

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3919165		Quote #:		Sales Order #: 0906404873				
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: DEAN						
Well Name: GUTTERSEN			Well #: D34-749		API/UWI #: 05-123-48555-00					
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO				
Legal Description: SE SW-22-3N-64W-1015FSL-1553FWL										
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 321						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB31357				Srvc Supervisor: Lance Carpenter						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		17578		Job Depth TVD		6900				
Water Depth				Wk Ht Above Floor		4				
Perforation Depth (MD)		From		To						
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36			0	1954	0	1954
Casing		5.5	4.892	17			0	17578	0	6900
Open Hole Section			8.5				1954	17600	1954	6900
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			17578		Top Plug	5.5	1	HES	
Float Shoe	5.5					Bottom Plug	5.5	2	HES	
Float Collar	5.5			17533		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5		HES	
Stage Tool	5.5					Centralizers	5.5		HES	
Fluid Data										
Stage/Plug #: 1										

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	120	bbl	11.5	3.87			
1 lbm/bbl		<b>FE-2, 2000 LB BAG - (1005549)</b>							
3.50 lbm/bbl		<b>SEM-94P, 35 LB SACK - (1023987)</b>							
3.50 lbm/bbl		<b>SEM-93P, 35 LB SACK - (1023977)</b>							
145.2420 lbm/bbl		<b>BARITE, BULK (100003681)</b>							
0.10 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.65		6	8.4
0.30 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
8.40 Gal		<b>FRESH WATER</b>							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	511	sack	13.2	1.67		6	8.05
0.18 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
8.28 Gal		<b>FRESH WATER</b>							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	NeoCem NT1	NeoCem TM	1174	sack	13.2	2.04		6	9.79
0.08 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
0.08 %		<b>FE-2, 2000 LB BAG - (1005549)</b>							
9.79 Gal		<b>FRESH WATER</b>							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	MMCR Displacement	MMCR Displacement	20	bbl	8.34				
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
6	Displacement	Displacement	387	bbl	8.33				

## Cementing Job Summary

Cement Left In Pipe	Amount	42 ft	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride:	500 ppm	Mix Water Temperature:
Cement Temperature:	## °F °C	Plug Displaced by:	8.4 lb/gal Water	Disp. Temperature:
Plug Bumped?	Yes	Bump Pressure:	2174 psi	Floats Held?
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:
<b>Comment</b> <p>JOB PERFORMED AS DESIGNED. NO ACCIDENT, INJURY OR SPILL. SLURRIES DENSITY VERIFIED WITH PRESSURIZED MUD BALANCE AND VOLUMES VERIFIED WITH MIX WATER GALLONS. DROPPED BOTTOM PLUG. PUMPED 120 BBL 11.5# SPACER. DROPPED BOTTOM PLUG. PUMPED 41 BBL 13.2# CAP. PUMPED 152 BBL 13.2# LEAD. PUMPED 427 BBL 13.2# TAIL. DROPPED TOP PLUG. PUMPED 407 BBL WATER DISPLACEMENT WITH MMCR IN FIRST 20 BBL AND BIOCIDES THROUGHOUT. BUMPED PLUG AT 3 BPM WITH 2174 PSI. TOOK TO 2848 PSI AND HELD FOR 5 MINUTE CASING TEST. FLOATS HELD WITH 5 BBL BACK.</p> <p>TOP OF TAIL – 7152'</p> <p>TOP OF LEAD – 3427'</p> <p>TOP OF CAP – 2423'</p> <p>TOP OF SPACER – 2 BBL BACK TO SURFACE</p>				

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Check Floats	Call Out	3/28/2020	08:30:00	USER	CREW CALLED OUT. ON LOCATION TIME 1430
Event	2	Depart Shop for Location	Depart Shop for Location	3/28/2020	12:45:00	USER	CREW HAS VERIFIED MATERIALS AND EQUIPMENT FOR THE JOB. CREW HAS JOURNEY MANAGEMENT SAFETY MEETING DISCUSSING ROUTE, CONVOY ORDER, FOLLOWING DISTANCE, COMMUNICATION, WALK AROUNDS, TRAFFIC AND DEPART FOR LOCATION
Event	3	Arrive At Loc	Arrive At Loc	3/28/2020	13:45:00	USER	CREW ARRIVES AT LOCATION. RIG RIH CASING 15100'. CREW ASSESSES LOCATION FOR HAZARDS AND EQUIPMENT LAYOUT AFTER STAGING OUT OF THE WAY UNTIL THE LANDING JOINT HAS BEEN PLACED ON THE RACK
Event	4	Other	Other	3/28/2020	17:00:00	USER	CREW SPOTS IN EQUIPMENT AND BEGINS RIGGING UP LINES AFTER HAVING RIG UP SAFETY MEETING DISCUSSING MUDDY AREAS, SLIPS TRIPS FALLS, COMMUNICATION, BACKING, LINE OF FIRE, PINCH POINTS, TEAM LIFTING AND RED ZONES
Event	5	Casing on Bottom	Casing on Bottom	3/28/2020	19:30:00	USER	CASING ON BOTTOM. HAD TO WASH DOWN THE LAST 1500' APPROXIMATELY
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/28/2020	20:45:00	USER	CREW, RIG CREW AND CUSTOMER REP HAVE PRE JOB SAFETY MEETING DISCUSSING MUSTER AREAS, CONTINGENCIES, RED ZONES, TUGGER OPERATIONS, LINE OF FIRE, COMMUNICATION, ROLES AND THE JOB PROCEEDURE
Event	7	Start Job	Start Job	3/28/2020	21:00:28	COM4	START JOB
Event	8	Test Lines	Test Lines	3/28/2020	21:17:16	COM4	FILL LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 4500 PSI. HELD FOR A FEW MINUTES, TEST GOOD. TEST IBOP TO 2200 PSI. TEST GOOD
Event	9	Drop Bottom Plug	Drop Bottom Plug	3/28/2020	21:26:43	USER	DROP BOTTOM PLUG
Event	10	Pump Spacer 1	Pump Spacer 1	3/28/2020	21:27:47	COM4	PUMP 120 BBL TUNED PRIME SPACER 11.5# 3.87 YIELD 24.42 GAL
Event	11	Check Weight	Check Weight	3/28/2020	21:31:20	COM4	VERIFIED WEIGHT WITH PRESSURIZED MUD BALANCE
Event	12	Shutdown	Shutdown	3/28/2020	21:53:02	USER	SHUTDOWN
Event	13	Drop Bottom Plug	Drop Bottom Plug	3/28/2020	21:55:05	COM4	DROP BOTTOM PLUG
Event	14	Pump Lead Cement	Pump Lead Cement	3/28/2020	22:00:00	COM4	PUMP 41 BBL ELASTICEM CAP 13.2# 1.65 YIELD 8.4 GAL 140 SACKS
Event	15	Pump Cement	Pump Cement	3/28/2020	22:06:05	COM4	PUMP 152 BBL ELASTICEM LEAD 13.2# 1.67 YIELD 8.05 GAL 511 SACKS

Event	16	Pump Tail Cement	Pump Tail Cement	3/28/2020	22:28:10	COM4	PUMP 427 BBL NEOCEM TAIL 13.2# 2.04 YIELD 9.79 GAL 1174 SACKS
Event	17	Shutdown	Shutdown	3/28/2020	23:31:47	USER	SHUTDOWN. BLOW DOWN LINES TO THE PIT. WASH PUMPS TO THE PIT
Event	18	Drop Top Plug	Drop Top Plug	3/28/2020	23:44:57	COM4	DROP TOP PLUG
Event	19	Pump Displacement	Pump Displacement	3/28/2020	23:45:03	COM4	PUMP 407 BBL WATER DISPLACEMENT WITH FIRST 20 BBL MMCR AND THEN BIOCIDES THROUGHOUT
Event	20	Bump Plug	Bump Plug	3/29/2020	00:42:43	COM4	BUMP PLUG AT 3 BPM WITH 2174 PSI. TOOK TO 2848 PSI AND HELD FOR 5 MINUTE CASING TEST
Event	21	Check Floats	Check Floats	3/29/2020	00:48:12	USER	FLOATS HELD WITH 5 BBL BACK
Event	22	End Job	End Job	3/29/2020	01:12:54	COM4	END JOB
Event	23	Safety Meeting	Safety Meeting	3/29/2020	01:15:00	USER	CREW HAS RIG DOWN SAFETY MEETING DISCUSSING SLIPS TRIPS FALLS, TEAM LIFTING, PINCH POINTS, LINE OF FIRE, COMMUNICATION AND BEGIN RIGGING DOWN
Event	24	Depart Location	Depart Location	3/29/2020	02:30:00	USER	CREW IS RIGGED DOWN AND READY TO DEPART. CREW HAS JOURNEY MANAGEMENT SAFETY MEETING DISCUSSING WALK AROUNDS, CONVOY ORDER, FOLLOWING DISTANCE, COMMUNICATION, ROUTE AND DEPART FROM LOCATION

## 3.0 Attachments

### 3.1 Job Chart

