

Well Name: Apache Canyon 35-07

Conductor Casing Cement

API/UWI 05071093200000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20072371	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 6,953.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/31/2007 00:00	Rig Release Date 9/2/2007 10:00

**Conductor Casing Cement, 8/31/2007 15:30**

Type Casing	Cementing Start Date 8/31/2007	Cementing End Date 8/31/2007	Wellbore Original Hole	String Conductor, 46.3ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment

Cmt'd cond csg w/ 87 sks MIDCON II Trinidad Surface Blend mixed @ 14.0 ppg &amp; circ 14 bbls cmt to pit

**1, 3.0-50.0ftKB**

Top Depth (ftKB) 3.0	Bottom Depth (ftKB) 50.0	Full Return? No	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) 35.0	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)	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

**Cond cement**

Fluid Type Cond cement	Fluid Description 14.0	Amount (sacks) 87	Class Midcon II	Volume Pumped (bbl) 26.0
Estimated Top (ftKB) 3.0	Estimated Bottom Depth (ftKB) 50.0	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) 40.0	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, 9/1/2007 06:30**

Type Casing	Cementing Start Date 9/1/2007	Cementing End Date 9/1/2007	Wellbore Original Hole	String Surface, 495.9ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment

Cmt'd Surface Casing w/ 246 sks MIDCON II Trinidad Surface Blend mixed @ 14.0 ppg &amp; circ 35 bbls cmt to pit

**1, 2.5-500.0ftKB**

Top Depth (ftKB) 2.5	Bottom Depth (ftKB) 500.0	Full Return? Yes	Vol Cement Ret (bbl) 35.0	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) 270.0	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) 500.0	Estimated Bottom Depth (ftKB) 500.0	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 Jobs by Well

Well Name: **Apache Canyon 35-07**

**Conductor Casing Cement**

API/UWI 05071093200000	Location T33S-R67W-S35	Field Name Purgatoire River	Permit Number 20072371	State/Province Colorado	Well Configuration Type Vertical
Gr Elev (ft) 6,953.00	Casing Flange Elevation (ft)	KB-Ground Distance (ft) 0.00	KB-Casing Flange Distance (ft)	Spud Date 8/31/2007 00:00	Rig Release Date 9/2/2007 10:00

Cement Fluid Additives		
Add	Type	Conc

Surface Cement				
Fluid Type Surface Cement	Fluid Description 14.0	Amount (sacks) 246	Class Midcon II	Volume Pumped (bbl) 73.0
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) 28.0
Estimated Top (ftKB) 2.5	Estimated Bottom Depth (ftKB) 440.0	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, 9/2/2007 10:00				
Type Casing	Cementing Start Date 9/2/2007	Cementing End Date 9/2/2007	Wellbore Original Hole	String Production, 1,911.0ftKB
Cementing Company Halliburton Energy Services	Evaluation Method	Cement Evaluation Results		

Comment  
Cmt'd PROD CSG W/ 250 SKS TYPE I-II TUNED LIGHT SYSTEM BLEND mixed @ 10.0 ppg f/b 30 sks MIDCON II Trinidad Prod Blend mixed @ 13.0 ppg & circ 31 bbls cmt to pit @ 13:04 hrs 9/2/2007

1, 2.5-1,980.0ftKB					
Top Depth (ftKB) 2.5	Bottom Depth (ftKB) 1,980.0	Full Return? Yes	Vol Cement Ret (bbl) 31.0	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) 450.0	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)	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) 60.0
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

Production Cement				
Fluid Type Production Cement	Fluid Description 10.0	Amount (sacks) 250	Class Prem Lite	Volume Pumped (bbl) 101.0
Estimated Top (ftKB) 2.5	Estimated Bottom Depth (ftKB) 1,680.0	Percent Excess Pumped (%)	Yield (ft³/sack) 2.27	Mix H2O Ratio (gal/sack) 8.29
Free Water (%)	Density (lb/gal) 10.00	Plastic Viscosity (cP)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Production Cement				
Fluid Type Production Cement	Fluid Description 13.0	Amount (sacks) 30	Class Midcon II	Volume Pumped (bbl) 11.0
Estimated Top (ftKB) 1,680.0	Estimated Bottom Depth (ftKB) 1,980.0	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



Cement Jobs by Well

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Displacement					
Fluid Type Displacement	Fluid Description 8.4	Amount (sacks)	Class	Volume Pumped (bbl) 44.0	
Estimated Top (ftKB) 2.5	Estimated Bottom Depth (ftKB) 1,865.7	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