

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RCVD JUN 14 '12
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number SF-079658, SF080456, NM0433 Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator BURLINGTON RESOURCES Oil & Gas Company, LP	7. Unit Agreement Name Huerfano Unit HZMC	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name 9. Well Number 1H	
4. Location of Well Surface: Unit M(SWSW), 645' FSL & 615' FWL BHL : Unit K(NESW), 1563' FSL & 1537' FWL Surface: Latitude: 36.49729° N (NAD83) Longitude: 107.90843° W BHL : Latitude: 36.49973° N (NAD83) Longitude: 107.88733°	10. Field, Pool, Wildcat Angel Peak Gallup 11. Sec., Twn, Rge, Mer. (NMPM) Surf: Sec. 9, T26N, R10W BHL : Sec. 10, T26N, R10W API # 30-045-35370	
14. Distance in Miles from Nearest Town 18 miles from Bloomfield	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 615'		
16. Acres in Lease 320.00	17. Acres Assigned to Well See attached plat	
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 339' from Huerfano Unit 215E/DK		
19. Proposed Depth 6025' (VD)	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6669' GL	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached		
24. Authorized by: <u>Arleen Kellywood</u> Arleen Kellywood (Staff Regulatory Tech)	5/2/12 Date	

Hold C104
for Directional Survey
and "As Drilled" plat

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

Archaeological Report attached

A gas recovery unit may or may not be used on this location.

Threatened and Endangered Species Report attached

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or presentations as to any matter within its jurisdiction.

Bond Numbers NMB-000015 and NMB-000089

This action is subject to technical and procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.4

Hold C104
for Directional Survey
and "As Drilled" plat

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

BLM'S APPROVAL OR ACCEPTANCE OF THIS
ACTION DOES NOT RELIEVE THE LESSEE AND
OPERATOR FROM OBTAINING ANY OTHER
AUTHORIZATION REQUIRED FOR OPERATIONS
ON FEDERAL AND INDIAN LANDS

JUL 12 2012 ca

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

Form C-102
Revised August 1, 2011

DISTRICT IV
1220 E. St. Francis Dr., Santa Fe, NM 87605
Phone: (505) 478-3489 Fax: (505) 478-3488

OIL CONSERVATION DIVISION **AMENDED REPORT**
1220 South St. Francis Dr.
Santa Fe, NM 87505
Bureau of Land Management

'API Number 30-045- 35370	'Pool Code 2170	'Pool Name ANGEL PEAK GALLUP
'Property Code 39288	'Property Name HUERFANO UNIT HZMC	'Well Number 1H
'OGRID No. 14538	'Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY LP	'Elevation 6669'

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	9	26N	10W		645'	SOUTH	615'	WEST	SAN JUAN

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	10	26N	10W		1563'	SOUTH	1537'	WEST	SAN JUAN

13 Dedicated Acres	PROJECT AREA	14 Joint or Infill	15 Consolidation Code	16 Order No.
320.00 AC. -	USA NM-0433			
160.00 AC. -	USA SF-080120-A			R-1410-C
160.00 AC. -	USA SF-080456			R-13499
320.00 AC. -	USA SF-078658			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

14

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed below hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Green Kallywood 4/11/12
Signature Date

Arleen Kellywood
Printed Name

arleen.r.kellywood@conocophillips.com

E-mail Address

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MARCH 13, 2012

Date of Survey _____

Signature and Seal of Professional Surveyor:

Burlington Resources Oil & Gas Company LP, a subsidiary of ConocoPhillips proposes to drill and complete the referenced horizontal well targeting a zone within the Mancos formation.

Technical Plan

1. Location

Huerfano Unit HZMC 1H

SHL: 645' FSL, 615' FWL -- T 26N, R 10W, Sec 09

BHL: 1563' FSL, 1537' FWL -- T 26N, R 10W, Sec 10

GL: 6669'

2. Geological Markers

Anticipated formation tops with comments of any possible water, gas, or oil shows are indicated below:

Formation	Depth (TVD)	Remarks
Nacimiento	Surface	Water
Ojo Alamo	1186'	Possible Water
Kirtland	1391'	
Fruitland	1549'	Possible Gas
Pictured Cliffs	1734'	
Lewis	2370'	
Huerfanito Bentonite	2590'	
Chacra	3081'	
Cliffhouse	3768'	Gas
Menefee	3810'	
Point Lookout	4607'	
Mancos	4894'	
El Vado	5689'	Oil/Gas
Basal Niobrara	6064'	

See attached directional plan for anticipated formation tops in measure depth.

3. Pressure Control Equipment

See Attached BOPE & Choke Manifold Schematic for a diagram of pressure control equipment.

- BOPE will be nipped up on top of wellhead after surface casing is set and cemented.
- Pressure control configuration will be designed to meet and exceed 2M standards.
- All equipment will have 3M pressure ratings.
- A rotating head will be rigged up on top of annular as seen in attached diagram.

4. Casing & Cement Program

A) The proposed casing program is outlined below:

Proposed Casing				
Casing	Hole Size	Casing Size	Weight/Grade	Depth
Surface	12-1/4"	9-5/8"	32.3#, H-40, STC, New	0' - 320' (TVD)
Intermediate	8-3/4"	7"	23.0#, L-80, LTC, New	0' - 5007' (TVD)
Production Liner	6-1/4"	4-1/2"	11.6#, L-80, BTC, New	5007' - 12064' (MD)

The intermediate casing may be set deeper if hole conditions allow.

The production liner will be tied back into the intermediate casing string with a liner hanger with a pack-off element.

A 4-1/2", 11.6#, L-80, BTC (new) frac string will be ran and tied into liner hanger for the stimulation.

B) The proposed cement program is shown below:

Cement Program				Planned Cement Top
Interval	Depth (TVD)	Volume	Slurry	
Surface	320'	244 ft ³	Lead Cmt: Type III Cmt 0.25 pps Celloflake 1.25 ft ³ /sk -- 5.75 gal/sk 15.2 ppg	Surface
Intermediate	5007'	1122 ft ³	Lead Cmt: Premium Lite 3% CaCl, 0.25 pps celloflake, 5 ppm LCM-1, 0.4% FL-52, 8% Bentonite, 0.4% SMS 2.13 ft ³ /sk -- 11.29 gal/sk 12.1 ppg Tail Cmt: Type III 1% CaCl, 0.25 pps celloflake, 0.2% FL-52 1.38 ft ³ /sk -- 6.64 gal/sk 14.6 ppg	Surface
Production	N/A	N/A	N/A – Sliding sleeves and external swellable casing packers will be utilized	N/A

For the intermediate hole, a 2-stage cement job may be performed if hole conditions indicate during operations. Stage tool will be placed appropriately as conditions indicate.

C) The proposed centralizer program is shown below:

Centralizer Program	
Interval	Centralizers
Surface	1 per joint on bottom 3 joints
Intermediate	10' above shoe jnt w/ collar clamp On top of 2 nd , 4 th , 6 th , 8 th , 10 th jnts 1 every 4 th jnt to Ojo Alamo 1 Turbolizer at base of Ojo Alamo 1 every joint thru Ojo Alamo 1 Turbolizer will be placed mid way into Ojo Alamo 1 every 4 th jnt from top of Ojo Alamo up to surface shoe 1 inside surface casing
Production	N/A

To allow adequate time for cement to achieve a minimum of 500 psi compressive strength, a minimum of 8 hours wait on cement time for each hole section will be observed. The wellhead will not be installed, casing will not be tested, and the prior casing shoe will not be drilled out until adequate wait on cement time is achieved.

Production hole will be completed/stimulated by means of sliding sleeves spaced out appropriately throughout the production liner. Swellable packers will be placed between sleeves to provide isolation for each stage. There will be 1 swellable packer placed below 7" casing to provide zonal isolation of the stimulated zone.

5. Drilling Fluids

A) The proposed drilling fluid program is outlined below:

Mud Program				
Interval	Mud Type	Weight (ppg)	Fluid Loss (cc)	Invert Ratio (Diesel/Brine)
Surface	Air / Water Gel System	Air 8.3 - 9.2	NC	
Intermediate	LSND / Gel system	8.4 - 10	6 - 14	
Production	Oil Based Mud	7.0 - 8.5	4 - 12	70/30 - 90/10

Oil based mud will be an Invert Mud. Base fluid will be diesel. Brine fluid will be CaCl or KCl.

LCM may be added to the mud system if hole conditions indicate.

B) Closed loop equipment will be utilized for solids control. A lined cutting pit will be utilized for water based cutting from upper hole sections. Cuttings from production hole will be hauled off to approved disposal site.

6. Abnormal Pressures & Hazards

- No over-pressured intervals expected.

ABHP $\approx$ 1600 psi per conversation w/ Stephen R. of CDP.
SCV

- No hydrogen sulfide gas is expected based off nearby well production.
- No anticipated loss zones or depleted zones. Well is located outside of Fruitland Coal “fairway” and Mesa Verde production intervals.

7. Testing, Logging, Coring

- Mud Logs: Mud loggers will be rigged up from KOP to production hole TD.
- MWD: Directional tools from KOP to production hole TD.
- LWD: Gamma Ray and Resistivity will be utilized in production hole for well placement.
- Logs: No planned open hole logs (other than the previously identified LWD logs) will be ran.
- Cased Hole Logs: A Temp Survey or CBL will be ran on the intermediate hole if cement is not circulated to surface during intermediate cement job.

8. Directional Plan

The planned wellbore directional plan and plot is attached.

The planned directional plan is built off geological targets from offset wells. The production hole will be landed and drilled within target formation horizontally utilizing LWD equipment to help steer the wellbore. On site adjustments will be made to the directional plan as formation and hole indicates.

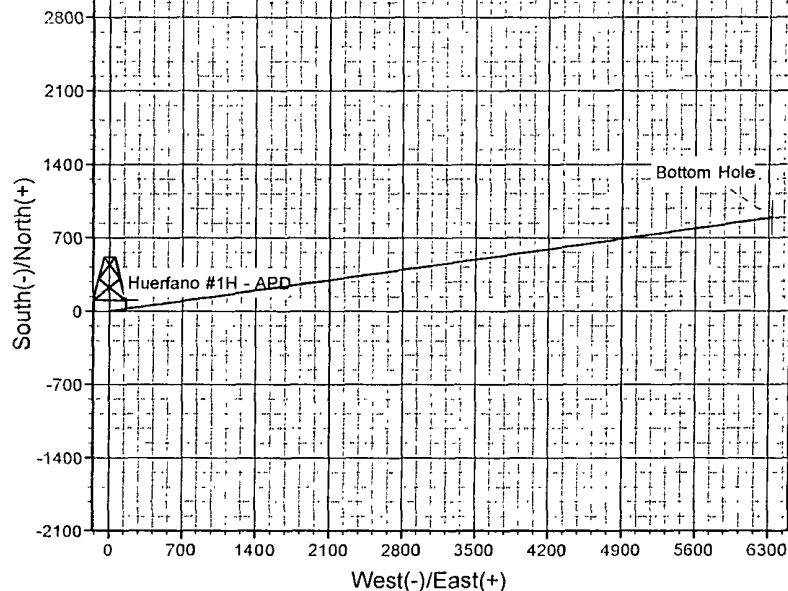
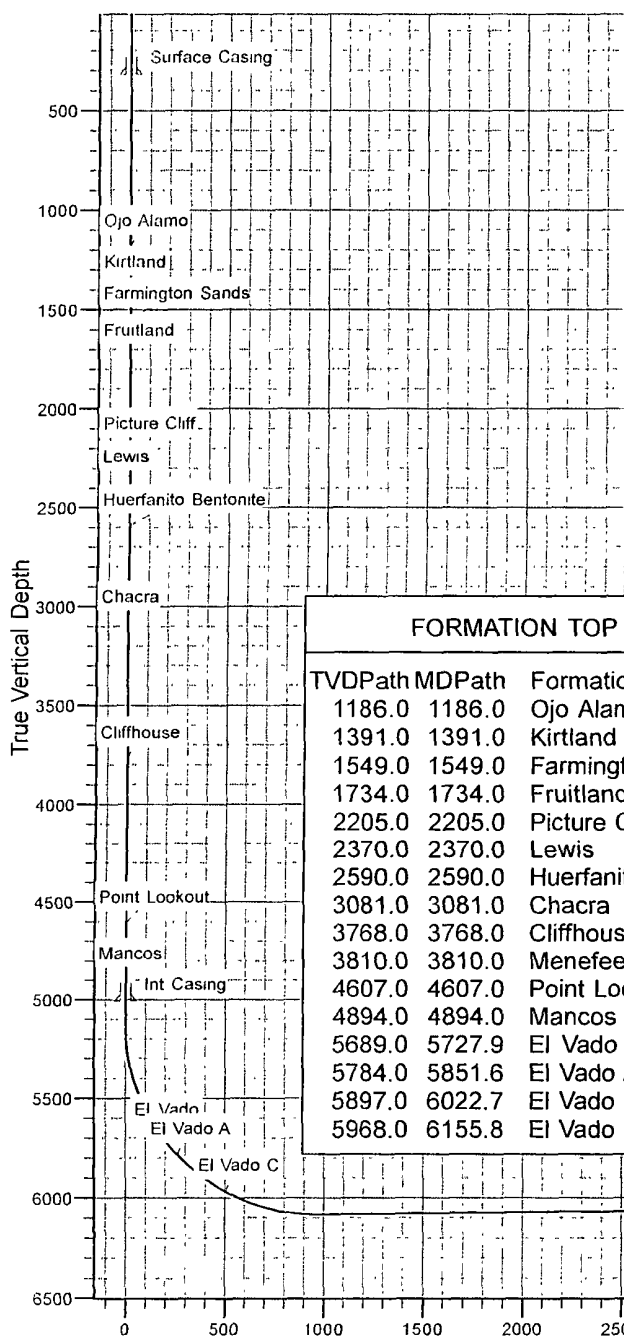
REFERENCE INFORMATION

KB @ 6684 0ft (AWS920)
Ground Elevation 6669.0
Reference Lat 36° 29' 50.244 N
Reference Long: 107° 54' 30.348 W

Project: San Juan Basin - New Mexico West Wells
Site: Huerfano / Huerfanito Wells
Well: Huerfano #1H - APD
Wellbore: Original Hole
Design: Original Hole APD Plan #1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5127.0	0.00	0.00	5127.0	0.0	0.0	0.00	0.00	0.0	
3	6637.0	90.60	81.97	6081.8	134.8	955.5	6.00	81.97	964.9	
	412064.0	90.60	81.97	6025.0	892.7	6329.0	0.00	0.00	6391.7	Bottom Hole

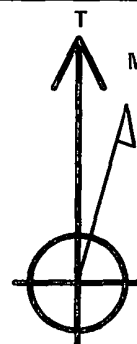


FORMATION TOP DETAILS

TVDP	MD	Formation
1186.0	1186.0	Ojo Alamo
1391.0	1391.0	Kirtland
1549.0	1549.0	Farmington Sands
1734.0	1734.0	Fruitland
2205.0	2205.0	Picture Cliff
2370.0	2370.0	Lewis
2590.0	2590.0	Huerfanito Bentonite
3081.0	3081.0	Chacra
3768.0	3768.0	Cliffhouse
3810.0	3810.0	Menefee
4607.0	4607.0	Point Lookout
4894.0	4894.0	Mancos
5689.0	5727.9	El Vado
5784.0	5851.6	El Vado A
5897.0	6022.7	El Vado B
5968.0	6155.8	El Vado C

CASING DETAILS

TVDP	MD	Name	Size
320.0	320.0	Surface Casing	9-5/8
5007.0	5007.0	Int Casing	7
6025.0	12064.0	4.5" Liner	4-1/2



Azimuths to True North
Magnetic North: 9.82°

Magnetic Field
Strength: 50460.4snT
Dip Angle: 63.20°
Date: 4/10/2012
Model: BGGM2011

4 5" Liner

Vertical Section at 81.97°

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Huerfano #1H - APD
Company:	ConocoPhillips SJB	TVD Reference:	KB @ 6684.0ft (AWS920)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	KB @ 6684.0ft (AWS920)
Site:	Huerfano / Huerfanito Wells	North Reference:	True
Well:	Huerfano #1H - APD	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Original Hole APD Plan #1		

Project:	San Juan Basin - New Mexico West Wells, New Mexico, Directional "S"		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Ground Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		Using geodetic scale factor

Site:	Huerfano / Huerfanito Wells		
Site Position:		Northing:	2,010,379.31 ft
From:	Lat/Long	Easting:	498,854.34 ft
Position Uncertainty:	15.0 ft	Slot Radius:	"
		Latitude:	36° 31' 30.309 N
		Longitude:	107° 50' 14.037 W
		Grid Convergence:	0.00 °

Well:	Huerfano #1H - APD		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			15.0 ft
			Ground Level:
			6,669.0 ft

Wellbore:	Original Hole		
Magnetics	Model Name	Sample Date	Declination
	BGGM2011	4/10/2012	9.82
			Dip Angle
			63.20
			Field Strength
			50,460

Design:	Original Hole APD Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			(°)
			81.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,127.0	0.00	0.00	5,127.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,637.0	90.60	81.97	6,081.8	134.8	955.5	6.00	6.00	0.00	81.97	
12,064.0	90.60	81.97	6,025.0	892.7	6,329.0	0.00	0.00	0.00	0.00	Bottom Hole

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
 Company: ConocoPhillips SJB
 Project: San Juan Basin - New Mexico West Wells
 Site: Huerfano / Huerfanito Wells
 Well: Huerfano #1H - APD
 Wellbore: Original Hole
 Design: Original Hole APD Plan #1

Local Co-ordinate Reference: Well Huerfano #1H - APD
 TVD Reference: KB @ 6684 0ft (AWS920)
 MD Reference: KB @ 6684 0ft (AWS920)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
Surface Casing									
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,186.0	0.00	0.00	1,186.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,391.0	0.00	0.00	1,391.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,549.0	0.00	0.00	1,549.0	0.0	0.0	0.0	0.00	0.00	0.00
Farmington Sands									
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,734.0	0.00	0.00	1,734.0	0.0	0.0	0.0	0.00	0.00	0.00
Fruitland									
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,205.0	0.00	0.00	2,205.0	0.0	0.0	0.0	0.00	0.00	0.00
Picture Cliff									
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,370.0	0.00	0.00	2,370.0	0.0	0.0	0.0	0.00	0.00	0.00
Lewis									
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,590.0	0.00	0.00	2,590.0	0.0	0.0	0.0	0.00	0.00	0.00
Huerfanito Bentonite									
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,081.0	0.00	0.00	3,081.0	0.0	0.0	0.0	0.00	0.00	0.00
Chacra									
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00

ConocoPhillips or its affiliates

Planning Report

Database: EDM Central Planning
Company: ConocoPhillips SJB
Project: San Juan Basin - New Mexico West Wells
Site: Huerfano / Huerfano Wells
Well: Huerfano #1H - APD
Wellbore: Original Hole
Design: Original Hole APD Plan #1

Local Co-ordinate Reference: Well Huerfano #1H - APD
TVD Reference: KB @ 6684 0ft (AWS920)
MD Reference: KB @ 6684 0ft (AWS920)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,768.0	0.00	0.00	3,768.0	0.0	0.0	0.0	0.00	0.00	0.00	
Cliffhouse										
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,810.0	0.00	0.00	3,810.0	0.0	0.0	0.0	0.00	0.00	0.00	
Menefee										
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,607.0	0.00	0.00	4,607.0	0.0	0.0	0.0	0.00	0.00	0.00	
Point Lookout										
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,894.0	0.00	0.00	4,894.0	0.0	0.0	0.0	0.00	0.00	0.00	
Mancos										
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,007.0	0.00	0.00	5,007.0	0.0	0.0	0.0	0.00	0.00	0.00	
Int Casing										
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,127.0	0.00	0.00	5,127.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	4.38	81.97	5,199.9	0.4	2.8	2.8	6.00	6.00	0.00	
5,300.0	10.38	81.97	5,299.0	2.2	15.5	15.6	6.00	6.00	0.00	
5,400.0	16.38	81.97	5,396.3	5.4	38.4	38.8	6.00	6.00	0.00	
5,500.0	22.38	81.97	5,490.6	10.0	71.2	71.9	6.00	6.00	0.00	
5,600.0	28.38	81.97	5,580.9	16.0	113.7	114.8	6.00	6.00	0.00	
5,700.0	34.38	81.97	5,666.2	23.3	165.2	166.8	6.00	6.00	0.00	
5,727.9	36.06	81.97	5,689.0	25.5	181.1	182.9	6.00	6.00	0.00	
El Vado										
5,800.0	40.38	81.97	5,745.6	31.8	225.3	227.5	6.00	6.00	0.00	
5,851.6	43.48	81.97	5,784.0	36.6	259.4	262.0	6.00	6.00	0.00	
El Vado A										
5,900.0	46.38	81.97	5,818.3	41.4	293.3	296.2	6.00	6.00	0.00	
6,000.0	52.38	81.97	5,883.4	52.0	368.4	372.0	6.00	6.00	0.00	
6,022.7	53.74	81.97	5,897.0	54.5	386.4	390.2	6.00	6.00	0.00	
El Vado B										
6,100.0	58.38	81.97	5,940.1	63.4	449.9	454.3	6.00	6.00	0.00	
6,155.8	61.73	81.97	5,968.0	70.2	497.8	502.7	6.00	6.00	0.00	
El Vado C										
6,200.0	64.38	81.97	5,988.0	75.7	536.7	542.0	6.00	6.00	0.00	
6,300.0	70.38	81.97	6,026.5	88.6	628.1	634.3	6.00	6.00	0.00	
6,400.0	76.38	81.97	6,055.0	102.0	722.9	730.1	6.00	6.00	0.00	
6,500.0	82.38	81.97	6,073.5	115.7	820.2	828.3	6.00	6.00	0.00	
6,600.0	88.38	81.97	6,081.5	129.6	918.9	928.0	6.00	6.00	0.00	
6,637.0	90.60	81.97	6,081.8	134.8	955.5	964.9	6.00	6.00	0.00	

ConocoPhillips or its affiliates

Planning Report

Databas:	EDM Central Planning	Local Co-ordinate Reference:	Well Huerfano #1H - APD
Company:	ConocoPhillips SJB	TVD Reference:	KB @ 6684.0ft (AWS920)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	KB @ 6684.0ft (AWS920)
Site:	Huerfano / Huerfano Wells	North Reference:	True
Well:	Huerfano #1H - APD	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Original Hole APD Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,700.0	90.60	81.97	6,081.2	143.6	1,017.9	1,028.0	0.00	0.00	0.00	
6,800.0	90.60	81.97	6,080.1	157.5	1,116.9	1,128.0	0.00	0.00	0.00	
6,872.9	90.60	81.97	6,079.4	167.7	1,189.1	1,200.9	0.00	0.00	0.00	
LP										
6,900.0	90.60	81.97	6,079.1	171.5	1,215.9	1,227.9	0.00	0.00	0.00	
7,000.0	90.60	81.97	6,078.0	185.5	1,314.9	1,327.9	0.00	0.00	0.00	
7,100.0	90.60	81.97	6,077.0	199.4	1,413.9	1,427.9	0.00	0.00	0.00	
7,200.0	90.60	81.97	6,075.9	213.4	1,513.0	1,527.9	0.00	0.00	0.00	
7,300.0	90.60	81.97	6,074.9	227.4	1,612.0	1,627.9	0.00	0.00	0.00	
7,400.0	90.60	81.97	6,073.8	241.3	1,711.0	1,727.9	0.00	0.00	0.00	
7,500.0	90.60	81.97	6,072.8	255.3	1,810.0	1,827.9	0.00	0.00	0.00	
7,600.0	90.60	81.97	6,071.7	269.2	1,909.0	1,927.9	0.00	0.00	0.00	
7,700.0	90.60	81.97	6,070.7	283.2	2,008.0	2,027.9	0.00	0.00	0.00	
7,800.0	90.60	81.97	6,069.7	297.2	2,107.0	2,127.9	0.00	0.00	0.00	
7,900.0	90.60	81.97	6,068.6	311.1	2,206.1	2,227.9	0.00	0.00	0.00	
8,000.0	90.60	81.97	6,067.6	325.1	2,305.1	2,327.9	0.00	0.00	0.00	
8,100.0	90.60	81.97	6,066.5	339.1	2,404.1	2,427.9	0.00	0.00	0.00	
8,200.0	90.60	81.97	6,065.5	353.0	2,503.1	2,527.9	0.00	0.00	0.00	
8,300.0	90.60	81.97	6,064.4	367.0	2,602.1	2,627.9	0.00	0.00	0.00	
8,400.0	90.60	81.97	6,063.4	381.0	2,701.1	2,727.9	0.00	0.00	0.00	
8,500.0	90.60	81.97	6,062.3	394.9	2,800.1	2,827.9	0.00	0.00	0.00	
8,600.0	90.60	81.97	6,061.3	408.9	2,899.2	2,927.9	0.00	0.00	0.00	
8,700.0	90.60	81.97	6,060.2	422.9	2,998.2	3,027.8	0.00	0.00	0.00	
8,800.0	90.60	81.97	6,059.2	436.8	3,097.2	3,127.8	0.00	0.00	0.00	
8,900.0	90.60	81.97	6,058.1	450.8	3,196.2	3,227.8	0.00	0.00	0.00	
9,000.0	90.60	81.97	6,057.1	464.8	3,295.2	3,327.8	0.00	0.00	0.00	
9,100.0	90.60	81.97	6,056.0	478.7	3,394.2	3,427.8	0.00	0.00	0.00	
9,200.0	90.60	81.97	6,055.0	492.7	3,493.2	3,527.8	0.00	0.00	0.00	
9,300.0	90.60	81.97	6,053.9	506.7	3,592.3	3,627.8	0.00	0.00	0.00	
9,400.0	90.60	81.97	6,052.9	520.6	3,691.3	3,727.8	0.00	0.00	0.00	
9,500.0	90.60	81.97	6,051.8	534.6	3,790.3	3,827.8	0.00	0.00	0.00	
9,600.0	90.60	81.97	6,050.8	548.5	3,889.3	3,927.8	0.00	0.00	0.00	
9,700.0	90.60	81.97	6,049.8	562.5	3,988.3	4,027.8	0.00	0.00	0.00	
9,800.0	90.60	81.97	6,048.7	576.5	4,087.3	4,127.8	0.00	0.00	0.00	
9,900.0	90.60	81.97	6,047.7	590.4	4,186.3	4,227.8	0.00	0.00	0.00	
10,000.0	90.60	81.97	6,046.6	604.4	4,285.4	4,327.8	0.00	0.00	0.00	
10,100.0	90.60	81.97	6,045.6	618.4	4,384.4	4,427.8	0.00	0.00	0.00	
10,200.0	90.60	81.97	6,044.5	632.3	4,483.4	4,527.8	0.00	0.00	0.00	
10,300.0	90.60	81.97	6,043.5	646.3	4,582.4	4,627.8	0.00	0.00	0.00	
10,400.0	90.60	81.97	6,042.4	660.3	4,681.4	4,727.7	0.00	0.00	0.00	
10,500.0	90.60	81.97	6,041.4	674.2	4,780.4	4,827.7	0.00	0.00	0.00	
10,600.0	90.60	81.97	6,040.3	688.2	4,879.4	4,927.7	0.00	0.00	0.00	
10,700.0	90.60	81.97	6,039.3	702.2	4,978.5	5,027.7	0.00	0.00	0.00	
10,800.0	90.60	81.97	6,038.2	716.1	5,077.5	5,127.7	0.00	0.00	0.00	
10,900.0	90.60	81.97	6,037.2	730.1	5,176.5	5,227.7	0.00	0.00	0.00	
11,000.0	90.60	81.97	6,036.1	744.1	5,275.5	5,327.7	0.00	0.00	0.00	
11,100.0	90.60	81.97	6,035.1	758.0	5,374.5	5,427.7	0.00	0.00	0.00	
11,200.0	90.60	81.97	6,034.0	772.0	5,473.5	5,527.7	0.00	0.00	0.00	
11,300.0	90.60	81.97	6,033.0	786.0	5,572.5	5,627.7	0.00	0.00	0.00	
11,400.0	90.60	81.97	6,032.0	799.9	5,671.6	5,727.7	0.00	0.00	0.00	
11,500.0	90.60	81.97	6,030.9	813.9	5,770.6	5,827.7	0.00	0.00	0.00	
11,600.0	90.60	81.97	6,029.9	827.9	5,869.6	5,927.7	0.00	0.00	0.00	
11,700.0	90.60	81.97	6,028.8	841.8	5,968.6	6,027.7	0.00	0.00	0.00	

ConocoPhillips or its affiliates

Planning Report

Database:	EDM Central Planning	Local Co-ordinate Reference:	Well Huerfano #1H - APD
Company:	ConocoPhillips SJBU	TVD Reference:	KB @ 6684 0ft (AWS920)
Project:	San Juan Basin - New Mexico West Wells	MD Reference:	KB @ 6684 0ft (AWS920)
Site:	Huerfano / Huerfano Wells	North Reference:	True
Well:	Huerfano #1H - APD	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Original Hole APD Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
11,800.0	90.60	81.97	6,027.8	855.8	6,067.6	6,127.7	0.00	0.00	0.00	
11,900.0	90.60	81.97	6,026.7	869.7	6,166.6	6,227.7	0.00	0.00	0.00	
12,000.0	90.60	81.97	6,025.7	883.7	6,265.6	6,327.7	0.00	0.00	0.00	
12,064.0	90.60	81.97	6,025.0	892.7	6,329.0	6,391.7	0.00	0.00	0.00	
4.5" Liner - Bottom Hole										

Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	N-S (ft)	E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Bottom Hole	- plan hits target center - Circle (radius 1.0)	0.00	0.00	6,025.0	892.7	6,329.0	2,001,157.02	484,256.34	36° 29' 59.064 N	107° 53' 12.834 W
LP	- plan misses target center by 83.4ft at 6872.9ft MD (6079.4 TVD, 167.7 N, 1189.1 E) - Circle (radius 1.0)	0.00	0.00	5,996.0	167.6	1,188.2	2,000,436.07	479,115.38	36° 29' 51.901 N	107° 54' 15.796 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
320.0	320.0	Surface Casing	9-5/8	12-1/4	
5,007.0	5,007.0	Int Casing	7	7	
12,064.0	6,025.0	4.5" Liner	4-1/2	6-1/8	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,810.0	3,810.0	Menefee		0.00		
4,894.0	4,894.0	Mancos		0.00		
1,549.0	1,549.0	Farmington Sands		0.00		
1,391.0	1,391.0	Kirtland		0.00		
3,081.0	3,081.0	Chacra		0.00		
1,734.0	1,734.0	Fruitland		0.00		
6,022.7	5,897.0	El Vado B		0.00		
1,186.0	1,186.0	Ojo Alamo		0.00		
5,727.9	5,689.0	El Vado		0.00		
3,768.0	3,768.0	Cliffhouse		0.00		
4,607.0	4,607.0	Point Lookout		0.00		
2,370.0	2,370.0	Lewis		0.00		
2,205.0	2,205.0	Picture Cliff		0.00		
2,590.0	2,590.0	Huerfano Bentonite		0.00		
5,851.6	5,784.0	El Vado A		0.00		
6,155.8	5,968.0	El Vado C		0.00		

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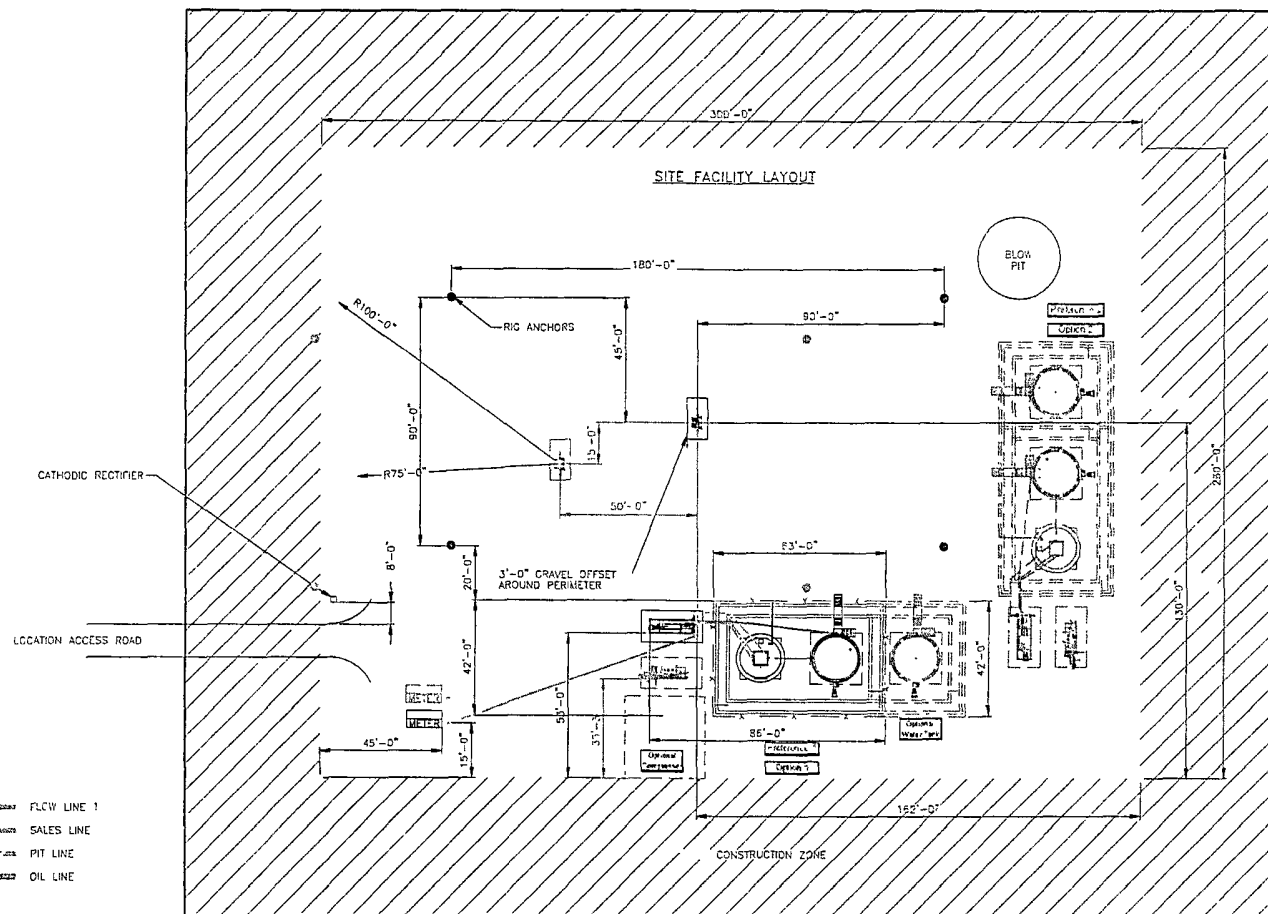
Planning Report



Database: EDM Central Planning
Company: ConocoPhillips SJB
Project: San Juan Basin - New Mexico West Wells
Site: Huerfano / Huerfanito Wells
Well: Huerfano #1H - APD
Wellbore: Original Hole
Design: Original Hole APD Plan #1

Local Co-ordinate Reference: Well Huerfano #1H - APD
TVD Reference: KB @ 6684 0ft (AWS920)
MD Reference: KB @ 6684 0ft (AWS920)
North Reference: True
Survey Calculation Method: Minimum Curvature

~~SUNSET 12:26:55 PM, gseeds~~



SEE SHEET 3 & 4 FOR PIPING DETAILS
ALL UNDERGROUND PIPE IS TO BE BURIED A MIN OF 3'-0" TOP

SHEET : 05

										CONOCO PHILLIPS HIGH PRESSURE 3 PHASE FACILITY DIAGRAM - SITE LAYOUT		
ENGINEERING REVIEW										REFERENCE DRAWINGS		
PROCESS MECHANICAL Piping ELECTRICAL										NO. DESCRIPTION		
CHV/STRUCTURAL PROJECT										SAN JUAN BUSINESS UNIT		
DESCRIPTION DATE BY CHK'D ENG DGC PRJ										SHEET NO. 1 OF 5 HP3PHASE-REV1		

pseeds. 3 \ps10C\psvoux LEF100\STD PRJ 0050 ARCHIVES\GES_Hr3phase-REV1_alt.dwg, 03/14/2012 - 12:20pm

BURLINGTON RESOURCES OIL & GAS COMPANY LP

HUERFANO UNIT HZMC #1H
645' FSL & 615' FWL
LOCATED IN THE SW/4 SW/4 OF SECTION 9,
T26N, R10W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM BLOOMFIELD, NM HWY 64 AND HWY 550 SOUTH, TRAVEL HWY 550 SOUTH 16 MILES TO CR 7225.
- 2) TURN LEFT AND TRAVEL CR 7225 1.2 MILES.
- 3) TURN RIGHT ON FIELD ROAD AND TRAVEL 0.6 MILES.
- 4) TURN LEFT AND TRAVEL 1537'.
- 5) TURN RIGHT AND TRAVEL 500' TO PROPOSED WELL LOCATION.

WELL FLAG LOCATED AT LAT: 36.49729° N, LONG. 107.90843° W (NAD 83).

JOB No.: COPC458
DATE: 03/26/12



Russell Surveying
1409 W. Aztec Blvd. #2
Aztec, New Mexico 87410
(505) 334-8637

BOPE & Choke Manifold Schematic

