GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
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gel.com

December 29, 2017

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF S18-012
Work Order: 440233
SDG: GEL440233

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 16, 2017. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: 300071 - 7H
Chain of Custody: S18-012-262, S18-012-264, S18-012-266, S18-012-302 and S18-012-378
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF S18-012
SDG: GEL440233

December 29, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on December 16, 2017, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
440233001	B3FHT1
440233002	B3FJK1
440233003	B3FJK2
440233004	B3FH20
440233005	B3FJ05

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: General Chemistry.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Heather Shaffer

Heather Shaffer
Project Manager

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL440233
Work Order #: 440233

Ion Chromatography

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times
Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
440233004 (B3FH20)	Nitrate and Nitrite	Received 16-DEC-17, out of holding 15-DEC-17
440233005 (B3FJ05)	Nitrate, Nitrite and Ortho-phosphate	Received 16-DEC-17, out of holding 14-DEC-17

Samples (See Below) were received with insufficient time to prep and/or analyze within the recommended method-specified holding time. The analysis was performed as soon as possible by the analyst. The data is qualified.

Sample	Analyte	Value
1203940442 (B3FHT1DUP)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940443 (B3FHT1PS)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940448 (B3FJK2DUP)	Bromide	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940449 (B3FJK2PS)	Bromide	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17

	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
440233001 (B3FHT1)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
440233003 (B3FJK2)	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17

Sample (See Below) was logged in for this analysis outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
440233002 (B3FJK1)	Nitrate and Nitrite	Logged 16-DEC-17, out of holding 16-DEC-17

Sample Dilutions

The following samples 1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP), 1203940449 (B3FJK2PS), 440233001 (B3FHT1), 440233002 (B3FJK1), 440233003 (B3FJK2), 440233004 (B3FH20) and 440233005 (B3FJ05) were diluted because target analyte concentrations exceeded the calibration range.

Analyte	440233			
	001	003	004	005
Several	10X 1X	10X 1X	10X 1X	100X 10X 1X

Sample Re-analysis

Samples1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP) and 1203940449 (B3FJK2PS) were re-analyzed due to CCV failure. The reanalysis data with passing instrument QC was reported.

Miscellaneous Information

Manual Integrations

Samples 1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP), 1203940449 (B3FJK2PS), 440233001 (B3FHT1), 440233002 (B3FJK1), 440233003 (B3FJK2), 440233004 (B3FH20) and 440233005 (B3FJ05) were manually integrated to correctly position the baseline as set in the calibration standards.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 440233	C.O.C. # S18-012-262 Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-012	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: SURV, DECEMBER 2017	**Logbook No.:** HNF-N-506-96/71	**Ice Chest No.:** N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A
Protocol SURV	**Priority:** 15 Days PRIORITY	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FHT1	N	W	DEC 14 2017	1045	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

6580
WC 2619

Relinquished By: M.R Chunn (Malcom Chunn CHPRC) — Print First and Last Name / Signature / Date/Time: DEC 14 2017 1050	Received By: Jeff Tucksen CHPRC — Print First and Last Name / Signature / Date/Time: DEC 14 2017 1050	Matrix *	
Relinquished By: Jeff Tucksen CHPRC — Print First and Last Name / Signature / Date/Time: DEC 14 2017 1340	Received By: B.Jorgenson, TARL — Print First and Last Name / Signature / Date/Time: 12-14-17 1340	S = Soil	DS = Drum Solids
Relinquished By: J. Bock — Print First and Last Name / Signature / Date/Time: J. Bock, TARL 12-15-17 1145	Received By: Fed Ex 12-15-17 — Print First and Last Name / Signature / Date/Time	SE = Sediment	DL = Drum Liquid
Relinquished By: — Print First and Last Name / Signature: Fed Ex / Date/Time	Received By: SL BOONE — Print First and Last Name / Signature / Date/Time: 12/16/17 930	SO = Solid	T = Tissue
		SL = Sludge	WI = Wipe
		W = Water	L = Liquid
		O = Oil	V = Vegetation
		A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 10/24/2017

FSR ID = FSR52769

A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-012-264 Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650	
SAF No.: S18-012	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071	
Project Title: SURV, DECEMBER 2017	**Logbook No.:** HNF-N-506 - 96 / 71	**Ice Chest No.:** N/A	
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A	
Protocol SURV	**Priority:** 15 Days PRIORITY	**Offsite Property No.:** N/A	

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FJK1	N		DEC 14 2017	0700	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

L6580

WC 2619

Relinquished By: M. R Chunn CHPRC	DEC 14 2017	1030	Received By: Jeff Tuckson CHPRC	DEC 14 2017	1030
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: Jeff Tuckson CHPRC	DEC 14 2017	1340	Received By: B. Jorgenson, TARL	B Jorgenson 12-14-17	1340
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: J. Bock, TARL	12-15-17	1445	Received By: Fed Ex 12-15-17		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By:	Fed Ex		Received By: STACY BOONE	12/16/17	930
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 10/24/2017

FSR ID = FSR52734

A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-012-266 Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650	
SAF No.: S18-012	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071	
Project Title: SURV, DECEMBER 2017	**Logbook No.:** HNF-N-506 -96 / 71	**Ice Chest No.:** N/A	
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A	
Protocol SURV	**Priority:** 15 Days PRIORITY	**Offsite Property No.:** N/A	

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FJK2	N	W	DEC 14 2017	0903	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

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L6580
LC2619

December 29, 2017

Relinquished By: Malcom Chunn CHPRC	M.R.C	DEC 14 2017	1030	Received By: Jeff Jackson CHPRC	DEC 14 2017 1030
Relinquished By: Jeff Jackson CHPRC		DEC 14 2017	1340	Received By: B.Jorgenson, TARL	12-14-17 1340
Relinquished By: J. Bock, TARL		12-15-17	1445	Received By: Fed Ex	12-15-17
Relinquished By:	Fed Ex			Received By: SL Boone	12/16/17 930

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 10/24/2017

FSR ID = FSR52735

A-6004-842 (REV 3)

Rev 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-012-302 Page 1 of 1

Collector: IVAN SCHAEFFER CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-012	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: SURV, DECEMBER 2017	**Logbook No.:** HNF-N-506 491 19/2	**Ice Chest No.:** N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A
Protocol SURV	**Priority:** 15 Days PRIORITY	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FH20	N	W	DEC 13 2017	1035	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

6572
WC2613

Relinquished By:	Received By:
IVAN SCHAEFFER CHPRC — Print First and Last Name / Signature / DEC 13 2017 1235 Date/Time	Jeff Tucksen CHPRC — Print First and Last Name / Signature / DEC 13 2017 1235 Date/Time
Jeff Tucksen CHPRC — Print First and Last Name / Signature / DEC 13 2017 1420 Date/Time	B. Jorgenson, TARL — Print First and Last Name / B Jorgenson 12-13-17 1420 Signature / Date/Time
J. Bock, TARL — Print First and Last Name / Signature / 12-15-17 1445 Date/Time	FedEx — Print First and Last Name / Signature / 12-15-17 Date/Time
Fed Ex — Print First and Last Name / Signature / Date/Time	STACY BOONE — Print First and Last Name / Signature / 12/18/17 Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 10/24/2017

FSR ID = FSR52777

A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # S18-012-378 Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-012	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: SURV, DECEMBER 2017	**Logbook No.:** HNF-N-506-97133	**Ice Chest No.:** N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A
Protocol SURV	**Priority:** 15 Days PRIORITY	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FJ05	N	W	12-12-17	1432	1x125-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 02	48 Hours	Cool <=6C

6571
WC2612

Relinquished By: Juan Aguilar /CHPRC — DEC 12 2017 1575	Received By: SSU-1 — DEC 12 2017 1575	Matrix *	
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	S = Soil	DS = Drum Solids
Relinquished By: SSU-1 — DEC 13 2017 0750	Received By: Jeff Lucas /CHPRC — DEC 13 2017 0750	SE = Sediment	DL = Drum Liquid
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	SO = Solid	T = Tissue
Relinquished By: Jeff Lucas /CHPRC — DEC 13 2017 1025	Received By: B.Jorgenson, TARL — 12-13-17 1025	SL = Sludge	WI = Wipe
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	W = Water	L = Liquid
Relinquished By: J. Bock, TARL — 12-15-17 1445	Received By: Fed Ex — 12-15-17	O = Oil	V = Vegetation
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 10/25/2017

FSR ID = FSR52930

A-6004-842 (REV 3)

Fed Ex Recd: 12/16/17 0930 H. Taylor

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 440833
Received By: Stacy Boone	Date Received: 16-DEC-17
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 7710 1357 6055-1c 7710 1419 2230-1c 7710 1083 0144-1c 7710 1082 9585-1c

Suspected Hazard Information	Yes	No	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
COC/Samples marked or classified as radioactive?	✓		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
Is package, COC, and/or Samples marked HAZ?		✓	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:_____
4	Daily check performed and passed on IR temperature gun?	✓			**Temperature Device Serial #: IR3-17** Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	✓			If Yes, Are Encores or Soil Kits present? Yes___ No✓ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes✓ No___ N/A (If unknown, select No) VOA vials free of headspace? Yes✓ No___ N/A Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials MEH Date 12/18/17 Page 1 of 1

GL-CHL-SR-001 Rev 5

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 29−DEC−17

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Qualifier	Qualifier Definition	Department	Fraction
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.		
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Organics	
P	Aroclor target analyte with greater than 25% difference between column analyses.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The analyte was detected in both the associated QC blank and in the sample.	Organics	
E	Concentration exceeds the calibration range of the instrument	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Spike Sample recovery is outside control limits.		
*	Duplicate analysis not within control limits	Inorganics	
>	Result greater than quantifiable range or greater than upper limit of the analysis range	General Chemistry	
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Inorganics	Metals
D	Results are reported from a diluted aliquot of sample.		
E	Reported value is estimated due to interferences. See comment in narrative.	Inorganics	Metals
M	Duplicate precision not met.	Inorganics	Metals
o	Analyte failed to recover within LCS limits (0rganics only)	Organics	
S	Reported value determined by the Method of Standard Additions (MSA)	Inorganics	
T	Spike and/or spike duplicate sample recovery is outside control limits.	Organics	
W	Post−digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Inorganics	
B	The analyte was detected in the associated method blank >/= MDC or >5% sample activity.	Radiological	
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Inorganics	
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	General Chemistry	
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Inorganics	Metals
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	General Chemistry	
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	General Chemistry	
UX	Gamma Spectroscopy−−Uncertain identification	Radiological	

Laboratory Certifications

List of current GEL Certifications as of 29 December 2017

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA180011
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122018−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−17−12
Utah NELAP	SC000122017−25
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL440233
Work Order #: 440233

Product: **Ion Chromatography**
Analytical Method: 9056_ANIONS_IC
Analytical Procedure: GL-GC-E-086 REV# 25
Analytical Batch: 1726992

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
440233001	B3FHT1
440233002	B3FJK1
440233003	B3FJK2
440233004	B3FH20
440233005	B3FJ05
1203940440	Method Blank (MB)
1203940441	Laboratory Control Sample (LCS)
1203940442	440233001(B3FHT1) Sample Duplicate (DUP)
1203940443	440233001(B3FHT1) Post Spike (PS)
1203940448	440233003(B3FJK2) Sample Duplicate (DUP)
1203940449	440233003(B3FJK2) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times
Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
440233004 (B3FH20)	Nitrate and Nitrite	Received 16-DEC-17, out of holding 15-DEC-17
440233005 (B3FJ05)	Nitrate, Nitrite and Ortho-phosphate	Received 16-DEC-17, out of holding 14-DEC-17

Samples (See Below) were received with insufficient time to prep and/or analyze within the recommended method-specified holding time. The analysis was performed as soon as possible by the analyst. The data is qualified.

Sample	Analyte	Value
1203940442 (B3FHT1DUP)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940443 (B3FHT1PS)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940448 (B3FJK2DUP)	Bromide	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
1203940449 (B3FJK2PS)	Bromide	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
440233001 (B3FHT1)	Nitrate and Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
440233003 (B3FJK2)	Chloride	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Fluoride	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Nitrate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17
	Nitrite	Received 16-DEC-17, within holding, analyzed 16-DEC-17, out of holding 16-DEC-17
	Sulfate	Received 16-DEC-17, within holding, analyzed 17-DEC-17, out of holding 16-DEC-17

Sample (See Below) was logged in for this analysis outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
440233002 (B3FJK1)	Nitrate and Nitrite	Logged 16-DEC-17, out of holding 16-DEC-17

Sample Dilutions
The following samples 1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP), 1203940449 (B3FJK2PS), 440233001 (B3FHT1), 440233002 (B3FJK1), 440233003 (B3FJK2), 440233004 (B3FH20) and 440233005 (B3FJ05) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	440233			
	001	003	004	005
Several	10X 1X	10X 1X	10X 1X	100X 10X 1X

Sample Re-analysis
Samples1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP) and 1203940449 (B3FJK2PS) were re-analyzed due to CCV failure. The reanalysis data with passing instrument QC was reported.

Miscellaneous Information

Manual Integrations
Samples 1203940442 (B3FHT1DUP), 1203940443 (B3FHT1PS), 1203940448 (B3FJK2DUP), 1203940449 (B3FJK2PS), 440233001 (B3FHT1), 440233002 (B3FJK1), 440233003 (B3FJK2), 440233004 (B3FH20) and 440233005 (B3FJ05) were manually integrated to correctly position the baseline as set in the calibration standards.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL440233 GEL Work Order: 440233

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Kristen Mizzell**

Date: 29 DEC 2017 **Title: Team Leader**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 29, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S18-012

Client Sample ID:	B3FHT1	Project:	CPRC0S18012
Sample ID:	440233001	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	14-DEC-17 10:45		
Receive Date:	16-DEC-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		8340	67.0	200	ug/L		1	RXB5	12/16/17	1232	1726992	1
Fluoride	B	115	33.0	500	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Nitrate-N	DX	12600	330	1000	ug/L		10	RXB5	12/17/17	0131	1726992	2
Sulfate	D	92300	1330	4000	ug/L		10					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 29, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S18-012

Client Sample ID:	B3FJK1	Project:	CPRC0S18012
Sample ID:	440233002	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	14-DEC-17 07:00		
Receive Date:	16-DEC-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride	B	92.9	67.0	200	ug/L		1	RXB5	12/16/17	2111	1726992	1
Fluoride	U	33.0	33.0	500	ug/L		1					
Nitrate-N	BX	114	33.0	250	ug/L		1					
Nitrite-N	UX	33.0	33.0	250	ug/L		1					
Sulfate	U	133	133	500	ug/L		1					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 29, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S18-012

Client Sample ID:	B3FJK2	Project:	CPRC0S18012
Sample ID:	440233003	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	14-DEC-17 09:03		
Receive Date:	16-DEC-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	121	33.0	500	ug/L		1	RXB5	12/16/17	1359	1726992	1
Nitrite-N	UX	33.0	33.0	250	ug/L		1					
Chloride	D	9330	670	2000	ug/L		10	RXB5	12/17/17	0257	1726992	2
Nitrate-N	DX	8940	330	1000	ug/L		10					
Sulfate	D	99800	1330	4000	ug/L		10					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: December 29, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S18-012

Client Sample ID:	B3FH20	Project:	CPRC0S18012
Sample ID:	440233004	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	13-DEC-17 10:35		
Receive Date:	16-DEC-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	348	33.0	500	ug/L		1	RXB5	12/16/17	2140	1726992	1
Nitrite-N	UX	33.0	33.0	250	ug/L		1					
Chloride	D	11200	670	2000	ug/L		10	RXB5	12/17/17	1039	1726992	2
Nitrate-N	DX	5490	330	1000	ug/L		10					
Sulfate	D	27800	1330	4000	ug/L		10					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: December 29, 2017

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF S18-012

Client Sample ID:	B3FJ05	Project:	CPRC0S18012
Sample ID:	440233005	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-DEC-17 14:32		
Receive Date:	16-DEC-17		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + GW 02 "As Received"												
Bromide		263	67.0	250	ug/L		1	RXB5	12/16/17	2209	1726992	1
Fluoride	B	116	33.0	500	ug/L		1					
Nitrite-N	UX	33.0	33.0	250	ug/L		1					
Nitrate-N	DX	15400	330	1000	ug/L		10	RXB5	12/17/17	1108	1726992	2
Sulfate	D	130000	1330	4000	ug/L		10					
Phosphorus in phosphate	UX	67.0	67.0	500	ug/L		1	MAR1	12/18/17	2347	1726992	3
Chloride	D	124000	6700	20000	ug/L		100	MAR1	12/28/17	1036	1726992	4

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	
3	9056_ANIONS_IC	
4	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: December 29, 2017

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **440233**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 1726992										
QC1203940442 440233001 DUP										
Bromide	B	97.5	B	93.2	ug/L	4.51 ^		(+/-200)	RXB5	12/16/17 13:01
Chloride		8340		8330	ug/L	0.0204		(0%-20%)		
Fluoride	B	115	B	114	ug/L	0.611 ^		(+/-500)		
Nitrate-N	DX	12600	DX	12500	ug/L	0.423		(0%-20%)		12/17/17 02:00
Nitrite-N	U	33.0	U	33.0	ug/L	N/A				12/16/17 13:01
Phosphorus in phosphate	UX	67.0	UX	67.0	ug/L	N/A			MAR1	12/18/17 20:25
Sulfate	D	92300	D	91400	ug/L	0.934		(0%-20%)	RXB5	12/17/17 02:00
QC1203940448 440233003 DUP										
Bromide	B	84.5	B	85.1	ug/L	0.708 ^		(+/-200)		12/16/17 14:27
Chloride	D	9330	D	9230	ug/L	1.07		(0%-20%)		12/17/17 03:26
Fluoride	B	121	B	119	ug/L	1.83 ^		(+/-500)		12/16/17 14:27
Nitrate-N	DX	8940	DX	8930	ug/L	0.101		(0%-20%)		12/17/17 03:26
Nitrite-N	UX	33.0	UX	33.0	ug/L	N/A				12/16/17 14:27
Phosphorus in phosphate	UX	67.0	UX	67.0	ug/L	N/A			MAR1	12/18/17 22:49

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QC Summary

Workorder: **440233**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1726992											
Sulfate		D	99800	D	99700	ug/L	0.123		(0%-20%)	RXB5	12/17/17 03:26
QC1203940441 LCS											
Bromide	1250				1280	ug/L		102	(80%-120%)		12/17/17 00:04
Chloride	5000				4810	ug/L		96.2	(80%-120%)		
Fluoride	2500				2530	ug/L		101	(80%-120%)		
Nitrate-N	2500				2480	ug/L		99.1	(80%-120%)		
Nitrite-N	2500				2570	ug/L		103	(80%-120%)		
Phosphorus in phosphate	1250				1320	ug/L		105	(80%-120%)	MAR1	12/18/17 17:31
Sulfate	10000				10200	ug/L		102	(80%-120%)	RXB5	12/17/17 00:04
QC1203940440 MB											
Bromide				U	67.0	ug/L					12/16/17 23:35
Chloride				U	67.0	ug/L					
Fluoride				U	33.0	ug/L					
Nitrate-N				U	33.0	ug/L					
Nitrite-N				U	33.0	ug/L					
Phosphorus in phosphate				U	67.0	ug/L				MAR1	12/18/17 17:02

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QC Summary

Workorder: **440233**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1726992											
Sulfate				U	133	ug/L				RXB5	12/16/17 23:35
QC1203940443 440233001 PS											
Bromide	1.25	B	0.0975		1.37	mg/L		102	(75%-125%)		12/16/17 13:30
Chloride	5.00		8.34		14.0	mg/L		114	(75%-125%)		
Fluoride	2.50	B	0.115		2.69	mg/L		103	(75%-125%)		
Nitrate-N	2.50	DX	1.26	DX	3.87	mg/L		105	(75%-125%)		12/17/17 02:28
Nitrite-N	2.50	U	0.00		2.56	mg/L		102	(75%-125%)		12/16/17 13:30
Phosphorus in phosphate	1.25	UX	0.00	X	1.20	mg/L		95.9	(75%-125%)	MAR1	12/18/17 20:53
Sulfate	10.0	D	9.23	D	19.8	mg/L		106	(75%-125%)	RXB5	12/17/17 02:28
QC1203940449 440233003 PS											
Bromide	1.25	B	0.0845		1.35	mg/L		101	(75%-125%)		12/16/17 14:56
Chloride	5.00	D	0.933	D	5.87	mg/L		98.7	(75%-125%)		12/17/17 03:55
Fluoride	2.50	B	0.121		2.59	mg/L		98.7	(75%-125%)		12/16/17 14:56
Nitrate-N	2.50	DX	0.894	DX	3.48	mg/L		104	(75%-125%)		12/17/17 03:55
Nitrite-N	2.50	UX	0.00	X	2.57	mg/L		103	(75%-125%)		12/16/17 14:56
Phosphorus in phosphate	1.25	UX	0.00	X	1.26	mg/L		101	(75%-125%)	MAR1	12/18/17 23:18

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QC Summary

Workorder: **440233**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography												
Batch 1726992												
Sulfate	10.0	D	9.98	D	20.8	mg/L		108	(75%-125%)	RXB5	12/17/17	03:55

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.