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		OCD	Artesia			
Form 3160-3 (April 2004)	20			FORM APPROV OMB No. 1004-01 Expires March 31,	137	
UNITED STATE DEPARTMENT OF THE BUREAU OF LAND MA	INTERIOR	,		5. Lease Serial No. NMLC-029419A		
APPLICATION FOR PERMIT TO				6. If Indian, Allotee or Tribo	e Name	
la. Type of work: DRILL REEN	TER			7. If Unit or CA Agreement, NMNM - 71030C		
Ib. Type of Well: ✓ Oil Well Gas Well Other	Sir	ngle Zone Multi	ple Zone	8. Lease Name and Well No. SKELLY UNIT #75	_ ~ _	
2. Name of Operator Chevron USA Agent: COG	Operating LI	c 229	137	9. API Well No. 30-015- 382	83	
3a. Address Agent Address: 550 W. Texas Ave., Suite 1300 Midland, TX 79701	3b. Phone No. 432-68	(include area code) 5-4385		10. Field and Pool, or Explorate Fren; Glorieta-Yeso	3	
4. Location of Well (Report location clearly and in accordance with a At surface 1650' FSL & 1650' FEL, Unit J At proposed prod. zone	arty State requirem	ents.*)		11. Sec., T. R. M. or Blk. and S Sec 22 T17S R31E	urvey or Area	
14. Distance in miles and direction from nearest town or post office* 9 miles East of Loco Hills	s, NM			12. County or Parish EDDY	13. State	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig, unit line, if any) 1650'	ation to nearest perty or lease line, ft.					
Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 19. Proposed Depth 6825' NMB000215						
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3840' GL	rt*	23. Estimated duration 15 days				
	24. Attac	chments			-	
The following, completed in accordance with the requirements of Onsh	ore Oil and Gas	Order No.1, shall be a	ttached to th	is form:		
 Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest System 	n Lands the	4. Bond to cover t Item 20 above). 5. Operator certification	•	ns unless covered by an existing	bond on file (see	
SUPO shall be filed with the appropriate Forest Service Office).	n Danes, me		specific infe	ormation and/or plans as may be	required by the	

25. Signature	Name (Printed/Typed)	Date
- ACLAN LOW	Robyn M. Odom	10/22/2010
Title		

Regulatory Analyst Approved by (Signature)'s / Don Peterson Name (Printed/Typed) MON 3

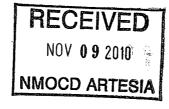
Title Office CARLSBAD FIELD OFFICE **FIELD MANAGER**

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. APPROVAL FOR TWO YEARS

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)

Roswell Controlled Water Basin



Kz 11/20/10

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL



2010

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-102

Revised October 12, 2005 Submit to Appropriate District Office

State Lease - 4 Copies Fee Lease - 3 Copies

DISTRICT II 1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III

OIL CONSERVATION DIVISION

11885 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505

1000 RIO BRAZOS RD., AZTEC, NM 87410		
DISTRICT IV	WEIT	1

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

11885 S. ST. FRANCIS DR., SANTA FE, NM 87505	WELL LOCATION AND	ACREAGE DEDICATION PLAT	☐ AMENDED REPORT
API Number 30-015-38283	Pool Code 26770	Pool Name FREN; GLORIETA-YESO	
Property Code	•	aty Name	Well Number
305607		LLY UNIT	754
OGRID No.	•	stor Name	· Elevation
229137		ERATING, LLC	3840'

Surface Location

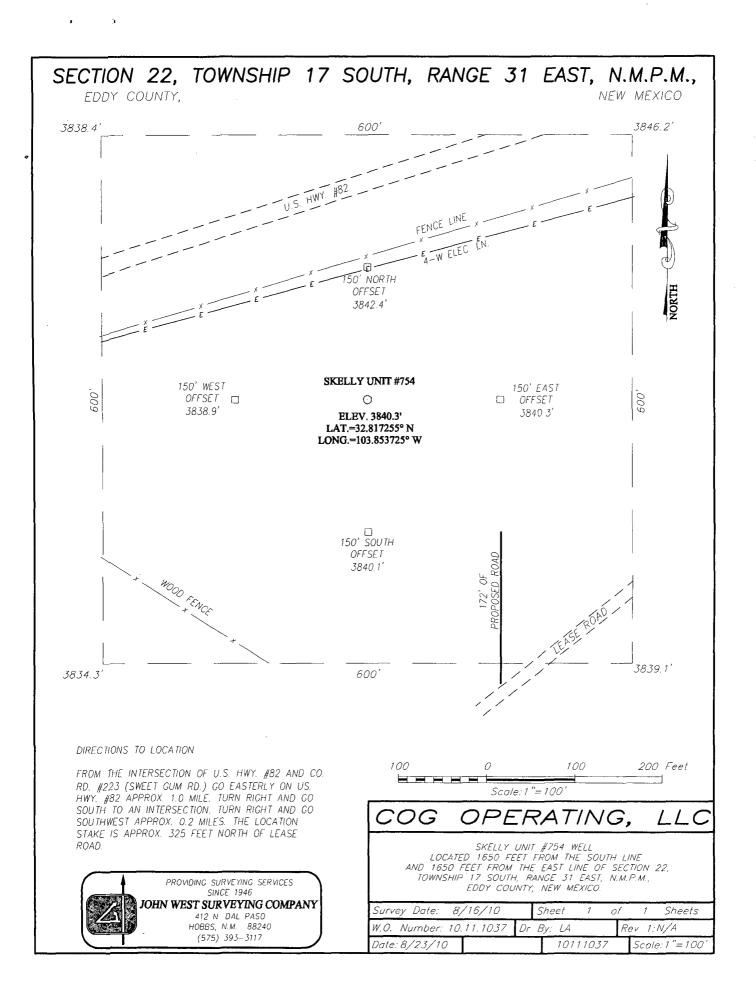
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	22	17-S	31-E		1650	SOUTH	1650	EAST	EDDY

Bottom Hole Location If Different From Surface

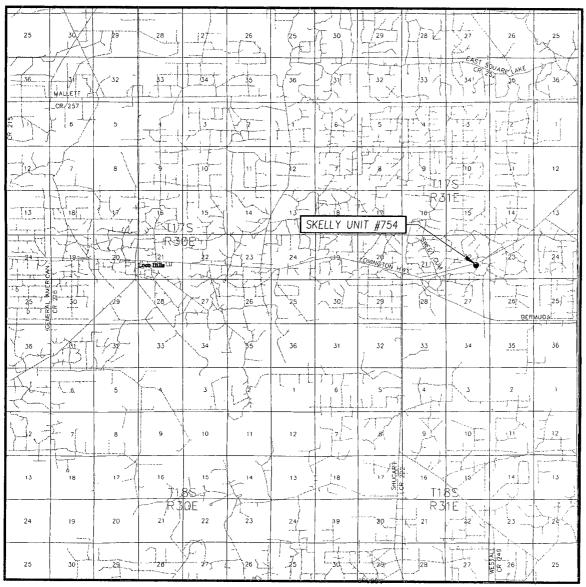
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or In	fill Co	nsolidation Code	Ord	ier No.	<u> </u>	·	<u> </u>	.1
40		ļ							

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

 OK A NOW-OWN TO WAR THE DELIVER THE DELIVE	
	OPERATOR CERTIFICATION I bereby 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.
	Signature Date
	Robyn Odom Printed Name SURVEYOR CERTIFICATION
GEODETIC COORDINATES NAD 27 NME	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
Y=661362.7 N 3838.4' 3846.2' X=647342.9 E 600 1650' 1650' 1650'	that the same is true and correct to the best of my belief. SON SAUCUS F. 16, 20 0
LONG.=103.853725* W - 10 10 10 10 10 10 10 10 10 10 10 10 10	Date Surveyed Signature & Seal of Professional Surveyor Model Culsa 08/23/2010
	Certificate No. GARY EIDSON 12641 RONALD EIDSON 3239



VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 22 TWP. 17-S RGE. 31-E

SURVEY N.M.P.M.

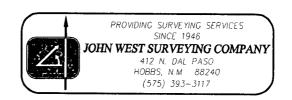
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1650' FSL & 1650' FEL

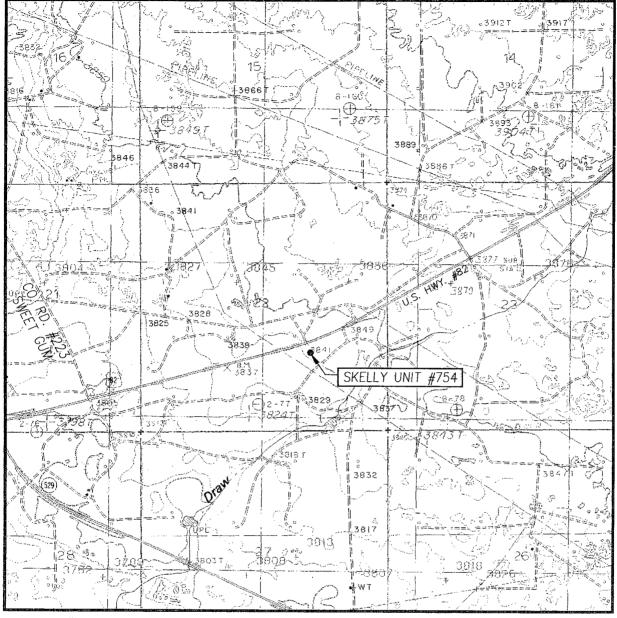
ELEVATION 3840'

OPERATOR COG OPERATING, LLC

LEASE SKELLY UNIT



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: MALJAMAR, N.M. - 10'

SEC. 22 TWP. 17-S RGE. 31-E SURVEY N.M.P.M. COUNTY EDDY STATE NEW MEXICO DESCRIPTION 1650' FSL & 1650' FEL ELEVATION_____3840' OPERATOR COG OPERATING, LLC LEASE SKELLY UNIT U.S.G.S. TOPOGRAPHIC MAP MALJAMAR, N.M.



PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY 412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117

Wells in 1 Mile Radius to Skelly Unit 754

	<u> </u>			#11070	Policel	Permitted	rermit 7	00000	200	2 C	170	Well Status	Target Eormation
	FDDY	S:23 T:47S R:31E	<u>}</u>	791	2/15/2010	2.000			ži.	7,000	udiamente en como en constante e	Active	
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	ЕООУ	S:22, T:17S, R:31E	SKELLY UNIT	743	5/27/2010	7,050		Yes	Ĕ	7,050	PO	Active Permit	
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····	ЕББР	S:23, T:17S, R:31E	SKELLY UNIT	613	7/24/2009	6,500		Yes	Ē	6,511	0	Active Permit	
	EDDY	S:15, T:17S, R:31E	SKELLY UNIT	635	3/6/2009	6,708	6,700	Yes	Ä	6,708	PO	Active Permit	
CCC	EDDY	S:22, T:17S, R:31E	SKELLY UNIT	628	2/27/2009	6,806	6,800	Yes	j <u>i</u>	6,846	0	Active Permit	
OPERATING EI	EDDY	S:22, T:17S, R:31E	SKELLY UNIT	627	2/25/2009	6,800		Yes	Ę	6,815	0	Active Permit	Можно подостино - модинизможностичности - сточно, ком может для подобрат
	ЕООУ	S:23, T:17S, R:31E	SKELLY UNIT	631	2/25/2009	6,800	on com a circioni rock	Yes	Ę	6,801	0	Active Permit	
COG OPERATING LLC	ЕББУ	S:14, T:17S, R:31E	SKELLY UNIT	633	2/25/2009	6,800		Yes	línk	6,798	0	Active Permit	designation to the state of the
COG OPERATING LLC	ЕООУ	S:14, T:17S, R:31E	SKELLY UNIT	634	2/25/2009	6,800		Yes	iik	6,820	0	Active Permit	Whatester i the first of the fi
COG OPERATING LLC	EDDY	S:22, T:17S, R:31E	SKELLY UNIT	629	2/25/2009	6,800		Yes	Ę	6,804	0	Active Permit	
	EDDY	S:21, T:17S, R:31E	SKELLY UNIT	625	2/25/2009	9'8'9		Yes	link	6,804	0	Active Permit	THE THE PROPERTY OF THE PROPER
COG OPERATING LLC	ЕООУ	S:15, T:17S, R:31E	SKELLY UNIT	632	2/25/2009	6,800		Yes	ij. X	6,825	0	Active Permit	TANAMAN INTERNATIONAL PROPRIESTO STATEMAN STATEM
COG OPERATING LLC	EDDY	S:22, T:17S, R:31E	SKELLY	626	2/24/2009	6,800		Yes	link	6,840	0	Active Permit	ть дельский межений применент применент применент применент применент применент применент применент применент
COG OPERATING LLC	EDDY	S:23, T:17S, R:31E	SKELLY UNIT	930	12/12/2008	6,800		Yes	Ä	6,818	0	Active Permit	Oddanie v volumbų i viduo diduoja vidostokas vidos činadanis productopografos, anomari van
COG OPERATING LLC	EDDY	S:23, T:17S, R:31E	SKELLY UNIT	616	11/21/2008	6,500	•	Yes	Ĭi	6,810	0	Active Permit	The company of the co
COG OPERATING LLC EI	EDDY	S:23, T:17S, R:31E	SKELLY UNIT	612	11/4/2008	6,500		Yes	link	6,708	. 0	Active Permit	

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Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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6,500	9,500	6,500	6,500	6,400	005'9	005'9	005'9	005'9	6,600	6,450	6,600	6,600	6,600	009'9	009'9
11/4/2008	11/4/2008	11/4/2008	11/4/2008	11/3/2008	8/4/2008	8/4/2008	8/4/2008	8/4/2008	8/1/2008	7/31/2008	7/31/2008	7/31/2008	7/25/2008	7/25/2008	7/24/2008
809	609	611	610	615	983	984	982	981	686	995	866	886	985	986 .	286
SKELLY	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY	SKELLY UNIT	SKELLY	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT	SKELLY UNIT
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COG OPERATING LLC	COG OPERATING LLC	COG OPERATING LLC	COG OPERATING LLC	COG OPERATING LLC	COG OPERATING LLC AGENT or COG OPERATING LLC	COG OPERATING LLC AGENT or COG OPERATING LLC	COG OPERATING LLC AGENT or COG OPERATING LLC	COG OPERATING LLC AGENT or COG OPERATING LLC	COG OPERATING LLC						
30-015-36766		30-015-36887	30-015-36888	30-015-36884 L	30-015-36514	30-015-36517	30-015-36515	30-015-36516	30-015-36498	30-015-36473	30-015-36681	30-015-36680	30-015-36454	30-015-36446	30-015-36497

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7/18/2008	7/18/2008	4/7/2008	4/7/2008	1/17/2008	1/17/2008	1/17/2008	10/11/2007	10/11/2007	9/18/2007	2/22/2006	2/22/2006	2/22/2006	2/21/2006	9/2/2005	9/2/2005	6/3/2005	11/30/2004	11/30/2004	
13	604	012	9	726	978	980	696	996	296	942	965	964	963	961	962	200	943	946	
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S:16, T:17S, R:31E	S:15, T:17S, R:31E	S:16, T:17S, R:31E	S:16, T:17S, R:31E	S:22, T:17S, R:31E	S:22, T:17S, R:31E	S:22, T:17S, R:31E	S:14, T:17S, R:31E	S:15, T:17S, R:31E	S:15, T:17S, R:31E	S:22, T:17S, R:31E	S:15, T:17S, R:31E	S:15, T:17S, R:31E	S:15, T:17S, R:31E	S:14, T:17S, R:31E	S:23, T:17S, R:31E	S:15, T:17S, R:31E	S:22, T:17S, R:31E	S:22, T:17S, R:31E	
EDDY	EDDY	ЕООУ	ЕООУ	ЕРРУ	ЕООУ	ЕРБҮ	ЕББУ	ЕБВУ	ЕООУ	ЕООУ	ЕООУ	ЕООУ	ЕООУ	ЕООУ	ЕООУ	ЕББҮ	ЕРРУ	ЕРБҮ	
EST OIL PORATION	COG OPERATING LLC	FOREST OIL CORPORATION	FOREST OIL CORPORATION	CHEVRON USA, INC. or CHEVRON USA INC	CHEVRON USA, INC.	CHEVRON USA, INC.	CHEVRON U S A INC	CHEVRON USA, INC.	CHEVRON USA, INC.	CHEVRON USA, INC.	MACK ENERGY CORPORATION or MACK ENERGY CORP	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or					
30-015-36423	30-015-36445	30-015-36256	30-015-36254	30-015-36061	30-015-36062	30-015-36063	30-015-35867	30-015-35969	30-015-35871	30-015-34645	30-015-34647	30-015-34686	30-015-34646	30-015-34324	30-015-34325	30-015-34143	30-015-32962	30-015-32965	

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5,430	5,350	5,350	5,410	5,450	5,483	5,430	5,430	5,350	5,350	5,450	5,483	5,405	5,405	5,360	5,427
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947	949	948	943	944	945	946	947	948	949	944	945	4	004	939	940
SKELLY UNIT	SKELLY UNIT	SKELLY	SKELLY	SKELLY	SKELLY UNIT	SKELLY UNIT	SKELLY	SKELLY	SKELLY UNIT	SKELLY	SKELLY	WILLOW STATE	WILLOW STATE	SKELLY	SKELLY UNIT
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CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON USA INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	MACK ENERGY CORPORATION or MACK ENERGY CORP	MACK ENERGY CORP	CHEVRON USA, INC. or CHEVRON USA INC	CHEVRON USA, INC. or CHEVRON USA INC						
30-015-32966	30-015-32968	30-015-32967	30-015-32962	30-015-32963	30-015-32964	30-015-32965	30-015-32966	30-015-32967	30-015-32968	30-015-32963	30-015-32964	30-015-32844	30-015-32844	30-015-32598	30-015-32599

8/24/2010

FREN PADDOCK			FREN PADDOCK	FREN PADDOCK	FREN PADDOCK		. ABO	ABO	ABO P&A 11-15-04	ABO P&A 110404	FREN PADDOCK	PADDOCK			THE	SAN ANDRES	SAN ANDRES	SAN ANDRES	
Active	Shut-in	Shut-in	Active	Active	Active	Active	Pumping	Shut-in	Pumping	Shut-in	Active	Active	Injection Well	Active	Injection Well	decrease economic	Shut-in	Pumping	
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5,478	3,782	0	2,360	5,427	5,478	5,700	8,000	9,200	8,000	9,200	5,700		4,000	3,692	2,503	4,100	4,000	4,050	
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941	900	003	939	940	941	906	903	904	903	904	906	900	200	001	127	021	022	023	
SKELLY	STATE B	STATE B	SKELLY	SKELLY	SKELLY UNIT	SKELLY	SKELLY	SKELLY UNIT	SKELLY	SKELLY	SKELLY	WILLOW STATE	LEAD	SKELLY UNIT	SKELLY UNIT	LEAD	LEAD	LEA D	SKELLY
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ЕООУ	ЕООУ	ЕООУ	EDDY	EDDY	EDDY	EDDY	EDDY	EDDY	ЕРРУ	EDDY	EDDY	EDDY	ЕРРУ	ЕББҮ	EDDY	ЕООУ	ЕООУ	ЕООУ	:
CHEVRON USA, INC. or CHEVRON USA INC	WISER OIL CO (THE)	WISER OIL CO (THE)	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON U S A INC	CHEVRON USA, INC. or CHEVRON USA INC	CHEVRON USA, INC. or CHEVRON U S A INC	MACK ENERGY CORP	WISER OIL CO (THE)	WISER OIL CO (THE)	WISER OIL CO (THE)	WISER OIL CO (THE)	WISER OIL CO (THE)	WISER OIL CO (THE)	WISER OIL CO				
30-015-32600	30-015-05173	30-015-05172	30-015-32598	30-015-32599	30-015-32600	30-015-31494	30-015-29419	30-015-29461	30-015-29419	30-015-29461	30-015-31494	30-015-29568	30-015-20658	30-015-05152	30-015-22261	30-015-29893	30-015-29702	30-015-29703	****

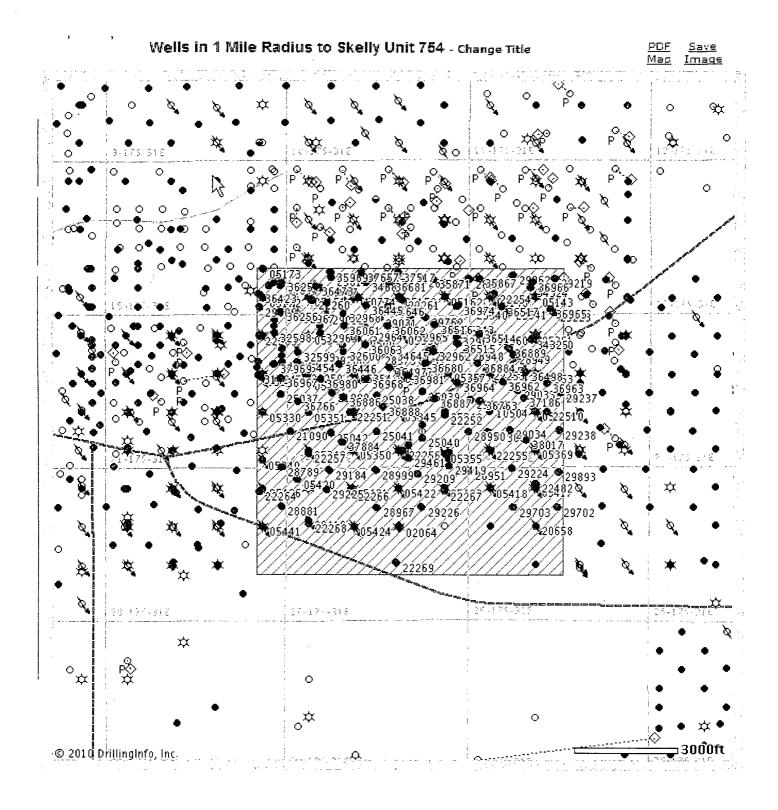
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ЕРРУ	ЕБРУ	Ерру	ЕООУ	Еррү	EDDY	ЕБР	ЕБВУ	ЕРРУ	EDDY	ЕООУ	ЕББҮ	ЕББҮ	ЕРРУ	ЕБВУ	ЕББҮ	ЕББҮ	ЕББҮ	ЕББҮ	EDOY	ЕDDY	ЕООУ	ЕББҮ	EDDY	ЕООУ	ЕББҮ	ЕООУ	ЕООУ	***********
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#### MASTER DRILLING PROGRAM

#### 1. **Geologic Name of Surface Formation**

Quaternary

#### 2. **Estimated Tops of Important Geologic Markers:**

Quaternary	Surface
Top of Salt	560'
Base of Salt	1150'
Yates	1770'
Seven Rivers	2100'
Queen	2715'
Grayburg	3100'
San Andres	3450'
Glorietta	4950'
Yeso Group	4995'

#### 3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

150'	Fresh Water
3100'	Oil/Gas
3450'	Oil/Gas
4950'	Oil/Gas
4995'	Oil/Gas
	3100' 3450' 4950'

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 3450 and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to 1380 and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a singleor multi-stage job, the 5_1/2" production casing back 200' into the intermediate casing, to be run at TD. (If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react See Conf to protect the wellbore and/or the environment.

See COA

#### 4. Casing Program

رر	Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
ger <	17 1/2"	0-450550	13 3/8"	48#	H-40orJ-55	New	ST&C	8.71/3.724/14.91
	11"or1 <del>2/4</del> "	0-180050	8 5/8"	24or32#	J-55	New	ST&C	2.91/1.46/5.65
	7 7/8"	0-T.D.	5 1/2"	15.5 or17#	J-55orL80	New	LT&C	1.71/1.574/2.20

#### 5. Cement Program

13 3/8" Surface Casing:

Class C, 500 sx, yield 1.32, back to surface

8 5/8" Intermediate Casing:

11" Hole:

**Single Stage:** 50:50:10, 350 sx lead, yield-2.45 + Class C, 200 sx tail, yield-1.32, back to surface.

Multi-Stage: Stage 1: Class C, 350 sx, yield-1.32. Stage 2: 50:50:10, 200 sx, yield-2.45, back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 450' See Con

5 1/2" Production Casing:

**Single Stage:** 35:65:6, 500 sx Lead, yield-2.05 + 50:50:2, 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

Multi-Stage: Stage 1: 50:50:2, 400 sx, - See Contyield - 1.37; Stage 2: 35:65:6, 500 sx, yield - 2.05, to 200' minimum tie back to intermediate casing. Multi stage tool to be set at approximately, depending on hole conditions, TD - 2000'. See Cont

#### 6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. The BOP will be nippled up on the 13 3/8" surface casing with BOP equipment and tested together to 1000 psi by rig pump surface casing with BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of the intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

#### 7. Types and Characteristics of the Proposed Mud System

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-450' 550	Fresh Water	8.5	28	N.C.
450-1800'1750	Brine	10	30	N.C.
1800'-TD	Cut Brine	8.7-9.1	29	N.C.

See COP

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

#### 8. 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.

#### 9. Logging, Testing and Coring Program

gee

**-** А.

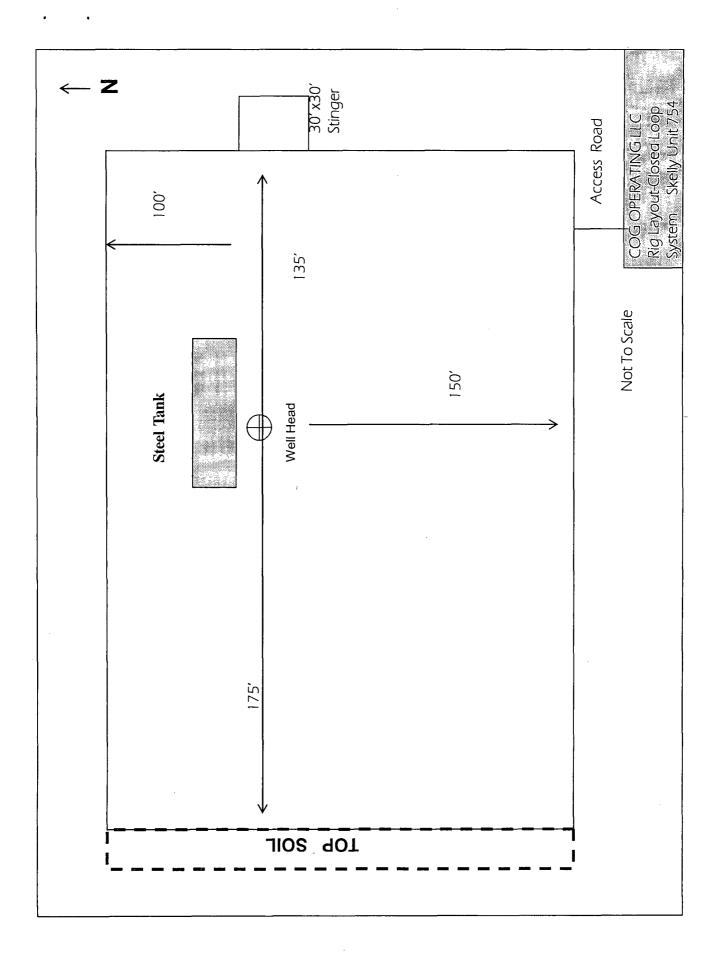
- The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to 8 5/8" casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

#### 10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

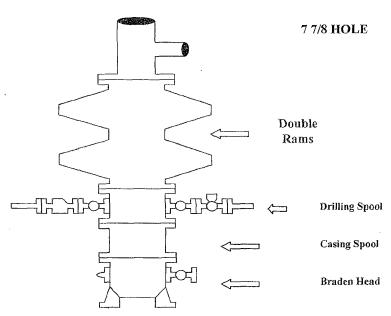
#### 11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 12 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



## **COG Operating LLC**

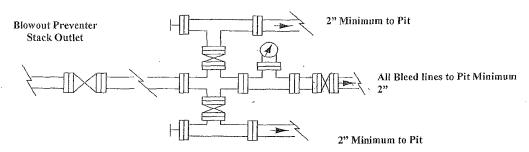
## **Exhibit #9 BOPE and Choke Schematic**



Minimum 4" Nominal choke and kill lines

#### Choke Manifold Requirement (2000 psi WP) No Annular Required

#### Adiustable Choke

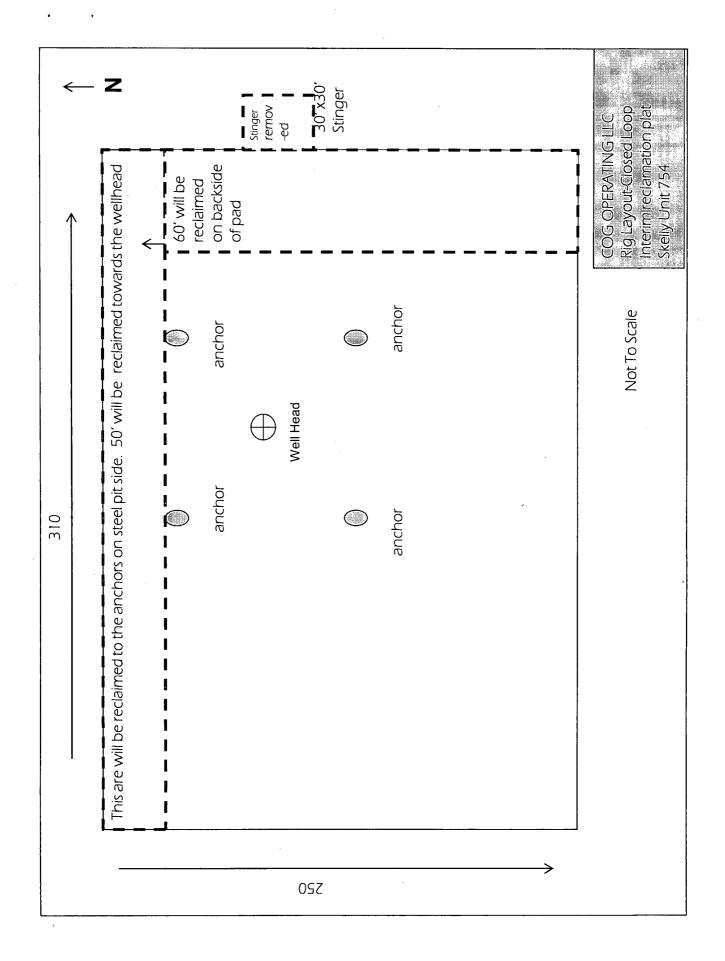


Adjustable Choke (or Positive)

## NOTES REGARDING THE BLOWOUT PREVENTERS Master Drilling Plan Eddy County, New Mexico

- 1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
- 2. Wear ring to be properly installed in head.
- 3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
- 4. All fittings to be flanged.
- 5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
- 6. All choke and fill lines to be securely anchored especially ends of choke lines.
- 7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
- 8. Kelly cock on Kelly.
- 9. Extension wrenches and hands wheels to be properly installed.
- 10. Blow out preventer control to be located as close to driller's position as feasible.
- 11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

Blowout Preventers Page 2



#### **COG Operating LLC**

#### Hydrogen Sulfide Drilling Operation Plan

#### I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- 1. The hazards an characteristics of hydrogen sulfide (H2S)
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
- 4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- 1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
- 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- 3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.

H2S Plan

#### II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

#### 1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

#### 2. Protective equipment for essential personnel:

A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

#### 3. H2S detection and monitoring equipment:

A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

#### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

#### 5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

#### 6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

#### 7. Communication:

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

#### 8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

#### EXHIBIT #7

## WARNING YOU ARE ENTERING AN H2S

#### AUTHORIZED PERSONNEL ONLY

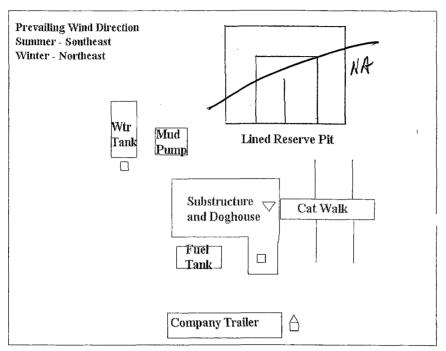
- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH COG OPERATING FOREMAN AT

COG OPERATING LLC 1-432-683-7443 1-575-746-2010

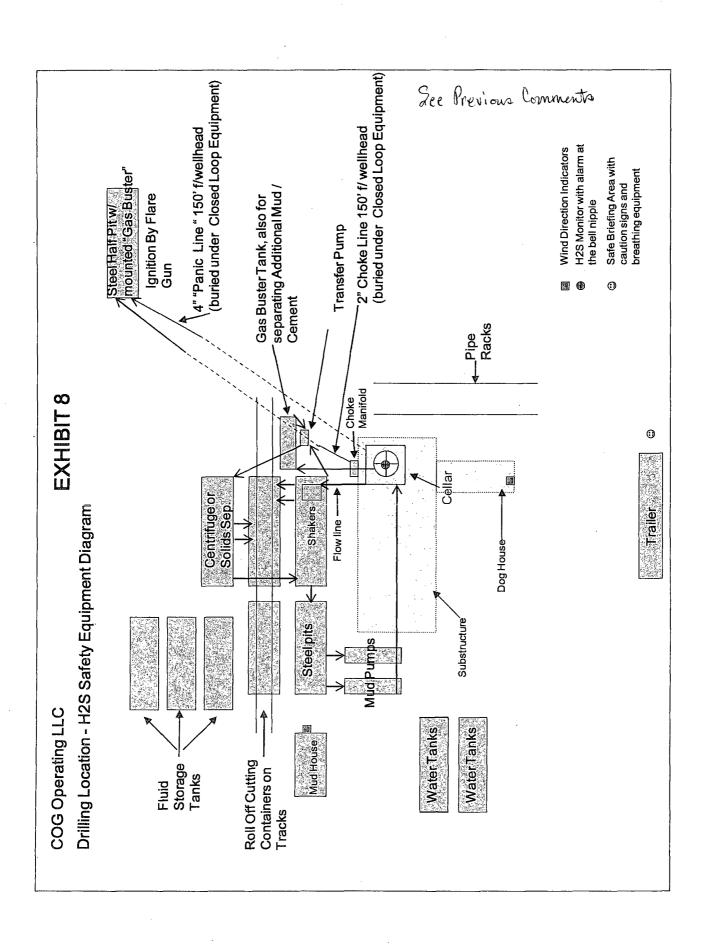
EDDY COUNTY EMERGENCY NUMBERS
ARTESIA FIRE DEPT. 575-746-5050
ARTESIA POLICE DEPT. 575-746-5000
EDDY CO. SHERIFF DEPT. 575-746-9888

LEA COUNTY EMERGENCY NUMBERS
HOBBS FIRE DEPT. 575-397-9308
HOBBS POLICE DEPT. 575-397-9285
LEA CO. SHERIFF DEPT. 575-396-1196

# DRILLING LOCATION H2S SAFETY EQUIPMENT Exhibit # 8



- $\overline{\hspace{1cm}}$  H2S Monitors with alarms at the bell nipple
- Wind Direction Indicators
- Safe Briefing areas with caution signs and breathing equipment min 150 feet from



#### SURFACE USE AND OPERATING PLAN

#### 1. Existing & Proposed Access Roads

- A. The well site survey and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM.
- B. All roads to the location are shown in the topographic map Exhibit #2. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.
- C. Directions to Location: From the intersection US Highway 82 and Co. Rd. 223 (Sweet Gum Road), Go Easterly on US Highway 82 apprx 1.0 mile. Turn Right & Go South to an intersection. Turn Right & Go Southwest apprx 0.2 miles. The location stake is apprx 325' North of Lease Road. See Vicinity Map, Exhibit #3.
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease. Roads will be maintained according to specifications in section 2A of this Surface Use and Operating Plan.

#### 2. Proposed Access Road:

Exhibit #4 shows that 172' of new access road will be required for this location. If any road is required it will be constructed as follows:

- A. The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.

E. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM caliche pit.

#### 3. Location of Existing Well:

Exhibit #5 shows all existing wells within a one-mile radius of this well.

As shown on this plat there are numerous wells producing from the San Andres and Yeso formations.

#### 4. Location of Existing and/or Proposed Facilities:

- A. COG Operating LLC does operate a production facility on this lease.
- B. If the well is productive, contemplated facilities will be as follows:
  - Production will be sent to the Skelly 942 Federal tank battery located well location @ 1210 FNL & 2195 FEL, Section 22, T17S, R31E, UL B. The facility location is shown in Exhibit #5.
  - 2) The tank battery and facilities including all flow lines and piping will be installed according to API specifications.
  - 3) Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.
  - 4) Proposed flow lines, will follow an archaeologically approved route to the Skelly 942 Federal tank battery located well location @ 1210 FNL & 2195 FEL, Section 22, T175, R31E, UL B. The flowline will be SDR 7 3" poly line laid on the surface and will be approximately 4778' in length with max pressure 100 psi. Flowlines will be no more than 11' from the paralleling road. The facility location is shown in Exhibit #5.
  - 5) It will be necessary to run electric power if this well is productive. Power will be provided by CVE and they will submit a separate plan and ROW for service to the well location.
  - 6) If the well is productive, rehabilitation plans will include the following:
    - a) The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

#### 5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #2. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

#### 6. Source of Construction Materials and Location "Turn-Over" Procedure:

Obtaining caliche: The primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well sight. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cu. Yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- A. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- B. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
- C. Subsoil is removed and piled along side the 120' by 120' area within the pad site.
- D. When caliche is found, material will be stock piled within the pad site to build the location and road.
- E. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- F. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche or subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in attached plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit.

#### 7. Methods of Handling Water Disposal:

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- B. Drilling fluids will be contained in steel mud pits.

- C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.
- E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

#### 8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

#### 9. Well Site Layout:

- A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #4. Dimensions of the pad and pits are shown on Exhibit #6. V door direction is East. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- B. Exhibit #6 also shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

#### 10. Plans for Restoration of the Surface:

A. Interim Reclamation will take place after the well has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production operations will be recontoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete. Pad will be approx. 200'X250" when reclaimed.

B. Final Reclamation: Upon plugging and abandoning the well, All caliche for well pad and lease road will be removed and surface will be recountoured to reflect its surroundings as much as possible. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be reseded with a BLM approved mixture and revegitated as per BLM orders.

#### 11. Surface Ownership:

- A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.
- B. The surface tenant for this site is Charles Martin, P.O. Box 706, Artesia NM 88211.
- C. The proposed road routes and surface location will be restored as directed by the BLM

#### 12. Other Information:

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
- B. There is no permanent or live water in the immediate area.
- C. There are no dwellings within 2 miles of this location.
- D. If needed, a Cultural Resources Examination is being prepared by Southern New Mexico Archaeological Services, Inc. P.O. Box 1, Bent New Mexico, 88314, phone # 505-671-4797 and the results will be forwarded to your office in the near future. Otherwise, COG will be participating in the Permian Basin MOA Program.

#### 13. Bond Coverage:

Bond Coverage is Nationwide Bond # 000215

#### 14. Lessee's and Operator's Representative:

The COG Operating LLC representative responsible for assuring compliance with the surface use plan is as follows:

John Coffman,

Erick Nelson.

**Drilling Superintendent** 

**Division Operations Manager** 

**COG Operating LLC** 

**COG Operating LLC** 

550 W. Texas, Suite 1300

550 W. Texas, Suite 1300

Midland, TX 79701

Midland, TX 79701

Phone (432) 683-7443 (office)

Phone (505) 746-2210 (office)

(432) 631-9762 (cell)

(432) 238-7591 (cell)

Surface Use Plan COG Operating, LLC Skelly Unit 754 1650' FSL & 1650' FEL Section 22, T-17-S, R-31-E, UL J Eddy County, New Mexico

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements make in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating, LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 27th day of August, 2010.

Signed:

Printed Name: Carl Bird

Position: Drilling Engineer

Address: 550 W. Texas, Suite 1300, Midland, Texas 79701

albid

Telephone: (432) 683-7443

Field Representative (if not above signatory): Same

E-mail: cbird@conchoresources.com

Surface Use Plan Page 7

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating
	NMLC029419A
WELL NAME & NO.:	754 Skelly Unit
SURFACE HOLE FOOTAGE:	1650' FSL & 1650' FEL
BOTTOM HOLE FOOTAGE	'FL& 'FL
LOCATION:	Section 22, T. 17 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

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# I. 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.

# II. 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.)

# III. 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.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. 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.

# V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

# Pad restriction

Avoid electric line approximately 120 to the north.

# **Plan of Development**

Sub-operator is to submit a Unit Plan of Development (UPOD) annually to the Unit operator for submission to the BLM. Guidelines for UPOD are available upon request at the BLM Carlsbad Field Office.

# VI. CONSTRUCTION

#### A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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 APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

#### B. V-DOOR DIRECTION: east

#### C. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

#### D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

#### E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

#### F. 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 needs.

#### G. 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

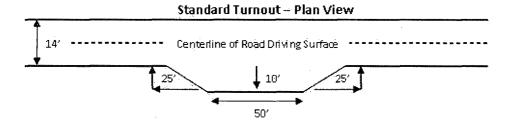
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

# Ditching

Ditching shall be required on both sides of the road.

#### **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:

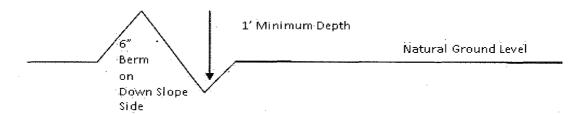


#### Drainage

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 a 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:

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

### **Culvert Installations**

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

#### Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

#### Fence Requirement

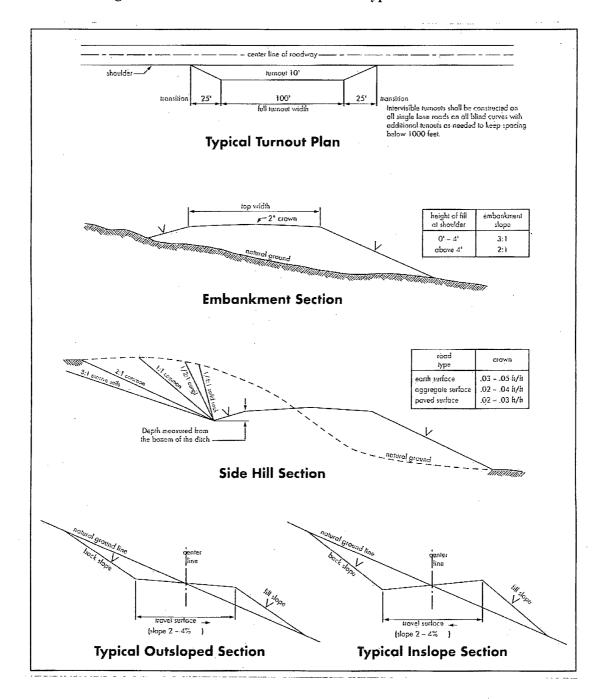
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

# **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



# VII. 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. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the Grayburg formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values 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. If the drilling rig is removed without approval an Incident of Non-Compliance will be written and will be a "Major" violation.
- 3. The record of the drilling rate along with the GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### 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 prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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.

Possible water flows in the Salado and Artesia Groups.

Possible lost circulation in the Grayburg and San Andres formations.

- 1. The 13-3/8 inch surface casing shall be set at approximately 550 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If the salt is encountered set the casing 25 feet above the top of the salt. Freshwater mud to be used to setting depth.
  - 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - 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.

	□ Cement to surface. If cement does not circulate see B.1.a, c-d above. This casing is to be set at approximately 1750 feet within the Tansill formation.
	used, DV tool is to be set 50 feet below previous casing shoe. Operator is to bmit sundry if DV tool depth varies by more than 100' from approved depth.
	a. First stage to DV tool, cement shall:
	□ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.
	b. Second stage above DV tool, cement shall:
	□ Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3.	The minimum required fill of cement behind the 5-1/2 inch production casing is:
	Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
	used, DV tool is to be set 50 feet below previous casing shoe. Operator is to bmit sundry if DV tool depth varies by more than 100' from approved depth.
	a. First stage to DV tool, cement shall:
	□ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Additional cement may be required as the excess calculated to be 17%.
	b. Second stage above DV tool, cement shall:
	Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
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.

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

#### C. PRESSURE CONTROL

- 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.
  - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- 3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips or where the float does not hold, the minimum wait time before cut-off is eight hours after bumping the plug or when the cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. BOP/BOPE testing can begin after the above conditions are satisfied.
  - b. The tests shall be done by an independent service company utilizing a test plug **not** a **cup** or **J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) prior to initiating the test.
  - c. The results of the test shall be reported to the appropriate BLM office.
  - d. 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.
  - e. 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.
  - 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. DRILL STEM TEST

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

# E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

**RGH 102610** 

# VIII. PRODUCTION (POST DRILLING)

#### A. 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 Shale Green, Munsell Soil Color Chart # 5Y 4/2

## B. PIPELINES

# STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

- 2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
- 3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- 4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:
- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or

injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

- 5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.
- 6. All construction and maintenance activity will be confined to the authorized right-of-way width of ______ feet.
- 7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.
- 8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.
- 9. The pipeline shall be buried with a minimum of <u>24</u> inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
- 10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
- 11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

- 12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
- 13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
- 14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.
- 15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

# C. ELECTRIC LINES (not applied for in APD)

## IX. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

# X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

# Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

	Species	lb/acre
	Plains Bristlegras	s 5lbs/A
	Sand Bluestem	5lbs/A
	Little Bluestem	3lbs/A
	Big Bluestem	6lbs/A
	Plains Coreopsis	2lbs/A
	Sand Dropseed	1lbs/A
**Four-winged Saltbush		5lbs/A

^{*} This can be used around well pads and other areas where caliche cannot be removed.

Pounds of seed x percent purity x percent germination = pounds pure live seed

^{*}Pounds of pure live seed: