Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1233823

Form ACO-1
August 2013
**Form must be Typed**
**Form must be Signed**
**All blanks must be Filled**

# WELL COMPLETION FORM
## WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34192
Name: SandRidge Exploration and Production LLC
Address 1: 123 ROBERT S. KERR AVE
Address 2:
City: OKLAHOMA CITY State: OK Zip: 73102 + 6406
Contact Person: Tiffany Golay
Phone: ( 405 ) 429-6543
CONTRACTOR: License # 34464
Name: Lariat Services, Inc. dba Chaparral, Drilling, Fluids
Wellsite Geologist: Will Scott
Purchaser:

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☑ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

| 8/20/2014 | 9/22/2014 | 10/19/2014 |
|---|---|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |

API No. 15 - 15-077-22079-01-00
Spot Description:
SW SW SE SE Sec. 36 Twp. 34 S. R. 8 ☐ East ☑ West
225 Feet from ☐ North / ☑ South Line of Section
1200 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Harper
Lease Name: Hank 3408 Well #: 1-36H
Field Name:
Producing Formation: Mississippian
Elevation: Ground: 1288 Kelly Bushing: 1307
Total Vertical Depth: 4765 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 822 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

**Drilling Fluid Management Plan**
*(Data must be collected from the Reserve Pit)*

Chloride content: 12000 ppm Fluid volume: 2892 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: SandRidge Exploration and Production, LLC
Lease Name: Jones Trust 3408 1-28H License #: 34192
Quarter SE Sec. 21 Twp. 34 S. R. 8 ☐ East ☑ West
County: Harper Permit #: 15077-22087-01-00

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**

☑ **Confidentiality Requested**
Date: 12/18/2014
☑ **Confidential Release Date:** 12/17/2016
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 12/18/2014

[redacted] 1233823

Operator Name: SandRidge Exploration and Production LLC Lease Name: Hank 3408 Well #: 1-36H

Sec. 36 Twp. 34 S. R. 8 ☐ East ☑ West County: Harper

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☐ Yes ☑ No
*(Attach Additional Sheets)*

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

Array Induction Gamma Ray Memory Log
Dual Spaced Neutron Spectral Density Memory Log

☐ Log Formation (Top), Depth and Datum ☐ Sample

| Name | Top | Datum |
|---|---|---|
| Base Heebner | 3493 | |
| Lansing | 3802 | |
| Cottage Grove | 4121 | |
| Oswego | 4525 | |
| Cherokee | 4725 | |
| Miss Unconformity | 5240 | |

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Conductor | 30 | 20 | 75 | 90 | Edge Services 10 sack grout | 9 | none |
| Surface | 12.25 | 9.63 | 36 | 822 | O-Tex Lite Premium Plus 65/35 | 410 | (6% gel) 2% Calcium Chloride, 1/4 pps C |
| Intermediate | 8.75 | 7 | 26 | 5678 | 50/50 Poz Premium; Premium | 350 | 4% gel, .2% FL-17, .1% C-51, .15% C-20 |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ☐ Perforate<br>☐ Protect Casing<br>☐ Plug Back TD<br>☐ Plug Off Zone | - | | | |
| | - | | | |

Did you perform a hydraulic fracturing treatment on this well? ☑ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☑ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☑ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)* | Depth |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

TUBING RECORD: Size: Set At: Packer At: Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 10/30/2014

Producing Method: ☑ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | | | | | |

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
*(If vented, Submit ACO-18.)*

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | SandRidge Exploration and Production LLC |
| Well Name | Hank 3408 1-36H |
| Doc ID | 1233823 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Conductor | 30 | 20 | 75 | 90 | Edge Services 10 sack grout | 9 | none |
| Surface | 12.25 | 9.63 | 36 | 822 | O-Tex Lite Premium Plus 65/35; Premium Plus (Class C) | 410 | (6% gel) 2% Calcium Chloride, 1/4 pps Cello-Flake, .2% X-Air |
| Intermediate | 8.75 | 7 | 26 | 5678 | 50/50 Poz Premium; Premium | 350 | 4% gel, .2% FL-17, .1% C-51, .15% C-20, .1% C-37, .2% X-Air |
| | | | | | | | |

EDGE SERVICES
580-254-3216
Woodward, OK

# INVOICE

| DATE | INVOICE # |
|---|---|
| 8/22/2014 | 5039 |

| BILL TO |
|---|
| SANDRIDGE ENERGY, INC.<br>ATTN: PURCHASING MANAGER<br>123 ROBERT S. KERR AVENUE<br>OKLAHOMA CITY, OK 73102 |

| REMIT TO |
|---|
| EDGE SERVICES, INC.<br>PO BOX 609<br>WOODWARD, OK 73802 |

| COUNTY | STARTING D... | WORK ORDER | RIG NUMBER | LEASE NAME | Terms |
|---|---|---|---|---|---|
| HARPER, KS | 8/20/2014 | 3945 | LARIAT 40 | HANK 3408 1-36H | Due on rec... |

| Description |
|---|
| DRILLED 90' OF 30" CONDUCTOR HOLE<br>DRILLED 6' OF 76" HOLE<br>FURNISHED AND SET 6' X 6' TINHORN CELLAR<br>FURNISHED 90' OF 20" CONDUCTOR PIPE<br>FURNISHED MUD, WATER, AND TRUCKING<br>FURNISHED WELDER AND MATERIALS<br>FURNISHED 9 YARDS OF 10 SACK GROUT FOR CONDUCTOR HOLE<br>FURNISHED 4 YARDS OF 10 SACK GROUT FOR MOUSE HOLE<br>FURNISHED GROUT PUMP<br>DRILL MOUSE HOLE<br>FURNISHED 80' OF 16" CONDUCTOR PIPE<br><br>TOTAL BID $19,850.00 |

AFE Number: AC14148
Well Name: Hank 3408 1-36H
Code: 850.010
Amount: $20,018.02
Co. Man: Quincy Lowe
Co. Man Sig.: [signature]
Notes:

| | |
|---|---|
| Sales Tax (6.15%) | $168.02 |
| **TOTAL** | $20,018.02 |

# JOB SUMMARY

| PROJECT NUMBER | TICKET DATE |
|---|---|
| SOK 4179 | 09/11/14 |

| COUNTY | State | COMPANY | CUSTOMER REP |
|---|---|---|---|
| Harper | Kansas | dridge Exploration & Produc | Luis Garza |

| LEASE NAME | Well No. | JOB TYPE | EMPLOYEE NAME |
|---|---|---|---|
| Hank 3408 | 1-36H | Surface | marcos quintana |

| EMP NAME | | | | | | |
|---|---|---|---|---|---|---|
| Marcos Quintana | | 0 | | | | |
| vantray | | | | | | |
| Roy Morris | | | | | | |
| Dustin Odom | | | | | | |

Form. Name _____ Type: _____

Packer Type _____ Set At 0

Bottom Hole Temp. 80 Pressure _____

Retainer Depth _____ Total Depth 850

| | Called Out | On Location | Job Started | Job Completed |
|---|---|---|---|---|
| Date | 9/10/2014 | 9/11/2014 | 9/11/2014 | 9/11/2014 |
| Time | 2000 | 0300 | 0700 | 0820 |

Tools and Accessories

| Type and Size | Qty | Make |
|---|---|---|
| Auto Fill Tube | 0 | IR |
| Insert Float Val | 0 | IR |
| Centralizers | 0 | IR |
| Top Plug | 0 | IR |
| HEAD | 0 | IR |
| Limit clamp | 0 | IR |
| Weld-A | 0 | IR |
| Texas Pattern Guide Shoe | 0 | IR |
| Cement Basket | 0 | IR |

Well Data

| | New/Used | Weight | Size | Grade | From | To | Max. Allow |
|---|---|---|---|---|---|---|---|
| Casing | | 36# | 9 5/8" | | Surface | 850 | 1,500 |
| Liner | | | | | | | |
| Liner | | | | | | | |
| Tubing | | | 0 | | | | |
| Drill Pipe | | | | | | | |
| Open Hole | | | 12¼" | | Surface | 850 | Shots/Ft. |
| Perforations | | | | | | | |
| Perforations | | | | | | | |
| Perforations | | | | | | | |

Materials

| | | | | |
|---|---|---|---|---|
| Mud Type | WBM | Density | 9 | Lb/Gal |
| Disp. Fluid | Fresh Water | Density | 8.33 | Lb/Gal |
| Spacer type | resh Wate | BBL. | 10 | 8.33 |
| Spacer type | | BBL. | | |
| Acid Type | | Gal. | % | |
| Acid Type | | Gal. | % | |
| Surfactant | | Gal. | In | |
| NE Agent | | Gal. | In | |
| Fluid Loss | | Gal/Lb | In | |
| Gelling Agent | | Gal/Lb | In | |
| Fric. Red. | | Gal/Lb | In | |
| MISC. | | Gal/Lb | In | |
| Perfpac Balls | | Qty. | | |
| Other | | | | |
| Other | | | | |
| Other | | | | |
| Other | | | | |
| Other | | | | |

Hours On Location

| Date | Hours |
|---|---|
| 9/11 | 4.0 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Total | 4.0 |

Operating Hours

| Date | Hours |
|---|---|
| 9/11 | 2.0 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Total | 2.0 |

Description of Job

Surface

Pressures

MAX 1,500 PSI AVG. 150

Average Rates in BPM

MAX 6 BPM AVG 4

Cement Left in Pipe

Feet 55 Reason SHOE JOINT

Cement Data

| Stage | Sacks | Cement | Additives | W/Rq. | Yield | Lbs/Gal |
|---|---|---|---|---|---|---|
| 1 | 215 | TEX Lite Premium Plus 65 | (6% Gel) 2% Calcium Chloride - ¼pps Cello-Flake - 0.2% X-Air | 11.11 | 2.01 | 12.40 |
| 2 | 195 | Premium Plus (Class C) | 2% Calcium Chloride - ¼pps Cello-Flake | 6.32 | 1.32 | 14.80 |
| 3 | *100 | Premium Plus (Class C) | *2% Calcium Chloride on side to use if necessary | *6.32 | *1.32 | *14.8 |
| | | | | | | |
| | | | | | | |

Summary

| | | | | | |
|---|---|---|---|---|---|
| Preflush | | Type: | | Preflush: BBl | 10.00 |
| Breakdown | | MAXIMUM | 1,500 PSI | Load & Bkdn: Gal - BBl | N/A |
| | | Lost Returns-N | NO/FULL | Excess /Return BBl | 74 |
| | | Actual TOC | SURFACE | Calc. TOC: | SURFACE |
| Average | | Bump Plug PSI: | 700 | Final Circ. PSI: | 200 |
| ISIP | 5 Min. | 10 Min | 15 Min | Cement Slurry: BBl | 122.0 |
| | | | | Total Volume BBl | 192.00 |

Type: Fresh Water

Pad:Bbl -Gal N/A

Calc.Disp Bbl 60

Actual Disp. 60.00

Disp:Bbl

CUSTOMER REPRESENTATIVE _____ SIGNATURE

# JOB SUMMARY

| COUNTY | State | COMPANY | PROJECT NUMBER | TICKET DATE |
|---|---|---|---|---|
| Harper | Kansas | Sandridge Exploration & Production | SOK 4200 | 09/17/14 |

| LEASE NAME | Well No. | JOB TYPE | CUSTOMER REP | EMPLOYEE NAME |
|---|---|---|---|---|
| Hank 3408 | 1-36H | Intermediate | Luis Garza | Arthur Setzer |

| EMP NAME | | | | | | | |
|---|---|---|---|---|---|---|---|
| Arthur Setzer | | 0 | | | | | |
| Jared Green | | | | | | | |
| Frank Reeves | | | | | | | |
| Ron Derry | | | | | | | |

Form. Name _____ Type: _____

Packer Type _____ Set At 0

Bottom Hole Temp. 155 Pressure _____

Retainer Depth _____ Total Depth 5678

| | Called Out | On Location | Job Started | Job Completed |
|---|---|---|---|---|
| Date | 9/17/2014 | 9/17/2014 | 9/17/2014 | 9/17/2014 |
| Time | 1200 | 1600 | 2015 | 2300 |

## Tools and Accessories

| Type and Size | Qty | Make |
|---|---|---|
| Auto Fill Tube | 0 | IR |
| Insert Float Va | 0 | IR |
| Centralizers | 0 | IR |
| Top Plug | 0 | IR |
| HEAD | 0 | IR |
| Limit clamp | 0 | IR |
| Weld-A | 0 | IR |
| Texas Pattern Guide Shoe | 0 | IR |
| Cement Basket | 0 | IR |

## Well Data

| | New/Used | Weight | Size | Grade | From | To | Max. Allow |
|---|---|---|---|---|---|---|---|
| Casing | | 26# | 7" | | Surface | 5,679 | 5,000 |
| Liner | | | | | | | |
| Liner | | | | | | | |
| Tubing | | | 0 | | | | |
| Drill Pipe | | | | | | | |
| Open Hole | | | 8¾" | | Surface | 5,685' | Shots/Ft. |
| Perforations | | | | | | | |
| Perforations | | | | | | | |
| Perforations | | | | | | | |

## Materials

| | | | | |
|---|---|---|---|---|
| Mud Type | WBM | Density | 9 | Lb/Gal |
| Disp. Fluid | Fresh Water | Density | 8.33 | Lb/Gal |
| Spacer type | Fresh Wate | BBL. | 20 | 8.33 |
| Spacer type | Caustic | BBL. | 10 | 8.40 |
| Acid Type | | Gal. | % | |
| Acid Type | | Gal. | % | |
| Surfactant | | Gal. | In | |
| NE Agent | | Gal. | In | |
| Fluid Loss | | Gal/Lb | In | |
| Gelling Agent | | Gal/Lb | In | |
| Fric. Red. | | Gal/Lb | In | |
| MISC. | | Gal/Lb | In | |

Perfpac Balls _____ Qty. _____

Other _____

Other _____

Other _____

Other _____

Other _____

## Hours On Location

| Date | Hours |
|---|---|
| 9/17 | 7.0 |
| Total | 7.0 |

## Operating Hours

| Date | Hours |
|---|---|
| 9/17 | 3.0 |
| Total | 3.0 |

## Description of Job

Intermediate

## Pressures

MAX 5,000 PSI AVG. 1850

## Average Rates in BPM

MAX 8 BPM AVG 8

## Cement Left in Pipe

Feet 40 Reason SHOE JOINT

## Cement Data

| Stage | Sacks | Cement | Additives | W/Rq. | Yield | Lbs/Gal |
|---|---|---|---|---|---|---|
| 1 | 250 | 50/50 POZ PREMIUM | 4% Gel - 0.2% FL-17 - 0.1% C-51 - 0.15% C-20 - 0.1% C-37 - 0.2% X-Air | 6.93 | 1.43 | 13.60 |
| 2 | 100 | Premium | 0.2% FL-17 - 0.1% C-51 - 0.15% C-20 - 0.2% X-Air | 5.19 | 1.19 | 15.60 |
| 3 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 |
| | | | | | | |
| | | | | | | |

## Summary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Preflush | 10 | Type: | Caustic | Preflush: | BBl | 30.00 | Type: Gel Spacer |
| Breakdown | | MAXIMUM | 5,000 PSI | Load & Bkdn: | Gal - BBl | N/A | Pad:Bbl -Gal N/A |
| | | Lost Returns-I | NO/FULL | Excess /Return | BBl | N/A | Calc.Disp Bbl 216 |
| Average | | Actual TOC | 2,567 | Calc. TOC: | | 2,567 | Actual Disp. 216.00 |
| ISIP | 5 Min. | Bump Plug PSI: | 1,850 | Final Circ. | PSI: | 820 | Disp:Bbl 216.00 |
| | | 10 Min | 15 Min | Cement Slurry | BBl | 84.0 | |
| | | | | Total Volume | BBl | 330.00 | |

CUSTOMER REPRESENTATIVE _____ SIGNATURE _____

| Directional Survey Calculations | Measured Depth (ft) | Sub-Sea Incl. (deg) | Vertical Azim. (ft) | True Vert Depth (ft) | Northings (+) Southings (-) (ft) | Eastings (+) Westings (-) (ft) | Vert Section (ft) | DLS deg/100' (deg) | FNL | FSL | FWL | FEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5032 | 225 | 4090 | 1201 |
| BHL | 9206 | 91.30 | 358.80 | 4748.08 | 4702.08 | 404.18 | 4719.41 | 0.00 | 333 | 4924 | 4611 | 708 |
| Miss Entry | 5240 | 78.85 | 3.83 | 4736.74 | 739.68 | 481.80 | 778.86 | 8.47 | 4295 | 961 | 4590 | 705 |
| Top Port | 5837 | 89.12 | 357.19 | 4765.61 | 1334.56 | 479.21 | 1371.25 | 1.07 | 3701 | 1556 | 4602 | 697 |
| Bottom Port | 9143 | 91.29 | 358.81 | 4749.50 | 4639.30 | 405.50 | 4656.99 | 1.54 | 395 | 4862 | 4610 | 708 |

| Survey Points | | X | Y | | X | Y | | m |
|---|---|---|---|---|---|---|---|---|
| | NW Corner XY Coord | 2103189 | 140035 | | | | North Line slope | 0.006203 |
| | SW Corner XY Coord | 2103319 | 134777 | Surface XY | 2107403 | 135029 | East Line slope | -0.0188356 |
| | NE Corner XY Coord | 2108509 | 140068 | | | | South Line slope | 0.0066175 |
| | SE Corner XY Coord | 2108608 | 134812 | | | | West Line slope | -0.0247242 |

| | Measured Depth (ft) | Sub-Sea Incl. (deg) | Vertical Azim. (deg) | True Vert Depth (ft) | Northings (+) Southings (-) (ft) | Eastings (+) Westings (-) (ft) | Vert Section (ft) | DLS deg/100' (deg) | FNL | FSL | FWL | FEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0.0 | 0 | 0 | 0 | 0 | 0 | 0 | 5032 | 225 | 4090 | 1201 |
| | 220 | 0.5 | 126.1 | 220.00 | -0.57 | 0.78 | -0.50 | 0.23 | 5033 | 224 | 4091 | 1200 |
| | 495 | 1 | 126.1 | 494.97 | -2.69 | 3.68 | -2.36 | 0.18 | 5035 | 222 | 4094 | 1197 |
| | 732 | 0.2 | 126.1 | 731.96 | -4.15 | 5.69 | -3.64 | 0.34 | 5036 | 221 | 4096 | 1195 |
| | 899 | 0.8 | 126.1 | 898.95 | -5.01 | 6.87 | -4.39 | 0.36 | 5037 | 220 | 4097 | 1194 |
| | 990 | 0.9 | 121.8 | 989.94 | -5.76 | 7.99 | -5.04 | 0.13 | 5038 | 219 | 4098 | 1193 |
| | 1444 | 1 | 148.2 | 1443.88 | -11.00 | 13.11 | -9.82 | 0.10 | 5043 | 214 | 4103 | 1188 |
| | 1917 | 2 | 338.7 | 1916.81 | -6.82 | 12.28 | -5.72 | 0.63 | 5039 | 218 | 4102 | 1189 |
| | 2390 | 1.9 | 323.5 | 2389.54 | 7.17 | 4.62 | 7.55 | 0.11 | 5025 | 232 | 4095 | 1196 |
| | 2861 | 1.7 | 292.3 | 2860.32 | 16.10 | -6.49 | 15.47 | 0.21 | 5016 | 241 | 4084 | 1207 |
| | 3333 | 0.7 | 251.6 | 3332.21 | 17.85 | -15.70 | 16.41 | 0.27 | 5014 | 243 | 4075 | 1216 |
| | 3803 | 0.7 | 142.1 | 3802.19 | 14.67 | -16.66 | 13.17 | 0.24 | 5017 | 240 | 4074 | 1217 |
| | 3835 | 0.7 | 133 | 3834.19 | 14.39 | -16.40 | 12.90 | 0.35 | 5018 | 239 | 4074 | 1217 |
| | 3866 | 0.8 | 140.2 | 3865.19 | 14.09 | -16.12 | 12.63 | 0.44 | 5018 | 239 | 4074 | 1217 |
| | 3897 | 2.2 | 67.4 | 3896.18 | 14.15 | -15.44 | 12.75 | 6.80 | 5018 | 239 | 4075 | 1216 |
| | 3929 | 5 | 60.7 | 3928.11 | 15.07 | -13.65 | 13.83 | 8.83 | 5017 | 240 | 4077 | 1214 |
| | 3960 | 7.3 | 55.7 | 3958.93 | 16.84 | -10.85 | 15.83 | 7.61 | 5015 | 242 | 4080 | 1211 |
| | 3992 | 9.6 | 50 | 3990.58 | 19.71 | -7.12 | 19.01 | 7.64 | 5012 | 245 | 4084 | 1208 |
| | 4024 | 11.8 | 49.3 | 4022.02 | 23.55 | -2.60 | 23.24 | 6.89 | 5009 | 249 | 4088 | 1203 |
| | 4055 | 13.9 | 48.6 | 4052.25 | 28.08 | 2.60 | 28.20 | 6.79 | 5004 | 253 | 4094 | 1198 |
| | 4088 | 15.3 | 48.2 | 4084.18 | 33.61 | 8.82 | 34.25 | 4.25 | 4999 | 259 | 4100 | 1191 |
| | 4119 | 17.4 | 50.3 | 4113.93 | 39.30 | 15.44 | 40.49 | 7.04 | 4993 | 264 | 4107 | 1185 |
| | 4150 | 20.1 | 50.8 | 4143.28 | 45.62 | 23.13 | 47.47 | 8.73 | 4987 | 270 | 4114 | 1177 |
| | 4182 | 23.2 | 51.5 | 4173.02 | 53.02 | 32.33 | 55.64 | 9.72 | 4979 | 278 | 4124 | 1168 |
| | 4213 | 26.4 | 52.5 | 4201.15 | 61.02 | 42.58 | 64.50 | 10.41 | 4971 | 286 | 4134 | 1157 |
| | 4245 | 29.3 | 52.1 | 4229.44 | 70.17 | 54.40 | 74.64 | 9.08 | 4962 | 295 | 4146 | 1145 |
| | 4277 | 32 | 51.8 | 4256.97 | 80.22 | 67.25 | 85.78 | 8.45 | 4952 | 305 | 4159 | 1132 |
| | 4308 | 34.3 | 50.5 | 4282.92 | 90.86 | 80.44 | 97.52 | 7.77 | 4942 | 315 | 4173 | 1119 |
| | 4340 | 36 | 49.8 | 4309.09 | 102.66 | 94.58 | 110.52 | 5.46 | 4930 | 327 | 4187 | 1104 |
| | 4371 | 37.9 | 49.8 | 4333.86 | 114.69 | 108.82 | 123.74 | 6.13 | 4918 | 339 | 4202 | 1090 |
| | 4403 | 39.8 | 50.5 | 4358.78 | 127.55 | 124.23 | 137.89 | 6.09 | 4905 | 352 | 4218 | 1074 |
| | 4434 | 41.4 | 49.8 | 4382.32 | 140.48 | 139.71 | 152.12 | 5.37 | 4893 | 365 | 4233 | 1059 |
| | 4466 | 42.8 | 49.7 | 4406.06 | 154.34 | 156.09 | 167.36 | 4.38 | 4879 | 378 | 4250 | 1042 |
| | 4497 | 44.9 | 48.4 | 4428.42 | 168.42 | 172.30 | 182.80 | 7.37 | 4865 | 392 | 4267 | 1025 |
| | 4529 | 48.3 | 47 | 4450.40 | 184.07 | 189.49 | 199.88 | 11.09 | 4849 | 408 | 4284 | 1008 |
| | 4560 | 50.3 | 45.7 | 4470.61 | 200.29 | 206.49 | 217.53 | 7.19 | 4833 | 424 | 4302 | 991 |
| | 4592 | 52.3 | 44.1 | 4490.62 | 217.98 | 224.11 | 236.69 | 7.37 | 4816 | 441 | 4320 | 973 |
| | 4624 | 53.8 | 42.7 | 4509.86 | 236.57 | 241.68 | 256.73 | 5.85 | 4797 | 460 | 4338 | 955 |
| | 4656 | 55.4 | 41.3 | 4528.40 | 255.95 | 259.13 | 277.56 | 6.14 | 4778 | 479 | 4356 | 937 |
| | 4687 | 57.7 | 39.8 | 4545.48 | 275.61 | 275.94 | 298.61 | 8.45 | 4758 | 499 | 4373 | 920 |
| | 4719 | 60.2 | 38.6 | 4561.99 | 296.85 | 293.26 | 321.28 | 8.45 | 4737 | 520 | 4391 | 902 |
| | 4751 | 62.1 | 37.5 | 4577.43 | 318.92 | 310.54 | 344.77 | 6.66 | 4715 | 542 | 4409 | 884 |
| | 4783 | 63.7 | 35.8 | 4592.00 | 341.78 | 327.54 | 369.02 | 6.88 | 4692 | 565 | 4426 | 867 |
| | 4814 | 65.2 | 33.7 | 4605.38 | 364.76 | 343.47 | 393.30 | 7.80 | 4670 | 587 | 4443 | 851 |
| | 4845 | 66.1 | 31.3 | 4618.16 | 388.57 | 358.65 | 418.35 | 7.63 | 4646 | 611 | 4458 | 835 |
| | 4877 | 66.9 | 29.3 | 4630.92 | 413.91 | 373.45 | 444.88 | 6.25 | 4621 | 636 | 4474 | 820 |
| | 4908 | 67.7 | 28 | 4642.88 | 439.01 | 387.16 | 471.08 | 4.65 | 4596 | 661 | 4488 | 805 |
| | 4940 | 69.5 | 26.6 | 4654.56 | 465.48 | 400.82 | 498.64 | 6.94 | 4569 | 688 | 4503 | 791 |
| | 4971 | 71.3 | 25.4 | 4664.96 | 491.73 | 413.62 | 525.91 | 6.86 | 4543 | 714 | 4516 | 778 |
| | 5003 | 72.4 | 24.5 | 4674.93 | 519.30 | 426.45 | 554.49 | 4.35 | 4515 | 741 | 4530 | 765 |
| | 5034 | 73 | 22.9 | 4684.15 | 546.40 | 438.34 | 582.52 | 5.29 | 4488 | 768 | 4542 | 752 |
| | 5066 | 72.7 | 19.4 | 4693.58 | 574.91 | 449.37 | 611.89 | 10.49 | 4460 | 797 | 4554 | 741 |
| | 5097 | 73.5 | 16.2 | 4702.60 | 603.15 | 458.44 | 640.81 | 10.21 | 4432 | 825 | 4564 | 731 |
| | 5129 | 74.6 | 13.2 | 4711.39 | 632.91 | 466.24 | 671.13 | 9.65 | 4402 | 855 | 4572 | 723 |
| | 5161 | 75.9 | 10.5 | 4719.54 | 663.19 | 472.59 | 701.85 | 9.11 | 4372 | 885 | 4579 | 716 |
| | 5192 | 77 | 7.5 | 4726.81 | 692.95 | 477.31 | 731.91 | 10.05 | 4342 | 915 | 4585 | 711 |
| | 5223 | 78.3 | 5.2 | 4733.44 | 723.04 | 480.65 | 762.18 | 8.37 | 4312 | 945 | 4589 | 707 |
| | 5254 | 79.3 | 2.7 | 4739.46 | 753.38 | 482.75 | 792.59 | 8.54 | 4282 | 975 | 4592 | 704 |
| Top of Tangent @ 5339' | 5285 | 81 | 0.9 | 4744.76 | 783.90 | 483.71 | 823.08 | 7.92 | 4251 | 1006 | 4593 | 702 |
| | 5317 | 82.9 | 1 | 4749.24 | 815.58 | 484.23 | 854.68 | 5.95 | 4220 | 1037 | 4595 | 701 |
| | 5362 | 84.8 | 0.8 | 4754.06 | 860.32 | 484.93 | 899.31 | 4.25 | 4175 | 1082 | 4596 | 700 |
| | 5411 | 86 | 1.2 | 4757.99 | 909.15 | 485.79 | 948.03 | 2.58 | 4126 | 1131 | 4598 | 698 |
| | 5456 | 86.9 | 1.1 | 4760.78 | 954.05 | 486.69 | 992.84 | 2.01 | 4081 | 1176 | 4601 | 696 |
| | 5506 | 87.7 | 0.8 | 4763.14 | 1003.99 | 487.52 | 1042.66 | 1.71 | 4031 | 1226 | 4603 | 694 |
| | 5536 | 88.6 | 0.7 | 4764.17 | 1035.97 | 487.93 | 1074.56 | 2.83 | 3999 | 1258 | 4604 | 693 |

| | Measured Depth (ft) | Sub-Sea Incl. (deg) | Vertical Azim. (deg) | True Vert Depth (ft) | Northings (+) Southings (-) (ft) | Eastings (+) Westings (-) (ft) | Vert Section (ft) | DLS deg/100' (deg) | FNL | FSL | FWL | FEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Btm of Tangent | 5601 | 89.5 | 359.4 | 4765.21 | 1098.96 | 487.99 | 1137.31 | 2.51 | 3936 | 1321 | 4605 | 692 |
| @ 5678' | 5649 | 90.4 | 359 | 4765.26 | 1146.96 | 487.32 | 1185.06 | 2.05 | 3888 | 1369 | 4606 | 692 |
| | 5748 | 90 | 356.9 | 4764.91 | 1245.89 | 483.78 | 1283.31 | 2.16 | 3789 | 1468 | 4605 | 694 |
| | 5839 | 89.1 | 357.2 | 4765.62 | 1336.76 | 479.09 | 1373.43 | 1.04 | 3698 | 1559 | 4602 | 697 |
| | 5931 | 88.6 | 356.9 | 4767.47 | 1428.62 | 474.36 | 1464.53 | 0.63 | 3606 | 1650 | 4600 | 700 |
| | 6023 | 89 | 356.4 | 4769.40 | 1520.44 | 468.99 | 1555.53 | 0.70 | 3515 | 1742 | 4597 | 703 |
| | 6113 | 89.6 | 357.9 | 4770.50 | 1610.32 | 464.51 | 1644.68 | 1.79 | 3425 | 1832 | 4595 | 706 |
| | 6204 | 88.5 | 358.8 | 4772.01 | 1701.27 | 461.89 | 1735.05 | 1.56 | 3334 | 1923 | 4594 | 707 |
| | 6294 | 90.3 | 359.1 | 4772.95 | 1791.25 | 460.24 | 1824.54 | 2.03 | 3244 | 2013 | 4595 | 707 |
| | 6386 | 90.9 | 359.4 | 4771.99 | 1883.23 | 459.04 | 1916.07 | 0.73 | 3152 | 2105 | 4596 | 706 |
| | 6477 | 92.1 | 359.6 | 4769.60 | 1974.20 | 458.24 | 2006.62 | 1.34 | 3061 | 2196 | 4597 | 705 |
| | 6567 | 90 | 359.9 | 4767.95 | 2064.17 | 457.85 | 2096.22 | 2.36 | 2971 | 2286 | 4599 | 704 |
| | 6662 | 90.3 | 0.8 | 4767.71 | 2159.17 | 458.43 | 2190.91 | 1.00 | 2876 | 2381 | 4602 | 702 |
| | 6758 | 89.3 | 359.8 | 4768.04 | 2255.17 | 458.93 | 2286.58 | 1.47 | 2780 | 2477 | 4605 | 700 |
| | 6852 | 89.5 | 359.2 | 4769.02 | 2349.16 | 458.11 | 2380.15 | 0.67 | 2686 | 2571 | 4606 | 699 |
| | 6946 | 90.2 | 358.4 | 4769.27 | 2443.14 | 456.15 | 2473.59 | 1.13 | 2592 | 2665 | 4607 | 699 |
| | 7041 | 89.1 | 357.7 | 4769.85 | 2538.08 | 452.91 | 2567.89 | 1.37 | 2497 | 2760 | 4606 | 700 |
| | 7136 | 90 | 357.7 | 4770.60 | 2633.00 | 449.10 | 2662.12 | 0.95 | 2402 | 2855 | 4604 | 702 |
| | 7231 | 91.7 | 358.5 | 4769.19 | 2727.93 | 445.95 | 2756.42 | 1.98 | 2307 | 2950 | 4604 | 704 |
| | 7325 | 90.2 | 359.2 | 4767.63 | 2821.89 | 444.07 | 2849.86 | 1.76 | 2213 | 3044 | 4604 | 704 |
| | 7419 | 90.7 | 0.1 | 4766.89 | 2915.89 | 443.49 | 2943.45 | 1.10 | 2119 | 3138 | 4606 | 702 |
| | 7514 | 89.8 | 0.2 | 4766.48 | 3010.89 | 443.74 | 3038.10 | 0.95 | 2024 | 3233 | 4608 | 700 |
| | 7608 | 90 | 0.5 | 4766.64 | 3104.88 | 444.31 | 3131.79 | 0.38 | 1930 | 3327 | 4611 | 698 |
| | 7704 | 89.5 | 359.4 | 4767.06 | 3200.88 | 444.23 | 3227.42 | 1.26 | 1834 | 3423 | 4614 | 696 |
| | 7799 | 89.5 | 359.1 | 4767.89 | 3295.87 | 442.99 | 3321.94 | 0.32 | 1739 | 3518 | 4615 | 696 |
| | 7894 | 90.9 | 357.5 | 4767.56 | 3390.82 | 440.17 | 3416.28 | 2.24 | 1644 | 3613 | 4614 | 697 |
| | 7990 | 91.4 | 356.7 | 4765.63 | 3486.68 | 435.31 | 3511.35 | 0.98 | 1548 | 3709 | 4612 | 700 |
| | 8085 | 90.5 | 358.3 | 4764.05 | 3581.57 | 431.17 | 3605.52 | 1.93 | 1453 | 3804 | 4610 | 702 |
| | 8179 | 91.1 | 358.7 | 4762.74 | 3675.53 | 428.71 | 3698.91 | 0.77 | 1359 | 3898 | 4610 | 703 |
| | 8273 | 92.1 | 359 | 4760.12 | 3769.47 | 426.82 | 3792.33 | 1.11 | 1265 | 3992 | 4610 | 703 |
| | 8368 | 90.5 | 358.4 | 4757.96 | 3864.42 | 424.67 | 3886.73 | 1.80 | 1170 | 4087 | 4610 | 703 |
| | 8463 | 91.3 | 358.2 | 4756.47 | 3959.37 | 421.85 | 3981.07 | 0.87 | 1075 | 4182 | 4610 | 704 |
| | 8557 | 89.9 | 358.2 | 4755.49 | 4053.31 | 418.90 | 4074.40 | 1.49 | 981 | 4276 | 4609 | 706 |
| | 8653 | 90.9 | 358.7 | 4754.82 | 4149.27 | 416.30 | 4169.77 | 1.16 | 885 | 4371 | 4609 | 706 |
| | 8747 | 90.6 | 358.3 | 4753.59 | 4243.23 | 413.84 | 4263.15 | 0.53 | 791 | 4465 | 4609 | 707 |
| | 8842 | 91.1 | 358.3 | 4752.18 | 4338.18 | 411.02 | 4357.49 | 0.53 | 697 | 4560 | 4609 | 708 |
| | 8936 | 89.8 | 358.8 | 4751.44 | 4432.14 | 408.65 | 4450.89 | 1.48 | 603 | 4654 | 4608 | 709 |
| | 9031 | 90.5 | 359.4 | 4751.19 | 4527.13 | 407.15 | 4545.39 | 0.97 | 508 | 4749 | 4609 | 708 |
| | 9126 | 91.1 | 359 | 4749.86 | 4622.11 | 405.83 | 4639.89 | 0.76 | 413 | 4844 | 4610 | 708 |
| | 9144 | 91.3 | 358.8 | 4749.49 | 4640.10 | 405.48 | 4657.79 | 1.57 | 395 | 4862 | 4610 | 708 |
| | 9206 | 91.3 | 358.8 | 4748.08 | 4702.08 | 404.18 | 4719.41 | 0.00 | 333 | 4924 | 4611 | 708 |

18) Frac the MISSISSIPPI (Stage 1) as follows using the chemical concentrations below:

| | Surfactant (gpt) | $ClO_2$ (ppm) | Scale Inhibitor (gpt) |
|---|---|---|---|
| Archer/Cimarron | 0 | 2-3 | 0.1 |
| Schlumberger | 0.5 | 2-3 | 0.25 |

NOTE: Pump FR as required to obtain minimum rate of 75 bpm. DO NOT EXCEED 0.75 gal/1000 concentration of FR without prior discussion with engineer.

| STAGE 1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 9,143 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 19100 | 455 | | | | | 4.5 |
| Slickwater | 100 | 6400 | 152 | 40/70 | 0.25 | Garnet | 1600 | 1.5 |
| Slickwater | 100 | 3200 | 76 | 40/70 | 0.50 | Garnet | 1600 | 0.8 |
| Slickwater | 100 | 7200 | 171 | | | | | 1.7 |
| Slickwater | 100 | 12200 | 290 | 40/70 | 0.50 | Genoa | 6100 | 2.9 |
| Slickwater | 100 | 9150 | 218 | | | | | 2.2 |
| Slickwater | 100 | 12267 | 292 | 40/70 | 0.75 | Genoa | 9200 | 2.9 |
| Slickwater | 100 | 9200 | 219 | | | | | 2.2 |
| Slickwater | 100 | 6100 | 145 | 40/70 | 1.00 | Genoa | 6100 | 1.5 |
| Slickwater | 100 | 4575 | 109 | | | | | 1.1 |
| Slickwater | 100 | 6100 | 145 | 40/70 | 1.00 | Garnet | 6100 | 1.5 |
| Slickwater | 100 | 8052 | 192 | | | | | 1.9 |
| TOTAL | | 104,294 | 2,483 | | | | 30,700 | 25.5 |
| | | | | | | | 9300 | |

Frac the MISSISSIPPI (Stage 2) as follows:
Drop 2.063" ball. Reduce rate to 5-10bpm as +/- 88 bbls (50 bbls before ball seats).
138.9 bbls to sleeve

| STAGE 2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,962 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 17900 | 424 | | | | | 4.2 |
| Slickwater | 100 | 6000 | 143 | 40/70 | 0.25 | Garnet | 1500 | 1.4 |
| Slickwater | 100 | 3000 | 71 | 40/70 | 0.50 | Garnet | 1500 | 0.7 |
| Slickwater | 100 | 6750 | 161 | | | | | 1.6 |
| Slickwater | 100 | 11400 | 271 | 40/70 | 0.50 | Genoa | 5700 | 2.7 |
| Slickwater | 100 | 8550 | 204 | | | | | 2.0 |
| Slickwater | 100 | 11333 | 270 | 40/70 | 0.75 | Genoa | 8500 | 2.7 |
| Slickwater | 100 | 8500 | 202 | | | | | 2.0 |
| Slickwater | 100 | 5700 | 136 | 40/70 | 1.00 | Genoa | 5700 | 1.4 |
| Slickwater | 100 | 4275 | 102 | | | | | 1.0 |
| Slickwater | 100 | 5700 | 136 | 40/70 | 1.00 | Garnet | 5700 | 1.4 |
| Slickwater | 100 | 7934 | 189 | | | | | 1.9 |
| TOTAL | | 97,792 | 2,326 | | | | 28,600 | 24.0 |
| | | | | | | | 8700 | |

Frac the MISSISSIPPI (Stage 3) as follows:
Drop 2.125" ball. Reduce rate to 5-10bpm as +/- 86 bbls (50 bbls before ball seats).
136.7 bbls to seat

| STAGE 3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,820 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 22300 | 530 | | | | | 5.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.25 | Garnet | 1800 | 1.7 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 0.50 | Garnet | 1800 | 0.9 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 14400 | 343 | 40/70 | 0.50 | Genoa | 7200 | 3.4 |
| Slickwater | 100 | 10800 | 257 | | | | | 2.6 |
| Slickwater | 100 | 14400 | 343 | 40/70 | 0.75 | Genoa | 10800 | 3.4 |
| Slickwater | 100 | 10800 | 257 | | | | | 2.6 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 1.00 | Genoa | 7200 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 1.00 | Garnet | 7200 | 1.7 |
| Slickwater | 100 | 7842 | 187 | | | | | 1.9 |
| TOTAL | | 119,992 | 2,856 | | | | 36,000 | 29.3 |
| | | | | | | | 10800 | |

Frac the MISSISSIPPI (Stage 4) as follows:
Drop 2.188" ball. Reduce rate to 5-10bpm as +/- 84 bbls (50 bbls before ball seats).
134.0 bbls to seat

| STAGE 4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,646 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 16900 | 401 | | | | | 4.0 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 10800 | 257 | 40/70 | 0.50 | Genoa | 5400 | 2.6 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 10800 | 257 | 40/70 | 0.75 | Genoa | 8100 | 2.6 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 5400 | 129 | 40/70 | 1.00 | Genoa | 5400 | 1.3 |
| Slickwater | 100 | 4050 | 96 | | | | | 1.0 |
| Slickwater | 100 | 5400 | 129 | 40/70 | 1.00 | Garnet | 5400 | 1.3 |
| Slickwater | 100 | 7728 | 184 | | | | | 1.8 |
| TOTAL | | 92,728 | 2,206 | | | | 27,100 | 22.8 |
| | | | | | | | 8200 | |

Frac the MISSISSIPPI (Stage 5) as follows:
Drop 2.250" ball. Reduce rate to 5-10bpm as +/- 82 bbls (50 bbls before ball seats).
132.5 bbls to seat

| STAGE 5 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,551 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 18100 | 430 | | | | | 4.3 |
| Slickwater | 100 | 6000 | 143 | 40/70 | 0.25 | Garnet | 1500 | 1.4 |
| Slickwater | 100 | 3000 | 71 | 40/70 | 0.50 | Garnet | 1500 | 0.7 |
| Slickwater | 100 | 6750 | 161 | | | | | 1.6 |
| Slickwater | 100 | 11600 | 276 | 40/70 | 0.50 | Genoa | 5800 | 2.8 |
| Slickwater | 100 | 8700 | 207 | | | | | 2.1 |
| Slickwater | 100 | 11600 | 276 | 40/70 | 0.75 | Genoa | 8700 | 2.8 |
| Slickwater | 100 | 8700 | 207 | | | | | 2.1 |
| Slickwater | 100 | 5800 | 138 | 40/70 | 1.00 | Genoa | 5800 | 1.4 |
| Slickwater | 100 | 4350 | 104 | | | | | 1.0 |
| Slickwater | 100 | 5800 | 138 | 40/70 | 1.00 | Garnet | 5800 | 1.4 |
| Slickwater | 100 | 7666 | 183 | | | | | 1.8 |
| TOTAL | | 98,816 | 2,352 | | | | 29,100 | 24.2 |

8800

Frac the MISSISSIPPI (Stage 6) as follows:
Drop 2.313" ball. Reduce rate to 5-10bpm as +/- 80 bbls (50 bbls before ball seats).
130.3 bbls to seat

| STAGE 6 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,408 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 7573 | 180 | | | | | 1.8 |
| TOTAL | | 67,773 | 1,613 | | | | 19,100 | 16.8 |

5800

Frac the MISSISSIPPI (Stage 7) as follows:
Drop 2.375" ball. Reduce rate to 5-10bpm as +/- 78 bbls (50 bbls before ball seats).
128.9 bbls to seat

| STAGE 7 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,314 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 7512 | 179 | | | | | 1.8 |
| TOTAL | | 67,712 | 1,612 | | | | 19,100 | 16.8 |

5800

Frac the MISSISSIPPI (Stage 8) as follows:
Drop 2.438" ball. Reduce rate to 5-10bpm as +/- 77 bbls (50 bbls before ball seats).
127.4 bbls to seat

| STAGE 8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,221 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 7452 | 177 | | | | | 1.8 |
| TOTAL | | 67,652 | 1,610 | | | | 19,100 | 16.8 |

5800

Frac the MISSISSIPPI (Stage 9) as follows:
Drop 2.500" ball. Reduce rate to 5-10bpm as +/- 75 bbls (50 bbls before ball seats).
126.0 bbls to seat

| STAGE 9 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,127 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 7390 | 176 | | | | | 1.8 |
| TOTAL | | 67,590 | 1,609 | | | | 19,100 | 16.8 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 10) as follows:
Drop 2.563" ball. Reduce rate to 5-10bpm as +/- 74 bbls (50 bbls before ball seats).
124.5 bbls to seat

| STAGE 10 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 8,031 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 7328 | 174 | | | | | 1.7 |
| TOTAL | | 67,528 | 1,608 | | | | 19,100 | 16.8 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 11) as follows:
Drop 2.625" ball. Reduce rate to 5-10bpm as +/- 71 bbls (50 bbls before ball seats).
121.7 bbls to seat

| STAGE 11 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,852 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 22300 | 530 | | | | | 5.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.25 | Garnet | 1800 | 1.7 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 0.50 | Garnet | 1800 | 0.9 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 14400 | 343 | 40/70 | 0.50 | Genoa | 7200 | 3.4 |
| Slickwater | 100 | 10800 | 257 | | | | | 2.6 |
| Slickwater | 100 | 14400 | 343 | 40/70 | 0.75 | Genoa | 10800 | 3.4 |
| Slickwater | 100 | 10800 | 257 | | | | | 2.6 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 1.00 | Genoa | 7200 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 1.00 | Garnet | 7200 | 1.7 |
| Slickwater | 100 | 7212 | 172 | | | | | 1.7 |
| TOTAL | | 119,362 | 2,841 | | | | 36,000 | 29.1 |
| | | | | | | | 10800 | |

Frac the MISSISSIPPI (Stage 12) as follows:
Drop 2.688" ball. Reduce rate to 5-10bpm as +/- 69 bbls (50 bbls before ball seats).
119.6 bbls to seat

| STAGE 12 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,713 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 17100 | 406 | | | | | 4.1 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 11000 | 262 | 40/70 | 0.50 | Genoa | 5500 | 2.6 |
| Slickwater | 100 | 8250 | 196 | | | | | 2.0 |
| Slickwater | 100 | 10933 | 260 | 40/70 | 0.75 | Genoa | 8200 | 2.6 |
| Slickwater | 100 | 8200 | 195 | | | | | 2.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Genoa | 5500 | 1.3 |
| Slickwater | 100 | 4125 | 98 | | | | | 1.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Garnet | 5500 | 1.3 |
| Slickwater | 100 | 7121 | 170 | | | | | 1.7 |
| TOTAL | | 93,180 | 2,217 | | | | 27,500 | 22.9 |
| | | | | | | | 8300 | |

Frac the MISSISSIPPI (Stage 13) as follows:
Drop 2.750" ball. Reduce rate to 5-10bpm as +/- 67 bbls (50 bbls before ball seats).
117.4 bbls to seat

| STAGE 13 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,577 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 17900 | 424 | | | | | 4.2 |
| Slickwater | 100 | 6000 | 143 | 40/70 | 0.25 | Garnet | 1500 | 1.4 |
| Slickwater | 100 | 3000 | 71 | 40/70 | 0.50 | Garnet | 1500 | 0.7 |
| Slickwater | 100 | 6750 | 161 | | | | | 1.6 |
| Slickwater | 100 | 11400 | 271 | 40/70 | 0.50 | Genoa | 5700 | 2.7 |
| Slickwater | 100 | 8550 | 204 | | | | | 2.0 |
| Slickwater | 100 | 11333 | 270 | 40/70 | 0.75 | Genoa | 8500 | 2.7 |
| Slickwater | 100 | 8500 | 202 | | | | | 2.0 |
| Slickwater | 100 | 5700 | 136 | 40/70 | 1.00 | Genoa | 5700 | 1.4 |
| Slickwater | 100 | 4275 | 102 | | | | | 1.0 |
| Slickwater | 100 | 5700 | 136 | 40/70 | 1.00 | Garnet | 5700 | 1.4 |
| Slickwater | 100 | 7032 | 167 | | | | | 1.7 |
| TOTAL | | 96,891 | 2,305 | | | | 28,600 | 23.8 |
| | | | | | | | 8700 | |

Frac the MISSISSIPPI (Stage 14) as follows:
Drop 2.813" ball. Reduce rate to 5-10bpm as +/- 65 bbls (50 bbls before ball seats).
115.9 bbls to seat

| STAGE 14 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,479 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 12200 | 288 | | | | | 2.9 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7800 | 186 | 40/70 | 0.50 | Genoa | 3900 | 1.9 |
| Slickwater | 100 | 5850 | 139 | | | | | 1.4 |
| Slickwater | 100 | 7733 | 184 | 40/70 | 0.75 | Genoa | 5800 | 1.8 |
| Slickwater | 100 | 5800 | 138 | | | | | 1.4 |
| Slickwater | 100 | 3900 | 93 | 40/70 | 1.00 | Genoa | 3900 | 0.9 |
| Slickwater | 100 | 2925 | 70 | | | | | 0.7 |
| Slickwater | 100 | 3900 | 93 | 40/70 | 1.00 | Garnet | 3900 | 0.9 |
| Slickwater | 100 | 6969 | 166 | | | | | 1.7 |
| TOTAL | | 68,327 | 1,624 | | | | 19,500 | 17.0 |
| | | | | | | | 5900 | |

Frac the MISSISSIPPI (Stage 15) as follows:
Drop 2.875" ball. Reduce rate to 5-10bpm as +/- 64 bbls (50 bbls before ball seats).
114.5 bbls to seat

| STAGE 15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,385 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 17200 | 407 | | | | | 4.1 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 11000 | 262 | 40/70 | 0.50 | Genoa | 5500 | 2.6 |
| Slickwater | 100 | 8250 | 196 | | | | | 2.0 |
| Slickwater | 100 | 11067 | 263 | 40/70 | 0.75 | Genoa | 8300 | 2.6 |
| Slickwater | 100 | 8300 | 198 | | | | | 2.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Genoa | 5500 | 1.3 |
| Slickwater | 100 | 4125 | 98 | | | | | 1.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Garnet | 5500 | 1.3 |
| Slickwater | 100 | 6908 | 164 | | | | | 1.6 |
| TOTAL | | 93,299 | 2,219 | | | | 27,600 | 22.9 |
| | | | | | | | 8300 | |

Frac the MISSISSIPPI (Stage 16) as follows:
Drop 2.938" ball. Reduce rate to 5-10bpm as +/- 62 bbls (50 bbls before ball seats).
112.4 bbls to seat

| STAGE 16 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,252 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11200 | 265 | | | | | 2.7 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 0.25 | Garnet | 900 | 0.9 |
| Slickwater | 100 | 1800 | 43 | 40/70 | 0.50 | Garnet | 900 | 0.4 |
| Slickwater | 100 | 4050 | 96 | | | | | 1.0 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.50 | Genoa | 3600 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.75 | Genoa | 5400 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 1.00 | Genoa | 3600 | 0.9 |
| Slickwater | 100 | 2700 | 64 | | | | | 0.6 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 1.00 | Garnet | 3600 | 0.9 |
| Slickwater | 100 | 6821 | 162 | | | | | 1.6 |
| TOTAL | | 63,321 | 1,506 | | | | 18,000 | 15.8 |
| | | | | | | | 5400 | |

Frac the MISSISSIPPI (Stage 17) as follows:
Drop 3.000" ball. Reduce rate to 5-10bpm as +/- 60 bbls (50 bbls before ball seats).
111.0 bbls to seat

| STAGE 17 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,159 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 6761 | 161 | | | | | 1.6 |
| TOTAL | | 66,961 | 1,594 | | | | 19,100 | 16.7 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 18) as follows:
Drop 3.063" ball. Reduce rate to 5-10bpm as +/- 59 bbls (50 bbls before ball seats).
109.5 bbls to seat

| STAGE 18 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 7,065 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 17100 | 406 | | | | | 4.1 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 11000 | 262 | 40/70 | 0.50 | Genoa | 5500 | 2.6 |
| Slickwater | 100 | 8250 | 196 | | | | | 2.0 |
| Slickwater | 100 | 10933 | 260 | 40/70 | 0.75 | Genoa | 8200 | 2.6 |
| Slickwater | 100 | 8200 | 195 | | | | | 2.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Genoa | 5500 | 1.3 |
| Slickwater | 100 | 4125 | 98 | | | | | 1.0 |
| Slickwater | 100 | 5500 | 131 | 40/70 | 1.00 | Garnet | 5500 | 1.3 |
| Slickwater | 100 | 6699 | 159 | | | | | 1.6 |
| TOTAL | | 92,757 | 2,207 | | | | 27,500 | 22.8 |
| | | | | | | | 8300 | |

Frac the MISSISSIPPI (Stage 19) as follows:
Drop 3.125" ball. Reduce rate to 5-10bpm as +/- 57 bbls (50 bbls before ball seats).
107.4 bbls to seat

| STAGE 19 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,931 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11700 | 278 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7400 | 176 | 40/70 | 0.50 | Genoa | 3700 | 1.8 |
| Slickwater | 100 | 5550 | 132 | | | | | 1.3 |
| Slickwater | 100 | 7467 | 178 | 40/70 | 0.75 | Genoa | 5600 | 1.8 |
| Slickwater | 100 | 5600 | 133 | | | | | 1.3 |
| Slickwater | 100 | 3700 | 88 | 40/70 | 1.00 | Genoa | 3700 | 0.9 |
| Slickwater | 100 | 2775 | 66 | | | | | 0.7 |
| Slickwater | 100 | 3700 | 88 | 40/70 | 1.00 | Garnet | 3700 | 0.9 |
| Slickwater | 100 | 6612 | 157 | | | | | 1.6 |
| TOTAL | | 65,754 | 1,565 | | | | 18,700 | 16.4 |
| | | | | | | | 5700 | |

Frac the MISSISSIPPI (Stage 20) as follows:
Drop 3.188" ball. Reduce rate to 5-10bpm as +/- 55 bbls (50 bbls before ball seats).
105.9 bbls to seat

| STAGE 20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,835 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 6549 | 156 | | | | | 1.6 |
| TOTAL | | 66,749 | 1,589 | | | | 19,100 | 16.6 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 21) as follows:
Drop 3.250" ball. Reduce rate to 5-10bpm as +/- 54 bbls (50 bbls before ball seats).
104.5 bbls to seat

| STAGE 21 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,744 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 16700 | 396 | | | | | 4.0 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 10600 | 252 | 40/70 | 0.50 | Genoa | 5300 | 2.5 |
| Slickwater | 100 | 7950 | 189 | | | | | 1.9 |
| Slickwater | 100 | 10667 | 254 | 40/70 | 0.75 | Genoa | 8000 | 2.5 |
| Slickwater | 100 | 8000 | 190 | | | | | 1.9 |
| Slickwater | 100 | 5300 | 126 | 40/70 | 1.00 | Genoa | 5300 | 1.3 |
| Slickwater | 100 | 3975 | 95 | | | | | 0.9 |
| Slickwater | 100 | 5300 | 126 | 40/70 | 1.00 | Garnet | 5300 | 1.3 |
| Slickwater | 100 | 6491 | 155 | | | | | 1.5 |
| TOTAL | | 90,432 | 2,151 | | | | 26,700 | 22.2 |
| | | | | | | | 8100 | |

Frac the MISSISSIPPI (Stage 22) as follows:
Drop 3.313" ball. Reduce rate to 5-10bpm as +/- 52 bbls (50 bbls before ball seats).
102.4 bbls to seat

| STAGE 22 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,609 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 13600 | 323 | | | | | 3.2 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 11400 | 271 | 40/70 | 0.50 | Genoa | 5700 | 2.7 |
| Slickwater | 100 | 8550 | 204 | | | | | 2.0 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 6403 | 152 | | | | | 1.5 |
| TOTAL | | 74,953 | 1,783 | | | | 19,100 | 18.5 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 23) as follows:
Drop 3.375" ball. Reduce rate to 5-10bpm as +/- 50 bbls (50 bbls before ball seats).
101.0 bbls to seat

| STAGE 23 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,515 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 282 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7467 | 178 | 40/70 | 0.75 | Genoa | 5600 | 1.8 |
| Slickwater | 100 | 5600 | 133 | | | | | 1.3 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 6341 | 151 | | | | | 1.5 |
| TOTAL | | 66,308 | 1,577 | | | | 19,000 | 16.5 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 24) as follows:

Drop 3.438" ball. Reduce rate to 5-10bpm as +/- 49 bbls (50 bbls before ball seats).

99.5 bbls to seat

| STAGE 24 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,422 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11900 | 283 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.50 | Genoa | 3800 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 7600 | 181 | 40/70 | 0.75 | Genoa | 5700 | 1.8 |
| Slickwater | 100 | 5700 | 136 | | | | | 1.4 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Genoa | 3800 | 0.9 |
| Slickwater | 100 | 2850 | 68 | | | | | 0.7 |
| Slickwater | 100 | 3800 | 90 | 40/70 | 1.00 | Garnet | 3800 | 0.9 |
| Slickwater | 100 | 6281 | 150 | | | | | 1.5 |
| TOTAL | | 66,481 | 1,583 | | | | 19,100 | 16.5 |
| | | | | | | | 5800 | |

Frac the MISSISSIPPI (Stage 25) as follows:

Drop 3.500" ball. Reduce rate to 5-10bpm as +/- 48 bbls (50 bbls before ball seats).

98.1 bbls to seat

| STAGE 25 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,329 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11700 | 278 | | | | | 2.8 |
| Slickwater | 100 | 4000 | 95 | 40/70 | 0.25 | Garnet | 1000 | 1.0 |
| Slickwater | 100 | 2000 | 48 | 40/70 | 0.50 | Garnet | 1000 | 0.5 |
| Slickwater | 100 | 4500 | 107 | | | | | 1.1 |
| Slickwater | 100 | 7400 | 176 | 40/70 | 0.50 | Genoa | 3700 | 1.8 |
| Slickwater | 100 | 5550 | 132 | | | | | 1.3 |
| Slickwater | 100 | 7467 | 178 | 40/70 | 0.75 | Genoa | 5600 | 1.8 |
| Slickwater | 100 | 5600 | 133 | | | | | 1.3 |
| Slickwater | 100 | 3700 | 88 | 40/70 | 1.00 | Genoa | 3700 | 0.9 |
| Slickwater | 100 | 2775 | 66 | | | | | 0.7 |
| Slickwater | 100 | 3700 | 88 | 40/70 | 1.00 | Garnet | 3700 | 0.9 |
| Slickwater | 100 | 6220 | 148 | | | | | 1.5 |
| TOTAL | | 65,362 | 1,556 | | | | 18,700 | 16.3 |
| | | | | | | | 5700 | |

Frac the MISSISSIPPI (Stage 26) as follows:

Drop 3.563" ball. Reduce rate to 5-10bpm as +/- 45 bbls (50 bbls before ball seats).

95.9 bbls to seat

| STAGE 26 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,188 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 16900 | 401 | | | | | 4.0 |
| Slickwater | 100 | 5600 | 133 | 40/70 | 0.25 | Garnet | 1400 | 1.3 |
| Slickwater | 100 | 2800 | 67 | 40/70 | 0.50 | Garnet | 1400 | 0.7 |
| Slickwater | 100 | 6300 | 150 | | | | | 1.5 |
| Slickwater | 100 | 10800 | 257 | 40/70 | 0.50 | Genoa | 5400 | 2.6 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 10800 | 257 | 40/70 | 0.75 | Genoa | 8100 | 2.6 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 5400 | 129 | 40/70 | 1.00 | Genoa | 5400 | 1.3 |
| Slickwater | 100 | 4050 | 96 | | | | | 1.0 |
| Slickwater | 100 | 5400 | 129 | 40/70 | 1.00 | Garnet | 5400 | 1.3 |
| Slickwater | 100 | 6128 | 146 | | | | | 1.5 |
| TOTAL | | 91,128 | 2,168 | | | | 27,100 | 22.4 |
| | | | | | | | 8200 | |

Frac the MISSISSIPPI (Stage 27) as follows:
Drop 3.625" ball. Reduce rate to 5-10bpm as +/- 43 bbls (50 bbls before ball seats).
93.3 bbls to seat

| STAGE 27 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 6,019 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 21800 | 519 | | | | | 5.2 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.25 | Garnet | 1800 | 1.7 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 0.50 | Garnet | 1800 | 0.9 |
| Slickwater | 100 | 8100 | 193 | | | | | 1.9 |
| Slickwater | 100 | 14000 | 333 | 40/70 | 0.50 | Genoa | 7000 | 3.3 |
| Slickwater | 100 | 10500 | 250 | | | | | 2.5 |
| Slickwater | 100 | 14000 | 333 | 40/70 | 0.75 | Genoa | 10500 | 3.3 |
| Slickwater | 100 | 10500 | 250 | | | | | 2.5 |
| Slickwater | 100 | 7000 | 167 | 40/70 | 1.00 | Genoa | 7000 | 1.7 |
| Slickwater | 100 | 5250 | 125 | | | | | 1.3 |
| Slickwater | 100 | 7000 | 167 | 40/70 | 1.00 | Garnet | 7000 | 1.7 |
| Slickwater | 100 | 6019 | 143 | | | | | 1.4 |
| TOTAL | | 115,719 | 2,755 | | | | 35,100 | 28.3 |
| | | | | | | | 10600 | |

Frac the MISSISSIPPI (Stage 28) as follows:
Drop 3.688" ball. Reduce rate to 5-10bpm as +/- 41 bbls (50 bbls before ball seats).
91.9 bbls to seat

| STAGE 28 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 5,931 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 11200 | 265 | | | | | 2.7 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 0.25 | Garnet | 900 | 0.9 |
| Slickwater | 100 | 1800 | 43 | 40/70 | 0.50 | Garnet | 900 | 0.4 |
| Slickwater | 100 | 4050 | 96 | | | | | 1.0 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.50 | Genoa | 3600 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 7200 | 171 | 40/70 | 0.75 | Genoa | 5400 | 1.7 |
| Slickwater | 100 | 5400 | 129 | | | | | 1.3 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 1.00 | Genoa | 3600 | 0.9 |
| Slickwater | 100 | 2700 | 64 | | | | | 0.6 |
| Slickwater | 100 | 3600 | 86 | 40/70 | 1.00 | Garnet | 3600 | 0.9 |
| Slickwater | 100 | 5961 | 142 | | | | | 1.4 |
| TOTAL | | 62,461 | 1,486 | | | | 18,000 | 15.6 |
| | | | | | | | 5400 | |

Frac the MISSISSIPPI (Stage 29) as follows:
Drop 3.750" ball. Reduce rate to 5-10bpm as +/- 40 bbls (50 bbls before ball seats).
90.5 bbls to seat

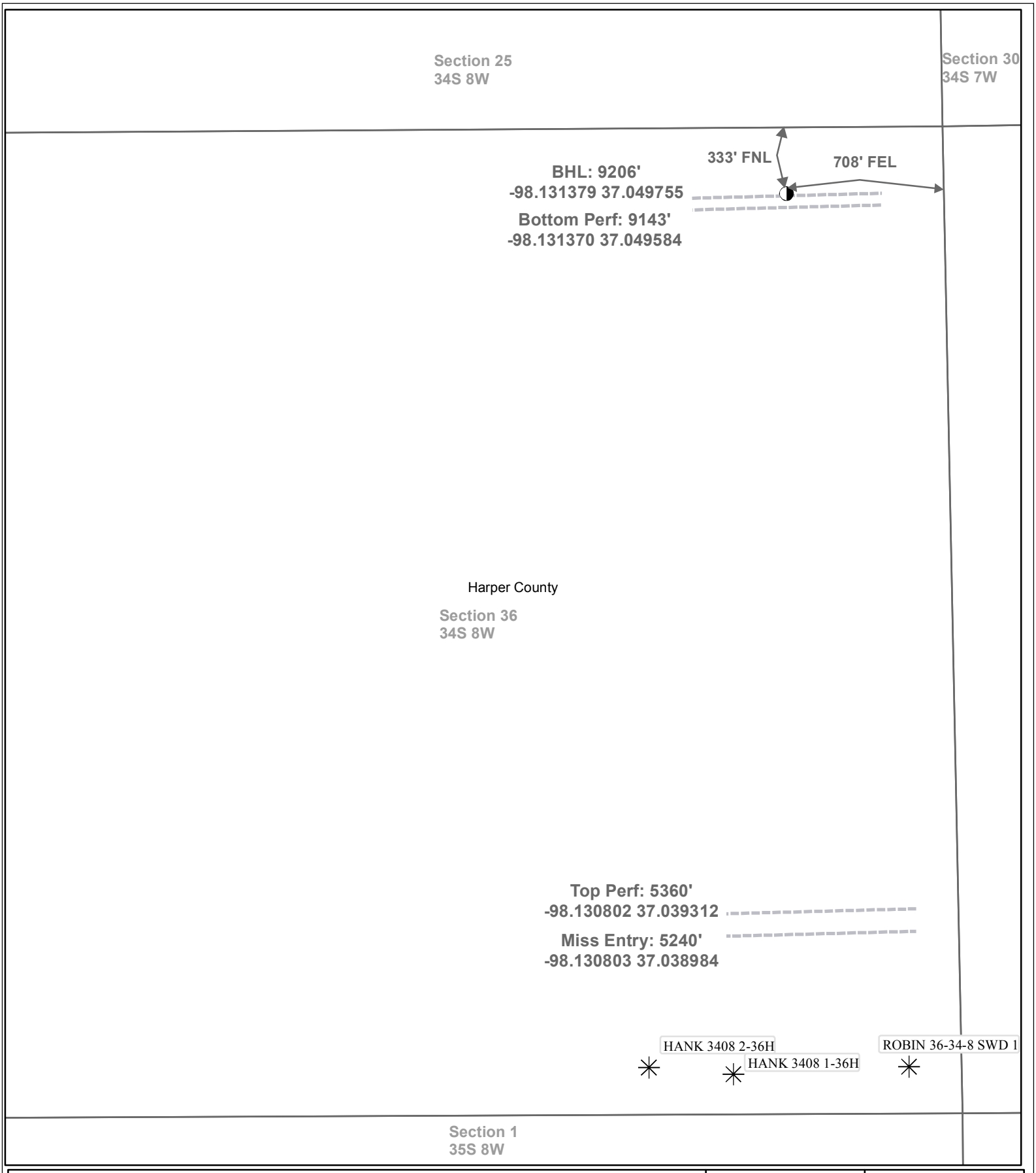
| STAGE 29 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Port @ | 5,837 ' | | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop type | Prop, lbs | ime, min |
| 15% HCl acid | 20 | 750 | 18 | | | | | 0.9 |
| Slickwater | 100 | 25800 | 612 | | | | | 6.1 |
| Slickwater | 100 | 8400 | 200 | 40/70 | 0.25 | Garnet | 2100 | 2.0 |
| Slickwater | 100 | 4200 | 100 | 40/70 | 0.50 | Garnet | 2100 | 1.0 |
| Slickwater | 100 | 9450 | 225 | | | | | 2.3 |
| Slickwater | 100 | 16600 | 395 | 40/70 | 0.50 | Genoa | 8300 | 4.0 |
| Slickwater | 100 | 12450 | 296 | | | | | 3.0 |
| Slickwater | 100 | 16533 | 394 | 40/70 | 0.75 | Genoa | 12400 | 3.9 |
| Slickwater | 100 | 12400 | 295 | | | | | 3.0 |
| Slickwater | 100 | 8300 | 198 | 40/70 | 1.00 | Genoa | 8300 | 2.0 |
| Slickwater | 100 | 6225 | 148 | | | | | 1.5 |
| Slickwater | 100 | 8300 | 198 | 40/70 | 1.00 | Garnet | 8300 | 2.0 |
| Slickwater | 100 | 5900 | 140 | | | | | 1.4 |
| TOTAL | | 135,308 | 3,220 | | | | 41,500 | 32.9 |
| | | | | | | | 12500 | |

19) SWI at lower frac valve. ND frac head and frac lines. NU frac lines to 4" wing valves on each side of 5K completion spool. Pressure test lines to 6000 psig. Max STP is 5000 psig. Frac Mississippi Lime STAGE 30 down 7" x 4-1/2" annulus as follows:

| STAGE 30 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Top perf @ | 5,360 ' | | | |
| Fluid | Rate | Vol, gal | Vol, bbl | Prop | Prop Con | Prop, lbs | Time, min |
| 15% HCl acid | 20 | 1500 | 36 | | | | 2 |
| Slickwater | 60 | 105000 | 2500 | | | | 42 |
| **TOTAL** | | **106,500** | **2,536** | | | **0** | **43.5** |

| | | | |
|---|---|---|---|
| **TOTAL FRAC JOB VOLUMES:** | **60,759** | **bbls** | **712,900 lbs, Prop** |
| **TOTAL VOLUMES w/ ball displacement:** | **63,951** | **bbls** | **215,700 lbs, Garnet** |

20) Shut in wellhead and iron, drain with vacuum truck. RDMO frac crew. ND wellhead isolation tool. Transfer




SANDRIDGE
THE POWER OF US

Actual BH Location

SandRidge Wells

Perf

Sections

**Actual Bottom-Hole Location of Hank 3408 1-36H**
**T&R: 34S 8W**
**Section: 36, 708' FEL & 333' FNL**
**-98.131379 37.049755**

1 in = 667 ft

0 500 1,000 2,000 Feet

N

| | |
|---|---|
| Draftsman: Dory Deines | Draft Date: 12/4/2014 |
| Drawing Name/Number: Addendum_Hank 3408 1-36H.mxd | |
| Coordinate System: NAD 1927 State Plane Kansas South FIPS: 1502 | |

# Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|---|---|
| Job Start Date: | 10/13/2014 |
| Job End Date: | 10/14/2014 |
| State: | Kansas |
| County: | Harper |
| API Number: | 15-077-22079-01-00 |
| Operator Name: | SandRidge Energy |
| Well Name and Number: | Hank 3408 #1-36H |
| Longitude: | -98.13201000 |
| Latitude: | 37.03690000 |
| Datum: | NAD27 |
| Federal/Tribal Well: | NO |
| True Vertical Depth: | 4,765 |
| Total Base Water Volume (gal): | 2,539,656 |
| Total Base Non Water Volume: | 0 |

**Hydraulic Fracturing Fluid Composition:**

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|---|---|---|---|---|---|---|---|
| Water | Well Operator | Carrier/Base Fluid | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 95.45659 | None |
| 40/70 Premium Preferred Sand | CAF | Proppant, Scouring, Fill | | | | | |
| | | | Crystalline Silica (quartz) | 14808-60-7 | 100.00000 | 2.21465 | None |
| 15% Unihibited HCl Acid | CAF | Etching, Dissolving, Cleaning | | | | | |
| | | | Water | 7732-18-5 | 85.00000 | 0.85861 | None |
| | | | Hydrochloric Acid | 7647-01-0 | 15.00000 | 0.15152 | None |
| | | | Water | 7732-18-5 | 24.00000 | 0.00020 | None |
| | | | Methanol | 67-56-1 | 9.00000 | 0.00008 | None |
| | | | 2-Butoxyethanol | 111-76-2 | 8.40000 | 0.00007 | None |
| | | | Tar Bases-quinoline derivs-benzyl chloride/quaternized | 72480-70-7 | 8.40000 | 0.00007 | None |
| | | | N-Dimethyformamide | 68-12-2 | 8.40000 | 0.00007 | None |
| | | | Triethyl Phosphate | 78-40-0 | 8.40000 | 0.00007 | None |
| | | | Ethylene Glycol | 107-21-1 | 8.40000 | 0.00007 | None |
| | | | Isopropyl Alchohol | 67-63-0 | 8.40000 | 0.00007 | None |
| | | | Ethoxylated Nonylphenol | 68412-54-4 | 8.40000 | 0.00007 | None |
| | | | Cinnamaldehyde | 104-55-2 | 8.40000 | 0.00007 | None |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 40/70 Resin Coated Sand | CAF | Proppant, Scouring, Fill | | | | | |
| | | | Crystalline Silica (quartz) | 14808-60-7 | 97.00000 | 0.92185 | None |
| C102 | Bosque Disposal Systems, LLC | Oxidizer | | | | | |
| | | | Chlorine Dioxide | 10049-04-4 | 15.00000 | 0.27066 | |
| FR-1 | CAF | Friction Reducer | | | | | |
| | | | Water | 7732-18-5 | 50.00000 | 0.00490 | None |
| | | | Petroleum Hydrotreated Light Distillate | 64742-47-8 | 2.50000 | 0.00205 | None |
| | | | Phosphoric Acid | 7664-38-2 | 16.80000 | 0.00165 | None |
| | | | Hydrochloric Acid | 7647-01-0 | 16.80000 | 0.00165 | None |
| | | | Ethylene Glycol | 107-21-1 | 12.70000 | 0.00125 | None |
| | | | Methanol | 67-56-1 | 3.60000 | 0.00036 | None |
| IC-2L | CAF | Iron Control | | | | | |
| | | | Acetic Acid | 64-19-7 | 80.00000 | 0.00362 | None |
| | | | Water | 7732-18-5 | 54.50000 | 0.00025 | None |
| | | | Polyglycol Ethers | 52624-57-4 | 13.60000 | 0.00006 | None |
| | | | Isopropanol | 67-63-0 | 13.60000 | 0.00006 | None |
| | | | Methanol | 67-56-1 | 9.00000 | 0.00004 | None |
| | | | Glycol Ether EB | 111-76-2 | 9.00000 | 0.00004 | None |

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)