



KANSAS CORPORATION COMMISSION 1071200  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
June 2009

Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 33921  
Name: Gra Ex, LLC  
Address 1: 2435 N Marquette, Kingman, KS 67068  
Address 2: PO BOX 32  
City: KINGMAN State: KS Zip: 67068 + 1066  
Contact Person: Leslie Krehbiel  
Phone: ( 620 ) 532-2644  
CONTRACTOR: License # 34233  
Name: Maverick Drilling LLC  
Wellsite Geologist: Jeffrey Burk  
Purchaser: Sunoco

Designate Type of Completion:

- New Well     Re-Entry     Workover
- Oil     WSW     SWD     SLOW
- 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
- Conv. to GSW
- Plug Back: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_
- Commingled    Permit #: \_\_\_\_\_
- Dual Completion    Permit #: \_\_\_\_\_
- SWD    Permit #: \_\_\_\_\_
- ENHR    Permit #: \_\_\_\_\_
- GSW    Permit #: \_\_\_\_\_

|                                   |                 |   |
|-----------------------------------|-----------------|---|
| 11/27/2011                        | 12/06/2011      | 12/27/2011                              |
| Spud Date or<br>Recompletion Date | Date Reached TD | Completion Date or<br>Recompletion Date |

API No. 15 - 15-185-23712-00-00

Spot Description: \_\_\_\_\_

SW NE SW NE Sec. 31 Twp. 24 S. R. 13  East  West

1702 Feet from  North /  South Line of Section

1730 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE     NW     SE     SW

County: Stafford

Lease Name: Violet Well #: 1

Field Name: Seevers NW

Producing Formation: Lansing/KC

Elevation: Ground: 1943 Kelly Bushing: 1951

Total Depth: 4330 Plug Back Total Depth: 4160

Amount of Surface Pipe Set and Cemented at: 280 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: 32000 ppm Fluid volume: 1500 bbls

Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: Gra Ex, LLC

Lease Name: Gingrich #1 SWD License #: 33921

Quarter SE Sec. 19 Twp. 23 S. R. 15  East  West

County: Pawnee Permit #: D-30682

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

- Letter of Confidentiality Received  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: Deanna Garris Date: 02/23/2012



1071200

Operator Name: Gra Ex, LLC Lease Name: Violet Well #: 1  
 Sec. 31 Twp. 24 S. R. 13  East  West County: Stafford

**INSTRUCTIONS:** Show important tops and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

|   |   |   |                                  |                                 |
|---|---|---|----------------------------------|---------------------------------|
| Drill Stem Tests Taken<br>(Attach Additional Sheets)          | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Log | Formation (Top), Depth and Datum | <input type="checkbox"/> Sample |
| Samples Sent to Geological Survey                             | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Name                                    | Top                              | Datum                           |
| Cores Taken   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Lansing                                 | 3648                             | 1705                            |
| Electric Log Run  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Mississippi                             | 3984                             | 2041                            |
| Electric Log Submitted Electronically<br>(If no, Submit Copy) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Arbuckle                                | 4256                             | 2313                            |
| List All E. Logs Run:<br><b>Attached</b>                      |   |   |                                  |                                 |

| CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> 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 |
| Surface   | 12                | 9                         | 24                | 308           | 60/40          | 205          | 8%gel, 3%cc                |
| Production  | 8                 | 5                         | 15.5              | 4331          | 75lite 125AA2  | 200          | 5 SX gilsonite             |
|   |                   |                           |                   |               |                |              |                            |

| ADDITIONAL CEMENTING / SQUEEZE RECORD   |                  |                |              |                            |
|---|------------------|----------------|--------------|----------------------------|
| Purpose:                                | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
| <input type="checkbox"/> Perforate      |                  |                |              |                            |
| <input type="checkbox"/> Protect Casing | -                |                |              |                            |
| <input type="checkbox"/> Plug Back TD   |                  |                |              |                            |
| <input type="checkbox"/> Plug Off Zone  | -                |                |              |                            |

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type<br>Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record<br>(Amount and Kind of Material Used) | Depth     |
|----------------|---|---|-----------|
| 4              | 3797'-3801' (Lansing I)   | 250 gal MCA & 1000 gal NE/FE  | 3797-3801 |
| 4              | 3810'-3816' (Lansing J1)  | 250 gal MCA & 1000 gal NE/FE  | 3810-3816 |
| 4              | 3823'-3828' (Lansing J2)  | 250 gal MCA & 1000 gal NE/FE  | 3823-3828 |
| 4              | 3888'-3894' (Lansing L)   | 300 gal MCA & 1200 gal NE/FE  | 3888-3894 |
| 4              | 4256'-4260' (under CIBP @4160')   | 150 gal MCA   | 4256-4260 |

|   |                        |  |                            |
|---|------------------------|--|----------------------------|
| TUBING RECORD: Size: <u>2 3/8"</u> Set At: <u>4159</u> Packer At: <u>none</u> |                        | Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |                            |
| Date of First, Resumed Production, SWD or ENHR.<br><u>01/24/2012</u>          |                        | Producing Method:<br><input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____ |                            |
| Estimated Production Per 24 Hours   | Oil Bbls.<br><u>80</u> | Gas Mcf  | Water Bbls.<br><u>10</u>   |
|   |                        |  | Gas-Oil Ratio<br><u>35</u> |

|   |  |  |
|---|--|--|
| DISPOSITION OF GAS:<br><input type="checkbox"/> Vented <input type="checkbox"/> Sold <input checked="" type="checkbox"/> Used on Lease<br>(If vented, Submit ACO-18.) | METHOD OF COMPLETION:<br><input type="checkbox"/> Open Hole <input checked="" type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled<br>(Submit ACO-5) <input type="checkbox"/> Other (Specify) _____ | PRODUCTION INTERVAL:<br><u>3797'-3894'</u><br>Gross Interval _____ |
|---|--|--|

|           |                        |
|-----------|------------------------|
| Form      | ACO1 - Well Completion |
| Operator  | Gra Ex, LLC            |
| Well Name | Violet 1               |
| Doc ID    | 1071200                |

All Electric Logs Run

|         |
|---------|
|         |
| Sonic   |
| Micro   |
| Bond    |
| CNL/CDL |
| DIL     |



|  |                        |                            |
|--|------------------------|----------------------------|
| PAGE<br>1 of 1                           | CUSTOMER NO<br>1001703 | INVOICE DATE<br>11/30/2011 |
| INVOICE NUMBER<br><b>1718 - 90765285</b> |                        |                            |

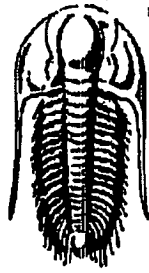
Pratt (620) 672-1201  
 B GRA-EX LLC  
 I PO Box: 32  
 L KINGMAN  
 L KS US 67068  
 T  
 O ATTN: ACCOUNTS PAYABLE

J LEASE NAME Violet 1  
 O LOCATION  
 B COUNTY Stafford  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T  
 E JOB CONTACT

| JOB #   | EQUIPMENT # | PURCHASE ORDER NO. |        | TERMS      | DUE DATE       |
|---|-------------|--------------------|--------|------------|----------------|
| 40401437  | 20920       |                    |        | Cash Sale  | 11/30/2011     |
|   |             | QTY                | U of M | UNIT PRICE | INVOICE AMOUNT |
| <i>For Service Dates: 11/27/2011 to 11/27/2011</i>                |             |                    |        |            |                |
| 0040401437  |             |                    |        |            |                |
| 171805479A Cement-New Well Casing/Pi 11/27/2011<br>B 5/8" Surface |             |                    |        |            |                |
| 60/40 POZ   |             | 205.00             | EA     | 9.24       | 1,894.21 T     |
| Cello-flake   |             | 52.00              | EA     | 2.85       | 148.15 T       |
| Calcium Chloride  |             | 531.00             | EA     | 0.81       | 429.31 T       |
| Wooden Cement Plug 8 5/8"   |             | 1.00               | EA     | 123.20     | 123.20         |
| Unit Mileage Charge-Pickups, Vans & Cars                          |             | 20.00              | HR     | 3.27       | 65.45          |
| Heavy Equipment Mileage   |             | 40.00              | MI     | 5.39       | 215.60         |
| Proppant and Bulk Delivery Charges                                |             | 177.00             | MI     | 1.23       | 218.06         |
| Depth Charge; 0-500'  |             | 1.00               | HR     | 770.00     | 770.00         |
| Blending & Mixing Service Charge                                  |             | 205.00             | MI     | 1.08       | 220.99         |
| Plug Container Utilization Charge                                 |             | 1.00               | EA     | 192.50     | 192.50         |
| Supervisor  |             | 1.00               | HR     | 134.75     | 134.75         |

|                           |                               |               |          |
|---------------------------|-------------------------------|---------------|----------|
| PLEASE REMIT TO:          | SEND OTHER CORRESPONDENCE TO: | SUB TOTAL     | 4,412.22 |
| BASIC ENERGY SERVICES, LP | BASIC ENERGY SERVICES, LP     | TAX           | 180.43   |
| PO BOX 841903             | PO BOX 10460                  | INVOICE TOTAL | 4,592.65 |
| DALLAS, TX 75284-1903     | MIDLAND, TX 79702             |               |          |





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Gra Ex LLC**

PO Box 32  
Kingman, KS 67068

ATTN: Jeff Burk

**Violet #1**

**31-24s-13w Stafford,KS**

Start Date: 2011.12.01 @ 04:40:20

End Date: 2011.12.01 @ 13:52:35

Job Ticket #: 42313      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.12.14 @ 14:17:03

Gra Ex LLC    31-24s-13w Stafford,KS    Violet #1    DST # 1    Lansing D,F    2011.12.01



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

Gra Ex LLC  
 PO Box 32  
 Kingman, KS 67068  
 ATTN: Jeff Burk

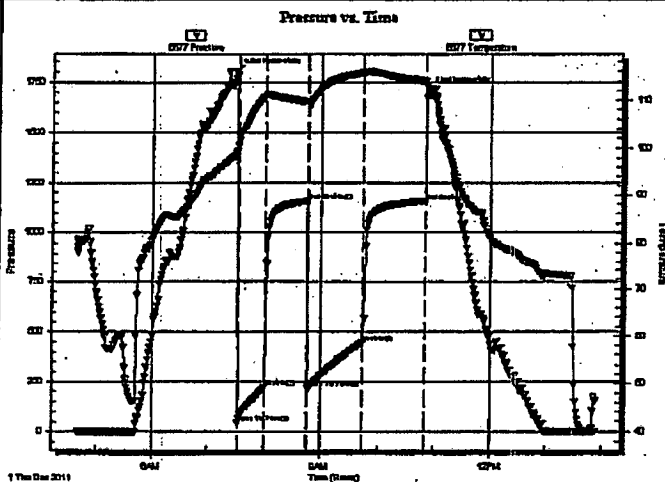
**31-24s-13w Stafford,KS**  
**Violet #1**  
 Job Ticket: 42313      DST#: 1  
 Test Start: 2011.12.01 @ 04:40:20

**GENERAL INFORMATION:**

Formation: **Lansing D,F**  
 Deviated: **No Whipstock**      ft (KB)  
 Test Type: **Conventional Bottom Hole (Initial)**  
 Time Tool Opened: **07:32:35**  
 Tester: **Mike Slemp**  
 Time Test Ended: **13:52:35**  
 Unit No: **53**  
 Interval: **3687.00 ft (KB) To 3744.00 ft (KB) (TVD)**  
 Reference Elevations: **1953.00 ft (KB)**  
 Total Depth: **3744.00 ft (KB) (TVD)**  
**1943.00 ft (CF)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Good**  
 KB to GR/CF: **10.00 ft**

**Serial #: 8677**      **Inside**  
 Press@RunDepth: **445.92 psig @ 3689.00 ft (KB)**      Capacity: **8000.00 psig**  
 Start Date: **2011.12.01**      End Date: **2011.12.01**      Last Calib.: **2011.12.01**  
 Start Time: **04:40:21**      End Time: **13:52:35**      Time On Birt: **2011.12.01 @ 07:30:05**  
 Time Off Birt: **2011.12.01 @ 10:52:35**

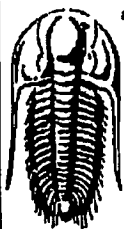
**TEST COMMENT:** IF- BOB in 5 min  
 IS- No blow back  
 FF- BOB in 7 min  
 FS- No blow back



| PRESSURE SUMMARY |                 |              |                      |
|------------------|-----------------|--------------|----------------------|
| Time (Min.)      | Pressure (psig) | Temp (deg F) | Annotation           |
| 0                | 1799.89         | 98.96        | Initial Hydro-static |
| 3                | 44.52           | 100.47       | Open To Flow (1)     |
| 32               | 220.74          | 111.02       | Shut-in(1)           |
| 75               | 1158.37         | 109.72       | End Shut-in(1)       |
| 77               | 214.85          | 109.17       | Open To Flow (2)     |
| 134              | 445.92          | 115.68       | Shut-in(2)           |
| 200              | 1154.32         | 113.91       | End Shut-in(2)       |
| 203              | 1705.95         | 111.53       | Final Hydro-static   |

| Recovery    |                                   |              |
|-------------|-----------------------------------|--------------|
| Length (ft) | Description                       | Volume (bbl) |
| 248.00      | MCW 50% mud 50% water skim of oil | 3.48         |
| 682.00      | MCW 95% water 5% mud              | 9.57         |
|             |                                   |              |
|             |                                   |              |

| Gas Rates |                |                 |                  |
|-----------|----------------|-----------------|------------------|
|           | Choke (Inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|           |                |                 |                  |



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Gra Ex LLC  
 PO Box 32  
 Kingman, KS 67068  
 ATTN: Jeff Burk

31-24s-13w Stafford, KS  
 Violet #1  
 Job Ticket: 42313      DST#: 1  
 Test Start: 2011.12.01 @ 04:40:20

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3668.00 ft | Diameter: 3.80 inches | Volume: 51.45 bbl              | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 70000.00 lb  |
|                           |                    |                       | <u>Total Volume: 51.45 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 7.00 ft            |                       |                                | String Weight: Initial 55000.00 lb |
| Depth to Top Packer:      | 3687.00 ft         |                       |                                | Final 58000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 57.00 ft           |                       |                                |                                    |
| Tool Length:              | 83.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                     |
|------------------|-------------|------------|----------|------------|------------------------------------|
| Shut In Tool     | 5.00        |            |          | 3666.00    |                                    |
| Hydraulic tool   | 5.00        |            |          | 3671.00    |                                    |
| Jars             | 5.00        |            |          | 3676.00    |                                    |
| Safety Joint     | 2.00        |            |          | 3678.00    |                                    |
| Packer           | 5.00        |            |          | 3683.00    | 26.00      Bottom Of Top Packer    |
| Packer           | 4.00        |            |          | 3687.00    |                                    |
| Stubb            | 1.00        |            |          | 3688.00    |                                    |
| Perforations     | 1.00        |            |          | 3689.00    |                                    |
| Recorder         | 0.00        | 8678       | inside   | 3689.00    |                                    |
| Recorder         | 0.00        | 8522       | inside   | 3689.00    |                                    |
| Perforations     | 19.00       |            |          | 3708.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 3709.00    |                                    |
| Drill Pipe       | 31.00       |            |          | 3740.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 3741.00    |                                    |
| Bullnose         | 3.00        |            |          | 3744.00    | 57.00      Bottom Packers & Anchor |

**Total Tool Length: 83.00**





**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Gra Ex LLC  
PO Box 32  
Kingman, KS 67068  
ATTN: Jeff Burk

31-24s-13w Stafford,KS  
Violet #1  
Job Ticket: 42313      DST#: 1  
Test Start: 2011.12.01 @ 04:40:20

**Mud and Cushion Information**

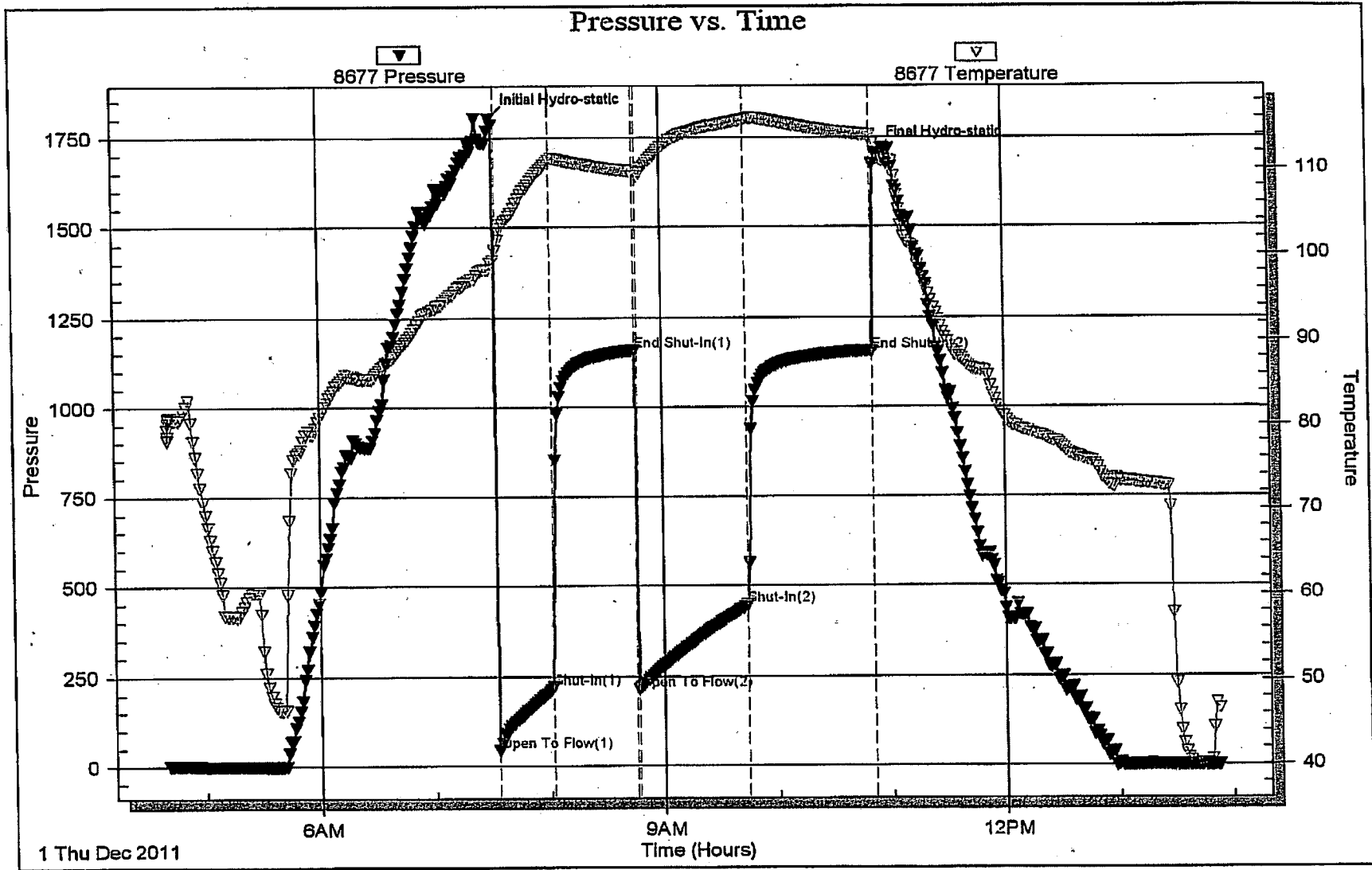
|                                  |                            |                 |           |
|----------------------------------|----------------------------|-----------------|-----------|
| Mud Type: Gel Chem               | Cushion Type:              | OIAP:           | deg API   |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | 68000 ppm |
| Viscosity: 48.00 sec/qt          | Cushion Volume: bbl        |                 |           |
| Water Loss: 8.74 ln <sup>2</sup> | Gas Cushion Type:          |                 |           |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |           |
| Salinity: 2800.00 ppm            |                            |                 |           |
| Filter Cake: inches              |                            |                 |           |

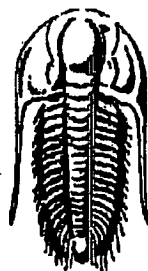
**Recovery Information**

Recovery Table

| Length<br>ft | Description                      | Volume<br>bbl |
|--------------|----------------------------------|---------------|
| 248.00       | MCW 50% mu 50% water skim of oil | 3.479         |
| 682.00       | MCW 95% water 5% mud             | 9.567         |

Total Length: 930.00 ft      Total Volume: 13.046 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Gra Ex LLC**

PO Box 32  
Kingman, KS 67068

ATTN: Jeff Burk

**Violet #1**

**31-24s-13w Stafford,KS**

Start Date: 2011.12.02 @ 01:40:26

End Date: 2011.12.02 @ 12:19:41

Job Ticket #: 42314                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.12.14 @ 14:17:21

Gra Ex LLC

31-24s-13w Stafford,KS

Violet #1

DST # 2

Lansing I, J

2011.12.02



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

Gra Ex LLC  
 PO Box 32  
 Kingman, KS 67068  
 ATTN: Jeff Burk

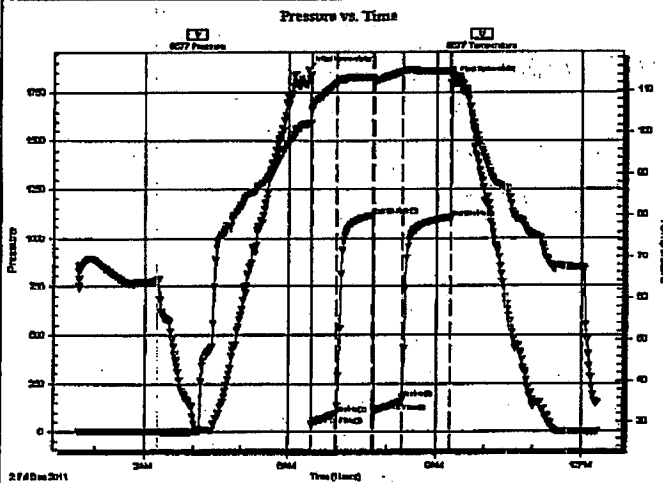
**31-24s-13w Stafford,KS**  
**Violet #1**  
 Job Ticket: 42314      DST#: 2  
 Test Start: 2011.12.02 @ 01:40:26

**GENERAL INFORMATION:**

Formation: Lansing I, J  
 Deviated: No Whipstock      ft (KB)  
 Time Tool Opened: 08:27:41  
 Time Test Ended: 12:19:41  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Mike Slemp  
 Unit No: 53  
 Interval: 3787.00 ft (KB) To 3834.00 ft (KB) (TVD)  
 Reference Elevations: 1953.00 ft (KB)  
 Total Depth: 3834.00 ft (KB) (TVD)      1943.00 ft (CF)  
 Hole Diameter: 7.88 inches      Hole Condition: Good      KB to GR/CF: 10.00 ft

**Serial #: 8677**      Inside  
 Press@RunDepth: 178.06 psig @ 3789.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2011.12.02      End Date: 2011.12.02      Last Calib.: 2011.12.02  
 Start Time: 01:40:27      End Time: 12:19:41      Time On Btm: 2011.12.02 @ 06:23:11  
 Time Off Btm: 2011.12.02 @ 09:20:11

**TEST COMMENT:** IF- BOB in 1 min  
 IS- No blow back  
 FF- BOB ASAO GTS in 15 TSTM  
 FS- No blow back



**PRESSURE SUMMARY**

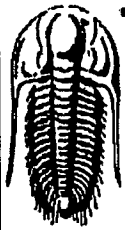
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1866.24         | 102.07       | Initial Hydro-static |
| 5           | 37.76           | 105.50       | Open To Flow (1)     |
| 35          | 95.07           | 111.80       | Shut-In(1)           |
| 80          | 1114.69         | 113.19       | End Shut-In(1)       |
| 81          | 105.87          | 112.07       | Open To Flow (2)     |
| 116         | 178.06          | 114.60       | Shut-In(2)           |
| 174         | 1103.42         | 114.70       | End Shut-In(2)       |
| 177         | 1813.96         | 114.28       | Final Hydro-static   |

**Recovery**

| Length (ft) | Description                     | Volume (bbl) |
|-------------|---------------------------------|--------------|
| 62.00       | OGOM10%gas20%oil10%water60% mud | 0.87         |
| 376.00      | GOC60%oil30gas5%water5% mud     | 5.27         |
| 62.00       | 100%water                       | 0.87         |
|             |                                 |              |
|             |                                 |              |

**Gas Rates**

| Choke (Inches) | Pressure (psig) | Gas Rate (Mc/d) |
|----------------|-----------------|-----------------|
|                |                 |                 |



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Gra Ex LLC  
PO Box 32  
Kingman, KS 67058  
ATTN: Jeff Burk

31-24s-13w Stafford,KS  
Violet #1  
Job Ticket: 42314      DST#: 2  
Test Start: 2011.12.02 @ 01:40:26

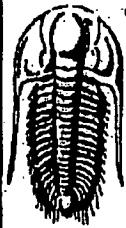
**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3790.00 ft | Diameter: 3.80 Inches | Volume: 53.16 bbl              | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 Inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 Inches | Volume: 0.00 bbl               | Weight to Full Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 53.16 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 29.00 ft           |                       |                                | String Weight: Initial 55000.00 lb |
| Depth to Top Packer:      | 3787.00 ft         |                       |                                | Final 56000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 47.00 ft           |                       |                                |                                    |
| Tool Length:              | 73.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 Inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                     |
|------------------|-------------|------------|----------|------------|------------------------------------|
| Shut In Tool     | 5.00        |            |          | 3766.00    |                                    |
| Hydraulic tool   | 5.00        |            |          | 3771.00    |                                    |
| Jars             | 5.00        |            |          | 3776.00    |                                    |
| Safety Joint     | 2.00        |            |          | 3778.00    |                                    |
| Packer           | 5.00        |            |          | 3783.00    | 26.00      Bottom Of Top Packer    |
| Packer           | 4.00        |            |          | 3787.00    |                                    |
| Stubb            | 1.00        |            |          | 3788.00    |                                    |
| Perforations     | 1.00        |            |          | 3789.00    |                                    |
| Recorder         | 0.00        | 8677       | inside   | 3789.00    |                                    |
| Recorder         | 0.00        | 8522       | inside   | 3789.00    |                                    |
| Perforations     | 9.00        |            |          | 3798.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 3799.00    |                                    |
| Drill Pipe       | 31.00       |            |          | 3830.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 3831.00    |                                    |
| Bullnose         | 3.00        |            |          | 3834.00    | 47.00      Bottom Packers & Anchor |

**Total Tool Length: 73.00**



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Gra Ex LLC

31-24s-13w Stafford,KS

PO Box 32  
Kingman, KS 67068

Violet #1

Job Ticket: 42314

DST#: 2

ATTN: Jeff Burk

Test Start: 2011.12.02 @ 01:40:26

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

58000 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description                    | Volume<br>bbbl |
|--------------|--------------------------------|----------------|
| 62.00        | OGCM10%gas20%oil10%water60%mud | 0.870          |
| 376.00       | GOC60%oil30gas5%water5%mud     | 5.274          |
| 62.00        | 100%water                      | 0.870          |

Total Length: 500.00 ft

Total Volume: 7.014 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

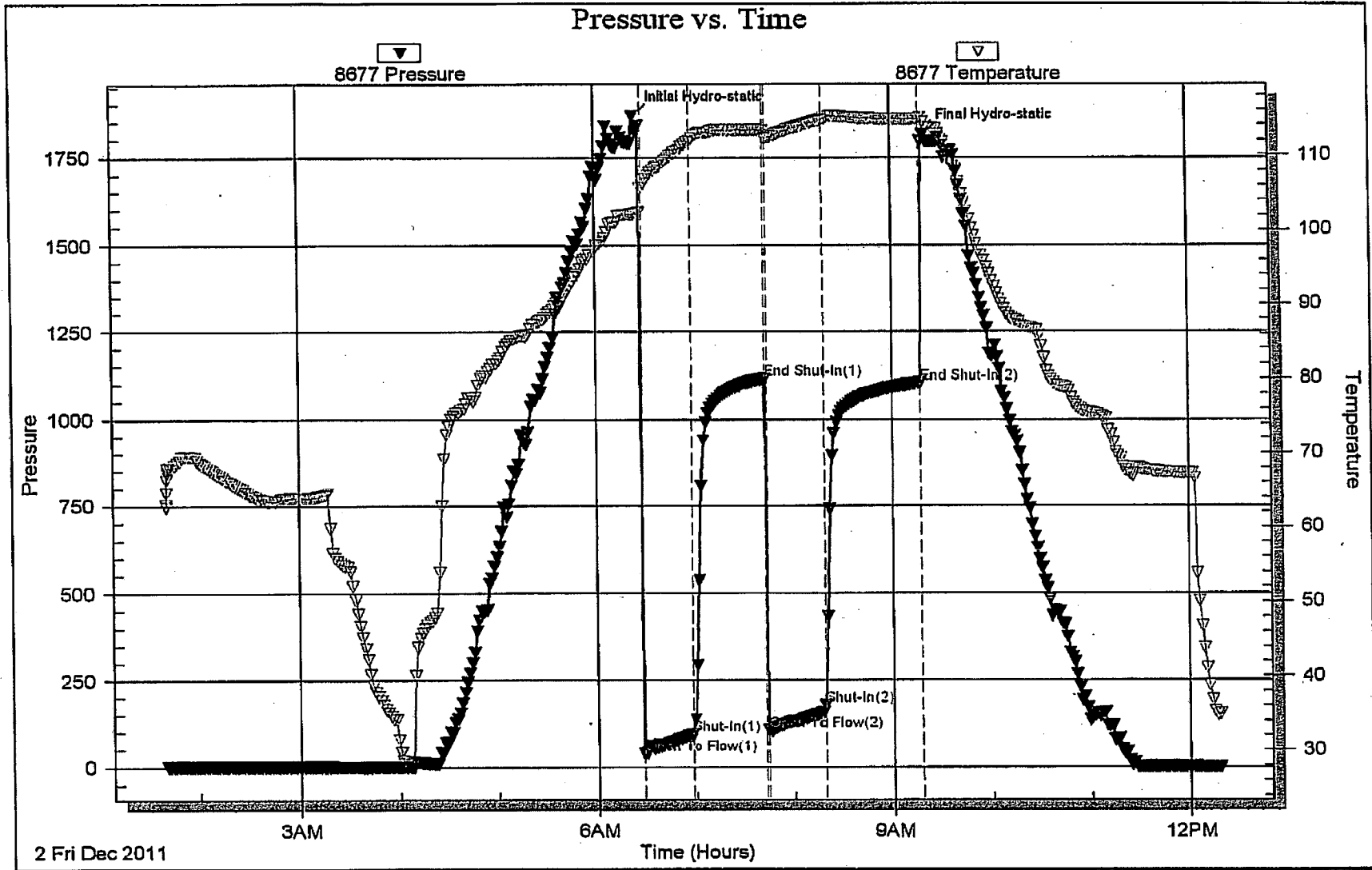
Recovery Comments:

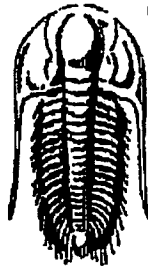
Serial #: 8677

Inside Gra Ex LLC

Violet #1

DST Test Number: 2





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Gra Ex LLC**  
PO Box 32  
Kingman, KS 67068

ATTN: Jeff Burk

**Violet #1**

**31-24s-13w Stafford,KS**

Start Date: 2011.12.02 @ 22:00:34

End Date: 2011.12.03 @ 08:00:34

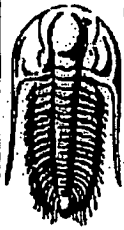
Job Ticket #: 42315                      DST #: 3

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.12.14 @ 14:18:50

Gra Ex LLC    31-24s-13w Stafford,KS    Violet #1    DST # 3    Lansing L    2011.12.02





**TRILOBITE TESTING, INC.**

**DRILL STEM TEST REPORT**

Gra Ex LLC  
 PO Box 32  
 Kingman, KS 67068  
 ATTN: Jeff Burk

**31-24s-13w Stafford,KS**  
**Violet #1**  
 Job Ticket: 42315      DST#: 3  
 Test Start: 2011.12.02 @ 22:00:34

**GENERAL INFORMATION:**

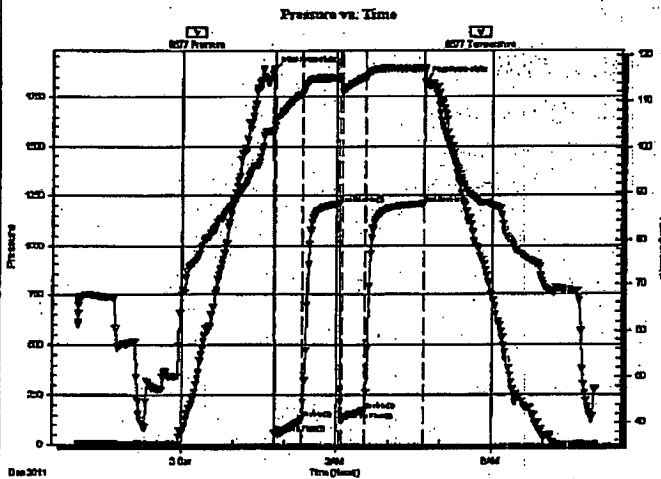
Formation: **Lansing L**  
 Deviated: **No Whipstock**      ft (KB)  
 Time Tool Opened: **01:47:49**  
 Time Test Ended: **08:00:34**  
 Interval: **3869.00 ft (KB) To 3903.00 ft (KB) (TVD)**  
 Total Depth: **3903.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 Inches** Hole Condition: **Good**

Test Type: **Conventional Bottom Hole (Initial)**  
 Tester: **Mike Slemp**  
 Unit No: **53**  
 Reference Elevations: **1953.00 ft (KB)**  
                                   **1943.00 ft (CF)**  
 KB to GR/CF: **10.00 ft**

**Serial #: 8677**      **Inside**  
 Press@RunDepth: **173.63 psig @ 3871.00 ft (KB)**  
 Start Date: **2011.12.02**      End Date:  
 Start Time: **22:00:35**      End Time:

Capacity: **8000.00 psig**  
 Last Calib.: **2011.12.03**  
 2011.12.03      Time On Btm: **2011.12.03 @ 01:46:19**  
 08:00:34      Time Off Btm: **2011.12.03 @ 04:41:34**

**TEST COMMENT:** IF- BOB in 1 min  
 IS- 4 inch blow back  
 FF- BOB ASAO GTS ASAO TSTM  
 FSI- BOB blow back



**PRESSURE SUMMARY**

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1883.96         | 103.74       | Initial Hydro-static |
| 2           | 57.91           | 104.79       | Open To Flow (1)     |
| 33          | 129.15          | 111.52       | Shut-In(1)           |
| 77          | 1211.19         | 115.06       | End Shut-In(1)       |
| 80          | 120.19          | 112.06       | Open To Flow (2)     |
| 107         | 173.63          | 115.22       | Shut-In(2)           |
| 174         | 1211.15         | 117.16       | End Shut-In(2)       |
| 176         | 1831.37         | 117.17       | Final Hydro-static   |

**Recovery**

| Length (ft) | Description                          | Volume (bbl) |
|-------------|--------------------------------------|--------------|
| 315.00      | MCO 95%oil5% mud                     | 4.42         |
| 215.00      | MWGO 40% gas 50% oil 5% water 5% mud | 3.02         |
|             |                                      |              |
|             |                                      |              |
|             |                                      |              |

**Gas Rates**

| Choke (Inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
|                |                 |                  |



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Gra Ex LLC  
PO Box 32  
Kingman, KS 67068  
ATTN: Jeff Burk

31-24s-13w Stafford,KS  
Violet #1  
Job Ticket: 42315      DST#: 3  
Test Start: 2011.12.02 @ 22:00:34

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3852.00 ft | Diameter: 3.80 Inches | Volume: 54.03 bbl              | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 Inches | Volume: 0.00 bbl               | Weight to Pull Loose: 70000.00 lb  |
|                           |                    |                       | <u>Total Volume: 54.03 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 9.00 ft            |                       |                                | String Weight: Initial 55000.00 lb |
| Depth to Top Packer:      | 3869.00 ft         |                       |                                | Final 59000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 34.00 ft           |                       |                                |                                    |
| Tool Length:              | 60.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 Inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

|                |       |      |        |         |                                    |
|----------------|-------|------|--------|---------|------------------------------------|
| Shut In Tool   | 5.00  |      |        | 3848.00 |                                    |
| Hydraulic tool | 5.00  |      |        | 3853.00 |                                    |
| Jars           | 5.00  |      |        | 3858.00 |                                    |
| Safety Joint   | 2.00  |      |        | 3860.00 |                                    |
| Packer         | 5.00  |      |        | 3865.00 | 26.00      Bottom Of Top Packer    |
| Packer         | 4.00  |      |        | 3869.00 |                                    |
| Stubb          | 1.00  |      |        | 3870.00 |                                    |
| Perforations   | 1.00  |      |        | 3871.00 |                                    |
| Recorder       | 0.00  | 8577 | Inside | 3871.00 |                                    |
| Recorder       | 0.00  | 8522 | Inside | 3871.00 |                                    |
| Perforations   | 29.00 |      |        | 3900.00 |                                    |
| Bullnose       | 3.00  |      |        | 3903.00 | 34.00      Bottom Packers & Anchor |

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Gra Ex LLC

31-24s-13w Stafford,KS

PO Box 32  
Kingman, KS 67068

Violet #1

Job Ticket: 42315

DST#: 3

ATTN: Jeff Burk

Test Start: 2011.12.02 @ 22:00:34

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Or API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.86 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: inches

**Recovery Information**

Recovery Table

| Length<br>ft | Description                  | Volume<br>bbf |
|--------------|------------------------------|---------------|
| 315.00       | MCO 95%oil5%mud              | 4.419         |
| 215.00       | MMCO40%gas50%oil5%water5%mud | 3.016         |

Total Length: 530.00 ft

Total Volume: 7.435 bbf

Num Fluid Samples: 0

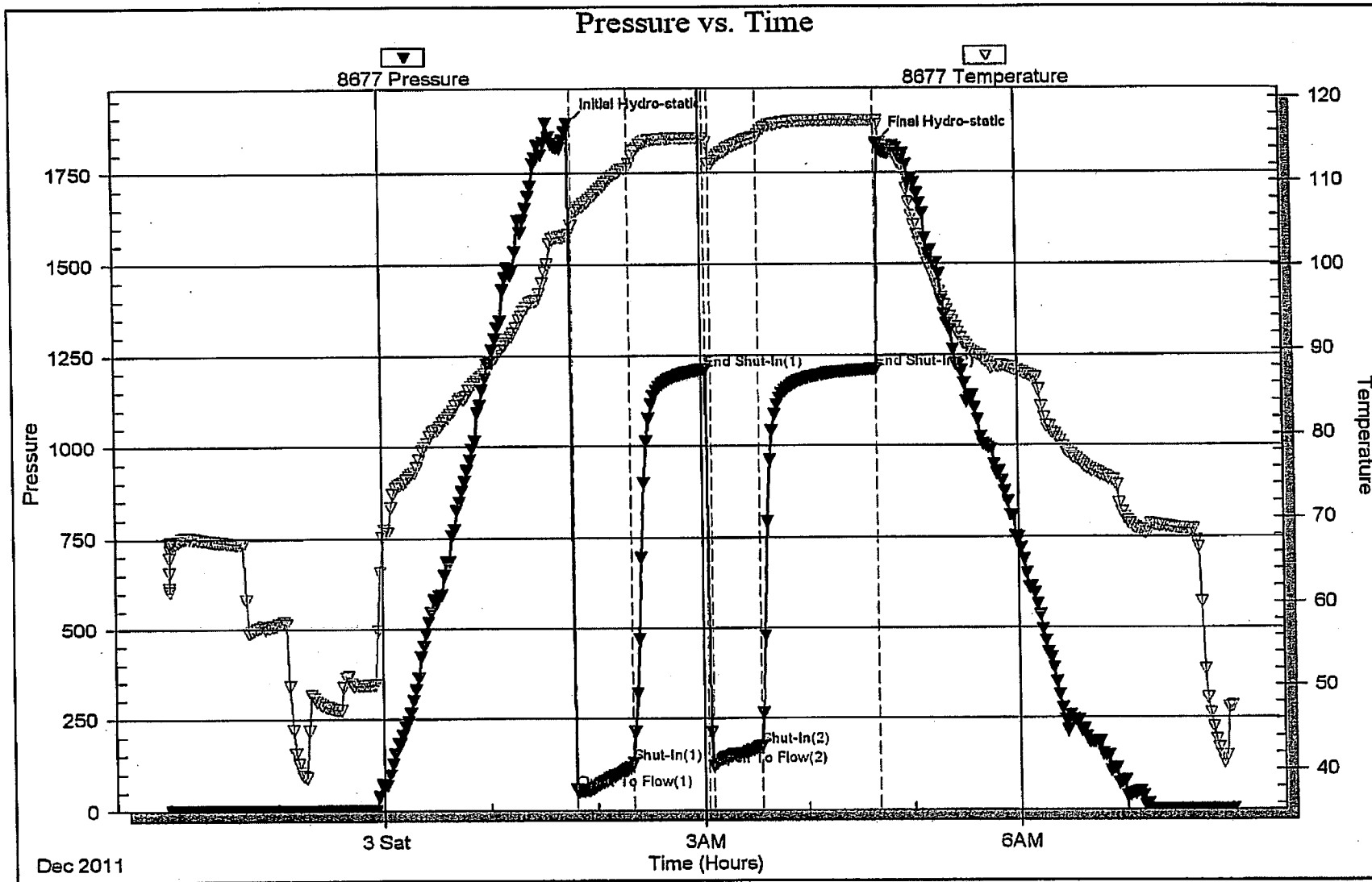
Num Gas Bombs: 0

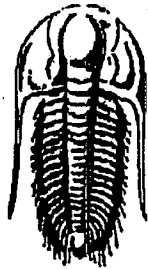
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Gra Ex LLC**

PO Box 32  
Kingman, KS 67068

ATTN: Jeff Burk

**Violet #1**

**31-24s-13w Stafford,KS**

Start Date: 2011.12.03 @ 21:13:31

End Date: 2011.12.04 @ 05:58:16

Job Ticket #: 44047                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.12.14 @ 14:19:06

Gra Ex LLC    31-24s-13w Stafford,KS    Violet #1    DST # 4    Mississippi    2011.12.03



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Gra Ex LLC

31-24s-13w Stafford,KS

PO Box 32  
Kingman, KS 67068

Violet #1

Job Ticket: 44047 DST#: 4

ATTN: Jeff Burk

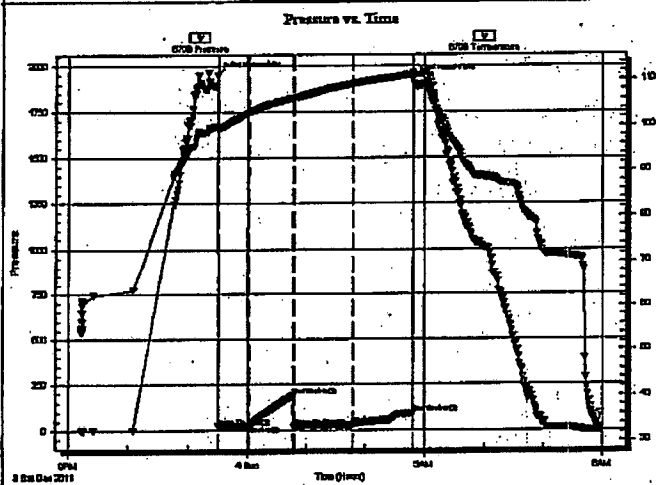
Test Start: 2011.12.03 @ 21:13:31

### GENERAL INFORMATION:

Formation: Mississippi  
 Deviated: No Whipstock ft (KB)  
 Time Tool Opened: 23:30:31  
 Time Test Ended: 05:58:16  
 Interval: 3969.00 ft (KB) To 4020.00 ft (KB) (TVD)  
 Total Depth: 4020.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Leal Cason  
 Unit No: 45  
 Reference Elevations: 1953.00 ft (KB)  
 1943.00 ft (CF)  
 KB to GR/CF: 10.00 ft

Serial #: 6798 Inside  
 Press@RunDepth: 31.99 psig @ 3970.00 ft (KB)  
 Start Date: 2011.12.03 End Date: 2011.12.04  
 Start Time: 21:13:32 End Time: 05:58:16  
 Capacity: 8000.00 psig  
 Last Calib.: 2011.12.04  
 Time On Brrt: 2011.12.03 @ 23:29:31  
 Time Off Brrt: 2011.12.04 @ 02:48:31

TEST COMMENT: IP: Fair Blow, 7 inches  
 ISI: No Blow back  
 FF: Weak Blow, BOB in 54 minutes  
 FSt: No Blow back



### PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1948.30         | 99.80        | Initial Hydro-static |
| 1           | 25.23           | 99.40        | Open To Flow (1)     |
| 33          | 28.81           | 102.90       | Shut-In(1)           |
| 77          | 192.07          | 106.06       | End Shut-In(1)       |
| 79          | 23.21           | 106.03       | Open To Flow (2)     |
| 138         | 31.99           | 109.14       | Shut-In(2)           |
| 199         | 95.19           | 111.16       | End Shut-In(2)       |
| 199         | 1929.81         | 111.48       | Final Hydro-static   |

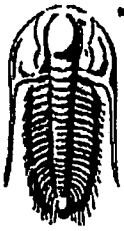
### Recovery

| Length (ft) | Description   | Volume (bbl) |
|-------------|---------------|--------------|
| 30.00       | SGCM 2%G 98%M | 0.42         |
|             |               |              |
|             |               |              |
|             |               |              |

\* Recovery from multiple tests

### Gas Rates

| Choke (Inches) | Pressure (psig) | Gas Rate (Mc/d) |
|----------------|-----------------|-----------------|
|                |                 |                 |



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Gra Ex LLC  
 PO Box 32  
 Kingman, KS 67068  
 ATTN: Jeff Burk

**31-24s-13w Stafford,KS**  
**Violet #1**  
 Job Ticket: 44047      DST#:4  
 Test Start: 2011.12.03 @ 21:13:31

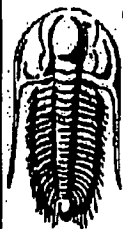
**Tool Information**

|                                    |                                |                   |                                    |
|------------------------------------|--------------------------------|-------------------|------------------------------------|
| Drill Pipe: Length: 3972.00 ft     | Diameter: 3.80 inches          | Volume: 55.72 bbl | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe: Length: 0.00 ft    | Diameter: 0.00 inches          | Volume: 0.00 bbl  | Weight set on Packer: 25000.00 lb  |
| Drill Collar: Length: 0.00 ft      | Diameter: 0.00 inches          | Volume: 0.00 bbl  | Weight to Pull Loose: 65000.00 lb  |
|                                    | <b>Total Volume: 55.72 bbl</b> |                   | Tool Chased: ft                    |
| Drill Pipe Above KB: 30.00 ft      |                                |                   | String Weight: Initial 58000.00 lb |
| Depth to Top Packer: 3969.00 ft    |                                |                   | Final 58000.00 lb                  |
| Depth to Bottom Packer: ft         |                                |                   |                                    |
| Interval between Packers: 51.00 ft |                                |                   |                                    |
| Tool Length: 78.00 ft              |                                |                   |                                    |
| Number of Packers: 2               | Diameter: 6.75 inches          |                   |                                    |

Tool Comments: Bottom Packer is a shale packer

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                     |
|------------------|-------------|------------|----------|------------|------------------------------------|
| Shut In Tool     | 5.00        |            |          | 3947.00    |                                    |
| Hydraulic tool   | 5.00        |            |          | 3952.00    |                                    |
| Jars             | 5.00        |            |          | 3957.00    |                                    |
| Safety Joint     | 2.00        |            |          | 3959.00    |                                    |
| Packer           | 5.00        |            |          | 3964.00    | 27.00      Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3969.00    |                                    |
| Stubb            | 1.00        |            |          | 3970.00    |                                    |
| Recorder         | 0.00        | 6798       | Inside   | 3970.00    |                                    |
| Recorder         | 0.00        | 8367       | Outside  | 3970.00    |                                    |
| Perforations     | 10.00       |            |          | 3980.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 3981.00    |                                    |
| Drill Pipe       | 32.00       |            |          | 4013.00    |                                    |
| Change Over Sub  | 1.00        |            |          | 4014.00    |                                    |
| Perforations     | 3.00        |            |          | 4017.00    |                                    |
| Bullnose         | 3.00        |            |          | 4020.00    | 51.00      Bottom Packers & Anchor |

**Total Tool Length: 78.00**



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Gra Ex LLC

31-24s-13w Stafford, KS

PO Box 32  
Kingman, KS 67068

Violet #1

Job Ticket: 44047      DST#: 4

ATTN: Jeff Burk

Test Start: 2011.12.03 @ 21:13:31

**Mud and Cushion Information**

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Satinity:

ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbf

Water Loss: 13.17 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 0.20 inches

**Recovery Information**

Recovery Table

| Length<br>ft | Description   | Volume<br>bbf |
|--------------|---------------|---------------|
| 30.00        | SGOM 2%G 98%M | 0.421         |

Total Length: 30.00 ft      Total Volume: 0.421 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

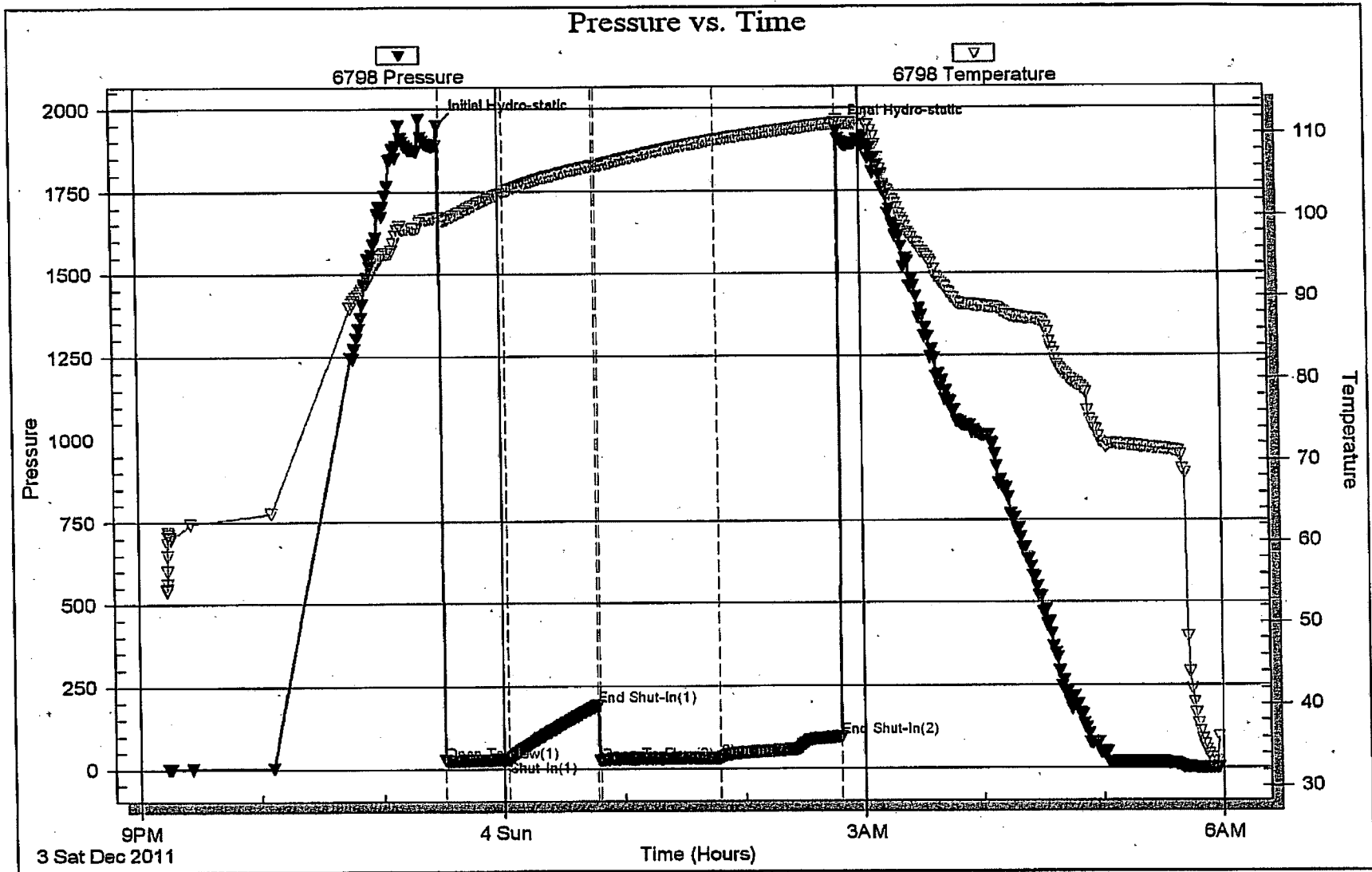
Serial #:

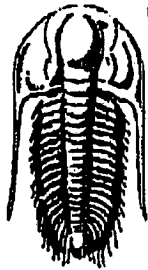
Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Gra Ex LLC**

PO Box 32  
Kingman, KS 67068

ATTN: Jeff Burk

**Violet #1**

**31-24s-13w Stafford,KS**

Start Date: 2011.12.05 @ 06:50:33

End Date: 2011.12.05 @ 16:44:03

Job Ticket #: 44048      DST #: 5

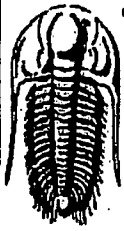
Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2011.12.14 @ 14:19:22

Gra Ex LLC    31-24s-13w Stafford,KS    Violet #1    DST # 5    Arbuckle    2011.12.05



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Gra Ex LLC  
PO Box 32  
Kingman, KS 67068  
ATTN: Jeff Burk

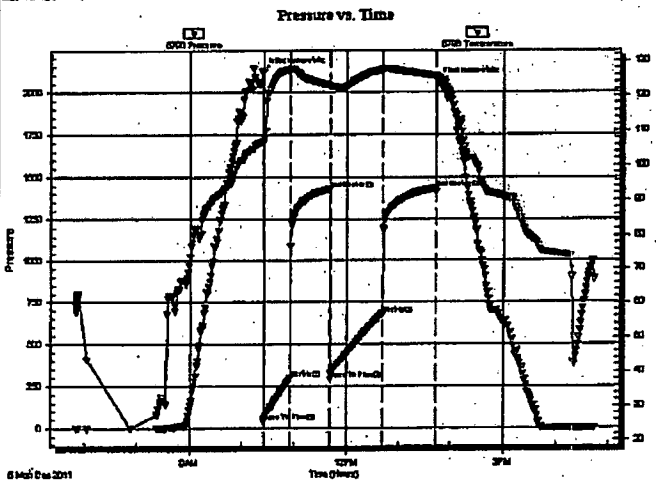
31-24s-13w Stafford, KS  
**Violet #1**  
Job Ticket: 44048 DST#: 5  
Test Start: 2011.12.05 @ 06:50:33

## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: **No Whipstock** ft (KB)  
Time Tool Opened: **10:24:48**  
Time Test Ended: **16:44:03**  
Interval: **4193.00 ft (KB) To 4265.00 ft (KB) (TVD)**  
Total Depth: **4265.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 Inches** Hole Condition: **Good**  
Test Type: **Conventional Bottom Hole (Reset)**  
Tester: **Leal Cason**  
Unit No: **45**  
Reference Elevations: **1953.00 ft (KB)**  
**1943.00 ft (CF)**  
**KB to GR/CF: 10.00 ft**

Serial #: **6798** Inside  
Press@RunDepth: **682.80 psig @ 4194.00 ft (KB)**  
Start Date: **2011.12.05** End Date: **2011.12.05**  
Start Time: **06:50:34** End Time: **16:44:03**  
Capacity: **8000.00 psig**  
Last Calib.: **2011.12.05**  
Time On Btm: **2011.12.05 @ 10:23:03**  
Time Off Btm: **2011.12.05 @ 13:44:18**

TEST COMMENT: IF: Strong Blow, BOB In 8 minutes  
IS: No Blow back  
FF: Strong Blow, BOB In 8 minutes  
FS: No Blow back



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2123.43         | 107.03       | Initial Hydro-static |
| 2           | 41.65           | 106.40       | Open To Flow (1)     |
| 32          | 297.04          | 127.61       | Shut-In(1)           |
| 78          | 1429.79         | 123.10       | End Shut-In(1)       |
| 79          | 291.29          | 122.95       | Open To Flow (2)     |
| 138         | 682.80          | 127.49       | Shut-In(2)           |
| 200         | 1433.46         | 125.77       | End Shut-In(2)       |
| 202         | 2065.57         | 125.61       | Final Hydro-static   |

## Recovery

| Length (ft) | Description         | Volume (bbl) |
|-------------|---------------------|--------------|
| 1364.00     | Water               | 19.13        |
| 372.00      | GWCM 5%G 35%W 60%M  | 5.22         |
| 30.00       | SOSGCM 1%O 2%G 97%M | 0.42         |
|             |                     |              |
|             |                     |              |

\* Recovery from multiple tests

## Gas Rates

| Choke (Inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
|                |                 |                  |



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Gra Ex LLC  
PO Box 32  
Kingman, KS 67068  
ATTN: Jeff Burk

31-24s-13w Stafford, KS  
Violet #1  
Job Ticket: 44048 DST#: 5  
Test Start: 2011.12.05 @ 06:50:33

### Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 4190.00 ft | Diameter: 3.80 inches | Volume: 58.77 bbl              | Tool Weight: 2100.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 70000.00 lb  |
|                           |                    |                       | <u>Total Volume: 58.77 bbl</u> | Tool Chased ft                     |
| Drill Pipe Above KB:      | 24.00 ft           |                       |                                | String Weight: Initial 63000.00 lb |
| Depth to Top Packer:      | 4193.00 ft         |                       |                                | Final 67000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 72.00 ft           |                       |                                |                                    |
| Tool Length:              | 99.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments: Shale Packer On Bottom

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Shut In Tool     | 5.00        |            |          | 4171.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 4176.00    |                               |
| Jars             | 5.00        |            |          | 4181.00    |                               |
| Safety Joint     | 2.00        |            |          | 4183.00    |                               |
| Packer           | 5.00        |            |          | 4188.00    | 27.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 4193.00    |                               |
| Stubb            | 1.00        |            |          | 4194.00    |                               |
| Recorder         | 0.00        | 6798       | Inside   | 4194.00    |                               |
| Recorder         | 0.00        | 8367       | Outside  | 4194.00    |                               |
| Perforations     | 5.00        |            |          | 4199.00    |                               |
| Change Over Sub  | 1.00        |            |          | 4200.00    |                               |
| Drill Pipe       | 61.00       |            |          | 4261.00    |                               |
| Change Over Sub  | 1.00        |            |          | 4262.00    |                               |
| Bullnose         | 3.00        |            |          | 4265.00    | 72.00 Bottom Packers & Anchor |

**Total Tool Length: 99.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Gra Ex LLC

31-24s-13w Stafford,KS

PO Box 32  
Kingman, KS 67068

Violet #1

Job Ticket: 44048

DST#: 5

ATTN: Jeff Burk

Test Start: 2011.12.05 @ 06:50:33

**Mud and Cushion Information**

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 12.77 in<sup>3</sup>

Resistivity: ohm m

Salinity: 10000.00 ppm

Filter Cake: 0.20 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

deg API

Water Salinity: 45000 ppm

**Recovery Information**

Recovery Table

| Length<br>ft | Description         | Volume<br>bbl |
|--------------|---------------------|---------------|
| 1364.00      | Water               | 19.133        |
| 372.00       | GWCM 5%G 35%W 60%M  | 5.218         |
| 30.00        | SOSGCM 1%O 2%G 97%M | 0.421         |

Total Length: 1766.00 ft

Total Volume: 24.772 bbl

Num Fluid Samples: 0

Num Gas Borrbts: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW was .38 @ 30 degrees

