Oil Cons.
N.M. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
SL NMLC 105887 BHL Fee

6. If Indian, Allotee or Tribe Name
N/A

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No.
N/A

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Orion Federal #3H <368057>

2. Name of Operator COG Operating, LLC <229137>

9. API Well No.
30-005-28001

3a. Address 550 West Texas, Suite 1300
Midland, TX 79701

3b. Phone No. *(include area code)*
(432)- 685-9158

10 Field and Pool, or Exploratory
Undesignated Wolfcamp

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface 660' FSL & 330' FEL, Unit P
At proposed prod. zone 660' FSL & 330' FWL, Unit M

DEC 12 2007
OCD-ARTESIA

11. Sec., T. R. M. or Blk. and Survey or Area
Section 13, T15S, R31E

14 Distance in miles and direction from nearest town or post office*
Approx 15 miles North of Maljamar, New Mexico

12. County or Parish
Chaves Co..

13. State
NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
330	640	160

18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19. Proposed Depth	20 BLM/BIA Bond No. on file
N/A	13450' MD 8925' TVD	NMB 000215

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
4358' GL	03/15/2008	45 Days

DEC 2007
Received
HOBBS
OCD

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
	Dwaine Moore	09/12/2007

Title
Agent for COG Operating LLC

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/S/ Angel Mayes	/S/ Angel Mayes	DEC 07 2007

Title	Office
Assistant Field Manager, Lands And Minerals	ROSWELL FIELD OFFICE

APPROVED FOR 2 YEARS

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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 representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED

If earthen pits are used is association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

EXHIBIT A

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-005-28001		Undesignated Wolfcamp

Property Code	Property Name	Well Number
36805	ORION FEDERAL Com	3H

OGRID No.	Operator Name	Elevation
229137	C.O.G. OPERATING L.L.C.	4358'

Surface Location

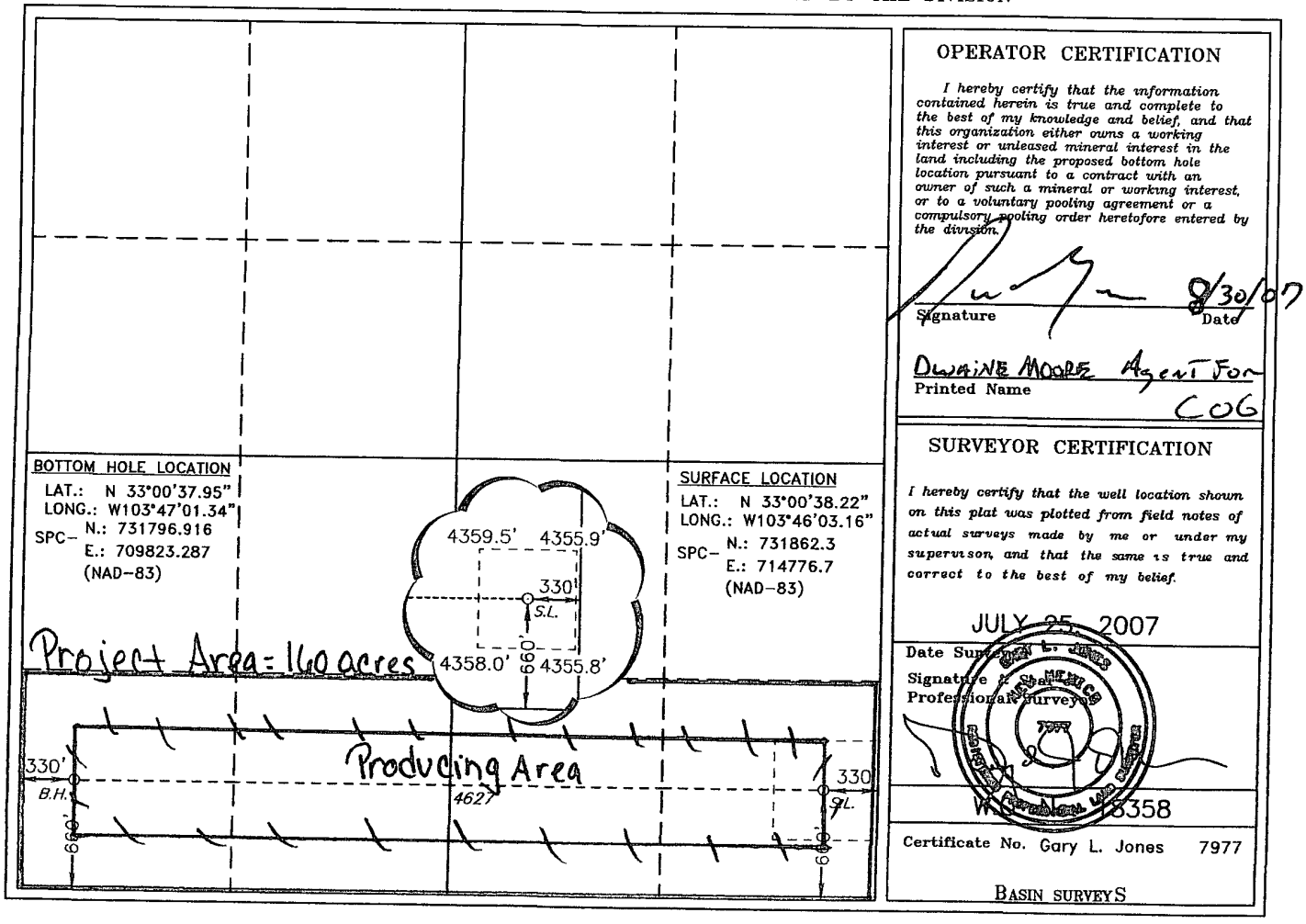
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	13	15 S	31 E		660	SOUTH	330	EAST	CHAVES

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	13	15 S	31 E		660	SOUTH	330	WEST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



OPERATOR CERTIFICATION

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 bottom hole 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.

Signature — Date 8/30/07

Dwaine Moore Agent For COG
Printed Name

SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

JULY 25, 2007
Date Surveyed

Signature & Seal of Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Orion Federal #3H
SL: 660' FSL & 330' FEL, Unit P
BHL: 660' FSL & 330' FWL, Unit M
Sec 13, T15S, R31E
Chaves County, NM

1. Proration Unit Spacing: 160 Acres

2. Ground Elevation: 4358'

3. Proposed Depths: Pilot hole TD = 9205', Horizontal TVD = 8925', MD = 13450'

4. Estimated tops of geological markers:

Quaternary	Surface
Yates	2480'
Queen	3290'
San Andres	4010'
Tubb	6840'
Abo	7570'
Wolfcamp	8905'

5. Possible mineral bearing formations:

Water sand	150'	Fresh Water
Yates	2480'	Oil / Gas
Queen	3290'	Oil / Gas
San Andres	4010'	Oil / Gas
Tubb	6840'	Oil / Gas
Abo	7570'	Oil / Gas
Wolfcamp	8905'	Oil / Gas

6. Casing Program - **Proposed**

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-400'	13-3/8"	48#	New	STC	H40
Collapse sf – 3.78, Burst sf – 7.20, Tension sf – 15.72						
12 1/4"	0' - 4000'	9-5/8"	40#	New	STC	J-55
Collapse sf – 1.285, Burst sf – 1.17, Tension sf – 3.25						
8-3/4"	0' – 8500'	5-1/2"	17#	New	LTC	P-110
Collapse sf – 1.754, Burst sf – 2.42, Tension sf – 2.94						
7-7/8"	8500' – 13450'	5-1/2"	17#	New	BTC	P-110
Collapse sf – 1.68, Burst sf – 2.39, Tension sf – 79.28						

7. Cement Program

13 3/8" Surf. Csg. Set at +/- 400', Circ to Surf with +/- 400 sx Class "C" w/ 2% CaCl2, 1.35 yd.

WITNESS

9 5/8" Intrmd. Csg. Set at +/- 4000'. Circ to Surf with +/- 800 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl2, 1.35 yd.

5 ½" Prod. Csg. Set at +/- 13450' MD. Cement casing with +/- 200 sx. 50/50/2 "C", 1.37 yd & +/- 900 sx Class "H", 1.18 yd. Est. TOC @ 8500'.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 800 psi w/ rig pump. After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester and used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 400'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
400'- 4000'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.
4000'- 7500'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
7500' - 13450'	9.5	36	10	Drill pilot hole, curve and horizontal section with XCD polymer / cut brine / starch.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Auxiliary Well Control and Monitoring Equipment

A. Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

11. Production Hole Drilling Summary:

Drill 8-3/4" Pilot hole thru Wolfcamp, run open hole logs. Spot 150 sx. "H" Kick off plug from +/- 9000' to +/-8500'. Time drill and kick off 7-7/8" hole at +/- 8500', building curve over +/- 475' to horizontal at 8925' TVD. Drill horizontal section in a westerly direction for +/-4500' lateral. Run production casing and cement.

12. Logging, Testing and Coring Program:

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.

B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.

C. Drill Stem test is not anticipated.

D. No conventional coring is anticipated.

E. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3865 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on March 15, 2008 with drilling and completion operations lasting approximately 45 days.

Pathfinder Energy
Planning Report

Company:	COG Operating Company LLC.	**Date:** 09/11/2007 **Time:** 14:04:13	**Page:** 1
Field:	Orion Federal	**Co-ordinate(NE) Reference:**	Site: Orion Federal #3H, Grid North
Site:	Orion Federal #3H	**Vertical (TVD) Reference:**	SITE 4379.0
Well:	Orion Federal #3H	**Section (VS) Reference:**	Well (0.00N,0.00E,269.42Azi)
Wellpath:	OH	**Plan:**	Plan #1 9-10-07

Field: Orion Federal

Map System:	US State Plane Coordinate System 1983	**Map Zone:**	New Mexico, Eastern Zone
Geo Datum:	GRS 1980	**Coordinate System:**	Site Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	igrf2005

Site: Orion Federal #3H

Site Position:		**Northing:**	731862.30 ft	**Latitude:**	33 0 38.173 N
From:	Map	**Easting:**	714776.70 ft	**Longitude:**	103 46 3.163 W
Position Uncertainty:	0.00 ft			**North Reference:**	Grid
Ground Level:	4358.00 ft			**Grid Convergence:**	0.31 deg

Well: Orion Federal #3H **Slot Name:**

Well Position:	+N/-S	0.00 ft	**Northing:**	731862.30 ft	**Latitude:**	33 0 38.173 N
	+E/-W	0.00 ft	**Easting:**	714776.70 ft	**Longitude:**	103 46 3.163 W
Position Uncertainty:		0.00 ft				

Wellpath: OH

Current Datum:	SITE	**Height**	4379.00 ft	**Drilled From:**	Surface
Magnetic Data:	09/10/2007			**Tie-on Depth:**	0.00 ft
Field Strength:	49495 nT			**Above System Datum:**	Mean Sea Level
Vertical Section:				**Declination:**	8.18 deg
				Mag Dip Angle:	60.99 deg

Depth From (TVD) ft	+N/-S ft	+E/-W ft	Direction deg
0.00	0.00	0.00	269.42

Plan: Plan #1 9-10-07

Principal:	No	**Date Composed:**	09/10/2007
		Version:	1
		Tied-to:	From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8447.00	0.00	0.00	8447.00	0.00	0.00	0.00	0.00	0.00	0.00	
9197.84	90.00	269.42	8925.00	-4.84	-477.98	11.99	11.99	0.00	269.42	
9230.17	90.97	269.42	8924.73	-5.17	-510.31	3.00	3.00	0.00	0.00	
9231.17	90.98	269.42	8924.71	-5.18	-511.30	1.00	0.92	-0.38	-22.47	
13310.44	90.98	269.42	8855.00	-46.73	-4589.76	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pathfinder Energy
Planning Report

Company:	COG Operating Company LLC.	**Date:** 09/11/2007 **Time:** 14:04:13	**Page:** 2
Field:	Orion Federal	**Co-ordinate(NE) Reference:** Site: Orion Federal #3H, Grid North	
Site:	Orion Federal #3H	**Vertical (TVD) Reference:** SITE 4379.0	
Well:	Orion Federal #3H	**Section (VS) Reference:** Well (0.00N,0.00E,269.42Azi)	
Wellpath:	OH	**Plan:** Plan #1 9-10-07	

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	0.00	0.00	
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pathfinder Energy
Planning Report

Company:	COG Operating Company LLC.	**Date:** 09/11/2007 **Time:** 14:04:13	**Page:** 3
Field:	Orion Federal	**Co-ordinate(NE) Reference:**	Site: Orion Federal #3H, Grid North
Site:	Orion Federal #3H	**Vertical (TVD) Reference:**	SITE 4379.0
Well:	Orion Federal #3H	**Section (VS) Reference:**	Well (0.00N,0.00E,269.42Azi)
Wellpath:	OH	**Plan:**	Plan #1 9-10-07

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	0.00	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	0.00	0.00	0.00	
8447.00	0.00	0.00	8447.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP @ 8447' MD, Begin Bui
8500.00	6.35	269.42	8499.89	-0.03	-2.94	2.94	11.99	11.99	0.00	
8600.00	18.34	269.42	8597.40	-0.25	-24.28	24.28	11.99	11.99	0.00	
8700.00	30.33	269.42	8688.35	-0.66	-65.40	65.41	11.99	11.99	0.00	
8800.00	42.31	269.42	8768.78	-1.26	-124.52	124.53	11.99	11.99	0.00	
8900.00	54.30	269.42	8835.17	-2.02	-199.05	199.06	11.99	11.99	0.00	
9000.00	66.29	269.42	8884 64	-2.89	-285.75	285.76	11.99	11.99	0.00	
9100.00	78.27	269.42	8915.02	-3.86	-380.82	380.84	11.99	11.99	0.00	
9197.84	90.00	269.42	8925.00	-4.84	-477.98	478.00	11 99	11.99	0.00	EOC @ 9198' MD, 8925' TVD
9200.00	90.06	269.42	8925.00	-4.86	-480.13	480.16	3.00	3.00	0.00	
9230.17	90.97	269.42	8924.73	-5.17	-510.31	510.33	3.00	3.00	0.00	
9231.17	90.98	269.42	8924.71	-5.18	-511.30	511.33	1.00	0.92	-0.38	EOB @ 9231' MD, 90.98° IN
9300.00	90.98	269.42	8923.53	-5.88	-580.12	580.15	0.00	0 00	0.00	
9400.00	90.98	269.42	8921.82	-6.90	-680.10	680.13	0.00	0.00	0.00	
9500.00	90.98	269.42	8920.12	-7.91	-780.08	780.12	0.00	0.00	0.00	
9600.00	90.98	269.42	8918.41	-8.93	-880.06	880.10	0.00	0.00	0.00	
9700.00	90.98	269.42	8916.70	-9.95	-980.04	980.09	0.00	0.00	0.00	
9800.00	90.98	269.42	8914.99	-10.97	-1080.02	1080.07	0.00	0 00	0.00	
9900.00	90.98	269.42	8913.28	-11.99	-1180.00	1180.06	0.00	0.00	0.00	
10000.00	90.98	269.42	8911.57	-13.01	-1279.98	1280.05	0.00	0.00	0.00	
10100.00	90.98	269.42	8909.86	-14.03	-1379.96	1380.03	0.00	0.00	0.00	
10200.00	90.98	269.42	8908.15	-15.05	-1479.94	1480.02	0.00	0.00	0.00	
10300.00	90.98	269.42	8906.44	-16.06	-1579.92	1580.00	0.00	0.00	0.00	
10400.00	90.98	269.42	8904.74	-17.08	-1679.90	1679.99	0.00	0.00	0.00	
10500.00	90.98	269.42	8903.03	-18.10	-1779.88	1779.97	0.00	0.00	0.00	
10600.00	90.98	269.42	8901.32	-19.12	-1879.86	1879.96	0.00	0.00	0.00	
10700.00	90.98	269.42	8899.61	-20.14	-1979.84	1979.94	0.00	0.00	0.00	
10800.00	90.98	269.42	8897.90	-21.16	-2079.82	2079.93	0.00	0.00	0.00	
10900.00	90.98	269.42	8896.19	-22.18	-2179.80	2179.91	0.00	0.00	0.00	
11000.00	90.98	269.42	8894.48	-23.20	-2279.78	2279.90	0.00	0.00	0.00	
11100.00	90.98	269.42	8892.77	-24.21	-2379.76	2379.88	0.00	0.00	0.00	
11200.00	90.98	269.42	8891.06	-25.23	-2479.74	2479.87	0.00	0.00	0.00	
11300.00	90.98	269.42	8889.36	-26.25	-2579.72	2579.86	0.00	0.00	0.00	
11400.00	90.98	269.42	8887.65	-27.27	-2679.70	2679.84	0.00	0.00	0.00	
11500.00	90.98	269.42	8885.94	-28.29	-2779.68	2779.83	0.00	0.00	0.00	
11600.00	90.98	269.42	8884.23	-29.31	-2879.66	2879.81	0.00	0.00	0.00	
11700.00	90.98	269.42	8882.52	-30.33	-2979.64	2979.80	0.00	0.00	0.00	

Pathfinder Energy
Planning Report

Company:	COG Operating Company LLC.	**Date:** 09/11/2007 **Time:** 14:04:13	**Page:** 4
Field:	Orion Federal	**Co-ordinate(NE) Reference:**	Site: Orion Federal #3H, Grid North
Site:	Orion Federal #3H	**Vertical (TVD) Reference:**	SITE 4379.0
Well:	Orion Federal #3H	**Section (VS) Reference:**	Well (0.00N,0.00E,269.42Azi)
Wellpath:	OH	**Plan:**	Plan #1 9-10-07

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
11800.00	90.98	269.42	8880.81	-31.35	-3079.62	3079.78	0.00	0.00	0.00	
11900.00	90.98	269.42	8879.10	-32.36	-3179.60	3179.77	0.00	0.00	0.00	
12000.00	90.98	269.42	8877.39	-33.38	-3279.58	3279.75	0.00	0.00	0.00	
12100.00	90.98	269.42	8875.68	-34.40	-3379.56	3379.74	0.00	0.00	0.00	
12200.00	90.98	269.42	8873.98	-35.42	-3479.54	3479.72	0.00	0.00	0.00	
12300.00	90.98	269.42	8872.27	-36.44	-3579.52	3579.71	0.00	0.00	0.00	
12400.00	90.98	269.42	8870.56	-37.46	-3679.50	3679.69	0.00	0.00	0.00	
12500.00	90.98	269.42	8868.85	-38.48	-3779.48	3779.68	0.00	0.00	0.00	
12600.00	90.98	269.42	8867.14	-39.50	-3879.46	3879.67	0.00	0.00	0.00	
12700.00	90.98	269.42	8865.43	-40.51	-3979.44	3979.65	0.00	0.00	0.00	
12800.00	90.98	269.42	8863.72	-41.53	-4079.43	4079.64	0.00	0.00	0.00	
12900.00	90.98	269.42	8862.01	-42.55	-4179.41	4179.62	0.00	0.00	0.00	
13000.00	90.98	269.42	8860.30	-43.57	-4279.39	4279.61	0.00	0.00	0.00	
13100.00	90.98	269.42	8858.60	-44.59	-4379.37	4379.59	0.00	0.00	0.00	
13200.00	90.98	269.42	8856.89	-45.61	-4479.35	4479.58	0.00	0.00	0.00	
13300.00	90.98	269.42	8855.18	-46.63	-4579.33	4579.56	0.00	0.00	0.00	
13310.44	90.98	269.42	8855.00	-46.73	-4589.76	4590.00	0.00	0.00	0.00	PBHL

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----> Deg	Min	Sec	<--- Longitude ---> Deg	Min	Sec
PBHL			8855.00	-46.73	-4589.76	731815.57	710186 94	33	0	37.951 N	103	46	57.065 W

Annotation

MD ft	TVD ft	
8447.00	8447.00	KOP @ 8447' MD, Begin Build @ 11.99°/100'
9197.84	8925.00	EOC @ 9198' MD, 8925' TVD, Begin Build @ 3°/100'
9231.17	8924.71	EOB @ 9231' MD, 90.98° INC
13310.43	8855.00	TD @ 13310' MD

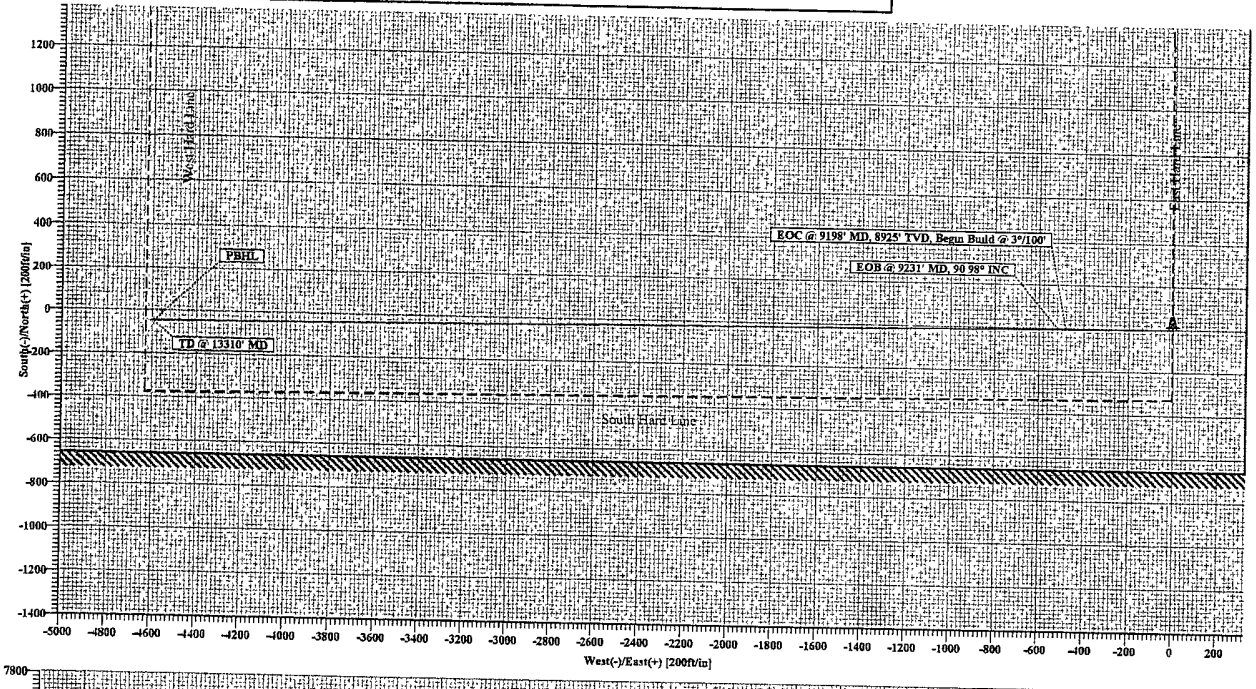
COG Operating Company LLC.

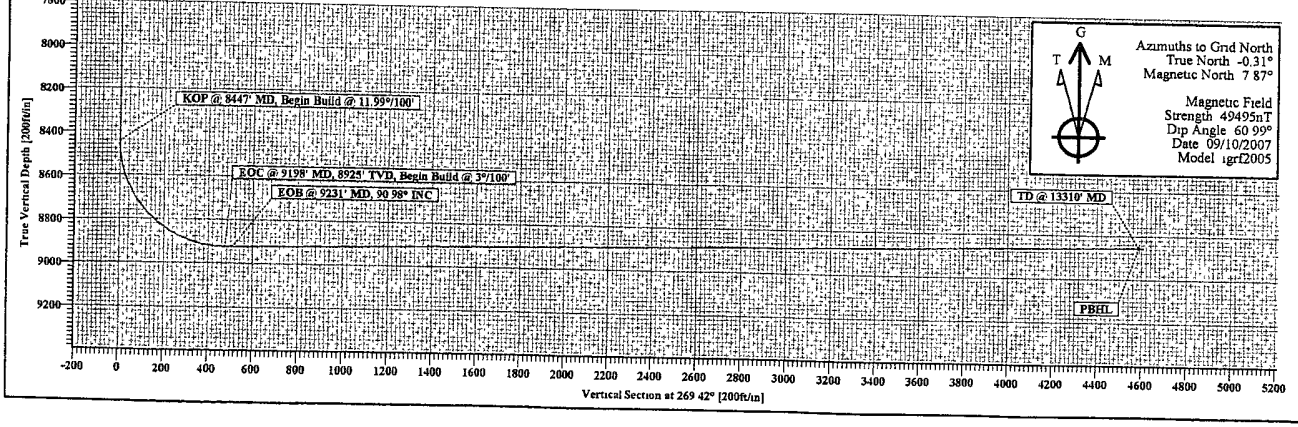
PATHFINDER

Field: Orion Federal
Site: Orion Federal #3H
Well: Orion Federal #3H
Wellpath: OH
Plan: Plan #1 9-10-07

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0.00	0 00	0 00	0 00	0 00	0 00	0 00	
2	8447 00	0 00	0 00	8447.00	0.00	0.00	0 00	0 00	0 00	
3	9197.84	90.00	269.42	8925.00	-4 84	-477 98	11 99	269 42	478 00	
4	9230 17	90.97	269 42	8924 73	-5 17	-510 31	3 00	0 00	510 33	
5	9231.17	90.98	269 42	8924 71	-5 18	-511 30	1 00	-22 47	511 32	
6	13310 44	90 98	269 42	8855.00	-46 73	-4589 76	0 00	0 00	4590 00	PBHL





SITE DETAILS

Orion Federal #3H

Site Centre Northing 731862 30
Easting: 714776 70

Ground Level 4358 00
Positional Uncertainty 0.00
Convergence 0 31

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
PBHL	8855 00	-46 73	-4589 76	Point

WELLPATH DETAILS

OH

Rig
Ref. Datum SITE 4379 00ft

V.Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD
269 42°	0 00	0 00	0 00

ANNOTATIONS

No	TVD	MD	Annotation
1	8447 00	8447 00	KOP @ 8447' MD, Begin Build @ 11 99°/100'
2	8925.00	9197 84	EOC @ 9198' MD, 8925' TVD, Begin Build @ 3°/100'
3	8924 71	9231 17	EOB @ 9231' MD, 90 98° INC
4	8855 00	13310 43	TD @ 13310' MD

Plan: Plan #1 9-10-07 (Orion Federal #3H/OH)
Created By: Dusk Crocker Date: 09/10/2007

SURFACE USE AND OPERATIONS PLAN
FOR DRILLING, COMPLETION, AND PRODUCING

C.O.G. Operating, LLC
Orion Federal Com #3H
SL: 660' FSL & 330' FEL, Unit P
BHL: 660' FSL & 330' FWL, Unit M
Sec 13, T15S, R31E
Chaves County, New Mexico

LOCATED

Approximately 15 miles North of Maljamar, New Mexico

OIL & GAS LEASE

SL: NMLC #105887
BHL: Fee

RECORD TITLE LESSEE

SL: Chesapeake Exploration LP, P O Box 18496, Oklahoma City, OK 73154-0496
Harvey E. Yates Co. PO Box 1933, Roswell, NM 88202-1933
BHL: FEE

BOND COVERAGE

$25,000 statewide bond of C.O.G. Operating, L.L.C.

SURFACE OWNER

Billy & Donna Medlin P.O. Box 50 Maljamar, NM 88264 1-505-676-4121

MINERAL OWNER

Bureau of Land Management

POOL

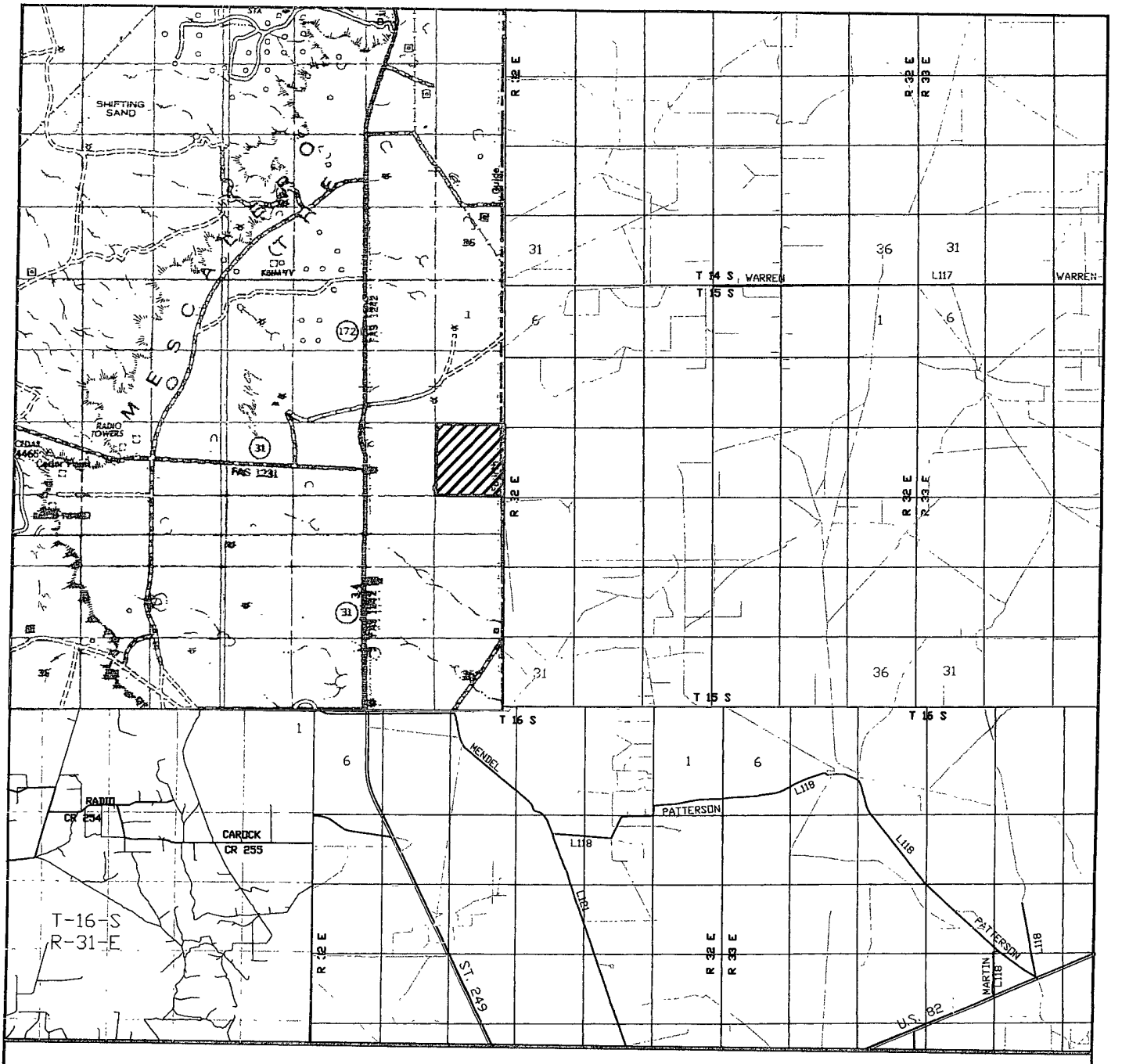
Undesignated Wolfcamp

PROPOSED TOTAL DEPTH

This well will be drilled to a Total Vertical Depth of approximately 8925' and a Measured Depth of approximately 13,450'.

A surface use agreement has been made with Mr. Medlin. and COG Operation LLC.

EXHIBIT D



ORION FEDERAL #3H
Located at 660' FSL and 330 FEL
Section 13, Township 15 South, Range 31 East,
N.M.P.M., Chaves County, New Mexico.

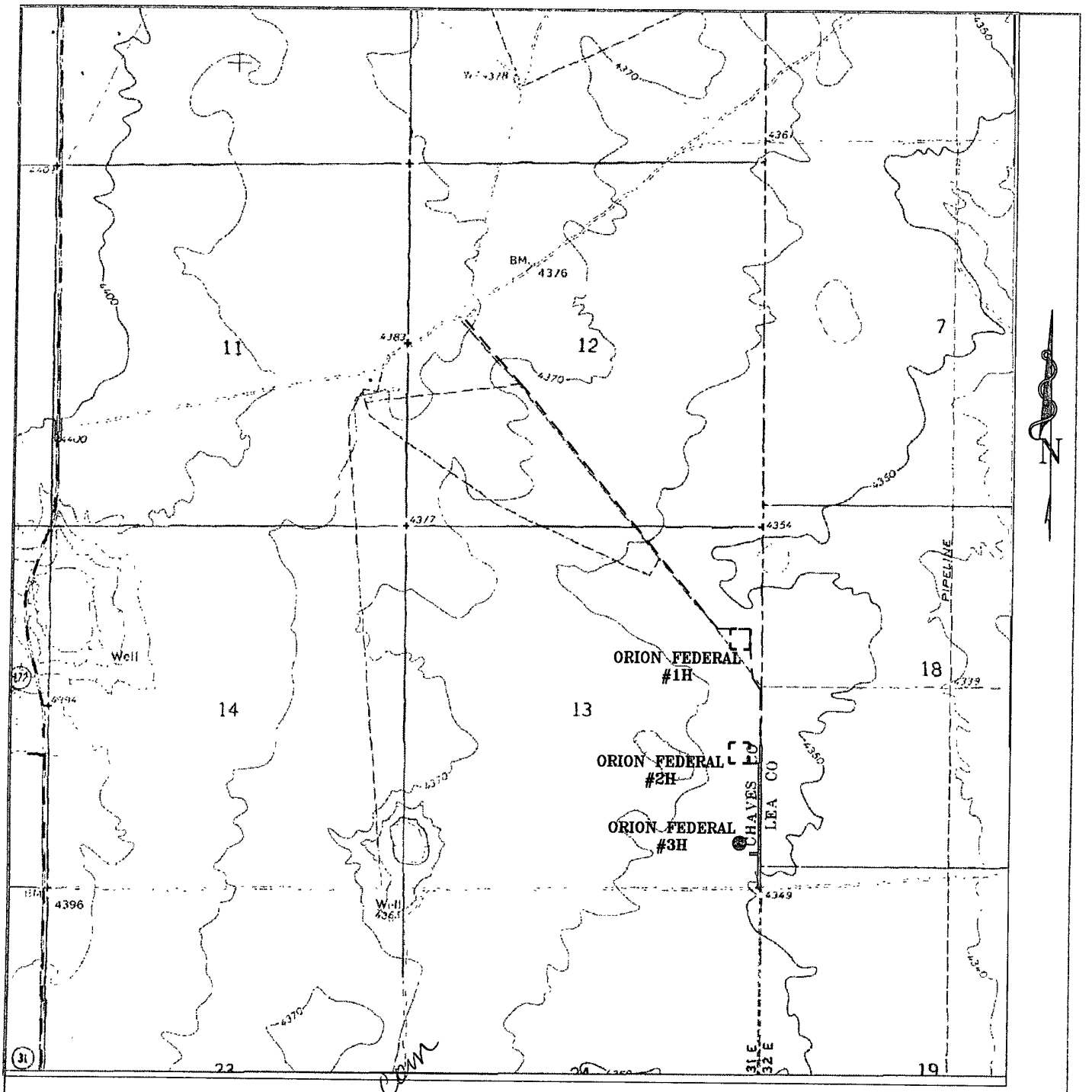
Basin Surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	JMS 18358TR
Survey Date:	07-25-2007
Scale:	1" = 2 MILES
Date:	07-30-2007

C.O.G. OPERATING L.L.C.

Exhibit "D"



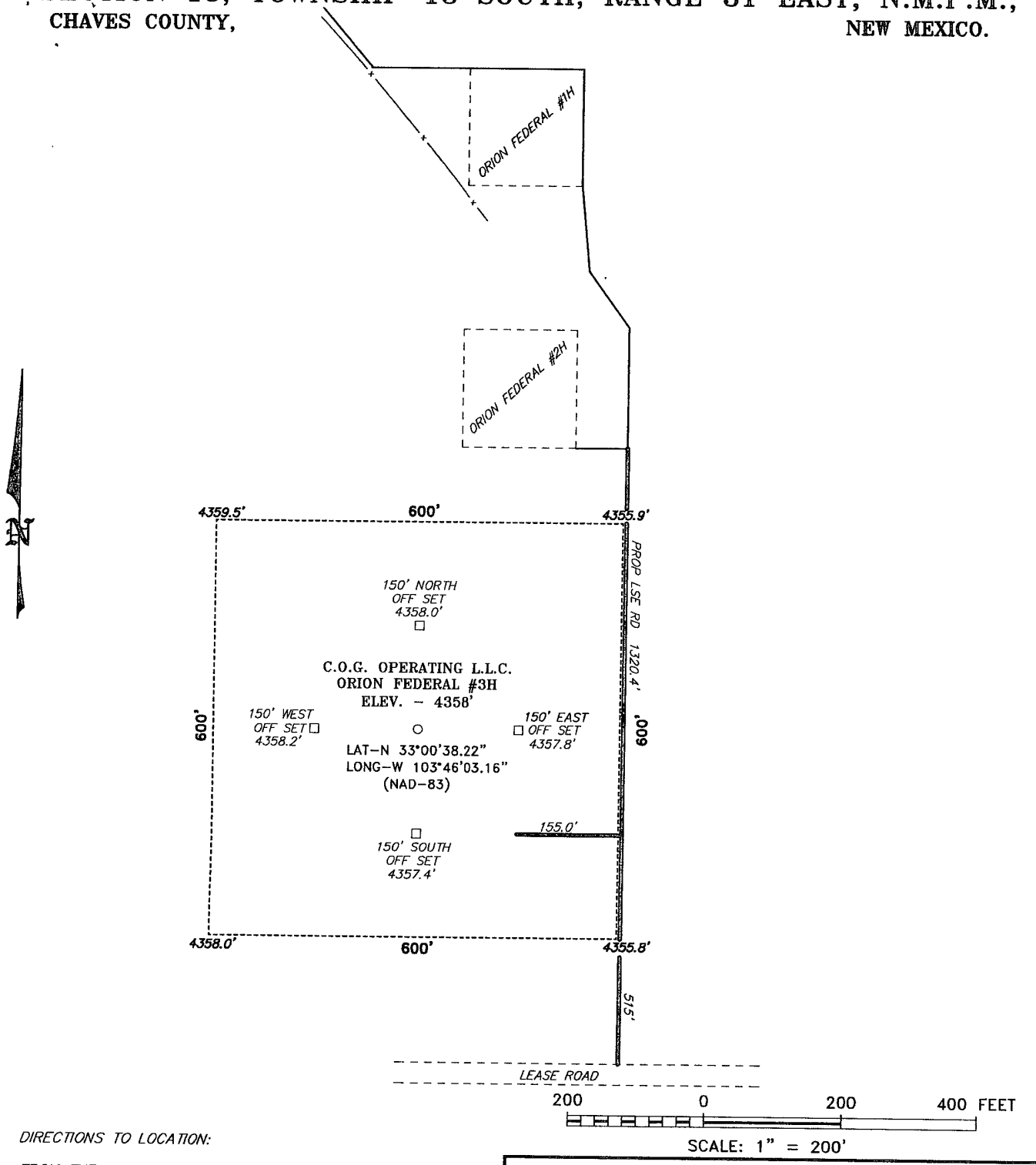
ORION FEDERAL #3H
Located at 660' FSL and 330 FEL
Section 13, Township 15 South, Range 31 East,
N.M.P.M., Chaves County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	JMS 18358T
Survey Date.	07-25-2007
Scale:	1" = 2000'
Date:	07-30-2007

C.O.G. OPERATING L.L.C.

SECTION 13, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.,
CHAVES COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF US. HWY 82 AND STATE HWY 249, GO NORTH 11.0 MILES TO CO. RD. 172, CONTINUE NORTH ON CO. RD. 172 FOR 0.9 MILES TO RANCH ROAD, FOLLOW RANCH ROAD EASTERLY 1.3 MILES TO PROPOSED LEASE ROAD.

C.O.G. OPERATING L.L.C.

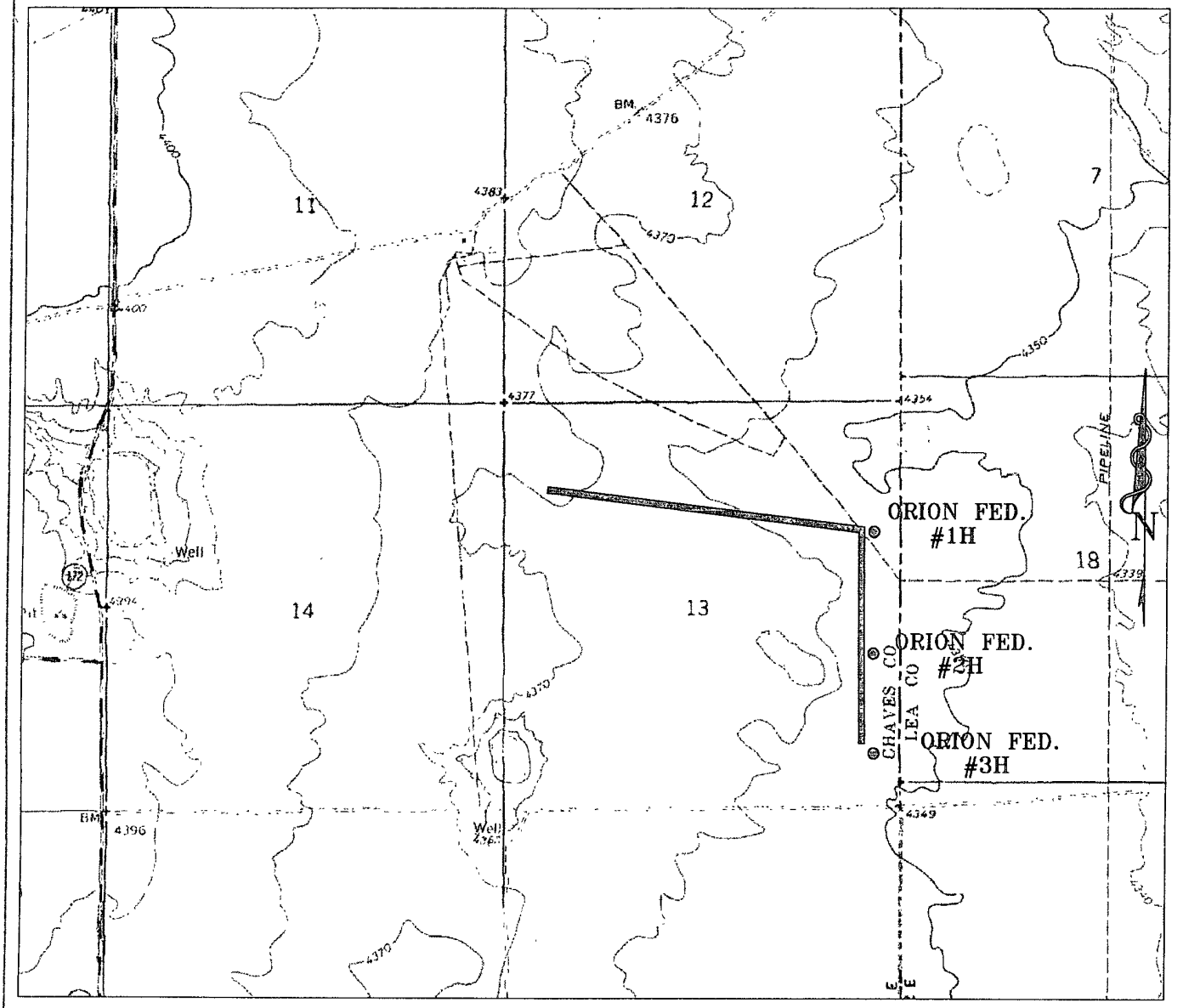
REF: ORION FEDERAL #3H / Well Pad Topo

THE ORION FEDERAL #3H LOCATED 660' FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF SECTION 13, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M., CHAVES COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 18358	Drawn By: J. M. SMALL		
Date: 07-30-2007	Disk: JMS 18358W	Survey Date: 07-25-2007	Sheet 1 of 1 Sheets

Exhibit "F-1"



PROPOSED ELECTRIC LINE FOR THE COG ORION FED. 1H, 2H, AND 3H.

Section 13, Township 15 South, Range 31 East, N.M.P.M. Chaves County, New Mexico.

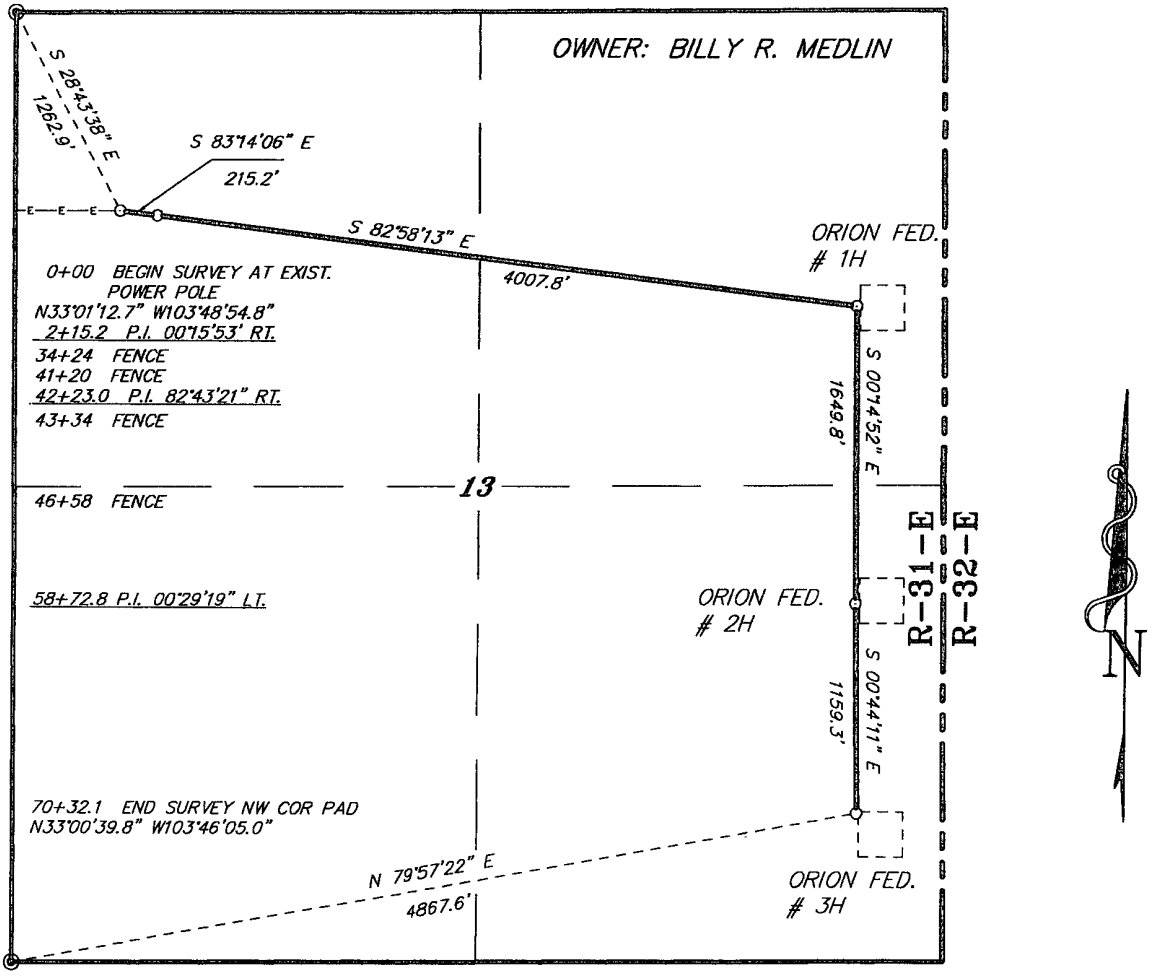
basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number: 18479
Survey Date: 08/23/07
Scale: 1" = 2000'
Date: 08/27/07

COG OPERATING, LLC.

SECTION 13, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M.,
CHAVES COUNTY, **NEW MEXICO.**



LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 13, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M., CHAVES COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES S.28°43'38"E., 1262.9 FEET FROM THE NORTHWEST CORNER OF SAID SECTION 13; THENCE S.83°14'06"E., 215.2 FEET; THENCE S.82°58'13"E., 4007.8 FEET; THENCE S.00°14'52"E., 1649.8 FEET; THENCE S.00°44'11"E., 1159.3 FEET TO THE END THIS LINE WHICH LIES N.79°57'22"E., 4867.6 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 13. SAID STRIP OF LAND BEING 7032.1 FEET OR 426.19 RODS IN LENGTH.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, NEW MEXICO P.S. No. 7977
TEXAS R.P.L.S. No. 5074

1000 0 1000 2000 FEET

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

COG OPERATING, LLC.

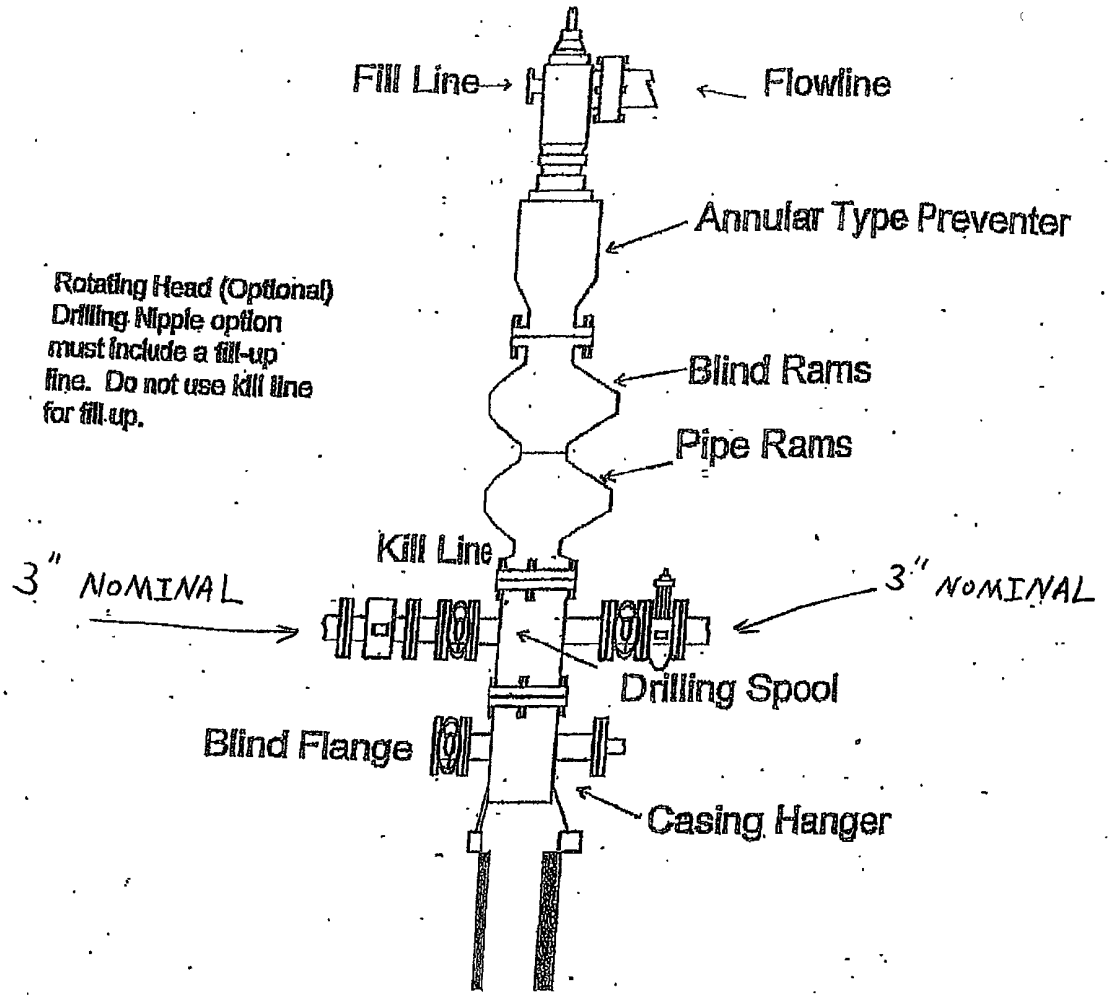
REF: PROPOSED ELEC. LINE FOR THE ORION WELLS

A PIPELINE CROSSING FEE LAND IN
SECTION 13, TOWNSHIP 15 SOUTH, RANGE 31 EAST,
N.M.P.M., CHAVES COUNTY, NEW MEXICO.

W.O. Number: 18479	Drawn By: James Presley		
Date: 08/27/07	Disk: JLP #1 – COG18479	Survey Date: 08/23/07	Sheet 1 of 1 Sheets

Exhibit "I"

BOPE SCHEMATIC

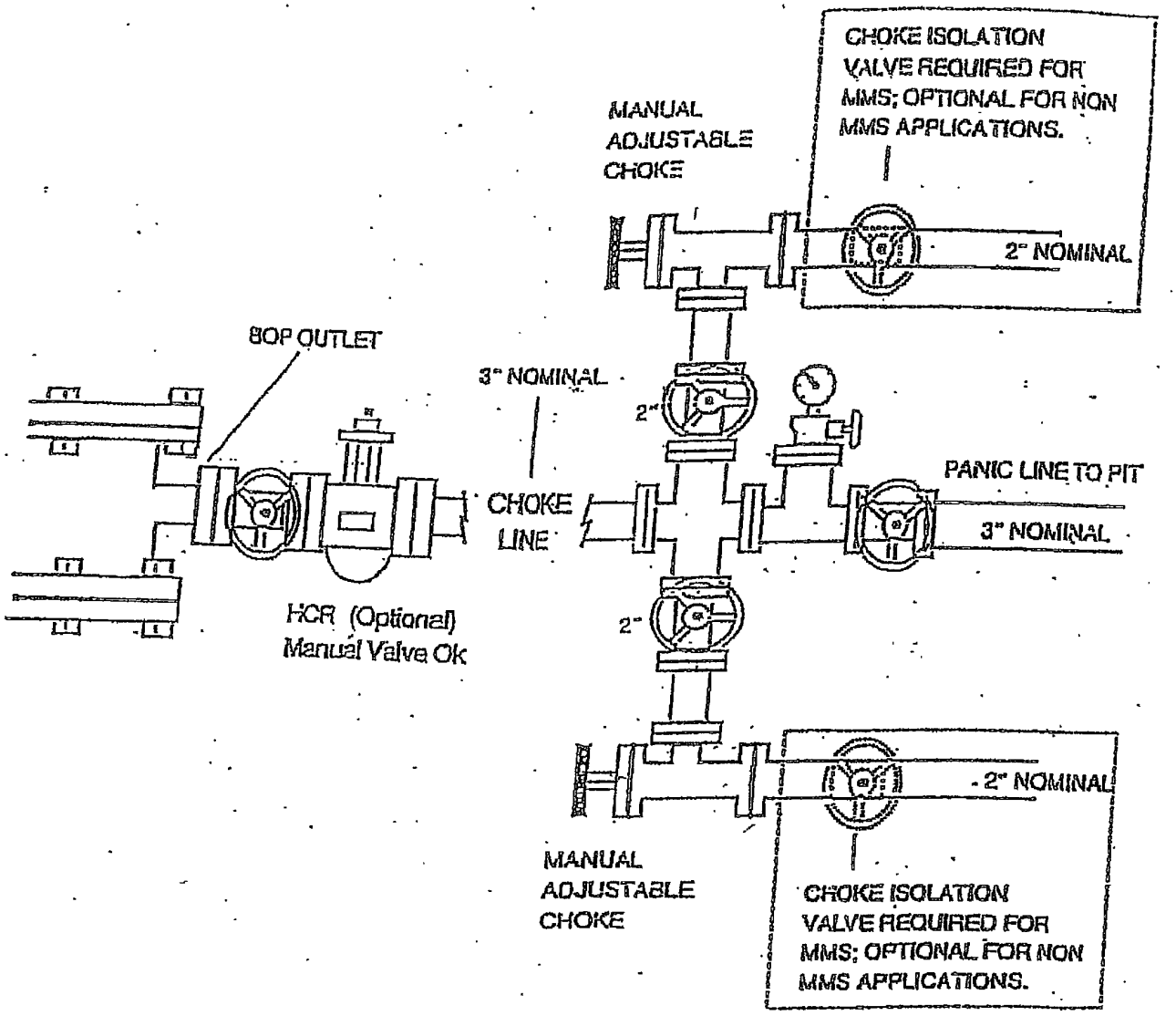


900 SERIES

Exhibit "J"

CHOKE MANIFOLD

3M SERVICE



PECOS DISTRICT - RFO
CONDITIONS OF APPROVAL

OPERATORS NAME: **COG Operating, LLC**
LEASE NO.: **NM-105887**
WELL NAME & NO: **Orion Federal Com. #3H**
SURFACE HOLE FOOTAGE: **660' FSL & 330' FEL**
BOTTOM HOLE FOOTAGE: **660' FSL & 330' FWL**
LOCATION: **Section 13, T. 15 S., R. 31 E., NMPM**
COUNTY: **Chaves County, New Mexico**

GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

I. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD (Filing of a Sundry Notice is required for this 60 day extension).

II. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

III. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations (access road and/or well pad). Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

IV. CONSTRUCTION

A. NOTIFICATION:

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Roswell Field Office at (505) 627-0247 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved Application for Permit to Drill and Conditions of Approval on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL:

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation. The topsoil shall be stockpile in the southwest corner of the well pad.

C. RESERVE PITS:

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 160' X 160' on the NORTH side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

D. FEDERAL MINERAL MATERIALS PIT:

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Roswell Field Office at (505) 627-0236.

E. WELL PAD SURFACING:

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational need.

F. ON LEASE ACCESS ROADS:

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

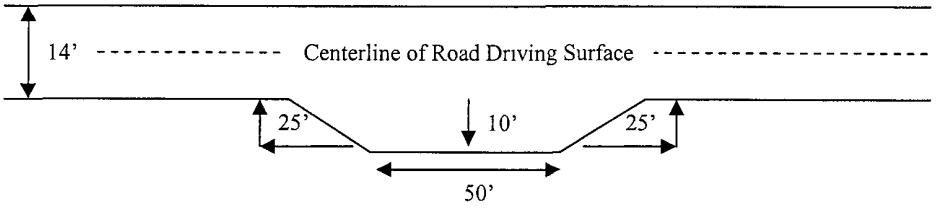
Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

Standard Turnout – Plan View

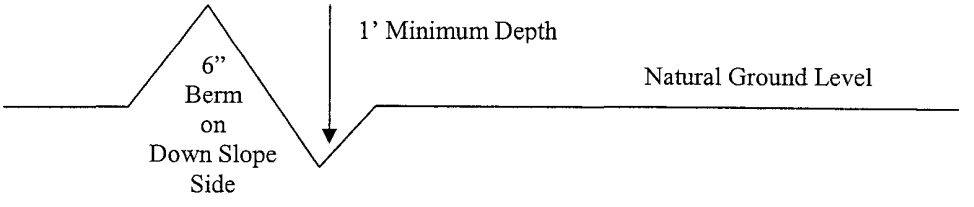


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section Of Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula For Spacing Interval Of Lead-off Ditches

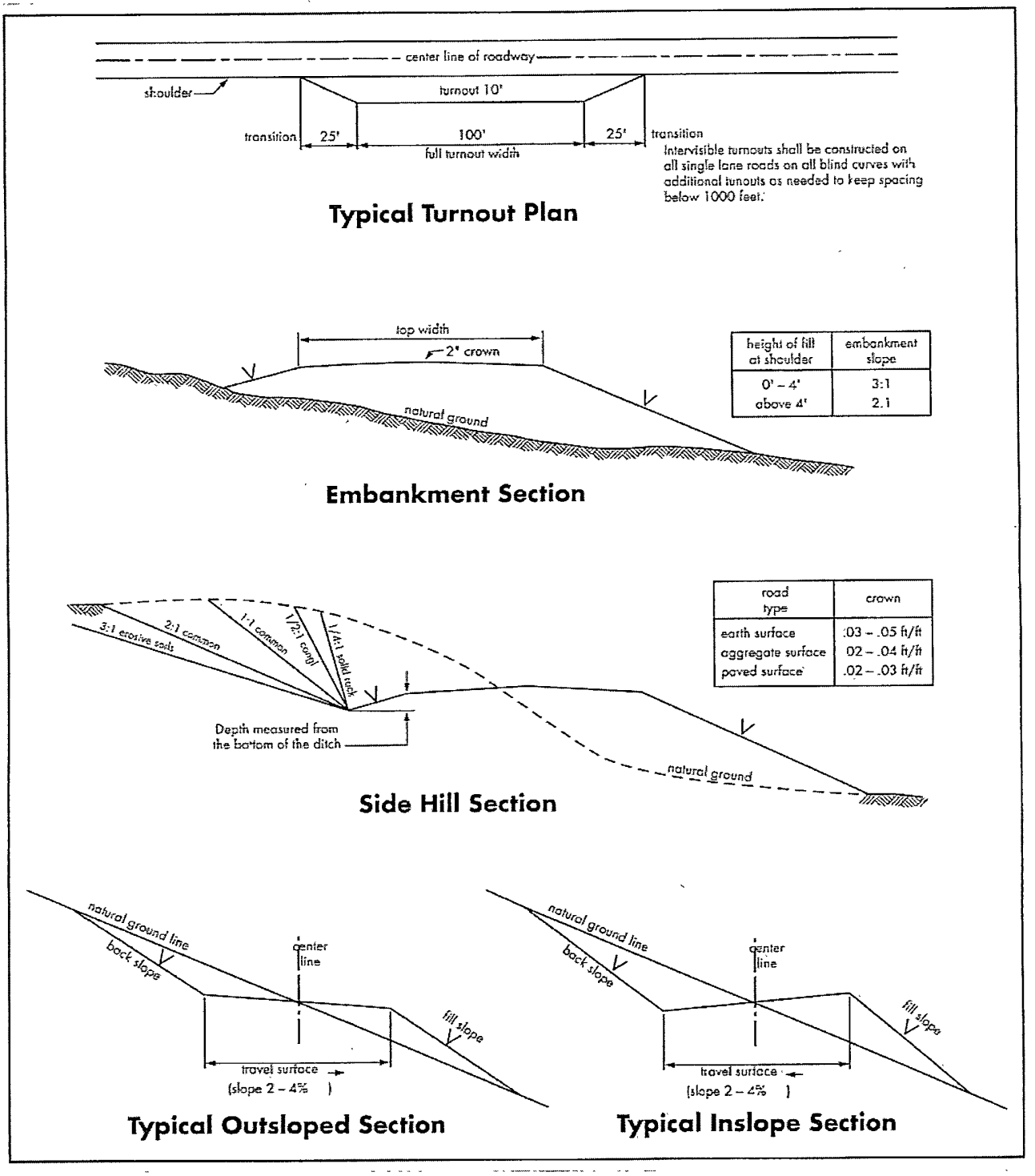
Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



V. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

BLM, Roswell Field Office, 2909 West Second St., Roswell NM 88201. 24 hour (575) 627-0205

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

d. Spudding well
e. Setting and/or Cementing of all casing strings
f. BOPE tests

5. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the San Andres formation, top expected to be about 3890 ft. Place H2S plan into operations at or before spud.

6. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

7. When floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

4. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

A. CASING

2. The 13⅜ inch surface casing shall be set at 400 feet and cemented to the surface.

e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

f. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, whichever is greater. (This is to include the lead cement).

g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.

h. If cement falls back, remedial action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 9 ⅝ inch intermediate casing is to circulate to surface . If cement does not circulate see B.1.a-d above.

3. The minimum required fill of cement behind the 5 1/2 inch production casing is tie back to liner top .

   g. If cement does not circulate, contact the appropriate BLM office for approval of remedial action.

   h. If cement is required to tie-back into previous casing string, a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

5. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

6. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 2000 (2M) psi.

7. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9 ⅝ intermediate casing shoe shall be 2000 (2M) psi.

8. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   g. The tests shall be done by an independent service company.

   h. The results of the test shall be reported to the appropriate BLM office.

   i. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

j. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

k. BOP/BOPE must be tested by an independent service company before drilling out of the 9 ⅝ inch shoe. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

l. A variance to test the surface casing and BOP/BOPE to the reduced pressure of 800 psi with the rig pumps is approved.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

4. Recording pit level indicator to indicate volume gains and losses.

5. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.

6. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

VI. PRODUCTION

C. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Olive Drab, Munsell Soil Color Chart 18-0622 TPX.**

VII. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo "interim" reclamation in order to minimize the environmental impacts of development on other resources and uses.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used in road repairs, fire walls or for building other roads and locations. In addition, in order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

B. RESERVE PIT CLOSURE

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Ecological Site: Sandy HP-3 for Shallow HP-3

Common Name and Preferred Variety	Scientific Name	Pounds of Pure Live Seed Per Acre
Blue grama, var. Lovington	*(Bouteloua gracilis)*	2.00 lb.
Sideoats grama var. Vaughn or El Reno	*(Bouteloua curtipendula)*	3.00 lbs.
Little bluestem	*(Schizachyrium scoparium)*	0.50 lb.
Sand dropseed	*(Sporobolus cryptandrus)*	1.00 lb.
Plains bristlegrass	*(Setaria macrostachya)*	1.00 lb.
Indian blanketflower	*(Gaillardia aristata)*	0.50 lb.
Desert or Scarlet Globemallow *or S. coccinea)*	*(Sphaeralcea ambigua)*	1.00 lb.
TOTAL POUNDS PURE LIVE SEED (pls) PER ACRE		9.00 lbs.

IF ONE SPECIES IS NOT AVAILABLE, INCREASE ALL OTHERS PROPORTIONATELY.
No less than four (4) species, including one (1) forb. No less than 9.0 pounds pls per acre shall be applied. Certified Weed Free Seed.

VIII. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the Private Surface Land Owner agreements.