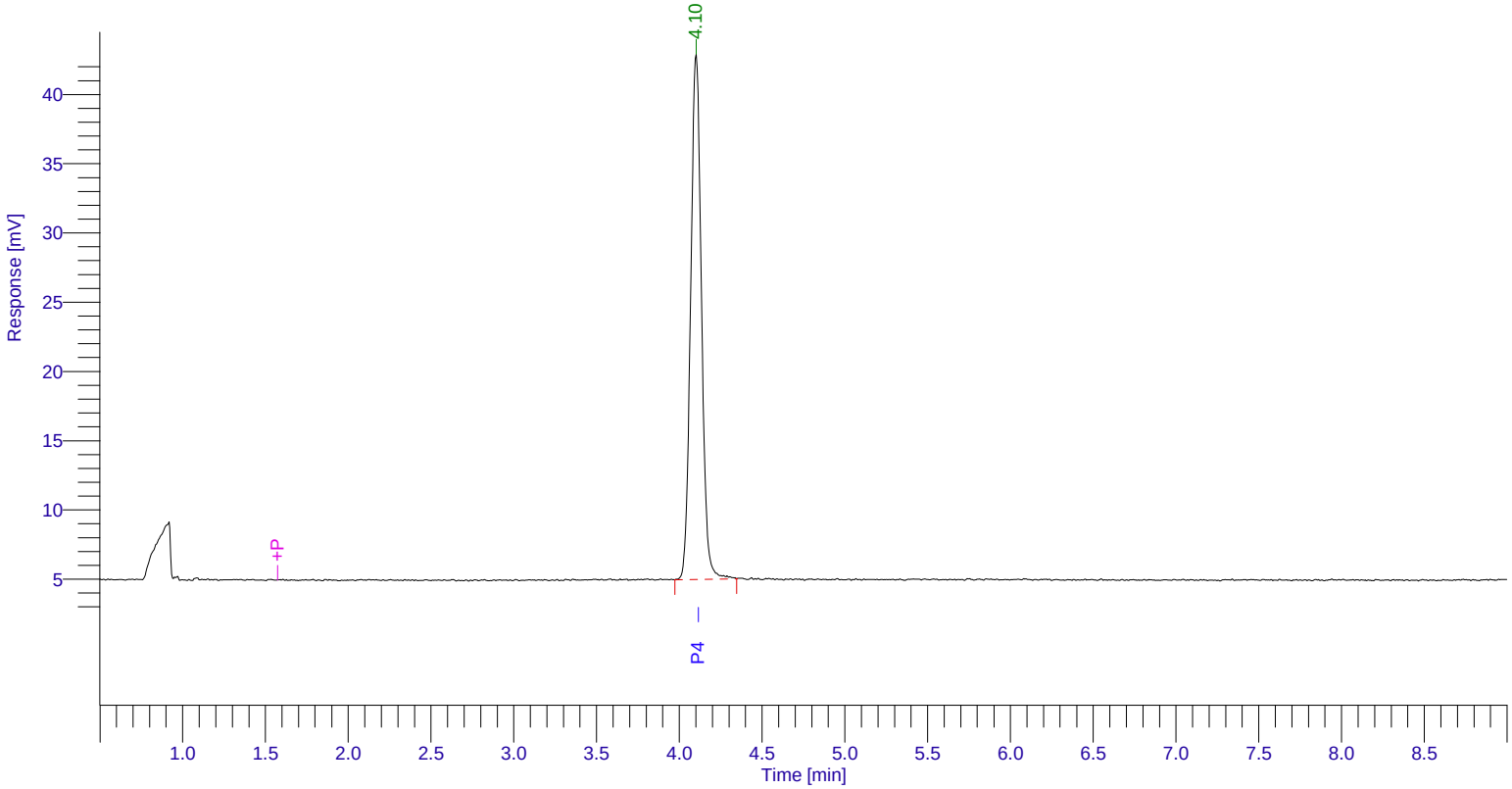

P4 CCV REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	Target Amt ug/mL	Rec %
4.10	P4	37921	172254	0.04414	0.05000	88.3
						88.3

P4 recovery 85 to 115%? YES ✓ NO

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:01 AM
Sample Name	: CCV4 0.05 ug/mL	Data Acquisition Time	: 11/13/2015 12:39:38 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/32	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 28		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_032.rst
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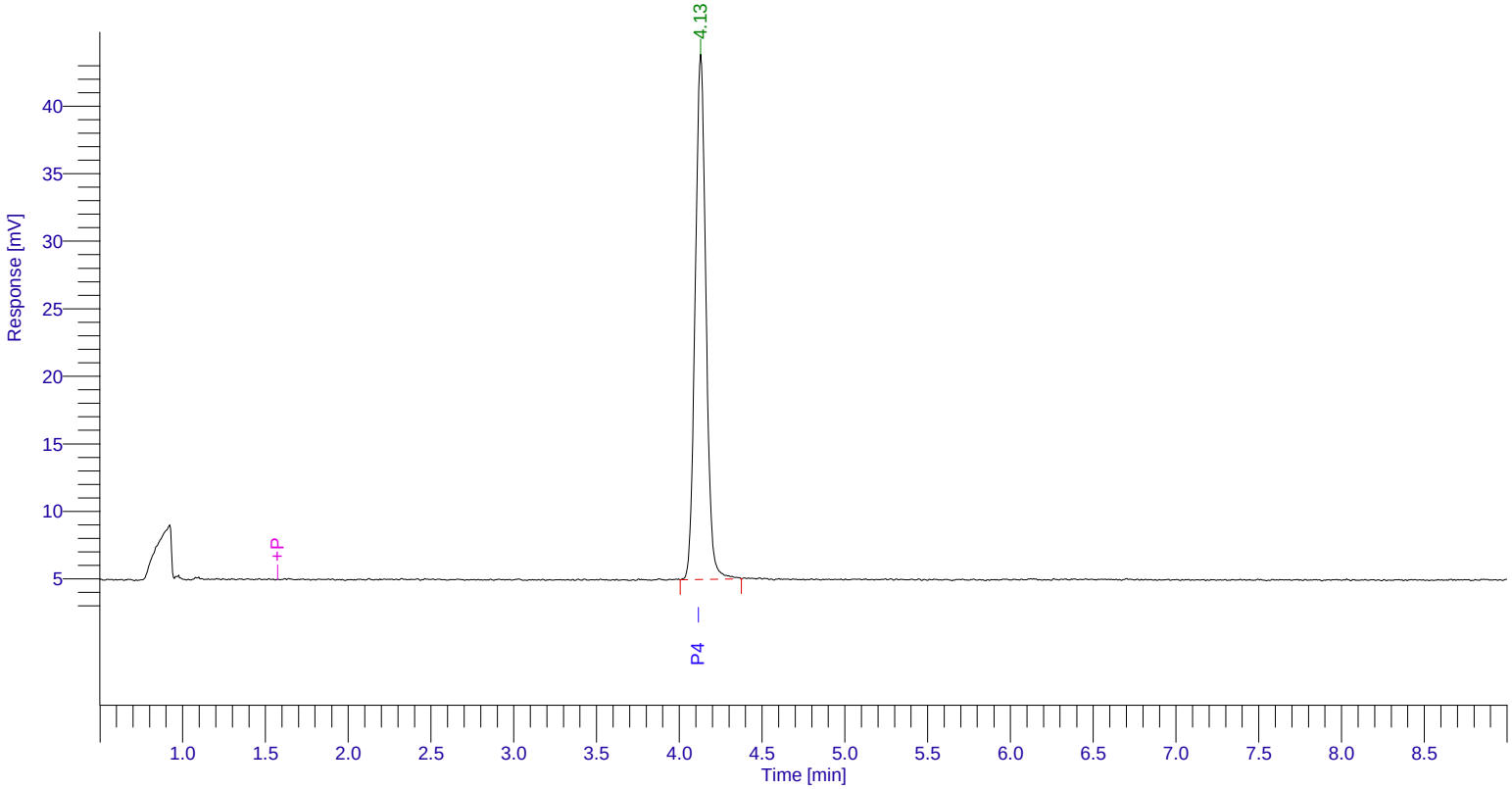

P4 CCV REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	Target Amt ug/mL	Rec %
4.13	P4	38829	176634	0.04519	0.05000	90.4
						90.4

P4 recovery 85 to 115%? YES NO

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:33:25 AM
Sample Name	: CCV5 0.05 ug/mL	Data Acquisition Time	: 11/13/2015 2:35:25 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/42	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 38		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_042.rst
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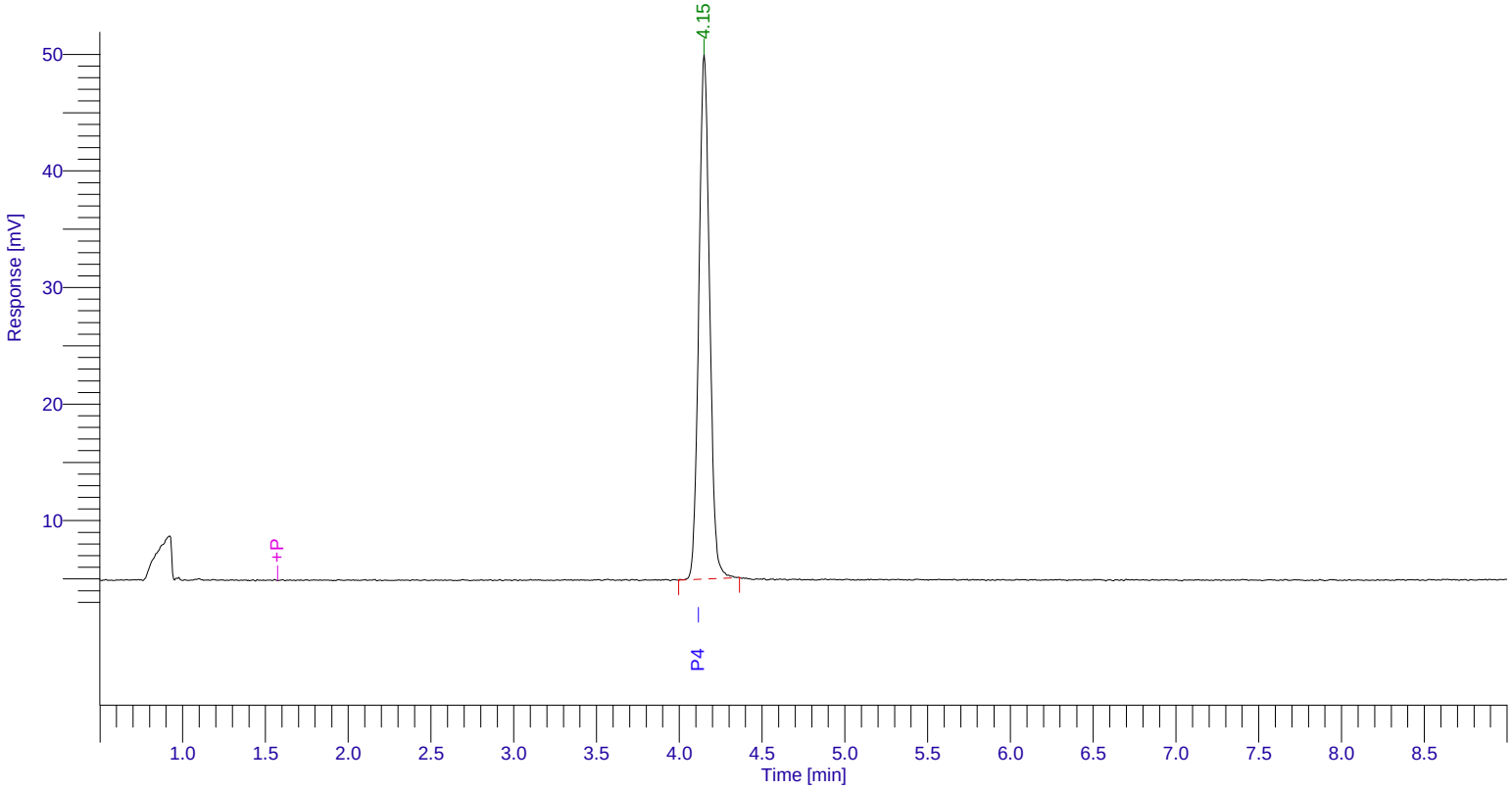


P4 CCV REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	Target Amt ug/mL	Rec %
4.15	P4	45011	204258	0.05233	0.05000	104.7
						104.7

P4 recovery 85 to 115%? YES ✓ NO

Batch Information: HBN 159282 [EGC/6033]

Client: Hydrometrics, Inc.

Set ID: 1531446

Method: 7580 White Phosphorus

Matrix: Water

Initial Calibration: 10/28/2015

Samples analyzed: 11/12/2015 and 11/13/2015

Instrument: GC24 (FPD02): HP5890 with DB-1 (30m x 0.53mm ID x 1.536um film) column and FPD detector with phosphorus filter.

Injection volulme: 2.0 uL. Voltage: 80%. Injection temp: POCO. Detector temp: 325C.

GC Program: 80C for 6.0 min.

Sample QC : MB and LCS were prepared and analyzed. MS/MSD were produced using client selected samples.

Dilutions: None.

Surrogate: Method does not required a surrogate.

Standard & QC Prep:

	Isooctane 19563 (mL)	Sample (Water) (mL)	Phosphorus 0.250 ppm 29640 (mL)	Aqueous Spike P4-in Water for QC/MS/MSD
STD1	1.00		1.000	
STD2	1.00		0.400	
STD3	1.00		0.2000	
STD4	1.00		0.0800	
STD5	1.00		0.0400	
STD6	1.00		0.02000	
STD7	1.00		0.00800	
ICV (STD2)	3.00		0.200	29653-ICV prepared by Mila Potekhin
CCVs (STD2)	3.00		0.200	
Blanks	3.00	120		
LCSs	3.00	120	0.050	29848
Samples	3.00	120		
MS/MSD	3.00	120	0.050	29848

Miscellaneous comments: 1) Quantitation was performed using peak height and 2nd order curve.

2) Concentration of spiking solution 29848 was verified prior to sample analysis.

3) Solvent dispensing bottle top pump verified for 10mL = 10mL in volumetric cylinder prior to use.

4) Raw data can be found at: \\Alsltws012\tccs\winter\GCE24\DATA\24151112

GC/FPD Analyst Writeup for method: EPA-7580 P4(White Phosphorus) in water.

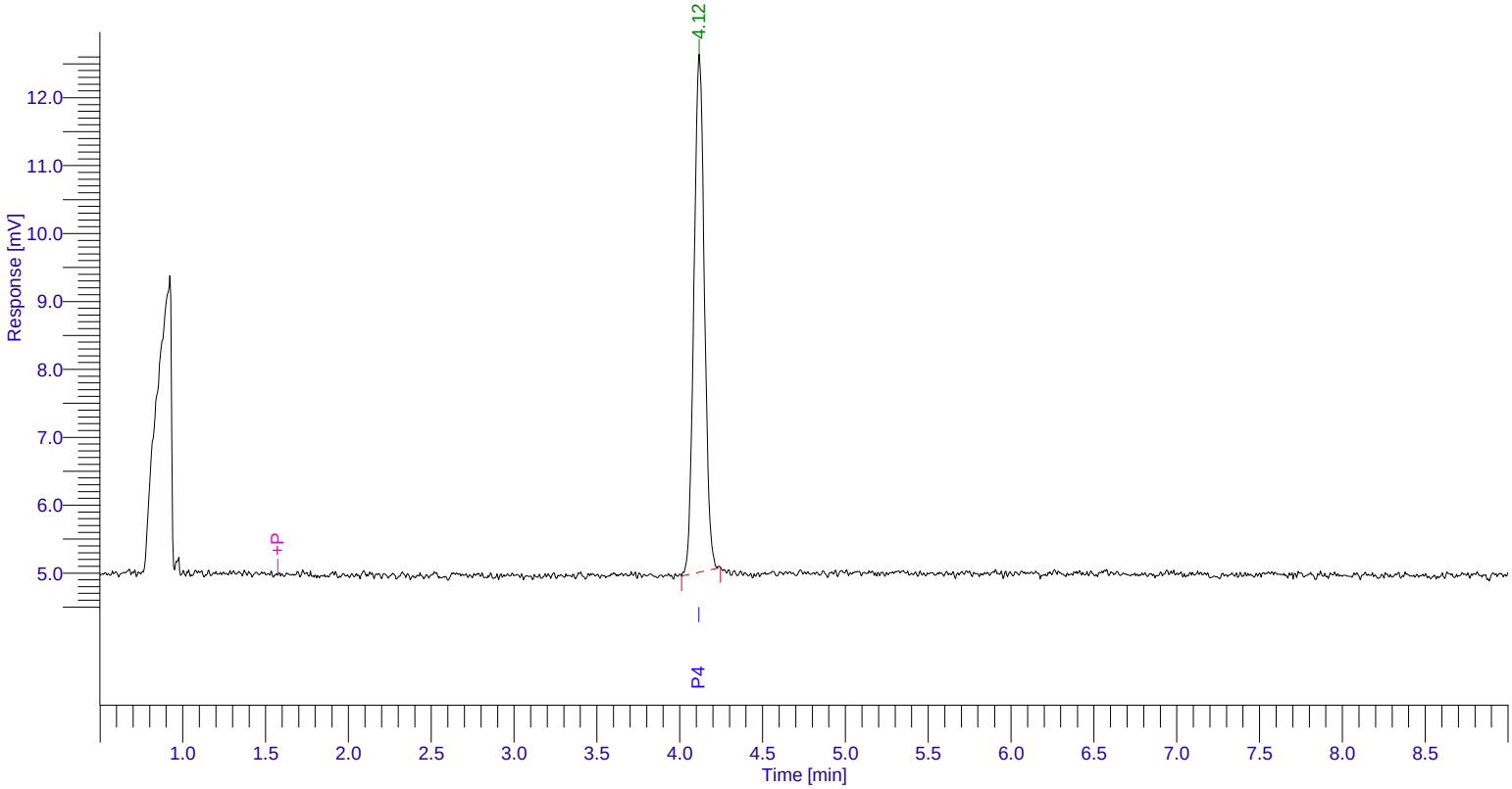
Analyst writeup done by CRW 11/23/2015

INJECTION LOG

File Name	Date Inject	Time Inject	Sample Name	Other ID	Instr ID	Column ID
24151112_005.rst	11/12/2015	12:51:02 PM	CCV1 0.05 ug/mL	29640	GC24	DB-1 30m x 0.53mm
24151112_006.rst	11/12/2015	1:02:21 PM	P4STK1110	29848	GC24	DB-1 30m x 0.53mm
24151112_007.rst	11/12/2015	1:13:40 PM	474897 RLVS	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_008.rst	11/12/2015	1:25:01 PM	474898 MB	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_009.rst	11/12/2015	1:36:22 PM	474899 LCS	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_010.rst	11/12/2015	1:47:43 PM	1531446001	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_011.rst	11/12/2015	1:59:06 PM	1531446002	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_012.rst	11/12/2015	2:10:29 PM	1531446003	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_013.rst	11/12/2015	2:21:54 PM	1531446004	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_014.rst	11/12/2015	2:33:19 PM	1531446005	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_015.rst	11/12/2015	2:44:44 PM	1531446006	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_016.rst	11/12/2015	2:56:12 PM	SLV BLK	25604	GC24	DB-1 30m x 0.53mm
24151112_017.rst	11/12/2015	3:07:40 PM	CCV2 0.05 ug/mL	29640	GC24	DB-1 30m x 0.53mm
24151112_018.rst	11/12/2015	3:19:12 PM	1531446007 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_019.rst	11/12/2015	3:30:44 PM	1531446008 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_020.rst	11/12/2015	3:42:16 PM	1531446009 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_021.rst	11/12/2015	3:53:50 PM	1531446010 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_022.rst	11/12/2015	4:05:23 PM	1531446011 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_023.rst	11/12/2015	4:16:56 PM	1531446012 NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_024.rst	11/12/2015	4:28:32 PM	1531446013 MS NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_025.rst	11/12/2015	4:40:22 PM	1531446014 MSD NOT USED	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_026.rst	11/12/2015	4:52:09 PM	SLV BLK	25604	GC24	DB-1 30m x 0.53mm
24151112_027.rst	11/12/2015	5:03:56 PM	CCV3 0.05 ug/mL NOT USED	29640	GC24	DB-1 30m x 0.53mm
24151112_028.rst	11/12/2015	5:15:44 PM	CCB	29640	GC24	DB-1 30m x 0.53mm
24151112_029.rst	11/12/2015	5:27:27 PM	CCB	29640	GC24	DB-1 30m x 0.53mm
24151112_030.rst	11/13/2015	12:16:16 PM	PRIME	29640	GC24	DB-1 30m x 0.53mm
24151112_031.rst	11/13/2015	12:27:57 PM	PRIME	29640	GC24	DB-1 30m x 0.53mm
24151112_032.rst	11/13/2015	12:39:38 PM	CCV4 0.05 ug/mL	29640	GC24	DB-1 30m x 0.53mm
24151112_033.rst	11/13/2015	12:51:17 PM	1531446007	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_034.rst	11/13/2015	1:02:54 PM	1531446008	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_035.rst	11/13/2015	1:14:34 PM	1531446009	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_036.rst	11/13/2015	1:26:11 PM	1531446010	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_037.rst	11/13/2015	1:37:45 PM	1531446011	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_038.rst	11/13/2015	1:49:18 PM	1531446012	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_039.rst	11/13/2015	2:00:50 PM	1531446013 MS	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_040.rst	11/13/2015	2:12:22 PM	1531446014 MSD	HBN 159282	GC24	DB-1 30m x 0.53mm
24151112_041.rst	11/13/2015	2:23:53 PM	CCB	29640	GC24	DB-1 30m x 0.53mm
24151112_042.rst	11/13/2015	2:35:25 PM	CCV5 0.05 ug/mL	29640	GC24	DB-1 30m x 0.53mm

Software Version	: 6.3.1.0504	Date	: 11/23/2015 11:32:27 AM
Sample Name	: P4STK1110	Data Acquisition Time	: 11/12/2015 1:02:21 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/6	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 100.000000
Cycle	: 2		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151112\24151112_006.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151112_7580_P4_Wseq.seq



P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	
4.12	P4	7614	33604	0.008885	= 0.889 ug/mL

CRW 11/23/15

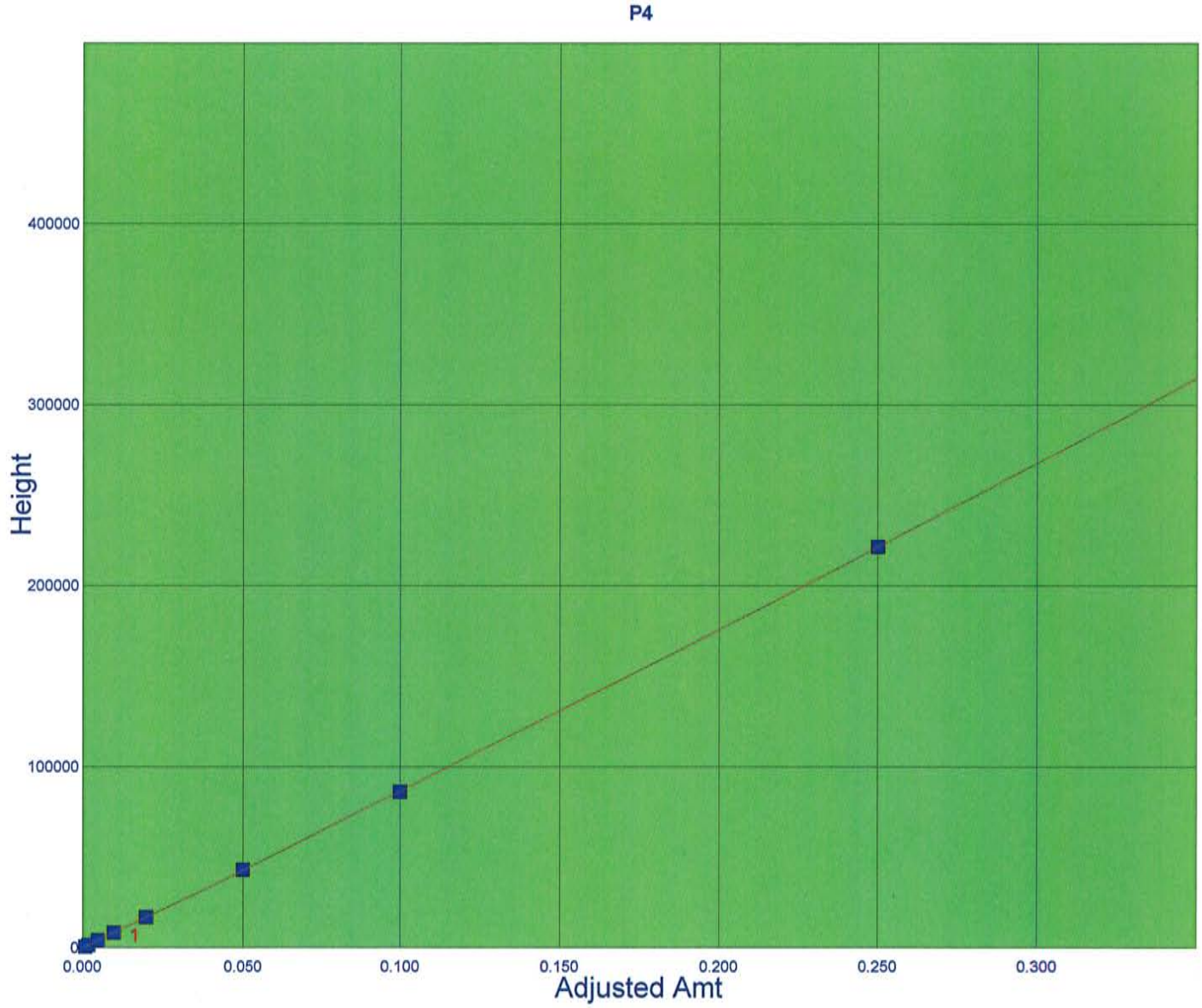
Fit Analysis Output For Method File: \\ALSLTWS012\TCCS\WINTER\GCE24\METHODS\24_P4.MTH
Reprocess Number : nasltw7038: 2294526
Component Name : P4
Date : 10/28/2015 9:13:27 AM

Curve Parameters:

Curve #1 : 2nd Order
Weighting Factor = 1/x R-Squared = 0.999988
Calibration Curve : Y = (28.899801) +(852528.030155) X +(133499.442627) X^2

Curve #1 :

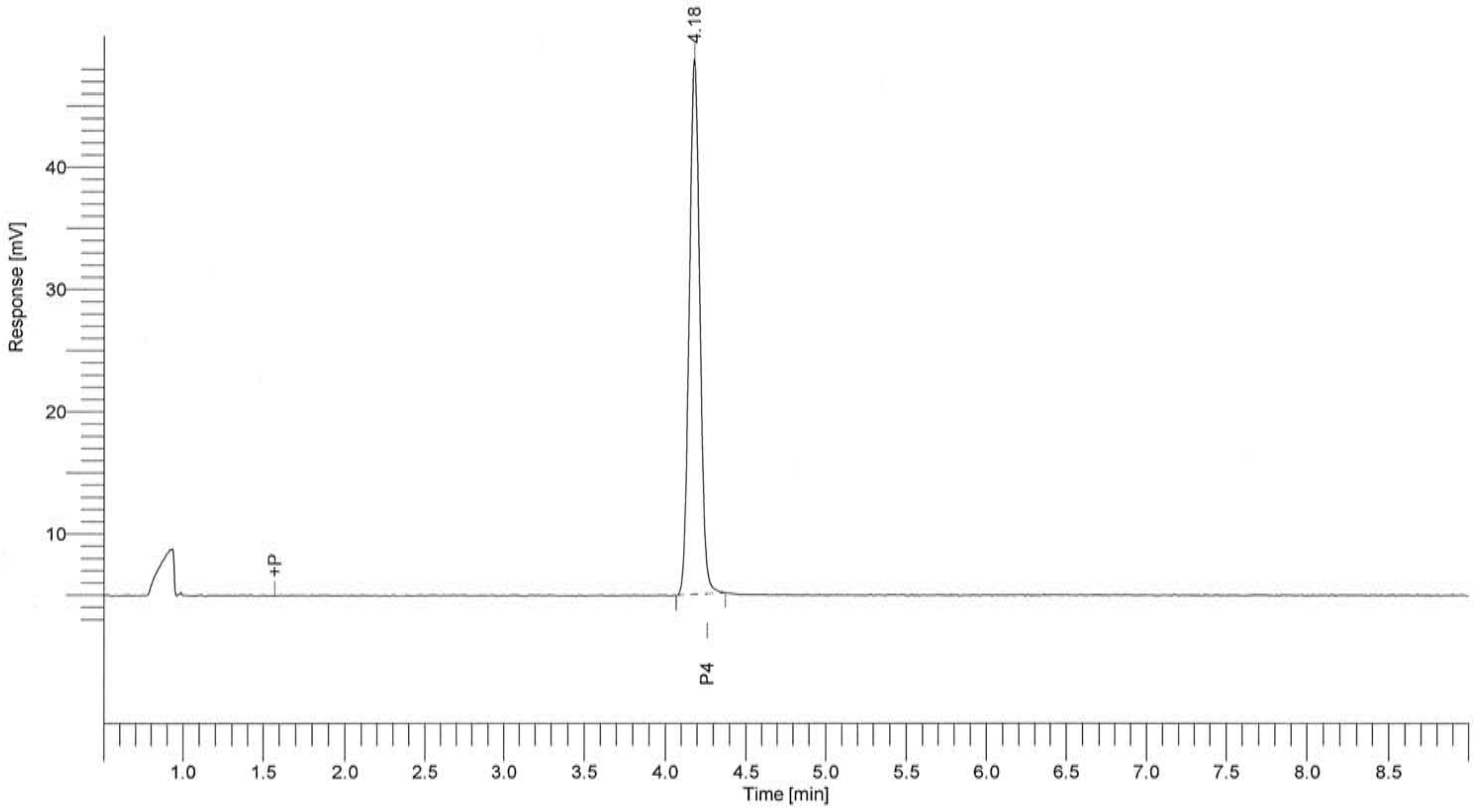
Level Name	Observed X-Value	Calculated X-Value	Delta	%Diff.	Observed Y-Value	Calculated Y-Value	Delta	%Diff.
8	0.001000	0.000990	9.9992e-06	1.010	873.034097	881.561	-8.527	-0.967
7	0.002000	0.002021	-2.144e-05	-1.061	1752.783496	1734.490	18.294	1.055
6	0.005000	0.005025	-2.473e-05	-0.492	4315.993803	4294.877	21.116	0.492
5	0.010000	0.009898	0.000102	1.034	8480.006372	8567.530	-87.524	-1.022
4	0.020000	0.020030	-2.994e-05	-0.149	17158.541801	17132.860	25.682	0.150
3	0.050000	0.050318	-3.177e-04	-0.631	43264.189611	42989.050	275.140	0.640
2	0.100000	0.099640	0.000360	0.362	86299.923380	86616.697	-316.774	-0.366
1	0.250000	0.250079	-7.897e-05	-0.032	221577.215960	221504.623	72.593	0.033



Software Version : 6.3.1.0504
Sample Name : ICV 0.05 ug/mL
Instrument Name : GC24
Rack/Vial : 0/11
Sample Amount : 1.000000
Cycle : 1

Date : 10/28/2015 9:10:14 AM
Data Acquisition Time : 10/27/2015 4:04:44 PM
Channel : B
Operator : winter
Dilution Factor : 1.000000

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_011.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



P4 CCV REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

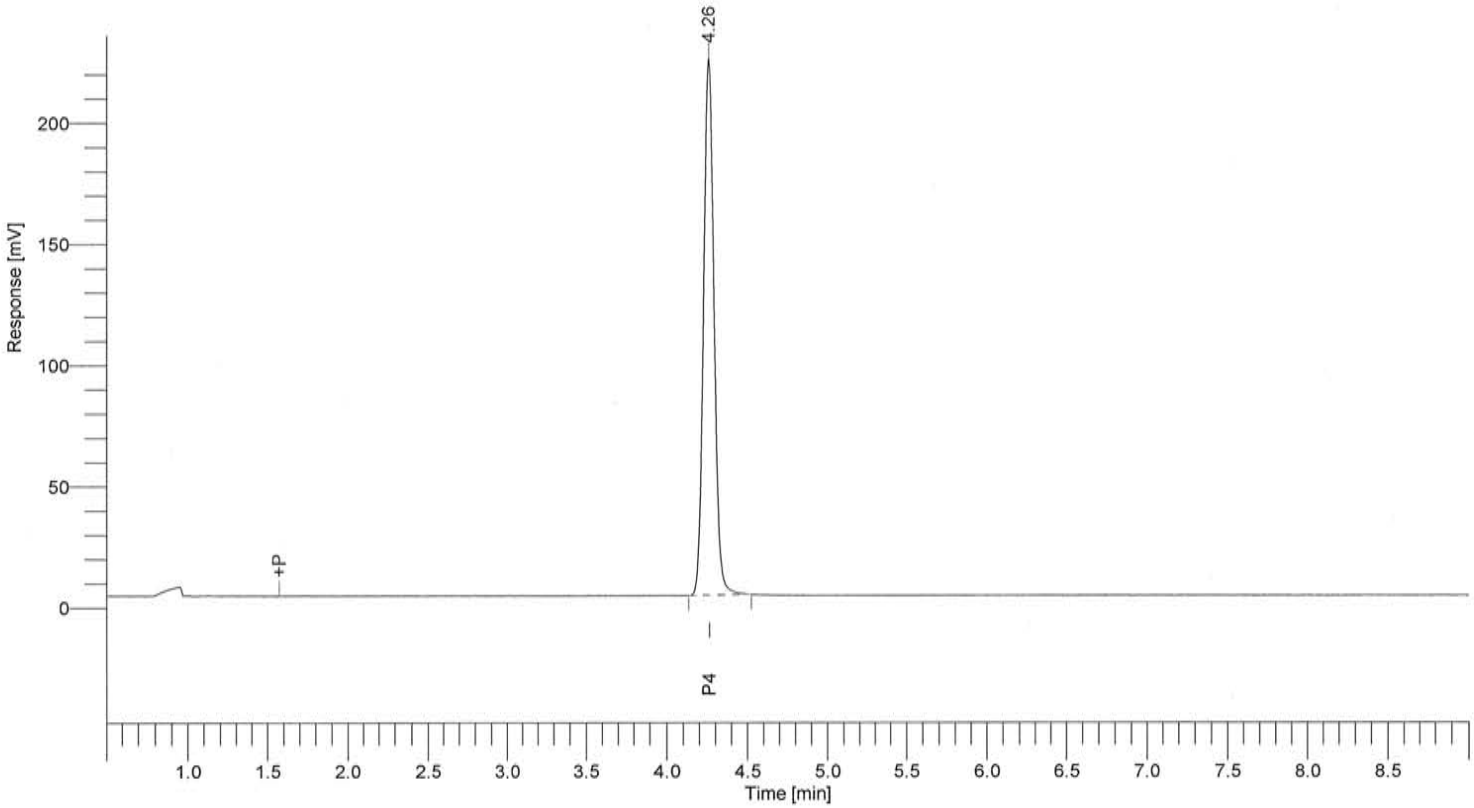
Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL	Target Amt ug/mL	Rec %
4.18	P4	43821	199653	0.05096	0.05000	101.9
						101.9

P4 recovery 85 to 115%? YES NO

Software Version : 6.3.1.0504
Sample Name : Std1 0.25 ug/mL
Instrument Name : GC24
Rack/Vial : 0/3
Sample Amount : 1.000000
Cycle : 1

Date : 10/28/2015 9:09:20 AM
Data Acquisition Time : 10/27/2015 2:34:06 PM
Channel : B
Operator : winter
Dilution Factor : 1.000000

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_003.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



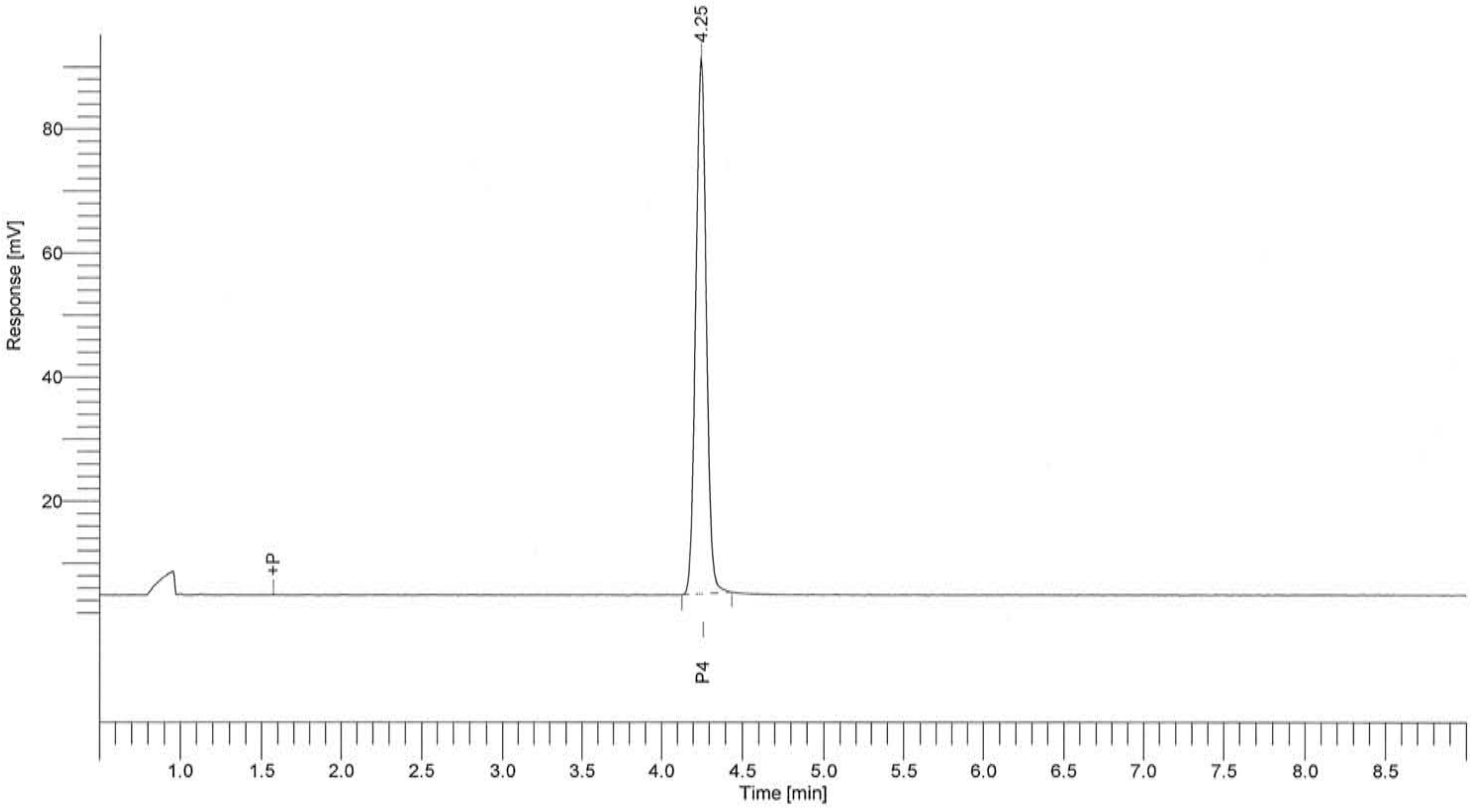
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.26	P4	221577	1020385	0.250079

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:09:32 AM
Sample Name	: Std2 0.10 ug/mL	Data Acquisition Time	: 10/27/2015 2:45:27 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/4	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 2		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_004.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



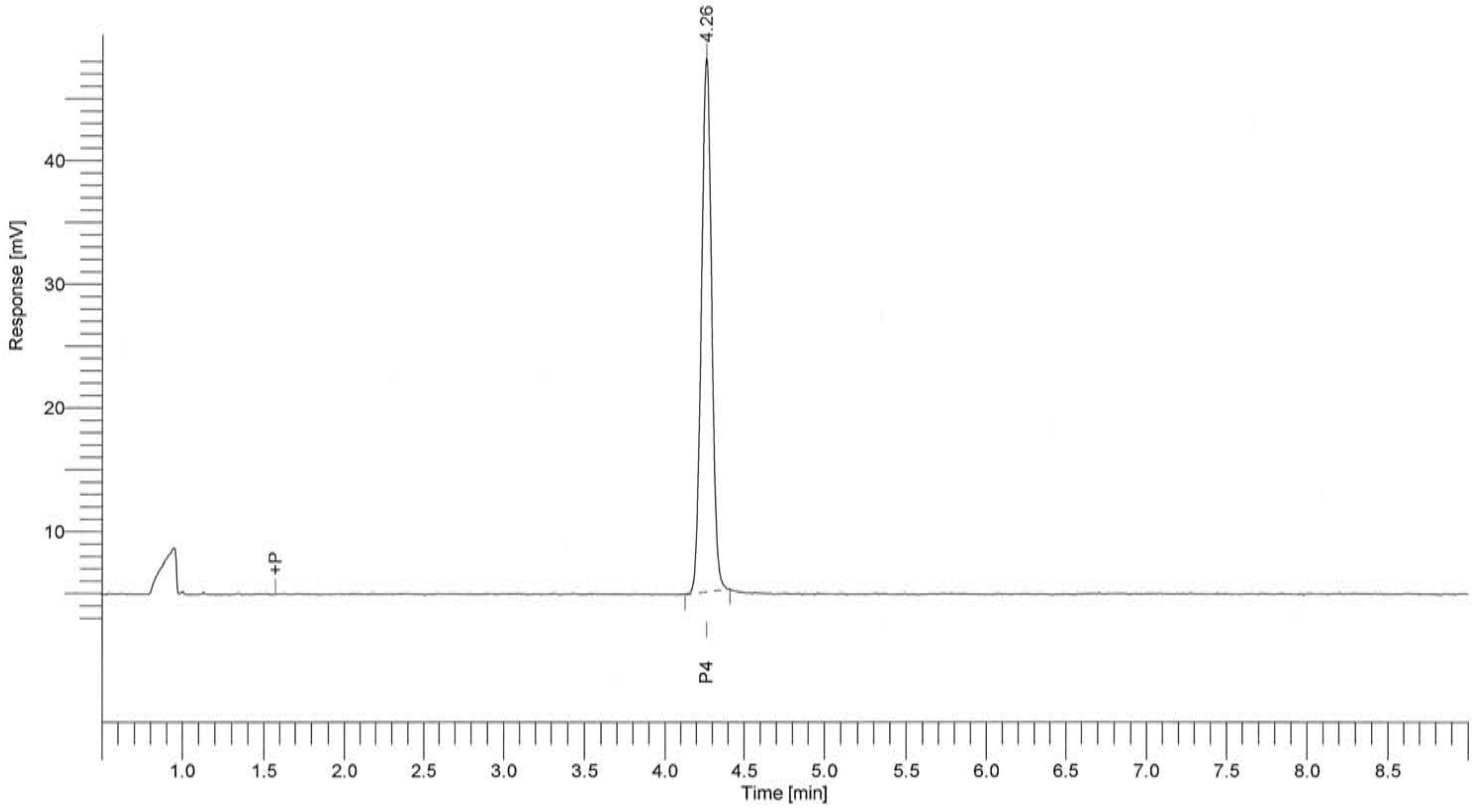
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.25	P4	86300	398816	0.099640

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:09:48 AM
Sample Name	: Std3 0.05 ug/mL	Data Acquisition Time	: 10/27/2015 2:56:48 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/5	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 3		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_005.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



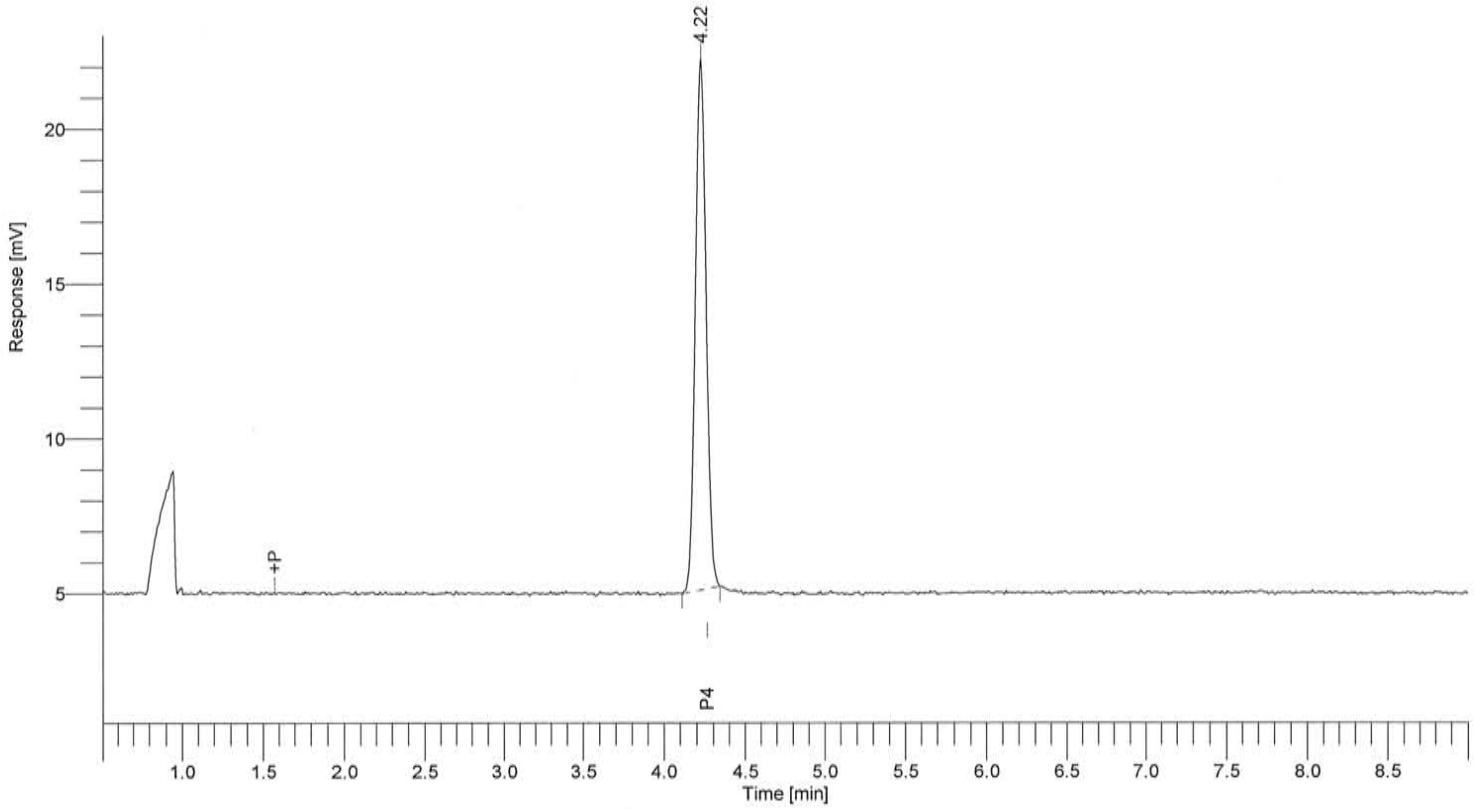
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.26	P4	43264	195882	0.050318

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:09:55 AM
Sample Name	: Std4 0.02 ug/mL	Data Acquisition Time	: 10/27/2015 3:08:07 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/6	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 4		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_006.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



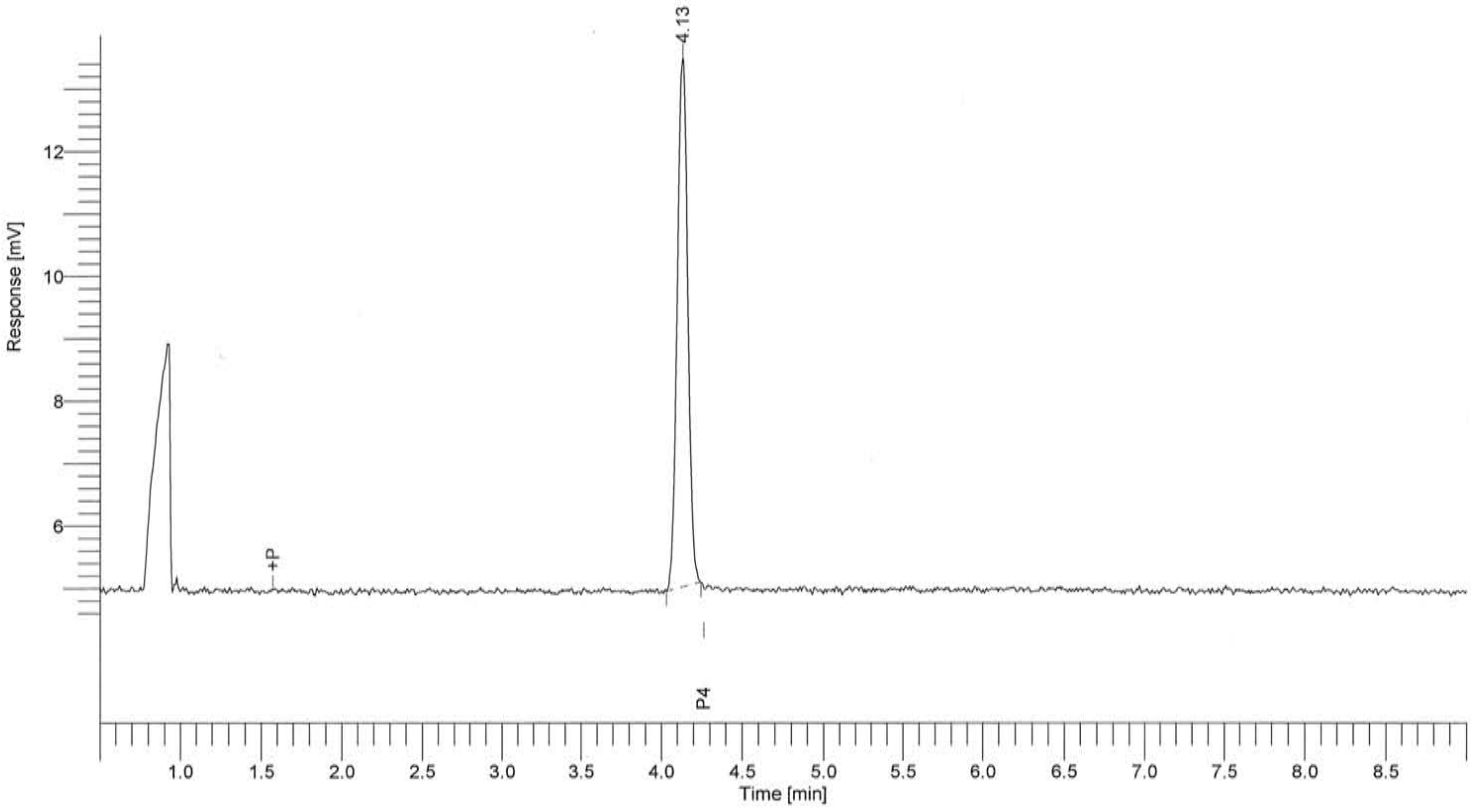
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.22	P4	17159	77361	0.020030

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:10:00 AM
Sample Name	: Std5 0.01 ug/mL	Data Acquisition Time	: 10/27/2015 3:19:25 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/7	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 5		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_007.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.13	P4	8480	38218	0.009898

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:10:05 AM
Sample Name	: Std6 0.005 ug/mL	Data Acquisition Time	: 10/27/2015 3:30:44 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/8	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 6		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_008.rst
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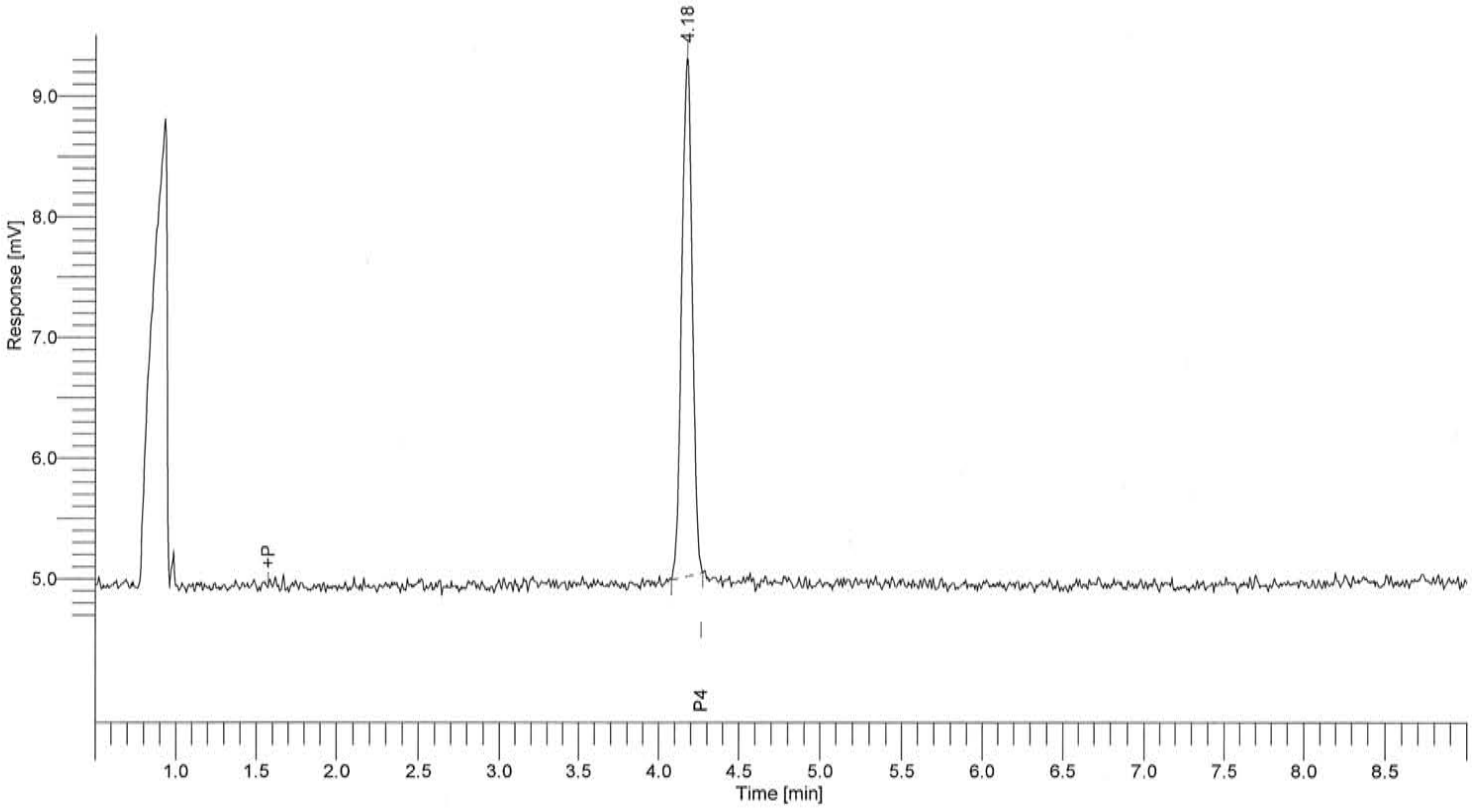


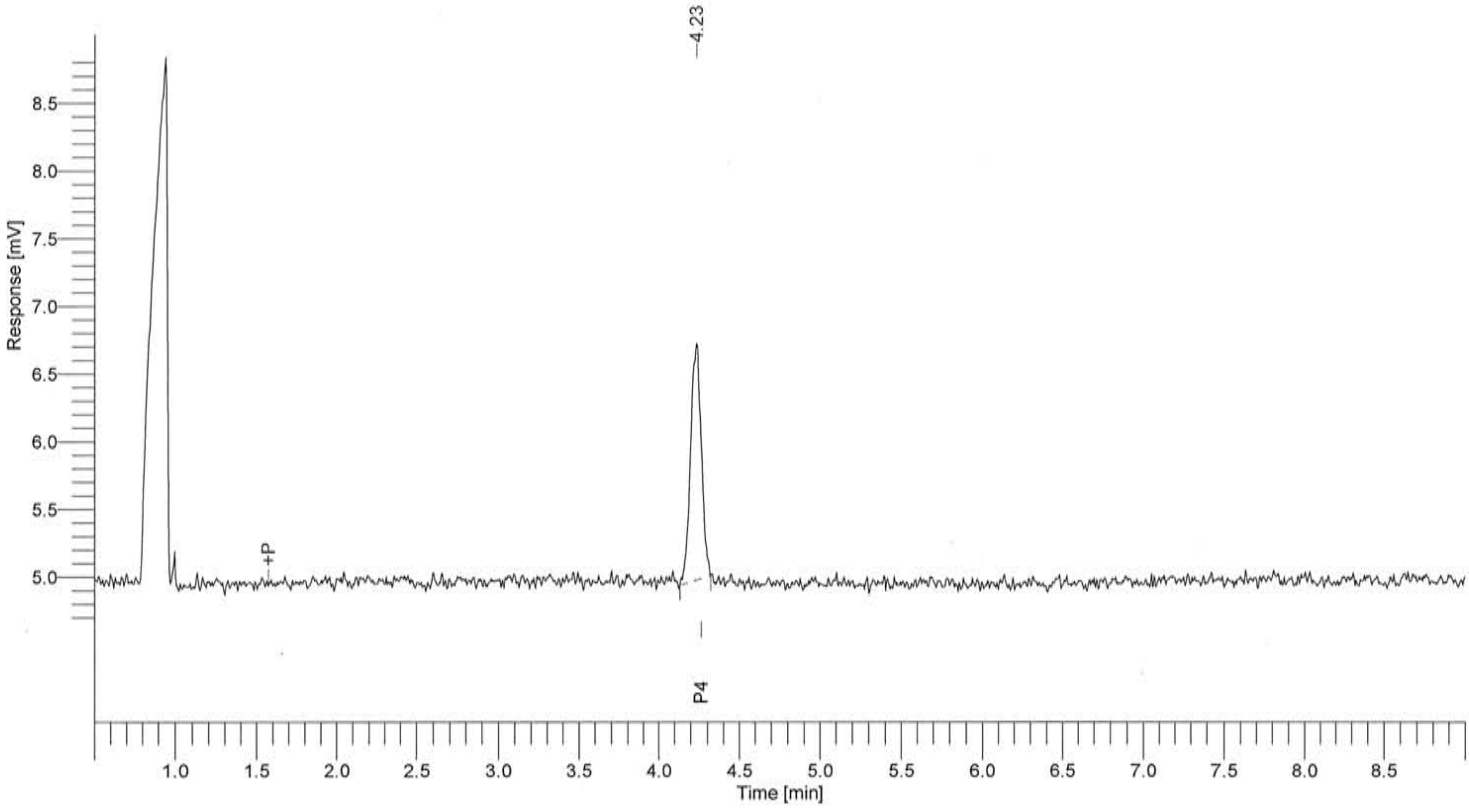
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.18	P4	4316	19099	0.005025

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:10:08 AM
Sample Name	: Std7 0.002 ug/mL	Data Acquisition Time	: 10/27/2015 3:42:03 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/9	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 7		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_009.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



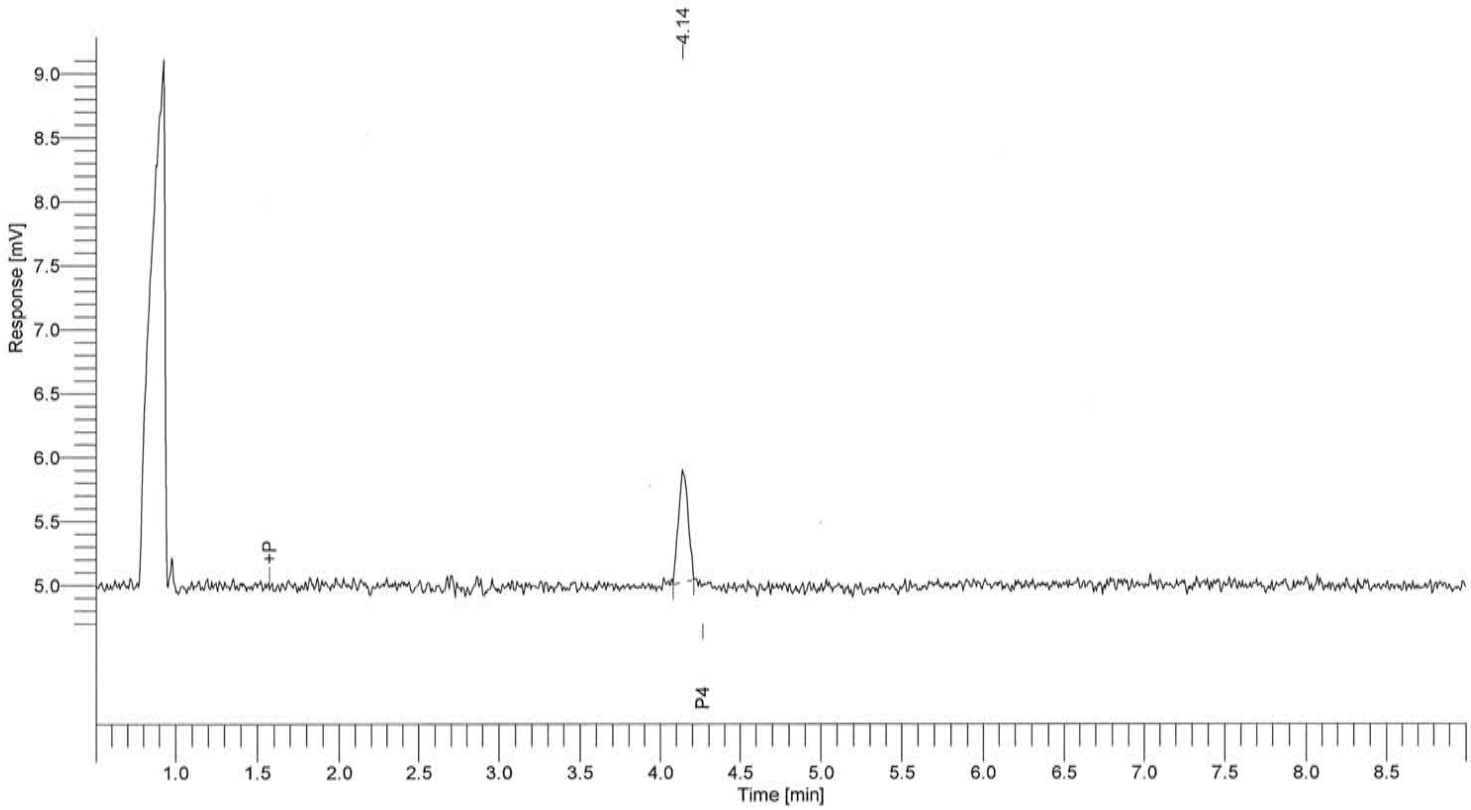
P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.23	P4	1753	7800	0.002021

Software Version	: 6.3.1.0504	Date	: 10/28/2015 9:10:12 AM
Sample Name	: Std8 0.001 ug/mL	Data Acquisition Time	: 10/27/2015 3:53:23 PM
Instrument Name	: GC24	Channel	: B
Rack/Vial	: 0/10	Operator	: winter
Sample Amount	: 1.000000	Dilution Factor	: 1.000000
Cycle	: 8		

Result File : \\Alsltws012\tccs\WINTER\gce24\data\24151027\24151027_010.rst
Sequence File : \\ALSLTWS012\TCCS\WINTER\GCE24\SEQUENCES\24151027_7580_P4_ICAL_Wseq.seq



P4 STANDARD REPORT

Column A: DB-1 30m x 0.53mm x 1.5um

Time min	Component Name	Height uV	Area [µV·s]	Raw Amt ug/mL
4.14	P4	873	3609	9.900e-04

INJECTION LOG

File Name	Date Inject	Time Inject	Sample Name	Other ID	Instr ID	Column ID
24151027_003.rst	10/27/2015	2:34:06 PM	Std1 0.25 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_004.rst	10/27/2015	2:45:27 PM	Std2 0.10 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_005.rst	10/27/2015	2:56:48 PM	Std3 0.05 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_006.rst	10/27/2015	3:08:07 PM	Std4 0.02 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_007.rst	10/27/2015	3:19:25 PM	Std5 0.01 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_008.rst	10/27/2015	3:30:44 PM	Std6 0.005 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_009.rst	10/27/2015	3:42:03 PM	Std7 0.002 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_010.rst	10/27/2015	3:53:23 PM	Std8 0.001 ug/mL	27951	GC24	DB-1 30m x 0.53mm
24151027_011.rst	10/27/2015	4:04:44 PM	ICV 0.05 ug/mL	27958	GC24	DB-1 30m x 0.53mm

STANDARD REPORT

Working Standard - P4 0.25

P4 0.25	Description - P4 0.25 ppm iso-octane sol

Standard:	29640	Created By:	C. Winter	Amount:	100 mL
MFG:	ALS	Create Date:	10/22/2015	Expires:	05/30/2016
MFG Lot:	010510	Lab Lot:	010510	Usable:	Yes
Part ID:	010510				

Pos.	Analyte	Name	Concentration
1	7723-14-0	Phosphorus	0.25016 ug/mL
2	7723-14-0W	White Phosphorus	0.25016 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
25604	UV grade	Iso-Octane for P4 analysis	ISO OCTANE	99.576 mL	10/31/2025
27930	P4 59 ug/mL	P4 solution 59 ug/mL	010510	0.424 mL	05/30/2016

STANDARD REPORT

Working Standard - P4 0.25-ICV

P4 0.25-ICV		Description - P4 0.25 ppm iso-octane sol
Standard: 29653	Created By: M. Potekhin	Amount: 50 mL
MFG: ALS	Create Date: 10/22/2015	Expires: 05/30/2016
MFG Lot: 010510	Lab Lot: 010510	Usable: Yes
Part ID: 010510		

Pos.	Analyte	Name	Concentration
1	7723-14-0	Phosphorus	0.25 ug/mL
2	7723-14-0W	White Phosphorus	0.25 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
25604	UV grade	Iso-Octane for P4 analysis	ISO OCTANE	49.788 mL	10/31/2025
27930	P4 59 ug/mL	P4 solution 59 ug/mL	010510	0.212 mL	05/30/2016

STANDARD REPORT

Constituent

Working Standard - P4 59 ug/mL

P4 59 ug/mL		Description - P4 solution 59 ug/mL
Standard: 27930	Created By: C. Winter	Amount: 100 mL
MFG: DCL	Create Date: 05/01/2015	Expires: 05/30/2016
MFG Lot: 010510	Lab Lot: 010510	Usable: Yes
Part ID: 010510		

Pos.	Analyte	Name	Concentration
1	7723-14-0	Phosphorus	59 ug/mL
2	7723-14-0W	White Phosphorus	59 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
3784	Toluene	100% Toluene	CX498	100 mL	04/16/2025
5045	Stock P4	Stock P4	755059	0.0059	08/06/2025

STANDARD REPORT

Constituent

Stock Standard - Stock P4

Stock P4		Description - Stock P4
Standard: 5045	Created By: M. Potekhin	Amount: 200 grams
MFG: Fisher	Create Date: 1/1/2008	Expires: 8/6/2025
MFG Lot: 755059	Lab Lot: 755059	Usable: Yes
Part ID: 755059		

Pos.	Analyte	Name	Concentration
1	7723-14-0	Phosphorus	1000 mg/g
2	7723-14-0W	White Phosphorus	1000 mg/g

STANDARD REPORT

Constituent

Solvent Standard - Toluene

Toluene			Description - 100% Toluene
Standard: 3784	Created By: M. Potekhin	Amount: 8 L	
MFG: B&J Brand	Create Date: 4/16/2009	Expires: 4/16/2025	
MFG Lot: CX498	Lab Lot: CX498	Usable: Yes	
Part ID: 347-4			

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Solvent Standard - UV grade

UV grade			Description - Iso-Octane for P4 analysis
Standard: 25604	Created By: C. Winter		Amount: 32 L
MFG: Alfa Aesar	Create Date: 10/10/2014		Expires: 10/31/2025
MFG Lot: U19A132	Lab Lot: ISO OCTANE		Usable: Yes
Part ID: 22901			

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			