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Automated Report

Technical Report for

Kerr-McGee Oil & Gas Onshore LP

GWA_Henrickson_Water_Well

FID:752520 Reg:Vol. Freq.:SP

SGS Job Number: DA13403

Sampling Date: 02/06/19



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Total number of pages in report: 53



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.

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Certifications: CO (CO00049), ID (CO00049), NE (NE-OS-06-04), ND (R-027), NJ (CO007), OK (D9942)
UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY (8TMS-L)

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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: DA13403

GWA_Henrickson_Water_Well
Project No: FID:752520 Reg:Vol. Freq.:SP

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
DA13403-1	02/06/19	12:32 JB	02/07/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA13403-1A	02/06/19	12:32 JB	02/07/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA13403-1B	02/06/19	12:32 JB	02/07/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA13403-1F	02/06/19	12:32 JB	02/07/19	AQ	Groundwater Filtered	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

CASE NARRATIVE / CONFORMANCE SUMMARY

2

Client: Kerr-McGee Oil & Gas Onshore LP

Job No DA13403

Site: GWA_Henrickson_Water_Well

Report Date 2/19/2019 4:29:32 PM

On 02/07/2019, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of DA13403 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: V7V2991

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA13348-1MS, DA13348-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike duplicate (MSD) recovery(s) of Toluene are outside control limits. Probable cause due to matrix interference.

GC Volatiles By Method RSK175 MOD

Matrix: AQ

Batch ID: GFB1049

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA12301-5MS, DA12301-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- DA13403-1A: The pH of the sample was >2 at time of analysis.

GC Volatiles By Method SW846 8015B

Matrix: AQ

Batch ID: GGB2307

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA12301-21MS, DA12301-21MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

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

Matrix: AQ

Batch ID: OP17440

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) DA12301-3MS, DA12301-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Tuesday, February 19, 2019

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Metals Analysis By Method EPA 200.7

Matrix: AQ

Batch ID: MP27325

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13400-1MSD, DA13400-1MS, DA13400-1MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Manganese are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike (MS) recovery(s) of Boron, Iron, Sodium, Strontium, Potassium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Metals Analysis By Method EPA 200.8

Matrix: AQ

Batch ID: MP27323

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13342-31FAMS, DA13342-31FAMSD were used as the QC samples for the metals analysis.

General Chemistry By Method EPA 300.0/SW846 9056

Matrix: AQ

Batch ID: R46628

- The data for EPA 300.0/SW846 9056 meets quality control requirements.
- DA13403-1 for Nitrogen, Nitrate + Nitrite: Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

General Chemistry By Method EPA 365.1

Matrix: AQ

Batch ID: GP24561

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13311-1MS, DA13388-1DUP were used as the QC samples for the Phosphorus, Total analysis.

General Chemistry By Method EPA300.0/SW846 9056A

Matrix: AQ

Batch ID: GP24543

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13356-2MS, DA13356-2MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- DA13403-1 for Nitrogen, Nitrate and Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

General Chemistry By Method HACH IRB-BART

Matrix: AQ

Batch ID: MB1143

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

General Chemistry By Method HACH SLYM-BART

Matrix: AQ

Batch ID: MB1144

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

General Chemistry By Method HACH SRB-BART

Matrix: AQ **Batch ID:** MB1145

- 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 2320B-2011

Matrix: AQ **Batch ID:** GN46068

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

Matrix: AQ **Batch ID:** GN46069

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

Matrix: AQ **Batch ID:** GN46070

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13296-1MS, DA13296-1MSD, DA13369-1DUP were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

General Chemistry By Method SM 2510B-2011

Matrix: AQ **Batch ID:** GP24562

- Sample(s) DA13369-1DUP were used as the QC samples for the Specific Conductivity analysis.

General Chemistry By Method SM 2540C-2011

Matrix: AQ **Batch ID:** GN46071

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA13388-2DUP were used as the QC samples for the Solids, Total Dissolved analysis.

General Chemistry By Method SM1030E-2011

Matrix: AQ **Batch ID:** GN46087

- The data for SM1030E-2011 meets quality control requirements.

General Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ **Batch ID:** GN46064

- Sample(s) DA13369-1DUP were used as the QC samples for the pH analysis.
- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: DA13403-1 Analysis performed past recommended hold time.

Field Data By Method FIELD

Matrix: AQ **Batch ID:** R46582

- 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: DA13403
 Account: Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well
 Collected: 02/06/19

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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DA13403-1 BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Benzene	2.5	1.0	0.50	ug/l	SW846 8260B
TPH-GRO (C6-C10)	0.0727	0.050	0.050	mg/l	SW846 8015B
Alkalinity, Bicarbonate as CaCO3	394	5.0		mg/l	SM 2320B-2011
Alkalinity, Carbonate	11.2	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3	406	5.0		mg/l	SM 2320B-2011
Bromide	0.48	0.10		mg/l	EPA300.0/SW846 9056A
Cation Anion Balance	0.68			%	SM1030E-2011
Chloride	47.2	2.5		mg/l	EPA300.0/SW846 9056A
Fluoride	1.7	0.20		mg/l	EPA300.0/SW846 9056A
Phosphorus, Total	0.023	0.010		mg/l	EPA 365.1
Solids, Total Dissolved	533	10		mg/l	SM 2540C-2011
Specific Conductivity	873	1.0		umhos/cm	SM 2510B-2011
Sulfate	2.5	1.0		mg/l	EPA300.0/SW846 9056A
pH ^a	8.50			su	SM4500HB+ -2011/9040C
Temperature (Field)	14.96			Deg. C	FIELD
pH (Field)	8.33			su	FIELD
Oxygen, Dissolved (Field)	0.01			mg/l	FIELD
Specific Conductivity (Field)	996.8	0.50		umhos/cm	FIELD
Turbidity	0.02			NTU	FIELD

DA13403-1A BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Methane ^b	5.97	0.020	0.010	mg/l	RSK175 MOD
Ethane ^b	0.734	0.0016	0.00080	mg/l	RSK175 MOD
Propane ^b	0.413	0.0022	0.0011	mg/l	RSK175 MOD

DA13403-1B BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Iron-Related Bacteria	2200	25		CFU/ml	HACH IRB-BART
Slime Forming Bacteria	500	500		CFU/ml	HACH SLYM-BART
Sulfate Reducing Bacteria	6000	200		CFU/ml	HACH SRB-BART

DA13403-1F BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Barium	0.0742	0.0040		mg/l	EPA 200.8
Boron	0.104	0.050		mg/l	EPA 200.7
Calcium	4.18	0.40		mg/l	EPA 200.7
Magnesium	0.794	0.20		mg/l	EPA 200.7
Manganese	0.0143	0.0050		mg/l	EPA 200.7
Potassium	1.73	1.0		mg/l	EPA 200.7
Sodium	214	0.40		mg/l	EPA 200.7
Strontium	0.130	0.0050		mg/l	EPA 200.7

Summary of Hits

Page 2 of 2

Job Number: DA13403
Account: Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well
Collected: 02/06/19



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

- (a) Analysis performed past recommended hold time.
(b) The pH of the sample was > 2 at time of analysis.



Wheat Ridge, CO

Section 4

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	02/06/19
Lab Sample ID:	DA13403-1	Date Received:	02/07/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	GWA_Henrickson_Water_Well		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V58625.D	1	02/07/19 19:48	MB	n/a	n/a	V7V2991
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	2.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		70-130%
17060-07-0	1,2-Dichloroethane-D4	92%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

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_7_3N_66W_HENRICKSON SWSE_7_3N_66W					Date Sampled:	02/06/19
Lab Sample ID:	DA13403-1					Date Received:	02/07/19
Matrix:	AQ - Ground Water					Percent Solids:	n/a
Method:	SW846 8015B						
Project:	GWA_Henrickson_Water_Well						

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	GB49022.D	1	02/09/19 18:48	BB	n/a	n/a	GGB2307

Run #1	Purge Volume
Run #2	5.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.0727	0.050	0.050	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%		

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

Report of Analysis

Page 1 of 1

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W		
Lab Sample ID:	DA13403-1	Date Sampled:	02/06/19
Matrix:	AQ - Ground Water	Date Received:	02/07/19
Method:	SW846-8015B SW846 3510C	Percent Solids:	n/a
Project:	GWA_Henrickson_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD62540.D	1	02/11/19 13:07	RB	02/09/19	OP17440	GFD2558
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

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_7_3N_66W_HENRICKSON SWSE_7_3N_66W
 Lab Sample ID: DA13403-1
 Matrix: AQ - Ground Water
 Project: GWA_Henrickson_Water_Well

Date Sampled: 02/06/19
 Date Received: 02/07/19
 Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	394	5.0	mg/l	1	02/11/19	PV	SM 2320B-2011
Alkalinity, Carbonate	11.2	5.0	mg/l	1	02/11/19	PV	SM 2320B-2011
Alkalinity, Total as CaCO ₃	406	5.0	mg/l	1	02/11/19	PV	SM 2320B-2011
Bromide	0.48	0.10	mg/l	2	02/07/19 15:04	JB	EPA300.0/SW846 9056A
Cation Anion Balance	0.68		%	1	02/13/19	KM	SM1030E-2011
Chloride	47.2	2.5	mg/l	5	02/07/19 15:17	JB	EPA300.0/SW846 9056A
Fluoride	1.7	0.20	mg/l	2	02/07/19 15:04	JB	EPA300.0/SW846 9056A
Nitrogen, Nitrate ^a	< 0.020	0.020	mg/l	2	02/07/19 15:04	JB	EPA300.0/SW846 9056A
Nitrogen, Nitrate + Nitrite ^b	< 0.040	0.040	mg/l	1	02/07/19 15:17	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.020	0.020	mg/l	5	02/07/19 15:17	JB	EPA300.0/SW846 9056A
Phosphorus, Total	0.023	0.010	mg/l	1	02/09/19 12:01	AM	EPA 365.1
Solids, Total Dissolved	533	10	mg/l	1	02/11/19	SK	SM 2540C-2011
Specific Conductivity	873	1.0	umhos/cm	1	02/11/19 12:30	PV	SM 2510B-2011
Sulfate	2.5	1.0	mg/l	2	02/07/19 15:04	JB	EPA300.0/SW846 9056A
pH ^c	8.50		su	1	02/11/19 12:00	PV	SM4500HB+ -2011/9040C

Field Parameters

Oxygen, Dissolved (Field)	0.01		mg/l	1	02/11/19	SUB	FIELD
Redox Potential Vs H ₂	-136.3		mv	1	02/11/19	SUB	FIELD
Specific Conductivity (Field)	996.8	0.50	umhos/cm	1	02/11/19	SUB	FIELD
Temperature (Field)	14.96		Deg. C	1	02/11/19	SUB	FIELD
Turbidity	0.02		NTU	1	02/11/19	SUB	FIELD
pH (Field)	8.33		su	1	02/11/19	SUB	FIELD

(a) Elevated detection limit due to matrix interference.

(b) Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

(c) Analysis performed past recommended hold time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	02/06/19
Lab Sample ID:	DA13403-1A	Date Received:	02/07/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSK175 MOD		
Project:	GWA_Henrickson_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	FB23126.D	1	02/07/19 18:03	BB	n/a	n/a	GFB1049
Run #2 ^a	FB23127.D	25	02/07/19 18:23	BB	n/a	n/a	GFB1049

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	18.5 Deg. C
Run #2	39.0 ml	4.0 ml	500 ul	18.5 Deg. C

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5.97 ^b	0.020	0.010	mg/l	
74-84-0	Ethane	0.734	0.0016	0.00080	mg/l	
74-98-6	Propane	0.413	0.0022	0.0011	mg/l	

(a) The pH of the sample was > 2 at time of analysis.

(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

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_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	02/06/19
Lab Sample ID:	DA13403-1B	Date Received:	02/07/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	GWA_Henrickson_Water_Well		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron-Related Bacteria	2200	25	CFU/ml	1	02/11/19 13:30	SK	HACH IRB-BART
Slime Forming Bacteria	500	500	CFU/ml	1	02/11/19 13:30	SK	HACH SLYM-BART
Sulfate Reducing Bacteria	6000	200	CFU/ml	1	02/11/19 13:30	SK	HACH SRB-BART

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	02/06/19
Lab Sample ID:	DA13403-1F	Date Received:	02/07/19
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	GWA_Henrickson_Water_Well		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analized By	Method	Prep Method
Barium	0.0742	0.0040	mg/l	2	02/08/19	02/12/19 EP	EPA 200.8 ²	EPA 200.8 ⁴
Boron	0.104	0.050	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Calcium	4.18	0.40	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Iron	< 0.010	0.010	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Magnesium	0.794	0.20	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Manganese	0.0143	0.0050	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Potassium	1.73	1.0	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵
Selenium	< 0.00080	0.00080	mg/l	2	02/08/19	02/12/19 EP	EPA 200.8 ²	EPA 200.8 ⁴
Sodium	214	0.40	mg/l	1	02/08/19	02/12/19 JR	EPA 200.7 ³	EPA 200.7 ⁵
Strontium	0.130	0.0050	mg/l	1	02/08/19	02/08/19 JR	EPA 200.7 ¹	EPA 200.7 ⁵

- (1) Instrument QC Batch: MA11018
- (2) Instrument QC Batch: MA11025
- (3) Instrument QC Batch: MA11029
- (4) Prep QC Batch: MP27323
- (5) Prep QC Batch: MP27325

RL = Reporting Limit

4.4
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS Accutest Sample Receipt Summary

Job Number: DA13403

Client: ABSAROKA

Project: GWA

Date / Time Received: 2/7/2019 1:15:00 PM

Delivery Method:

Airbill #'s: CO

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

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. Cooler temp verification: | 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

DA13403: Chain of Custody

Page 2 of 2

MS Volatiles**QC Data Summaries**

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: DA13403

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V2991-MB	7V58605.D	1	02/07/19	MB	n/a	n/a	V7V2991

The QC reported here applies to the following samples:

Method: SW846 8260B

DA13403-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	107%
17060-07-0	1,2-Dichloroethane-D4	96%
2037-26-5	Toluene-D8	90%
460-00-4	4-Bromofluorobenzene	103%

Blank Spike Summary

Page 1 of 1

Job Number: DA13403

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V2991-BS	7V58603.D	1	02/07/19	MB	n/a	n/a	V7V2991

The QC reported here applies to the following samples:

Method: SW846 8260B

DA13403-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	52.2	104	70-130
100-41-4	Ethylbenzene	50	49.0	98	69-130
108-88-3	Toluene	50	48.3	97	70-130
	m,p-Xylene	100	98.8	99	70-130
95-47-6	o-Xylene	50	48.9	98	70-130
1330-20-7	Xylene (total)	150	148	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
17060-07-0	1,2-Dichloroethane-D4	96%	70-130%
2037-26-5	Toluene-D8	94%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: DA13403

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA13348-1MS	7V58607.D	25	02/07/19	MB	n/a	n/a	V7V2991
DA13348-1MSD	7V58608.D	25	02/07/19	MB	n/a	n/a	V7V2991
DA13348-1	7V58606.D	25	02/07/19	MB	n/a	n/a	V7V2991

The QC reported here applies to the following samples:

Method: SW846 8260B

DA13403-1

CAS No.	Compound	DA13348-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1100	1250	2100	80	1250	2140	83	2	67-130/30
100-41-4	Ethylbenzene	161	1250	1190	82	1250	1190	82	0	69-130/30
108-88-3	Toluene	2910	1250	3800	71	1250	3770	69* ^a	1	70-130/30
	m,p-Xylene	2560	2500	4450	76	2500	4450	76	0	70-130/30
95-47-6	o-Xylene	539	1250	1580	83	1250	1570	82	1	70-130/30
1330-20-7	Xylene (total)	3100	3750	6030	78	3750	6030	78	0	67-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA13348-1	Limits
1868-53-7	Dibromofluoromethane	105%	107%	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	97%	95%	70-130%
2037-26-5	Toluene-D8	95%	94%	95%	70-130%
460-00-4	4-Bromofluorobenzene	99%	97%	101%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

GC Volatiles**QC Data Summaries**

7

Includes the following where applicable:

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

Method Blank Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB2307-MB	GB49016.D	1	02/09/19	BB	n/a	n/a	GGB2307

The QC reported here applies to the following samples: Method: SW846 8015B

DA13403-1

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	89% 60-140%

Method Blank Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB1049-MB	FB23103.D	1	02/07/19	BB	n/a	n/a	GFB1049

The QC reported here applies to the following samples: Method: RSK175 MOD

DA13403-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

7.1.2
7

Blank Spike Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB2307-BS	GB49017.D	1	02/09/19	BB	n/a	n/a	GGB2307

The QC reported here applies to the following samples: Method: SW846 8015B

DA13403-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.88	85	51-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	95%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB1049-BS	FB23104.D	10	02/07/19	BB	n/a	n/a	GFB1049

The QC reported here applies to the following samples:

Method: RSK175 MOD

DA13403-1A

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.522	102	70-133
74-84-0	Ethane	0.923	1.08	117	70-137
74-98-6	Propane	1.38	1.62	118	70-137

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA12301-21MS	GB49018.D	1	02/09/19	BB	n/a	n/a	GGB2307
DA12301-21MSD	GB49019.D	1	02/09/19	BB	n/a	n/a	GGB2307
DA12301-21	GB49020.D	1	02/09/19	BB	n/a	n/a	GGB2307

The QC reported here applies to the following samples: Method: SW846 8015B

DA13403-1

CAS No.	Compound	DA12301-21 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	1.76	80	2.2	1.90	86	8	40-132/30

CAS No.	Surrogate Recoveries	MS	MSD	DA12301-21	Limits
120-82-1	1,2,4-Trichlorobenzene	92%	96%	93%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA12301-5MS	FB23106.D	10	02/07/19	BB	n/a	n/a	GFB1049
DA12301-5MSD	FB23107.D	10	02/07/19	BB	n/a	n/a	GFB1049
DA12301-5	FB23105.D	1	02/07/19	BB	n/a	n/a	GFB1049

The QC reported here applies to the following samples: Method: RSK175 MOD

DA13403-1A

CAS No.	Compound	DA12301-5 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND	0.512	0.493	96	0.512	0.504	98	2	15-196/30
74-84-0	Ethane	ND	0.923	1.01	109	0.923	1.03	112	2	53-144/30
74-98-6	Propane	ND	1.38	1.51	110	1.38	1.54	112	2	54-144/30

* = 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: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17440-MB	FC62538.D	1	02/11/19	RB	02/09/19	OP17440	GFC2559

The QC reported here applies to the following samples: Method: SW846-8015B

DA13403-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	74% 11-142%

Blank Spike Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17440-BS	FC62539.D	1	02/11/19	RB	02/09/19	OP17440	GFC2559

The QC reported here applies to the following samples: Method: SW846-8015B

DA13403-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	3.77	75	22-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	72%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA13403
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17440-MS	FC62540.D	1	02/11/19	RB	02/09/19	OP17440	GFC2559
OP17440-MSD	FC62541.D	1	02/11/19	RB	02/09/19	OP17440	GFC2559
DA12301-3	FC62542.D	1	02/11/19	RB	02/09/19	OP17440	GFC2559

The QC reported here applies to the following samples: Method: SW846-8015B

DA13403-1

CAS No.	Compound	DA12301-3 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	4.28	86	5	4.66	93	9	22-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA12301-3	Limits
84-15-1	o-Terphenyl	91%	99%	97%	11-142%

* = 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: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27323
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 02/08/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079	0.061	<2.0
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	0.12	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP27323: DA13403-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27323
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 02/08/19

Metal	DA13342-31FA Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	56.0	440	400	95.8	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium					
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium	1.3	197	200	97.9	70-130
Silver	anr				
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	anr				

Associated samples MP27323: DA13403-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27323
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 02/08/19

Metal	DA13342-31FA Original MSD		Spikelot ICPALL2 % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	56.0	431	400	93.5	2.1	20
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	1.3	195	200	96.9	1.0	20
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP27323: DA13403-1F

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27323
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 02/08/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	393	400	98.3	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	198	200	99.0	85-115
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP27323: DA13403-1F

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/08/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	30		
Antimony	30	2.1	10		
Arsenic	25	3.8	7		
Barium	10	.2	2		
Beryllium	10	.9	1.3		
Boron	50	.8	7.4	0.60	<50
Cadmium	10	.2	1.6		
Calcium	400	2.4	53	22.7	<400
Chromium	10	.3	1.7		
Cobalt	5.0	.5	2.3		
Copper	10	.8	2.3		
Iron	10	1.5	3.1	2.6	<10
Lead	50	2.1	6.3		
Lithium	5.0	.4	4		
Magnesium	200	6.8	31	-1.5	<200
Manganese	5.0	.5	1.1	0.20	<5.0
Molybdenum	10	.4	4.3		
Nickel	30	.5	6.1		
Phosphorus	100	15	24		
Potassium	1000	84	250	-21	<1000
Selenium	50	7.1	21		
Silicon	50	4.7	45		
Silver	30	.3	4		
Sodium	400	7.3	51	-63	<400
Strontium	5.0	.01	.6	-0.10	<5.0
Thallium	10	1.8	7.5		
Tin	60	12	51		
Titanium	10	.1	1.9		
Uranium	50	2.9	8.5		
Vanadium	10	.4	.7		
Zinc	30	.4	3.8		

Associated samples MP27325: DA13403-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/08/19

Metal	RL	IDL	MDL	MB raw	final
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(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 02/08/19

Metal	DA13400-1 Original MS	Spikelot ICPAL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	6690	8830	1000	182.0(a) 70-130
Cadmium	anr			
Calcium	687000	898000	25000	120.0 70-130
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	112000	112000	5000	370.0(a) 70-130
Lead	anr			
Lithium				
Magnesium	182000	168000	25000	104.0 70-130
Manganese	1620	2650	500	154.0N(b) 70-130
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	90000	136000	25000	140.0(a) 70-130
Selenium	anr			
Silicon				
Silver	anr			
Sodium	15000000	14300000	25000	-10800.0a 70-130
Strontium	1000000000213000	500		-9200.0a 70-130
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium	anr			
Zinc	anr			

Associated samples MP27325: DA13403-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 02/08/19

Metal	DA13400-1 Original MS	SpikeLot ICPALL2 % Rec	QC Limits
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(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.

(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 02/08/19

	DA13400-1		Spikelot		MSD	QC
Metal	Original	MSD	ICPALL2	% Rec	RPD	Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	6690	8540	1000	153.0(a)	3.3	20
Cadmium	anr					
Calcium	687000	863000	25000	-20.0(a)	4.9	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	112000	105000	5000	230.0(a)	6.5	20
Lead	anr					
Lithium						
Magnesium	182000	177000	25000	140.0(a)	7.6	20
Manganese	1620	2580	500	140.0N(b)	2.7	20
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	90000	140000	25000	156.0(a)	3.6	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	15000000	15100000	25000	-7600.0a	8.3	20
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium	anr					
Zinc	anr					

Associated samples MP27325: DA13403-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 02/08/19

Metal	DA13400-1 Original MSD	SpikeLot ICPALL2 % Rec	MSD RPD	QC Limit
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(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.

(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA13403
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP27325
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 02/08/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	1030	1000	103.0	85-115
Cadmium	anr			
Calcium	24600	25000	98.4	85-115
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	4940	5000	98.8	85-115
Lead	anr			
Lithium				
Magnesium	23500	25000	94.0	85-115
Manganese	483	500	96.6	85-115
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	26300	25000	105.2	85-115
Selenium	anr			
Silicon				
Silver	anr			
Sodium	25200	25000	100.8	85-115
Strontium	479	500	95.8	85-115
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium	anr			
Zinc	anr			

Associated samples MP27325: DA13403-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

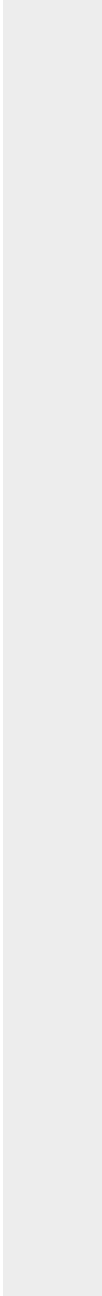
QC Batch ID: MP27325
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 02/08/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested



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: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN46068	5.0	2.5	mg/l	100	102	101.7	90-110%
Alkalinity, Carbonate	GN46069	5.0	2.5	mg/l	100	102	101.7	80-120%
Alkalinity, Total as CaCO3	GN46070	5.0	2.5	mg/l	100	102	101.7	90-110%
Bromide	GP24543/GN46042	0.050	0.0	mg/l	0.5	0.518	103.6	90-110%
Chloride	GP24543/GN46042	0.50	0.0	mg/l	5	5.03	100.6	90-110%
Fluoride	GP24543/GN46042	0.10	0.0	mg/l	1	1.01	101.0	90-110%
Iron-Related Bacteria	MB1143	25	<25	CFU/ml				
Nitrogen, Nitrate	GP24543/GN46042	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%
Nitrogen, Nitrite	GP24543/GN46042	0.0040	0.0	mg/l	0.05	0.0530	106.0	90-110%
Phosphorus, Total	GP24561/GN46060	0.010	0.00	mg/l	0.2	0.193	96.5	90-110%
Phosphorus, Total	GP24561/GN46060	0.010	0.00	mg/l	0.2	0.198	99.0	90-110%
Slime Forming Bacteria	MB1144	500	<500	CFU/ml				
Solids, Total Dissolved	GN46071	10	0.0	mg/l	400	395	98.8	90-110%
Specific Conductivity	GP24562/GN46065			umhos/cm	98.8	98.2	99.4	90-110%
Specific Conductivity	GP24562/GN46065			umhos/cm	998	984	98.6	90-110%
Sulfate	GP24543/GN46042	0.50	0.0	mg/l	5	5.02	100.4	90-110%
Sulfate Reducing Bacteria	MB1145	200	<200	CFU/ml				
pH	GN46064			su	8.00	7.98	99.8	99.1-100.9%
pH	GN46064			su	6.00	6.01	100.2	99.1-100.9%

Associated Samples:

Batch MB1143: DA13403-1B
Batch MB1144: DA13403-1B
Batch MB1145: DA13403-1B
Batch GN46064: DA13403-1
Batch GN46068: DA13403-1
Batch GN46069: DA13403-1
Batch GN46070: DA13403-1
Batch GN46071: DA13403-1
Batch GP24543: DA13403-1
Batch GP24561: DA13403-1
Batch GP24562: DA13403-1
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN46070	DA13369-1	mg/l	465	465	0.2	0-20%
Phosphorus, Total	GP24561/GN46060	DA13388-1	mg/l	0.077	0.0760	1.3	0-20%
Solids, Total Dissolved	GN46071	DA13388-2	mg/l	612	635	3.7	0-5%
Specific Conductivity	GP24562/GN46065	DA13369-1	umhos/cm	970	964	0.6	0-20%
pH	GN46064	DA13369-1	su	8.67	8.65	0.2	0-5%

Associated Samples:

Batch GN46064: DA13403-1
Batch GN46070: DA13403-1
Batch GN46071: DA13403-1
Batch GP24561: DA13403-1
Batch GP24562: DA13403-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN46070	DA13296-1	mg/l	114	100	212	97.3	80-120%
Bromide	GP24543/GN46042	DA13356-2	mg/l	0.0	5	5.2	104.0	80-120%
Chloride	GP24543/GN46042	DA13356-2	mg/l	123	50	175	104.0	80-120%
Fluoride	GP24543/GN46042	DA13356-2	mg/l	0.57	10	11.0	104.3	80-120%
Nitrogen, Nitrate	GP24543/GN46042	DA13356-2	mg/l	4.4	1	5.5	110.0	80-120%
Nitrogen, Nitrite	GP24543/GN46042	DA13356-2	mg/l	0.0	0.5	0.50	100.0	80-120%
Phosphorus, Total	GP24561/GN46060	DA13311-1	mg/l	0.0	0.2	0.194	95.0	90-110%
Sulfate	GP24543/GN46042	DA13356-2	mg/l	134	50	187	106.0	80-120%

Associated Samples:

Batch GN46070: DA13403-1

Batch GP24543: DA13403-1

Batch GP24561: DA13403-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA13403
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN46070	DA13296-1	mg/l	114	100	211	0.2	20%
Bromide	GP24543/GN46042	DA13356-2	mg/l	0.0	5	5.2	0.0	20%
Chloride	GP24543/GN46042	DA13356-2	mg/l	123	50	174	0.6	20%
Fluoride	GP24543/GN46042	DA13356-2	mg/l	0.57	10	10.7	2.8	20%
Nitrogen, Nitrate	GP24543/GN46042	DA13356-2	mg/l	4.4	1	5.5	0.0	20%
Nitrogen, Nitrite	GP24543/GN46042	DA13356-2	mg/l	0.0	0.5	0.50	0.0	20%
Sulfate	GP24543/GN46042	DA13356-2	mg/l	134	50	186	0.5	20%

Associated Samples:

Batch GN46070: DA13403-1

Batch GP24543: DA13403-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits