JUN 10 2009
OCD-ARTESIA

RM

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

5 Lease Serial No
NMNM 100844 & NMNM 95630

6. If Indian, Allottee or Tribe Name

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

1 Type of Well
☑ Oil Well ☐ ☐ ☐ Gas Well ☐☐ ☐ Other

8. Well Name and No.
Comet 22 Federal #3

2 Name of Operator **COG Operating LLC**

9 API Well No.
30-015-35821

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

3b Phone No *(include area code)*
432-685-4340

10. Field and Pool, or Exploratory Area
Crow Flats, Wolfcamp

4 Location of Well *(Footage, Sec., T., R., M., or Survey Description)*

SURFACE: 1980' FNL & 330' FWL
Section 22, T16S, R28E, UL E

BHL: 1980' FNL & 330' FEL
Section 22, T16S, R28E, UL H

11. County or Parish, State
Eddy County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other **Chg pool, casing & cementing program**
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13 Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG respectfully requests permission:

to change Field and Pool from Wolfcamp to Crow Flats Abo; ← SUBJECT TO LIKE APPROVAL BY STATE
to change proposed Casing & Cement Program;
to change Pilot Hole TD to 6800' MD;
to submit a revised Directional Plan;
for a variance to the 200' minimum tie back in order to set the pump as close to the formation as possible. The curve and horizontal are all located in the Abo Formation.

Jaqui Reeves
NMOCD Geologist

Attached is a revised plat and revised Form 3160-3 Drill Plan with changes reflected in shaded areas.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14 I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)* **Phyllis A. Edwards** Title **Regulatory Analyst**

Signature Phyllis A. Edwards Date **10/09/2008**

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title _____ Date JUN 8 2009

Conditions of approval, if any, are attached. Approval of this notice 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 Office

WESLEY W. INGRAM
PETROLEUM ENGINEER

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.

(Instructions on page 2)

MR

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	
	97681	Crow Flats	ABO
Property Code	**Property Name**		**Well Number**
36629	COMET "22" FEDERAL		3
OGRID No.	**Operator Name**		**Elevation**
229137	C.O.G. OPERATING L.L.C.		3611'

Surface Location

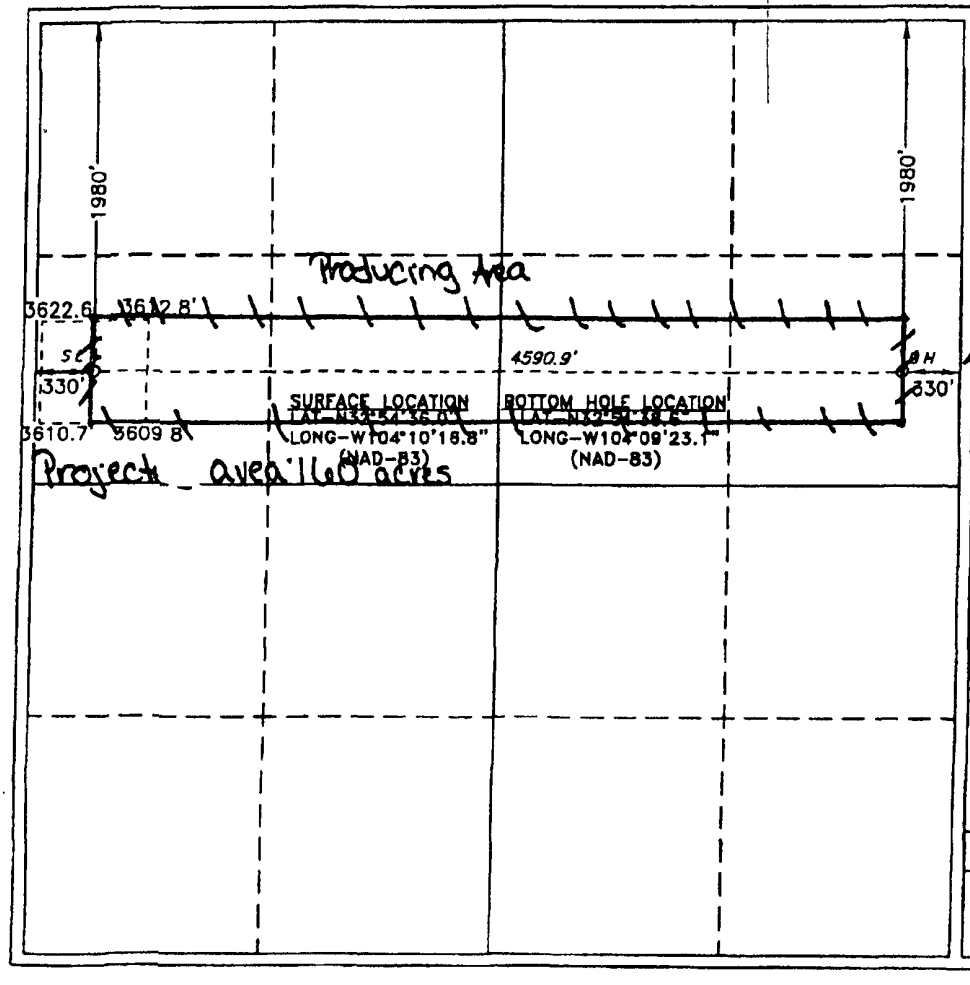
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	22	16 S	28 E		1980	NORTH	330	WEST	EDDY

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
H	22	16 S	28 E		1980	NORTH	330	EAST	EDDY

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.

7/25/07
Signature Date

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

APRIL 11, 2007
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

ATTACHMENT TO FORM 3160-3
COG Operating
Comet "22" Federal # 3
SL: 1980' FNL & 330' FWL, Unit E
BHL: 1980' FNL & 330' FEL, Unit H
Sec 22, T16S, R28E
Eddy County, NM

REVISED 10/08/2008

1. Proration Unit Spacing: 160 Acres

2. Ground Elevation: 3611'

3. Proposed Depths: Pilot Hole TD = 6800'; Horizontal TVD = 6590'; Horizontal MD = 11000'

4. Estimated tops of geological markers:

Quaternary	Surface
Yates	390'
Queens	1020'
San Andres	1950'
Glorietta	3370'
Abo	5400'
Top Basal Abo	6530'

5. Possible mineral bearing formations:

Water Sand	Fresh Water	150'
San Andres	Oil / Gas	1950'
Glorietta	Oil / Gas	3370'
Abo	Oil / Gas	5400'
Top Basal Abo	Oil / Gas	6530'

6. Casing Program:

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-500'	13-3/8"	48#	New	STC	H40
Collapse sf - 2.98, Burst sf – 2.33, Tension sf – 13.42						
12 1/4"	0' - 1800'	9-5/8"	40#	New	STC	J-55
Collapse sf - 2. 86, Burst sf – 1.42, Tension sf – 7.22						
8-3/4"	0' – +/-6050'MD	7"	26#	New	LTC	P-110
Collapse sf - 2. 18, Burst sf – 1.53, Tension sf – 4.37						
6-1/8"	5950' – +/-11000'MD	4-1/2"	11.6#	New	LTC	P-110
Collapse sf – 2.47, Burst sf – 1.64, Tension sf – 4.48						

7. Cement Program: See COA

13 3/8" Surf Csg Set at +/- 500', Circ to Surf with +/- 500 sx Class "C" w/ 2% CaCl2, 1.35 yd.

9 5/8" Intrmd Csg Set at +/- 1800'. Circ to Surf with +/- 600 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl2, 1.35 yd.

7" Production Casing set at +/- 6050' MD, Cement with +/- 500 sx. 50/50/10 "C", 2.45 yd & +/- 200 sx Class "H", 1.18 yd., Est. TOC @ 200'minimum tie back into intermediate casing.

4 ½" Production Liner set from +/- 5950' to +/-11000' MD, 6590' TVD, Liner run with +/- 5 isolation Packers and Sliding sleeves in un-cemented Lateral.

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 1000 psi ~~w/ rig pump.~~ See COA

After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester, this equipment will be 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' - 500'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
500 '- 1800'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.
1800' – 6800'	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.
6050' - 11150'	9.5	36	10	Drill 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. Production Hole Drilling Summary:

See COA

Drill 8-3/4" pilot hole thru Top Basal Abo to +/- 6800' MD, run open hole logs. Spot 350 sx. "H" Kick off plug from +/- 6600' to +/-5950'. Dress off to 6050' and set 7" production casing. Drill 6-1/8" hole and kick off at +/- 6200', building curve over +/- 350' to horizontal at 6550' TVD. Drill horizontal section in an easterly direction for +/-4500' lateral to TD at +/-11000' MD 6590' TVD. Run 4-1/2" production liner in Open hole lateral and set isolation packers and liner top packer @ +/- 5950' MD

ATTACHMENT TO FORM 3160-3
COG Operating
Comet "22" Federal # 3
Page 3 of 3

11. 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.

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 Pilot hole to 9 5/8" casing shoe.

    B. Drill Stem test is not anticipated.

    C. No conventional coring is anticipated.

    D. Further testing procedures will be determined after the 4 ½" production liner packers have been installed 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 110 degrees and estimated maximum bottom hole pressure is 2945 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 November 1, 2008 with drilling and completion operations lasting approximately 90 days.

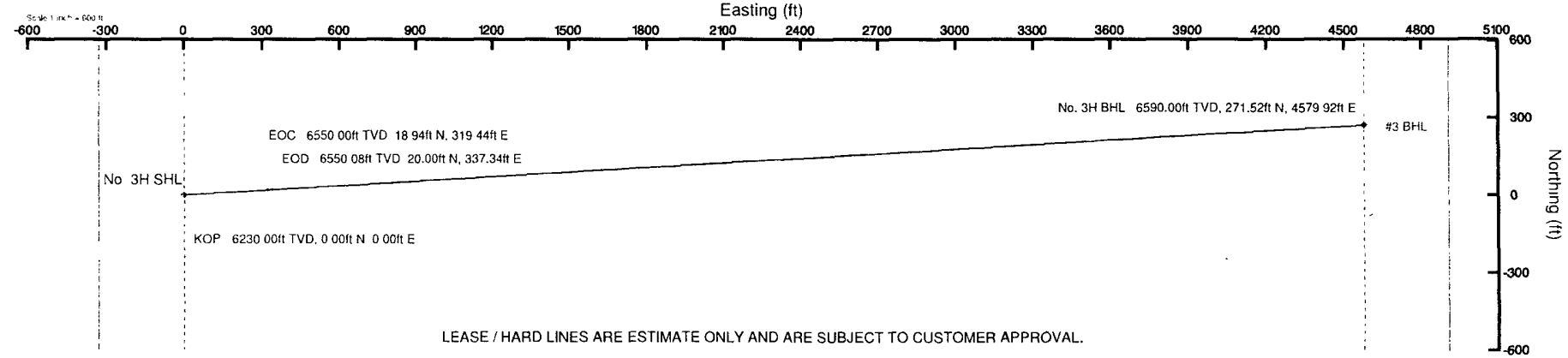
Concho O&G

Location	Eddy County, NM	Slot	No. 3H SHL
Field	Section 22 T16S R28E (Comet)	Well	No. 3H
Facility	Comet 22 Federal #3	Wellbore	No. 3H PWB

BAKER HUGHES INTEQ

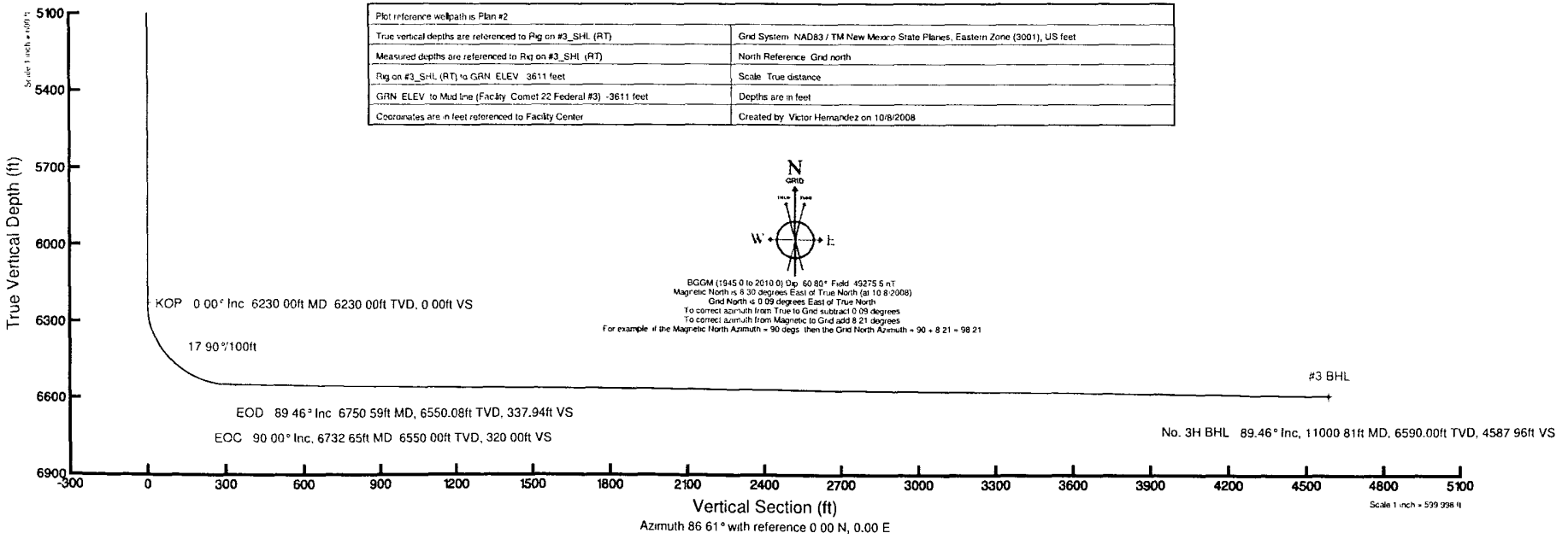
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	86.607	0.00	0.00	0.00	0.00	0.00
KOP	6230.00	0.000	86.607	6230.00	0.00	0.00	0.00	0.00
EOC	6732.65	90.000	86.607	6550.00	18.94	319.44	17.90	320.00
EOD	6750.59	89.462	86.607	6550.08	20.00	337.34	3.00	337.94
No. 3H BHL	11000.81	89.462	86.607	6590.00	271.52	4579.92	0.00	4587.96



LEASE / HARD LINES ARE ESTIMATE ONLY AND ARE SUBJECT TO CUSTOMER APPROVAL.

Plot reference wellpath is Plan #2	
True vertical depths are referenced to Rig on #3_SHL (RT)	Grid System NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on #3_SHL (RT)	North Reference Grid north
Rig on #3_SHL (RT) to GRN ELEV 3611 feet	Scale True distance
GRN ELEV to Mud line (Facility Comet 22 Federal #3) -3611 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by Victor Hernandez on 10/8/2008



BGGM (1945 0 to 2010 0) Dip 60 80° Field 49275 5 nT
Magnetic North is 8 30 degrees East of True North (at 10 8 2008)
Grid North is 0 09 degrees East of True North
To correct azimuth from True to Grid subtract 0 09 degrees
To correct azimuth from Magnetic to Grid add 8 21 degrees
For example if the Magnetic North Azimuth = 90 degs then the Grid North Azimuth = 90 + 8 21 = 98 21

Planned Wellpath Report

Plan #2

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**Section 22 T16S R28E (Comet)**	Wellbore	**No. 3H PWB**
Facility	**Comet 22 Federal #3**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 2.0**
North Reference	**Grid**	User	**Victor Hernandez**
Scale	**0.999912**	Report Generated	**10/8/2008** at **10:21:49 AM**
Convergence at slot	**0.09° East**	Database/Source file	**WA_Midland/No._3H_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[USft]**	**Northing[USft]**	**Latitude**	**Longitude**
Slot Location	**0.00**	**0.00**	591060.23	694827.74	32°54'35.972"N	104°10'16.719"W
Facility Reference Pt			**591060.23**	**694827.74**	32°54'35.972"N	104°10'16.719"W
Field Reference Pt			**591052.32**	**692055.85**	32°54'08.544"N	104°10'16.861"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on #3_SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Facility Center**	Rig on #3_SHL (RT) to GRN. ELEV.	**3611.00ft**
Vertical Reference Pt	**Rig on #3_SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on #3_SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**GRN. ELEV.**	Section Azimuth	**86.61°**

Planned Wellpath Report

Plan #2

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**Section 22 T16S R28E (Comet)**	Wellbore	**No. 3H PWB**
Facility	**Comet 22 Federal #3**		

WELLPATH DATA (52 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	86.607	0.00	0.00	0.00	0.00	0.00	Tie On
6230.00	0.000	86.607	6230.00	0.00	0.00	0.00	0.00	KOP
6330.00†	17.905	86.607	6328.38	15.50	0.92	15.47	17.90	
6430.00†	35.810	86.607	6417.23	60.49	3.58	60.39	17.90	
6530.00†	53.715	86.607	6487.95	130.62	7.73	130.39	17.90	
6630.00†	71.620	86.607	6533.68	219.10	12.97	218.71	17.90	
6730.00†	89.525	86.607	6549.99	317.35	18.78	316.79	17.90	
6732.65	90.000	86.607	6550.00	320.00	18.94	319.44	17.90	EOC
6750.59	89.462	86.607	6550.08	337.94	20.00	337.34	3.00	EOD
6830.00†	89.462	86.607	6550.83	417.34	24.70	416.61	0.00	
6930.00†	89.462	86.607	6551.77	517.34	30.62	516.43	0.00	
7030.00†	89.462	86.607	6552.71	617.33	36.54	616.25	0.00	
7130.00†	89.462	86.607	6553.65	717.33	42.45	716.07	0.00	
7230.00†	89.462	86.607	6554.59	817.32	48.37	815.89	0.00	
7330.00†	89.462	86.607	6555.53	917.32	54.29	915.71	0.00	
7430.00†	89.462	86.607	6556.46	1017.31	60.21	1015.53	0.00	
7530.00†	89.462	86.607	6557.40	1117.31	66.13	1115.35	0.00	
7630.00†	89.462	86.607	6558.34	1217.31	72.04	1215.17	0.00	
7730.00†	89.462	86.607	6559.28	1317.30	77.96	1314.99	0.00	
7830.00†	89.462	86.607	6560.22	1417.30	83.88	1414.81	0.00	
7930.00†	89.462	86.607	6561.16	1517.29	89.80	1514.63	0.00	
8030.00†	89.462	86.607	6562.10	1617.29	95.71	1614.45	0.00	
8130.00†	89.462	86.607	6563.04	1717.28	101.63	1714.27	0.00	
8230.00†	89.462	86.607	6563.98	1817.28	107.55	1814.09	0.00	
8330.00†	89.462	86.607	6564.92	1917.28	113.47	1913.91	0.00	
8430.00†	89.462	86.607	6565.86	2017.27	119.39	2013.73	0.00	
8530.00†	89.462	86.607	6566.80	2117.27	125.30	2113.56	0.00	
8630.00†	89.462	86.607	6567.73	2217.26	131.22	2213.38	0.00	
8730.00†	89.462	86.607	6568.67	2317.26	137.14	2313.20	0.00	
8830.00†	89.462	86.607	6569.61	2417.25	143.06	2413.02	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**Section 22 T16S R28E (Comet)**	Wellbore	**No. 3H PWB**
Facility	**Comet 22 Federal #3**		

WELLPATH DATA (52 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8930.00†	89.462	86.607	6570.55	2517.25	148.98	2512.84	0.00	
9030.00†	89.462	86.607	6571.49	2617.24	154.89	2612.66	0.00	
9130.00†	89.462	86.607	6572.43	2717.24	160.81	2712.48	0.00	
9230.00†	89.462	86.607	6573.37	2817.24	166.73	2812.30	0.00	
9330.00†	89.462	86.607	6574.31	2917.23	172.65	2912.12	0.00	
9430.00†	89.462	86.607	6575.25	3017.23	178.57	3011.94	0.00	
9530.00†	89.462	86.607	6576.19	3117.22	184.48	3111.76	0.00	
9630.00†	89.462	86.607	6577.13	3217.22	190.40	3211.58	0.00	
9730.00†	89.462	86.607	6578.07	3317.21	196.32	3311.40	0.00	
9830.00†	89.462	86.607	6579.00	3417.21	202.24	3411.22	0.00	
9930.00†	89.462	86.607	6579.94	3517.20	208.16	3511.04	0.00	
10030.00†	89.462	86.607	6580.88	3617.20	214.07	3610.86	0.00	
10130.00†	89.462	86.607	6581.82	3717.20	219.99	3710.68	0.00	
10230.00†	89.462	86.607	6582.76	3817.19	225.91	3810.50	0.00	
10330.00†	89.462	86.607	6583.70	3917.19	231.83	3910.32	0.00	
10430.00†	89.462	86.607	6584.64	4017.18	237.74	4010.14	0.00	
10530.00†	89.462	86.607	6585.58	4117.18	243.66	4109.96	0.00	
10630.00†	89.462	86.607	6586.52	4217.17	249.58	4209.78	0.00	
10730.00†	89.462	86.607	6587.46	4317.17	255.50	4309.60	0.00	
10830.00†	89.462	86.607	6588.40	4417.17	261.42	4409.42	0.00	
10930.00†	89.462	86.607	6589.34	4517.16	267.33	4509.24	0.00	
11000.81	89.462	86.607	6590.00[1]	4587.96	271.52	4579.92	0.00	No 3H BHL

HOLE & CASING SECTIONS Ref Wellbore: No. 3H PWB Ref Wellpath: Plan #2

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
6.125in Open Hole	6230.00	11000.81	4770.81	6230.00	NA	0.00	0.00	NA	NA

Planned Wellpath Report

Plan #2

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**Section 22 T16S R28E (Comet)**	Wellbore	**No. 3H PWB**
Facility	**Comet 22 Federal #3**		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) #3 BHL	11000.81	6590.00	271.52	4579.92	**595639.74**	**695099.24**	32°54'38.586"N	104°09'22.993"W	point

SURVEY PROGRAM Ref Wellbore: No. 3H PWB Ref Wellpath: Plan #2

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	11000.81	NaviTrak (Standard)		No. 3H PWB

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**COG Operating LLC**
LEASE NO.:	**NMNM 100844 & NMNM 95630**
WELL NAME & NO.:	**Comet 22 Federal 3**
SURFACE HOLE FOOTAGE:	**1980' FNL & 0330' FWL**
BOTTOM HOLE FOOTAGE	**1980' FNL & 0330' FEL**
LOCATION:	**Section 22, T. 16 S., R 28 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. 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.

3. Floor controls are required for 3M or Greater systems. These 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.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.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 compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High cave/karst.
Possible lost circulation in the Grayburg and San Andres formations.
Possible high pressure gas bursts in the Wolfcamp – applies to Pilot Hole.

1. The **13-3/8"** inch surface casing shall be set **in the Tansill formation at approximately 500 feet** and cemented to the surface.

    a. 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.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

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

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

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

Pilot hole must have a plug at the bottom of the hole. Plug to be a minimum of 170' in length, must extend a minimum of 50' above the top of the Wolfcamp and must be tagged. Contact BLM a minimum of 4 hours prior to tag. Tag to be reported on subsequent sundry with details about casing. Operator has the option of setting one solid plug from base of pilot hole to kickoff point.

3. The minimum required fill of cement behind the **7** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   ☒ No cement required – operator using liner system with packers and sliding sleeves. **Tie back of 100' for the packer liner system approved.**

5. 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.

C. PRESSURE CONTROL

1. 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.

2. 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.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **3000 (3M)** psi.

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

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

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

    c. 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.

    d. 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.

    e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2. – **Applies to pilot hole.**

    f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

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. - **Applies to pilot hole.**

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

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