

API/UWI 05071088250000	Location T34S-R68W-S11	Field Name Purgatoire River	Permit Number 20061861	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,448.00	Casing Flange Elevation (ft) 23.0	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft) 0.00	Spud Date 8/1/2006 10:30	Rig Release Date 8/3/2006 17:15

Conductor Casing Cement, 8/1/2006 11:15

Type Casing	Cementing Start Date 8/1/2006	Cementing End Date 8/1/2006	Wellbore Original Hole	String Conductor, 23.0ftKB
Cementing Company LOWE'S	Evaluation Method	Cement Evaluation Results		

Comment
Cmt cond @23' GL w/ 10 sks REDI-CRETE

1, 13.0-23.0ftKB

Top Depth (ftKB) 13.0	Bottom Depth (ftKB) 23.0	Full Return? Yes	Vol Cement Ret (bbl) 0.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 1	Final Pump Rate (bbl/min) 1	Avg Pump Rate (bbl/min) 1		Final Pump Pressure (psi) 0.0	Plug Bump Pressure (psi)
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Cement

Fluid Type Cement	Fluid Description 18.0	Amount (sacks) 10	Class A	Volume Pumped (bbl) 1.8
Estimated Top (ftKB) -3.0	Estimated Bottom Depth (ftKB) 23.0	Percent Excess Pumped (%)	Yield (ft³/sack) 1.00	Mix H2O Ratio (gal/sack) 5.00
Free Water (%)	Density (lb/gal) 18.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc
None		

Surface Casing Cement, 8/1/2006 21:00

Type Casing	Cementing Start Date 8/1/2006	Cementing End Date 8/1/2006	Wellbore Original Hole	String Surface, 410.8ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment
Cmt surf csg @ 410.75' w/ 152 sks, circ 23 bbls (78 sks) to pit @ 22:39 hrs 8/1/06

1, 0.0-415.0ftKB

Top Depth (ftKB) 0.0	Bottom Depth (ftKB) 415.0	Full Return? Yes	Vol Cement Ret (bbl) 23.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3		Final Pump Pressure (psi) 125.0	Plug Bump Pressure (psi) 0.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Spacer

Fluid Type Spacer	Fluid Description 8.33	Amount (sacks) 8.33	Class	Volume Pumped (bbl) 85.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 415.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc
Trinidad Surf Blend		100.0

Cement

Fluid Type Cement	Fluid Description 14.0	Amount (sacks) 152	Class G	Volume Pumped (bbl) 65.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 415.0	Percent Excess Pumped (%)	Yield (ft³/sack) 1.66	Mix H2O Ratio (gal/sack) 7.76
Free Water (%)	Density (lb/gal) 14.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc

Displacement

Fluid Type Displacement	Fluid Description 8.00	Amount (sacks) 8.00	Class	Volume Pumped (bbl) 23.0
Estimated Top (ftKB) 415.0	Estimated Bottom Depth (ftKB) 364.5	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Well Name: Apache Canyon 11-15

API/UWI 05071088250000	Location T34S-R68W-S11	Field Name Purgatoire River	Permit Number 20061861	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,448.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/1/2006 10:30	Rig Release Date 8/3/2006 17:15

Cement Fluid Additives		
Add	Type	Conc

Production Casing Cement, 8/3/2006 17:15				
Type Casing	Cementing Start Date 8/3/2006	Cementing End Date 8/3/2006	Wellbore Original Hole	String Production, 2,364.9ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		
Comment				

1, 1,631.0-2,375.0ftKB					
Top Depth (ftKB) 1,631.0	Bottom Depth (ftKB) 2,375.0	Full Return? Yes	Vol Cement Ret (bbl) 12.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3		Final Pump Pressure (psi) 490.0	Plug Bump Pressure (psi) 1,530.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Spacer				
Fluid Type Spacer	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 100.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 2,375.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

LCM				
Fluid Type LCM	Fluid Description 9.00	Amount (sacks)	Class	Volume Pumped (bbl) 60.0
Estimated Top (ftKB) 545.0	Estimated Bottom Depth (ftKB) 2,375.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 9.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

1st Stage cmt				
Fluid Type 1st Stage cmt	Fluid Description 13.0	Amount (sacks) 130	Class Prem Lite	Volume Pumped (bbl) 47.0
Estimated Top (ftKB) 945.0	Estimated Bottom Depth (ftKB) 2,375.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 10.58
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Displacement				
Fluid Type Displacement	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 55.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,631.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

2, 94.0-1,631.0ftKB					
Top Depth (ftKB) 94.0	Bottom Depth (ftKB) 1,631.0	Full Return? Yes	Vol Cement Ret (bbl) 23.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3		Final Pump Pressure (psi) 525.0	Plug Bump Pressure (psi) 1,575.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Well Name: Apache Canyon 11-15

Conductor Casing Cement

API/UWI 05071088250000	Location T34S-R68W-S11	Field Name Purgatoire River	Permit Number 20061861	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,448.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/1/2006 10:30	Rig Release Date 8/3/2006 17:15

Spacer					
Fluid Type Spacer	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 10.0	
Estimated Top (ftKB) 1,350.0	Estimated Bottom Depth (ftKB) 1,631.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

LCM					
Fluid Type LCM	Fluid Description 9.00	Amount (sacks)	Class	Volume Pumped (bbl) 20.0	
Estimated Top (ftKB) 1,020.0	Estimated Bottom Depth (ftKB) 1,631.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 9.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc

2nd Stage cmt					
Fluid Type 2nd Stage cmt	Fluid Description 13.0	Amount (sacks) 275	Class Prem Lite	Volume Pumped (bbl) 100.0	
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,631.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 10.58	
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc
Trinidad Prod Blend		100.0

Displacement					
Fluid Type Displacement	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 38.0	
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,631.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.33	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives		
Add	Type	Conc
Trinidad Prod Blend		100.0