

**QUICKSILVER RESOURCES INC-EBUSINESS  
DO NOT MAIL-801 CHERRY ST  
FORT WORTH, Texas**

Pertlaw 24-33

DHS 6

## **Post Job Summary** **Cement Multiple Stages**

Date Prepared: September 5, 2012  
Version: 1

Service Supervisor: HAMMOND, QUINN

Submitted by: Charli A Brown

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

| Job Tubulars      |                        |         |       |           | MD       |           | Excess % | Shoe Joint Length ft |
|-------------------|------------------------|---------|-------|-----------|----------|-----------|----------|----------------------|
| Type              | Description            | Size in | ID in | Wt lbm/ft | Top ft   | Bottom ft |          |                      |
| Casing            | Intermediate Casing    | 7.00    | 6.276 | 26.00     | 0.00     | 6,400.00  | 0.00     | 40.00                |
| Open Hole Section | Intermediate Open Hole |         | 8.75  |           | 1,200.00 | 6,400.00  | 15       | 0.00                 |

## Pumping Schedule

| Fluid # | Fluid Type    | Fluid Name       | Density lbm/gal | Avg Rate bbl/min | Volume      |
|---------|---------------|------------------|-----------------|------------------|-------------|
| 1       | Spacer        | TUNED SPACER III | 10.00           | 4.00             | 20.0 bbl    |
| 2       | Cement Slurry | EconoCem         | 12.20           | 4.00             | 415.0 sacks |
| 3       | Cement Slurry | EXTENDACEM       | 14.20           | 4.00             | 145.0 sacks |
| 4       | Mud           | Displacement     | 8.40            | 5.00             | 221.0 bbl   |

## Fluids Pumped

**Stage/Plug # 1    Fluid 1:**    TUNED SPACER III  
TUNED SPACER III - SBM (483826)

Fluid Density: 10.00 lbm/gal  
Fluid Volume: 20.00 bbl  
Pump Rate: 4.00 bbl/min

**Stage/Plug # 1    Fluid 2:**    EconoCem  
ECONOCEM (TM) SYSTEM  
0.125 lbm Poly-E-Flake  
0.9 % HR-5  
3 lbm Kol-Seal

Fluid Weight: 12.20 lbm/gal  
Slurry Yield: 2.23 ft<sup>3</sup>/sack  
Total Mixing Fluid: 12.11 Gal  
Volume: 415.0 sacks  
Calculated Fill: 3,100.00 ft  
Calculated Top of Fluid: 2,800.00 ft  
Pump Rate: 4.00 bbl/min

**Stage/Plug # 1    Fluid 3:**    EXTENDACEM  
EXTENDACEM (TM) SYSTEM  
0.4 % HR-5  
0.125 lbm Poly-E-Flake  
3 lbm Kol-Seal

Fluid Weight: 14.20 lbm/gal  
Slurry Yield: 1.30 ft<sup>3</sup>/sack  
Total Mixing Fluid: 5.49 Gal  
Volume: 145.0 sacks  
Calculated Fill: 500.00 ft  
Calculated Top of Fluid: 5,900.00 ft  
Pump Rate: 4.00 bbl/min

**Stage/Plug # 1    Fluid 4:**    Displacement

Fluid Density: 8.40 lbm/gal  
Fluid Volume: 221.00 bbl  
Pump Rate: 5.00 bbl/min

# HALLIBURTON

## Job Summary

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### Job Information

|  |                      |
|--|----------------------|
| Job Start Date                                 | 8/16/2012 7:05:00 PM |
| Job MD   | 5,848.0 ft           |
| Job TVD  | 5,848.0 ft           |
| Height of Plug Container/Swage Above Rig Floor | 4.0 ft               |
| Surface Temperature at Time of Job             | 88 degF              |
| Mud Type                                       | INTEGRADE            |
| Actual Mud Density                             | 9 lbm/gal            |
| Time Circulated before job                     | 200.00 hour(s)       |
| Mud Volume Circulated                          | 500.00 bbl           |
| Rate at Which Well was Circulated              | 6.000 bbl/min        |
| Pipe Movement During Hole Circulation          | Reciprocated         |
| Time From End Mud Circ. to Job Start           | 1,800.00 minute      |
| Calculated Displacement                        | 221.70 bbl           |
| Job Displaced by (rig/halco)                   | Cement Unit HP Pumps |

### Cementing Equipment

|                                   |                              |
|-----------------------------------|------------------------------|
| Number of Centralizers Used       | 25                           |
| Pipe Centralization               | Through Entire Cement Column |
| Brand of Float Equipment Used     | HALLIBURTON                  |
| Did Float Equipment Hold?         | Yes                          |
| Plug set used?                    | Top Plug                     |
| Did Plugs Bump?                   | Yes                          |
| Calculated Pressure to Bump Plugs | 1,320.0 psig                 |

**Service Supervisor Reports**
**Job Log**

| Date/Time        | Activity Code                                    | Pump Rate | Volume | Pressure (psig) | Comments  |
|------------------|--|-----------|--------|-----------------|---|
| 08/16/2012 06:30 | Call Out   |           |        |                 | CREW CALLED OUT   |
| 08/16/2012 08:30 | Safety Huddle                                    |           |        |                 | PRE CONVOY MEETING                                      |
| 08/16/2012 09:00 | Depart from Service Center                       |           |        |                 | HEADED TO LOCATION                                      |
| 08/16/2012 12:00 | Arrive At Loc                                    |           |        |                 | CASERS RIH  |
| 08/16/2012 12:00 | Wait on Customer Sub-Contractor Equip            |           |        |                 | CASERS RIH  |
| 08/16/2012 14:39 | Wait on Customer Sub-Contractor Equipm           |           |        |                 | CASERS RIGGING DOWN                                     |
| 08/16/2012 17:30 | Rig-Up Equipment                                 |           |        |                 | MIRU  |
| 08/16/2012 18:30 | Safety Huddle                                    |           |        |                 | GO OVER JOB WITH RIG AND CO REP                         |
| 08/16/2012 19:00 | Other  |           | 3      |                 | FLOOD LINES   |
| 08/16/2012 19:05 | Pressure Test                                    |           |        | 5000.0          | TEST TO 5000 PSI  |
| 08/16/2012 19:10 | Pump Spacer                                      | 4         | 20     | 90.0            | TUNED SPACER III D:10 Y:6.6 W:43.78 BBLs:20             |
| 08/16/2012 19:20 | Pump Lead Cement                                 | 4         | 165    | 90.0            | ECONOCEM D:12.2 Y:2.23 W:12.11 SKS:415 BBLs:165         |
| 08/16/2012 20:00 | Pump Tail Cement                                 | 4         | 34     | 130.0           | EXTENDACEM D:14.2 Y:1.3 W:5.49 SKS:145 BBLs:34          |
| 08/16/2012 20:20 | Shutdown   |           |        |                 | WASH UP ON TOP OF PLUG                                  |
| 08/16/2012 20:20 | Drop Plug  |           |        |                 | CO REP WATCHED  |
| 08/16/2012 20:22 | Pump Displacement                                | 5         | 211    | 1190.0          | MUD DISPLACEMENT  |
| 08/16/2012 21:00 | Slow Rate  | 2         | 15     | 1100.0          | SLOW TO LAND PLUG RETURNS SLOWED TO .5 BBL LAST 15 BBLs |
| 08/16/2012 21:06 | Bump Plug  |           |        |                 | LANDED @ 1100 PSI                                       |
| 08/16/2012 21:09 | Check Floats                                     |           |        |                 | GOT 2 BBLs BACK   |
| 08/16/2012 21:15 | Safety Huddle                                    |           |        |                 | PRE RIG DOWN MEETING                                    |
| 08/16/2012 21:30 | Rig-Down Equipment                               |           |        |                 | RIG DOWN  |
| 08/16/2012 22:30 | Safety Huddle                                    |           |        |                 | PRE CONVOY MEETING                                      |
| 08/16/2012 22:35 | Depart Location for Service Center or Other Site |           |        |                 | HEADED TO YARD  |
| 08/16/2012 22:35 | Other  |           |        |                 | THANK YOU FOR USING HES QRH CS                          |

## The Road to Excellence Starts with Safety

|   |                    |                                  |                        |
|---|--------------------|----------------------------------|------------------------|
| Sold To #: 346707                             | Ship To #: 2920610 | Quote #:                         | Sales Order #: 9731660 |
| Customer: QUICKSILVER RESOURCES INC-EBUSINESS |                    | Customer Rep: Damme, Dustin      |                        |
| Well Name: Pertlaw                            |                    | Well #: 24-33                    | API/UWI #:             |
| Field:  | City (SAP): CRAIG  | County/Parish: Moffat            | State: Colorado        |
| Contractor: DHS                               |                    | Rig/Platform Name/Num: 6         |                        |
| Job Purpose: Cement Multiple Stages           |                    |                                  |                        |
| Well Type: Exploratory / Wildcat              |                    | Job Type: Cement Multiple Stages |                        |
| Sales Person: SCOTT, KYLE                     |                    | Srvc Supervisor: HAMMOND, QUINN  | MBU ID Emp #: 472403   |

## Job Personnel

| HES Emp Name   | Exp Hrs | Emp #  | HES Emp Name     | Exp Hrs | Emp #  | HES Emp Name    | Exp Hrs | Emp #  |
|----------------|---------|--------|------------------|---------|--------|-----------------|---------|--------|
| ESTEP, KENNETH | 0.0     | 214387 | HAMMOND, QUINN R | 0.0     | 472403 | JUTSUM, TIMOTHY | 0.0     | 510127 |
| SLAUGH, CODY B | 0.0     | 104465 |                  |         |        |                 |         |        |

## Equipment

| HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way |
|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
| 10533645   | 80 mile        | 10572545   | 80 mile        | 10872435   | 80 mile        | 11041164   | 80 mile        |
| 11259880   | 80 mile        | 11263210   | 80 mile        | 11338211   | 80 mile        |            |                |

## Job Hours

| Date | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours |
|------|-------------------|-----------------|------|-------------------|-----------------|------|-------------------|-----------------|
|      |                   |                 |      |                   |                 |      |                   |                 |

TOTAL Total is the sum of each column separately

## Job

## Job Times

| Formation Name         | Top      | Bottom            | Called Out    | Date            | Time  | Time Zone |
|------------------------|----------|-------------------|---------------|-----------------|-------|-----------|
| Formation Depth (MD)   |          |                   | On Location   | 16 - Aug - 2012 | 06:30 | MST       |
| Form Type              |          | BHST              | Job Started   | 16 - Aug - 2012 | 12:00 | MST       |
| Job depth MD           | 5848. ft | Job Depth TVD     | Job Started   | 16 - Aug - 2012 | 19:05 | MST       |
| Water Depth            |          | Wk Ht Above Floor | Job Completed | 16 - Aug - 2012 | 21:00 | GMT       |
| Perforation Depth (MD) | From     | To                | Job Completed | 16 - Aug - 2012 | 22:30 | MST       |

## Well Data

| Description | New / Used | Max pressure psig | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
|-------------|------------|-------------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|
|-------------|------------|-------------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|

Sales/Rental/3<sup>rd</sup> Party (HES)

| Description                          | Qty | Qty uom | Depth | Supplier |
|--------------------------------------|-----|---------|-------|----------|
| MILEAGE FOR CEMENTING CREW,ZI        | 160 | MI      |       |          |
| ZI FUEL SURCHG-CARS/PICKUPS<1 1/2TON | 160 | MI      |       |          |

## Tools and Accessories

| Type         | Size | Qty | Make | Depth | Type        | Size | Qty | Make | Depth | Type           | Size | Qty | Make |
|--------------|------|-----|------|-------|-------------|------|-----|------|-------|----------------|------|-----|------|
| Guide Shoe   |      |     |      |       | Packer      |      |     |      |       | Top Plug       |      |     |      |
| Float Shoe   |      |     |      |       | Bridge Plug |      |     |      |       | Bottom Plug    |      |     |      |
| Float Collar |      |     |      |       | Retainer    |      |     |      |       | SSR plug set   |      |     |      |
| Insert Float |      |     |      |       |             |      |     |      |       | Plug Container |      |     |      |
| Stage Tool   |      |     |      |       |             |      |     |      |       | Centralizers   |      |     |      |

## Miscellaneous Materials

| Gelling Agt   | Conc | Surfactant | Conc | Acid Type | Qty  | Conc | % |
|---------------|------|------------|------|-----------|------|------|---|
| Treatment Fld | Conc | Inhibitor  | Conc | Sand Type | Size | Qty  |   |

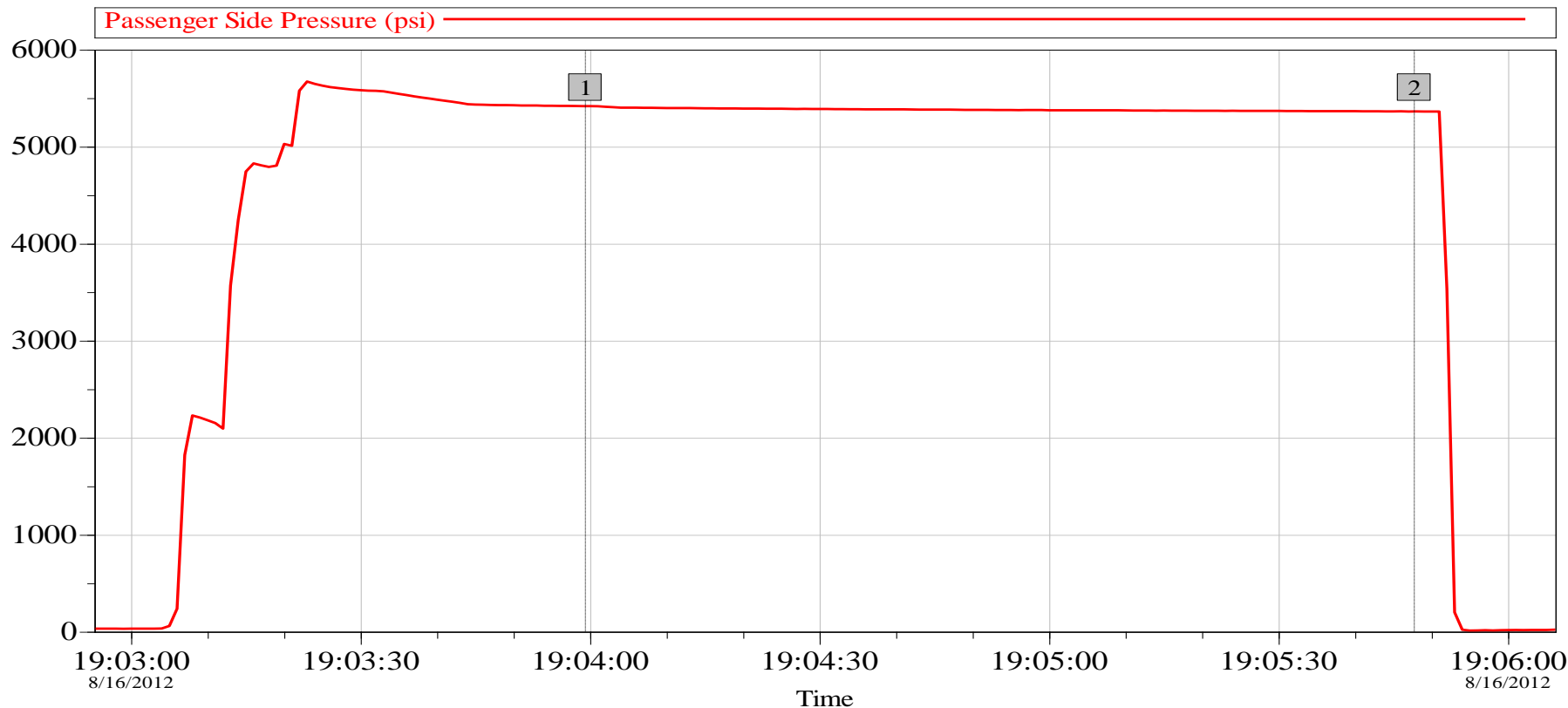
## Fluid Data

Stage/Plug #: 1

| Fluid #                                  | Stage Type              | Fluid Name                             | Qty    | Qty uom                           | Mixing Density lbm/gal | Yield ft <sup>3</sup> /sk | Mix Fluid Gal/sk | Rate bbl/min | Total Mix Fluid Gal/sk |
|--|-------------------------|--|--------|-----------------------------------|------------------------|---------------------------|------------------|--------------|------------------------|
| 1  | <b>TUNED SPACER III</b> | <b>TUNED SPACER III - SBM (483826)</b> | 20.00  | bbl                               | 10.                    | 6.6                       | 43.78            | 5.0          |                        |
|  | 38.32 gal/bbl           | FRESH WATER                            |        |                                   |                        |                           |                  |              |                        |
|  | 0.645 gal/bbl           | MUSOL(R) A, BULK (100003696)           |        |                                   |                        |                           |                  |              |                        |
|  | 0.645 gal/bbl           | SEM-7, 55 GAL DRUM (100001626)         |        |                                   |                        |                           |                  |              |                        |
|  | 65.5 lbm/bbl            | BARITE, 100 LB SK (100003680)          |        |                                   |                        |                           |                  |              |                        |
| 2  | <b>EconoCem</b>         | <b>ECONOCEM (TM) SYSTEM (452992)</b>   | 415.0  | sacks                             | 12.2                   | 2.23                      | 12.11            | 5.0          | 12.11                  |
|  | 0.4 %                   | HALAD(R)-344, 50 LB (100003670)        |        |                                   |                        |                           |                  |              |                        |
|  | 0.125 lbm               | POLY-E-FLAKE (101216940)               |        |                                   |                        |                           |                  |              |                        |
|  | 0.9 %                   | HR-5, 50 LB SK (100005050)             |        |                                   |                        |                           |                  |              |                        |
|  | 3 lbm                   | KOL-SEAL, BULK (100064233)             |        |                                   |                        |                           |                  |              |                        |
|  | 12.11 Gal               | FRESH WATER                            |        |                                   |                        |                           |                  |              |                        |
| 3  | <b>EXTENDACEM</b>       | <b>EXTENDACEM (TM) SYSTEM (452981)</b> | 145.0  | sacks                             | 14.2                   | 1.3                       | 5.49             | 5.0          | 5.49                   |
|  | 0.2 %                   | HALAD(R)-344, 50 LB (100003670)        |        |                                   |                        |                           |                  |              |                        |
|  | 0.4 %                   | HR-5, 50 LB SK (100005050)             |        |                                   |                        |                           |                  |              |                        |
|  | 0.125 lbm               | POLY-E-FLAKE (101216940)               |        |                                   |                        |                           |                  |              |                        |
|  | 3 lbm                   | KOL-SEAL, BULK (100064233)             |        |                                   |                        |                           |                  |              |                        |
|  | 5.489 Gal               | FRESH WATER                            |        |                                   |                        |                           |                  |              |                        |
| 4  | <b>Displacement</b>     |  | 221.00 | bbl                               | 8.4                    |                           |                  | 5.0          |                        |
| <b>Calculated Values</b>                 |                         | <b>Pressures</b>                       |        | <b>Volumes</b>                    |                        |                           |                  |              |                        |
| Displacement                             |                         | Shut In: Instant                       |        | Lost Returns                      |                        | Cement Slurry             |                  | Pad          |                        |
| Top Of Cement                            |                         | 5 Min                                  |        | Cement Returns                    |                        | Actual Displacement       |                  | Treatment    |                        |
| Frac Gradient                            |                         | 15 Min                                 |        | Spacers                           |                        | Load and Breakdown        |                  | Total Job    |                        |
| <b>Rates</b>                             |                         |  |        |                                   |                        |                           |                  |              |                        |
| Circulating                              |                         | Mixing                                 |        | Displacement                      |                        | Avg. Job                  |                  |              |                        |
| Cement Left In Pipe                      | Amount                  | 0 ft                                   | Reason | Shoe Joint                        |                        |                           |                  |              |                        |
| Frac Ring # 1 @                          | ID                      | Frac ring # 2 @                        | ID     | Frac Ring # 3 @                   | ID                     | Frac Ring # 4 @           | ID               |              |                        |
| The Information Stated Herein Is Correct |                         |  |        | Customer Representative Signature |                        |                           |                  |              |                        |

## Data Acquisition

### Quicksilver Pertaw 24-33 Intermediate Pressure Test



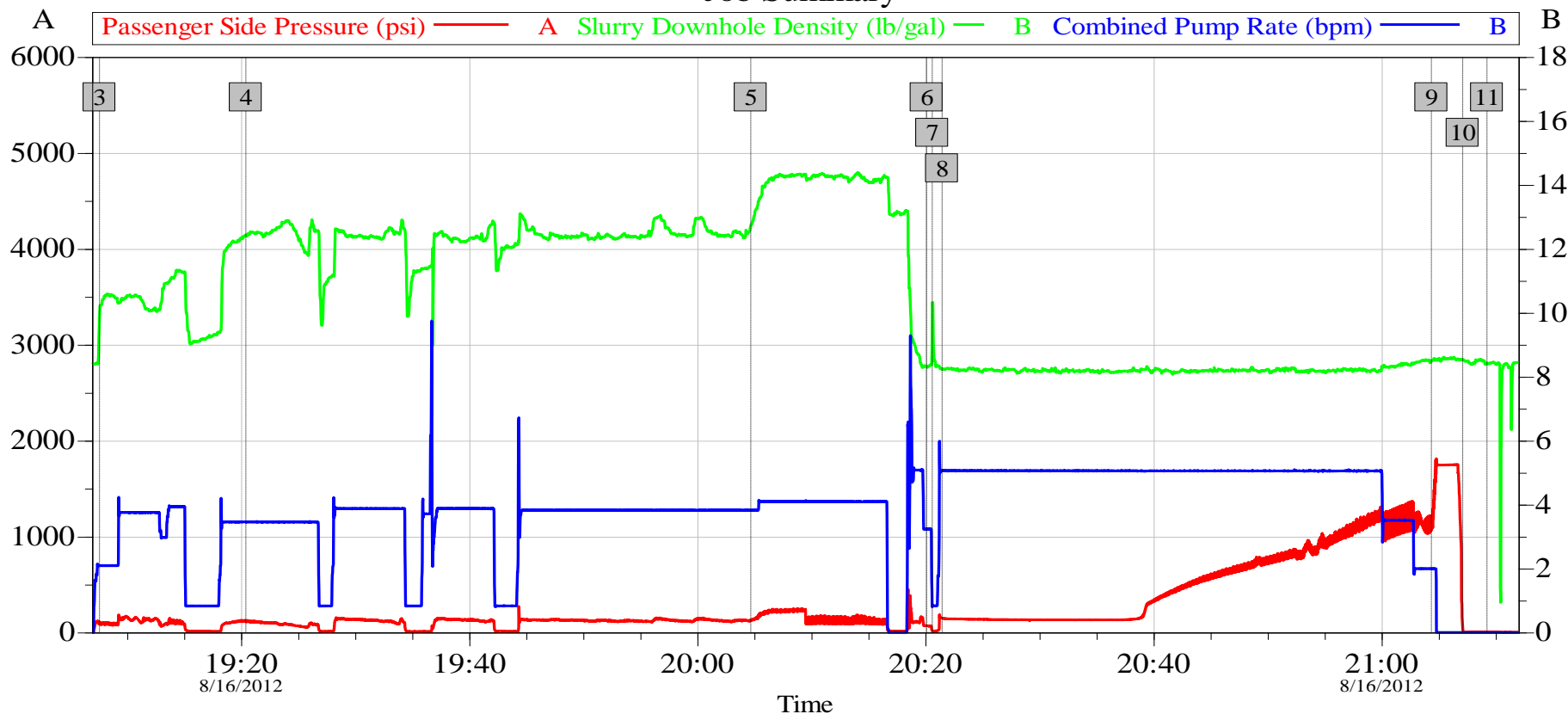
| Global Event Log |               |          |      |              |               |          |      |
|------------------|---------------|----------|------|--------------|---------------|----------|------|
| Intersection     |               | PSI      |      | Intersection |               | PSI      |      |
| 1                | Pressure Test | 19:03:59 | 5418 | 2            | Pressure Test | 19:05:48 | 5363 |

|                                   |                                |                             |
|-----------------------------------|--------------------------------|-----------------------------|
| Customer: Quicksilver             | Job Date: 16-Aug-2012          | Sales Order #: 18:07:10     |
| Job Description: 7" Intermediate  | UWI:                           | Elite #: 10872435           |
| Service Supervisor: Quinn Hammond | Service Operator: Ken Estep II | Service Leader: Cody Slaugh |

OptiCem v6.4.9  
05-Sep-12 15:32

## Quicksilver Pertaw 24-33 Intermediate

### Job Summary



### Global Event Log

|               |          |                    |          |                     |          |
|---------------|----------|--------------------|----------|---------------------|----------|
| 3 Pump Spacer | 19:07:35 | 4 Pump Lead Cement | 19:20:25 | 5 Pump Tail Cement  | 20:04:41 |
| 6 Shutdown    | 20:20:07 | 7 Drop Plug        | 20:20:36 | 8 Pump Displacement | 20:21:28 |
| 9 Bump Plug   | 21:04:21 | 10 Check Floats    | 21:07:06 | 11 Job Complete     | 21:09:14 |

Customer: Quicksilver  
Job Description: 7" Intermediate  
Service Supervisor: Quinn Hammond

Job Date: 16-Aug-2012  
UWI:  
Service Operator: Ken Estep II

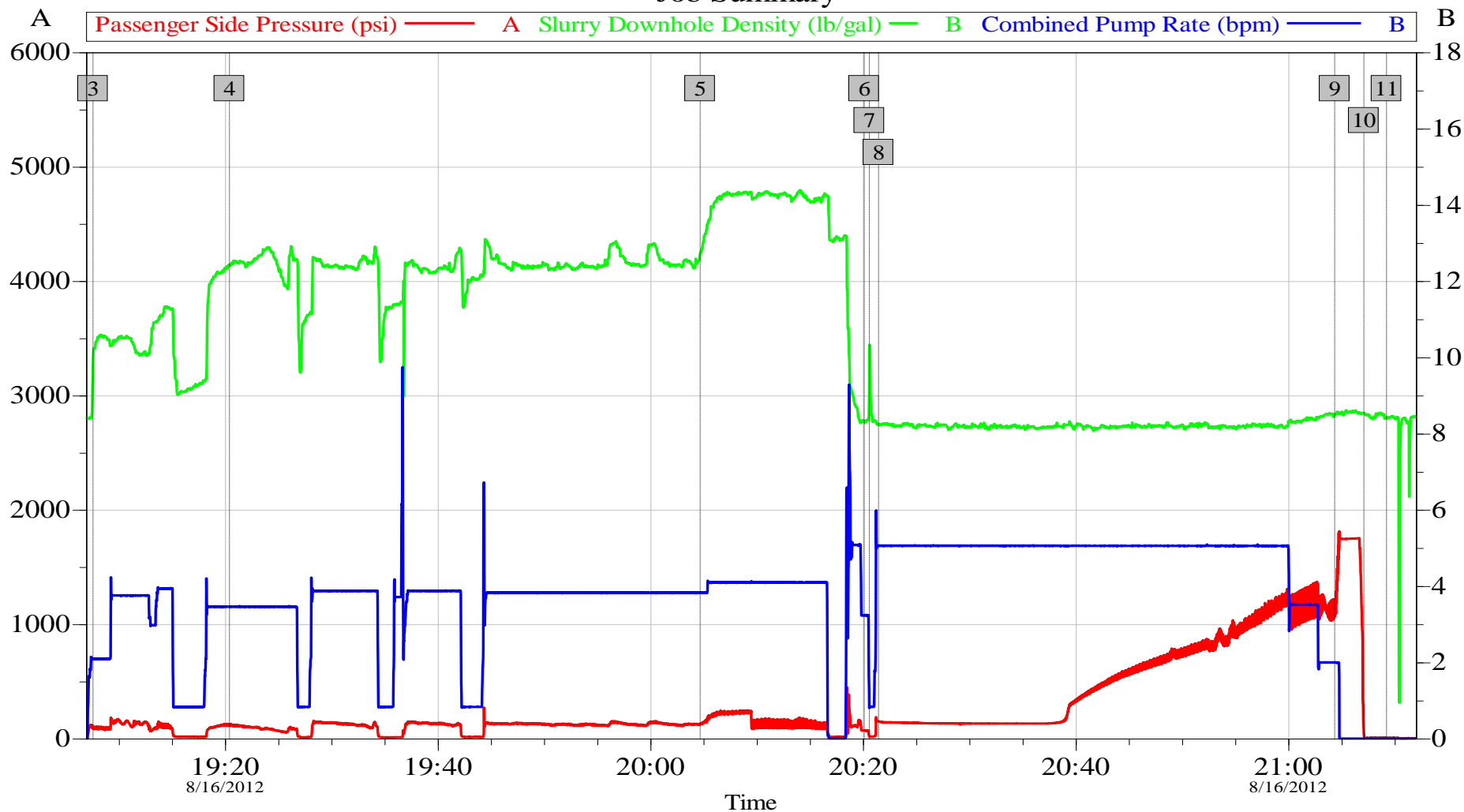
Sales Order #: 18:07:10  
Elite #: 10872435  
Service Leader: Cody Slauch

OptiCem v6.4.9  
05-Sep-12 15:35



## Quicksilver Pertaw 24-33 Intermediate

### Job Summary



|                                   |                                |                             |
|-----------------------------------|--------------------------------|-----------------------------|
| Customer: Quicksilver             | Job Date: 16-Aug-2012          | Sales Order #: 18:07:10     |
| Job Description: 7" Intermediate  | UWI:                           | Elite #: 10872435           |
| Service Supervisor: Quinn Hammond | Service Operator: Ken Estep II | Service Leader: Cody Slaugh |

OptiCem v6.4.9  
05-Sep-12 15:36

# HALLIBURTON

## Lab Data

### LAB RESULTS – Lead

#### Cementing Rockies, Vernal

##### Job Information

|                       |                            |                 |                     |                   |               |
|-----------------------|----------------------------|-----------------|---------------------|-------------------|---------------|
| <b>Request/Slurry</b> | 262489/1                   | <b>Rig Name</b> | DHS DRILLING #6     | <b>Date</b>       | 11/AUG/2012   |
| <b>Submitted By</b>   | Christopher Cicirello      | <b>Job Type</b> | Intermediate Casing | <b>Bulk Plant</b> | Vernal        |
| <b>Customer</b>       | Quicksilver Resources Inc. | <b>Location</b> | Moffat              | <b>Well</b>       | Pertlaw 23-24 |

##### Well Information

|                          |    |                  |         |             |       |
|--------------------------|----|------------------|---------|-------------|-------|
| <b>Casing/Liner Size</b> | 7" | <b>Depth MD</b>  | 6400 ft | <b>BHST</b> | 170 F |
| <b>Hole Size</b>         |    | <b>Depth TVD</b> | 6400 ft | <b>BHCT</b> | 121 F |

##### Drilling Fluid Information

|                          |  |                       |  |                |         |
|--------------------------|--|-----------------------|--|----------------|---------|
| <b>Mud Supplier Name</b> |  | <b>Mud Trade Name</b> |  | <b>Density</b> | 8.0 PPG |
|--------------------------|--|-----------------------|--|----------------|---------|

##### Cement Information - Lead Design

| <u>Conc</u> | <u>UOM</u> | <u>Cement/Additive</u> | <u>Type</u> | <u>Sample Date</u> | <u>Lot No.</u> | <u>Cement Properties</u> |             |        |
|-------------|------------|------------------------|-------------|--------------------|----------------|--------------------------|-------------|--------|
| 100.00      | % BWOC     | Cement Blend           |             |                    |                | Slurry Density           | 12.20       | PPG    |
| 11.84       | gal/sack   | Fresh Water            | Lab         | Mar 08, 2012       | 3/8/12         | Slurry Yield             | 2.23        | ft3/sk |
| 0.125       | lb/sk      | Pol-E-Flake            | Bulk        | Aug 11, 2012       | 4/10/2012      | Water Requirement        | 11.84       | GPS    |
| 0.900       | % BWOC     | HR-5 (PB)              | Bulk        | Aug 11, 2012       | SXC05B-25S3OG  | Total Mix Fluid          | 11.84       | GPS    |
| 3.000       | lb/sk      | Kol-Seal               | Bulk        | Aug 11, 2012       | 4/20/2012      | Water Source             | Fresh Water |        |
|             |            |                        |             |                    |                | Water Chloride           | N/A         | ppm    |

##### Operation Test Results Request ID 262489/1

##### Thickening Time - ON-OFF-ON

| <b>Test Temp<br/>(°F)</b> | <b>Pressure<br/>(psi)</b> | <b>Reached in<br/>(min)</b> | <b>30 Bc<br/>(hh:min)</b> | <b>50 Bc<br/>(hh:min)</b> | <b>70 Bc<br/>(hh:min)</b> | <b>100 Bc<br/>(hh:min)</b> | <b>Start Bc</b> | <b>Stirring<br/>before stop<br/>(mins)</b> | <b>Static<br/>Period<br/>(min)</b> | <b>Peak<br/>reading<br/>(BC)</b> |
|---------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|----------------------------|-----------------|--|------------------------------------|----------------------------------|
| 121                       | 3,780                     | 35                          | 04:19                     | 05:17                     | 05:17                     | 05:17                      | 18              | 75   | 30                                 | 21                               |

No deflection out of shutdown Bc stayed at 21.

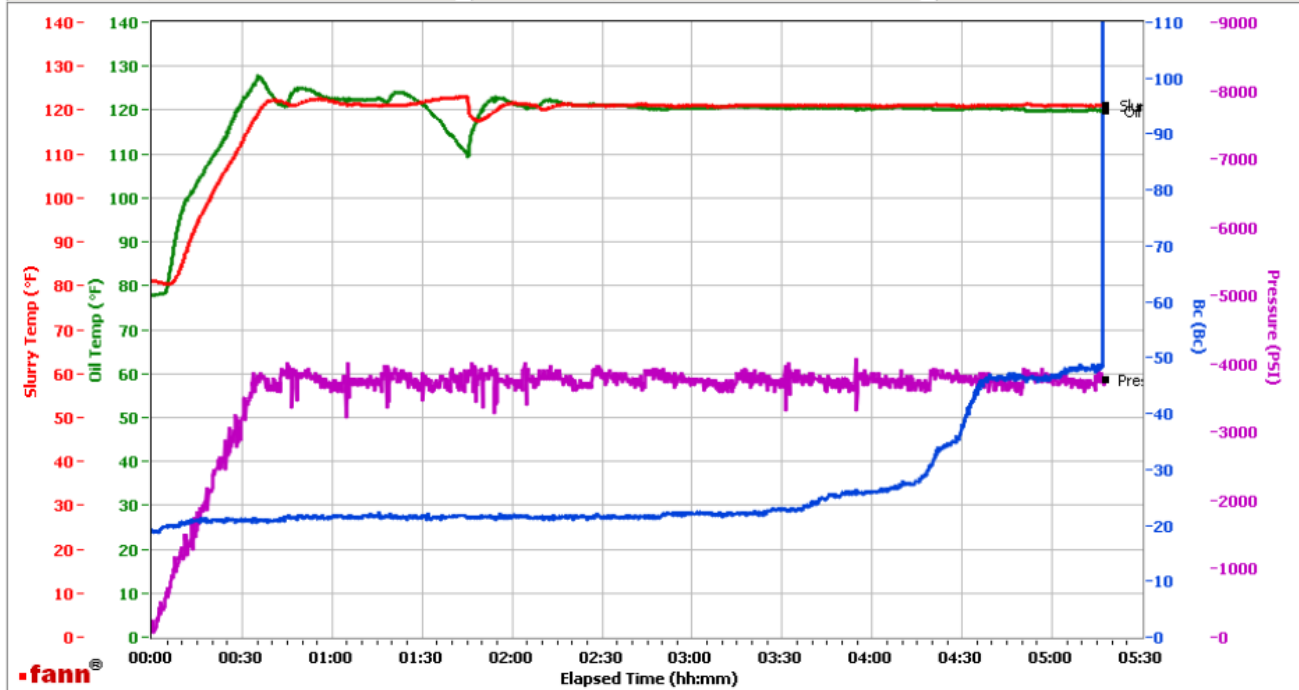
# HALLIBURTON

## Vernal

| Fields            | Values        |
|-------------------|---------------|
| Project Name      | Quicksilver   |
| Test ID           | 262489-1b     |
| Request ID        | HPHT 5        |
| Tested by         | ADF           |
| Customer          | Quicksilver   |
| Well No           | Pertlaw 23-24 |
| Rig               | 6             |
| Casing/Liner Size | 7             |

| Fields         | Values       |
|----------------|--------------|
| Job Type       | Inter Lead   |
| Cement Type    | III/G        |
| Cement Weight  | Light Weight |
| Test Date      | 08/12/12     |
| Test Time      | 02:34 AM     |
| Temp. Units    | degF         |
| Pressure Units | PSI          |
| SW Version     | 2.0.2.206    |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 04h:19m |
| 50.00 Bc  | 05h:17m |
| 70.00 Bc  | 05h:17m |
| 100.00 Bc | 05h:17m |
| 00h:30m   | 20.99   |
| 01h:00m   | 21.34   |
| 01h:30m   | 21.58   |
| 02h:00m   | 21.37   |



Data File O:\HPHT Data Files\Vernal Consistometer #5\Quicksilver 262489-1b.tdms

Comments 12.2 d, 2.23 y

### Cementing Rockies, Vernal

#### Job Information

|                       |                            |                 |                     |                   |               |
|-----------------------|----------------------------|-----------------|---------------------|-------------------|---------------|
| <b>Request/Slurry</b> | 262492/1                   | <b>Rig Name</b> | DHS DRILLING #6     | <b>Date</b>       | 11/AUG/2012   |
| <b>Submitted By</b>   | Christopher Cicirello      | <b>Job Type</b> | Intermediate Casing | <b>Bulk Plant</b> | Vernal        |
| <b>Customer</b>       | Quicksilver Resources Inc. | <b>Location</b> | Moffat              | <b>Well</b>       | Pertlaw 23-24 |

#### Well Information

|                          |    |                  |         |             |       |
|--------------------------|----|------------------|---------|-------------|-------|
| <b>Casing/Liner Size</b> | 7" | <b>Depth MD</b>  | 6400 ft | <b>BHST</b> | 170 F |
| <b>Hole Size</b>         |    | <b>Depth TVD</b> | 6400 ft | <b>BHCT</b> | 121 F |

#### Drilling Fluid Information

|                          |  |                       |  |                |         |
|--------------------------|--|-----------------------|--|----------------|---------|
| <b>Mud Supplier Name</b> |  | <b>Mud Trade Name</b> |  | <b>Density</b> | 8.0 PPG |
|--------------------------|--|-----------------------|--|----------------|---------|

#### Cement Information - Tail Design

| <u>Conc</u> | <u>UOM</u> | <u>Cement/Additive</u> | <u>Type</u> | <u>Sample Date</u> | <u>Lot No.</u> | <u>Cement Properties</u> |             |        |
|-------------|------------|------------------------|-------------|--------------------|----------------|--------------------------|-------------|--------|
| 100.00      | % BWOC     | Cement Blend           | Bulk        | Aug 11, 2012       |                | Slurry Density           | 14.20       | PPG    |
| 0.125       | lb/sk      | Pol-E-Flake            | Bulk        | Aug 11, 2012       | 4/10/2012      | Slurry Yield             | 1.29        | ft3/sk |
| 0.400       | % BWOC     | HR-5 (PB)              | Bulk        | Aug 11, 2012       | SXC05B-25S30G  | Water Requirement        | 5.28        | GPS    |
| 3.000       | lb/sk      | Kol-Seal               | Bulk        | Aug 11, 2012       | 4/20/2012      | Total Mix Fluid          | 5.28        | GPS    |
| 5.28        | gal/sack   | Fresh Water            | Lab         | Mar 08, 2012       | 3/8/12         | Water Source             | Fresh Water |        |
|             |            |                        |             |                    |                | Water Chloride           | N/A         | ppm    |

#### Operation Test Results Request ID 262492/1

##### Thickening Time

| <b>Temp (°F)</b> | <b>Pressure (psi)</b> | <b>Reached in (min)</b> | <b>Start BC</b> | <b>30 Bc (hh:mm)</b> | <b>50 Bc (hh:mm)</b> | <b>70 Bc (hh:mm)</b> | <b>100 Bc (hh:mm)</b> |
|------------------|-----------------------|-------------------------|-----------------|----------------------|----------------------|----------------------|-----------------------|
| 121              | 3,780                 | 35                      | 13              | 02:32                | 02:43                | 02:48                | 02:56                 |

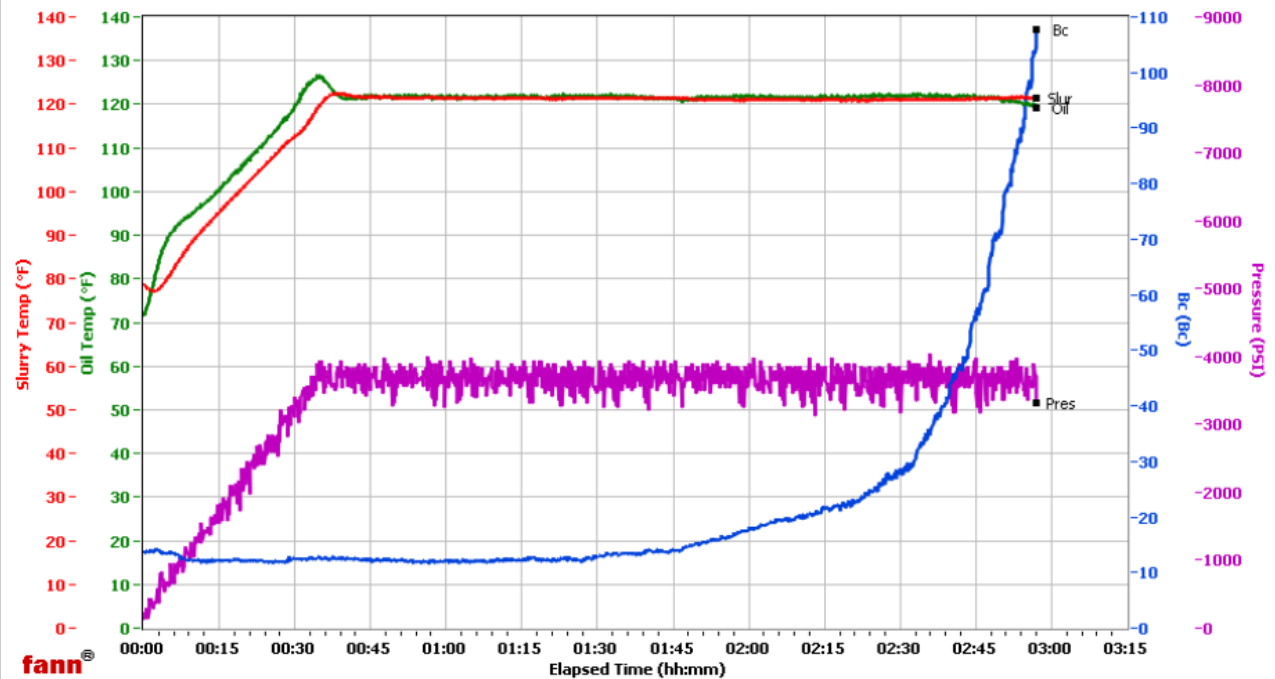
# HALLIBURTON

## Vernal

| Fields            | Values        |
|-------------------|---------------|
| Project Name      | Quicksilver   |
| Test ID           | 262492-1      |
| Request ID        | HPHT 8        |
| Tested by         | ADF           |
| Customer          | Quicksilver   |
| Well No           | Pertlaw 23-24 |
| Rig               | 6             |
| Casing/Liner Size | 7             |

| Fields         | Values     |
|----------------|------------|
| Job Type       | Inter Tail |
| Cement Type    | G          |
| Cement Weight  | Standard   |
| Test Date      | 08/11/12   |
| Test Time      | 01:20 PM   |
| Temp. Units    | degF       |
| Pressure Units | PSI        |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 02h:32m |
| 50.00 Bc  | 02h:43m |
| 60.00 Bc  | 02h:46m |
| 70.00 Bc  | 02h:48m |
| 100.00 Bc | 02h:56m |
| 200.00 Bc | NaN     |
| 03h:00m   | NaN     |
| 06h:00m   | NaN     |



Data File O:\HPHT Data Files\Vernal Consistometer #8\Quicksilver 262492-1.tdms

Comments 14.2 d, 1.29 y