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# Great Western Operating Company, LLC PRODUCTION POST JOB REPORT

Schneider HD 11-342HNX 05-123-44684  
S:7 T:4N R:66W Weld CO

CallSheet #: 900  
Proposal #: 13384



**PRODUCTION Post Job Report**

**Attention:** Mr. Matt Mount | (303) 398-0373 | mmount@gwogco.com  
Great Western Operating Company, LLC  
1801 Broadway, Suite 500 | Denver, CO 80202

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Dear Mr. Mount,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,

**Jacob Ojeda**

Field Engineer | (763) 516-3012 | Jacob.Ojeda@bjsservices.com

**Field Office**      1716 East Allison Rd., Cheyenne WY, 82007  
Phone: (307) 638-5585

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## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	n/a	0	1575	0
Open Hole	Outer	n/a	8.5	n/a	n/a	1500	7000	10
Open Hole	Outer	n/a	8.5	n/a	n/a	7000	16937	5
Casing	Inner	5.5	4.892	17	n/a	0	16937	0

### 1.2 Equipment / People

Unit Type	Unit	Employee #1	Employee #2	Mileage
Bulk Trailer	508	Borst, David		60
Silo	655			
Silo	675			
Silo	19			
Cement Pump	102	Saldivar, Jesus	Vasquez, Mike	60
Light Duty Pickups	7	Casciato, Luke	Agosto, Miguel	60

### 1.3 Timing

Event	Date/Time
Call Out	6/12/2017 18:30
Depart Facility	6/12/2017 20:00
On Location	6/12/2017 21:00
Rig Up Iron	6/12/2017 22:00
Job Started	6/13/2017 03:31
Job Completed	6/13/2017 09:15
Rig Down Iron	6/13/2017 09:45
Depart Location	6/13/2017 11:00

### 1.4 General Job Information

Metrics	Value
Well Fluid Density	10 lb/gal
Well Fluid Type	OBM
Rig Circulation Vol	1260 bbls
Rig Circulation Time	3 hours
Calculated Displacement	394 bbls
Actual Displacement	394 bbls
Total Spacer to Surface	50 bbls
Total CMT to Surface	55 bbls

### 1.5 Well Fluid Details

Metrics	Value
Plastic Viscosity	17
Yield Point	8
10 sec. SGS	5
10 min. SGS	6
30 min. SGS	8
Filtrate	12
Flow Line Temp.	134

### 1.6 Job Details

Metrics	Value
Flare Prior to Job	Yes
Flare Prior to Job	8800 units
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	10 lb/gal
Well Fluid Density Out of Well	10 lb/gal

### 1.7 Job Details (cont.)

Metrics	Value
BHCT	224 °F
BHST	224 °F



### 1.8 Circulation

Lost Circulation Experienced
No

### 1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sk)	Volume (bbl)	Top (ft)
1	1	CD Spacer - OBM	Spacer	11.50			31.21		50.00	0
1	2	ALTCem P100-X2	Lead	13.20	1.82	9.89		981.00	318.00	0
1	3	ALTCem P50-X1	Tail	13.50	1.47	7.43		1627.00	426.00	7000
1	4	MMCR Water	Displacement	8.33			41.90		20.00	16049
1	5	3% KCl	Displacement	8.33			42.00		367.00	262
1	6	Water	DisplacementFinal	8.33			42.00		7.00	0

### 1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	1	Spacer	CD Spacer - OBM	ASR-20	StrengthRetrogression	213.49	lb/bbl
1	1	Spacer	CD Spacer - OBM	AR-31	Retarder	0.58	lb/bbl
1	1	Spacer	CD Spacer - OBM	ASF-20	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer - OBM	ASF-80	Surfactant	0.50	gal/bbl
1	1	Spacer	CD Spacer - OBM	AVS-10	Viscosifier	0.90	lb/bbl
1	2	Lead	ALTCem P100-X2	AC3-10	Cement	100.00	%
1	2	Lead	ALTCem P100-X2	ABX-20	BondEnhancer	3.00	%BWOB
1	2	Lead	ALTCem P100-X2	ADF-11	Defoamer	0.30	%BWOB
1	2	Lead	ALTCem P100-X2	AFL-50	FluidLoss	0.50	%BWOB
1	2	Lead	ALTCem P100-X2	AR-31	Retarder	0.17	%BWOB
1	2	Lead	ALTCem P100-X2	AVS-20	Viscosifier	0.10	%BWOB
1	3	Tail	ALTCem P50-X1	ACG-10	Cement	50.00	%
1	3	Tail	ALTCem P50-X1	AFA-10	Extender	50.00	%
1	3	Tail	ALTCem P50-X1	ADF-11	Defoamer	0.30	%BWOB
1	3	Tail	ALTCem P50-X1	AFL-50	FluidLoss	0.20	%BWOB
1	3	Tail	ALTCem P50-X1	AR-20	Retarder	0.10	%BWOB
1	3	Tail	ALTCem P50-X1	AVS-10	Viscosifier	0.10	%BWOB
1	3	Tail	ALTCem P50-X1	AVS-50	Viscosifier	2.00	%BWOB
1	4	Displacement	MMCR Water	AR-61	Retarder	0.10	gal/bbl



## 2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	6/12/2017	18:30					BJ Crew was called out to Great Western 560 Production
2	Pre-Convoy Safety Meeting	6/12/2017	19:30					Held journey management with BJ Crew
3	Depart Facility	6/12/2017	20:00					Crew departs facility, heads to location
4	Arrive on Location	6/12/2017	21:00					Crew arrives on location
5	Assess Location	6/12/2017	21:15					Crew conducts walk around of location and discusses spotting of equipment
6	Spot Equipment	6/12/2017	21:30					Crew spots in equipment
7	Pre-Rig Up Safety Meeting	6/12/2017	21:45					Crew conducts STEACS briefing
8	Rig Up	6/12/2017	22:00					Crew rigs up all iron and fittings, noticed that the level markers on upright H2O tanks were broken. Brought situation to Customer Representative's attention, he checked and verified amount of H2O in tanks was sufficient.
9	Other	6/13/2017	00:15					Rig landed 5.5" casing, began circulating, rotating rubber began to leak. Rig circulated all gas out of hole through their choke line for a total of 8800 units, circulated for 3 hours for a total of 1260 bbl 1850psi. Turned over well to BJ Crew.
10	Safety Meeting	6/13/2017	02:30					BJ Crew, Rig Crew, and Customer Rep, conducted STEACS briefing, and discussed job procedure.
11	Start Job	6/13/2017	03:31					Crew begins job
12	Fill Lines	6/13/2017	03:34	8.33	2	2	150	Pumped 2 bbl of H2O at 2bpm in order to fill lines to pressure test
13	Pressure Test	6/13/2017	03:41	8.33			5000	Pressure tested all lines to 5000 psi, bled off 500 psi. pressured back to 5000, pressure held, no leaks bled back to truck.
14	Shutdown	6/13/2017	03:41					Shutdown in order to mix Spacer
15	Pump Spacer	6/13/2017	03:46	11.5	4	50	150	Mixed and pumped 50 bbl of weighted spacer at 11.5 ppg, 4bpm, 150 psi. Full returns.
16	Pump Lead	6/13/2017	04:00	13.2	6	2	200	mixed and pumped 2 bbl of lead cmt at 13.2 ppg,



17	Shutdown	6/13/2017	04:02					Lines began jacking, kick off of the pump began leaking, shutdown in order to tighten wings back together
18	Pump Lead	6/13/2017	04:06	13.2	5.5	316	200	Brought pumps back online for 316 bbl of lead (981 SKS, 1.82yld, 9.89 GL/SK ) at 5.5 bpm, 200psi. Full returns.
19	Slow Rate	6/13/2017	05:11	13.2	4		200	Slowed rate for silo change.
20	Pump Tail	6/13/2017	05:13	13.5	4	426		Mixed and pumped 426 bbl of tail cmt (1627sks, 1.47yld, 7.43gl/sk) at 13.5ppg.
21	Increase Rate	6/13/2017	05:14	13.5	5.5	235	200	Increased rate to 5.5 bpm after silo change and cmt had good delivery, full returns.
22	Slow Rate	6/13/2017	06:00	13.5	2	20	150	While mixing, pump quit pulling mix water. Slowed rate, switched to inside H2O, in order to switch to a new H2O tank.
23	Increase Rate	6/13/2017	06:10	13.5	5.5	171	200	increased rate after H2O situation was corrected to 5.5 bpm, 200psi.
24	Slow Rate	6/13/2017	07:02	13.5	3		150	Slowed rate in order to mix shoe.
25	Shutdown	6/13/2017	07:06					Shutdown in order to wash pumps and lines
26	Wash Pumps and Lines	6/13/2017	07:07	8.33	3		100	pumped 10 bbl of fresh H2O in order to clean out pumps and lines prior to displacement
27	Drop Top Plug	6/13/2017	07:13					Dropped top plug, both tattle tales failed.
28	Shutdown	6/13/2017	07:14					Shutdown in order to take cap off of plug container to verify plug was away.
29	Pump Displacement	6/13/2017	07:20	8.5	6	384	2500	Pumped 384 bbl of 3% KCL H2O at 6bpm. 2500psi.
30	Slow Rate	6/13/2017	08:48	8.33	3	10	2200	Slowed rate to 3 bpm in order to land plug. 2200psi
31	Landed Top Plug	6/13/2017	09:03	8.33			3200	Landed top plug at 2200 psi. bumped pressure to 3200 as per Costumer Representative's request. Calculated displacement was 394bbl, actual displacement was 394bbl. 55 bbl of cmt to surface.
32	Check Floats	6/13/2017	09:08					Held pressure for 5 minutes, checked floats, floats held. 4 bbl in return.
33	End Job	6/13/2017	09:15					Crew ends job
34	Pre-Rig Down Safety Meeting	6/13/2017	09:30					Crew conducts STEACS briefing for rig down.
35	Rig Down	6/13/2017	09:45					Crew rigs down all iron and fittings
36	Pre-Convoy Safety Meeting	6/13/2017	10:30					Crew conducts journey management.
37	Depart Location	6/13/2017	11:00					Crew departs location, heads to facility.

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	85 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	169 mg/L	0-3000 mg/L
Total Alkalinity	240	0-1000
Total Hardness	>375 mg/L	0-500 mg/L
Carbonates	140 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	0 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### 4 Pump Diagrams

