



**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<br>BBL | Maximum Fluid<br>Pressure | Total Gas Injected<br>MCF | Maximum Gas<br>Pressure | # Days of<br>Injection |
|------|--------------|-----------------------------|---------------------------|---------------------------|-------------------------|------------------------|
|      | January      | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | February     | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | March        | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | April        | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | May          | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | June         | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | July         | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | August       | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | September    | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | October      | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | November     | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | December     | _____                       | _____                     | _____                     | _____                   | _____                  |
|      | <b>TOTAL</b> | _____                       | _____                     | _____                     | _____                   | _____                  |



## WATER ANALYSIS REPORT

**Company:** Haach Operating

**Sample Point:**

**Source:** Lowe-Jones

**Date Sampled:** 5/29/2014

**Well No:** 8

**Date Analyzed:** 6/9/2014

|                                 |         |                                |        |
|---------------------------------|---------|--------------------------------|--------|
| pH:                             | 6.50    | Total Dissolved Solids (mg/L): | 90,798 |
| Dissolved H <sub>2</sub> S:     | N/A     | Total Ionic Strength:          | 1.777  |
| Dissolved CO <sub>2</sub> :     | N/A     | Specific Gravity:              | 1.080  |
| Resistivity @ 75°F(Ohm-Meters): | 0.07950 | Density, (lbs/gal):            | 9.01   |

| Cations               | mg/L   | Meq/L | Anions          | mg/L   | Meq/L |
|-----------------------|--------|-------|-----------------|--------|-------|
| Calcium:              | 5,011  | 251   | Carbonate:      | 0      | 0     |
| Magnesium:            | 1,621  | 133   | Bicarbonate:    | 293    | 5     |
| Sodium:               | 27,573 | 1,199 | Chloride:       | 56,000 | 1,577 |
| Barium:               | 300    |       | Sulfate:        | 0      | 0     |
| Strontium:            | 0      |       | Total Hardness: | 19,200 |       |
| Total Dissolved Iron: | 0.32   |       |                 |        |       |

### PROBABLE MINERAL COMPOSITION

|                        | mg/L   | Meq/L |
|------------------------|--------|-------|
| Calcium Bicarbonate:   | 389    | 5     |
| Calcium Sulfate:       | 0      | 0     |
| Calcium Chloride:      | 13,640 | 246   |
| Magnesium Bicarbonate: | 0      | 0     |
| Magnesium Sulfate:     | 0      | 0     |
| Magnesium Chloride:    | 6,328  | 133   |
| Sodium Bicarbonate:    | 0      | 0     |
| Sodium Sulfate:        | 0      | 0     |
| Sodium Chloride:       | 70,083 | 1,199 |

**Remarks**



## SCALE DEPOSITION POTENTIAL ANALYSIS

**Company:** Haach Operating

**Source:** Lowe-Jones

**Well No:** 8

**Sample Point:**

**Date Sampled:** 5/29/2014

**Date Analyzed:** 6/9/2014

### Brine Composition

|                          |        |           |        |                               |        |
|--------------------------|--------|-----------|--------|-------------------------------|--------|
| pH:                      | 6.50   | Ca, mg/L: | 5,011  | Total Hardness, mg/L:         | 19,200 |
| Specific Gravity:        | 1.080  | Mg, mg/L: | 1,621  | Total Dissolved Solids, mg/L: | 90,798 |
| HCO <sub>3</sub> , mg/L: | 293    | Na, mg/L: | 27,573 | Total Ionic Strength:         | 1.777  |
| Cl, mg/L:                | 56,000 | Ba, mg/L: | 300    | Total Dissolved Iron, mg/L:   | 0.3    |
| SO <sub>4</sub> , mg/L:  | 0      | Sr, mg/L: | 0      |                               |        |

### Calcium Carbonate Scale Indices

|                             |       |       |       |       |                        |       |
|-----------------------------|-------|-------|-------|-------|------------------------|-------|
| Temperature, °F:            | 75    | 100   | 125   | 150   | Specified Temperatures |       |
| Stiff-Davis Index:          | 0.000 | 0.134 | 0.515 | 0.976 | 40                     | 180   |
| Deposition, lbs/1,000 Bbls: | 0.0   | 39.8  | 112.6 | 149.2 | 0.000                  | 1.585 |
|                             |       |       |       |       | 0.0                    | 163.3 |

### Calcium Sulfate Scale Indices

|                             |       |       |       |       |                        |       |
|-----------------------------|-------|-------|-------|-------|------------------------|-------|
| Temperature, °F:            | 75    | 100   | 125   | 150   | Specified Temperatures |       |
| Supersaturation Ratio:      | 0.000 | 0.000 | 0.000 | 0.000 | 40                     | 180   |
| Deposition, lbs/1,000 Bbls: | 0.0   | 0.0   | 0.0   | 0.0   | 0.000                  | 0.000 |
|                             |       |       |       |       | 0.0                    | 0.0   |

### Barium Sulfate Scale Indices

|                             |       |       |       |       |                        |       |
|-----------------------------|-------|-------|-------|-------|------------------------|-------|
| Temperature, °F:            | 75    | 100   | 125   | 150   | Specified Temperatures |       |
| Supersaturation Ratio:      | 0.000 | 0.000 | 0.000 | 0.000 | 40                     | 180   |
| Deposition, lbs/1,000 Bbls: | 0.0   | 0.0   | 0.0   | 0.0   | 0.000                  | 0.000 |
|                             |       |       |       |       | 0.0                    | 0.0   |



## SCALE DEPOSITION POTENTIAL TRENDS

Company: Haach Operating

Source: Lowe-Jones

Well No: 8

Sample Point:

Date Sampled: 5/29/2014

Date Analyzed: 6/9/2014

