
WPX ENERGY ROCKY MOUNTAIN LLC-EBUS

**GM 513-1
RULISON
Garfield County , Colorado**

**Squeeze Perfs
12-Jul-2013**

Post Job Report

The Road to Excellence Starts with Safety

Sold To #: 300721	Ship To #: 2403058	Quote #:	Sales Order #: 900584482
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		Customer Rep: Dunnick, Brian	
Well Name: GM		Well #: 513-1	API/UWI #:
Field: RULISON	City (SAP): PARACHUTE	County/Parish: Garfield	State: Colorado
Contractor: WORKOVER		Rig/Platform Name/Num: WORKOVER	
Job Purpose: Squeeze Perfs			
Well Type: Development Well		Job Type: Squeeze Perfs	
Sales Person: MAYO, MARK		Srv Supervisor: PONDER, THOMAS	MBU ID Emp #: 427112

Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
LINN, PAUL Andrew	6	479143	MILLER II, MATTHEW Reginald	6	425164	PONDER, THOMAS Lynn	6	427112
ZUMWALT, ORVILLE Raymond	5	398157						

Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10616651C	60 mile	10784064	60 mile	11006314	60 mile	11583931	60 mile
11808827	60 mile						

Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
07/12/2013	6	5						

TOTAL Total is the sum of each column separately

Job

Formation Name										Date		Time	Time Zone	
Formation Depth (MD)		Top			Bottom				Called Out	12 - Jul - 2013		02:00	MST	
Form Type					BHST					On Location	12 - Jul - 2013		06:00	MST
Job depth MD		3896. ft			Job Depth TVD		3896. ft			Job Started	12 - Jul - 2013		08:04	MST
Water Depth					Wk Ht Above Floor		3. ft			Job Completed	12 - Jul - 2013		10:25	MST
Perforation Depth (MD)		From			To				Departed Loc	12 - Jul - 2013		12:00	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
-------------	------------	-------------------	---------	-------	---------------	--------	-------	-----------	--------------	------------	---------------

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	4 ½	1		4483	Bottom Plug			
Float Collar					Retainer	4 ½	1		3896	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 ft3/sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk

Stage/Plug #: 1									
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density uom	Yield uom	Mix Fluid uom	Rate uom	Total Mix Fluid uom

Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft ³ /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk	
1	7.5% HCL SPACER		5.00	bbl	8.8	.0	.0	2.0		
2	WATER SPACER		10.00	bbl	8.34	.0	.0	2.0		
3	SqueezeCem Tail Cement	SQUEEZECEM (TM) SYSTEM (452971)	175.0	sacks	15.8	1.15	4.98	2.0	4.98	
0.05 %		HR-800, 50 LB SACK (101619742)								
4.98 Gal		FRESH WATER								
4	Displacement		15.00	bbl	8.33	.0	.0	.75		
Calculated Values		Pressures		Volumes						
Displacement	15.1	Shut In: Instant		Lost Returns		Cement Slurry	35.8	Pad		
Top Of Cement		5 Min		Cement Returns		Actual Displacement	17	Treatment		
Frac Gradient		15 Min		Spacers	14.8	Load and Breakdown		Total Job	67.6	
Rates										
Circulating		Mixing	2	Displacement	.75	Avg. Job	1			
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						

The Road to Excellence Starts with Safety

Sold To #: 300721		Ship To #: 2403058		Quote #:		Sales Order #: 900584482	
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS				Customer Rep: Dunnick, Brian			
Well Name: GM			Well #: 513-1			API/UWI #:	
Field: RULISON		City (SAP): PARACHUTE		County/Parish: Garfield		State: Colorado	
Legal Description:							
Lat:				Long:			
Contractor: WORKOVER			Rig/Platform Name/Num: WORKOVER				
Job Purpose: Squeeze Perfs						Ticket Amount:	
Well Type: Development Well			Job Type: Squeeze Perfs				
Sales Person: MAYO, MARK			Srvc Supervisor: PONDER, THOMAS			MBU ID Emp #: 427112	

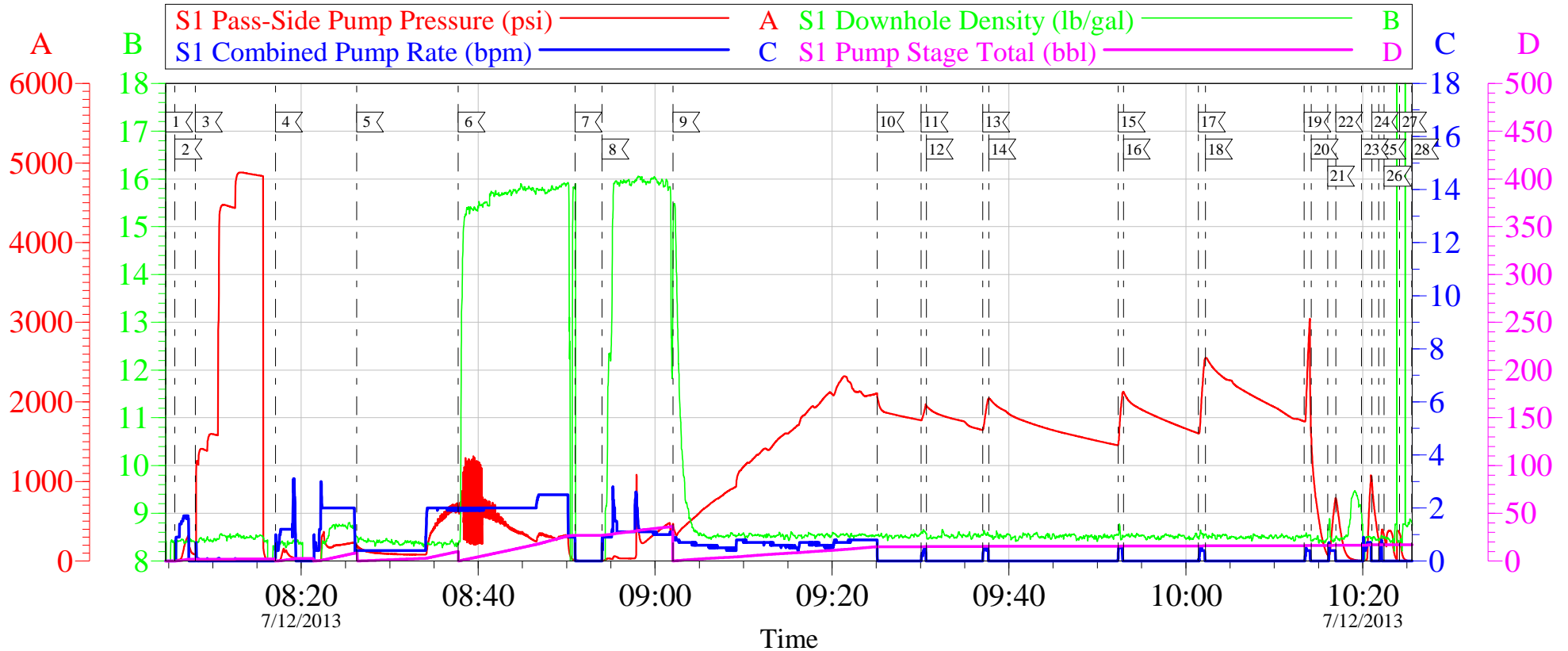
Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Call Out	07/12/2013 02:00							
Crew Leave Yard	07/12/2013 04:30							ALL HES PRESENT FOR PRE-CONVOY SAFETY HUDDLE
Arrive At Loc	07/12/2013 06:00							
Assessment Of Location Safety Meeting	07/12/2013 06:05							TUBING- 2 3/8" 4.7#, RETAINER SET @ 3896, PERF HOLES- 4066' TO 4462', BRIDGE PLUG SET @ 4483', PRODUCTION CASING- 4 1/2" 11.6# J-55
Rig-Up Equipment	07/12/2013 06:10							1-550 PICKUP, 1-ELITE PUMP, 1-660 CUFT BULK TRUCK, 1-ACID TRANSPORT
Safety Meeting	07/12/2013 07:45							ALL HES PRESENT, RIG CREW PRESENT
Start Job	07/12/2013 08:04		2	2		290.0		FILL LINES
Test Lines	07/12/2013 08:08		0.1	0.1		4882.0		OK PRESSURE TEST
Pump Acid - Start	07/12/2013 08:21		2	4.8		366.0		7.5% HCL, HAD PROBLEMS KEEPING PRME AT BEGINNING OF HCL SPACER
Pump Spacer	07/12/2013 08:26		2	10		749.0		FRESH WATER
Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	

Pump Cement	07/12/2013 08:38		2	35.8		729.0		175 SKS 15.8 PPG 1.15 FT3/SK 4.98 GAL/SK, TOWARDS THE END OF TAIL CEMENT THE TUB ENDED UP POWDERING OFF WITH OUT ANY WARNING, CUSTOMER ASKED THAT WE SHUTDOWN COMPLETELY TO FIX IT AS TO NOT PUT ANY BAD CEMENT DOWNHOLE
Pump Displacement	07/12/2013 09:01		0.75	15		2323. 0		FRESH WATER
Shutdown	07/12/2013 09:25					2323. 0		HESITATE AS PER CUSTOMER REQUEST
Pump Water	07/12/2013 09:30		0.5	0.25	15.25	1700. 0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 09:30					1958. 0		HESITATE AS PER CUSTOMER REQUEST
Pump Water	07/12/2013 09:37		0.5	0.25	15.5	1645. 0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 09:37					2036. 0		HESITATE AS PER CUSTOMER REQUEST
Pump Water	07/12/2013 09:52		0.5	0.25	15.75	1470. 0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 09:53					2125. 0		HESITATE AS PER CUSTOMER REQUEST
Pump Water	07/12/2013 10:01		0.5	0.25	16	1604. 0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 10:02					2553. 0		HESITATE AS PER CUSTOMER REQUEST
Pump Water	07/12/2013 10:13		0.5	0.25	16.25	1750. 0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 10:14					3045. 0		HESITATE AS PER CUSTOMER REQUEST, PRESSURED UP TO 3045 AND THEN BROKE BACK COMPLETELY
Pump Water	07/12/2013 10:16		0.5	0.25	16.5	80.0		FRESH WATER, PRESSURED UP TO 3045 AND THEN BROKE BACK COMPLETELY
Activity Description	Date/Time	Cht #	Rate bbl/ min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	

Shutdown	07/12/2013 10:16					794.0		HESITATE AS PER CUSTOMER REQUEST TO SEE IF WE COULD SQUEEZE ON ANYMORE LEFT IN TUBING
Pump Water	07/12/2013 10:20		0.5	0.25	16.75	.0		FRESH WATER, SQUEEZE
Shutdown	07/12/2013 10:20					1078. 0		PRESSURE FELL OFF AS SOON AS PUMPS WERE DISENGAGED, TRY HESITATING 1 MORE TIME
Pump Water	07/12/2013 10:57		0.5	0.25	17	.0		FRESH WATER
Shutdown	07/12/2013 10:57					398.0		CUSTOMER DECIDED THAT WE WERE DONE TRYING TO SQUEEZE ON THE HOLES, PUMPED A TOTAL OF 17 BBL OF DISPLACEMENT, 0.7 BBL BEFORE THE TOP PERFS
Open Bypass / Sting Out	07/12/2013 10:57					382.0		STING OUT OF RETAINER, RIG REVERSE CIRCULATED WELL OUT, SAW SMALL TRACES OF CEMENT
End Job	07/12/2013 10:57							THANK YOU FOR CHOOSING HALLIBURTON, THOMAS PONDER AND CREW

WPX GM 513-1

SQUEEZE



Local Event Log			
Maximum	SPPP	Maximum	SPPP
1 START JOB	08:04:40 1.000	2 FILL LINES	08:05:43 323.0
4 PUMP HCL SPACER	08:17:05 366.0	5 PUMP H2O SPACER	08:26:15 728.0
7 SHUTDOWN	08:50:58 16.00	8 RESUME	08:53:59 1086
10 SHUTDOWN	09:25:06 2107	11 PUMP WATER	09:30:04 1971
13 PUMP WATER	09:37:03 2044	14 SHUTDOWN	09:37:44 2044
16 SHUTDOWN	09:52:56 2125	17 PUMP WATER	10:01:25 2552
19 PUMP WATER	10:13:22 3045	20 SHUTDOWN	10:14:11 1576
22 SHUTDOWN	10:16:57 791.0	23 PUMP WATER	10:19:51 1078
25 PUMP WATER	10:21:50 395.0	26 SHUTDOWN	10:22:25 384.0
28 END JOB	10:25:33 17.10	3 TEST LINES	08:08:02 4882
		6 PUMP TAIL CEMENT	08:37:44 1316
		9 PUMP H2O DISPLACEMENT	09:02:00 2323
		12 SHUTDOWN	09:30:40 1951
		15 PUMP WATER	09:52:21 2125
		18 SHUTDOWN	10:02:13 2553
		21 PUMP WATER	10:16:02 791.0
		24 SHUTDOWN	10:21:02 1022
		27 STING OUT OF RETAINER	10:24:09 355.0

Customer: WPX
Well Description: GM 513-1
Company Rep: JUSTIN SKALLA

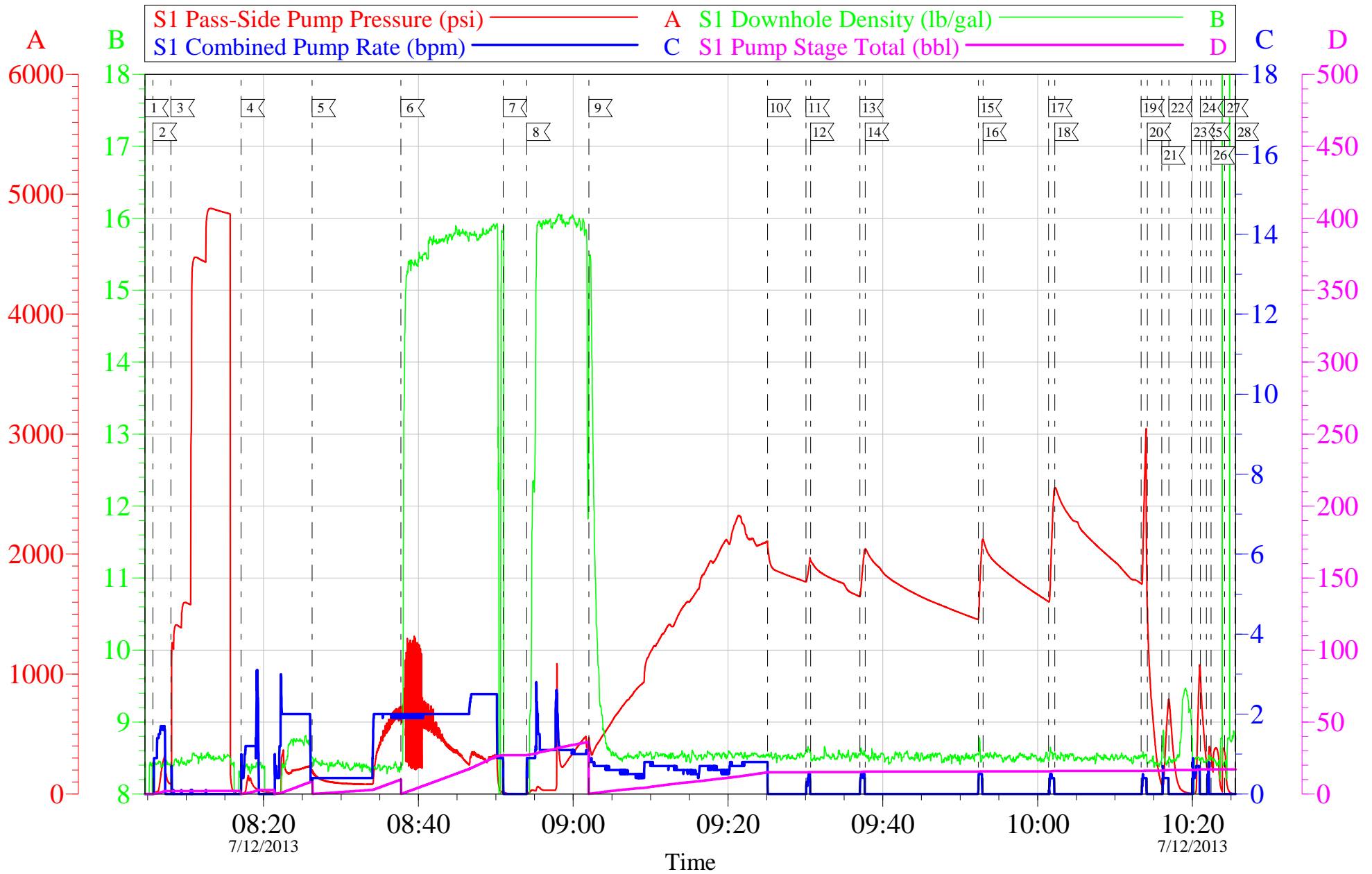
Job Date: 12-Jul-2013
Job Type: SQUEEZE
Cement Supervisor: THOMAS PONDER

Sales Order #: 900584482
ADC Used: YES
Elite #/Operator: ELITE #4 / REGGIE MILLER

OptiCem v6.4.10
12-Jul-13 11:55

WPX GM 513-1

SQUEEZE



Customer: WPX	Job Date: 12-Jul-2013	Sales Order #: 900584482
Well Description: GM 513-1	Job Type: SQUEEZE	ADC Used: YES
Company Rep: JUSTIN SKALLA	Cement Supervisor: THOMAS PONDER	Elite #/Operator: ELITE #4 / REGGIE MILLER

OptiCem v6.4.10
12-Jul-13 11:55

HALLIBURTON

Company:	<u>WPX</u>	Date:	<u>7/12/2013</u>
Submitted by:	<u>THOMAS PONDER</u>	Date Rec.:	<u>7/12/2013</u>
Attention:	<u>LARRY COOKSEY</u>	S.O.#	<u>900584482</u>
Lease	<u>GM</u>	Job Type:	<u>SQUEEZE</u>
Well #	<u>513-1</u>		

Specific Gravity	<i>MAX</i>	<i>1</i>
pH	<i>8</i>	<i>7.2</i>
Potassium (K)	<i>5000</i>	<i>250</i> Mg / L
Calcium (Ca)	<i>500</i>	<i>120</i> Mg / L
Iron (FE2)	<i>300</i>	<i>10</i> Mg / L
Chlorides (Cl)	<i>3000</i>	<i>0</i> Mg / L
Sulfates (SO ₄)	<i>1500</i>	<i><200</i> Mg / L
Carbonates hardness		
Temp	<i>40-80</i>	<i>58</i> Deg
Total Dissolved Solids		<i>345</i> Mg / L

Respectfully: THOMAS PONDER

Title: CEMENTING SUPERVISOR

Location: GRAND JCT, CO

Sales Order #: 900584482	Line Item: 10	Survey Conducted Date: 7/12/2013
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		Job Type (BOM): CMT SQUEEZE PERFORATIONS BOM
Customer Representative: JUSTIN SKALLA		API / UWI: (leave blank if unknown) AFEYSO4DGHKRW05EAAA
Well Name: GM		Well Number: 513-1
Well Type: Development Well	Well Country: United States of America	
H2S Present:	Well State: Colorado	Well County: Garfield

Dear Customer,

We hope that you were satisfied with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and service of a standard unmatched in the service sector of the energy industry.

Please take the time to let us know if our performance met with your satisfaction. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.

CUSTOMER SATISFACTION SURVEY

CATEGORY	CUSTOMER SATISFACTION RESPONSE	
Survey Conducted Date	The date the survey was conducted	7/12/2013
Survey Interviewer	The survey interviewer is the person who initiated the survey.	THOMAS PONDER (HX41187)
Customer Participation	Did the customer participate in this survey? (Y/N)	Yes
Customer Representative	Enter the Customer representative name	JUSTIN SKALLA
HSE	Was our HSE performance satisfactory? Circle Y or N	Yes
Equipment	Were you satisfied with our Equipment? Circle Y or N	Yes
Personnel	Were you satisfied with our people? Circle Y or N	Yes
Customer Comment	Customer's Comment	

CUSTOMER SIGNATURE

Sales Order #: 900584482	Line Item: 10	Survey Conducted Date: 7/12/2013
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		Job Type (BOM): CMT SQUEEZE PERFORATIONS BOM
Customer Representative: JUSTIN SKALLA		API / UWI: (leave blank if unknown) AFEYSO4DGHKRW05EAAA
Well Name: GM		Well Number: 513-1
Well Type: Development Well	Well Country: United States of America	
H2S Present:	Well State: Colorado	Well County: Garfield

KEY PERFORMANCE INDICATORS

General	
Survey Conducted Date The date the survey was conducted	7/12/2013

Cementing KPI Survey	
Type of Job Select the type of job. (Cementing or Non-Cementing)	0
Select the Maximum Deviation range for this Job What is the highest deviation for the job you just completed? This may not be the maximum well deviation.	Vertical
Total Operating Time (hours) Total Operating Hours Including Rig-up, Pumping, Rig-down. Enter in decimal format.	5
HSE Incident, Accident, Injury HSE Incident, Accident, Injury. This should be recordable incidents only.	No
Was the job purpose achieved? Was the job delivered correctly as per customer agreed design?	Yes
Operating Hours (Pumping Hours) Total number of hours pumping fluid on this job. Enter in decimal format.	3
Customer Non-Productive Rig Time (hrs) Lost time due to Halliburton in the start, execution, or completion of an ordered service or product, or delays in a follow-on service. Enter in decimal format. 0 if none.	0
Type of Rig Classification Job Was Performed Type Of Rig (classification) Job Was Performed On	Drilling Rig (Portable)
Number Of JSAs Performed Number Of Jsas Performed	6
Number of Unplanned Shutdowns Unplanned shutdown is when injection stops for any period of time.	0
Was this a Primary Cement Job (Yes / No)	No

Sales Order #: 900584482	Line Item: 10	Survey Conducted Date: 7/12/2013
Customer: WPX ENERGY ROCKY MOUNTAIN LLC-EBUS		Job Type (BOM): CMT SQUEEZE PERFORATIONS BOM
Customer Representative: JUSTIN SKALLA		API / UWI: (leave blank if unknown) AFEYSO4DGHKRW05EAAA
Well Name: GM		Well Number: 513-1
Well Type: Development Well	Well Country: United States of America	
H2S Present:	Well State: Colorado	Well County: Garfield

Primary Cement Job= Casing job, Liner job, or Tie-back job.	
Was this a Plug or a Squeeze Job? Please select the appropriate choice	No
Was this a Primary or a Remedial Job? Kick off plug, Plug to Abandon, LCM plug or Planned Liner Top Squeeze, Squeeze of existing perforations, Squeeze of casing leak	No
Mixing Density of Job Stayed in Designed Density Range (0-100%) Density Range defined as +/- .20 ppg. Calculation: Total BBLs cement mixed at designed density divided by total BBLs of cement multiplied by 100	99
Was Automated Density Control Used? Was Automated Density Control (ADC) Used ?	Yes
Pump Rate (percent) of Job Stayed At Designed Pump Rate Pump Rate range defined as +/- 1bbl/min. Calculation: Total BBLs of fluid pumped at the designed rate divided by Total BBLs of fluid pumped, multiplied by 100	98
Nbr of Remedial Sqz Jobs Rqd - Competition Number Of Remedial Squeeze Jobs Required After Primary Job Performed By Competition	0
Nbr of Remedial Plug Jobs Rqd - HES Number Of Remedial Plug Jobs Needed After Primary Plug Pumped By HES	0
Nbr of Remedial Sqz Jobs Rqd - HES Number Of Remedial Squeeze Jobs Required After Primary Job Performed By HES	0

HALLIBURTON

Rockies, Grand Junction

Lab Results- Squeeze

Job Information

Request/Slurry	2017542/1	Rig Name		Date	12/July/2013
Submitted By	Charles Ross	Job Type	Perforation Squeeze	Bulk Plant	Grand Junction
Customer	Halliburton	Location		Well	GM 513-1

Well Information

Casing/Liner Size	4.5"	Depth MD	4000 ft	BHST	148 degF
Hole Size		Depth TVD	4000 ft	BHCT	125 degF

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
-------------------	----------------	---------

Cement Information - Squeeze Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
100	% BWOC	Mountain G	Lab	08.02.13	Tank 29	Slurry Density	15.798	lbm/gal
0.338	% BWOC	HALAD-344 (PB)	Lab	13.02.13	B2-33B	Slurry Yield	1.15	ft3/sack
						Water Requirement	4.98	gal/sack
0.113	% BWOC	HALAD-413 (PB)	Chemicals	06.02.13	ZM2J01 96AO	Total Mix Fluid	4.98	gal/sack
0.05	% BWOC	HR-800	Bulk Blend	05.09.12	0723120 1			
4.98	gal/sack	Fresh Water	Lab	20.09.12		Water Source Water Chloride	Fresh Water	

Project Test Results Request ID 2017542/1

API Fluid Loss

Test Temp (°F)	Test Pressure (psi)	Test Time (min)	ISO FL (cc/30 min)	Meas. Vol.	Calc. ISO FL (<30 min)	Conditioning time (min)
125	1000	30	70	35	70	30

Thickening Time - ON-OFF-ON

Test Temp (°F)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
125	2980	9	1:41	1:50	2:00	2:13	7	25	10	14

This report is the property of Halliburton Energy Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the expressed written approval of Halliburton. It may however be used in the course of regular business operations by any person or concern receiving such report from Halliburton. This report is for information purposes only and the content is limited to the sample described. Halliburton makes no warranties, expressed or implied, as to the accuracy of the contents or results. Any user of this report agrees Halliburton shall not be liable for any loss or damage regardless of cause, including any act or omission of Halliburton, resulting from the use hereof.