

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

**Conductor Casing Cement, 4/27/2007 15:00**

Type Casing	Cementing Start Date 4/27/2007	Cementing End Date 4/27/2007	Wellbore Original Hole	String Conductor, 49.6ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment  
Cmt'd 13-3/8" cond w/ 85 sks MIDCON II Trinidad Surf Blend mixed @ 14.0 ppg & circ 14 bbls to pit

**1, 3.0-52.0ftKB**

Top Depth (ftKB) 3.0	Bottom Depth (ftKB) 52.0	Full Return? Yes	Vol Cement Ret (bbl) 14.0	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) 45.0	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 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 20.0
Estimated Top (ftKB) 3.0	Estimated Bottom Depth (ftKB) 52.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

**Cement Fluid Additives**

Add	Type	Conc

**Cement**

Fluid Type Cement	Fluid Description 14.0	Amount (sacks) 85	Class Midcon II	Volume Pumped (bbl) 25.0
Estimated Top (ftKB) 3.0	Estimated Bottom Depth (ftKB) 52.0	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 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 7.0
Estimated Top (ftKB) 3.0	Estimated Bottom Depth (ftKB) 45.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

**Cement Fluid Additives**

Add	Type	Conc

**Surface Casing Cement, 4/28/2007 11:15**

Type Casing	Cementing Start Date 4/28/2007	Cementing End Date 4/28/2007	Wellbore Original Hole	String Surface, 494.0ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment  
Cmt'd 8-5/8" surf csg w/ 233 sks MIDCON II Trinidad Surface Blend mixed @ 14.0 ppg & circ 27 bbls cmt to pit @ 12:15 hrs 4/28/2007

**1, 2.5-500.0ftKB**

Top Depth (ftKB) 2.5	Bottom Depth (ftKB) 500.0	Full Return? Yes	Vol Cement Ret (bbl) 27.0	Top Plug? Yes	Bottom Plug? No
Initial Pump Rate (bbl/min) 4	Final Pump Rate (bbl/min) 4	Avg Pump Rate (bbl/min) 4		Final Pump Pressure (psi) 165.0	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 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 35.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

**Well Name: Apache Canyon 35-14-02**

**Conductor Casing Cement**

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

Cement Fluid Additives		
Add	Type	Conc

Cement				
Fluid Type Cement	Fluid Description 14.0	Amount (sacks) 233	Class Midcon II	Volume Pumped (bbl) 69.0
Estimated Top (ftKB) 2.5	Estimated Bottom Depth (ftKB) 500.0	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 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 7.0
Estimated Top (ftKB) 2.5	Estimated Bottom Depth (ftKB) 430.0	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Production Casing Cement, 4/29/2007 21:30				
Type Casing	Cementing Start Date 4/29/2007	Cementing End Date 4/30/2007	Wellbore Original Hole	String Production, 1,721.1ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment  
Cmt'd 5-1/2" prod csg w/ 135 sks 1st stage f/b 75 sks LEAD & 90 sks TAIL 2nd stage & circ 30 bbls 1st stage & 19 bbl 2nd stage to pit @ 00:52 hrs 4/30/2007

1, 994.5-1,750.0ftKB					
Top Depth (ftKB) 994.5	Bottom Depth (ftKB) 1,750.0	Full Return? Yes	Vol Cement Ret (bbl) 30.0	Top Plug? Yes	Bottom Plug? No
Initial Pump Rate (bbl/min) 4	Final Pump Rate (bbl/min) 4	Avg Pump Rate (bbl/min) 4	Final Pump Pressure (psi) 440.0	Plug Bump Pressure (psi) 1,100.0	
Pipe Reciprocated? No	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)	Pipe Rotated? No	Pipe RPM (rpm)	
Tagged Depth (ftKB) 1,675.0	Tag Method	Depth Plug Drilled Out To (ftKB)	Drill Out Diameter (in)	Drill Out Date	

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 50.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Spacer				
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 100.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 10.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

**Well Name: Apache Canyon 35-14-02**

**Conductor Casing Cement**

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

<b>Spacer</b>					
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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)	

<b>Cement Fluid Additives</b>					
Add	Type			Conc	

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Spacer				
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Cement				
Fluid Type Cement	Fluid Description 13.0	Amount (sacks) 135	Class Midcon II	Volume Pumped (bbl) 49.0
Estimated Top (ftKB) 994.5	Estimated Bottom Depth (ftKB) 1,750.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.04	Mix H2O Ratio (gal/sack) 10.56
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 8.4	Amount (sacks)	Class Midcon II	Volume Pumped (bbl) 40.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB) 1,675.5	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

2, 0.0-994.5ftKB					
Top Depth (ftKB) 0.0	Bottom Depth (ftKB) 994.5	Full Return? Yes	Vol Cement Ret (bbl) 19.0	Top Plug? Yes	Bottom Plug? Yes
Initial Pump Rate (bbl/min) 4	Final Pump Rate (bbl/min) 4	Avg Pump Rate (bbl/min) 4	Final Pump Pressure (psi) 310.0	Plug Bump Pressure (psi) 1,475.0	
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 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Spacer				
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Spacer				
Fluid Type Spacer	Fluid Description 9.0	Amount (sacks)	Class	Volume Pumped (bbl) 10.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	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

Spacer				
Fluid Type Spacer	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 4.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Lead Cement				
Fluid Type Lead Cement	Fluid Description 12.0	Amount (sacks) 75	Class Midcon II	Volume Pumped (bbl) 34.0
Estimated Top (ftKB) 0.0	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack) 2.56	Mix H2O Ratio (gal/sack) 14.50
Free Water (%)	Density (lb/gal) 12.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Tail Cement				
Fluid Type Tail Cement	Fluid Description 13.0	Amount (sacks) 90	Class Midcon II	Volume Pumped (bbl) 33.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB) 494.5	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

**Well Name: Apache Canyon 35-14-02**

API/UWI 05071092330000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20070313	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 7,008.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 4/27/2007 12:00	Rig Release Date 4/29/2007 21:30

**Displacement**

Fluid Type Displacement	Fluid Description	Amount (sacks)	Class	Volume Pumped (bbl) 24.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft³/sack)	Mix H2O Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.40	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

**Cement Fluid Additives**

Add	Type	Conc