

XTO Energy

County: APT: 30-045-23944
 State:
 Sampled at:
 Date: September 11, 2017

Field:
 Location: Federal GC 1-1A
 Formation:
 Depth: 0

CUST

H & M Precision Water Analysis Report

	mg/L	meq/L
Sum +		
Potassium	nd	nd
Sodium	1,329.1	57.81
Calcium	18.9	0.94
Magnesium	7.9	0.66
Iron	60.0	3.22
Barium	0.0	0.00
Strontium	nd	nd

	mg/L	meq/L
Sum -		
Sulfate	0.0	0.00
Chloride	2,000.0	56.41
Carbonate	nd	nd
Bicarbonate	910.0	14.91
Hydroxide	nd	nd

CATIONS 1,415.9 62.62

ANIONS 2,910.0 71.32

System Parameters

Total Dissolved Solids @180C

Sample Temperature, °F

Sample pH, standard units

Dissolved Oxygen

Carbon Dioxide

Total Sulfide, (TS)

Sulfide Ion, (S)

Dissolved Hydrogen Sulfide, (TS-S)

Specific Gravity

Resistivity, measured

Ionic strength

Sulfate Reducing Bacteria

Aerobic Bacteria

Manganese Level

4,326 mg/L

70 °F

8.44 Units

nd ppm

nd mg/L

nd mg/L

nd mg/L

nd mg/L

1.0031

nd ohm/m^3

0.068

nd

nd

0 mg/L

Scaling Tendency

CACO3			CASO4		
Temp F	Stiff Davis Index	A Index	Temp F	SOLUBILITY Actual	Calculated
32	0.38	9	50	0.00	30.52
60	0.58	12	68	0.00	31.15
68	0.79	14	86	0.00	31.78
77	0.89	14	104	0.00	32.10
86	1.00	15	122	0.00	32.13
104	1.21	15	140	0.00	31.20
122	1.42	16	158	0.00	30.24
140	1.64	16	176	0.00	29.25
158	1.86	16			
176	2.08	16			

Chemical Residuals: na PPM

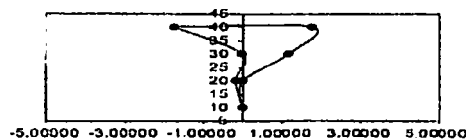
Amine Residuals: na PPM

BASO4 SCALE POSSIBLE

NO

Water Analysis Pattern

40 30 20 10 0 20 30 40



NOTE: Stiff Davis Index

-Indicates undersaturation. Scale formation negative.
 0 indicates the water is at saturation point. Scale unlikely.
 +Indicates supersaturation. A positive scaling condition exists.

NOTE: Skillman Method Calcium Sulfate 'S' Index

-Indicates undersaturation. Scale formation negative.
 0 indicates the water is at saturation point. Scale unlikely.
 +Indicates supersaturation. A positive scaling condition exists.

NOTE: A Index; worst possible case. Assumes 100% precipitation.

-Units = pounds of scale produced / 1000 bbls. of water.

-A Index <= 0 Scale formation negative.

-A Index > 0 Scale formation positive.

Approved: Zech Schaff
 09/11/17

v4.01



NEW MEXICO ENERGY, MINERALS
AND NATURAL RESOURCES DEPARTMENT

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AZTEC, NM 87410
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<http://www.emnrd.state.nm.us/ocd/>

BRADENHEAD TEST REPORT

(Submit 2 copies to above address)

Date of Test 9-7-17 Operator XTO Energy, Inc. API # 3004523944

Property Name FEDERAL GAS COM 1 001A Location: Unit F Section 20 Township 32 Range 12
(Well Name and Number)

Pressure (Shut-In or Producing) 29 Intermediate 117 Casing 117 Bradenhead 12

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

Time	Bradenhead			Intermediate		Bradenhead Flowed	Intermediate Flowed
	BH Blowdown	Casing Monitor	Intermediate Monitor	Intermediate Blowdown	Casing Monitor		
5 minutes	0	117					
10 minutes	0	117					
15 minutes	0	117				X	
20 minutes							
25 minutes							
30 minutes						X	
5 minute SI							

If bradenhead flowed water, check all of the descriptions that apply below:

Clear Fresh Salty Sulfur Black X

5 Minute Shut-in Bradenhead 7 Intermediate

REMARKS:

Water flowed after 5 minute mark, and stopped after 10 minute.
Water sample taken
flowed 1 gallon during test

By Russ Mann Witness

Lease Operator

(Position)