

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/15/2014
Report #: 38
Depth Progress: 0.00m
Depth End: 1,908.00mKB
Rig Release Date: 1/23/2014

Pump: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/20/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
INVERT	2.0	1,063.330	1.0	M3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Report Date: 1/16/2014
Report #: 39
Depth Progress: 0.00m
Depth End: 1,908.00mKB
Rig Release Date: 1/23/2014

Rig: Beaver Drilling Ltd. 2

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470					
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013		Days From Spud (days) 19.73			
Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00		End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes	
Daily Cost Total (Cost) 211,773.53		Cumulative Cost (Cost) 4,359,205.66		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817		Estimated Days 34.19	
Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB)		Head Count 54.0		Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 30,121.00			
Avg Connection Gas 990		Avg Background Gas 150		Avg Trip Gas 28		Max H2S (ppm) 0					
Road Condition Ice/Snow		Weather Cloudy		Temperature (°C) -23		Wind NE					

Ops and Depth @ Morning Report

Drill 156mm lateral directional hole at 1947m.

Wellbore
Original Hole

Last 24hr Summary

No incidents or accidents. 8 - HID, 2 - OBS and 0 - ASA (all closed out)

Lay down landing joint, attempt to set Stream-Flo packoff seal assembly above mandrel hanger, contact Calgary to create a 'Management of Change' prior to lifting BOP, flowcheck, lift BOP, fix Stream-Flo mandrel hanger issue, set Stream-Flo packoff seal assembly and pressure test, make up BHA, pressure test spool to 20,000kPa high and 1,400kPa for 10 minutes each (pressure test from upper spool against pipe rams using Schlumberger), run in the hole, tag cement at 1893mMD, drill out cement, tag float at 1895m, drill out float and shoe.

From midnight to 6:00am= Drill 156mm hole from 1908m to 1914m, circulate bottoms up, perform FIT to a gradient of 12.5kPa/m (surface applied pressure: 4430kPa for 10 minutes), drill 156mm lateral hole with accumulated MWD surveys, rig services, connections and circulation times.

24hr Forecast

Drill 156mm lateral directional hole with accumulated MWD surveys, rig services, connections and circulation times.

Daily Contacts

Drilling Superintendent, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String

Intermediate, 1,908.00mKB

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	01:45	1.75	INTRM1	WHDBOP	WWSP	T	Wellhead/Tree	1,908.00	1,908.00	Attempt to land pack off seal assembly
01:45	02:00	0.25	INTRM1	RIGMNT	SVRG	P		1,908.00	1,908.00	Rig service function test rig smart anti collision function test crown saver
02:00	05:00	3.00	INTRM1	WHDBOP	WWSP	T	Wellhead/Tree	1,908.00	1,908.00	Attempt to land pack off seal assembly
05:00	08:00	3.00	INTRM1	WHDBOP	WWSP	T	Wellhead/Tree	1,908.00	1,908.00	Attempt to land pack off seal assembly, talked to Conoco office (Calgary) about lifting BOP stack, recieved waiver to lift BOP stack ConocoPhillips Prepared a MOC # 37877
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P		1,908.00	1,908.00	Rig service, checked brake linkage and BOP sling
08:15	08:30	0.25	INTRM1	WHDBOP	SFTY	T	Wellhead/Tree	1,908.00	1,908.00	Safety meeting on nipple down bop reviewed jsa#115 nipple down bop
08:30	09:15	0.75	INTRM1	WHDBOP	NUND	T	Wellhead/Tree	1,908.00	1,908.00	Take catch can off split stack at flange, between upper and lower casing bowl
09:15	13:00	3.75	INTRM1	WHDBOP	WWSP	T	Wellhead/Tree	1,908.00	1,908.00	Cleaned prepared top of mandral hanger, until able to get a seal, with the pack off seal assembly
13:00	15:15	2.25	INTRM1	WHDBOP	NUND	T	Wellhead/Tree	1,908.00	1,908.00	Set BOP stack back down and nipped up
15:15	15:30	0.25	INTRM1	RIGMNT	SVRG	P		1,908.00	1,908.00	Clean and prepare floor to pick up and make up BHA
15:30	16:00	0.50	INTRM1	DRILL	PULD	P		1,908.00	1,908.00	Make up BHA with a Smith 156mm MSi613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. (RPM of 0.135/L), 1.66m from bit to bend, mud motor
16:00	21:00	5.00	INTRM1	DRILL	TRIP	P		1,908.00	1,908.00	Make up BHA run in hole, with a Smith 156mm MSi613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, 1.66m from bit to bend, mud motor, MWD and LWD tools 2 joints HWDP, Jars, 1 joint of HWDP, to 1285mKB
20:00	22:30	1.50	INTRM1	WHDBOP	BOPE	P		1,908.00	1,908.00	Pressure test, with Schlumberger, flange between upper and lower casing bowl, close pipe rams on B.O.P stack, low of 1,400kpa, for 10 minutes and a high of 20,000kpa, for 10 minutes. Held good.

Daily Drilling

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Report Date: 1/16/2014
Report #: 39
Depth Progress: 0.00m
Depth End: 1,908.00mKB
Rig Release Date: 1/23/2014

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
22:30	23:30	1.00	INTRM1	DRILL	TRIP	P		1,908.00	1,908.00	Trip in the hole with a Smith 156mm MSI613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, 1.66m from bit to bend, mud motor, MWD and LWD tools 2 joints HWDP, Jars, 1 joint of HWDP, 126 joints of 4" drill pipe, 37 joints of HWDP, from 1285m to 1893m
23:30	00:00	0.50	INTRM1	CEMENT	DRLG	P		1,908.00	1,908.00	Tag cement @ 1893mKB drill out Tag float collar @ 1895mKB drill out

Fluid/Mud Chks: Mud Engineer: <Mud Engineer?>

Time	23:15	Depth (mKB)	1,906.00	Density (kg/m³)	1,080.0	Funnel Viscosity (s/L)	75	pH		PV Override (Pa·s)	YP Override (Pa)
Low Gravity Solids (%)		MBT (kg/m³)		Oil Water Ratio		Chlorides (mg/L)		Calcium (mg/L)		Lime (kg/m³)	Potassium (mg/L)
Electric Stab (V)		ECD - Manual Entry (k...)		Sand (%)		Solids, Corr. (%)		T Flowline (°C)		HTHP Pressure (kPa)	HTHP Filtrate (mL/30...)
API Filtrate (mL/30min)		Mud Lost to Surface (m³)		Mud Lost to Hole (m³)		Daily Mud Field Est (Cost)					
Cum Mud Lost to Surface (m³)		44.00		Cum Mud Lost to Hole (m³)		6.00		Cumulative Mud Cost (Cost)			93,328.19

Last BOP Drill

Type	BOP Drill	Days Last Chk (...)	3	Last Date	1/13/2014	Days Until Next...	2	Next Check Date	1/18/2014
Days Since Lost Time Incident (days)		827.00		Days Since Recordable Incident (days)		827.00			

Safety Incidents

Date	Com	Category

Drill String: BHA # <BHA No.??>

Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
Nozzles (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)		
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)
					Total Drill Hrs (hr)

Comment

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameter: <depthstart> - <depthend> mKB

Cum Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (daN)	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
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Hydraulic Calculations

Bit Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...	

Error

Mud Pump: 1, NATIONAL, 8-P-80

Pump Number	1	Make	NATIONAL	Model	8-P-80	Rod Diameter (mm)	140.0	Stroke Length (mm)	216.0
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Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00		2,909.00	0.499	5,150
1/20/2014 00:00		2,909.00	1.014	17,500

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	2	Make	NATIONAL	Model	8-P-80	Rod Diameter (mm)	140.0	Stroke Length (mm)	216.0
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Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/16/2014
Report #: 39
Depth Progress: 0.00m
Depth End: 1,908.00mKB
Rig Release Date: 1/23/2014

Log Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Report Date: 1/17/2014
Report #: 40
Depth Progress: 216.00m
Depth End: 2,124.00mKB
Rig Release Date: 1/23/2014

Rig: Beaver Drilling Ltd. 2

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470					
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013		Days From Spud (days) 20.73			
Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00		End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes	
Daily Cost Total (Cost) 192,768.58		Cumulative Cost (Cost) 4,551,974.24		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817		Estimated Days 34.19	
Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB)		Head Count 54.0		Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 30,721.00			
Avg Connection Gas 890		Avg Background Gas 135		Avg Trip Gas				Max H2S (ppm) 0			
Road Condition Ice/Snow		Weather Cloudy		Temperature (°C) -22				Wind SW			
Ops and Depth @ Morning Report Drill 156mm lateral directional hole at 2200m.									Wellbore Original Hole		

Last 24hr Summary

No incidents or accidents. 7 - HID, 2 - OBS and 0 - ASA (all closed out)

Drill 156mm hole from 1908m to 1914m, circulate bottoms up, perform FIT to a gradient of 12.5kPa/m (surface applied pressure: 4430kPa for 10 minutes), drill 156mm lateral hole from 1914m to 2124m with accumulated MWD surveys, rig services, connections and circulation times. WOB: 6-10,000kDaN, RPM - 35-80 (Motor RPM - 152), Differential pressure: 2200-3000kPa, Pump rate: 1.1 m3/min. Torque: 7-10,000ft/lbs, Rotate: 162.75m - 75% / Slide: 53.25m - 25%, ROP: 16m/hr. Last survey at 2171mMD, inclination= 85.99°, azimuth= 297.06°, TVD - 1784.25m. We are 0.41m below and 3.9m right of the line.

24hr Forecast

Drill 156mm lateral hole with accumulated MWD surveys, rig services, connections and circulation times.

Daily Contacts

Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String

Intermediate, 1,908.00mKB

Time Log

Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	00:30	0.50	INTRM1	CEMENT	DRLG	P		1,908.00	1,908.00	Drill out float collar Tagged @ 1895mKB Drill out shoe @ 1907mKB
00:30	00:45	0.25	PROD1	RIGMNT	SVRG	P		1,908.00	1,908.00	Rig service function test rig smart anti collision system function test crown saver function test pipe rams 8 sec C/O grease all moving parts check fluid levels in floor motor.
00:45	01:00	0.25	PROD1	DRILL	SFTY	P		1,908.00	1,908.00	B.O.P drill well secure in 80 sec crew in position check manifold
01:00	01:30	0.50	PROD1	DRILL	DRLG	P		1,908.00	1,914.00	Drill 156mm hole with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 1907mKB to 1914mKB
01:30	02:15	0.75	PROD1	DRILL	CIRC	P		1,914.00	1,914.00	Circulate bottoms up prepair to do a fit test
02:15	02:30	0.25	PROD1	DRILL	FIT	P		1,914.00	1,914.00	formation integrity test 4400kpa for 10 min
02:30	07:15	4.75	PROD1	DRILL	DRLG	P		1,914.00	1,972.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 1914mKB to 1972mKB
07:15	07:45	0.50	PROD1	DRILL	SRVY	P		1,972.00	1,972.00	Accumulated directional surveys
07:45	08:00	0.25	PROD1	DRILL	SFTY	P		1,972.00	1,972.00	Safety meeting with both rig crews, tool push and conoco reps. present
08:00	09:00	1.00	PROD1	DRILL	DRLG	P		1,972.00	1,982.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 1972m to 1982m
09:00	09:15	0.25	PROD1	RIGMNT	SVRG	P		1,982.00	1,982.00	Rig service function test rig smart anti collision system function test crown saver function test hydrill 13 sec C/O grease all moving parts check fluid levels in floor motor, change oil in HPU
09:15	14:15	5.00	PROD1	DRILL	DRLG	P		1,982.00	2,067.00	Drill 156m hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 1982m to 2067m
14:15	16:00	1.75	PROD1	DRILL	SRVY	P		2,067.00	2,067.00	Accumulated directional surveys
16:00	17:00	1.00	PROD1	DRILL	DRLG	P		2,067.00	2,077.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2067m to 2077m

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/17/2014
Report #: 40
Depth Progress: 216.00m
Depth End: 2,124.00mKB
Rig Release Date: 1/23/2014

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P: T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
17:00	17:15	0.25	PROD1	RIGMNT	SVRG	P		2,077.00	2,077.00	Rig service function test rig smart anti collision system function test crown saver function test pipe rams 6 sec C/O grease all moving parts check fluid levels in floor motor, change oil in floor motor
17:15	21:45	4.50	PROD1	DRILL	DRLG	P		2,077.00	2,115.00	Drill 156mm hole, with Smith 156mm MSI613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2077m to 2115m
21:45	22:30	0.75	PROD1	RIGMNT	RGRP	T	Non-rig Surface Eqp	2,115.00	2,115.00	Work on NOV reprogram system
22:30	23:15	0.75	PROD1	DRILL	DRLG	P		2,115.00	2,124.00	Drill 156 mm hole, with Smith 156mm MSI613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2115m to 2124m
23:15	23:30	0.25	PROD1	DRILL	OTHR	P		2,124.00	2,124.00	Re log gamma from 2115m to 2124
23:30	00:00	0.50	PROD1	DRILL	SRVY	P		2,124.00	2,124.00	Accumulated directional surveys

Fluid/Mud Chks: Mud Engineer: Corey Clark

Time 13:30	Depth (mKB) 2,045.00	Density (kg/m³) 1,045.0	Funnel Viscosity (s/L) 67	pH	PV Override (Pa·s) 18.0	YP Override (Pa) 5.0
Low Gravity Solids (%) 5.5	MBT (kg/m³)	Oil Water Ratio 82/18	Chlorides (mg/L) 211,825	Calcium (mg/L) 38	Lime (kg/m³) 17	Potassium (mg/L)
Electric Stab (V) 680.0	ECD - Manual Entry (k... 1,227.0	Sand (%) 8.5	Solids, Corr. (%) 8.5	T Flowline (°C) 43	HTHP Pressure (kPa)	HTHP Filtrate (mL/30... 4.0
API Filtrate (mL/30min)		Mud Lost to Surface (m³) 4.00		Mud Lost to Hole (m³) 1.00		Daily Mud Field Est (Cost) 5,316.65
Cum Mud Lost to Surface (m³) 48.00		Cum Mud Lost to Hole (m³) 7.00		Cumulative Mud Cost (Cost) 98,644.84		

Last BOP Drill

Days Last Chk (... 0	Last Date 1/17/2014	Days Until Next... 5	Next Check Date 1/22/2014
Days Since Lost Time Incident (days) 828.00	Days Since Recordable Incident (days) 828.00		

Safety Incidents

Date	Com	Category

Drill String: BHA # 5

Bit Run 4	Drill Bit 156.0mm, 613, jh8402	Length (m) 0.19	IADC Bit Dull	TFA (incl Noz) (mm²) 760	BHA ROP (m/hr) 17.9
Nozzles (mm) 12.7/12.7/12.7/12.7/12.7	String Length (m) 2,910.00	OD (mm) 132.0	Max Rotating Hook Load (daN) 69,000		
Depth In (mKB) 1,908.00	Depth Out (mKB) 2,910.00	Avg ROP (m/hr) 17.9	Depth This Job (m) 1,002.00	Total Depth Drilled b... 2,910.00	Job Drill Hrs (hr) 56.00
Total Drill Hrs (hr) 56.00					

Comment
Smith 156mm MSI613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, (1.66m from bit to bend), mud motor, MWD and LWD tools 2 JOINTS HWDP, Jars, 1 joint of HWDP.

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Drill pipe - Stands	70.0	101.6	68	1,283.77	2,910.00
4" D.P	70.0	101.0	1	5.15	1,626.23
4" HW	70.0	132.0	36	335.20	1,621.08
4" D.P	70.0	101.0	126	1,199.76	1,285.88
4" H.W	65.0	101.0	1	9.53	86.12
Jars	59.0	131.0	1	5.07	76.59
4" HW	70.0	132.0	3	27.54	71.52
X/O SUB	58.0	128.0	1	0.82	43.98
Slick monel	67.0	119.0	1	9.50	43.16
x/o	56.0	120.0	1	0.45	33.66
4.75 LWD ABS	70.0	129.0	1	4.79	33.21
4.75 LWD SAWR	70.0	128.0	1	6.15	28.42
4.75 gap sub	63.0	119.0	1	0.58	22.27
Slick monel	67.0	119.0	1	9.47	21.69
NM Pony Monel	57.0	119.0	1	3.10	12.22
MUD MOTOR	34.0	123.0	1	8.93	9.12

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/17/2014
Report #: 40
Depth Progress: 216.00m
Depth End: 2,124.00mKB
Rig Release Date: 1/23/2014

Drilling Parameter: 2,067.00 - 2,124.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (daN)	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
216.00	17.50	9.1	1.100	12,000	80	17,000	59,000	55,000	62,000	59,000	9,800.0

Hydraulic Calculations

Bit Hydraulic Power (kW)	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
6.3	0.00033	2	24.1	341.1	1,620.1	1,045.0	1,137.7
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/min)	Max Open Hole AV (m/min)	
8.13	2.05	20.95	34.1	175.4	99.1	202.6	

Error

Mud Pump: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
INVERT	5.0	1,063.330	1.0	M3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/17/2014	1,914.50	91.52	303.85	1,777.81	228.54	121.74	-193.42	228.20	6.19
1/17/2014	1,924.00	91.60	302.88	1,777.55	238.04	126.96	-201.35	237.67	3.07
1/17/2014	1,933.50	91.70	302.60	1,777.28	247.53	132.10	-209.34	247.14	0.94
1/17/2014	1,943.00	91.60	303.40	1,777.01	257.03	137.27	-217.30	256.61	2.54
1/17/2014	1,952.50	90.90	301.80	1,776.80	266.53	142.39	-225.30	266.09	5.51
1/17/2014	1,962.00	91.00	303.30	1,776.64	276.02	147.50	-233.31	275.57	4.75
1/17/2014	1,971.50	90.50	301.40	1,776.52	285.52	152.58	-241.34	285.06	6.20
1/17/2014	1,981.00	90.70	300.90	1,776.42	295.02	157.49	-249.47	294.55	1.70
1/17/2014	1,990.50	90.50	301.30	1,776.32	304.52	162.40	-257.60	304.04	1.41
1/17/2014	2,000.00	89.70	300.30	1,776.30	314.02	167.27	-265.76	313.54	4.04
1/17/2014	2,009.50	89.30	299.40	1,776.38	323.51	171.99	-274.00	323.04	3.11
1/17/2014	2,019.00	88.30	300.00	1,776.58	333.00	176.70	-282.25	332.53	3.68
1/17/2014	2,028.50	88.60	299.40	1,776.84	342.49	181.40	-290.50	342.03	2.12

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/17/2014
Report #: 40
Depth Progress: 216.00m
Depth End: 2,124.00mKB
Rig Release Date: 1/23/2014

Key Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/17/2014	2,038.00	88.50	298.50	1,777.08	351.97	186.00	-298.81	351.53	2.86
1/17/2014	2,048.00	88.30	297.90	1,777.36	361.95	190.73	-307.62	361.52	1.90
1/17/2014	2,057.00	88.30	297.90	1,777.63	370.92	194.93	-315.57	370.52	0.00
1/17/2014	2,066.50	86.70	297.50	1,778.04	380.39	199.35	-323.97	380.00	5.21
1/17/2014	2,076.50	86.50	296.80	1,778.63	390.34	203.90	-332.85	389.98	2.18
1/17/2014	2,085.50	86.30	297.37	1,779.20	399.30	207.99	-340.85	398.96	2.01
1/17/2014	2,095.00	85.82	296.66	1,779.85	408.75	212.30	-349.29	408.43	2.70
1/17/2014	2,104.50	85.68	297.15	1,780.56	418.20	216.58	-357.74	417.90	1.61

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Report Date: 1/18/2014
Report #: 41
Depth Progress: 371.00m
Depth End: 2,495.00mKB
Rig Release Date: 1/23/2014

Rig: Beaver Drilling Ltd. 2

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470					
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013		Days From Spud (days) 21.73			
Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00		End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes	
Daily Cost Total (Cost) 166,517.34		Cumulative Cost (Cost) 4,718,491.58		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817		Estimated Days 34.19	
Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB)		Head Count 54.0		Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 31,321.00			
Avg Connection Gas 2,700		Avg Background Gas 1,200		Avg Trip Gas				Max H2S (ppm) 0			
Road Condition Ice/Snow		Weather Cloudy		Temperature (°C) -21				Wind S 15 kms			
Ops and Depth @ Morning Report Drill 156mm lateral directional hole at 2572m.								Wellbore Original Hole			

Last 24hr Summary

No incidents or accidents. 8 - HID, 2 - OBS and 0 - ASA (all closed out)

Drill 156mm lateral hole from 2124m to 2495m with accumulated MWD surveys, rig services, connections and circulation times. WOB: 6-10,000kDaN, RPM - 35-80 (Motor RPM - 152), Differential pressure: 2000-3000kPa, Pump rate: 1.1 m3/min. Torque: 7-10,000ft/lbs, Rotate: 341m - 92% / Slide: 29.5m - 8%, ROP: 19.9m/hr. Last survey at 2551mMD, inclination= 87.98°, azimuth= 297.85°, TVD - 1794.22m. We are 0.39m below and 12.12m right of the line.

24hr Forecast

Drill 156mm lateral hole with accumulated MWD surveys, rig services, connections and circulation times.

Daily Contacts

Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String

Intermediate, 1,908.00mKB

Time Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	00:15	0.25	PROD1	DRILL	OTHR	P		2,124.00	2,124.00	Re log gamma from 2119m to 2124m
00:15	01:00	0.75	PROD1	DRILL	DRLG	P		2,124.00	2,134.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2124m to 2134
01:00	01:30	0.50	PROD1	RIGMNT	SVRG	P		2,134.00	2,134.00	Rig service function test rig smart anti collision system function test crown saver function test H.C.R 3 seconds O/C grease all moving parts check fluid levels in floor motor, Function test flair stack ignitor set up breaks on draw works
01:30	06:15	4.75	PROD1	DRILL	DRLG	P		2,134.00	2,229.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2134m to 2229m
06:15	07:45	1.50	PROD1	DRILL	SRVY	P		2,229.00	2,229.00	Accumulated directional survey time
07:45	08:00	0.25	PROD1	DRILL	SFTY	P		2,229.00	2,229.00	Crew hand over meeting Rig manager and Conoco reps. present
08:00	10:30	2.50	PROD1	DRILL	DRLG	P		2,229.00	2,267.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2229m to 2267m
10:30	10:45	0.25	PROD1	RIGMNT	SVRG	P		2,267.00	2,267.00	Rig service function test rig smart anti collision system function test crown saver function test pipe rams 6 seconds O/C grease all moving parts check fluid levels in floor motor, Function test flair stack ignitor
10:45	14:15	3.50	PROD1	DRILL	DRLG	P		2,267.00	2,362.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2267m to 2362m
14:15	16:00	1.75	PROD1	DRILL	SRVY	P		2,362.00	2,362.00	Accumulated directional surveys
16:00	17:00	1.00	PROD1	DRILL	DRLG	P		2,362.00	2,381.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2362m to 2381m
17:00	17:15	0.25	PROD1	RIGMNT	SVRG	P		2,381.00	2,381.00	Rig service function test rig smart anti collision system function test crown saver function test hydrill 13 seconds O/C grease all moving parts check fluid levels in floor motor, Function test flair stack ignitor
17:15	23:00	5.75	PROD1	DRILL	DRLG	P		2,381.00	2,495.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2381m to 2495m

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/18/2014
Report #: 41
Depth Progress: 371.00m
Depth End: 2,495.00mKB
Rig Release Date: 1/23/2014

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P. T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
23:00	00:00	1.00	PROD1	DRILL	SRVY	P		2,495.00	2,495.00	Accumulated directional surveys

Fluid/Mud Chks: Mud Engineer: Corey Clark

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (Pa·s)	YP Override (Pa)
11:00	2,285.00	1,040.0	74		18.0	4.5
Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
6.9		83/17	254,082	38	17	
Electric Stab (V)	ECD - Manual Entry (k...)	Sand (%)	Solids, Corr. (%)	T Flowline (°C)	HTHP Pressure (kPa)	HTHP Filtrate (mL/30...)
640.0	1,206.0	3.0	9.2	43		4.0
API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Field Est (Cost)			
	6.00	1.00	10,871.31			
Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost (Cost)				
54.00	8.00	109,516.15				

Last BOP Drill

Type	Days Last Chk (...)	Last Date	Days Until Next...	Next Check Date
BOP Drill	1	1/17/2014	4	1/22/2014
Days Since Lost Time Incident (days)	829.00	Days Since Recordable Incident (days)	829.00	

Safety Incidents

Date	Com	Category

Drill String: BHA # 5

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
4	156.0mm, 613, jh8402	0.19	-----	760	17.9
Nozzles (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)		
12.7/12.7/12.7/12.7/12.7	2,910.00	132.0	69,000		
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)
1,908.00	2,910.00	17.9	1,002.00	2,910.00	56.00
					Total Drill Hrs (hr)
					56.00

Comment

th 156mm MSI613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, (1.66m from bit to bend), mud motor, MWD and LWD tools 2 JOINTS HWDP, Jars, 1 joint of HWDP.

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Drill pipe - Stands	70.0	101.6	68	1,283.77	2,910.00
4" D.P	70.0	101.0	1	5.15	1,626.23
4" HW	70.0	132.0	36	335.20	1,621.08
4" D.P	70.0	101.0	126	1,199.76	1,285.88
4" H.W	65.0	101.0	1	9.53	86.12
Jars	59.0	131.0	1	5.07	76.59
4" HW	70.0	132.0	3	27.54	71.52
X/O SUB	58.0	128.0	1	0.82	43.98
Slick monel	67.0	119.0	1	9.50	43.16
x/o	56.0	120.0	1	0.45	33.66
4.75 LWD ABS	70.0	129.0	1	4.79	33.21
4.75 LWD SAWR	70.0	128.0	1	6.15	28.42
4.75 gap sub	63.0	119.0	1	0.58	22.27
Slick monel	67.0	119.0	1	9.47	21.69
NM Pony Monel	57.0	119.0	1	3.10	12.22
MUD MOTOR	34.0	123.0	1	8.93	9.12

Drilling Parameter: 2,362.00 - 2,495.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (daN)	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
587.00	35.75	19.7	0.900	10,000	80	14,800	69,000	64,000	73,000	69,000	10,900.0
Hydraulic Calculations											
Bit Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)				
3.4		0.00018	2	19.7	227.3	1,572.2	1,040.0	1,129.4			
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...					
9.56	6.17	20.92	27.9	143.5	81.1	165.8					

Mud Pump: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80	140.0	216.0

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/18/2014
Report #: 41
Depth Progress: 371.00m
Depth End: 2,495.00mKB
Rig Release Date: 1/23/2014

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
CALCIUM CHLORIDE	31.0	43.920	40.0	SX
INVERT	7.0	1,063.330	1.0	M3
Truvis	2.0	149.670	25.0	SX
Versacoat HF	2.0	883.570	55.0	BBL

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/18/2014	2,113.50	85.59	296.97	1,781.24	427.15	220.67	-365.73	426.87	0.67
1/18/2014	2,123.00	85.59	296.66	1,781.97	436.59	224.94	-374.19	436.33	0.98
1/18/2014	2,132.50	85.68	295.25	1,782.69	446.03	229.08	-382.70	445.79	4.45
1/18/2014	2,142.00	85.90	259.20	1,783.42	454.58	230.26	-391.95	454.44	113.53
1/18/2014	2,151.00	85.82	295.16	1,784.09	462.70	231.36	-400.71	462.63	119.54
1/18/2014	2,171.00	85.90	297.06	1,785.53	482.60	240.14	-418.62	482.55	2.85
1/18/2014	2,181.50	85.90	296.57	1,786.28	493.06	244.86	-427.96	493.02	1.40
1/18/2014	2,191.00	86.10	297.40	1,786.94	502.53	249.16	-436.41	502.49	2.69
1/18/2014	2,199.50	86.40	296.40	1,787.50	511.00	253.00	-443.97	510.97	3.68
1/18/2014	2,209.00	86.70	297.40	1,788.07	520.47	257.29	-452.43	520.44	3.29
1/18/2014	2,247.00	87.90	295.90	1,789.86	558.38	274.31	-486.35	558.37	1.52
1/18/2014	2,266.00	88.20	296.40	1,790.51	577.34	282.68	-503.40	577.33	0.92
1/18/2014	2,275.50	88.70	296.60	1,790.77	586.82	286.92	-511.90	586.82	1.70
1/18/2014	2,313.50	89.50	297.10	1,791.36	624.79	304.08	-545.80	624.79	0.74
1/18/2014	2,342.00	89.40	298.40	1,791.64	653.28	317.35	-571.02	653.28	1.37
1/18/2014	2,361.00	89.70	298.40	1,791.79	672.28	326.39	-587.73	672.28	0.47
1/18/2014	2,380.00	89.80	298.20	1,791.87	691.27	335.39	-604.46	691.27	0.35
1/18/2014	2,399.00	89.40	298.60	1,792.00	710.27	344.43	-621.17	710.27	0.89
1/18/2014	2,418.00	89.60	298.80	1,792.17	729.27	353.55	-637.84	729.27	0.45
1/18/2014	2,437.00	88.20	297.28	1,792.53	748.26	362.48	-654.60	748.26	3.26

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/18/2014
Report #: 41
Depth Progress: 371.00m
Depth End: 2,495.00mKB
Rig Release Date: 1/23/2014

Key Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/18/2014	2,455.50	88.60	296.84	1,793.05	766.75	370.90	-671.07	766.75	0.96
1/18/2014	2,475.00	88.60	298.95	1,793.52	786.24	380.02	-688.30	786.23	3.25

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/19/2014
Report #: 42
Depth Progress: 400.00m
Depth End: 2,895.00mKB
Rig Release Date: 1/23/2014

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470	
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013	
Days From Spud (days) 22.73		Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00	
End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes		Daily Cost Total (Cost) 122,537.96	
Cumulative Cost (Cost) 4,841,029.54		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817	
Estimated Days 34.19		Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB) 2,881.00		Head Count 54.0	
Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 31,921.00		Avg Connection Gas 3,300		Avg Background Gas 780	
Avg Trip Gas		Max H2S (ppm) 0		Road Condition Ice/Snow		Weather Snowing	
Temperature (°C) -24		Wind S 15 kms		Ops and Depth @ Morning Report Wash back to bottom from 1908m (wiper trip).		Wellbore Original Hole	

Last 24hr Summary
No incidents or accidents. 9 - HID, 1 - OBS and 0 - ASA (all closed out)

Drill 156mm lateral hole from 2495m to 2895m, with accumulated MWD surveys, rig services, connections and circulation times. WOB: 6-14,000kDaN, RPM - 35-80 (Motor RPM - 152), Differential pressure: 2000-3000kPa, Pump rate: 0.9-1.0 m3/min. Torque: 7-10,000ft/lbs, Rotate: 368.0m - 92.0% / Slide: 32.0m - 8.0%, ROP: 20.5m/hr. Last survey at 2890mMD, inclination= 87.8°, azimuth= 301.07°, TVD - 1803.24m. Projected survey at bit: 2910mMD (TD), inclination= 87.8°, azimuth= 301.07°, TVD - 1804.01m. We are 0.78m below and 14.92m left of the line.

24hr Forecast
Wash back to bottom at 2910mMD (TD), Circulate 3+ bottoms up and clean hole, pull out of the hole, laydown directional tools, rig up Schlumberger loggers, run USIT log, rig out loggers, rig up power tongs and laydown truck, run 114.3mm production liner.

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String
Intermediate, 1,908.00mKB

art. Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Tribl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	01:00	1.00	PROD1	DRILL	DRLG	P		2,495.00	2,514.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2495m to 2514m
01:00	01:15	0.25	PROD1	RIGMNT	SVRG	P		2,514.00	2,514.00	Rig service function test rig smart anti collision system function test crown saver function test H.C.R 3sec open/close, grease all moving parts check fluid levels in floor motor
01:15	06:45	5.50	PROD1	DRILL	DRLG	P		2,514.00	2,600.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2514m to 2600m
06:45	07:45	1.00	PROD1	DRILL	SRVY	P		2,600.00	2,600.00	Accumulated directional surveys
07:45	08:00	0.25	PROD1	DRILL	SFTY	P		2,600.00	2,600.00	Crew handover meeting with both crews, tool push, conoco reps present.
08:00	09:30	1.50	PROD1	DRILL	DRLG	P		2,600.00	2,628.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2600m to 2628m
09:30	09:45	0.25	PROD1	RIGMNT	SVRG	P		2,628.00	2,628.00	Rig service function test rig smart anti collision system function test crown saver function test pipe rams 6sec O/C grease all moving parts check fluid levels in floor motor
09:45	14:30	4.75	PROD1	DRILL	DRLG	P		2,628.00	2,752.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2628m to 2752m
14:30	16:00	1.50	PROD1	DRILL	SRVY	P		2,752.00	2,752.00	Accumulated directional surveys
16:00	17:15	1.25	PROD1	DRILL	DRLG	P		2,752.00	2,780.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2752m to 2780m
17:15	17:30	0.25	PROD1	RIGMNT	SVRG	P		2,780.00	2,780.00	Rig service function test rig smart anti collision system function test crown saver function test hydrill 13sec open/close, grease all moving parts check fluid levels in floor motor
17:30	23:00	5.50	PROD1	DRILL	DRLG	P		2,780.00	2,895.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2780m to 2895m
23:00	00:00	1.00	PROD1	DRILL	SRVY	P		2,895.00	2,895.00	Accumulated directional survey time

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/19/2014
Report #: 42
Depth Progress: 400.00m
Depth End: 2,895.00mKB
Rig Release Date: 1/23/2014

...d/Mud Chks: Mud Engineer: Corey Clark

Time	09:30	Depth (mKB)	2,630.00	Density (kg/m³)	1,045.0	Funnel Viscosity (s/L)	83	pH		PV Override (Pa*s)	23.0	YP Override (Pa)	5.0
Low Gravity Solids (%)	8.2	MBT (kg/m³)		Oil Water Ratio	84/16	Chlorides (mg/L)	284,951	Calcium (mg/L)	47	Lime (kg/m³)	17	Potassium (mg/L)	
Electric Stab (V)	700.0	ECD - Manual Entry (k...)	1,206.0	Sand (%)	2.8	Solids, Corr. (%)	9.5	T Flowline (°C)	45	HTHP Pressure (kPa)		HTHP Filtrate (mL/30...)	4.0
API Filtrate (mL/30min)		Mud Lost to Surface (m³)	7.00	Mud Lost to Hole (m³)	1.00	Daily Mud Field Est (Cost)							10,515.93
Cum Mud Lost to Surface (m³)	61.00	Cum Mud Lost to Hole (m³)	9.00	Cumulative Mud Cost (Cost)									120,032.08

Last BOP Drill

Type	BOP Drill	Days Last Chk (...)	2	Last Date	1/17/2014	Days Until Next...	3	Next Check Date	1/22/2014
Days Since Lost Time Incident (days)	830.00	Days Since Recordable Incident (days)	830.00						

Safety Incidents

Date	Com	Category

Drill String: BHA # 5

Bit Run	4	Drill Bit	156.0mm, 613, jh8402	Length (m)	0.19	IADC Bit Dull	-----	TFA (incl Noz) (mm²)	760	BHA ROP (m/hr)	17.9
Nozzles (mm)	12.7/12.7/12.7/12.7/12.7	String Length (m)	2,910.00	OD (mm)	132.0	Max Rotating Hook Load (daN)				69,000	
Depth In (mKB)	1,908.00	Depth Out (mKB)	2,910.00	Avg ROP (m/hr)	17.9	Depth This Job (m)	1,002.00	Total Depth Drilled b...	2,910.00	Job Drill Hrs (hr)	56.00
										Total Drill Hrs (hr)	56.00

Comment

Smith 156mm MSi613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, (1.66m from bit to bend), mud motor, MWD and LWD tools 2 JOINTS HWDP, Jars, 1 joint of HWDP.

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
" pipe - Stands	70.0	101.6	68	1,283.77	2,910.00
D.P	70.0	101.0	1	5.15	1,626.23
4" HW	70.0	132.0	36	335.20	1,621.08
4 " D.P	70.0	101.0	126	1,199.76	1,285.88
4" H.W	65.0	101.0	1	9.53	86.12
Jars	59.0	131.0	1	5.07	76.59
4" HW	70.0	132.0	3	27.54	71.52
X/O SUB	58.0	128.0	1	0.82	43.98
Slick monel	67.0	119.0	1	9.50	43.16
x/o	56.0	120.0	1	0.45	33.66
4.75 LWD ABS	70.0	129.0	1	4.79	33.21
4.75 LWD SAWR	70.0	128.0	1	6.15	28.42
4.75 gap sub	63.0	119.0	1	0.58	22.27
Slick monel	67.0	119.0	1	9.47	21.69
NM Pony Monel	57.0	119.0	1	3.10	12.22
MUD MOTOR	34.0	123.0	1	8.93	9.12

Drilling Parameter: 2,752.00 - 2,895.00 mKB

Cum Depth (m)	987.00	Cum Drill...	55.25	Int ROP (...)	21.2	Flow Rate...	0.900	WOB (daN)	11,000	RPM (r...	80	SPP (kPa)	17,300	Drill Str Wt (d...	69,000	SO Str Wt (daN)	61,000	PU Str Wt (daN)	75,000	Off-Btm Str W...	69,000	Drill Tq	12,260.0
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Hydraulic Calculations

Bit Hydraulic Powe...	3.4	HP/Area (kW/mm²)	0.00018	% P @ bit (%)	1	Bit Jet Velocity (m/s)	19.7	Bit dP (kPa)	228.3	P Drop Annular (kPa)	1,742.1	Mud Density (kg/m³)	1,045.0	ECD End (kg/m³)	1,143.4
Drill String Volume (m³)	11.09	Bit to Shoe Volume (m³)	10.61	Vol Shoe to Top (m³)	20.88	Min Casing AV (m/min)	27.9	Max Casing AV (m/min)	143.5	Min Open Hole AV (m/...	81.1	Max Open Hole AV (m/...	165.8		

Error

Mud Pump: 1, NATIONAL, 8-P-80

Pump Number	1	Make	NATIONAL	Model	8-P-80	Rod Diameter (mm)	140.0	Stroke Length (mm)	216.0
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mp Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/19/2014
Report #: 42
Depth Progress: 400.00m
Depth End: 2,895.00mKB
Rig Release Date: 1/23/2014

Drilling Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
CALCIUM CHLORIDE	12.0	43.920	40.0	SX
INVERT	8.0	1,063.330	1.0	M3
Truvis	4.0	149.670	25.0	SX
Versacoat HF	1.0	883.570	55.0	BBL

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/19/2014	2,494.00	88.60	297.28	1,793.99	805.23	388.97	-705.05	805.23	2.64
1/19/2014	2,513.50	88.20	298.56	1,794.53	824.72	398.09	-722.27	824.71	2.06
1/19/2014	2,532.00	88.38	298.65	1,795.09	843.21	406.95	-738.51	843.21	0.33
1/19/2014	2,551.00	87.98	297.85	1,795.69	862.20	415.94	-755.24	862.19	1.41
1/19/2014	2,570.00	88.10	298.80	1,796.34	881.19	424.95	-771.95	881.18	1.51
1/19/2014	2,589.00	88.10	299.00	1,796.97	900.18	434.12	-788.58	900.17	0.32
1/19/2014	2,608.00	88.30	299.00	1,797.57	919.17	443.33	-805.19	919.16	0.32
1/19/2014	2,627.00	88.40	298.60	1,798.11	938.16	452.48	-821.83	938.15	0.65
1/19/2014	2,646.00	88.50	297.00	1,798.63	957.15	461.34	-838.63	957.14	2.53
1/19/2014	2,665.00	88.80	298.60	1,799.07	976.14	470.20	-855.43	976.13	2.57
1/19/2014	2,684.00	87.90	297.30	1,799.62	995.13	479.10	-872.21	995.12	2.50
1/19/2014	2,703.00	88.30	297.50	1,800.25	1,014.11	487.84	-889.07	1,014.10	0.71
1/19/2014	2,721.00	88.50	298.60	1,800.75	1,032.10	496.30	-904.95	1,032.09	1.86
1/19/2014	2,740.00	88.00	298.50	1,801.33	1,051.09	505.37	-921.63	1,051.08	0.81
1/19/2014	2,759.00	88.20	299.40	1,801.96	1,070.08	514.57	-938.24	1,070.07	1.45
1/19/2014	2,778.50	88.50	301.30	1,802.53	1,089.57	524.41	-955.06	1,089.56	2.96
1/19/2014	2,798.50	88.70	300.30	1,803.01	1,109.55	534.65	-972.24	1,109.54	1.53
1/19/2014	2,807.50	89.20	301.30	1,803.18	1,118.54	539.26	-979.97	1,118.53	3.73
1/19/2014	2,837.00	89.31	302.48	1,803.56	1,148.00	554.84	-1,005.01	1,147.99	1.21
1/20/2014	2,855.50	89.20	300.50	1,803.80	1,166.48	564.50	-1,020.79	1,166.48	3.22

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00



Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/19/2014
Report #: 42
Depth Progress: 400.00m
Depth End: 2,895.00mKB
Rig Release Date: 1/23/2014

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Report Date: 1/20/2014
Report #: 43
Depth Progress: 15.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Rig: Beaver Drilling Ltd. 2

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470	
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013	
Days From Spud (days) 23.73		Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00	
End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes		Daily Cost Total (Cost) 103,189.12	
Cumulative Cost (Cost) 4,944,218.66		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817	
Estimated Days 34.19		Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB) 54.0		Head Count 600.00	
Personnel Total Hours (hr) 32,521.00		Cum Personnel Total Hours (hr) 32,521.00		Avg Connection Gas 3,100		Avg Background Gas 740	
Avg Trip Gas 29		Max H2S (ppm) 0		Road Condition Ice/Snow		Weather Cloudy	
Temperature (°C) -24		Wind SE 10 kms		Ops and Depth @ Morning Report Rig out Schlumberger loggers.		Wellbore Original Hole	

Last 24hr Summary

No incidents or accidents. 3 - HID, 3 - OBS and 0 - ASA (all closed out)

Drill 156mm lateral hole from 2895m to 2910m. Last survey at 2890mMD, inclination= 87.8°, azimuth= 301.07°, TVD - 1803.24m. Projected survey at bit: 2910mMD (TD), inclination= 87.8°, azimuth= 301.07°, TVD - 1804.01m. We are 0.78m below and 14.92m left of the line. Circulate 2 bottoms up, pull out of the hole to 1908mMD (casing shoe), wash in to 2910mMD (TD), circulate 3 bottoms up and clean hole, pull out of the hole, lay down directional tools.

24hr Forecast

Rig up power tongs and laydown truck, run 114.3mm production liner and Volant Hydroforms with liner top packer followed by drill pipe and heavy weight drill pipe, strap in and drift drill pipe and heavy weight drill pipe, tag bottom, circulate bottoms up and clean hole, rig up cementers, cement liner to liner top, displace with fresh water, set liner with liner top packer, circulate excess cement out and displace hole with fresh water, laydown drill pipe.

Daily Contacts

Drilling Superintendent, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String

Intermediate, 1,908.00mKB

Time Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	00:45	0.75	PROD1	DRILL	DRLG	P		2,895.00	2,910.00	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 lobe, 3.8 stage (rpm at 0.135/L) 1.66m from bit to bend, mud motor, from 2895m to 2910m. TD well at 00:42 hrs. Jan. 20 2014
00:45	01:00	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service function test rig smart anti collision system function test crown saver, function test H.C.R 3 sec open/close grease all moving parts check fluid level in floor motor
01:00	01:30	0.50	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Weekly safety meeting, with rig crew and Conoco rep present
01:30	01:45	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	B.O.P drill on tripping stabbing valve discussed and everyones job while tripping
01:45	02:15	0.50	PROD1	DRILL	CIRC	P		2,910.00	2,910.00	Circulate 2 bottoms up prepair to trip
02:15	04:45	2.50	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Trip out of hole from 2910mKB to 1988mKB flow checks at 2904m,2818m,1885m
04:45	05:30	0.75	PROD1	RIGMNT	SLPC	P		2,910.00	2,910.00	Slip and cut 45m of drilling line, grease crown and blocks
05:30	08:00	2.50	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Wash to bottom from 1909m to 2324m, Rotary at 35rpm pump rate of 1.0m3
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service function test rig smart anti collision system function test crown saver, function test pipe rams 6sec open/close grease all moving parts check fluid level in floor motor
08:15	11:30	3.25	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Wash to bottom from 2324m, Rotary at 35rpm pump rate of 1.0m3
11:30	13:30	2.00	PROD1	DRILL	CIRC	P		2,910.00	2,910.00	Circulate hole clean, 3 bottoms up
13:30	15:15	1.75	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Trip out of hole to 2435m, with flow check at 2758m
15:15	15:30	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Crew change over and safety meeting with crews and Conoco rep.
16:00	16:00	0.50	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Continue to trip out of the hole, with flow checks
16:00	17:30	1.50	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Continue to trip out of hole, with flow check at 1668m
17:30	18:15	0.75	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Safety stand down safety meeting with, rig crew, rig manager, Conoco well site supervisors and Conoco Calgary Staff

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/20/2014
Report #: 43
Depth Progress: 15.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
18:15	18:30	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	BOP drill crew in position well secure in 90 sec function test motor kills operating properly
18:30	18:45	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service, check brake linkage and crown saver
18:45	23:00	4.25	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Continue to trip out of hole, with flow check at 86m
23:00	00:00	1.00	PROD1	DRILL	PULD	P		2,910.00	2,910.00	Lay down directional tools, flow check OOH, close/open blind rams, 6 sec., monitor well

Fluid/Mud Chks: Mud Engineer: Corey Clark

Time	00:00	Depth (mKB)	2,910.00	Density (kg/m³)	1,060.0	Funnel Viscosity (s/L)	83	pH		PV Override (Pa·s)	23.0	YP Override (Pa)	5.0
Low Gravity Solids (%)	8.2	MBT (kg/m³)		Oil Water Ratio	84/16	Chlorides (mg/L)	284,951	Calcium (mg/L)	47	Lime (kg/m³)	17	Potassium (mg/L)	
Electric Stab (V)	700.0	ECD - Manual Entry (k...)	1,206.0	Sand (%)	2.8	Solids, Corr. (%)	9.5	T Flowline (°C)	45	HTHP Pressure (kPa)		HTHP Filtrate (mL/30...)	4.0
API Filtrate (mL/30min)		Mud Lost to Surface (m³)	1.00	Mud Lost to Hole (m³)	0.00	Daily Mud Field Est (Cost)							1,744.93
Cum Mud Lost to Surface (m³)	62.00	Cum Mud Lost to Hole (m³)	9.00	Cumulative Mud Cost (Cost)									121,777.01

Last BOP Drill

Type	BOP Drill	Days Last Chk (...)	3	Last Date	1/17/2014	Days Until Next...	2	Next Check Date	1/22/2014
Days Since Lost Time Incident (days)			831.00	Days Since Recordable Incident (days)					831.00

Safety Incidents

Date	Com	Category

Drill String: BHA # 5

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
	156.0mm, 613, jh8402	0.19	-----	760	17.9
Washes (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)		
12.7/12.7/12.7/12.7/12.7	2,910.00	132.0	69,000		
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)
1,908.00	2,910.00	17.9	1,002.00	2,910.00	56.00
					Total Drill Hrs (hr)
					56.00

Comment

Smith 156mm MSI613 PDC bit, Pathfinder 7/8 lobe, 3.8 stage, set at 1.36 deg. rotate at 0.135/L, (1.66m from bit to bend), mud motor, MWD and LWD tools 2 JOINTS HWDP, Jars, 1 joint of HWDP.

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Drill pipe - Stands	70.0	101.6	68	1,283.77	2,910.00
4" D.P	70.0	101.0	1	5.15	1,626.23
4" HW	70.0	132.0	36	335.20	1,621.08
4" D.P	70.0	101.0	126	1,199.76	1,285.88
4" H.W	65.0	101.0	1	9.53	86.12
Jars	59.0	131.0	1	5.07	76.59
4" HW	70.0	132.0	3	27.54	71.52
X/O SUB	58.0	128.0	1	0.82	43.98
Slick monel	67.0	119.0	1	9.50	43.16
x/o	56.0	120.0	1	0.45	33.66
4.75 LWD ABS	70.0	129.0	1	4.79	33.21
4.75 LWD SAWR	70.0	128.0	1	6.15	28.42
4.75 gap sub	63.0	119.0	1	0.58	22.27
Slick monel	67.0	119.0	1	9.47	21.69
NM Pony Monel	57.0	119.0	1	3.10	12.22
MUD MOTOR	34.0	123.0	1	8.93	9.12

Drilling Parameter: 2,895.00 - 2,910.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (daN)	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
1,002.00	56.00	20.0	0.900	11,000	80	17,500	69,000	60,000	75,000	69,000	12,400.0

Hydraulic Calculations

Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
3.5	0.00018	1	19.7	231.6	1,765.3	1,060.0	1,159.7
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...	
11.15	10.77	20.88	27.9	143.5	81.1	165.8	

Error

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/20/2014
Report #: 43
Depth Progress: 15.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Pump: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Mud Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/20/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
Barite	40.0	17.040	40.0	SX
INVERT	1.0	1,063.330	1.0	M3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
1/20/2014	2,890.00	87.80	301.07	1,804.71	1,200.95	582.16	-1,050.41	1,200.95	1.31
1/20/2014	2,890.00	87.80	301.07	1,804.71	1,200.95	582.16	-1,050.41	1,200.95	1.31
1/20/2014	2,910.00	87.80	301.07	1,805.47	1,220.92	592.47	-1,067.53	1,220.92	0.00

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Report Date: 1/21/2014

Report #: 44

Depth Progress: 0.00m

Depth End: 2,910.00mKB

Rig Release Date: 1/23/2014

Rig: Beaver Drilling Ltd. 2

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470	
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013	
Days From Spud (days) 24.73		Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00	
End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes		Daily Cost Total (Cost) 246,313.25	
Cumulative Cost (Cost) 5,190,531.91		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817	
Estimated Days 34.19		Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB)		Head Count 54.0	
Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 33,121.00		Avg Connection Gas		Avg Background Gas	
Avg Trip Gas 28		Max H2S (ppm) 0		Road Condition Ice/Snow		Weather Cloudy	
Temperature (°C) -20		Wind SW 10 kms		Ops and Depth @ Morning Report		Displace invert from well with fresh water from top of liner top packer.	

Last 24hr Summary
No incidents or accidents. 7 - HID, 3 - OBS and 0 - ASA (all closed out)

Pull out of the hole, lay down directional tools, rig up Schlumberger loggers and run USIT log (point of refusal at 1824mMD (67°) at 03:00hrs), rig out loggers, rig up power tongs and laydown truck, run 114.3mm production liner and Volant Hydroforms with liner top packer followed by drill pipe and heavy weight drill pipe, strap in and drift drill pipe and heavy weight drill pipe.

24hr Forecast
Tag bottom, circulate bottoms up and clean hole, rig up cementers, cement liner to liner top, displace with fresh water, bump plug, set liner with liner top packer, circulate excess cement out and displace hole with fresh water, rig up laydown truck, laydown drill pipe and heavy weight drill pipe, run in the rest of the drill pipe in the derrick, laydown drill pipe, rig up power tongs, run 114.3mm tie-back liner.

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String
Production, 2,909.32mKB

Time Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service function test blind ram's 3 sec to close & motor kills & crown saver
00:15	00:30	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Held BOP drill, while out of the hole, 45 sec.
00:30	00:45	0.25	PROD1	EVALWB	SFTY	P		2,910.00	2,910.00	Safety meeting with Schlumberger, on logging
00:45	07:45	7.00	PROD1	EVALWB	ELOG	P		2,910.00	2,910.00	Usit log with schlumberger, to point of refusal, 1824mMD (approx. 67 deg) at 03:00 Hrs. January 21 2014.
07:45	08:00	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Crew change hand over meeting safety meeting with crews and Conoco rep.
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service close/open blind rams 6 sec crown saver operating properly
08:15	09:15	1.00	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Rig up to run 114.3mm, 17.26kg/m, P-110, LTC casing liner
09:15	09:30	0.25	PROD1	CASING	SFTY	P		2,910.00	2,910.00	Safety meeting with Hallmark tong hand and Trotter pipe handlers reviewed jsa # 97 rig up power tongs and # 99 Install shoe/float
09:30	16:00	6.50	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Run 114.3mm, 17.26kg/m, P-110, LTC casing liner to 1430.50m Break circulation at 590m 1229m
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service, check pipe spinner, slip and tong dies
16:15	16:30	0.25	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Make up liner top packer with Weatherford hand
16:30	17:30	1.00	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Rig out lay down truck and power tongs, rig up floor to trip in the hole
17:30	17:45	0.25	PROD1	CASING	SFTY	P		2,910.00	2,910.00	Safety meeting on tripping in the hole/Strap and drift pipe from monkey board
17:45	20:30	2.75	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Trip in the hole from 1436m to 1889m with drill pipe to hang Weatherford liner packer and 114.3mm, 17.26kg/m, P-110, LTC casing liner
20:30	20:45	0.25	PROD1	CASING	CIRC	P		2,910.00	2,910.00	Break circulation at 1889 m circulate for 10 min.
15	00:00	3.25	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Trip in hole from 1889m to 2860m with drill pipe to hang Weatherford liner packer and 114.3mm, 17.26kg/m, P-110, LTC casing liner

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/21/2014
Report #: 44
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Mud/Mud Chks: Mud Engineer: <Mud Engineer?>						
Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (Pa-s)	YP Override (Pa)
Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
Electric Stab (V)	ECD - Manual Entry (kPa)	Sand (%)	Solids, Corr. (%)	T Flowline (°C)	HTHP Pressure (kPa)	HTHP Filtrate (mL/30...)
API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Field Est (Cost)			
Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost (Cost)				
Last BOP Drill						
Type	Days Last Chk (...)	Last Date	Days Until Next...	Next Check Date		
BOP Drill	4	1/17/2014	1	1/22/2014		
Days Since Lost Time Incident (days)	832.00		Days Since Recordable Incident (days)	832.00		
Safety Incidents						
Date	Com					Category
Drill String: BHA # <BHA No.??>						
Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)	
Nozzles (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)			
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)	Total Drill Hrs (hr)
Comment						
Drill String Components						
Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)	
Drilling Parameter: <depthstart> - <depthend> mKB						
Drill Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)
Hydraulic Calculations						
Bit Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...
Error						
Mud Pump: 1, NATIONAL, 8-P-80						
Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)		
1	NATIONAL	8-P-80	140.0	216.0		
Pump Checks						
Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)		
1/20/2014 00:00	2,909.00	0.499	5,150	64		
1/20/2014 00:00	2,909.00	1.014	17,500	130		
Pump Operations						
Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)		
1/21/2014	1/21/2014	127.0				
1/22/2014	1/22/2014	127.0				
Mud Pump: 2, NATIONAL, 8-P-80						
Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)		
2	NATIONAL	8-P-80	140.0	216.0		
Pump Checks						
Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)		
1/19/2014 00:00	2,513.00	0.647	6,855	83		
1/19/2014 00:00	2,513.00	0.897	15,000	115		
Pump Operations						
Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)		
1/19/2014	1/19/2014	127.0	15,000			
/2014		127.0				
Shaker Screens						
Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note	

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/21/2014
Report #: 44
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/22/2014
Report #: 45
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470	
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013	
Days From Spud (days) 25.73		Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00	
End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes		Daily Cost Total (Cost) 117,964.36	
Cumulative Cost (Cost) 5,308,496.27		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817	
Estimated Days 34.19		Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB)		Head Count 54.0	
Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 33,721.00		Avg Connection Gas		Avg Background Gas	
Avg Trip Gas		Max H2S (ppm)		Road Condition Ice/Snow		Weather Cloudy	
Temperature (°C) -14		Wind Calm		Ops and Depth @ Morning Report Tie onto liner top.		Wellbore Original Hole	

Last 24hr Summary

No incidents or accidents. 9 - HID, 0 - OBS and 0 - ASA (all closed out)

Run 114.3mm production liner with drill pipe and heavy weight drill pipe, strap in and drift drill pipe and heavy weight drill pipe, tag bottom at 2910mMD, circulate bottoms up and clean hole, rig up cementers, cement liner up to liner top, drop dart and displace with fresh water, bump plug 3,500kPA over final circulating pressure, bleed off, check floats, pressure up to 28,000kPA and set liner with liner top packer, circulate out pre-flush and 2m3 of excess cement out, displace hole with fresh water, rig out cementers, flowcheck, rig up laydown truck, laydown drill pipe and heavy weight drill pipe, run in the rest of the drill pipe in the derrick, laydown drill pipe, rig up power tongs, run 114.3mm tie-back liner.

24hr Forecast

Land mandrel seal assembly and tie onto top of liner top packer, remove landing joint, pressure test packoff seal assembly, pressure test 114.3mm x 177.8mm annulus to 15,000kPA, nipple down BOP, blow out water and pour 2 pails of diesel, install wellhead, clean mud tanks.

Daily Contacts

Drilling Superintendent, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String

Production, 2,909.32mKB

e Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P. T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
00:00	00:30	0.50	PROD1	CASING	TRIP	P		2,910.00	2,910.00	Run 102-joints of 114.3mm, 17.26kg/m, P-110, LTC production liner from 2909.32m to 1477.35m. Run 109 x Volant Hydroform centralizers from 1511m to 1908m. Fill pipe every 20 joints and break circulation every 600m.
00:30	00:45	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig Service function test hydril 14 sec & crown saver
00:45	03:45	3.00	PROD1	CASING	CIRC	P		2,910.00	2,910.00	Tag bottom at 2910mMD, circulate bottoms up and clean hole.
03:45	04:00	0.25	PROD1	CASING	SFTY	P		2,910.00	2,910.00	Hold safety meeting with Schlumberger cementers prior to cementing 114.3mm production liner
04:00	06:30	2.50	PROD1	CEMENT	CMNT	P		2,910.00	2,910.00	Rig up Schlumberger cementers to cement 114.3mm production liner, pump 9m3 of 1000kg/m3 CW8 pre-flush, stop and pressure test line to 35,000kPA (held OK), bleed off pressure, then pump 5m3 of 1200kg/m3 MUDPUSH II pre-flush spacer and then pump 21 tonnes/15.6m3 (20% excess) of 1900kg/m3 Conventional Class G Tail Cement with 0.6% Fluid Loss + 0.5% Dispersant + 0.2% Anti Foam + 0.2% Retarder + 72L/tonne Gas Control Agent from 2909.32m to 1477.35m. Drop dart and displace 18.88m3 of fresh water. Bump plug 3,500kpa over final circulating pressure of 11,200kPA at 7:30hrs on January 22nd 2014, bleed pressure and check floats (holding OK). pressure up to 28,000kPA and set liner with liner top packer, circulate out pre-flush and 2m3 of excess cement out, displace hole with fresh water.
06:30	07:45	1.25	PROD1	CEMENT	CMNT	P		2,910.00	2,910.00	Displace hole with fresh water
07:45	08:00	0.25	PROD1	CEMENT	SFTY	P		2,910.00	2,910.00	Crew change hand over meeting safety meeting with crews and Conoco rep.
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service
08:15	08:45	0.50	PROD1	CEMENT	RURD	P		2,910.00	2,910.00	Rig out cementers, flow check
08:45	09:15	0.50	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Clean and prepare floor to lay down drill pipe, rig up laydown truck
09:15	09:30	0.25	PROD1	DRILL	SFTY	P		2,910.00	2,910.00	Safety meeting with Trotter lay down truckers
09:30	11:45	2.25	PROD1	DRILL	PULD	P		2,910.00	2,910.00	Lay down 86 drill pipe used to hang liner
11:45	13:45	2.00	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Run in the hole 36 stands of drill pipe out of derrick

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/22/2014
Report #: 45
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Log

Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation
13:45	15:30	1.75	PROD1	DRILL	PULD	P		2,910.00	2,910.00	Lay down 72 drill pipe with Trottier lay down trucker
15:30	16:45	1.25	PROD1	DRILL	TRIP	P		2,910.00	2,910.00	Run in the hole the 37 stands of drill pipe in derrick
16:45	17:00	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service
17:00	21:45	4.75	PROD1	DRILL	PULD	P		2,910.00	2,910.00	Lay down drill pipe and HWDP with Trottier lay down truck
21:45	22:45	1.00	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Rig up Hallmark power tongs and Trottier lay down truck to run 114.3mm tie back casing
22:45	23:00	0.25	PROD1	CASING	SFTY	P		2,910.00	2,910.00	Held safety meeting with Hallmark power tongs and Trottier lay down truck prior to handle 114.3mm casing
23:00	00:00	1.00	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Rig up Stream-Flo Pack off seal to landing joint, run in to upper casing bowl and measure out

Fluid/Mud Chks: Mud Engineer: Corey Clark

Time 07:00	Depth (mKB) 2,910.00	Density (kg/m³) 1,080.0	Funnel Viscosity (s/L) 88	pH	PV Override (Pa·s) 24.0	YP Override (Pa) 5.0
Low Gravity Solids (%) 9.8	MBT (kg/m³)	Oil Water Ratio 84/16	Chlorides (mg/L) 285,598	Calcium (mg/L) 45,500	Lime (kg/m³) 17	Potassium (mg/L)
Electric Stab (V) 640.0	ECD - Manual Entry (k... 1,266.9	Sand (%) 2.8	Solids, Corr. (%) 11.1	T Flowline (°C) 39	HTHP Pressure (kPa)	HTHP Filtrate (mL/30... 4.0
API Filtrate (mL/30min)		Mud Lost to Surface (m³) 1.00		Mud Lost to Hole (m³) 0.00		Daily Mud Field Est (Cost) 1,063.33
Cum Mud Lost to Surface (m³) 63.00		Cum Mud Lost to Hole (m³) 9.00		Cumulative Mud Cost (Cost) 122,840.34		

Last BOP Drill

Type BOP Drill	Days Last Chk (...) 5	Last Date 1/17/2014	Days Until Next... 0	Next Check Date 1/22/2014
Days Since Lost Time Incident (days) 833.00	Days Since Recordable Incident (days) 833.00			

Safety Incidents

Date	Com	Category

Drill String: BHA # <BHA No.??>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
Nozzles (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)		
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)
Total Drill Hrs (hr)					
Comment					

Drill String Components

Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameter: <depthstart> - <depthend> mKB

Cum Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (daN)	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
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Hydraulic Calculations

Bit Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...	

Error

Mud Pump: 1, NATIONAL, 8-P-80

Pump Number 1	Make NATIONAL	Model 8-P-80	Rod Diameter (mm) 140.0	Stroke Length (mm) 216.0
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Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/20/2014 00:00	2,909.00	0.499	5,150	64
1/20/2014 00:00	2,909.00	1.014	17,500	130

Up Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/21/2014	1/21/2014	127.0		
1/22/2014	1/22/2014	127.0		

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/22/2014
Report #: 45
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

J Pump: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80	140.0	216.0

Pump Checks

Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)
1/19/2014 00:00	2,513.00	0.647	6,855	83
1/19/2014 00:00	2,513.00	0.897	15,000	115

Pump Operations

Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)
1/19/2014	1/19/2014	127.0	15,000	
1/21/2014		127.0		

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
1	1/22/2014		80		3
1	1/22/2014		100		2
1	1/22/2014		80		1

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units
ERT	1.0	1,063.330	1.0	M3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/23/2014
Report #: 46
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

UWI 300E7665-10126-45		Surface Legal Location E-76 65-10 126-45		MaxWell Job Number JOB01@2006		License No. EL 470	
Ground Elevation (m) 268.20		Original KB/RT Elevation (m) 273.40		Casing Flange Elevation (m) 268.00		Original Spud Date 12/28/2013	
Days From Spud (days) 26.73		Job Category DRILLING		Primary Job Type DRILLING ORIGINAL		Actual Start Date 12/9/2013 00:00	
End Date 1/23/2014 23:59		Final Job Status DRILLED		Final Report? Yes		Daily Cost Total (Cost) 1,139,392.20	
Cumulative Cost (Cost) 6,447,888.47		Total AFE (Cost) 6,820,300.00		AFE+Supp Amt (Cost) 6,820,300.00		AFE / RFE / Maint.# 10351817	
Estimated Days 34.19		Planned Depth (TMD) (mKB) 2,881.00		Override TVD (mKB) 2,881.00		Head Count 54.0	
Personnel Total Hours (hr) 600.00		Cum Personnel Total Hours (hr) 34,321.00		Avg Connection Gas		Avg Background Gas	
Avg Trip Gas		Max H2S (ppm)		Road Condition Ice/Snow		Weather Cloudy	
Temperature (°C) -14		Wind NE 15 kms		Ops and Depth @ Morning Report Tear out rig.		Wellbore Original Hole	

Last 24hr Summary
No incidents or accidents. 9 - HID, 0 - OBS and 0 - ASA (all closed out)

Rig up power tongs, run 114.3mm tie-back liner, space out using 2 small pup joints, land mandrel seal assembly and tie onto top of liner top packer with 18,000dan of compression, remove landing joint, pressure test 114.3mm x 177.8mm annulus to 15,000kPa, rig out top drive, nipple down BOP. Rig release at 23:59hrs on January 23rd, 2014.

From midnight to 6:00am: Nipple down BOP, pressure test packoff seal assembly, blow out water and pour 2 pails of diesel, install wellhead, clean mud tanks, tear out rig. No pressure on backside.

24hr Forecast
Rig out rig to move to P-20 location.

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Richard Turgeon, 780-387-1706; WS Supervisor, Dave Oppen, 403-863-8205; Rig Manager, Rick Yavis, 780-718-2962; Command Centre, 403-910-0357

Last Casing String
Production, 2,909.32mKB

Time Log											
Start Time	End Time	Dur (hr)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Start Depth (mKB)	End Depth (mKB)	Operation	
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service function test crown saver	
00:15	05:00	4.75	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Run 1- 114.3mm latch assembly, 104 joints of 114.3mm, 17.26kg/m, P-110 LTC casing, 1-114.3mm, 17.26kg/m, P-110,LTC pup joint, 1-114.3mm joint of casing, 1-114.3mm pup joint, sealed Mandrel Hanger and 1-114.3mm landing joint, with Hallmark power tongs and	
05:00	06:00	1.00	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Pick up and run sealed Mandrel Hanger	
06:00	07:45	1.75	PROD1	CASING	RNCS	P		2,910.00	2,910.00	Set sealed Mandrel Hanger at 18,000, compression, tighten seal assembly bolts	
07:45	08:00	0.25	PROD1	CASING	SFTY	P		2,910.00	2,910.00	Crew change safety meeting with rig manager and Conoco reps	
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service	
08:15	08:30	0.25	PROD1	WHDBOP	PRTS	P		2,910.00	2,910.00	Pressure test casing bowl with Schlumberger to 15,000kpa, held good	
08:30	09:30	1.00	DEMOB	CASING	RNCS	P		2,910.00	2,910.00	Rig out Hallmark power tongs and Trotter lay down truck	
09:30	12:00	2.50	DEMOB	RIGMNT	SVRG	P		2,910.00	2,910.00	Clean floor pick top off of rotary table and clean	
12:00	16:00	4.00	DEMOB	MOVE	DMOB	P		2,910.00	2,910.00	Rig out top drive and lay down	
16:00	16:15	0.25	DEMOB	RIGMNT	SVRG	P		2,910.00	2,910.00	Rig service	
16:15	19:00	2.75	DEMOB	MOVE	DMOB	P		2,910.00	2,910.00	Rig out service loop and hydraulic power unit, for top drive	
19:00	19:15	0.25	DEMOB	MOVE	SFTY	P		2,910.00	2,910.00	Crew change safety meeting with rig manager and Conoco reps	
19:15	00:00	4.75	DEMOB	WHDBOP	NUND	P		2,910.00	2,910.00	Nipple down BOP stack, HCR line, flare line, degasser line, kill line, lift off BOP stack and rack in sub, clean and prepare casing bowl to install well head, Rig Released Jan 23/2014 @ 23:59 Hrs	

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/23/2014
Report #: 46
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Mud/Mud Chks: Mud Engineer: <Mud Engineer?>						
Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (Pa-s)	YP Override (Pa)
Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
Electric Stab (V)	ECD - Manual Entry (kPa)	Sand (%)	Solids, Corr. (%)	T Flowline (°C)	HTHP Pressure (kPa)	HTHP Filtrate (mL/30...)
API Filtrate (mL/30min)		Mud Lost to Surface (m³)	Mud Lost to Hole (m³)		Daily Mud Field Est (Cost)	
Cum Mud Lost to Surface (m³)		Cum Mud Lost to Hole (m³)		Cumulative Mud Cost (Cost)		
Last BOP Drill						
Type	Days Last Chk (...)	Last Date	Days Until Next...	Next Check Date		
BOP Drill	6	1/17/2014	-1	1/22/2014		
Days Since Lost Time Incident (days)		Days Since Recordable Incident (days)				
834.00		834.00				
Safety Incidents						
Date	Com				Category	
Drill String: BHA # <BHA No.??>						
Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)	
Nozzles (mm)	String Length (m)	OD (mm)	Max Rotating Hook Load (daN)			
Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled b...	Job Drill Hrs (hr)	Total Drill Hrs (hr)
Comment						
Drill String Components						
Item Des	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)	
Drilling Parameter: <depthstart> - <depthend> mKB						
Run Depth (m)	Cum Drill...	Int ROP (...)	Flow Rate...	WOB (daN)	RPM (r...	SPP (kPa)
Hydraulic Calculations						
Bit Hydraulic Powe...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	P Drop Annular (kPa)	Mud Density (kg/m³)
Drill String Volume (m³)	Bit to Shoe Volume (m³)	Vol Shoe to Top (m³)	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m/...
Error						
Mud Pump: 1, NATIONAL, 8-P-80						
Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)		
1	NATIONAL	8-P-80	140.0	216.0		
Pump Checks						
Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)		
1/20/2014 00:00	2,909.00	0.499	5,150	64		
1/20/2014 00:00	2,909.00	1.014	17,500	130		
Pump Operations						
Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)		
1/21/2014	1/21/2014	127.0				
1/22/2014	1/22/2014	127.0				
Mud Pump: 2, NATIONAL, 8-P-80						
Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)		
2	NATIONAL	8-P-80	140.0	216.0		
Pump Checks						
Date	Depth (mKB)	Q Flow (m³/min)	P (kPa)	Strokes (spm)		
1/19/2014 00:00	2,513.00	0.647	6,855	83		
1/19/2014 00:00	2,513.00	0.897	15,000	115		
Pump Operations						
Start Date	End Date	Liner Size (mm)	P Max (kPa)	Vol/Stk OR (m³/stk)		
1/19/2014	1/19/2014	127.0	15,000			
/2014		127.0				
Shaker Screens						
Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note	
	1/23/2014				4	
	1/23/2014				3	

Daily Drilling

COPRC DODO CANYON E-76 65-10 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 1/23/2014
Report #: 46
Depth Progress: 0.00m
Depth End: 2,910.00mKB
Rig Release Date: 1/23/2014

Shaker Screens

Des	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
	1/23/2014				2
	1/23/2014				1
	1/23/2014				4
	1/23/2014				3
	1/23/2014				2
	1/23/2014				1
	1/23/2014				4
1	1/23/2014		80		3
1	1/23/2014		100		2
1	1/23/2014		80		1
1	1/22/2014		80		3
1	1/22/2014		100		2
1	1/22/2014		80		1

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
1	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 07:00	2.00	1800	1,000.0	0.400	2,100.0	0.200

Centrifuge/Cyclone: HGS Centrifuge, BOS Solutions, 5500

Number	Make	Model	Diameter (mm)
2	BOS Solutions	5500	

Centrifuge/Cyclone Checks

Date	Hrs (hr)	RPM (rpm)	Dens OF (kg/m³)	Q OF (L/min)	Dens UF (kg/m³)	Q UF (L/min)
1/19/2014 13:00	3.00	2000	990.0	0.400	1,700.0	0.200

Fluid / Mud Additive Amounts

Des	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top (TVD) (mKB)	Prog Top TVD (mKB)
Little Bear	31.00	31.00	31.00
Slater River	76.00	76.00	76.00
Arctic Red	800.50	800.46	76.40
Martin House	938.50	938.44	76.40
Imperial	975.50	975.43	76.40
Upper Canol	1,665.00	1,658.53	1,653.40
Lower Canol	1,700.72	1,689.07	1,694.40