

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, 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, NM 87505

Form C-144 CLEZ
July 21, 2008

For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOCD District Office.

Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

Type of action: Permit Closure

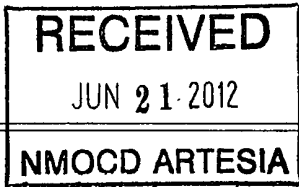
Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: COG OPERATING LLC OGRID #: 229137
Address: 550 WEST TEXAS, SUITE 100 MIDLAND, TX 79701
Facility or well name: BIG GIRL 31 STATE #11H
API Number: 30-015-40410 OCD Permit Number: 213105
U/L or Qtr/Qtr UL M Section 31 Township 17S Range 28 E County: EDDY
Center of Proposed Design: Latitude N/A Longitude N/A NAD: 1927 1983
Surface Owner: Federal State Private Tribal Trust or Indian Allotment

2.
 Closed-loop System: Subsection H of 19.15.17.11 NMAC
Operation Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) P&A
 Above Ground Steel Tanks or Haul-off Bins

3.
Signs: Subsection C of 19.15.17.11 NMAC
 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
 Signed in compliance with 19.15.3.103 NMAC



4.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
 Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
 Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
 Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
 Previously Approved Design (attach copy of design) API Number: _____
 Previously Approved Operating and Maintenance Plan API Number: _____

5.
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)
Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.
Disposal Facility Name: CRI Disposal Facility Permit Number: R1966
Disposal Facility Name: GM INC Disposal Facility Permit Number: 711-019-001
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?
 Yes (If yes, please provide the information below) No
Required for impacted areas which will not be used for future service and operations:
 Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
 Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
 Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6.
Operator Application Certification:
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Kelly J. Holly Title: Permitting Tech
Signature: Date: 06/20/2012
e-mail address: kholly@concho.com Telephone: 432-685-4384

7. **OCD Approval:** Permit Application (including closure plan) Closure Plan (only)

OCD Representative Signature: J R Wade Approval Date: 06/25/2012

Title: Disposal Supervisor OCD Permit Number: 213105

8. **Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

Closure Completion Date: _____

9. **Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

Yes (If yes, please demonstrate compliance to the items below) No

Required for impacted areas which will not be used for future service and operations:

- Site Reclamation (Photo Documentation)
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique

10. **Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

DISTRICT I
1625 N. French Dr., Hobbs, NM 88249
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-	Pool Code 96836	Pool Name Red Lake; Glorieta Yeso, Northeast
Property Code	Property Name BIG GIRL 31 STATE	Well Number 11H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3668'

Surface Location


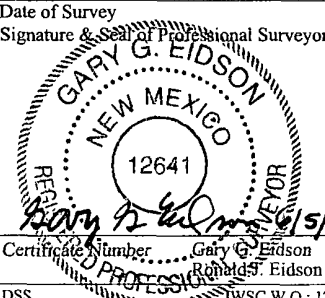
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	31	17-S	28-E		615	SOUTH	10	WEST	EDDY

Bottom Hole Location If Different From Surface

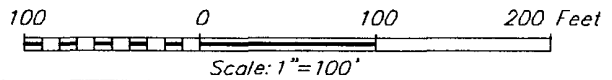
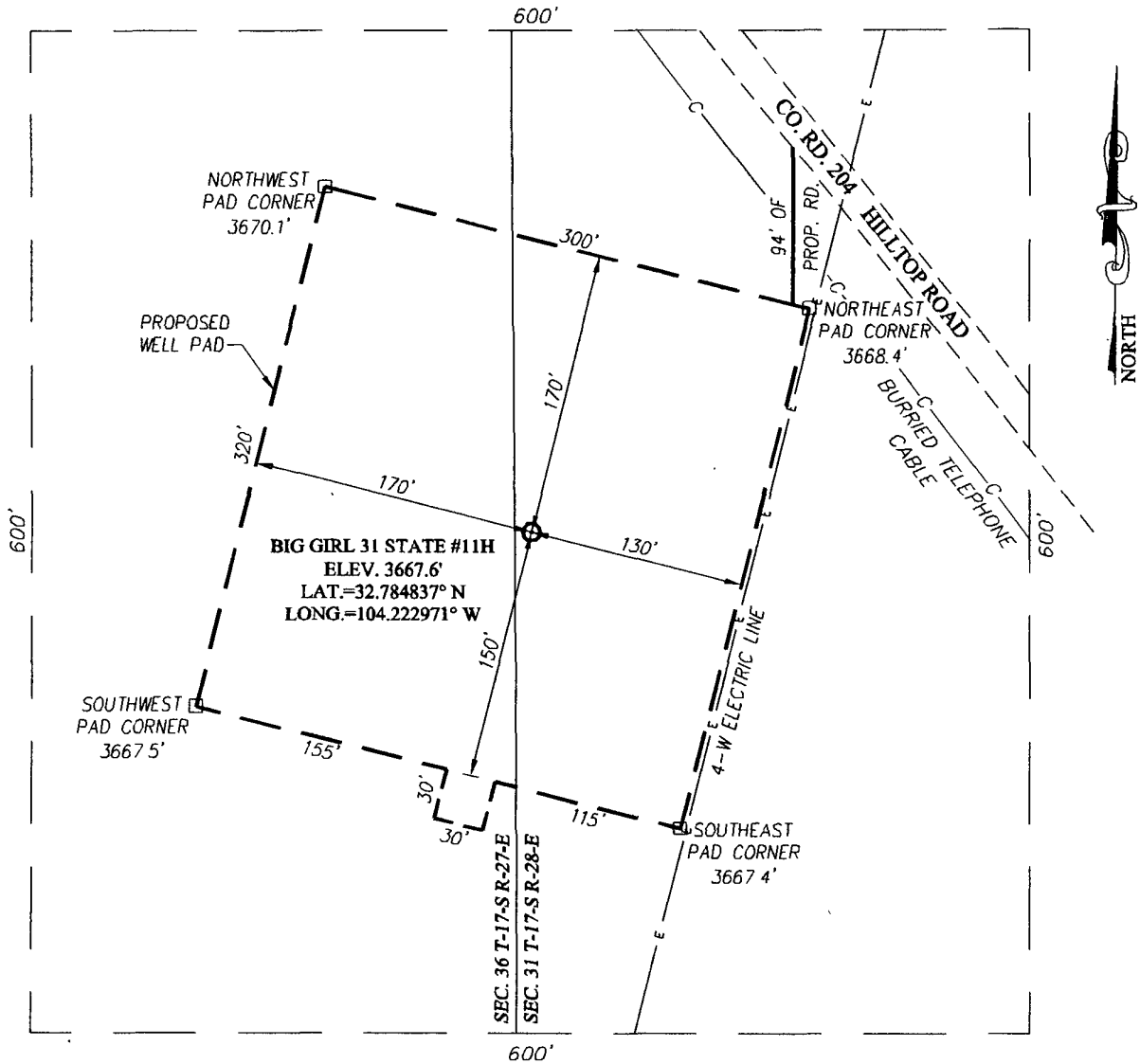
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	31	17-S	28-E		330	SOUTH	330	EAST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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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


<p>LOT 1</p>	<p>CORNER COORDINATES TABLE</p> <p>A) Y=649958.1 N, X=533903.0 E</p> <p>B) Y=650045.8 N, X=539213.6 E</p> <p>C) Y=648637.2 N, X=533910.6 E</p> <p>D) Y=648742.8 N, X=539234.0 E</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information 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 or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division</p> <p> 6-19-12 Signature Date</p> <p>Kelly J. Holly Printed Name</p> <p>kholly@concho.com E-mail Address</p>
<p>LOT 2</p>	<p>GEODETTIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=649252.3 N X=533917.0 E</p>	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>MAY 19, 2012</p>
<p>LOT 3</p> <p>Estimated Completed Interval: 603 FSL + 330 FWL</p>	<p>LAT.=32 784837" N LONG.=104.222971" W</p> <p>BOTTOM HOLE LOCATION Y=649066.0 N X=538899.0 E</p> <p>Project Area</p> <p>Producing Area</p> <p>GRID AZ.=92°08'27"</p> <p>HORIZ DIST.=4986.7'</p> <p>LOT 4</p> <p>S.L. 10'</p> <p>A 615'</p> <p>B.H. 330'</p> <p>C 615'</p> <p>D 330'</p>	<p>Date of Survey Signature & Seal of Professional Surveyor:</p> <p></p> <p>Certificate Number Gary G. Eidson 12641 Ronald S. Eidson 3239</p> <p>DSS JWSC W.O. 12 11.0981</p>

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY **NEW MEXICO**



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #204 (HILLTOP) GO SOUTHEAST ON CO. RD. #204 APPROX 2.0 MILES THE LOCATION IS 340 FEET WEST OF CO. RD. #204.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

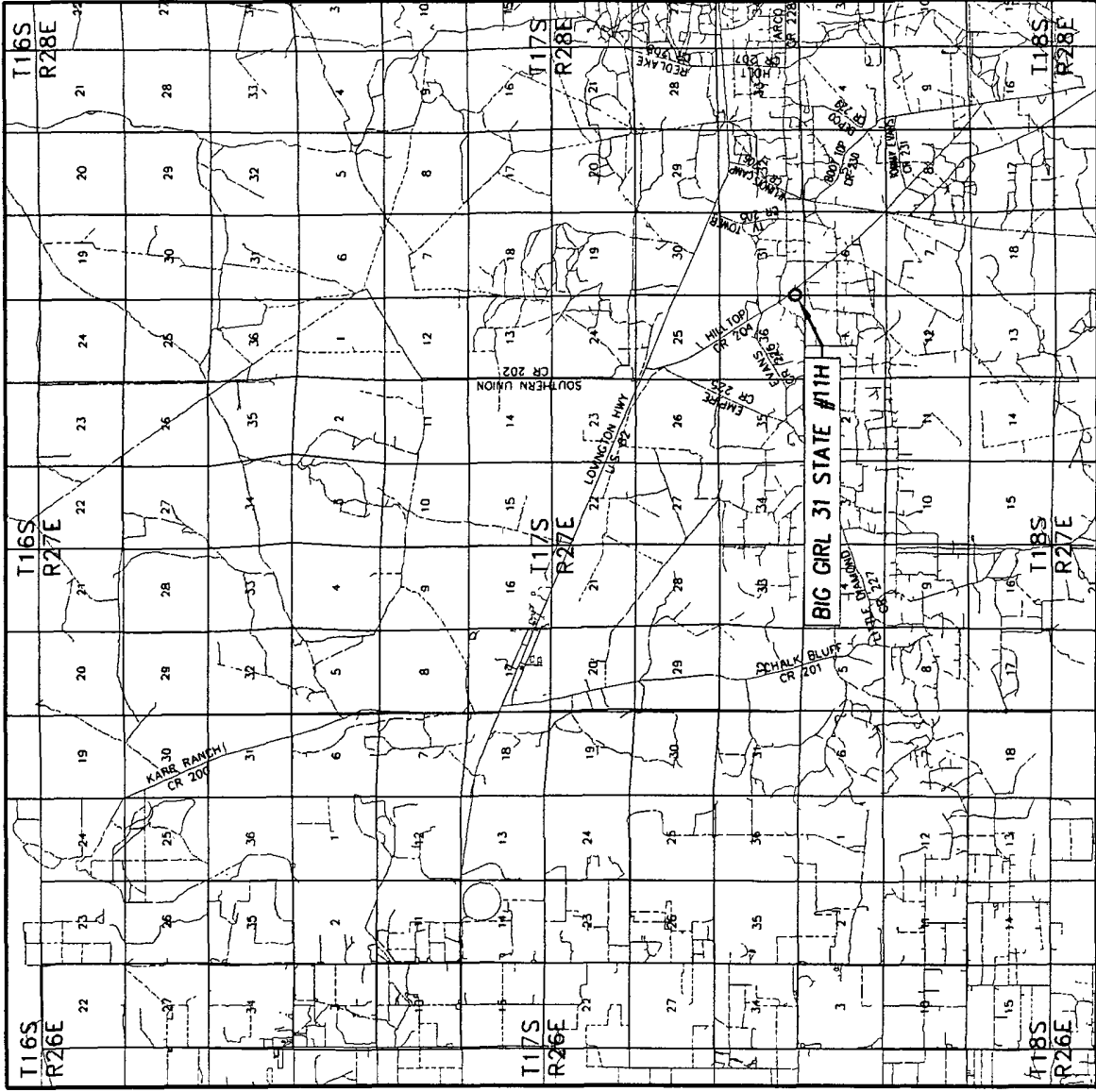
COG OPERATING, LLC

BIG GIRL 31 STATE #11H WELL
LOCATED 615 FEET FROM THE SOUTH LINE
AND 10 FEET FROM THE WEST LINE OF SECTION 31,
TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 5/19/12	CAD Date: 5/31/12	Drawn By: DSS
W.O. No.: 12110981	Rev:	Rel W.O.:

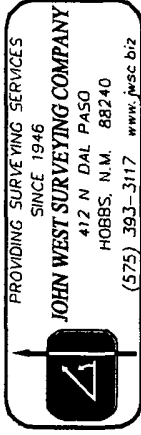
Sheet 1 of 1

VICINITY MAP



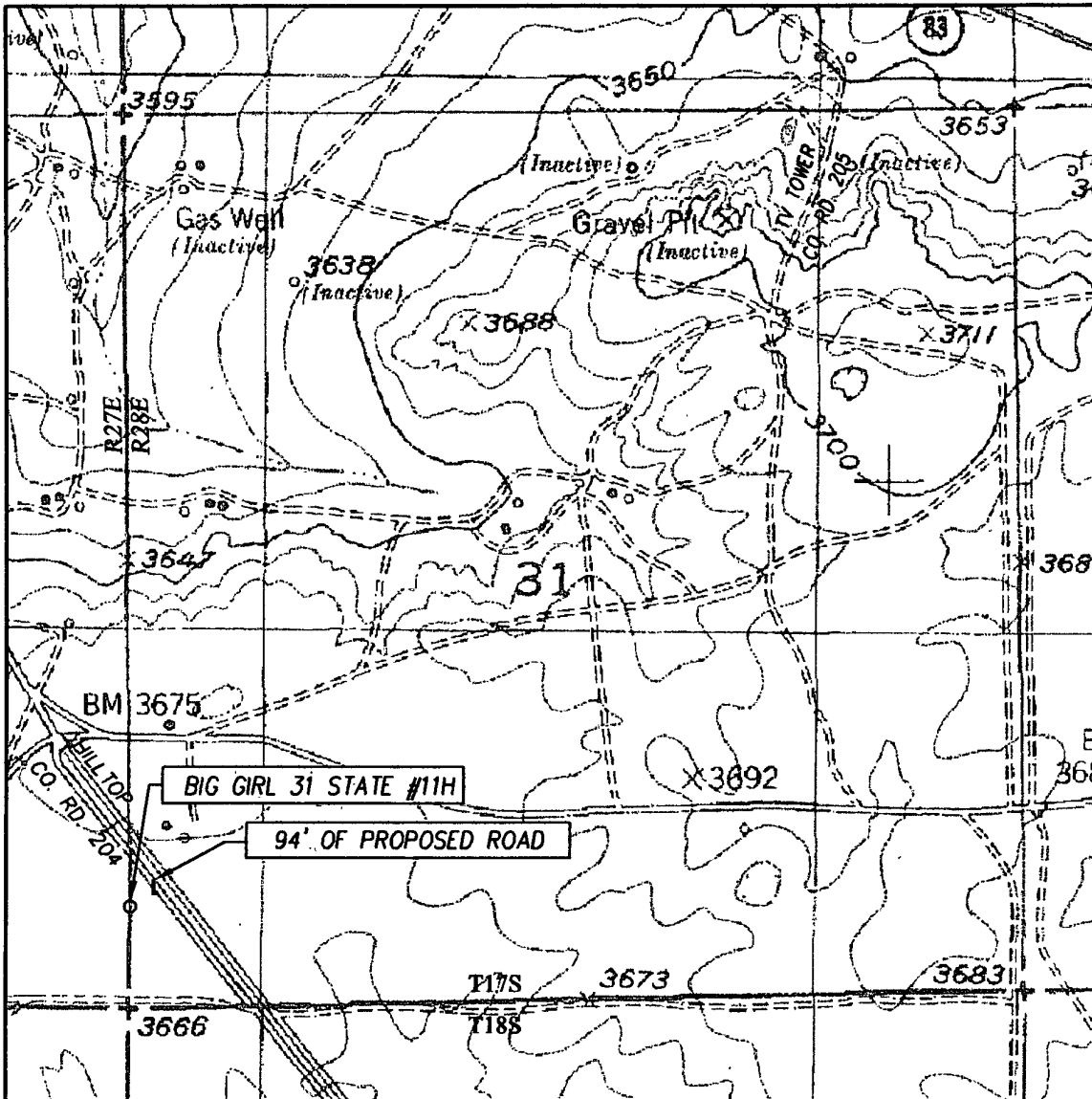
SCALE: 1" = 2 MILES

SEC. 31 TWP. 17--S RGE. 28--E
 SURVEY N.M.P.M.
 COUNTY EDDY STATE NEW MEXICO
 DESCRIPTION 615' FSL & 10' FWL
 ELEVATION 3668'
 OPERATOR COG OPERATING, LLC
 LEASE BIG GIRL 31 STATE



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LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:
RED LAKE, N.M. - 10'

SEC. 31 TWP. 17-S RGE 28-E

SURVEY _____ N.M.P.M. _____

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 615' FSL & 10' FWL

ELEVATION _____ 3668'

OPERATOR COG OPERATING, LLC

LEASE BIG GIRL 31 STATE

U.S.G.S TOPOGRAPHIC MAP

RED LAKE, N.M. _____

PROVIDING SURVEYING SERVICES
SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

COG Operating LLC

Eddy County, NM

Big Girl 31 State 11H

Big Girl 31 State 11H

Wellbore #1

Plan: Plan #1

Surface: 615' FSL, 10' FWL, Sec 31, T17S, R28E, Lot #4

BHL: 330' FSL, 330' FEL, Sec 31, T17S, R28E, Unit P

PP: 603' FSL, 330' FWL, Sec 31, T17S, R28E, Lot #4

Standard Planning Report

14 June, 2012

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Site Big Girl 31 State 11H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3685 00ft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3685 00ft (Original Well Elev)
Site:	Big Girl 31 State 11H	North Reference:	Grid
Well:	Big Girl 31 State 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Eddy County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Big Girl 31 State 11H				
Site Position:	Northing:	649,252 30 ft	Latitude:	32.78483326	
From:	Map	Easting:	533,917 00 ft	Longitude:	-104.22297492
Position Uncertainty:	0 00 ft	Slot Radius:	13 200 in	Grid Convergence:	0 06 °

Well	Big Girl 31 State 11H					
Well Position	+N/-S	0 00 ft	Northing:	649,252 30 ft	Latitude:	32 78483326
	+E/-W	0 00 ft	Easting:	533,917 00 ft	Longitude:	-104.22297492
Position Uncertainty	0 00 ft	Wellhead Elevation:		Ground Level:	3,667 00 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/14/2012	7 82	60 57	48,788

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0 00	92 14

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 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00	
3,522 54	0 00	0 00	3,522 54	0 00	0 00	0 00	0 00	0 00	0 00	
4,272 54	90 00	92 14	4,000 00	-17 84	477 13	12 00	12 00	0 00	92 14	
8,780 55	90 00	92 14	4,000 00	-186 30	4,982 00	0 00	0 00	0 00	0 00	PBHL (Big Girl 31 Sta

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Site Big Girl 31 State 11H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3685 00ft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3685 00ft (Original Well Elev)
Site:	Big Girl 31 State 11H	North Reference:	Grid
Well:	Big Girl 31 State 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)	
3,522.54	0.00	0.00	3,522.54	0.00	0.00	0.00	0.00	0.00	0.00	
KOP - Start Build @ 12.00°/100'										
3,600.00	9.30	92.14	3,599.66	-0.23	6.27	6.27	12.00	12.00	0.00	
3,700.00	21.30	92.14	3,695.94	-1.22	32.58	32.60	12.00	12.00	0.00	
3,800.00	33.30	92.14	3,784.64	-2.93	78.32	78.38	12.00	12.00	0.00	
3,900.00	45.30	92.14	3,861.89	-5.29	141.49	141.59	12.00	12.00	0.00	
4,000.00	57.30	92.14	3,924.31	-8.20	219.34	219.49	12.00	12.00	0.00	
4,100.00	69.30	92.14	3,969.16	-11.53	308.44	308.66	12.00	12.00	0.00	
4,112.30	70.77	92.14	3,973.36	-11.97	320.00	320.22	12.00	12.00	0.00	
PP @ 4112.30 MD, 3973.36 TVD, 70.77 INC, 92.14 AZ, 320.22 VS										
4,200.00	81.30	92.14	3,994.50	-15.14	404.93	405.21	12.00	12.00	0.00	
4,272.54	90.00	92.14	4,000.00	-17.84	477.13	477.46	12.00	12.00	0.00	
Landing Point - Hold @ 90.00° INC, 92.14° AZ										
4,300.00	90.00	92.14	4,000.00	-18.87	504.58	504.93	0.00	0.00	0.00	
4,400.00	90.00	92.14	4,000.00	-22.61	604.51	604.93	0.00	0.00	0.00	
4,500.00	90.00	92.14	4,000.00	-26.34	704.44	704.93	0.00	0.00	0.00	
4,600.00	90.00	92.14	4,000.00	-30.08	804.37	804.93	0.00	0.00	0.00	
4,700.00	90.00	92.14	4,000.00	-33.82	904.30	904.93	0.00	0.00	0.00	
4,800.00	90.00	92.14	4,000.00	-37.55	1,004.23	1,004.93	0.00	0.00	0.00	
4,900.00	90.00	92.14	4,000.00	-41.29	1,104.16	1,104.93	0.00	0.00	0.00	
5,000.00	90.00	92.14	4,000.00	-45.03	1,204.09	1,204.93	0.00	0.00	0.00	
5,100.00	90.00	92.14	4,000.00	-48.76	1,304.02	1,304.93	0.00	0.00	0.00	
5,200.00	90.00	92.14	4,000.00	-52.50	1,403.95	1,404.93	0.00	0.00	0.00	
5,300.00	90.00	92.14	4,000.00	-56.24	1,503.88	1,504.93	0.00	0.00	0.00	
5,400.00	90.00	92.14	4,000.00	-59.97	1,603.81	1,604.93	0.00	0.00	0.00	
5,500.00	90.00	92.14	4,000.00	-63.71	1,703.74	1,704.93	0.00	0.00	0.00	
5,600.00	90.00	92.14	4,000.00	-67.45	1,803.67	1,804.93	0.00	0.00	0.00	
5,700.00	90.00	92.14	4,000.00	-71.18	1,903.60	1,904.93	0.00	0.00	0.00	
5,800.00	90.00	92.14	4,000.00	-74.92	2,003.53	2,004.93	0.00	0.00	0.00	
5,900.00	90.00	92.14	4,000.00	-78.66	2,103.46	2,104.93	0.00	0.00	0.00	
6,000.00	90.00	92.14	4,000.00	-82.39	2,203.39	2,204.93	0.00	0.00	0.00	
6,100.00	90.00	92.14	4,000.00	-86.13	2,303.32	2,304.93	0.00	0.00	0.00	
6,200.00	90.00	92.14	4,000.00	-89.87	2,403.25	2,404.93	0.00	0.00	0.00	
6,300.00	90.00	92.14	4,000.00	-93.61	2,503.18	2,504.93	0.00	0.00	0.00	
6,400.00	90.00	92.14	4,000.00	-97.34	2,603.11	2,604.93	0.00	0.00	0.00	
6,500.00	90.00	92.14	4,000.00	-101.08	2,703.04	2,704.93	0.00	0.00	0.00	
6,600.00	90.00	92.14	4,000.00	-104.82	2,802.97	2,804.93	0.00	0.00	0.00	
6,700.00	90.00	92.14	4,000.00	-108.55	2,902.90	2,904.93	0.00	0.00	0.00	
6,800.00	90.00	92.14	4,000.00	-112.29	3,002.83	3,004.93	0.00	0.00	0.00	
6,900.00	90.00	92.14	4,000.00	-116.03	3,102.76	3,104.93	0.00	0.00	0.00	
7,000.00	90.00	92.14	4,000.00	-119.76	3,202.69	3,204.93	0.00	0.00	0.00	
7,100.00	90.00	92.14	4,000.00	-123.50	3,302.62	3,304.93	0.00	0.00	0.00	
7,200.00	90.00	92.14	4,000.00	-127.24	3,402.55	3,404.93	0.00	0.00	0.00	
7,300.00	90.00	92.14	4,000.00	-130.97	3,502.48	3,504.93	0.00	0.00	0.00	
7,400.00	90.00	92.14	4,000.00	-134.71	3,602.41	3,604.93	0.00	0.00	0.00	
7,500.00	90.00	92.14	4,000.00	-138.45	3,702.34	3,704.93	0.00	0.00	0.00	
7,600.00	90.00	92.14	4,000.00	-142.18	3,802.27	3,804.93	0.00	0.00	0.00	
7,700.00	90.00	92.14	4,000.00	-145.92	3,902.20	3,904.93	0.00	0.00	0.00	
7,800.00	90.00	92.14	4,000.00	-149.66	4,002.13	4,004.93	0.00	0.00	0.00	
7,900.00	90.00	92.14	4,000.00	-153.40	4,102.06	4,104.93	0.00	0.00	0.00	
8,000.00	90.00	92.14	4,000.00	-157.13	4,201.99	4,204.93	0.00	0.00	0.00	
8,100.00	90.00	92.14	4,000.00	-160.87	4,301.92	4,304.93	0.00	0.00	0.00	
8,200.00	90.00	92.14	4,000.00	-164.61	4,401.85	4,404.93	0.00	0.00	0.00	

Planning Report

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Site Big Girl 31 State 11H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3685 00ft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3685' 00ft (Original Well Elev)
Site:	Big Girl 31 State 11H	North Reference:	Grnd
Well:	Big Girl 31 State 11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)	
8,300 00	90 00	92 14	4,000 00	-168 34	4,501 78	4,504 93	0 00	0 00	0 00	
8,400 00	90 00	92 14	4,000 00	-172 08	4,601 71	4,604 93	0 00	0 00	0 00	
8,500 00	90 00	92 14	4,000 00	-175 82	4,701 64	4,704 93	0 00	0 00	0 00	
8,600 00	90 00	92 14	4,000 00	-179 55	4,801 57	4,804 93	0 00	0 00	0 00	
8,700 00	90 00	92 14	4,000 00	-183 29	4,901 50	4,904 93	0 00	0 00	0 00	
8,780 55	90 00	92 14	4,000 00	-186 30	4,982.00	4,985 48	0 00	0 00	0 00	
TD @ 8780.55' MD, 4000.00' TVD - PBHL (Big Girl 31 State 11H Plan 1)										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL (Big Girl 31 State	0 00	0 00	4,000 00	-186 30	4,982 00	649,066 00	538,899 00	32 78430584	-104 20676488
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
3,522 54	3,522 54	0.00	0.00	KOP - Start Build @ 12 00°/100'	
4,112 30	3,973 36	-11 97	320 00	PP @ 4112 30 MD, 3973 36 TVD, 70 77 INC, 92 14 AZ, 320 22 VS	
4,272 54	4,000 00	-17 84	477 13	Landing Point - Hold @ 90 00° INC, 92 14° AZ	
8,780 55	4,000 00	-186 30	4,982 00	TD @ 8780 55' MD, 4000 00' TVD	



**COG Operating LLC
Big Girl 31 State 11H
Eddy County, NM
Plan #1**

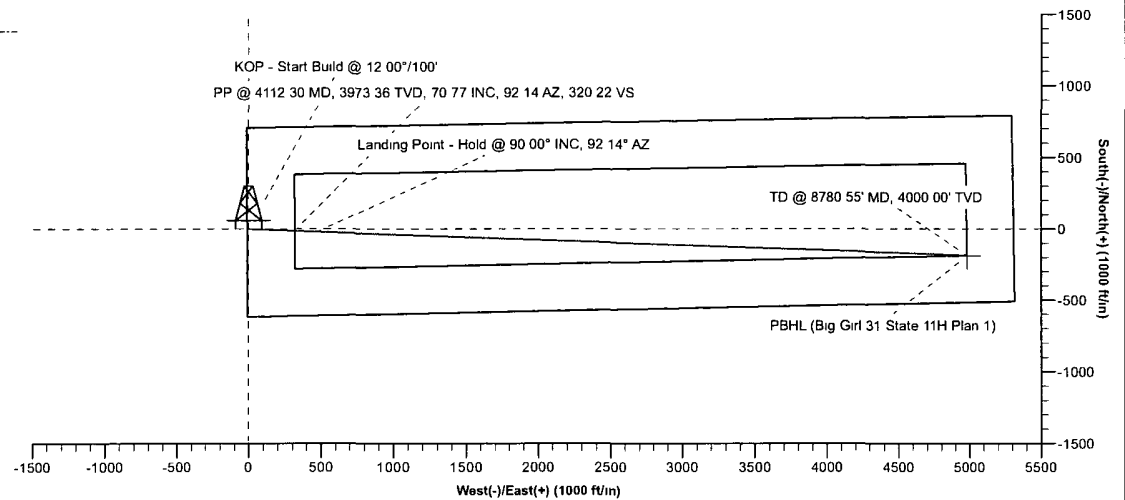
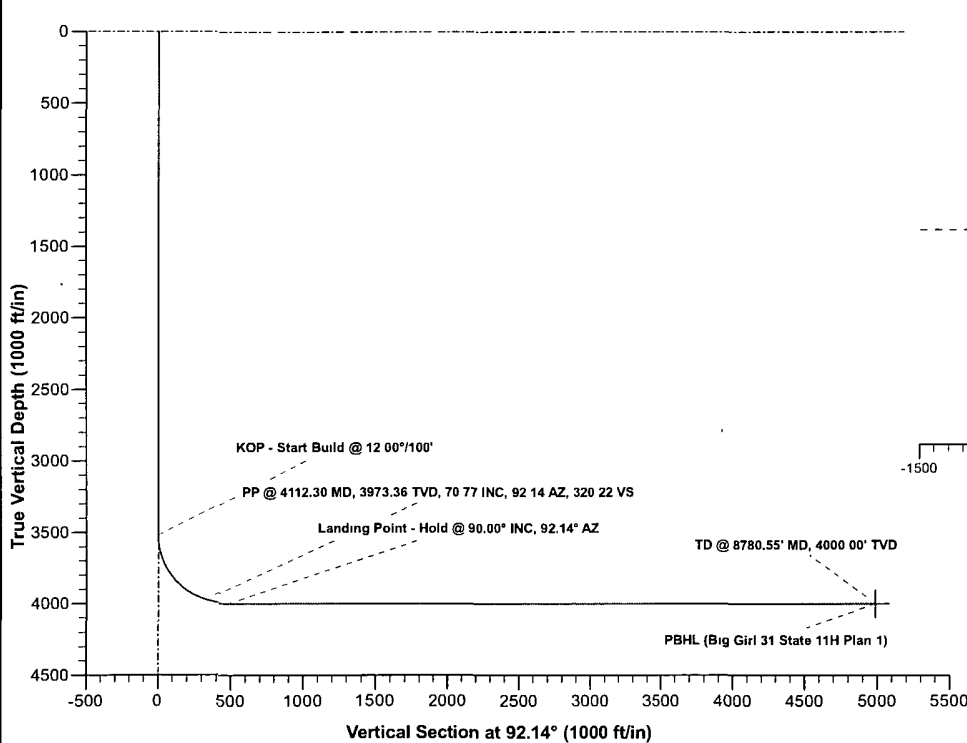


Azimuths to Grid North
True North: -0.06°
Magnetic North: 7.76°

Magnetic Field
Strength: 48787.9snT
Dip Angle: 60.57°
Date: 5/14/2012
Model: IGRF2010

Surface Location		Ground Elev: 3667.00 WELL @ 3685.00ft (Original Well Elev)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	649252.30	533917.00	32.78483326	-104.22297492

TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Big Girl 31 State 11H Plan 1)	4000.00	-186.30	4982.00	649066.00	538899.00	32.78430584	-104.20676487



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSEct	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3522.54	0.00	0.00	3522.54	0.00	0.00	0.00	0.00	0.00	KOP - Start Build @ 12.00°/100'
3	4272.54	90.00	92.14	4000.00	-17.84	477.13	12.00	92.14	477.46	Landing Point - Hold @ 90.00° INC, 92.14° AZ
4	8780.55	90.00	92.14	4000.00	-186.30	4982.00	0.00	0.00	4985.48	TD @ 8780.55' MD, 4000.00' TVD