



OXY USA Inc.
9-POINT DRILLING PLAN

Well Information

Hells Gulch Federal 35-03A
Section 35, Township 8S, Range 92W
Mesa County, Colorado

1. Geologic Markers and Formations

Names and estimated tops of all geologic groups, formations, members or zones are shown in the table below. Also indicated are probable gas-bearing horizons. The only anticipated water-bearing zones are in the Upper Wasatch. Standard drilling practice is to case off these zones to protect any useable water resources.

Geologic Prognosis

Projected Formation Tops			GL: 7985 KB: 8015			
Tops			MD (ft) Reference KB	TVD (ft) Reference KB	TVDSS (ft)	Comments
	Wasatch "G" Sand		1750	1708	6307	poss gas
	Fort Union		4202	3826	4189	salt water
Mesaverde	Williams Fork	Ohio Creek ("Mesaverde" top)	5310	4907	3108	salt water
		Williams Fork ("base Ohio Creek")	5602	5198	2817	saltwater, poss gas
		Top of Gas	6649	6245	1770	● gas
		Cameo Coal	7944	7540	475	● gas
	Iles	Rollins	8364	7960	55	salt water
TD	TD based upon structural control at top of Rollins in this area (400' below)		8764	8360	-345	

2. Estimated Tops of Anticipated Water, Oil, Gas or Minerals and Operator's Plan for Protection

Upper Wasatch	(freshwater)	120-500' possible lost circulation
Williams Fork (Top of Gas)	(gas)	6245' TVD
Cameo Coal	(gas)	7540' TVD

Casing and cementing will be designed to protect potentially productive hydrocarbons, lost circulation zones and prospectively valuable mineral deposits. All indications of usable water will be reported.

Surface Casing will be tested to 1500 psi and Production Casing will be tested to 2500 psig.

3. The Operators Minimum Specifications for Pressure Control

A schematic diagram of the BOP equipment is provided in Attachment "A".

An annular 11", 3M BOP along with one pipe ram and one blind ram, will be installed on the 9-5/8" surface casing. The BOP will be used, maintained and tested in accordance with requirements specified in Section III A-1 of Onshore Order 2.

The kill line will not be used as a fill up line.

This BOP will be attached to the surface casing and tested to 3000 psi before drilling out. The surface casing will be tested to 1500 psi.

In addition, the BOP will be tested after any repairs made or breaks in the connections. The BOP will be fully tested at least every 21 days.

4. Proposed Casing Setting and Cementing Program

9-5/8" surface casing will be set ~ 1500', covering all freshwater zones and will be cemented to surface. Cement volume will be calculated to lift cement to surface plus 50% excess.

The cement volume for the 4-1/2" production casing will be calculated to cover 500' above any commercial hydrocarbon zones encountered.

Casing Program:

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt.</u>	<u>Grade</u>	<u>Connection</u>	<u>Length</u>	<u>Setting Depth</u>	<u>Condition</u>
12-1/4"	9-5/8"	36.0#	K-55	LTC	1,500'	1,500'	New
7-7/8"	4-1/2"	11.6#	P-110	BTC	8,734'	8,734'	New

9-5/8", 36#, K-55, LTC	Collapse	Burst	Tensile	ID	Make-up Torque
100%	2020 psi	3520 psi	489,000 lb	8.921"	Optimum – 4350
80%	1616 psi	2816 psi	391,200 lb	8.765" Drift	

4-1/2", 11.6#, P-110, BTC	Collapse	Burst	Tensile	ID	Make-up Torque – Optimal (ft-lbs)
100%	10,130 psi	10,690 psi	367,000 lb	4.00"	Make up to mark
80%	8,104 psi	8,552 psi	293,600 lb	3.875" Drift	

Casing Program							
Item	From (ft)	To (ft)	Length (ft)	Weight (ppf)	Grade	Joint Type	Total Weight (lbs)
9-5/8"	0	1500	1500	36.0	K-55	LTC	54,000
4-1/2"	0	8734	8734	11.6	P-110	BTC	101,660

Minimum Safety Factors			
Item	External Pressure Collapse	Internal Yield Pressure	Tension Yield Strength
Target	1	1.2	1.6
9-5/8"	3.0	1.7	3.0
4-1/2"	1.9	1.4	1.9

Cementing Program:

Casing String:	9-5/8", 36#, K-55 Surface Casing, 12-1/4" OH	
Slurry Design Basis:	Lead slurry: ~810' of 9-5/8" x 12-1/4" annulus with 50% excess, 90' of 9-5/8" x 16" annulus Tail slurry: 50' of 9-5/8", 36# shoe track, 600' of 9-5/8" x 12-1/4" annulus with 50% excess	
Fluids Sequence / Volume:	Spacer	10 bbls Fresh Water + 20 bbls Superflush + 10 bbls Fresh Water.
	Lead Slurry	Calculated bbls of Versacem Cement, 12.3 ppg; 2.34 cf/sk Goal TOC: Surface
	Tail Slurry	57 bbls / 321 cf / 155 sxs Versacem Cement, 12.8 ppg; 2.08 cf/sk Goal TOC: 600' Above Shoe
	Displacement	Calculated bbls of fresh water

SURFACE LEAD CEMENT

Fluid 4: 12.3 VERSACEM LEAD

VERSACEM (TM) SYSTEM

0.25 lbm/sk Poly-E-Flake (Additive Material)

0.1 % Tuf Fiber 594 (Additive Material)

SURFACE TAIL CEMENT

Fluid 5: 12.8 VERSACEM TAIL

VERSACEM (TM) SYSTEM

0.25 lbm/sk Poly-E-Flake (Additive Material)

Casing String:	4-1/2", 11.6#, P110 Production Casing, 7-7/8" OH	
Slurry Design Basis:	Lead slurry: ~3500' of 4-1/2" x 7-7/8" annulus with 10 % excess, 300' of 4-1/2" x 8.921" annulus Tail slurry: 50' of 4-1/2", 11.6# shoe track, ~4200' of 4-1/2" X 7-7/8" annulus with 10% excess (use of caliper log)	
Fluids Sequence / Volume:	Spacer	10 bbls Fresh Water + 20 bbls Superflush + 10 bbls Fresh Water
	Lead Slurry	Calculated bbls of Extendacem Cement, 12.4 ppg; 1.89 cf/sk Goal TOC: 200' Above Surface Shoe
	Tail Slurry	Calculated bbls of Varicem Cement, 13.1 ppg; 1.62 cf/sk Goal TOC: 500' Above Mesaverde Top
	Displacement	Calculated bbls 2% KCl Water

PRODUCTION LEAD CEMENT

Fluid 4: 12.4 EXTENDACEM LEAD

EXTENDACEM (TM) SYSTEM

0.125 lbm/sk Poly-E-Flake (Additive Material)

PRODUCTION TAIL CEMENT

Fluid 5: 13.1 VARICEM TAIL

VARICEM (TM) CEMENT

0.125 lbm/sk Poly-E-Flake (Additive Material)

5. Mud Program

The mud specifications described in Mud Table A will be used to drill surface to 1,530'. The system will be converted to the mud specifications described in Mud

Table B for drilling below 1,530'. Mud properties will generally follow the schedule below but may change as hole conditions dictate. Sufficient mud materials to maintain mud properties, control lost circulation and to contain blowout will be available at the wellsite. All mud additives are biodegradable and Material Safety Data Sheets will be kept on location at all times. No chrome constituent additives will be used in the mud system without prior BLM approval.

Mud Table A

Hole Section / operation:				Drill 12-1/4" Surface hole to 1,530' MD			
Type	Density (ppg)	Viscosity	PV	YP	API FL	Drill Solids	Gels 10 sec
WBM - LSND	8.4 – 8.8	36 - 42	12 - 18	12 - 16	10 -15	4% - 6%	8 - 15

Mud Table B

Hole Section / operation:				Drilling 7-7/8" Production interval			
Type	Density (ppg)	Viscosity	PV	YP	API FL	pH	Drill Solids
WBM - LSND	8.7 – 9.5	45 - 55	12 - 18	16 - 24	< 8	9.5 – 10.0	4% - 6%

The mud will be checked several times daily to determine density, viscosity, chlorides, pH, fluid loss, and LCM.

6. Logging Program

The logging program for the well is described in the table below. Due to the inherent instability of the wellbore, drill-pipe conveyance method will be used to deploy a memory logging tool string to acquire open hole logs.

Open hole logging

Run	Logs	Tool name	Interval	Vendor
1	Gamma Ray, array induction, comp. neutron, photo density, sonic	Compact Drop-Off (CDO)	TD to surface casing	Weatherford

Cased hole logging

Run	Logs	Tool name	Interval	Vendor
1	CBL/CCL	SSLT	TD to 500' above cement	Schlumberger

Hole Section:	Logging Company	Required Sensors / Service
12-1/4" Surface:	Scientific Drilling	Real time MWD with inclination and azimuth will be run.
7-7/8" Production:	Scientific Drilling	Real time MWD with inclination and azimuth will be run.
Cased Hole:	Schlumberger	cement bond, casing collar locator, spectral gamma ray, neutron, and temperature logs will be acquired from TD up to top of cement
Open Hole:	Weatherford	Gamma Ray, array induction, comp neutron, photo density, sonic

7. Anticipated Pressures and Temperatures

No abnormal pressures, temperatures or hazards are expected to be encountered. No overpressured intervals are expected. Proper mud weight will be maintained to drill at a balanced or slightly over-balanced condition.

The Williams Fork Shale zone has potential for lost circulation due to the fractured nature of the shale. In addition to drilling in a balanced or slightly over-balanced condition, the drilling fluid will contain various types of LCM to plug the fractures and prevent losses.

No H₂S or other hazardous gases have been encountered in offset wells.

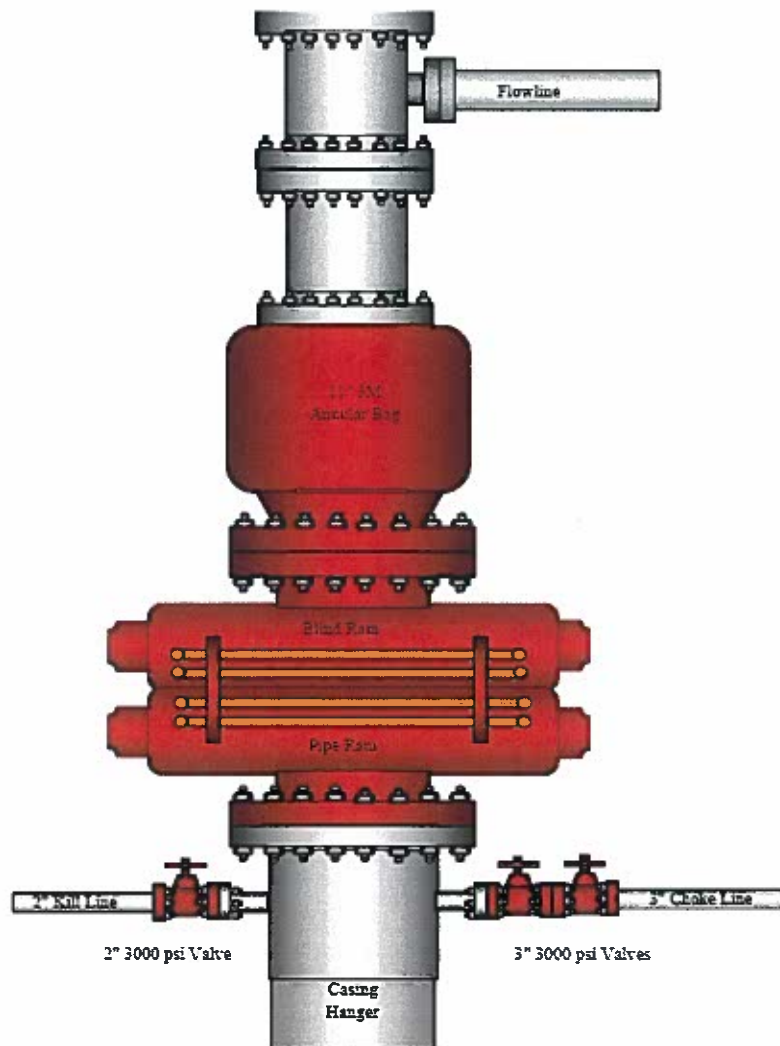
8. Directional Program

(Directional program description to be provided for each APD)

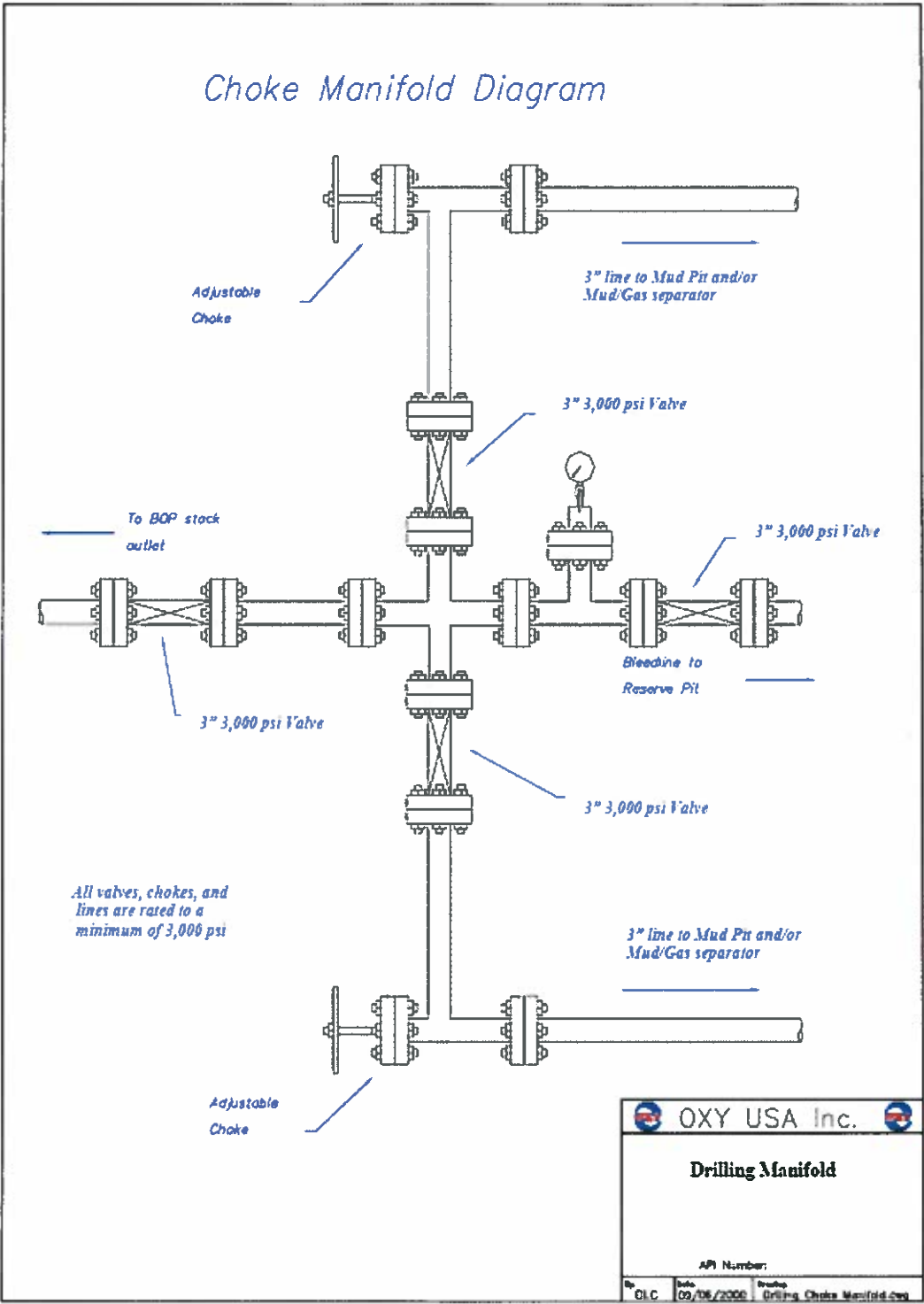
Maximum Planned Hole Inclination:	31 deg
Proximity Issues:	None
Survey Program:	Real-Time MWD

Attachments

a) BOP Schematic



b) Choke Manifold Schematic



c) Wellbore Schematic

WELL HELLS GULCH FEDERAL 35-03A - WELLBORE DIAGRAM						
FORMATION MD	Hole size & Depth MD			Csg Depth MD	CMT Slurry TOC MD	Casing Notes
				MD	TOC at Surface	
					Top out slurry 12.5 ppg	
					Lead slurry 12.3 ppg	
					Tail slurry 12.8 ppg - up to 900'	
	12 1/4" - 1,530'			1,500'		9 5/8" 36 #/ft K-55 LTC From 30 to 1,500'
1750	7 7/8" - 8764'				TOC at 1,300'	
Wasatch "G"						
4202'						
Fort Union						
5310' Ohio Creek					Lead slurry 12.4 ppg	
5602'						
Williams fork						
6649'						
Top of Gas						
7944'						
Cameo Coal						
8364'						
Rollins						
TD				8734'	Tail slurry 13.1 ppg - TOC at 4810' (~ 500' above Ohio Creek)	4 1/2" 11.6 #/ft P-110 BTC, From 30 to 8,734'