# **OCD-ARTESIA**

OCT 16 2007

Form 3160 -3 (April 2004)

# **OCD-ARTESIA**

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

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

6. If Indian, Allotee or Tribe Name

5. Lease Senal No.

NMLC - 029418 (a)

APPLICATION FOR P	ERMIT TO	DRILL C	R REENTER
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AFFEIGATION FOR FERIVITI TO	AFFLICATION FOR FERMIT TO DRILL ON REENTER						
la Type of work: 🗸 DRILL REEN	TER UNORTHUDU	N.	7. If Unit or CA Agreeme	ent, Name and No.			
Type of Well: Onl Well Gas Well Other Single Zone Multiple Zone SKELLY UNIT #969							
2. Name of Operator 2/323 Chevron USA Inc. (Co	OG Operating LLC agent)		9 API Well No.	35867			
3a. Address 550 W. Texas Ave., Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) 432-685-4340		10 Field and Pool, or Expl Fren; Gloriet	loratory			
4. Location of Well (Report location clearly and in accordance with  At surface 1290 FSL & 330 F  At proposed prod. zone 990 FSL & 330 F	WL, Unit M Roswell Contro	olled Wat	11 Sec., T. R. M or Blk.a er Basin Sec 14 T17	•			
4 Distance in miles and direction from nearest town or post office*			12. County or Parish	13 State			
9 miles East of Loco Hi	lls, NM		EDDY	NM			
5. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)  330	16 No. of acres in lease 640	17. Spacin	g Unit dedicated to this well  40				
8 Distance from proposed location*	19. Proposed Depth	9. Proposed Denth 20 BLM/BIA Bond No. o					
to nearest well, drilling, completed, applied for, on this lease, ft.	6500		CA-0329				
1. Elevations (Show whether DF, KDB, RT, GL, etc.) 3888' GR	22. Approximate date work will sta 12/15/2007	rrt*	23 Estimated duration 15 day	rs			
	24. Attachments	,					
he following, completed in accordance with the requirements of Onsh	ore Oil and Gas Order No.1, shall be a	ttached to thi	s form				
. Well plat certified by a registered surveyor 2. A Drilling Plan.	4. Bond to cover to Item 20 above).	the operation	ns unless covered by an exis	sting bond on file (see			
. A Surface Use Plan (if the location is on National Forest Syster SUPO shall be filed with the appropriate Forest Service Office)		specific info	ormation and/or plans as ma	y be required by the			
5. Signature Auflier Le and	Name (Printed/Typed) Phyllis Edwards		Da	te 09/10/2007			
itle Regulatory Analyst				-			
				. OOT 1.1 00			
Approved by (Signature) /s/ JD Whitloc	K Jr Name (Printed/Types) J[	O Whit	lock Jr	ite OCT 11 20			
			LD OFFICE.				
	Office CARLSBA	D FIE	LD OFFICE.	le the applicant to			

\*(Instructions on page 2)

Drill Only - NSL required To produce APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS **ATTACHED** 

> If earthen pits are used in association with the drilling of this well, an OCD pit permit must be

SEE ATTACHED FOR CONDITIONS OF APPROVAL

# Statement Accepting Responsibility for Operations

**Operator Name:** 

**CHEVRON USA Inc.** (COG Operating LLC, Agent)

Street or Box #:

550 W. Texas, Suite 1300

City, State:

Midland, TX

Zip Code:

79701

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No.:

NMLC-029418 (a)

Skelly Unit #969

Legal Description of Land: Section 14

T-17S R-31E

SW/4 SW/4

Formation (s) (if applicable): Fren; Glorieta Yeso

Bond Coverage: (State if individually bonded or another's bond)

**Statewide Bond** 

**BLM Bond File No.:** 

CA-0329

**Authorized Signature:** 

Title: Drilling Supt.

Date: 9-10-07

#### State of New Mexico

DISTRICT I 1925 N. FRENCH DR., HOBBS, NM 88240

Rnergy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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 1000 Rio Brazos Rd., Aztec, NM 87410

1220 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE. NM 87505

# WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool	Name
	26770	FREN; GLORIE	TA- YESO
Property Code		Property Name	Well Number
29742	SK	969	
OGRID No.		Elevation	
4323	CHEVE	ON U.S.A INC.	3888'

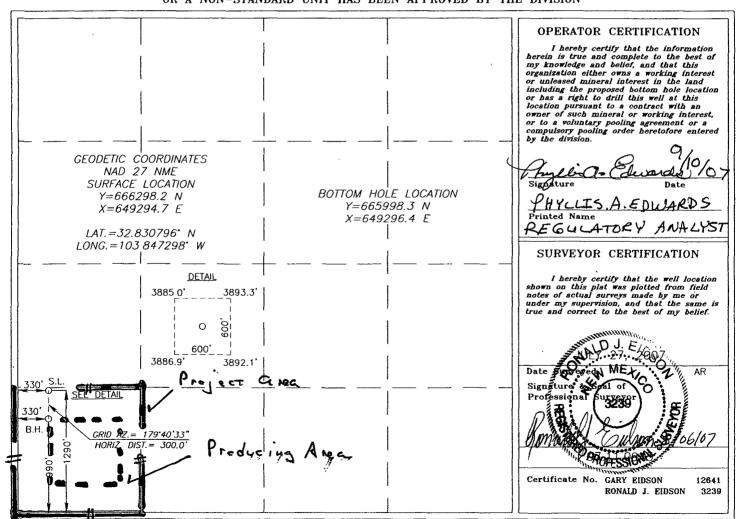
#### Surface Location

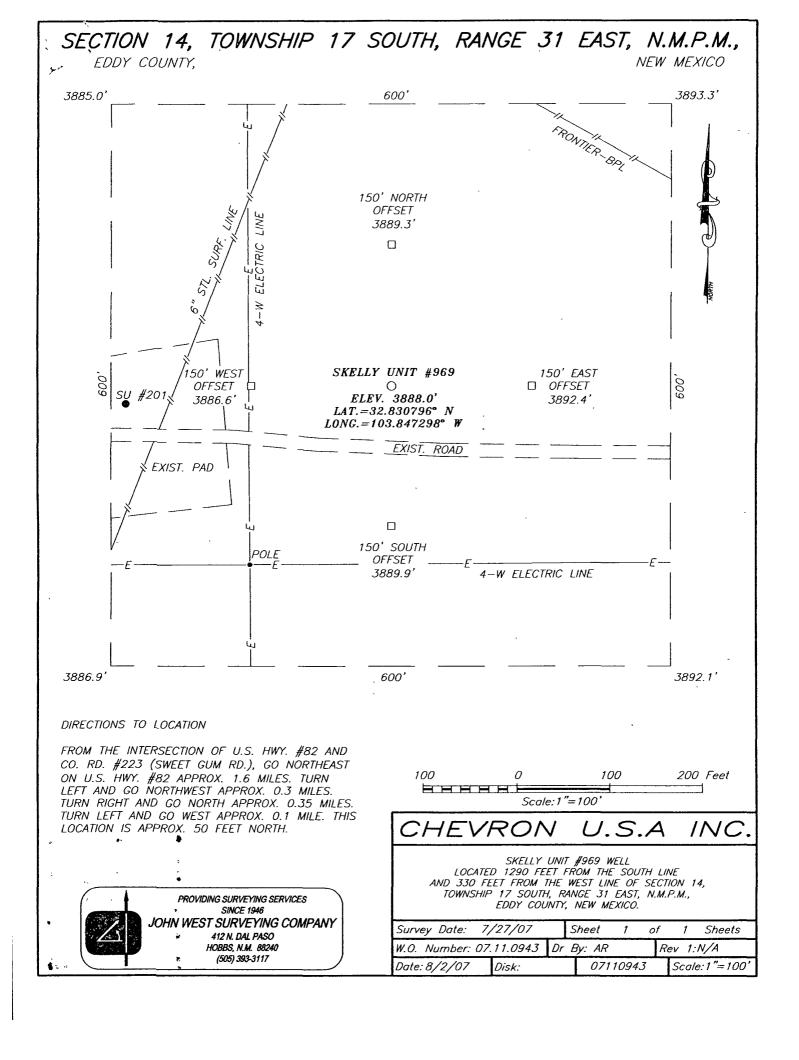
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
М	14	17-S	31-E		1290	SOUTH	330	WEST	EDDY

#### Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
М	14	17-S	31-E		990	SOUTH	330	WEST	EDDY
Dedicated Acres	Joint o	r Infill Co	nsolidation	Code Or	der No.				
40									

## 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





Attached to Form 3160-3 Chevron USA Iuc. Skelly Unit #969 1290 FSL & 330 FWL, Unit M SW/4 SW/4, Sec 14 T17S R31E Eddy County, NM

# DRILLING PROGRAM

# 1. Geologic Name of Surface Formation

Quaternary

# 2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	505'
Base of Salt	1025'
Yates	1600'
Queen	2450'
San Andres	3200'
Glorieta	4700'

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

150'	Fresh Water
2580'	Oil/Gas
3200'	Oil/Gas
4800'	Oil/Gas
	2580' 3200'

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 450' and circulating cement back to surface will protect the surface fresh water sand. Salt Section will be protected by setting 8 5/8" casing to 1800' and circulating cement back to surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 1/2" production casing, which will be run at TD.

## 4. Casing Program:

Hole Size	Interval	OD Casing	Weight, Grade, Jt, Cond., Type
17 ½"	0-450'	13 3/8"	48#, H-40, ST&C, New, 8.71/3.724/14.91
12 1/4"	0-1800'	8 5/8"	24#, J-55, ST&C, New, 2.91/1.46/5.65
7 7/8"	0-TD	5 1/2"	17#, J-55, LT&C, New, 1.71/1.574/2.20

Drilling Program Page 1

Attached to Form 3160-3 Chevron USA Inc. Skelly Unit #969 1290 FSL & 330 FWL, Unit M SW/4 SW/4, Sec 14 T17S R31E Eddy County, NM

# 5. Cement Program:

- 13 3/8" Surface Casing: Circulate to Surface with 500 sx Class C, yield 1.32.
- 8 5/8 Intermediate Casing: Circulate to Surface with 800 sx Class C, yield 1.32...
- 5 1/2" Production Casing: Cement Casing with 1600 sx Class C, yield 1.32, with sufficient cement to circulate to surface.

# 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 bottom. The BOP will be nippled up on the 13 3/8" surface casing and tested to 1500 psi by a 3<sup>rd</sup> party. The BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a 3<sup>rd</sup> party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of 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 and choke lines and choke manifold (Exhibit #11) with 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'	Fresh Water	8.5	28	N.C.
450-1800	Brine	10	30	N.C.
1800' <b>-TD</b>	Cut Brine	9.1	29	N.C.

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

# 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.

Drilling Program Page 2

Attached to Form 3160-3 Chevron USA Inc. Skelly Unit #969 1290 FSL & 330 FWL, Unit M SW/4 SW/4, Sec 14 T17S R31E Eddy County, NM

# 9. Logging, Testing and Coring Program:

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. 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 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

# 10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2400 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

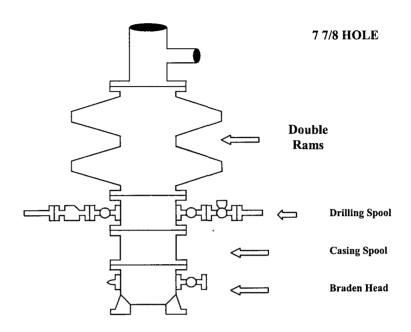
# 11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is December 15, 2007. Once commenced, the drilling operation should be finished in approximately 15 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.

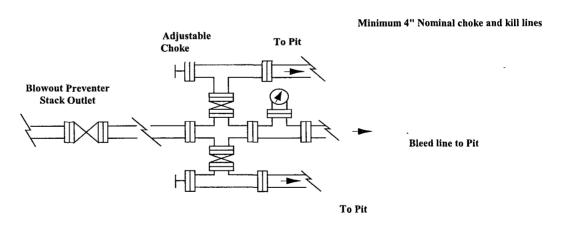
Drilling Program Page 3

# Chevron USA, Inc.

# Exhibit #9 BOPE Schematic



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



Adjustable Choke (or Positive)

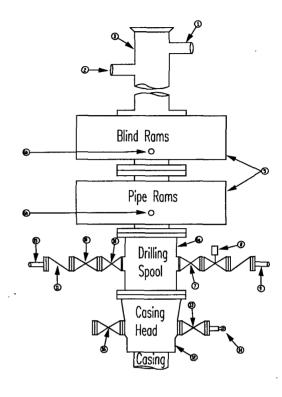
# Chevron USA, Inc.

# **Minimum Blowout Preventer Requirements**

# 2000 psi Working Pressure 2 MWP EXHIBIT #10

**Stack Requirements** 

	Stack Requireme	AA CO	
NO.	Items	Min.	Min.
		I.D.	Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min, kill line and 3" min, choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



#### **OPTIONAL**

1.6	Elanged Malus	1 12/16
1 10	Flanged Valve	1 13/16
1		, I

## CONTRACTOR'S OPTION TO FURNISH:

- All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
- Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
- 3. BOP controls, to be located near drillers' position.
- Kelly equipped with Kelly cock.
- Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
- Kelly saver-sub equipped with rubber casing protector at all times.
- 7. Plug type blowout preventer tester.
- 8. Extra set pipe rams to fit drill pipe in use on location at all times.
- Type RX ring gaskets in place of Type R.

#### COG TO FURNISH:

- 1. Bradenhead or casing head and side valves.
- 2. Wear bushing. If required.

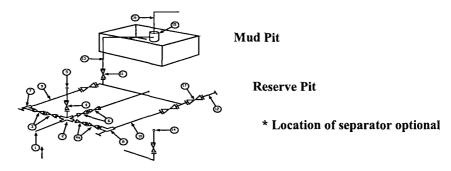
## GENERAL NOTES:

- Deviations from this drawing may be made only with the express permission of COG's Drilling Manager.
- All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
- Controls to be of standard design and each marked, showing opening and closing position
- 4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

  Replaceable parts for adjustable choke, or bean

- sizes, retainers, and choke wrenches to be conveniently located for immediate use.
- All valves to be equipped with hand-wheels or handles ready for immediate use.
- 6. Choke lines must be suitably anchored.
- 7. Handwheels and extensions to be connected and ready for
- Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
- All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
- Casinghead connections shall not be used except in case of emergency.
- 11. Do not use kill line for routine fill up operations.

Chevron USA, Inc. Exhibit #11 MIMIMUM CHOKE MANIFOLD 3,000, 5,000, and 10,000 PSI Working Pressure 2 M will be used or greater 3 MWP - 5 MWP - 10 MWP



#### **Below Substructure**

# Mimimum requirements

		3,0	00 MWP	_	5	,000 MWP		1	10,000 MWP		
No.		I.D.	NOMINAL	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating	
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000	
2	Cross 3" x 3" x 3" x 2"		-	3,000			5,000				
2	Cross 3" x 3" x 3" x 2"									10,000	
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000	
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000	
4a	Valves (1)	2 1/16		3,000	2 1/16	T	5,000	2 1/16		10,000	
5	Pressure Gauge			3,000			5,000			10,000	
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000	
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000	
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000	
9	Line		3"	3,000		3"	5,000		3"	10,000	
10	Line		2"	3,000		2"	5,000		2"	10,000	
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000	
12	Line		3"	1,000		3"	1,000		3"	2,000	
13	Line		3"	1,000		3"	1,000		3"	2,000	
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000	
15	Gas Separator		2' x5'			2' x5'			2' x5'		
16	Line		4"	1,000		4"	1,000		4"	2,000	
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000	

- (1) Only one required in Class 3M
- (2) Gate valves only shall be used for Class 10 M
- Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

#### EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- 1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees.

# Attachment to Exhibit #9 NOTES REGARDING THE BLOWOUT PREVENTERS Skelly Unit #969 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 14

# **COG Operating LLC**

Eddy County, NM (NAD 27 NME) Skelly Unit #969 Skelly Unit #969 Wellbore #1

Plan: Plan #1

# **Standard Planning Report**

04 October, 2007



# **Scientific Drilling**

# Planning Report



Database: Company:

Design:

Geo Datum: Map Zone:

From:

Well Position

EDM 2003.16 Single User Db

COG Operating LLC Eddy County, NM (NAD 27 NME)

Project: Site: Skelly Unit #969 Well: Skelly Unit #969 Wellbore: Wellbore #1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Skelly Unit #969

WELL @ 3888.00ft (Original Well Elev) WELL @ 3888.00ft (Original Well Elev)

Grid

Minimum Curvature

المراجعة

Project Eddy County, NM (NAD 27 NME)

Plan #1

Map System: US State Plane 1927 (Exact solution)

NAD 1927 (NADCON CONUS)

New Mexico East 3001

System Datum:

Mean Sea Level

Site Skelly Unit #969

Site Position:

Map

Northing: Easting:

666,298.20 ft 649.294.70ft Latitude: Longitude:

32° 49' 50.867 N 103° 50' 50.274 W

0.26° **Position Uncertainty:** 0 00 ft Slot Radius: **Grid Convergence:** 

Skelly Unit #969. Well 🦸

+N/-S 0 00 ft Northing: Easting:

666,298 20 ft 649,294 70 ft

Latitude: Longitude:

32° 49' 50 867 N 103° 50' 50 274 W

+E/-W 0 00 ft 0 00 ft Wellhead Elevation: Ground Level: 3,888 00 ft **Position Uncertainty** 

Wellbore Wellbore #1

Sample Date Declination Field Strength Magnetics Model Name Dip Angle (°) (nT) IGRF200510 60 80 10/4/2007 8 19 49.340

Design **Audit Notes:** Version: PLAN Tie On Depth: 0.00 Phase: Vertical Section: Depth From (TVD) +N/-S +E/-W Direction (°), (ft) (ft) (ft) 0.00 0.00 0 00 179 68

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# **Scientific Drilling**

Planning Report



Database: EDM 2003 16 Single User Db

Company: COG Operating LLC

Eddy County, NM (NAD 27 NME)

Project: Site: Well: Skelly Unit #969 Skelly Unit #969 Wellbore:

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Skelly Unit #969

WELL @ 3888.00ft (Original Well Elev) WELL @ 3888 00ft (Original Well Elev)

Grid : Minimum Curvature

Wellbore #1 Design: Plan #1

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2,090 44         3.81         179 68         2,090 30         -6.33         0.04         6.33         2.00         2.00         0.00           EOC hold 3.81         2         3.81         179 68         2.099.84         -6.96         0.04         6.96         0.00         0.00         0.00           2,000.00         3.81         179 68         2.199 62         -13 61         0.08         13.61         0.00         0.00         0.00           2,400.00         3.81         179 68         2.299 40         -20.25         0 11         20.25         0 00         0.00         0.00         0.00           2,500.00         3.81         179.68         2,498.96         -33.53         0.19         33.53         0.00         0.00         0.00         0.00           2,500.00         3.81         179.68         2,598.73         -40.18         0.23         40.18         0.00         0.00         0.00         0.00           2,900.00         3.81         179.68         2,698.07         -60.10         0.34         60.11         0.00         0.00         0.00           2,900.00         3.81         179.68         2,898.07         -60.10         0.34         60.11         0.00 </td <td>" KOL USOO OR</td> <td>art 2.0,7100 ;</td> <td>3, 52, 11, 90</td> <td>A STATE OF THE</td> <td>ிலித்வும் ⊢ ″விச</td> <td>4 . 200</td> <td>» , .<sup>»</sup>, ".</td> <td>and the profit of the profit</td> <td>children and so at</td> <td>12. 14. OUSE</td>	" KOL USOO OR	art 2.0,7100 ;	3, 52, 11, 90	A STATE OF THE	ிலித்வும் ⊢ ″விச	4 . 200	» , . <sup>»</sup> , ".	and the profit of the profit	children and so at	12. 14. OUSE
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2,200,00       3,81       179 68       2,199 62       -13 61       0.08       13,61       0.00       0.00       0.00         2,300,00       3,81       179 68       2,299 40       -20.25       0.11       20.25       0.00       0.00       0.00       0.00         2,400,00       3,81       179.68       2,399.18       -26.89       0.15       26.89       0.00       0.00       0.00       0.00         2,500,00       3,81       179.68       2,498.96       -33.53       0.19       33.53       0.00       0.00       0.00       0.00         2,500,00       3,81       179.68       2,598.73       -40.18       0.23       40.18       0.00	2,100.00	3.81	179.68		-6.96					
2,400.00	2,200.00	3.81	179 68	2,199 62	-13 61	0.08	13.61	0 00	0 00	0.00
2,500 00       3,81       179.68       2,498.96       -33.53       0.19       33.53       0.00       0.	2,300.00	3.81	179 68	2,299 40	-20.25	0 11	20 25	0 00	0 00	0.00
2,500 00       3,81       179.68       2,498.96       -33.53       0.19       33.53       0.00       0.	•									1
2,600.00       3,81       179,68       2,598,73       -40,18       0.23       40,18       0.00       0.00       0.00       0.00         2,700.00       3,81       179,68       2,698,51       -46,82       0.27       46,82       0.00       0.00       0.00       0.00         2,800.00       3,81       179,68       2,798,29       -53,46       0.30       53,46       0.00       0.00       0.00         3,000.00       3,81       179,68       2,898,07       -60,10       0.34       60,11       0.00       0.00       0.00       0.00         3,000.00       3,81       179,68       2,997,85       -66,75       0.38       66,75       0.00       0.00       0.00       0.00         3,200.00       3,81       179,68       3,197,41       -80,03       0.42       73,39       0.00       0.	1									)
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2,800 00	L '			•						1
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3,100 00       3 81       179 68       3,097 63       -73.39       0.42       73.39       0.00       0 00       0.00         3,200 00       3.81       179 68       3,197.41       -80.03       0 45       80 03       0 00       0.00       0.00         3,300 00       3 81       179 68       3,297 19       -86.68       0 49       86.68       0.00       0 00       0 00         3,400.00       3.81       179 68       3,396.97       -93.32       0.53       93.32       0.00       0.00       0.00       0.00         3,500.00       3 81       179 68       3,596.53       -106.60       0.60       106.61       0.00       0.00       0.00       0.00         3,700.00       3 81       179.68       3,596.30       -113.25       0.64       113.25       0.00       0.00       0.00       0.00         3,800.00       3.81       179.68       3,695.80       -119.89       0.68       119.89       0.00       0.00       0.00       0.00         3,900.00       3.81       179.68       3,895.66       -126.53       0.72       126.53       0.00       0.00       0.00       0.00         4,000.00       3.81       179.68<	2,900.00	3.81	179.68	2,898.07	-60.10	0 34	60.11	0.00	0.00	0.00
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3,600 00 3 81 179 68 3,596.53 -106.60 0.60 106.61 0 00 0.00 0.00 0 00 3,700.00 3 81 179.68 3,696.30 -113.25 0.64 113.25 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										
3,700.00       3 81       179.68       3,696.30       -113.25       0.64       113.25       0.00       0 00       0 00       0 00         3,800.00       3.81       179.68       3,796.08       -119.89       0.68       119.89       0.00       0.00       0.00         3,900.00       3.81       179.68       3,895.86       -126.53       0 72       126.53       0.00       0.00       0.00         4,000.00       3.81       179.68       3,995.64       -133.17       0.75       133.18       0.00       0.00       0.00         4,100.00       3.81       179.68       4,095.42       -139.82       0.79       139.82       0.00       0.00       0.00         4,200.00       3.81       179.68       4,195.20       -146.46       0.83       146.46       0.00       0.00       0.00       0.00         4,300.00       3.81       179.68       4,294.98       -153.10       0.87       153.10       0.00       0.00       0.00       0.00         4,500.00       3.81       179.68       4,394.76       -159.75       0.91       159.75       0.00       0.00       0.00       0.00         4,500.00       3.81       179.68       <	'			•						
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3,900.00       3.81       179.68       3,895.86       -126.53       0.72       126.53       0.00       0.00       0.00         4,000.00       3.81       179.68       3,995.64       -133.17       0.75       133.18       0.00       0.00       0.00         4,100.00       3.81       179.68       4,095.42       -139.82       0.79       139.82       0.00       0.00       0.00         4,200.00       3.81       179.68       4,195.20       -146.46       0.83       146.46       0.00       0.00       0.00         4,300.00       3.81       179.68       4,294.98       -153.10       0.87       153.10       0.00       0.00       0.00         4,400.00       3.81       179.68       4,394.76       -159.75       0.91       159.75       0.00       0.00       0.00         4,500.00       3.81       179.68       4,494.54       -166.39       0.94       166.39       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0.00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68 <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1									
4,000.00       3 81       179.68       3,995.64       -133 17       0.75       133 18       0 00       0 00       0.00         4,100 00       3.81       179.68       4,095.42       -139 82       0 79       139.82       0 00       0 00       0.00         4,200.00       3.81       179.68       4,195.20       -146 46       0 83       146 46       0.00       0.00       0.00         4,300 00       3.81       179.68       4,294 98       -153.10       0.87       153.10       0 00       0.00       0.00       0.00         4,400.00       3.81       179.68       4,394.76       -159 75       0 91       159.75       0.00       0.00       0.00       0.00         4,500 00       3.81       179.68       4,494.54       -166 39       0 94       166.39       0.00       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0 00       0.00       0.00         4,700 00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0 00       0 00       0.00         4,800 00       3 81       179.68       4,793.87	· ·			·						İ
4,100 00       3.81       179.68       4,095.42       -139 82       0 79       139.82       0 00       0 00       0.00         4,200.00       3.81       179.68       4,195.20       -146 46       0 83       146 46       0.00       0.00       0.00         4,300.00       3.81       179.68       4,294 98       -153.10       0.87       153.10       0 00       0.00       0.00         4,400.00       3.81       179.68       4,394.76       -159 75       0 91       159.75       0.00       0.00       0.00         4,500.00       3.81       179.68       4,494.54       -166 39       0 94       166.39       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0 00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0 00       0 00       0.00         4,800.00       3 81       179.68       4,793.87       -186.32       1.06       186.32       0 00       0 00       0 00	1									
4,200.00       3.81       179.68       4,195.20       -146.46       0.83       146.46       0.00       0.00       0.00       0.00         4,300.00       3.81       179.68       4,294.98       -153.10       0.87       153.10       0.00       0.00       0.00       0.00         4,400.00       3.81       179.68       4,394.76       -159.75       0.91       159.75       0.00       0.00       0.00       0.00         4,500.00       3.81       179.68       4,494.54       -166.39       0.94       166.39       0.00       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0.00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0.00       0.00       0.00         4,800.00       3.81       179.68       4,793.87       -186.32       1.06       186.32       0.00       0.00       0.00										
4,300 00       3.81       179.68       4,294 98       -153.10       0.87       153.10       0 00       0.00       0 00         4,400.00       3.81       179.68       4,394.76       -159.75       0 91       159.75       0.00       0.00       0.00         4,500 00       3.81       179.68       4,494.54       -166.39       0.94       166.39       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0.00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0.00       0.00       0.00         4,800.00       3.81       179.68       4,793.87       -186.32       1.06       186.32       0.00       0.00       0.00	1			•						
4,400.00       3.81       179.68       4,394.76       -159.75       0.91       159.75       0.00       0.00       0.00       0.00         4,500.00       3.81       179.68       4,494.54       -166.39       0.94       166.39       0.00 </td <td></td>										
4,500 00       3.81       179.68       4,494.54       -166 39       0.94       166.39       0.00       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0.00       0.00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0.00       0.00       0.00         4,800.00       3.81       179.68       4,793.87       -186.32       1.06       186.32       0.00       0.00       0.00	4,300 00	3.81	179.68	4,294 98	-153.10	0.87	153.10	0 00	0.00	0 00
4,500 00       3.81       179.68       4,494.54       -166 39       0.94       166.39       0.00       0.00       0.00       0.00         4,600.00       3.81       179.68       4,594.32       -173.03       0.98       173.03       0.00       0.00       0.00       0.00         4,700.00       3.81       179.68       4,694.10       -179.67       1.02       179.68       0.00       0.00       0.00         4,800.00       3.81       179.68       4,793.87       -186.32       1.06       186.32       0.00       0.00       0.00	4.400.00	3.81	179.68	4.394.76	-159 75	0 91	159.75	0.00	0.00	0.00
4,600.00     3.81     179.68     4,594.32     -173.03     0.98     173.03     0.00     0.00     0.00       4,700.00     3.81     179.68     4,694.10     -179.67     1.02     179.68     0.00     0.00     0.00       4,800.00     3.81     179.68     4,793.87     -186.32     1.06     186.32     0.00     0.00     0.00										
4,700 00     3.81     179.68     4,694.10     -179.67     1.02     179.68     0 00     0 00     0.00       4,800 00     3 81     179 68     4,793 87     -186.32     1.06     186.32     0 00     0 00     0 00				•						
4,800 00 3 81 179 68 4,793 87 -186.32 1.06 186.32 0 00 0 00										
	1									
4,900.00 3.81 179.68 4,893.65 -192.96 1.09 192.96 0.00 0.00 0.00										
	4,900.00	3.81	179 68	4,893 65	-192.96	1 09	192.96	0 00	0 00	0 00

# **Scientific Drilling**

# Planning Report



COMPASS 2003.16 Build 42

Database: EDM 2003.16 Single User Db
Company COG Operating LLC
Project: Eddy County, NM (NAD 27 NME)
Site: Skelly Unit #969
Well Skelly Unit #969
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Skelly Unit #969
TVD Reference: WELL @ 3888.00ff (On MD Reference:

MD Reference: Survey Calculation Method: Hand Latiner The Preside Contact

WELL @ 3888.00ft (Original Well Elev) WELL @ 3888 00ff (Onginal Well Èlev)

Grid

Minimum Curvature

Planned Survey  Measured  Depth	lination	Azimuth	Vertical Depth	+N/-\$	28 35 G	Vertical Section		Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft) (	/100ft)	(°/100ft)
5,000.00	3.81	179 68	4,993.43	-199 60	1.13	199.60	0 00	0 00	0.00
5,100.00	3 81	179 68	5,093.21	-206.24	1.17	206 25	0 00	0.00	0.00
5,200.00	3.81	179 68	5,192.99	-212.89	1.21	212.89	0.00	0 00	0.00
5,300.00	3.81	179 68	5,292.77	-219 53	1 24	219 53	0.00	0 00	0 00
5,400.00	3.81	179 68	5,392 55	-226.17	1 28	226.18	0.00	0.00	0.00
5,500.00	3.81	179 68	5,492.33	-232.82	1 32	232 82	0.00	0 00	0 00
5,600 00	3.81	179.68	5,592.11	-239.46	1 36	239.46	0.00	0.00	0.00
5,700 00	3.81	179.68	5,691.89	-246.10	1.40	246.10	0.00	0 00	0.00
5,800.00	3 81	179.68	5,791.67	-252 74	1.43	252.75	0 00	0.00	0.00
5,900.00	3.81	179 68	5,891.45	-259 39	1 47	259.39	0.00	0.00	0.00
6,000.00	3.81	179.68	5,991 22	-266.03	1 51	266.03	0.00	0 00	0.00
6,100.00	3 81	179 68	6,091.00	272 67	1.55	272.68	0.00	0.00	0 00
6,200.00	3.81	179.68	6,190.78	່ -279 31	1.58	279,32	0.00	0.00	0 00
6,300 00	3.81	179.68	6,290.56	-285.96	1.62	285 96	0 00	0.00	0 00
6,400.00	3.81	179.68	6,390 34	-292.60	1.66	292.60	0.00	0.00	0 00
6,500 00	3 81	179.68	6,490.12	-299.24	1 70	299.25	0.00	0.00	0 00
6,509.90	3.81	179.68	6,500.00	-299 90	1.70	299.90	0.00	0.00	0.00
PBHL-Skelly Unit	#969		4 , 4		. 4 T. 1	". · ×.	BUNG TEN IF	State of the	1 200

Targets  Target Name  hit/miss target  Shape	o Angle Di	p Dir. (°)	TVD (ft)	+N/-Si (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude:	Longitude
PBHL-Skelly Unit #969 - plan hits target - Point	0.00	0.00	6,500 00	-299.90	1.70	665,998.30	649,296.40	32° 49' 47 900 N	103° 50' 50 270 W

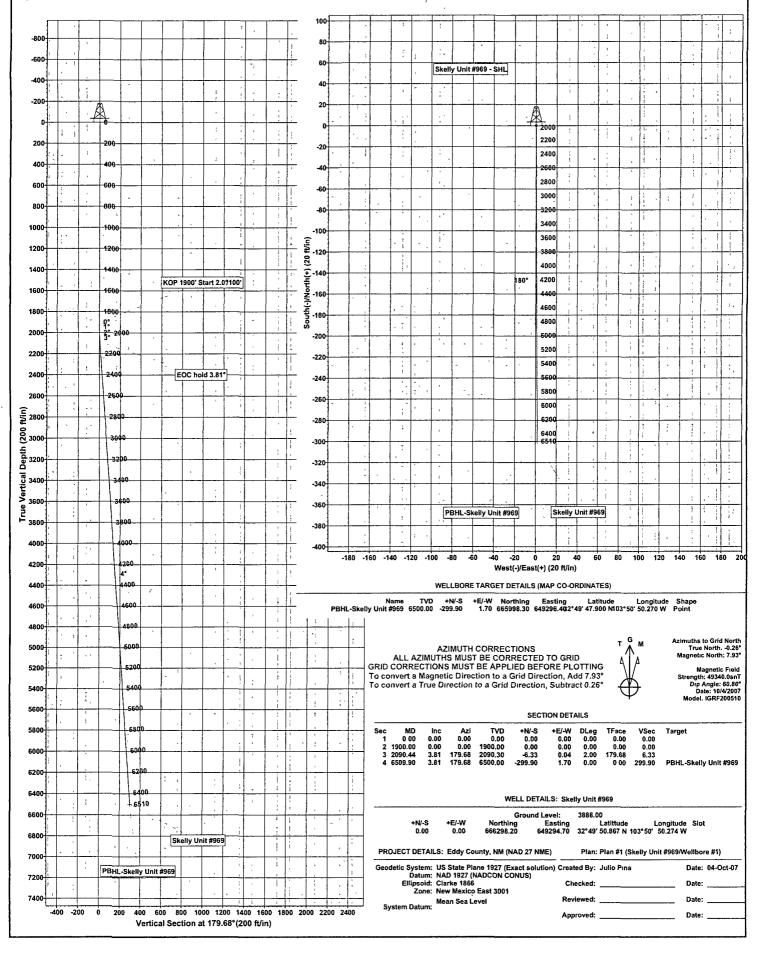
	2,090.44	2,090.30	-6.33	0.04	EOC hold 3.81°
	1,900.00	1,900 00	0.00	0.00	KOP 1900' Start 2 0°/100'
	Measüred Depth (ft)	Vertical Depth (ft)	Local Coordina +N/-S (ft)	tes +E/-W (ft)	Comment:
Plan Annotati	ons.	ి 🛂 🚉		1.00	
200 min 200	The state of the s	BBC ~ 1 rice admits more 100000 Managements collect	CONTRACTOR OF THE PARTY OF THE	SEE TO CHARLE HAT MADE TO A SHOULD BE SEEN	B. Alliando de a cris de companya della particola de la Pareza della della circada depublicada. La della del

# **COG Operating LLC**

Scientific Drilling for COG Operating LLC Site: Eddy County, NM (NAD 27 NME)

Well: Skelly Unit #969 Wellbore: Wellbore #1 Design: Plan #1





# Skelly Unit #969 - Plan #1 Proposal

# SCIENTIFIC DRILLING

FOR

COG Operating LLC

Well Name

: Skelly Unit #969 : Eddy County, NM (NAD 27 NME) Well Location

Design : Plan #1

Data Reference : Grid North Well Surface Loc. : X = 649294.70Y = 666298.20

: NAD 1927 (NADCON CONUS) US State Plane 1927 (Exact solution), New Mexico East 3001 : 32° 49' 50.867 N : 103° 50' 50.274 W Map Projection

Latitude Longitude

: NAD 1927 (NADCON CONUS) Geodetic Datum

Measured	_			Sub-Sea	Vertical	Local Co	oordinates	UTM Co	ordinates
Vertical Depth	Dogleg Course	Inc.	Azim.	Depth	Depth	N/S	E/W	N/S	E/W
Section	Rate Length								
(ft)	(Ťt)			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
(ft) 0.00	(°/100ft) 0.00	0.00	0.00	-3888.00	0.00	0.00 N	0.00 E	666298.20 N	649294.70 E
0.00	0.00	0.00	0.00	3000.00	0.00	0.00 1	0.00 E	000230120 11	013231170 2
1900.00	1900.00	0.00	0.00	-1988.00	1900.00	0.00 N	0.00 E	666298.20 N	649294.70 E
0.00	0.00	KOP 190		2.0°/100'	- Keeper				
2000.00	100.00	2.00	179.68	-1888.02	1999.98	1.75 S	0.01 E	666296.45 N	649294.71 E
1.75	2.00	MWD (2)							
2090.44	90.44		179.68	-1797.70	2090.30	6.33 s	0.04 E	666291.87 N	649294.74 E
6.33	2.00	EOC hold		4700 46	2000 04				
2100.00	9.56	3.81	179.68	-1788.16	2099.84	6.96 S	0.04 E	666291.24 N	649294.74 E
6.96 2200.00	$0.00 \\ 100.00$	2 01	170 69	-1688.38	2100 62	12 61 c	0 00 5	666304 FO N	640204 70 5
13.61	0.00	3.81	179.68	-1000.30	2199.62	13.61 S	0.08 E	666284.59 N	649294.78 E
2300.00	100.00	3.81	179.68	-1588.60	2299.40	20.25 s	0.11 E	666277.95 N	649294.81 E
20.25	0.00	3.01	175.00	1300.00	2233.40	20.23	U.II L	000277.33 N	043234.01 L
2400.00	100.00	3.81	179.68	-1488.82	2399.18	26.89 s	0.15 E	666271.31 N	649294.85 E
26.89	0.00	5.5-				20.05	0.25	000272132 11	0.52505 2
2500.00	100.00	3.81	179.68	-1389.04	2498.96	33.53 s	0.19 E	666264.67 N	649294.89 E
33.53	0.00								
2600.00	100.00	3.81	179.68	-1289.27	2598.73	40.18 S	0.23 E	666258.02 N	649294.93 E
					*	and the second second			

skelly U	Init #9	969 - 1	Plan	#1	Proposal
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40.18	0.00			- · · · · · · · · · · · · · · · · · · ·					
2700.00	100.00	3.81	179.68	-1189.49	2698.51	46.82 S	0.27 E	666251.38 N	649294.97 E
46.82 2800.00	0.00 100.00	3.81	179.68	-1089.71	2798.29	53.46 S	0.30 E	666244.74 N	649295.00 E
53.46 2900.00	$0.00 \\ 100.00$	3.81	179.68	-989.93	2898.07	60.10 s	0.34 E	666238.10 N	649295.04 E
60.11	0.00								
3000.00 66.75	$\substack{100.00\\0.00}$	3.81	179.68	-890.15	2997.85	66.75 S	0.38 E	666231.45 N	649295.08 E
3100.00	100.00	3.81	179.68	-790.37	3097.63	73.39 s	0.42 E	666224.81 N	649295.12 E
73.39 3200.00	$\substack{0.00\\100.00}$	3 81	179.68	-690.59	3197.41	80.03 s	0.45, E	666218.17 N	649295.15 E
80.03	0.00								
3300.00 86.68	$     \begin{array}{r}       100.00 \\       0.00     \end{array} $	3.81	179.68	-590.81	3297.19	86.68 S	0.49 E	666211.52 N	649295.19 E
3400.00	100.00	3.81	179.68	-491.03	3396.97	93.32 s	0.53 E	666204.88 N	649295.23 E
93.32 3500.00	0.00 100.00	3.81	179.68	-391.25	3496.75	99.96 s	0.57 E	666198.24 N	649295.27 E
99.96	0.00								
3600.00 106.61	$ \begin{array}{c} 100.00 \\ 0.00 \end{array} $	3.81	179.68	-291.47	3596.53	106.60 s	0.60 E	666191.60 N	649295.30 E
3700.00	100.00	3.81	179.68	-191.70	3696.30	113.25 s	0.64 E	666184.95 N	649295.34 E
113.25 3800.00	$\substack{0.00\\100.00}$	3.81	179.68	-91.92	3796.08	119.89 s	0.68 E	666178.31 N	649295.38 E
119.89	0.00								
3900.00 126.53	$100.00 \\ 0.00$	3.81	179.68	7.86	3895.86	126.53 s	0.72 E	666171.67 N	649295.42 E
4000.00	100.00	3.81	179.68	107.64	3995.64	133.17 s	0.75 E	666165.03 N	649295.45 E
133.18 4100.00	0.00 100.00	3.81	179.68	207.42	4095.42	139.82 s	0.79 E	666158.38 N	649295.49 E
139.82 4200.00	$0.00 \\ 100.00$	3.81							
146.46	0.00	3.01	179.68	307.20	4195.20	146.46 S	0.83 E	666151.74 N	649295.53 E
4300.00 153.10	$ \begin{array}{c} 100.00 \\ 0.00 \end{array} $	3.81	179.68	406.98	4294.98	153.10 s	0.87 E	666145.10 N	649295.57 E
4400.00	100.00	3.81	179.68	506.76	4394.76	159.75 s	0.91 E	666138.45 N	649295.61 E
159.75 4500.00	$\begin{array}{c} 0.00 \\ 100.00 \end{array}$	3.81	179.68	606.54	4494.54	166.39 s	0.94 E	666131.81 N	649295.64 E
166.39	0.00								
4600.00 173.03	$\frac{100.00}{0.00}$	3.81	179.68	706.32	4594.32	173.03 S	0.98 E	666125.17 N	649295.68 E
4700.00 179.68	100.00	3.81	179.68	806.10	4694.10	179.67 s	1.02 E	666118.53 N	649295.72 E
4800.00	$0.00 \\ 100.00$	3.81	179.68	905.87	4793.87	186.32 s	1.06 E	666111.88 N	649295.76 E
186.32 4900.00	$0.00 \\ 100.00$	3.81	179.68	1005.65	4893.65	192.96 s	1.09 E	666105.24 N	649295.79 E
192.96	0.00							r	
5000.00	100.00	3.81	179.68	1105.43	4993.43	199.60 s	1.13 E	666098.60 N	649295.83 E

199.60	0.00			•		•			
5100.00	100.00	3.81	179.68	1205.21	5093.21	206.24 S	1.17 E	666091.96 N	649295.87 E
206.25	0.00								
5200.00	100.00	3.81	179.68	1304.99	5192.99	212.89 S	1.21 E	666085.31 N	649295.91 E
212.89	0.00								
5300.00	100.00	3.81	179.68	1404.77	5292.77	219.53 S	1.24 E	666078.67 N	.649295 <b>.</b> 94 E
219.53	0.00								
5400.00	100.00	3.81	179.68	1504.55	5392.55	226.17 S	1.28 E	666072.03 N	649295.98 E
226.18	0.00						*		
5500.00	100.00	3.81	179.68	1604.33	5492.33	232.82 S	1.32 E	666065.38 N	649296.02 E
232.82	0.00								
5600.00	100.00	3.81	179.68	1704.11	5592.11	239.46 S	1.36 E	666058.74 N	649296.06 E
239.46	0.00								
5700.00	100.00	3.81	179.68	1803.89	5691.89	246.10 S	1.40 E	666052.10 N	649296.10 E
246.10	0.00								
5800.00	100.00	3.81	179.68	1903.67	5791.67	252.74 S	1.43 E	666045.46 N	649296.13 E
252.75	0.00								
5900.00	100.00	3.81	179.68	2003.45	5891.45	259.39 S	1.47 E	666038.81 N	649296.17 E
259.39	0.00								

266.03 S

272.67 S

279.31 S

285.96 S

292,60 S

299.90 S

1.51 E

1.55 E

1.58 E

1.62 E

1.66 E

1.70 E

666032.17 N

666025.53 N

666018.89 N

666012.24 N

666005.60 N

665998.30 N

649296.21 E

649296.25 E

649296.28 E

649296.32 E

649296.36 E

649296.40 E

Skelly Unit #969 - Plan #1 Proposal

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to WELL. Northings and Eastings are relative to Well.

5991.22

6091.00

6190.78

6290.56

6390.34

6500.00

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Slot and calculated along an Azimuth of 179.675° (Grid).

2103.22

2203.00

2302.78

2402.56

2502.34

2612.00

6000.00

266.03

6100.00

272.68

6200.00

279.32

6300.00

6400.00

292.60

299.90

6509.90

285.96

100.00

0.00

100.00

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109.90

0.00

3.81 179.68

3.81 179.68

3.81 179.68

3.81 179.68

3.81 179.68

3.81 179.68

PBHL-Skelly Unit #969

Coordinate System is NAD 1927 (NADCON CONUS) US State Plane 1927 (Exact solution), New Mexico East 3001. Grid Convergence at Surface is 0.264°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 6509.90ft., the Vertical Section Displacement is 299.90ft., in the Direction of 179.675° (Grid).

# Chevron USA, Inc.

# 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.

# 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

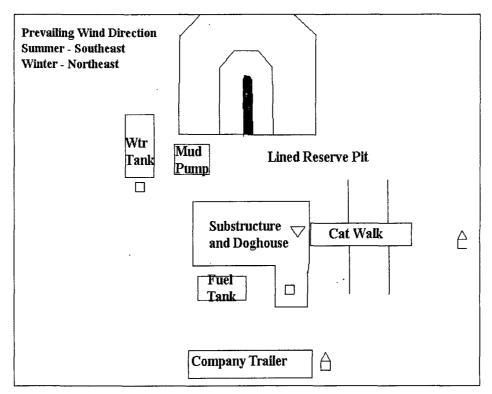
# WARNING YOU ARE ENTERING AN H2S

# **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

Chevron USA, Inc. (COG OPERATING LLC, agent)
1-432-683-7443

# DRILLING LOCATION H2S SAFTY EQUIPMENT Exhibit # 8



- 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 and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM. The NIAF inventoried an area 600' x 600', with an impact area of 300' x 300'. Access will be provided by existing lease roads & existing well locations.
- B. All roads to the location are shown in Exhibit below. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling well will be done where necessary.
- C. Directions to Location: From intersection of U. S. Hwy 82 & CR 223, go NE on U. S. Hwy 82 apprx 1.6 miles. Turn Left & go NW .3 mile. Turn Right & go North apprx .35 mile. Turn Left & go West apprx .1 mile. This location is apprx 50' to the North.
- 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.

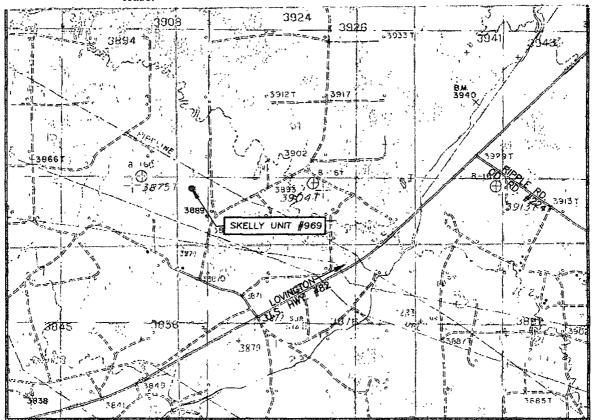


Exhibit #4

# 2. Proposed Access Road:

Exhibit #3 shows the 0' of new access road to be constructed. The road will be constructed as follows:

- A. The Maximum width of the running surface will be 14'. The road will be crowned and 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 nearest BLM approved caliche pit or reserve pit area.
- F. The proposed access road as shown in Exhibit #3 has been centerline flagged by John West Engineering, Hobbs, New Mexico.

# 3. Location of Existing Wells & Proposed flow lines for New Wells:

Exhibit #4 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. Proposed flow lines, will follow an archaeologically approved route to the Tank Battery.

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

- A. Chevron USA Inc. does operate a production facility on this lease.
- B. If the well is productive, contemplated facilities will be as follows:
  - 1) Yeso Completion: Will be sent to the Skelly Unit tank battery. The Facility 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 a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.

4) It will be necessary to run electric power if this well is productive. Power will be run by CVE and they will send in a separate plan for power.

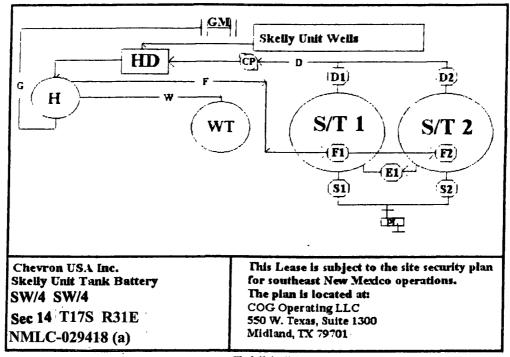


Exhibit #5

- A. If the well is productive, rehabilitation plans are as follows:
  - 1) The reserve pit will be back filled after the contents of the pit are dry (within 120 days after the well is completed).
  - 2) Topsoil removed from the drill site will be used to recontour the pit area to the original natural level, as nearly as possible, and reseeded as per BLM specifications.

## 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 #4. If a commercial fresh water source is nearby, fasline 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:

#### 6. Source of Construction Materials:

All caliche required for construction of the drill pad and proposed new access road (approximately 2500 cubic yards) will be obtained from a BLM approved caliche pit or the reserve pit.

# 7. Methods of Handling Water Disposal:

- A. Drill cuttings not retained for evaluation purposes will be disposed into the reserve pit.
- B. Drilling fluids will be contained in a lined working pit. The reserve pit will contain any excess drilling fluid or flow from the well during drilling, cementing and completion operations. The reserve pit will be an earthen pit, approximately 125' X 125' X 10' deep with a dividing wall dividing it into two horseshoe style pits and fenced on three sides prior to drilling. It will be fenced on the fourth side immediately following rig removal. The reserve pit will be lined 125' X 125' X 10'. The reserve pit will be lined (12-mil thickness) to minimize loss of drilling fluids and saturation of the ground with brine water.
- C. Water produced from the well during completion may be disposed into the reserve pit or a steel tank (depending on the rates). After the well is permanently placed on production, produced water will be collected in tanks (fiberglass) until pumped to an approved disposal system; produced oil will be collected in steel tanks until sold.
- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. All water and fluids will be disposed of into the reserve pit. Salts and other chemicals produced during drilling or testing will be disposed into the reserve pit. 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. The reserve pit will be completely fenced and kept closed until it has dried. When the reserve pit is dry enough to breakout and backfill and reseeded as per BLM specifications as weather permits. 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 #6. Dimensions of the pad and pits are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.

- B. Diagram below shows the proposed orientation of reserve pit, working pit and access road. There is a possibility that the pits will be moved around depending on Caliche in the area. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.
- C. The reserve pit will be lined with high quality plastic sheeting (12 mil thickness).

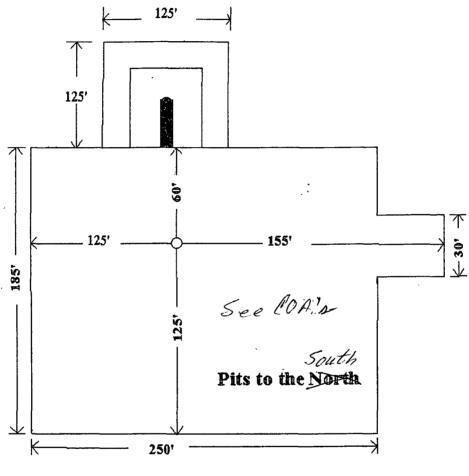


Exhibit #6

## 10. Plans for Restoration of the Surface:

- A. Upon completion of the proposed operations, the pit area, after allowing drying, will be broken out and leveled. The original topsoil will be returned to the pit area, which will be leveled and contoured to as nearly the original topography as possible.
- B. The disturbed area will be revegetated by reseeding during the proper growing season with a seed mixture of native grasses as recommended by the BLM.

- C. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time that the rig is removed, the reserve pit will be fenced on the rig (fourth) side to prevent livestock from being entrapped. The fencing will remain in place until the pit area is cleaned up and leveled. No oil will be left on the surface of the fluid in the pit.
- D. Upon completion of proposed operations, if the well is completed, the reserve pit area will be treated as outlined above within the same prescribed time. Any additional caliche required for facilities will be obtained from a BLM approved caliche pit. Topsoil removed from the drill site will be used to recontour the pit area to its original natural level and reseeded as per BLM specifications.

# 11. Surface Ownership:

The well site and lease is located entirely on Federal surface. We have notified the surface lessee of the impending operations. According to BLM the lease is Charles Martin, P.O. Box 706, Artesia NM 88211.

#### 12. Other Information:

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is native scrub grass with sagebrush.
- B. There is no permanent or live water in the immediate area.
- C. A Cultural Resources Examination has been requested and will be forwarded to your office in the near future.

#### 13. 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 CHEVRON USA, Inc. (COG Operating LLC, Agent) 550 West Texas, Suite 1300 Midland, TX 79701 Phone (432) 683-7443 (office)

# OPERATOR'S REPRESENTATIVE

John Coffman Chevron USA, Inc. COG Operating LLC (Agent) 550 W. Texas, Suite 1300 Midland, TX 79701 432-683-7443

# **CERTIFICATION**

I hereby certify that I, or person under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed by Chevron USA, Inc. (COG Operating LLC, Agent) and its contractors and subcontractors in conformity with this plan and the terms and conditions which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

9-10-07

Date

John Coffman

Drilling Supt.

# VII. DRILLING

# A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 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, (505) 361-2822

- 1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the Queen formation. Gas stream measurements are between 1000-3000 ppm and in STVs 16-5000 ppm.
- 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.

# B. CASING

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- 1. The 13-3/8 inch surface casing shall be set a minimum of 25 feet into the Rustler Anhydrite and above the salt at 450 feet and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).
  - 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 action will be done prior to drilling out that string.

Possible lost circulation in the Grayburg and San Andres formations. Possible water flows in the Salado and Artesia Groups.

- 2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a-d above.
- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
- 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.

# C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
  - e. A variance to test the surface casing and BOP/BOPE to the reduced pressure of 1500 psi with the rig pumps is approved.

Engineer on call phone (after hours): Carlsbad: (505) 706-2779

WWI 100307

# Arrant, Bryan, EMNRD

From:

Arrant, Bryan, EMNRD

Sent:

Tuesday, October 16, 2007 2:07 PM

To:

'Phyllis Edwards'

Cc:

Jones, William V., EMNRD

Subject: Skelly Unit # 969

# Hi Phyllis,

In review of the 'legal location' of this well as it penetrates the top of the Glorieta formation, it appears to me that it will be non standard.

I come up with a penetration point of @ 210' from the lease line as it tops the Glorieta.

If this is the case, then it will need a NSL. When you get a chance, please call.

Also, when your geologist has time, I need to visit with him/her about another matter regarding drilling wells in this and other areas that penetrate the Tubb formation.

Thanks, Bryan G. Arrant District II Geologist New Mexico Oil Conservation Division 1301 West Grand Ave. Artesia, NM 88210 505-748-1283 Ext. 103