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**ANTERO RESOURCES**

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**CSF 21C-07-07-91  
MAMM CREEK  
Garfield County , Colorado**

**Squeeze Perfs  
23-Feb-2011**

**Post Job Report**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 337854	<b>Ship To #:</b> 2696160	<b>Quote #:</b>	<b>Sales Order #:</b> 7989416
<b>Customer:</b> ANTERO RESOURCES		<b>Customer Rep:</b> Karchner, George	
<b>Well Name:</b> CSF	<b>Well #:</b> 21C-07-07-91	<b>API/UWI #:</b> 05-045-17084	
<b>Field:</b>	<b>City (SAP):</b> SILT	<b>County/Parish:</b> Garfield	<b>State:</b> Colorado
<b>Lat:</b> N 39.463 deg. OR N 39 deg. 27 min. 47.855 secs.		<b>Long:</b> W 107.599 deg. OR W -108 deg. 24 min. 4.036 secs.	
<b>Contractor:</b> WORKOVER		<b>Rig/Platform Name/Num:</b> WORK OVER	
<b>Job Purpose:</b> Squeeze Perfs			
<b>Well Type:</b> Development Well		<b>Job Type:</b> Squeeze Perfs	
<b>Sales Person:</b> METLI, MARSHALL		<b>Srvc Supervisor:</b> TRIPLETT, MICHEAL	<b>MBU ID Emp #:</b> 447908

**Job Personnel**

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
HAMMOND, DENNIS C	7	287025	LUNCEFORD, STEVEN John	7	457512	STILLSON, ERIC W	7	393789
TRIPLETT, MICHEAL Anthony	7	447908	WEAVER, CARLTON Russell	7	457698			

**Equipment**

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10616651C	75 mile	10722398	75 mile	10995025	75 mile	11139330	75 mile
11259885	75 mile						

**Job Hours**

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
02/23/2011	7	2						

**TOTAL** Total is the sum of each column separately

**Job**

**Job Times**

Formation Name	Top	Bottom	Called Out	Date	Time	Time Zone
<b>Formation Depth (MD)</b>			<b>On Location</b>	23 - Feb - 2011	07:00	MST
<b>Form Type</b>		BHST	<b>Job Started</b>	23 - Feb - 2011	10:00	MST
<b>Job depth MD</b>	4500. ft	<b>Job Depth TVD</b>	4500. ft	<b>Job Completed</b>	23 - Feb - 2011	12:00
<b>Water Depth</b>		<b>Wk Ht Above Floor</b>	5. ft	<b>Departed Loc</b>	23 - Feb - 2011	13:30
<b>Perforation Depth (MD)</b>	From	To				

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

Description	Qty	Qty uom	Depth	Supplier
R/A DENSOMETER W/CHART RECORDER,/JOB,ZI	1	JOB		
ADC (AUTO DENSITY CTRL) SYS, /JOB,ZI	1	JOB		
PORT. DATA ACQUIS. W/OPTICEM RT W/HES	1	EA		

**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	Injection Test			bbl	.	.0	.0	.0	
2	Tail Cement	HALCEM (TM) SYSTEM (452986)	188.0	sacks	15.8	1.16	5.04		5.04
	5.04 Gal	FRESH WATER							
3	Displacement		18.00	bbl	.	.0	.0	.0	
Calculated Values		Pressures		Volumes					
Displacement	17.8	Shut In: Instant	1680	Lost Returns	0	Cement Slurry		Pad	
Top Of Cement		5 Min		Cement Returns	3	Actual Displacement	17.8	Treatment	
Frac Gradient		15 Min		Spacers	17.8	Load and Breakdown		Total Job	94.4
Rates									
Circulating	2	Mixing	2	Displacement	2	Avg. Job	2		
Cement Left In Pipe	Amount	0 ft	Reason	REVERSED CEMENT OUT					
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					

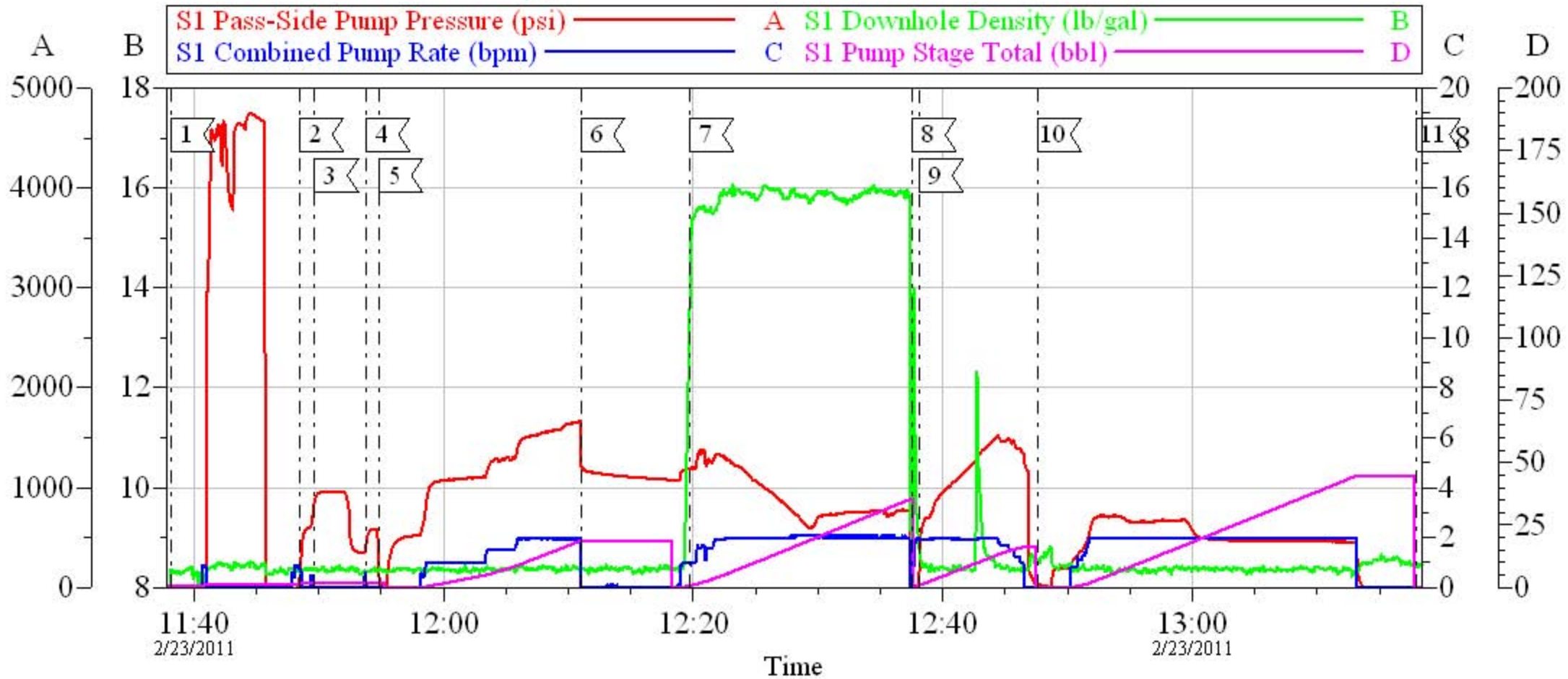
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<b>Legal Description:</b>			
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<b>Contractor:</b> WORKOVER		<b>Rig/Platform Name/Num:</b> WORK OVER	
<b>Job Purpose:</b> Squeeze Perfs			<b>Ticket Amount:</b>
<b>Well Type:</b> Development Well		<b>Job Type:</b> Squeeze Perfs	
<b>Sales Person:</b> METLI, MARSHALL		<b>Srvc Supervisor:</b> TRIPLETT, MICHEAL	<b>MBU ID Emp #:</b> 447908

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Call Out	02/23/2011 02:30							
Depart Yard Safety Meeting	02/23/2011 03:30							
Crew Leave Yard	02/23/2011 03:45							
Arrive At Loc	02/23/2011 07:00							
Assessment Of Location Safety Meeting	02/23/2011 07:41							CHECK LOCATION AND FIND OUT WHERE EQUIPMENT NEEDS TO BE SPOTTED
Other	02/23/2011 07:41							SPOT EQUIPMENT, 1 RCM PUMP TRUCK, 1 660
Pre-Rig Up Safety Meeting	02/23/2011 07:41							GO OVER JSA AND HAVE CREW SIGN.
Rig-Up Equipment	02/23/2011 07:41							RIG UP SQUEEZE MANIFOLD
Pre-Job Safety Meeting	02/23/2011 11:15							HAVE SAFETY MEETING WITH EVERYONE ON LOCATION, TO DISCUSS JOB PROCEDURE AND PLAN.
Start Job	02/23/2011 11:38							PACKER SET @ 4620', TUBING: 2.375" 4.7#, CASING 5.5" 23#, TOP PERF @ 4660', BOTTOM PERF @ 4661', 3 PERFS PER FOOT. 8.4 PPG WELL FLUID

Activity Description	Date/Time	Cht #	Rate bbl/min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Test Lines	02/23/2011 11:48		0.5			4500.0		PRESSURE TESTED LINE TO WELL HEAD NO LEAKS. FOUND LEAK ON VALVE ON BACK SIDE AND REPLACED. PRESSURE TESTED CASING HELD 500 ON IT FOR 1 MIN, RIG CLOSED THERE RAMS AND PUT 500 PSI ON CASING.
Injection Test	02/23/2011 11:54		1.5	18		1680.0		ISIP ALSO TAKEN 1860 PSI.
Pump Cement	02/23/2011 12:19		2	38.8		1085.0		188 SACKS MIXED @ 15.8PPG, 1.16 YIELD, 5.04 GALS/SACK.
Pump Displacement	02/23/2011 12:38		2	17		1472.0		FINAL SQUEEZE PRESSURE WAS 1340 WITH 17 BBLS OF DISPLACEMENT GONE.
Shutdown	02/23/2011 12:46							
Open Bypass / Sting Out	02/23/2011 12:47							STINGOUT
Reverse Circ Well	02/23/2011 12:48		2	45		675.0		REVERSE OUT GOT CEMENT BACK WITH 15BBLS GONE, CLEARED BACK UP WITH 18 BBLS GONE, GOT A TOTAL OF 3 BBLS OF CEMENT BACK TO SURFACE.
End Job	02/23/2011 13:18							USED 40 LBS OF SUGAR, 2 ADDITIONAL HOURS ADDED TO THE TICKET.
Safety Meeting - Pre Rig-Down	02/23/2011 13:20							
Rig-Down Equipment	02/23/2011 13:45							
Pre-Convoy Safety Meeting	02/23/2011 14:30							
Crew Leave Location	02/23/2011 14:40							THANK YOU FOR USING HALLIBURTON MIKE TRIPLETT AND CREW.

# ANTERO SQUEEZE CSF 21C-07-07-91



Local Event Log			
1	START JOB	11:38:07	2
2	TEST WELL HEAD	11:48:27	3
3	TEST CASING	11:49:40	4
4	PUT 500 ON BACKSIDE	11:53:46	5
5	INJECTION TEST/ISIP	11:54:46	6
6	SHUTDOWN	12:10:59	7
7	START TAIL	12:19:45	8
8	SHUTDOWN	12:37:34	9
9	START DISPLACEMENT	12:38:07	10
10	REVERSE OUT	12:47:36	
11	END JOB	13:18:00	

Customer: ANTERO	Job Date: 23-Feb-2011	Sales Order #: 7989416
Well Description: CSF 21C-07-07-91	JOB TYPE: SQUEEZE	COMPANY REP: GEORGE KARCHNER
ADC USED: YES	SERVICE SUPERVISOR: MIKE TRIPLETT	ELITE/OPERATER: 4/RUSTY WEAVER