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Automated Report

Technical Report for

Kerr-McGee Oil & Gas Onshore LP

GWA_EOR_Unit

FID:0 Reg:N/A Freq.:SP

SGS Job Number: DA55944

Sampling Date: 06/05/23



Report to:

Kerr-McGee Oil & Gas Onshore LP
112 High Street
Buffalo, WY 82834
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ATTN: Tanya Cude

Total number of pages in report: 43



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Eric Hoffman

Client Service contact: Parna Payandeh 303-425-6021

Certifications: CO (CO00049), NE (NE-OS-06-04), ND (R-027), UT (NELAP CO00049)
LA (LA150028), TX (T104704511), WY (8TMS-L), HI (CO00049), NJ (CO011), NV (CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

Kerr-McGee Oil & Gas Onshore LP

Job No: DA55944

GWA_EOR_Unit

Project No: FID:0 Reg:N/A Freq.:SP

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
---------------	----------------	---------	----------	------------------	------------------

This report contains results reported as ND = Not detected. The following applies:

Organics ND = Not detected above the MDL

DA55944-1 06/05/23 10:05 JB 06/06/23 AQ Ground Water BW_BEEBE_SEEP SENW_9_IN_65W

DA55944-1F 06/05/23 10:05 JB 06/06/23 AQ Groundwater Filtered BW_BEEBE_SEEP SENW_9_IN_65W

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Kerr-McGee Oil & Gas Onshore LP

Job No: DA55944

Site: GWA_EOR_Unit

Report Date 6/16/2023 5:23:54 AM

On 06/06/2023, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 3 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of DA55944 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260B

Matrix: AQ	Batch ID: V7V4428
-------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

MS Semi-volatiles By Method SW846 8270C

Matrix: AQ	Batch ID: OP23846
-------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA54902-17MS, DA54902-17MSD were used as the QC samples indicated.

GC Volatiles By Method SW846 8015D

Matrix: AQ	Batch ID: GGA2739
-------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846-8015D

Matrix: AQ	Batch ID: OP23848
-------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55946-1MS, DA55946-1MSD were used as the QC samples indicated.

Metals Analysis By Method EPA 200.8

Matrix: AQ	Batch ID: MP37531
-------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55960-1AMS, DA55960-1AMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Calcium, Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

General Chemistry By Method EPA 365.1

Matrix: AQ **Batch ID:** GP34419

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55897-1DUP, DA55897-1MS, DA55897-1MSD were used as the QC samples for the Phosphorus, Total analysis.

General Chemistry By Method EPA300.0

Matrix: AQ **Batch ID:** GP34400

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55926-2MS, DA55926-2MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- DA55944-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

General Chemistry By Method SM 2320B-2011

Matrix: AQ **Batch ID:** GN60348

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55944-1DUP, DA55944-1MS, DA55944-1MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Matrix: AQ **Batch ID:** GN60349

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** GN60350

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2510B-2011

Matrix: AQ **Batch ID:** GP34410

- Sample(s) DA55975-1DUP were used as the QC samples for the Specific Conductivity analysis.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN60375

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55975-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

General Chemistry By Method SM 2540D-2011

Matrix: AQ **Batch ID:** GN60362

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA55942-1DUP were used as the QC samples for the Solids, Total Suspended analysis.

General Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ

Batch ID: GN60352

- The data for SM4500HB+-2011/9040C meets quality control requirements.
- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: DA55944-1 Analysis performed past recommended hold time.

Field Data By Method FIELD

Matrix: AQ

Batch ID: R60921

- The data for FIELD meets quality control requirements.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: DA55944
Account: Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit
Collected: 06/05/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

DA55944-1 BW_BEEBE_SEEP SENW_9_IN_65W

TPH-DRO (C10-C28)	2.20	0.20	0.19	mg/l	SW846-8015D
Fluoride	0.78	0.20		mg/l	EPA300.0
Chloride	212	13		mg/l	EPA300.0
Bromide	0.30	0.10		mg/l	EPA300.0
Nitrogen, Nitrate	1.0	0.020		mg/l	EPA300.0
Sulfate	194	13		mg/l	EPA300.0
Alkalinity, Bicarbonate as CaCO3	194	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	194	5.0		mg/l	SM 2320B-2011
Phosphorus, Total	0.70	0.010		mg/l	EPA 365.1
Solids, Total Dissolved	828	10		mg/l	SM 2540C-2011
Solids, Total Suspended	135	5.0		mg/l	SM 2540D-2011
Specific Conductivity	1460	1.0		umhos/cm	SM 2510B-2011
pH ^a	8.16			su	SM4500HB+ -2011/9040C
pH (Field)	8.17			su	FIELD
Temperature (Field)	17.8			Deg. C	FIELD

DA55944-1F BW_BEEBE_SEEP SENW_9_IN_65W

Barium	0.128	0.0020		mg/l	EPA 200.8
Boron	0.206	0.040		mg/l	EPA 200.8
Calcium	84.3	2.0		mg/l	EPA 200.8
Iron	0.0289	0.020		mg/l	EPA 200.8
Magnesium	25.7	0.50		mg/l	EPA 200.8
Manganese	0.0218	0.0010		mg/l	EPA 200.8
Potassium	8.48	1.0		mg/l	EPA 200.8
Selenium	0.0011	0.00040		mg/l	EPA 200.8
Sodium	130	2.5		mg/l	EPA 200.8
Strontium	1.11	0.10		mg/l	EPA 200.8

(a) Analysis performed past recommended hold time.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W	Date Sampled: 06/05/23
Lab Sample ID: DA55944-1	Date Received: 06/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: GWA_EOR_Unit	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V89149.D	1	06/07/23 17:29	MM	n/a	n/a	V7V4428
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.60	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	
	m,p-Xylene	ND	1.0	0.96	ug/l	
95-47-6	o-Xylene	ND	1.0	0.60	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		70-130%
17060-07-0	1,2-Dichloroethane-D4	112%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
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Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W Lab Sample ID: DA55944-1 Matrix: AQ - Ground Water Method: SW846 8270C SW846 3510C Project: GWA_EOR_Unit	Date Sampled: 06/05/23 Date Received: 06/06/23 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G166085.D	1	06/08/23 15:31	TH	06/07/23 08:00	OP23846	E1G3451
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
91-20-3	Naphthalene	ND	1.9	0.76	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
4165-60-0	Nitrobenzene-d5	87%		26-130%		
321-60-8	2-Fluorobiphenyl	76%		20-130%		
1718-51-0	Terphenyl-d14	57%		21-155%		

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W Lab Sample ID: DA55944-1 Matrix: AQ - Ground Water Method: SW846 8015D Project: GWA_EOR_Unit	Date Sampled: 06/05/23 Date Received: 06/06/23 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA61321.D	1	06/07/23 18:52	MB	n/a	n/a	GGA2739
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.040	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	110%		60-140%		

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

4.1
4

Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W Lab Sample ID: DA55944-1 Matrix: AQ - Ground Water Method: SW846-8015D SW846 3510C Project: GWA_EOR_Unit	Date Sampled: 06/05/23 Date Received: 06/06/23 Percent Solids: n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LW12139.D	1	06/09/23 11:56	JB	06/07/23 10:00	OP23848	GLW459
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	2.20	0.20	0.19	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	77%		10-131%		

ND = Not detected RL = Reporting Limit E = Indicates value exceeds calibration range	MDL = Method Detection Limit J = Indicates an estimated value B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
--	--

4.1
4

Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W	Date Sampled: 06/05/23
Lab Sample ID: DA55944-1	Date Received: 06/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: GWA_EOR_Unit	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
300.0							
Fluoride	0.78	0.20	mg/l	2	06/06/23 16:01	DM	EPA300.0
Chloride	212	13	mg/l	25	06/06/23 16:15	DM	EPA300.0
Nitrogen, Nitrite ^a	< 0.10	0.10	mg/l	25	06/06/23 16:15	DM	EPA300.0
Bromide	0.30	0.10	mg/l	2	06/06/23 16:01	DM	EPA300.0
Nitrogen, Nitrate	1.0	0.020	mg/l	2	06/06/23 16:01	DM	EPA300.0
Sulfate	194	13	mg/l	25	06/06/23 16:15	DM	EPA300.0
Alkalinity, Bicarbonate as CaC	194	5.0	mg/l	1	06/07/23	KH	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/07/23	KH	SM 2320B-2011
Alkalinity, Total as CaCO ₃	194	5.0	mg/l	1	06/07/23	KH	SM 2320B-2011
Phosphorus, Total	0.70	0.010	mg/l	1	06/08/23 13:50	MB	EPA 365.1
Solids, Total Dissolved	828	10	mg/l	1	06/08/23 08:00	JW	SM 2540C-2011
Solids, Total Suspended	135	5.0	mg/l	1	06/08/23	KH	SM 2540D-2011
Specific Conductivity	1460	1.0	umhos/cm	1	06/08/23 13:00	JW	SM 2510B-2011
pH ^b	8.16		su	1	06/07/23	KH	SM4500HB+ -2011/9040C

Field Parameters

Temperature (Field)	17.8		Deg. C	1	06/07/23	SUB	FIELD
pH (Field)	8.17		su	1	06/07/23	SUB	FIELD

(a) Elevated detection limit due to matrix interference.

(b) Analysis performed past recommended hold time.

RL = Reporting Limit

4.1
4

Report of Analysis

Client Sample ID: BW_BEEBE_SEEP SENW_9_IN_65W Lab Sample ID: DA55944-1F Matrix: AQ - Groundwater Filtered Project: GWA_EOR_Unit	Date Sampled: 06/05/23 Date Received: 06/06/23 Percent Solids: n/a
--	---

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	0.128	0.0020	mg/l	1	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Boron	0.206	0.040	mg/l	1	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Calcium	84.3	2.0	mg/l	5	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Iron	0.0289	0.020	mg/l	1	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Magnesium	25.7	0.50	mg/l	5	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Manganese	0.0218	0.0010	mg/l	1	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Potassium	8.48	1.0	mg/l	5	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Selenium	0.0011	0.00040	mg/l	1	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Sodium	130	2.5	mg/l	5	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²
Strontium	1.11	0.10	mg/l	5	06/13/23	06/14/23 DU	EPA 200.8 ¹	EPA 200.8 ²

(1) Instrument QC Batch: MA16629

(2) Prep QC Batch: MP37531

RL = Reporting Limit

4.2
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.acctest.com

Table with 2 columns: Bottle Order Control #, FED-EX Tracking #; SGS Quote #, SGS Job # DA55944

Main form containing Client/Reporting Information, Project Information, Requested Analysis, Matrix Codes, Collection table, Data Deliverable Information, and Sample Custody sections.

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DA55944: Chain of Custody

Page 1 of 4



SGS Sample Receipt Summary

Job Number: DA55944

Client: ABSAROKA

Project: GWA

Date / Time Received: 6/6/2023 3:00:00 PM

Delivery Method: CO

Airbill #s:

Cooler Temps (Initial/Adjusted): #1: (3/3):

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|----------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Thermometer ID: | IR Gun; | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

Y or N N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

DA55944: Chain of Custody

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5.1
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Problem Resolution

Page 2 of 2

Job Number: DA55944

CSR: _____

Response Date: _____

Response:

5.1

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DA55944: Chain of Custody
Page 3 of 4

Job Change Order: DA55944

Requested Date: 6/7/2023 Received Date: 6/6/2023
Account Name: Kerr-McGee Oil & Gas Onshore L Due Date: 6/7/2023
Project Description: GWA_EOR_Unit Deliverable: COMMBN
C/O Initiated By: SHALIN_WI PM: PP TAT (Days): 1

Sample #: DA55944-ALL Dept: LOGIN

Client ID: TAT: 1

Change: Please revise ID to- SENW_9_1N_65W

DA55944: Chain of Custody
Page 4 of 4

Above Changes Per: Tanya Cude Date/Time: 6/7/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V4428-MB	7V89143.D	1	06/07/23	MM	n/a	n/a	V7V4428

The QC reported here applies to the following samples:

Method: SW846 8260B

DA55944-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	1.0	0.96	ug/l	
95-47-6	o-Xylene	ND	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	97% 70-130%
17060-07-0	1,2-Dichloroethane-D4	99% 70-130%
2037-26-5	Toluene-D8	101% 70-130%
460-00-4	4-Bromofluorobenzene	97% 70-130%

6.1.1
6

Blank Spike/Blank Spike Duplicate Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V4428-BS	7V89140A.D	1	06/07/23	MM	n/a	n/a	V7V4428
V7V4428-BSD	7V89141.D	1	06/07/23	MM	n/a	n/a	V7V4428

The QC reported here applies to the following samples:

Method: SW846 8260B

DA55944-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	55.5	111	56.3	113	1	70-130/30
100-41-4	Ethylbenzene	50	56.0	112	56.5	113	1	70-130/30
108-88-3	Toluene	50	57.1	114	56.7	113	1	70-130/30
	m,p-Xylene	100	110	110	109	109	1	70-130/30
95-47-6	o-Xylene	50	56.2	112	55.7	111	1	70-130/30
1330-20-7	Xylene (total)	150	166	111	164	109	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	98%	70-130%
2037-26-5	Toluene-D8	102%	102%	70-130%
460-00-4	4-Bromofluorobenzene	98%	98%	70-130%

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA55944
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23846-MB	1G166078A.D	1	06/08/23	TH	06/07/23	OP23846	E1G3451

The QC reported here applies to the following samples:

Method: SW846 8270C

DA55944-1

CAS No.	Compound	Result	RL	MDL	Units	Q
91-20-3	Naphthalene	ND	2.0	0.80	ug/l	

CAS No.	Surrogate Recoveries	Limits	
4165-60-0	Nitrobenzene-d5	90%	26-130%
321-60-8	2-Fluorobiphenyl	83%	20-130%
1718-51-0	Terphenyl-d14	97%	21-155%

7.1.1

7

Blank Spike Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23846-BS	1G166079A.D	1	06/08/23	TH	06/07/23	OP23846	E1G3451

The QC reported here applies to the following samples:

Method: SW846 8270C

DA55944-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
91-20-3	Naphthalene	50	40.3	81	32-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	91%	26-130%
321-60-8	2-Fluorobiphenyl	82%	20-130%
1718-51-0	Terphenyl-d14	96%	21-155%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23846-MS	1G166081A.D	1	06/08/23	TH	06/07/23	OP23846	E1G3451
OP23846-MSD	1G166082A.D	1	06/08/23	TH	06/07/23	OP23846	E1G3451
DA54902-17	1G166083A.D	1	06/08/23	TH	06/07/23	OP23846	E1G3451

The QC reported here applies to the following samples:

Method: SW846 8270C

DA55944-1

CAS No.	Compound	DA54902-17 Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
91-20-3	Naphthalene	ND	100	81.3	81	100	77.9	78	4	16-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA54902-17 Limits	
4165-60-0	Nitrobenzene-d5	87%	83%	84%	26-130%
321-60-8	2-Fluorobiphenyl	81%	77%	80%	20-130%
1718-51-0	Terphenyl-d14	96%	95%	90%	21-155%

* = Outside of Control Limits.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA55944
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2739-MB	GA61314.D	1	06/07/23	MB	n/a	n/a	GGA2739

The QC reported here applies to the following samples:

Method: SW846 8015D

DA55944-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.040	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	111% 60-140%

8.1.1

8

Blank Spike/Blank Spike Duplicate Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2739-BS	GA61311.D	1	06/07/23	MB	n/a	n/a	GGA2739
GGA2739-BSD	GA61312.D	1	06/07/23	MB	n/a	n/a	GGA2739

The QC reported here applies to the following samples:

Method: SW846 8015D

DA55944-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	2.2	1.90	86	1.93	88	2	64-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
120-82-1	1,2,4-Trichlorobenzene	116%	120%	60-140%

8.2.1
8

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA55944
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23848-MB	LW12130.D	1	06/09/23	JB	06/07/23	OP23848	GLW459

The QC reported here applies to the following samples:

Method: SW846-8015D

DA55944-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.19	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	83% 10-131%

9.1.1

9

Blank Spike Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23848-BS	LW12131.D	1	06/09/23	JB	06/07/23	OP23848	GLW459

The QC reported here applies to the following samples:

Method: SW846-8015D

DA55944-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	5.63	113	20-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	10-131%

9.2.1
9

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA55944
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23848-MS	LW12132.D	1	06/09/23	JB	06/07/23	OP23848	GLW459
OP23848-MSD	LW12133.D	1	06/09/23	JB	06/07/23	OP23848	GLW459
DA55946-1	LW12148.D	1	06/09/23	JB	06/07/23	OP23848	GLW459

The QC reported here applies to the following samples:

Method: SW846-8015D

DA55944-1

CAS No.	Compound	DA55946-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	5	3.89	78	5	3.74	75	4	20-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA55946-1	Limits
84-15-1	o-Terphenyl	94%	90%	86%	10-131%

9.3.1
9

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA55944
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

QC Batch ID: MP37531
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 06/13/23

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.52	13		
Antimony	0.40	.01	.3		
Arsenic	0.20	.05	.05		
Barium	2.0	.096	.25	0.12	<2.0
Beryllium	0.20	.077	.1		
Boron	40	18	20	1.7	<40
Cadmium	0.10	.03	.04		
Calcium	400	25	100	-3.1	<400
Chromium	2.0	.087	.25		
Cobalt	0.20	.04	.05		
Copper	2.0	.05	.81		
Iron	20	1.6	10	3.2	<20
Lead	0.50	.094	.13		
Magnesium	100	10	25	6.5	<100
Manganese	1.0	.079	.51	0.15	<1.0
Molybdenum	1.0	.037	.27		
Nickel	2.0	.098	.35		
Phosphorus	60	7.6	25		
Potassium	200	2	50	-16	<200
Selenium	0.40	.05	.1	0.038	<0.40
Silver	0.10	.0081	.025		
Sodium	500	10	130	2.0	<500
Strontium	20	.1	5	0.0053	<20
Thallium	0.20	.032	.05		
Tin	10	.22	2.5		
Titanium	2.0	.05	.37		
Uranium	0.20	.015	.05		
Vanadium	1.0	.14	.2		
Zinc	10	.05	2.1		

Associated samples MP37531: DA55944-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

10.1.1
10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA55944
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

QC Batch ID: MP37531
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 06/13/23

Metal	DA55960-1A Original MS	Spike ICPMS5	lot % Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	43.3	472	400	107.2 70-130
Beryllium				
Boron	352	784	400	108.0 70-130
Cadmium				
Calcium	69300	72400	5000	62.0 (a) 70-130
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	52.5	1060	1000	100.8 70-130
Lead	anr			
Magnesium	7350	11700	5000	87.0 70-130
Manganese	30.6	230	200	99.7 70-130
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	15500	19000	5000	70.0 70-130
Selenium	1.1	201	200	100.0 70-130
Silver	anr			
Sodium	111000	112000	5000	20.0 (a) 70-130
Strontium	351	461	100	110.0 70-130
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium	anr			
Zinc	anr			

Associated samples MP37531: DA55944-1F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

10.1.2 10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA55944
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

QC Batch ID: MP37531
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 06/13/23

Metal	DA55960-1A Original MSD	SpikeLot ICPMS5	% Rec	MSD RPD	QC Limit	
Aluminum	anr					
Antimony						
Arsenic	anr					
Barium	43.3	468	400	106.2	0.9	20
Beryllium						
Boron	352	793	400	110.3	1.1	20
Cadmium						
Calcium	69300	73400	5000	82.0	1.4	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	52.5	1060	1000	100.8	0.0	20
Lead	anr					
Magnesium	7350	11800	5000	89.0	0.9	20
Manganese	30.6	228	200	98.7	0.9	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	15500	19600	5000	82.0	3.1	20
Selenium	1.1	201	200	100.0	0.0	20
Silver	anr					
Sodium	111000	109000	5000	-40.0(a)	2.7	20
Strontium	351	456	100	105.0	1.1	20
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium	anr					
Zinc	anr					

Associated samples MP37531: DA55944-1F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

10.1.2 10

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA55944
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_EOR_Unit

QC Batch ID: MP37531
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 06/13/23

Metal	BSP Result	SpikeLot ICPMS5	% Rec	QC Limits
Aluminum	anr			
Antimony				
Arsenic	anr			
Barium	416	400	104.0	85-115
Beryllium				
Boron	440	400	110.0	85-115
Cadmium				
Calcium	5120	5000	102.4	85-115
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	1040	1000	104.0	85-115
Lead	anr			
Magnesium	5040	5000	100.8	85-115
Manganese	204	200	102.0	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	4890	5000	97.8	85-115
Selenium	206	200	103.0	85-115
Silver	anr			
Sodium	4980	5000	99.6	85-115
Strontium	103	100	103.0	85-115
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium	anr			
Zinc	anr			

Associated samples MP37531: DA55944-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

10.1.3 10

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA55944
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN60349	5.0	0.0	mg/l	100	100	100.0	90-110%
Alkalinity, Carbonate	GN60350	5.0	0.0	mg/l	100	100	100.0	90-110%
Alkalinity, Total as CaCO3	GN60348	5.0	0.0	mg/l	100	100	100.0	90-110%
Bromide	GP34400/GN60346	0.050	0.0	mg/l	0.5	0.515	103.0	90-110%
Chloride	GP34400/GN60346	0.50	0.0	mg/l	5	5.10	102.0	90-110%
Fluoride	GP34400/GN60346	0.10	0.0	mg/l	1	1.01	101.0	90-110%
Nitrogen, Nitrate	GP34400/GN60346	0.010	0.0	mg/l	0.1	0.0989	98.9	90-110%
Nitrogen, Nitrite	GP34400/GN60346	0.0040	0.0	mg/l	0.05	0.0541	108.2	90-110%
Phosphorus, Total	GP34419/GN60383	0.010	0.0	mg/l	0.2	0.195	97.5	90-110%
Solids, Total Dissolved	GN60375			mg/l	250	249	99.6	90-110%
Solids, Total Dissolved	GN60375	10	0.0	mg/l	250	249	99.6	90-110%
Solids, Total Dissolved	GN60375	10	0.0	mg/l				
Solids, Total Suspended	GN60362	5.0	0.0	mg/l	500	489	97.8	90-110%
Specific Conductivity	GP34410/GN60368			umhos/cm	10000	1020	101.9	90-110%
Sulfate	GP34400/GN60346	0.50	0.0	mg/l	5	5.10	102.0	90-110%

Associated Samples:

Batch GN60348: DA55944-1
Batch GN60349: DA55944-1
Batch GN60350: DA55944-1
Batch GN60362: DA55944-1
Batch GN60375: DA55944-1
Batch GP34400: DA55944-1
Batch GP34410: DA55944-1
Batch GP34419: DA55944-1
(*) Outside of QC limits

11.1
11

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA55944
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN60348	DA55944-1	mg/l	194	195	0.8	0-20%
Phosphorus, Total	GP34419/GN60383	DA55897-1	mg/l	0.030	0.030	0.0	0-20%
Solids, Total Dissolved	GN60375	DA55975-1	mg/l	748	737	1.4	0-5.44%
Solids, Total Dissolved	GN60375	DA55975-1	mg/l	748	737	1.4	0-5.44%
Solids, Total Suspended	GN60362	DA55942-1	mg/l	106	110	4.0	0-5.44%
Specific Conductivity	GP34410/GN60368	DA55975-1	umhos/cm	1360	1370	0.1	0-20%

Associated Samples:

Batch GN60348: DA55944-1
Batch GN60362: DA55944-1
Batch GN60375: DA55944-1
Batch GP34410: DA55944-1
Batch GP34419: DA55944-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA55944
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN60348	DA55944-1	mg/l	194	100	278	84.0	80-120%
Bromide	GP34400/GN60346	DA55926-2	mg/l	0.18	12.5	13.6	108.8	80-120%
Bromide	GP34400/GN60346	DA55926-2	mg/l	0.63 U	12.5	13.6	108.8	80-120%
Chloride	GP34400/GN60346	DA55926-2	mg/l	54.1	125	189	107.9	80-120%
Chloride	GP34400/GN60346	DA55926-2	mg/l	55.3	125	189	107.9	80-120%
Fluoride	GP34400/GN60346	DA55926-2	mg/l	1.3 U	25	26.6	106.4	80-120%
Fluoride	GP34400/GN60346	DA55926-2	mg/l	0.25 U	25	26.6	106.4	80-120%
Nitrogen, Nitrate	GP34400/GN60346	DA55926-2	mg/l	6.9	2.5	9.5	104.0	80-120%
Nitrogen, Nitrite	GP34400/GN60346	DA55926-2	mg/l	0.015 U	1.25	1.4	112.0	80-120%
Phosphorus, Total	GP34419/GN60383	DA55897-1	mg/l	0.030	0.2	0.23	100.0	90-110%
Sulfate	GP34400/GN60346	DA55926-2	mg/l	21.1	125	153	105.5	80-120%
Sulfate	GP34400/GN60346	DA55926-2	mg/l	19.9	125	153	105.5	80-120%

Associated Samples:

Batch GN60348: DA55944-1

Batch GP34400: DA55944-1

Batch GP34419: DA55944-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA55944
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_EOR_Unit

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN60348	DA55944-1	mg/l	194	100	275	0.9	20%
Bromide	GP34400/GN60346	DA55926-2	mg/l	0.18	12.5	13.2	3.0	20%
Bromide	GP34400/GN60346	DA55926-2	mg/l	0.63 U	12.5	13.2	3.0	20%
Chloride	GP34400/GN60346	DA55926-2	mg/l	54.1	125	186	1.6	20%
Chloride	GP34400/GN60346	DA55926-2	mg/l	55.3	125	186	1.6	20%
Fluoride	GP34400/GN60346	DA55926-2	mg/l	1.3 U	25	26.0	2.3	20%
Fluoride	GP34400/GN60346	DA55926-2	mg/l	0.25 U	25	26.0	2.3	20%
Nitrogen, Nitrate	GP34400/GN60346	DA55926-2	mg/l	6.9	2.5	9.5	0.0	20%
Nitrogen, Nitrite	GP34400/GN60346	DA55926-2	mg/l	0.015 U	1.25	1.4	0.0	20%
Phosphorus, Total	GP34419/GN60383	DA55897-1	mg/l	0.030	0.2	0.23	0.0	20%
Sulfate	GP34400/GN60346	DA55926-2	mg/l	21.1	125	150	2.0	20%
Sulfate	GP34400/GN60346	DA55926-2	mg/l	19.9	125	150	2.0	20%

Associated Samples:

Batch GN60348: DA55944-1

Batch GP34400: DA55944-1

Batch GP34419: DA55944-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits