



**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 | _____ | _____ | _____ | _____ | _____ |
| | TOTAL | _____ | _____ | _____ | _____ | _____ |

STAABCO CHEMICAL, INC.

P.O. Box D
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Phone: (785) 737-6141
Fax: (785) 434-2529

WATER ANALYSIS REPORT

Company: Shakespeare
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.

Date Sampled: February 1, 2017
Date Analyzed: February 2, 2017

| | | | |
|-----------------------------|-------|--------------------------------|---------|
| pH: | 6.50 | Total Dissolved Solids (mg/L): | 102,204 |
| Dissolved H ₂ S: | 20 | | |
| Dissolved CO ₂ : | 0 | Total Ionic Strength: | 1.883 |
| Specific Gravity: | 1.065 | | |
| Density, (lbs/gal): | 8.88 | | |

| | mg/L | Meq/L |
|-----------------------|----------------|-------|
| Anions | | |
| Sulfide | 97.6 | 97.6 |
| Bicarbonate: | 378 | 6 |
| Chloride: | 60,000 | 1,690 |
| Sulfate: | 2,600 | 54 |
| Cations | | |
| Calcium: | 2,880 | 144 |
| Magnesium: | 708 | 58 |
| Sodium: | 35,616 | 1,549 |
| Barium: | 22 | |
| Strontium: | 0 | |
| Total Hardness: | 4,040 | |
| Total Dissolved Iron: | 0 | |
| Ferrous Iron: | Not Determined | |

PROBABLE MINERAL COMPOSITION

| | | | |
|----------|------------------------|-------|--------|
| 144 Ca | 6 HCO ₃ | | |
| 58 Mg | 54 SO ₄ | Meq/L | mg/L |
| 1,549 Na | 1,690 Cl | | |
| | Calcium Bicarbonate: | 6 | 502 |
| | Calcium Sulfate: | 54 | 3,687 |
| | Calcium Chloride: | 84 | 4,641 |
| | Magnesium Bicarbonate: | 0 | 0 |
| | Magnesium Sulfate: | 0 | 0 |
| | Magnesium Chloride: | 58 | 2,762 |
| | Sodium Bicarbonate: | 0 | 0 |
| | Sodium Sulfate: | 0 | 0 |
| | Sodium Chloride: | 1,549 | 90,526 |

Saturation Values
In Distilled Water @ 20°C

| | |
|---------------------------------------|------------|
| CaCO ₃ | 13 mg/L |
| CaSO ₄ * 2H ₂ O | 2,090 mg/L |
| MgCO ₃ | 103 mg/L |

COMMENTS:

STAABCO CHEMICAL, INC.

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Scale Deposition Potential Analysis

Company: Shakespeare
Source: Ottley 1-10 SWD, 6-15 & 9-15 Inj.

Date Sampled: February 1, 2017
Date Analyzed: February 2, 2017

Brine Composition

| | | | | | |
|--------------------------|--------|-----------|--------|-------------------------------|---------|
| pH: | 6.50 | Ca, mg/L: | 2,880 | Total Hardness, mg/L: | 4,040 |
| Specific Gravity: | 1.065 | Mg, mg/L: | 708 | Total Dissolved Solids, mg/L: | 102,204 |
| HCO ₃ , mg/L: | 378 | Na, mg/L: | 35,616 | Total Ionic Strength: | 1.883 |
| Cl, mg/L: | 60,000 | Ba, mg/L: | 22 | Total Dissolved Iron, mg/L: | 0.0 |
| SO ₄ , mg/L: | 2,600 | Sr, mg/L: | 0 | | |

Calcium Carbonate Scale Indices


| | | | | | Specified Temperatures | |
|-----------------------------|--------|------|-------|-------|------------------------|-------|
| Temperature, °F: | 75 | 100 | 125 | 150 | 110 | 130 |
| Stiff-Davis Index: | -0.25 | 0.02 | 0.40 | 0.87 | 0.16 | 0.49 |
| Deposition, lbs/1,000 Bbls: | -165.2 | 2.0 | 123.0 | 183.6 | 56.9 | 140.8 |

Calcium Sulfate Scale Indices

| | | | | | Specified Temperatures | |
|-----------------------------|--------|--------|--------|--------|------------------------|--------|
| Temperature, °F: | 75 | 100 | 125 | 150 | 110 | 130 |
| Supersaturation Ratio: | 0.78 | 0.79 | 0.80 | 0.81 | 0.79 | 0.80 |
| Deposition, lbs/1,000 Bbls: | -357.2 | -352.8 | -331.2 | -307.9 | -345.3 | -326.4 |

Barium Sulfate Scale Indices

| | | | | | Specified Temperatures | |
|-----------------------------|--------|--------|--------|--------|------------------------|--------|
| Temperature, °F: | 75 | 100 | 125 | 150 | 110 | 130 |
| Supersaturation Ratio: | 290.83 | 216.18 | 154.11 | 107.29 | 188.79 | 142.25 |
| Deposition, lbs/1,000 Bbls: | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |

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