



## Cement

Well Name: Rieder 18Y-301

### Cement

#### Surface Casing Cement, Casing, 7/9/2015 08:00

Type Casing	String Surface, 910.0ftKB	Start Date 7/9/2015	Cementing End Date 7/9/2015	Wellbore Original Hole	Job Drilling - original, 7/8/2015 20:30	Cementing Company Cementers Well Service Inc	Cement Objective	Eval Method Returns to Surface
----------------	------------------------------	------------------------	--------------------------------	---------------------------	--	---	------------------	-----------------------------------

#### Cement Stages

Stg # 1	Description Surface Casing Cement				Objective		Top Depth (ftKB) 13.0	Bottom Depth (ftKB) 920.0	Pump Start Date 7/9/2015		Pump End Date 7/9/2015		Top Plug? No	Btm Plug? Yes			
Initial Pump Rate (bbl/min) 4		Final Pump Rate (bbl/min) 5		Avg Pump Rate (bbl/min) 5		Final Pump Pressure (psi) 500.0	Plug Bump Pressure (psi) 900.0	Pressure Held (psi) 500.0		Pressure Release Date 7/9/2015		Full Return? Yes	Vol Cement Ret (bbl) 7.0		Volume Lost (bbl)		
Recip? No	Stroke (ft)	Recip Rate (...)	Rotat... No	RPM (rpm)	Pipe Movement Note			MD Tagged... 860.0	Tag Method Drill Bit		Tag Wt (100... 2	Prop... No	Depth Plug... 920.0	Tag Cement Date 7/10/2015		Drill Out Date 7/10/2015	Drill Out Dia (...) 8 3/4

#### Cement Fluids

Fluid	Est Top (ftKB)	Est Btm (ftKB)	Pump Start Date	Pump End Date	Class	Amount (sacks)	Mix H2O Ratio (gal/sack)	Yield (ft³/sack)	Vol Pumped (bbl)	Excess (%)	Dens (lb/gal)
Lead	13.0	920.0	7/9/2015	7/9/2015	50/50 poz	530	5.20	1.18	111.3		15.20

#### Intermediate Casing Cement, Casing, 7/13/2015 04:00

Type Casing	String Intermediate, 7,523.0ftKB	Start Date 7/13/2015	Cementing End Date 7/13/2015	Wellbore Original Hole	Job Drilling - original, 7/8/2015 20:30	Cementing Company Sanjel (USA) Inc	Cement Objective	Eval Method Returns to Surface
----------------	-------------------------------------	-------------------------	---------------------------------	---------------------------	--	---------------------------------------	------------------	-----------------------------------

#### Cement Stages

Stg # 1	Description Intermediate Casing Cement				Objective		Top Depth (ftKB) 13.0	Bottom Depth (ftKB) 7,533.0	Pump Start Date 7/13/2015		Pump End Date 7/13/2015		Top Plug? No	Btm Plug? Yes		
Initial Pump Rate (bbl/min) 3		Final Pump Rate (bbl/min) 5		Avg Pump Rate (bbl/min) 4		Final Pump Pressure (psi) 300.0		Plug Bump Pressure (psi) 2,000.0		Pressure Held (psi) 2,000.0		Pressure Release Date 7/13/2015		Full Return? Yes	Vol Cement Ret (bbl) 21.0	Volume Lost (bbl)
Recip? No	Stroke (ft)	Recip Rate (...)	Rotat... No	RPM (rpm)	Pipe Movement Note			MD Tagged... 7,480.0	Tag Method Drill Bit	Tag Wt (100... 5	Prop... No	Depth Plug... 7,533.0	Tag Cement Date 7/13/2015		Drill Out Date 7/13/2015	Drill Out Dia (...) 6 1/8

#### Cement Fluids

Fluid	Est Top (ftKB)	Est Btm (ftKB)	Pump Start Date	Pump End Date	Class	Amount (sacks)	Mix H2O Ratio (gal/sack)	Yield (ft³/sack)	Vol Pumped (bbl)	Excess (%)	Dens (lb/gal)
Lead	13.0	5,000.0	7/13/2015	7/13/2015	POZ TYPE III	465	10.88	1.95	161.5		12.00
Tail	5,000.0	7,533.0	7/13/2015	7/13/2015	1-1-2 GEL	275	5.93	1.42	83.5		14.60

#### Production Casing Cement, Casing, 7/16/2015 02:00

Type Casing	String Liner, 11,554.0ftKB	Start Date 7/16/2015	Cementing End Date 7/16/2015	Wellbore Original Hole	Job Drilling - original, 7/8/2015 20:30	Cementing Company Sanjel (USA) Inc	Cement Objective	Eval Method Calculated
----------------	-------------------------------	-------------------------	---------------------------------	---------------------------	--	---------------------------------------	------------------	---------------------------

#### Cement Stages

Stg # 1	Description Production Casing Cement				Objective		Top Depth (ftKB) 6,435.0	Bottom Depth (ftKB) 11,558.0	Pump Start Date 7/16/2015		Pump End Date 7/16/2015		Top Plug? No	Btm Plug? Yes		
Initial Pump Rate (bbl/min) 4	Final Pump Rate (bbl/min) 5		Avg Pump Rate (bbl/min) 4		Final Pump Pressure (psi) 1,350.0		Plug Bump Pressure (psi) 2,050.0		Pressure Held (psi) 2,800.0		Pressure Release Date 7/16/2015		Full Return? No	Vol Cement Ret (bbl) 20.0	Volume Lost (bbl)	
Recip? No	Stroke (ft)	Recip Rate (...)	Rotat... No	RPM (rpm)	Pipe Movement Note		MD Tagged...	Tag Method		Tag Wt (100... No	Prop... No	Depth Plug...	Tag Cement Date		Drill Out Date	Drill Out Dia (...)

#### Cement Fluids

Fluid	Est Top (ftKB)	Est Btm (ftKB)	Pump Start Date	Pump End Date	Class	Amount (sacks)	Mix H2O Ratio (gal/sack)	Yield (ft³/sack)	Vol Pumped (bbl)	Excess (%)	Dens (lb/gal)
Lead	6,435.0	11,558.0	7/16/2015	7/16/2015	50/50 poz	470	6.19	1.25	107.0		13.50