

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form U3C  
June 2015  
Form must be Typed  
Form must be completed  
on a per well basis

**ANNUAL REPORT OF PRESSURE MONITORING,  
FLUID INJECTION AND ENHANCED RECOVERY**

Complete all blanks - add pages if needed. Copy to be retained for five (5) years after filing date.

OPERATOR: License # \_\_\_\_\_  
Name: \_\_\_\_\_  
Address 1: \_\_\_\_\_  
Address 2: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_  
Lease Name: \_\_\_\_\_  
Well Number: \_\_\_\_\_

API No.: \_\_\_\_\_  
Permit No.: \_\_\_\_\_  
Reporting Year: \_\_\_\_\_  
(January 1 to December 31)  
\_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Sec. \_\_\_\_ Twp. \_\_\_\_ S. R. \_\_\_\_  E  W  
(a/a/a/a)  
\_\_\_\_\_ feet from  N /  S Line of Section  
\_\_\_\_\_ feet from  E /  W Line of Section  
County: \_\_\_\_\_

**I. Injection Fluid:**

Type (Pick one):  Fresh Water  Treated Brine  Untreated Brine  Water/Brine  
Source:  Produced Water  Other (Attach list)  
Quality: Total Dissolved Solids: \_\_\_\_\_ mg/l Specific Gravity: \_\_\_\_\_ Additives: \_\_\_\_\_  
(Attach water analysis, if available)

**II. Well Data:**

Maximum Authorized Injection Pressure: \_\_\_\_\_ psi Injection Zone: \_\_\_\_\_  
Maximum Authorized Injection Rate: \_\_\_\_\_ barrels per day  
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: \_\_\_\_\_ (Include TA's)

III.	Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
	January	_____	_____	_____	_____	_____
	February	_____	_____	_____	_____	_____
	March	_____	_____	_____	_____	_____
	April	_____	_____	_____	_____	_____
	May	_____	_____	_____	_____	_____
	June	_____	_____	_____	_____	_____
	July	_____	_____	_____	_____	_____
	August	_____	_____	_____	_____	_____
	September	_____	_____	_____	_____	_____
	October	_____	_____	_____	_____	_____
	November	_____	_____	_____	_____	_____
	December	_____	_____	_____	_____	_____
	<b>TOTAL</b>	_____	_____	_____	_____	_____

# ROCKWATER ENERGY SOLUTIONS

876 Old Highway 99  
Pawhuska, OK 74056

Phone: 918-287-3850  
Fax: 918-287-1632

## WATER ANALYSIS REPORT

<b>Company:</b>	PETROLEUM RESOURCES MANAGMENT	<b>Lab ID Number:</b>	44497
<b>Water Source:</b>	HAMMON TB	<b>Date Sampled:</b>	3-21-2017
<b>Sample Point:</b>	INCOMING SWT	<b>Date Analyzed:</b>	3-22-2017

**Production Data:**      **BOPD:**      0                      **BWPD:**      0                      **MMCFD:**      0

pH:	7.18	Total Dissolved Solids (mg/L):	59,348
Dissolved H <sub>2</sub> S:	2.0	Total Ionic Strength:	1.064
Dissolved CO <sub>2</sub> :	50.0	Specific Gravity:	1.044
Resistivity @ 75°F (Ohm-Meters):	0.12450	Density, (lbs/gal):	8.71

<b>Cations</b>	<b>mg/L</b>	<b>Meq/L</b>	<b>Anions</b>	<b>mg/L</b>	<b>Meq/L</b>
Calcium:	1,320	66	Carbonate:	0	0
Magnesium:	287	24	Bicarbonate:	189	3
Sodium:	21,337	928	Chloride:	36,000	1,014
Barium:	215		Sulfate:	0	0
Strontium:	0		Total Hardness:	4,480	
Ferrous Iron:	0.0				
Total Dissolved Iron:	61.8				

## PROBABLE MINERAL COMPOSITION

	<b>mg/L</b>	<b>Meq/L</b>
<b>Calcium Bicarbonate:</b>	251	3
<b>Calcium Sulfate:</b>	0	0
<b>Calcium Chloride:</b>	3,491	63
<b>Magnesium Bicarbonate:</b>	0	0
<b>Magnesium Sulfate:</b>	0	0
<b>Magnesium Chloride:</b>	1,119	24
<b>Sodium Bicarbonate:</b>	0	0
<b>Sodium Sulfate:</b>	0	0
<b>Sodium Chloride:</b>	54,232	928

**Remarks**

*Hydro*  *Pax*

**Analyst:** \_\_\_\_\_

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## SCALE DEPOSITION POTENTIAL ANALYSIS

<b>Company:</b>	PETROLEUM RESOURCES MANAGMENT	<b>Lab ID Number:</b>	44497
<b>Water Source:</b>	HAMMON TB	<b>Date Sampled:</b>	3-21-2017
<b>Sample Point:</b>	INCOMING SWT	<b>Date Analyzed:</b>	3-22-2017

### Brine Composition

pH:	7.18	Ca, mg/L:	1,320	Total Hardness, mg/L:	4,480
Specific Gravity:	1.044	Mg, mg/L:	287	Total Dissolved Solids, mg/L:	59,348
HCO <sub>3</sub> , mg/L:	189	Na, mg/L:	21,337	Total Ionic Strength:	1.064
Cl, mg/L:	36,000	Ba, mg/L:	215		
SO <sub>4</sub> , mg/L:	0	Sr, mg/L:	0	Total Dissolved Iron, mg/L:	61.8

### Calcium Carbonate Scale Indices

Specified Temperatures

Temperature, °F:	75	100	125	150	59	180
Stiff-Davis Index:	-0.27	0.02	0.40	0.87	-0.42	1.45
Deposition, lbs/1,000 Bbls:	-83.7	8.8	62.5	92.2	-136.1	104.2

### Calcium Sulfate Scale Indices

Specified Temperatures

Temperature, °F:	75	100	125	150	180
Supersaturation Ratio:	0.000	0.000	0.000	0.000	0.000
Deposition, lbs/1,000 Bbls:	-1,456.6	-1,455.8	-1,442.2	-1,412.6	-1,365.7

### Barium Sulfate Scale Indices

Specified Temperatures

Temperature, °F:	75	100	125	150	59	180
Supersaturation Ratio:	0.000	0.000	0.000	0.000	0.000	0.000
Deposition, lbs/1,000 Bbls:	-0.5	-0.7	-0.9	-1.4	-0.4	-1.9



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## SCALE DEPOSITION POTENTIAL TRENDS

Company: PETROLEUM RESOURCES MANAGMENT  
Water Source: HAMMON TB  
Sample Point: INCOMING SWT

Lab ID Number: 44497  
Date Sampled: 3-21-2017  
Date Analyzed: 3-22-2017

