

*The Road to Excellence Starts with Safety*

Sold To #: 345242	Ship To #: 3630434	Quote #:	Sales Order #: 0903432455
Customer: NOBLE ENERGY INC - EBUS		Customer Rep: John Drahota	
Well Name: NUGENT	Well #: LD06-665	API/UWI #: 05-123-40808-00	
Field: WILDCAT	City (SAP): RAYMER	County/Parish: WELD	State: COLORADO
Legal Description: SE NE-5-9N-58W-2310FNL-330FEL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517	
Job BOM: 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB61755		Srvc Supervisor: Vaughn Oteri	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type		BHST	230 degF
Job depth MD	16170ft	Job Depth TVD	
Water Depth		Wk Ht Above Floor	
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	1930	0	1930
Casing		5.5	4.778	20			0	16136	0	5184
Open Hole Section			8.5				1930	16170	1930	5184

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	HES
Float Shoe	5.5			16136	Bottom Plug	5.5	2	HES
Float Collar	5.5			16088	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									
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	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	4.71			

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	11 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11	4.72				
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	ExpandaCem w/o CBL	EXPANDACEM (TM) SYSTEM	150	sack	13.2	1.6		5	7.67	
7.67 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	Expandacem	EXPANDACEM (TM) SYSTEM	486	sack	13.2	1.6		5	7.69	
7.69 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	EconoCem	ECONOCEM (TM) SYSTEM	1428	sack	13.5	1.68		5	7.98	
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	355	bbl	8.33					
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint		
<b>Comment</b> No spacer back to surface										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	DS Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	7/29/2016	21:00:00	USER					Call out from ARC hub
Event	2	Arrive At Loc	Arrive At Loc	7/29/2016	22:30:00	USER					Requested on location @0300 Arrived on location @2230 met with company rep to discuss job process and concerns advised we were early and would not be able to rig up till casing was all in the hole
Event	3	Other	Other	7/29/2016	22:31:00	USER					TD-16170 TP-16136 FC-16088 SURF 1930 KOP-5184 Casing 5.5 20#
Event	4	Start Job	Start Job	7/30/2016	07:32:07	COM4	0.00	8.54	0.00	0.00	Held pre-job safety meeting with all hands on location to discuss job process and hazards
Event	5	Test Lines	Test Lines	7/30/2016	07:44:26	COM4	37.00	8.46	0.00	0.00	Pressure tested pumps and lines with fresh water 4981 psi, Pressure held good and no leaks found
Event	6	Test Lines	Test Lines	7/30/2016	07:49:03	COM4	17.00	8.45	0.00	0.00	Pressure tested to IBOP Valve 3046 psi no leaks found and pressure held good
Event	7	Drop Bottom Plug	Drop Bottom Plug	7/30/2016	08:01:12	COM4	30.00	8.44	0.00	0.00	Released plug witnessed by company rep
Event	8	Check Weight	Check weight	7/30/2016	08:01:54	COM4	28.00	8.43	0.00	0.00	Confirm weight of 11.0ppg on scales
Event	9	Pump Spacer 1	Pump Spacer 1	7/30/2016	08:04:49	COM4	25.00	8.41	0.00	0.00	Mixed 40bbl of 11.0ppg Tuned spacer III with surfactants, and mixed 40bbl of 11.0ppg Tuned Spacer III without surfactants at 4.0bpm 289psi
Event	10	Shutdown	Shutdown	7/30/2016	08:25:19	COM4	238.00	10.85	2.00	2.00	Shut down so that rig could un-sting from casing
Event	11	Drop Bottom Plug	Drop Bottom Plug	7/30/2016	08:25:28	COM4	121.00	10.81	0.00	0.00	Released plug witnessed by company rep
Event	12	Check Weight	Check weight	7/30/2016	08:28:05	COM4	38.00	10.74	0.00	0.00	Confirm weight of 13.2ppg on scales
Event	13	Pump Lead Cement	Pump Lead Cement	7/30/2016	08:30:12	COM4	38.00	10.73	0.00	0.00	Mixed 636sks or 180bbl of 13.2ppg Y-1.6

											g/sk-7.67 ExpandaCem at 6.0bpm 420psi
Event	14	Shutdown	Shutdown	7/30/2016	08:51:28	COM4	86.00	13.05	0.00	0.40	Had to shut down due to bulk truck idle shut down and air leaked down and was unable to open discharge valve, restarted truck and built air to open valve
Event	15	Pump Tail Cement	Pump Tail Cement	7/30/2016	09:01:43	COM4	376.00	13.28	4.00	2.00	Mixed 1428sks or 427bbl of 13.5ppg Y-1.68 g/sk-7.98 EconoCem at 6.0bpm 450psi
Event	16	Check Weight	Check weight	7/30/2016	09:02:05	COM4	406.00	13.39	4.00	2.00	Confirm weight on scales of 13.5ppg
Event	17	Other	Other	7/30/2016	09:33:03	COM4	218.00	13.54	2.00	2.00	Had to slow rate due to poor bulk delivery on silo 6641
Event	18	Check Weight	Check weight	7/30/2016	09:40:20	COM4	452.00	13.45	4.00	2.00	Confirm weight of 13.5ppg on scales
Event	19	Shutdown	Shutdown	7/30/2016	10:06:17	COM4	64.00	13.15	0.00	0.00	
Event	20	Drop Top Plug	Drop Top Plug	7/30/2016	10:06:21	COM4	57.00	13.15	0.00	0.00	Released plug witnessed by company rep
Event	21	Clean Lines	Clean Lines	7/30/2016	10:06:25	COM4					Washed pumps and lines with fresh water, rig blew stand pipe down
Event	22	Pump Displacement	Pump Displacement	7/30/2016	10:19:59	COM4					Pump first 20bbl with water treated with MMCR, pumped remainder of 335 water treated with Bio-cide
Event	23	Bump Plug	Bump Plug	7/30/2016	11:00:23	COM4					Bumped plug 500psi over final pump pressure 1420/ 1940psi
Event	24	Other	Other	7/30/2016	11:06:14	COM4					Released pressure back to pump truck to check floats 3.5bbl back floats held good
Event	25	End Job	End Job	7/30/2016	11:11:48	COM4	-8.00	8.10	0.00	0.00	No spacer back to surface