

API/UWI 05071087460000	Location T34S-R68W-S12	Field Name Purgatoire River	Permit Number 20060639	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,504.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/3/2006 19:00	Rig Release Date 8/6/2006 18:30

Conductor Casing Cement, 8/3/2006 19:45

Type Casing	Cementing Start Date 8/3/2006	Cementing End Date 8/3/2006	Wellbore Original Hole	String Conductor, 23.0ftKB
Cementing Company LOWE's	Evaluation Method	Cement Evaluation Results		

Comment
Cmt'd cond w/ 8 sks REDI-CRETE f/ 23' GL - surf

1, 3.0-23.0ftKB

Top Depth (ftKB) 3.0	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) 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

Cement

Fluid Type Cement	Fluid Description 18.0	Amount (sacks) 8	Class A	Volume Pumped (bbl) 1.4
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, 8/4/2006 16:00

Type Casing	Cementing Start Date 8/4/2006	Cementing End Date 8/5/2006	Wellbore Original Hole	String Surface, 805.9ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment
Cmt'd surf csg w/ 447 sks MIDCON II Trinidad Surf Blend mixed @ 14.0 ppg (1.66 yield) around shoe w/ no cmt to surf and top of cmt going out into location fill between 23' & 30'. WOC 5 hrs. Topped out cmt w/ 81 sks "DITTO" cmt @ 24:00 hrs 8/4/06

1, 30.0-810.0ftKB

Top Depth (ftKB) 30.0	Bottom Depth (ftKB) 810.0	Full Return? No	Vol Cement Ret (bbl) 0.0	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 2	Avg Pump Rate (bbl/min) 2		Final Pump Pressure (psi) 220.0	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)	Class	Volume Pumped (bbl) 100.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 810.0	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

Primary cmt

Fluid Type Primary cmt	Fluid Description 14.0	Amount (sacks) 447	Class G	Volume Pumped (bbl) 131.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 810.0	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 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 45.0
Estimated Top (ftKB) 810.0	Estimated Bottom Depth (ftKB) 810.0	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)

Well Name: Apache Canyon 12-04

API/UWI 05071087460000	Location T34S-R68W-S12	Field Name Purgatoire River	Permit Number 20060639	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,504.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/3/2006 19:00	Rig Release Date 8/6/2006 18:30

Cement Fluid Additives		
Add	Type	Conc

2, 0.0-30.0ftKB					
Top Depth (ftKB) 0.0	Bottom Depth (ftKB) 30.0	Full Return? No	Vol Cement Ret (bbl) 1.0	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) 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

Top-out-cmt				
Fluid Type Top-out-cmt	Fluid Description 14.0	Amount (sacks) 81	Class G	Volume Pumped (bbl) 24.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 30.0	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
Trinidad Surf Blend		100.0

Production Casing Cement, 8/6/2006 18:30				
Type Casing	Cementing Start Date 8/6/2006	Cementing End Date 8/7/2006	Wellbore Original Hole	String Production, 2,477.9ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		
Comment				

1, 1,755.0-2,500.0ftKB					
Top Depth (ftKB) 1,755.0	Bottom Depth (ftKB) 2,500.0	Full Return? No	Vol Cement Ret (bbl) 0.0	Top Plug? Yes	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) 255.0	Plug Bump Pressure (psi) 920.0
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? No	Pipe RPM (rpm)
Tagged Depth (ftKB) 2,431.0	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) 65.0
Estimated Top (ftKB) 520.0	Estimated Bottom Depth (ftKB) 2,500.0	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 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 60.0
Estimated Top (ftKB) 670.0	Estimated Bottom Depth (ftKB) 2,500.0	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 Cement				
Fluid Type 1st Stage Cement	Fluid Description 13.0	Amount (sacks) 125	Class Prem Lite	Volume Pumped (bbl) 45.4
Estimated Top (ftKB) 1,115.0	Estimated Bottom Depth (ftKB) 2,500.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 7.66
Free Water (%)	Density (lb/gal) 13.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Well Name: Apache Canyon 12-04

Conductor Casing Cement

API/UWI 05071087460000	Location T34S-R68W-S12	Field Name Purgatoire River	Permit Number 20060639	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,504.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/3/2006 19:00	Rig Release Date 8/6/2006 18:30

Displacement				
Fluid Type Displacement	Fluid Description 8.33	Amount (sacks)	Class	Volume Pumped (bbl) 57.9
Estimated Top (ftKB) 2,500.0	Estimated Bottom Depth (ftKB) 2,430.7	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

2, 1,544.0-1,745.0ftKB					
Top Depth (ftKB) 1,544.0	Bottom Depth (ftKB) 1,745.0	Full Return? No	Vol Cement Ret (bbl) 0.0	Top Plug? Yes	Bottom Plug? Yes
Initial Pump Rate (bbl/min) 3	Final Pump Rate (bbl/min) 3	Avg Pump Rate (bbl/min) 3	Final Pump Pressure (psi) 30.0	Plug Bump Pressure (psi) 1,350.0	
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) 10.0
Estimated Top (ftKB) 1,440.0	Estimated Bottom Depth (ftKB) 1,744.6	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) 1,135.0	Estimated Bottom Depth (ftKB) 1,744.6	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 cement				
Fluid Type 2nd Stage cement	Fluid Description 13.0	Amount (sacks) 250	Class	Volume Pumped (bbl) 91.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,744.6	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 7.66
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) 41.6
Estimated Top (ftKB) 1,744.6	Estimated Bottom Depth (ftKB) 1,744.6	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
Trinidad Prod Blend		100.0

Cement Squeeze, 8/18/2006 00:00				
Type Squeeze	Cementing Start Date 8/18/2006	Cementing End Date	Wellbore Original Hole	String Production, 2,477.9ftKB
Cementing Company	Evaluation Method	Cement Evaluation Results		
Comment				

Well Name: Apache Canyon 12-04

API/UWI 05071087460000	Location T34S-R68W-S12	Field Name Purgatoire River	Permit Number 20060639	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 8,504.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/3/2006 19:00	Rig Release Date 8/6/2006 18:30

1, 1,258.0-1,541.0ftKB

Top Depth (ftKB) 1,258.0	Bottom Depth (ftKB) 1,541.0	Full Return? No	Vol Cement Ret (bbl)	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min)	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min)		Final Pump Pressure (psi)	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

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

Cement Fluid Additives					
Add	Type			Conc	

2, 0.0-1,254.0ftKB

Top Depth (ftKB) 0.0	Bottom Depth (ftKB) 1,254.0	Full Return? No	Vol Cement Ret (bbl)	Top Plug? No	Bottom Plug? No
Initial Pump Rate (bbl/min)	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min)		Final Pump Pressure (psi)	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

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

Cement Fluid Additives					
Add	Type			Conc	