

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

MAR 05 2015

RECEIVED

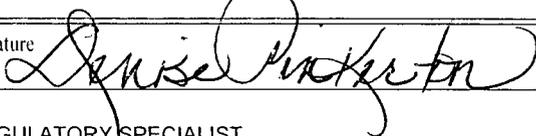
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. <b>ATS-14-850</b> <b>&lt;3142481</b>	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. White City 21 25 27 Fed Com #5H	
2. Name of Operator CHEVRON U.S.A. INC.		9. API Well No. <b>30-015-42975</b>	
3a. Address 15 SMITH ROAD MIDLAND, TEXAS 79705	3b. Phone No. (include area code) 432-687-7375	10. Field and Pool, or Exploratory HAY HOLLOW; BONE SPRING, N	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 330' FSL, & 990' FWL, UL: M At proposed prod. zone 330' FNL, & 990' FWL, UL: D		11. Sec., T. R. M. or Blk. and Survey or Area SEC 21, T-25S, R-27E (SHL) SEC 21, T-25S, R-27E (BHL)	
14. Distance in miles and direction from nearest town or post office* 10 MILES FROM MALAGA, NEW MEXICO		12. County or Parish EDDY	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330' FSL	16. No. of acres in lease 320	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 3398' TO FED K GAS COM	19. Proposed Depth TVD <b>11,500</b> MD- <b>16,500'</b>	20. BLM/BIA Bond No. on file CA0329	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3128' GL	22. Approximate date work will start*	23. Estimated duration	

24. Attachments

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

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

25. Signature 	Name (Printed/Typed) DENISE PINKERTON	Date 05/22/2014
Title REGULATORY SPECIALIST		
Approved by (Signature) <b>Steve Caffey</b>	Name (Printed/Typed)	<b>MAR 3 2015</b>
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

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.

**Carlsbad Controlled Water Basin 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.

(Continued on page 2)

\*(Instructions on page 2)

APPROVAL FOR TWO YEARS

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed 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 the company I represent, 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 a false statement.

Executed this 20 day of May, 20 14

Name: K Wojtasek  
Kelly Wojtasek - Project Manager

Address: 1400 Smith Street, 40039  
Houston, TX 77027

Office 713-372-9691

E-mail: kellyanne@chevron.com

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 743-1233 Fax: (575) 743-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6173 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

MAR 05 2015

AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-42975	<sup>2</sup> Pool Code 30216	<sup>3</sup> Pool Name Hay Hollow; Bone Spring, North
<sup>4</sup> Property Code 314248	<sup>5</sup> Property Name WHITE CITY 21 25 27 FED COM	
<sup>7</sup> OGRID No. 4323	<sup>8</sup> Operator Name CHEVRON U.S.A. INC.	<sup>9</sup> Elevation 3128'

<sup>10</sup> Surface Location

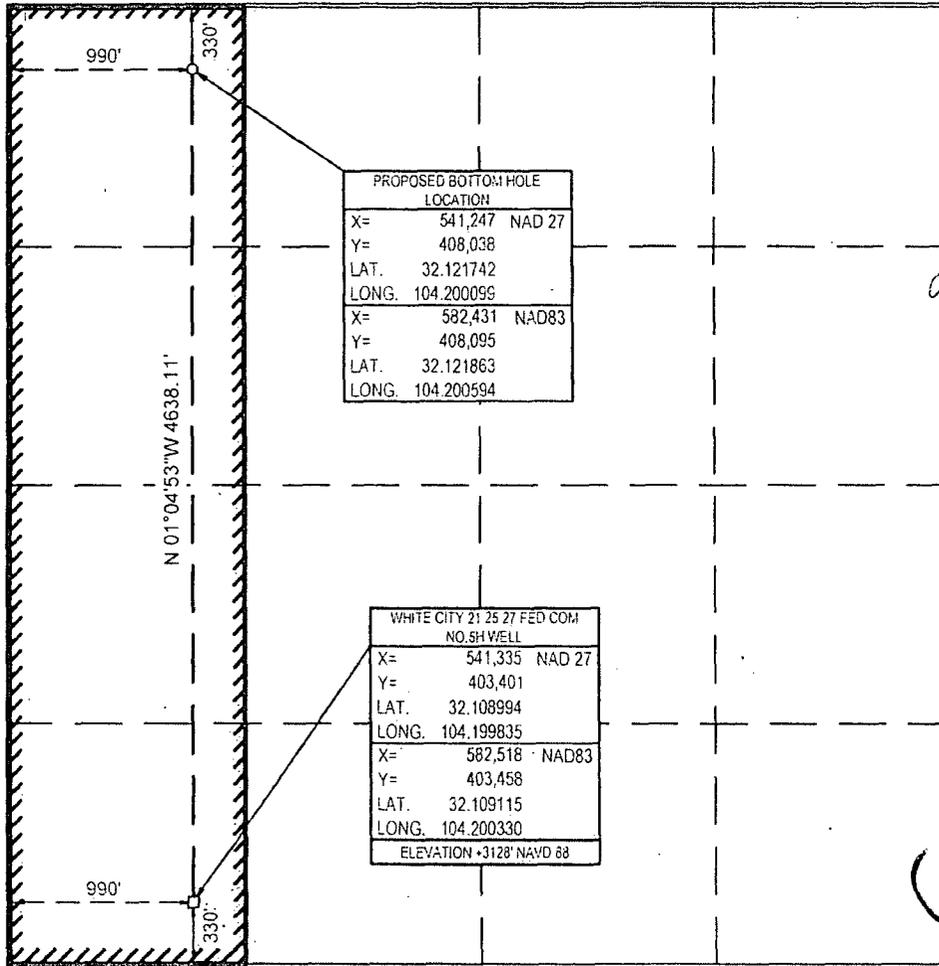
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	21	25 SOUTH	27 EAST, N.M.P.M.		330'	SOUTH	990'	WEST	EDDY

<sup>11</sup> 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
D	21	25 SOUTH	27 EAST, N.M.P.M.		330'	NORTH	990'	WEST	EDDY

<sup>12</sup> Dedicated Acres 160	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

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.



PROPOSED BOTTOM HOLE LOCATION			
X=	541,247	NAD 27	
Y=	408,038		
LAT.	32.121742		
LONG.	104.200099		
X=	582,431	NAD83	
Y=	408,095		
LAT.	32.121863		
LONG.	104.200594		

WHITE CITY 21 25 27 FED COM NO. 5H WELL			
X=	541,335	NAD 27	
Y=	403,401		
LAT.	32.108994		
LONG.	104.199835		
X=	582,518	NAD83	
Y=	403,458		
LAT.	32.109115		
LONG.	104.200330		
ELEVATION *3128' NAVD 88			

<sup>17</sup> OPERATOR CERTIFICATION  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Denise Pinkerton 05/22/2014  
Signature Date

Denise Pinkerton  
Printed Name

lea.ke@dchevron.com  
E-mail Address

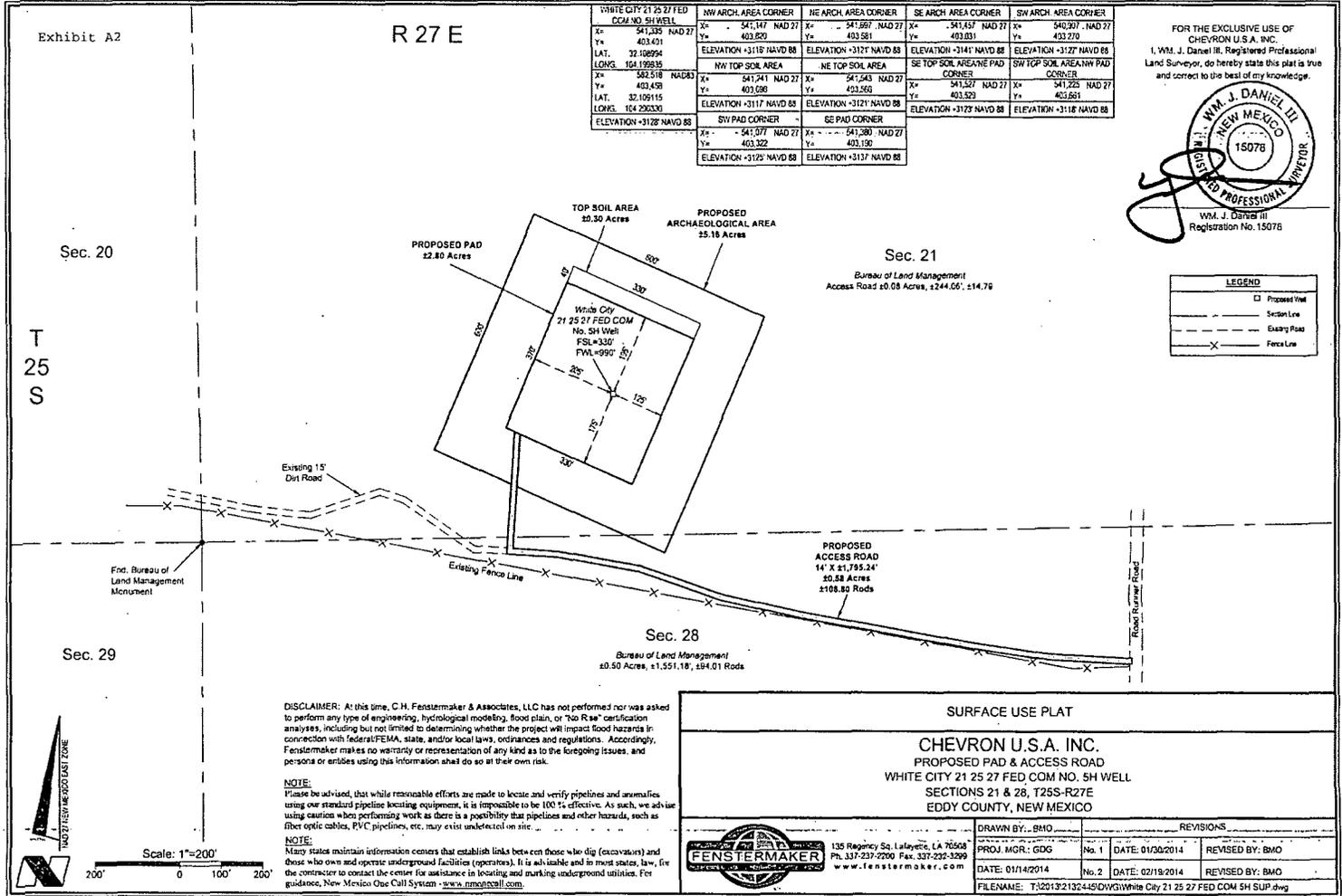
<sup>18</sup> SURVEYOR CERTIFICATION  
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

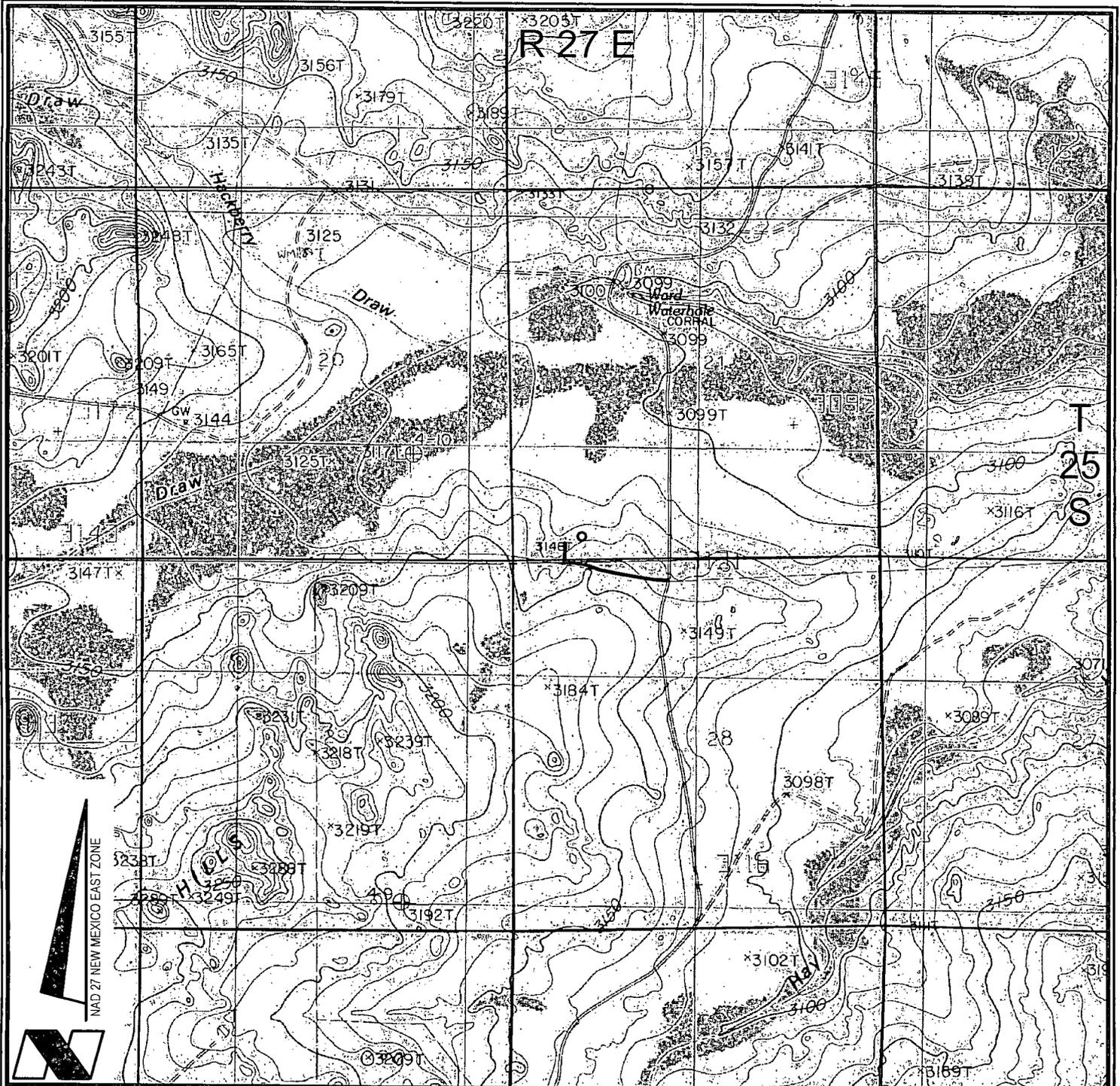
Feb 28, 2014  
Date of Survey

Signature and Seal of Professional Surveyor:  
W. J. DANIEL III  
NEW MEXICO  
15078  
REGISTERED PROFESSIONAL SURVEYOR

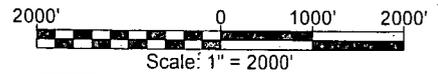
Certificate Number  
#15078

# Exhibit A-2





VICINITY MAP



**CHEVRON U.S.A. INC.**

WHITE CITY 21 25 27 FED COM NO. 5H WELL  
 LOCATED 330' FSL AND 990' FWL  
 SECTION 21, T25S-R27E  
 EDDY COUNTY, NEW MEXICO



Lafayette New Orleans Houston  
 135 Regency Sq. Lafayette, LA 70508  
 Ph. 337-237-2200 Fax. 337-232-3299  
[www.fenstermaker.com](http://www.fenstermaker.com)

DRAWN BY: BMO

PROJ. MGR.: GDG

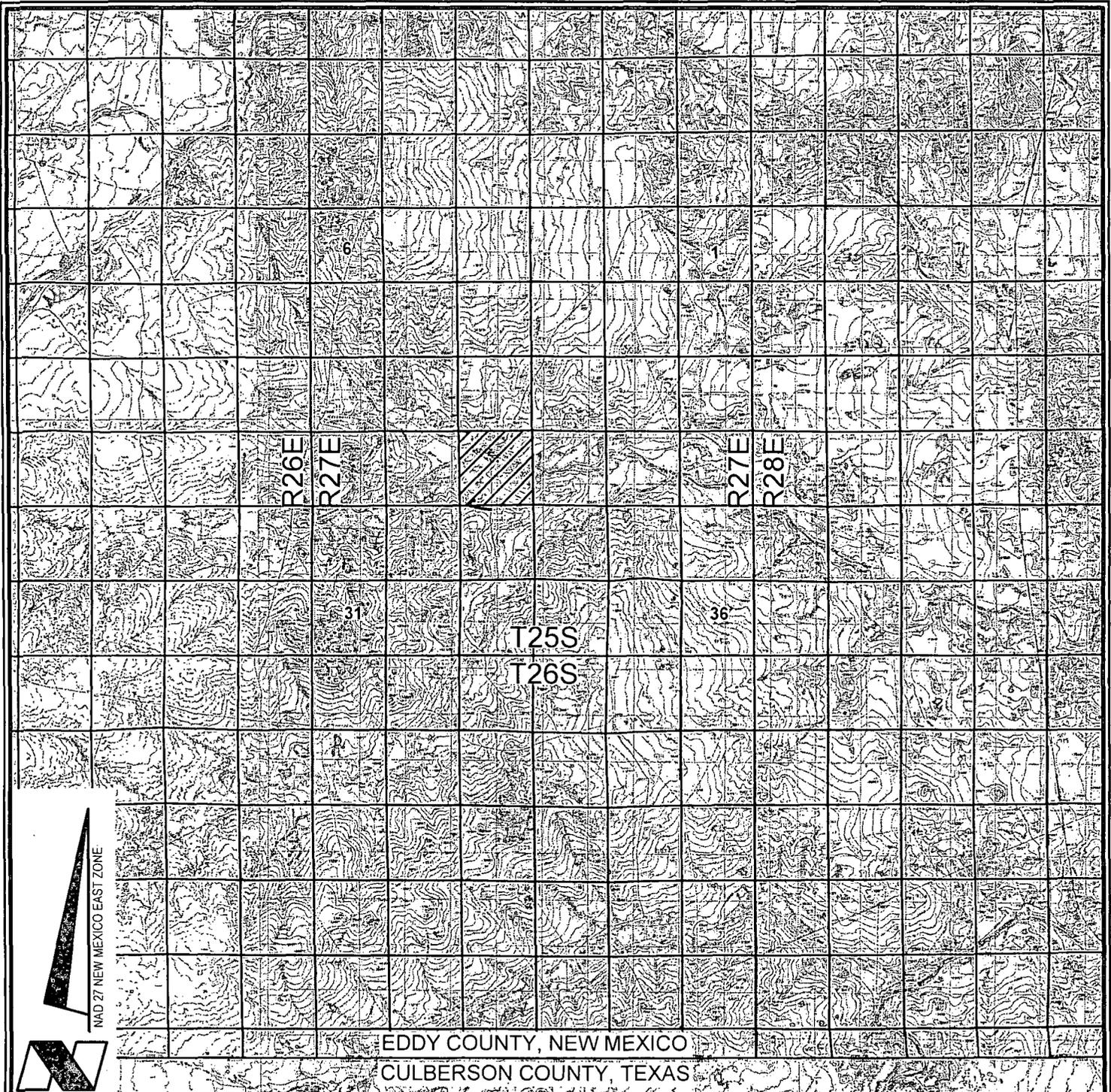
REVISED: 01/30/2014 BMO  
 02/19/2014 BMO

DATE: 01/14/2014

SHEET 1 OF 3 SHEETS

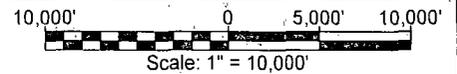
FILENAME: T:\2013\2132445\DWG\White City 21 25 27 FED COM 5H APD.dwg

# Exhibit A-3



EDDY COUNTY, NEW MEXICO  
CULBERSON COUNTY, TEXAS

VICINITY MAP



## CHEVRON U.S.A. INC.

WHITE CITY 21 25 27 FED COM NO. 5H WELL  
LOCATED 330' FSL AND 990' FWL  
SECTION 21, T25S-R27E  
EDDY COUNTY, NEW MEXICO



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DRAWN BY: BMO

PROJ. MGR.: GDG

FILENAME: T:\2013\2132445\DWG\White City 21 25 27 FED COM 5H APD.dwg

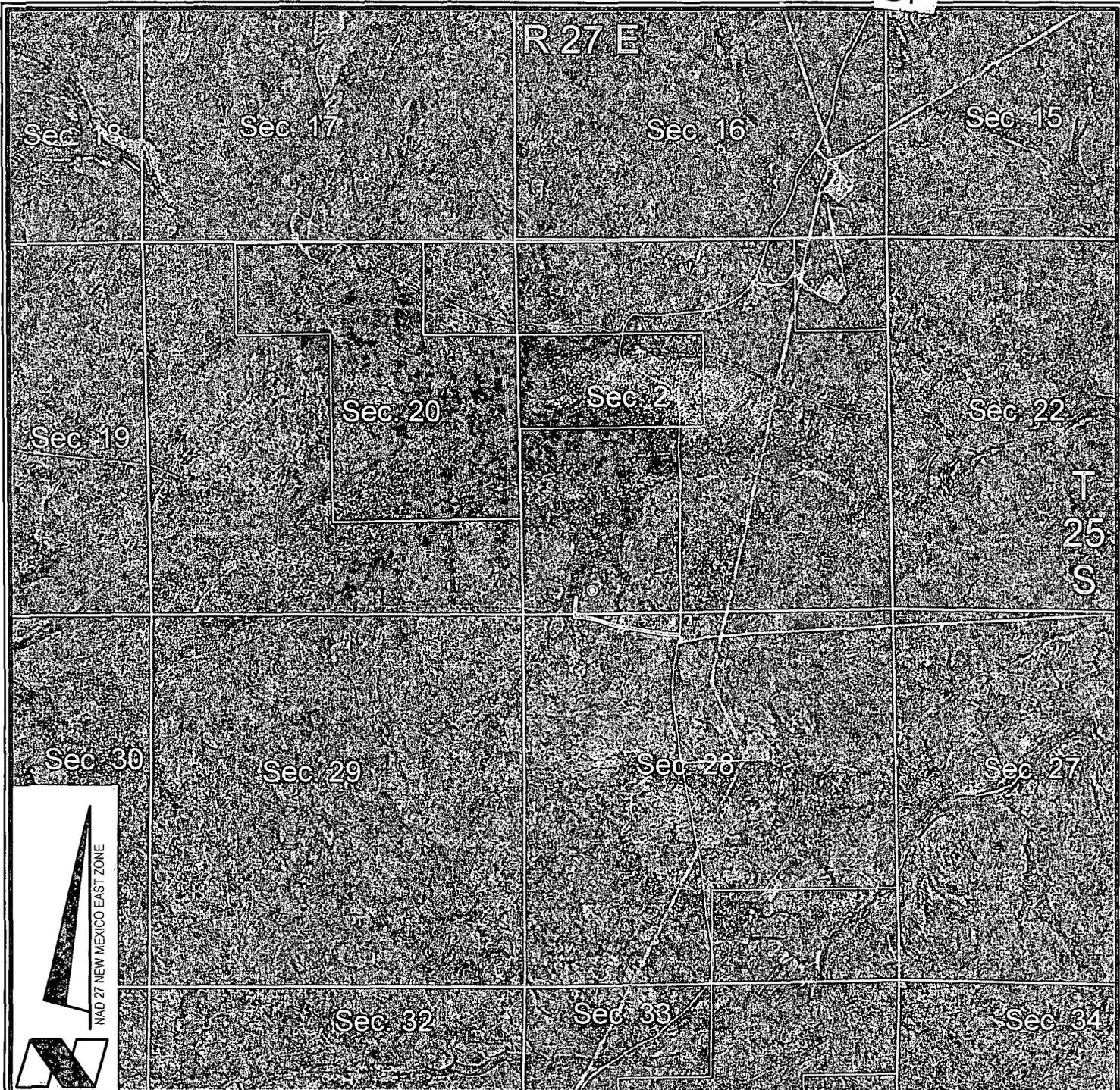
REVISED: 01/30/2014 BMO

02/19/2014 BMO

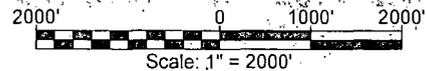
DATE: 01/14/2014

SHEET 2 OF 3 SHEETS

Exhibit A-3



VICINITY MAP



-  = FEDERAL LAND
-  = FEE LAND
-  = STATE LAND

**CHEVRON U.S.A. INC.**  
 WHITE CITY 21 25 27 FED COM NO. 5H WELL  
 LOCATED 330' FSL AND 990' FWL  
 SECTION 21, T25S-R27E  
 EDDY COUNTY, NEW MEXICO



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DRAWN BY: BMO

PROJ. MGR.: GDG

FILENAME: T:\2013\2132445\DWG\White City 21 25 27 FED COM 5H APD.dwg

REVISED: 01/30/2014 BMO

02/19/2014 BMO

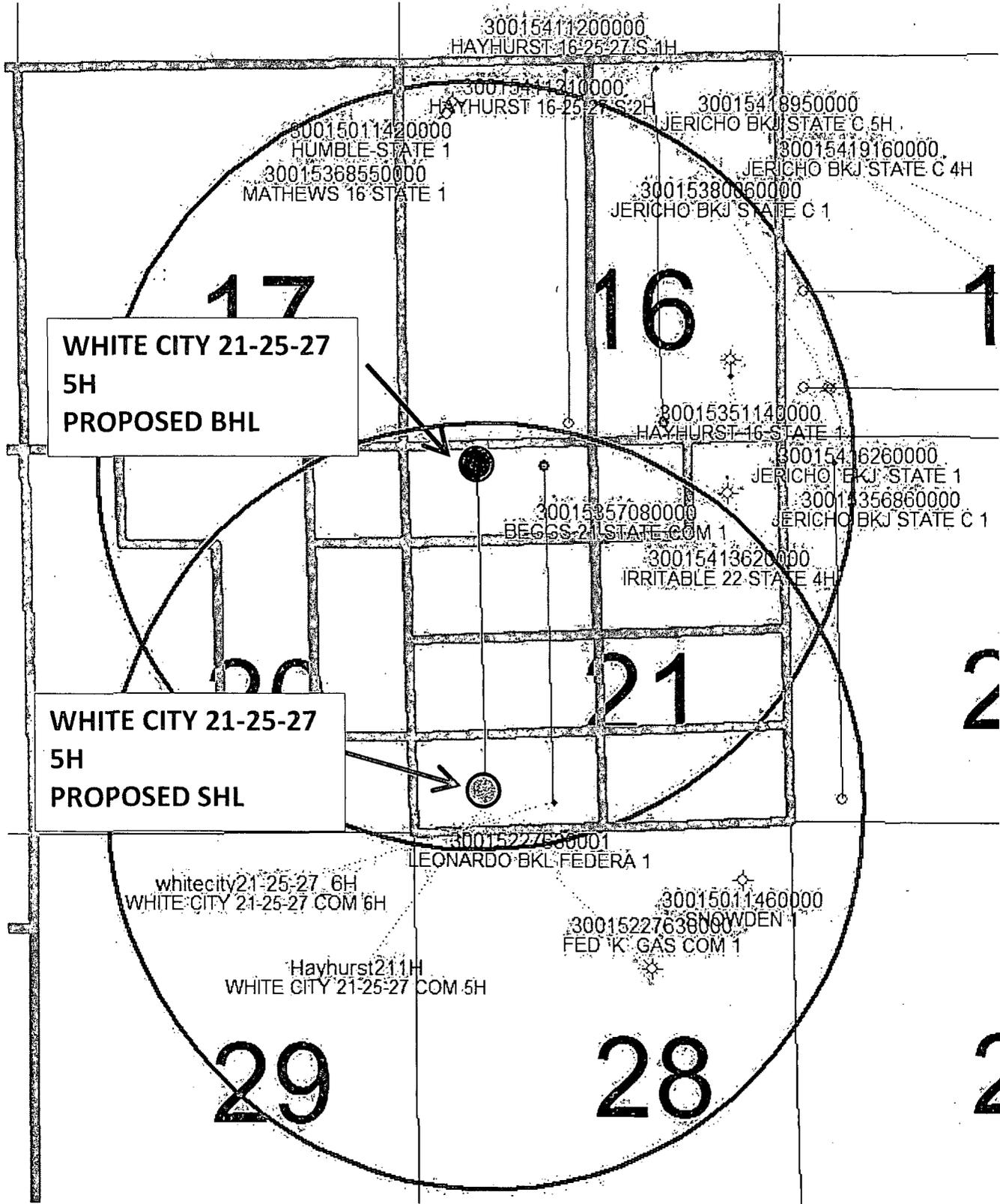
DATE: 01/14/2014

SHEET 3 OF 3 SHEETS

# Exhibit B

Exhibit B

## WHITE CITY 21-25-27 5H SECTION 21 TWN 25 RNG 27 EDDY, COUNTY NEW MEXICO 1 MILE RADIUS OF SURFACE AND BOTTOM HOLE



**1. FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA	KBTVD	MD
Castile	2640	519	
Lamar	1074	2085	
Bell Canyon	1030	2129	
Cherry Canyon	226	2933	
Brushy Canyon	-945	4104	
Bone Spring Limestone	-2490	5649	
Avalon	-2786	5945	
1st Bone Spring	-3440	6599	
2nd Bone Spring	-4100	7259	
	0	0	
	0	0	
Lateral TD (2nd Bone Spring)	(4,270)	7,429	12,869

**2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		350
Water	Castile	519
Water	Lamar	2085
Water	Bell Canyon	2129
Oil/Gas	Cherry Canyon	2933
Oil/Gas	Brushy Canyon	4104
Oil/Gas	Bone Spring Limestone	5649
Oil/Gas	Avalon	5945
Oil/Gas	1st Bone Spring	6599
Oil/Gas	2nd Bone Spring	7259

All shows of fresh water and minerals will be reported and protected.

**3. BOP EQUIPMENT**

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified in the attached testing requirements. Chevron requests a variance to use A coflex hose with a metal protective covering that will be utilized between the BOP and Choke manifold. Please see the attached testing and certification information.

*See  
COM*

Chevron requests a variance to use a GE/Vetco SH-2 Multibowl wellhead, which will be run through the rig foot on surface casing. BOPE will be nipped up and test after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from GE/Vetco and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

5

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	400'	17-1/2"	13-3/8"	48 #	H-40	STC	New
Intermediate	0'	<del>2100'</del> 2,700'	12-1/4"	9-5/8"	40 #	HCK-55	LTC	New
Production	0'	12,869'	8-3/4"	5-1/2"	17.0 #	HCP-110	CDC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. \*\*\*A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.

d. Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.

**SF Calculations based on the following "Worst Case" casing design.**

Surface Casing: 1500'  
 Intermediate Casing: 5300'  
 Production Casing: 16,500' MD/11,500' TVD (5000' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension
Surface	1.28	1.14	1.6
Shallow Intermediate	1.28	1.25	1.6
Production	1.34	1.65	1.6

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
<b>Burst Design</b>			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
<b>Collapse Design</b>			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
<b>Tension Design</b>			
100k lb overpull	X	X	X

See  
COA

5. CEMENTING PROGRAM

Slurry	Type	Top	Bottom	Weight (ppg)	Yield (sx/cu ft)	%Excess Open Hole	Sacks	Water gal/sk
Surface								
Tail	Class C+2%CaCl	0'	400'	14.8	1.36	125	472	6.39
Intermediate								
Lead	Class C+4%Gel +1%CaCl	0'	1,500'	13.7	1.68	100	500	9.72
Tail	Class C+1%CaCl	1,500'	2,100'	14.8	1.33	100	311	6.24
Production								
1st Lead	50% Class H+ 50% Silicalite +2% Gel	1,600'	6,652'	11.3	2.54	100	899	15.07
2nd Lead	50% Class H+ 50% Silicalite +2% Gel	6,652'	11,840'	12.5	1.81	35	981	8.10
Tail	Acid Soluble Cement	11,840'	12,869'	15	2.6	0	100	11.2

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing.

**6. MUD PROGRAM**

From	To	Type	Weight	F. Vis	Filtrate
0'	400'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
400'	2,700'	Brine	9.5 - 10.1	28 - 29	NC - NC
2,700'	6,952'	FW/Cut Brine	8.3 - 9.5	28 - 29	NC - NC
6,952'	7,704'	Cut Brine	8.3 - 9.5	28 - 30	15 - 25
7,704'	12,869'	FW/Cut Brine	8.3 - 9.5	28 - 29	15 - 25

Curve

A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

**7. TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

- a. Drill stem tests are not planned.
- b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Curve and Lateral	While Drilling	TBD
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

- c. Conventional whole core samples are not planned.
- d. A Directional Survey will be run.

**8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

- a. No abnormal pressures or temperatures are expected. Estimated BHP is: 3313 psi
- b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

# Chevron USA, Inc.



**Project:** Eddy County, NM  
**Site:** White City  
**Well:** White City 21 25 27 Com 5H  
**Wellbore:** Wellbore #1  
**Plan:** Plan #1  
**Rig:** TBD

SURFACE LOCATION			
US State Plane 1927 (Exact solution) New Mexico East 3001			
Elevation: GL 3128.0' + KB 31.0' @ 3159.00usft (TBD)			
Northing	Easting	Latitude	Longitude
403401.00	541335.00	32° 8' 32.383 N	104° 11' 59.403 W

### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
White City 21 25 27 Com 5H BHL 2	7410.00	4816.96	-91.65	408217.96	541243.35	32° 7' 20.055 N	104° 12' 0.400 W
White City 21 25 27 Com 5H BHL	7410.80	4637.00	-86.00	408038.00	541247.00	32° 7' 18.274 N	104° 12' 0.360 W

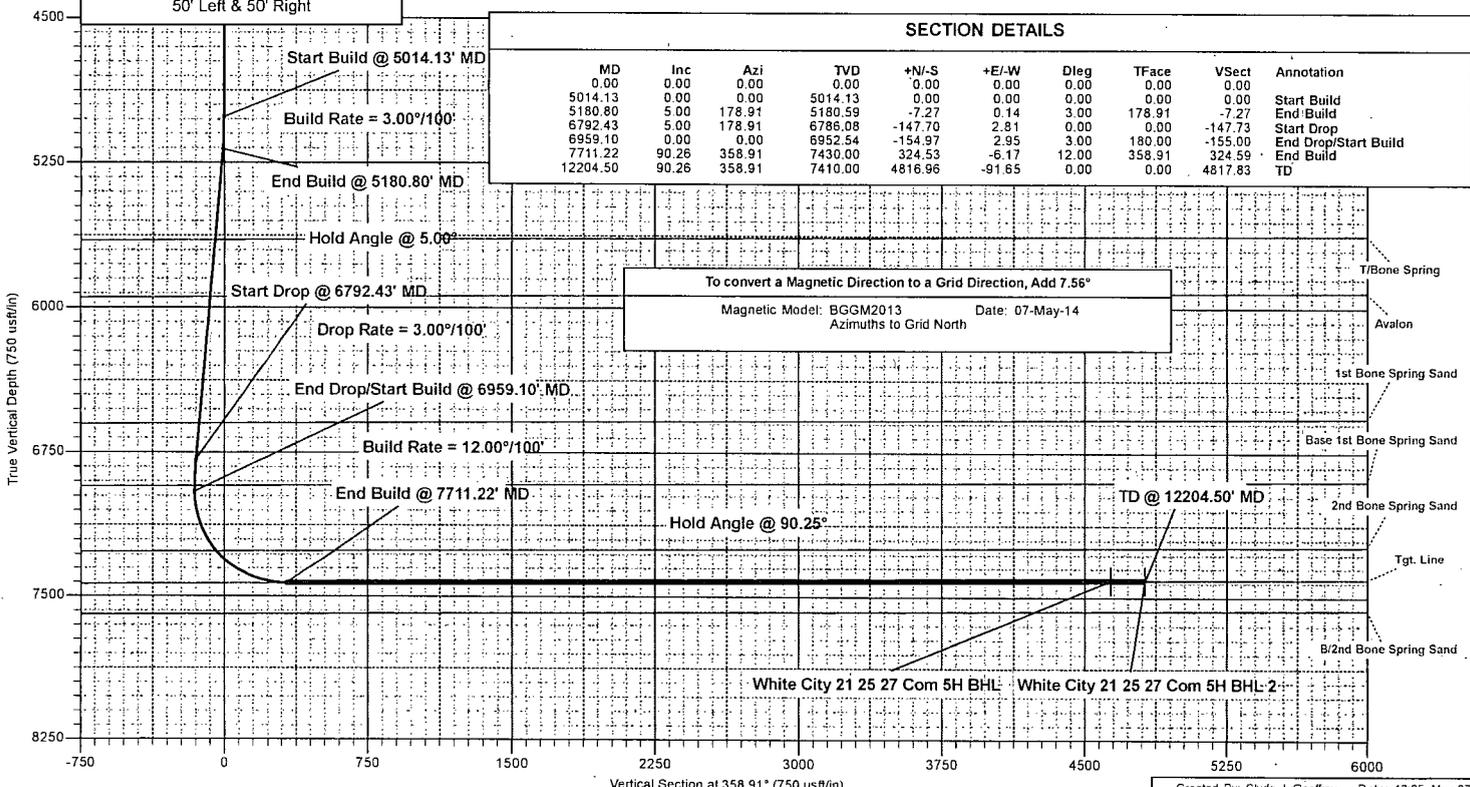
### TARGET INFORMATION:

7431.47' TVD @ 0.0° VS w/0.26° Up Dip  
 10' Up & 10' Down  
 50' Left & 50' Right

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5014.13	0.00	0.00	5014.13	0.00	0.00	0.00	0.00	0.00	Start Build
5180.80	5.00	178.91	5180.59	-7.27	0.14	3.00	178.91	-7.27	End Build
6792.43	5.00	178.91	6786.08	-147.70	2.81	0.00	0.00	-147.73	Start Drop
6959.10	0.00	0.00	6952.54	-154.97	2.95	3.00	180.00	-155.00	End Drop/Start Build
7711.22	90.26	358.91	7430.00	324.53	-6.17	12.00	358.91	324.59	End Build
12204.50	90.26	358.91	7410.00	4816.96	-91.65	0.00	0.00	4817.83	TD

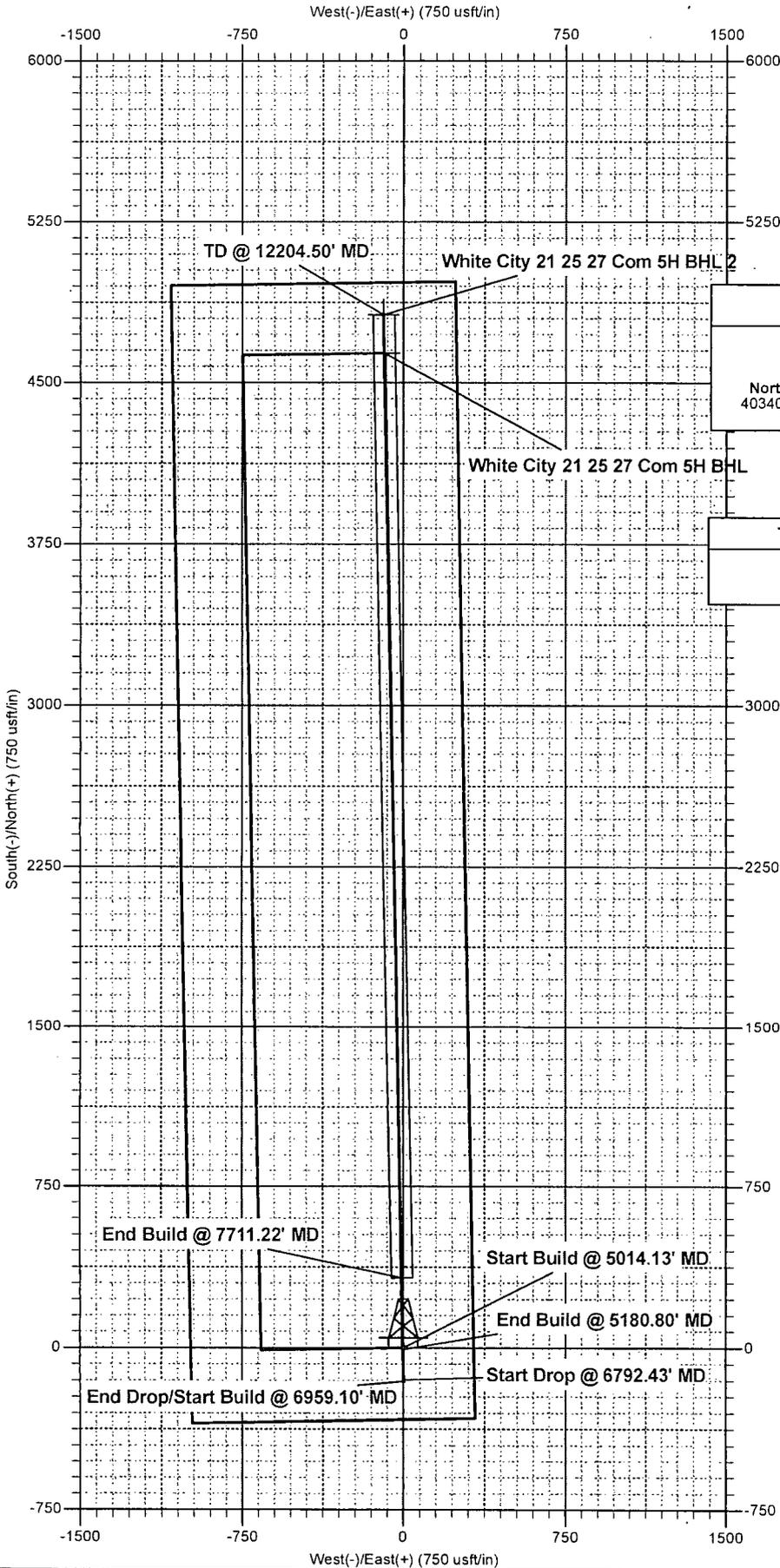
To convert a Magnetic Direction to a Grid Direction, Add 7.56°  
 Magnetic Model: BGGM2013      Date: 07-May-14  
 Azimuths to Grid North



Created By: Clyde J. Geoffroy      Date: 13:35, May 07 2014

# Chevron USA, Inc.

Project: Eddy County, NM  
 Site: White City  
 Well: White City 21 25 27 Com 5H  
 Wellbore: Wellbore #1  
 Design: Plan #1  
 Rig: TBD



### SURFACE LOCATION

US State Plane 1927 (Exact solution)  
 New Mexico East 3001  
 Elevation: GL 3128.0' + KB 31.0' @ 3159.00usft (TBD)

Northing	Easting	Latitude	Longitude
403401.00	541335.00	32° 6' 32.383 N	104° 11' 59.403 W

To convert a Magnetic Direction to a Grid Direction, Add 7.56°

Magnetic Model: BGGM2013      Date: 07-May-14  
 Azimuths to Grid North

### TARGET INFORMATION:

7431.47' TVD @ 0.0° VS w/0.26° Dip  
 10' Up & 10' Down  
 50' Left & 50' Right



**NM OIL CONSERVATION**

ARTESIA DISTRICT

MAR 05 2015

RECEIVED

# **Chevron USA, Inc.**

Eddy County, NM

White City

White City 21 25 27 Com 5H

Wellbore #1

Plan: Plan #1

## **Standard Planning Report**

07 May, 2014

Planning Report

Database:	STXWP_EDM	Local Co-ordinate Reference:	Well White City 21 25 27 Com 5H
Company:	Chevron USA Inc.	TVD Reference:	GL 3128.0' KB 31.0' @ 3159.00usft (TBD)
Project:	Eddy County NM	MD Reference:	GL 3128.0' KB 31.0' @ 3159.00usft (TBD)
Site:	White City	North Reference:	Grid
Well:	White City 21 25 27 Com 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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

Site:	White City				
Site Position:	Northing:	403,401.00 usft	Latitude:	32° 6' 32.383 N	
From: Map	Easting:	541,335.00 usft	Longitude:	104° 11' 59.403 W	
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well:	White City 21 25 27 Com 5H					
Well Position	+N/-S	0.00 usft	Northing:	403,401.00 usft	Latitude:	32° 6' 32.383 N
	+E/-W	0.00 usft	Easting:	541,335.00 usft	Longitude:	104° 11' 59.403 W
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level:	3,128.00 usft	

Wellbore:	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	5/7/2014	7.63	59.88	48,160

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	358.91

Plan Sections:										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,014.13	0.00	0.00	5,014.13	0.00	0.00	0.00	0.00	0.00	0.00	
5,180.80	5.00	178.91	5,180.59	-7.27	0.14	3.00	3.00	0.00	178.91	
6,792.43	5.00	178.91	6,786.08	-147.70	2.81	0.00	0.00	0.00	0.00	
6,959.10	0.00	0.00	6,952.54	-154.97	2.95	3.00	-3.00	0.00	180.00	
7,711.22	90.26	358.91	7,430.00	324.53	-6.17	12.00	12.00	0.00	358.91	
12,204.50	90.26	358.91	7,410.00	4,816.96	-91.65	0.00	0.00	0.00	0.00	

Planning Report

Database	STXWP_EDM	Local Co-ordinate Reference	Well: White City 21-25-27-Com 5H
Company	Chevron USA Inc	TVD Reference	GL 3128.0 + KB 31.0 @ 3159.00usft (TBD)
Project	Eddy County NM	MD Reference	GL 3128.0 + KB 31.0 @ 3159.00usft (TBD)
Site	White City	North Reference	Grid
Well	White City 21-25-27-Com 5H	Survey Calculation Method	Minimum Curvature
Wellbore	Wellbore #1		
Design	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
519.00	0.00	0.00	519.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Castile</b>										
2,085.00	0.00	0.00	2,085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Lamar LS</b>										
2,129.00	0.00	0.00	2,129.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Bell Canyon</b>										
2,933.00	0.00	0.00	2,933.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Cherry Canyon</b>										
4,104.00	0.00	0.00	4,104.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Brushy Canyon</b>										
5,014.13	0.00	0.00	5,014.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build @ 5014.13 MD - Build Rate = 3.00%/100'</b>										
5,100.00	2.58	178.91	5,099.97	-1.93	0.04	-1.93	3.00	3.00	0.00	0.00
5,180.80	5.00	178.91	5,180.59	-7.27	0.14	-7.27	3.00	3.00	0.00	0.00
<b>End Build @ 5180.80 MD - Hold Angle @ 5.00°</b>										
5,200.00	5.00	178.91	5,199.72	-8.94	0.17	-8.94	0.00	0.00	0.00	0.00
5,300.00	5.00	178.91	5,299.34	-17.65	0.34	-17.66	0.00	0.00	0.00	0.00
5,400.00	5.00	178.91	5,398.95	-26.37	0.50	-26.37	0.00	0.00	0.00	0.00
5,500.00	5.00	178.91	5,498.57	-35.08	0.67	-35.09	0.00	0.00	0.00	0.00
5,600.00	5.00	178.91	5,598.19	-43.80	0.83	-43.80	0.00	0.00	0.00	0.00
5,651.22	5.00	178.91	5,649.22	-48.26	0.92	-48.27	0.00	0.00	0.00	0.00
<b>T/Bone Spring</b>										
5,700.00	5.00	178.91	5,697.81	-52.51	1.00	-52.52	0.00	0.00	0.00	0.00
5,800.00	5.00	178.91	5,797.43	-61.22	1.17	-61.23	0.00	0.00	0.00	0.00
5,900.00	5.00	178.91	5,897.05	-69.94	1.33	-69.95	0.00	0.00	0.00	0.00
5,948.47	5.00	178.91	5,945.34	-74.16	1.41	-74.17	0.00	0.00	0.00	0.00
<b>Avalon</b>										
6,000.00	5.00	178.91	5,996.67	-78.65	1.50	-78.67	0.00	0.00	0.00	0.00
6,100.00	5.00	178.91	6,096.29	-87.37	1.66	-87.38	0.00	0.00	0.00	0.00
6,200.00	5.00	178.91	6,195.91	-96.08	1.83	-96.10	0.00	0.00	0.00	0.00
6,300.00	5.00	178.91	6,295.53	-104.79	1.99	-104.81	0.00	0.00	0.00	0.00
6,400.00	5.00	178.91	6,395.15	-113.51	2.16	-113.53	0.00	0.00	0.00	0.00
6,500.00	5.00	178.91	6,494.77	-122.22	2.33	-122.24	0.00	0.00	0.00	0.00
6,600.00	5.00	178.91	6,594.39	-130.94	2.49	-130.96	0.00	0.00	0.00	0.00
6,605.23	5.00	178.91	6,599.60	-131.39	2.50	-131.41	0.00	0.00	0.00	0.00
<b>1st Bone Spring Sand</b>										
6,700.00	5.00	178.91	6,694.01	-139.65	2.66	-139.67	0.00	0.00	0.00	0.00
6,792.43	5.00	178.91	6,786.09	-147.70	2.81	-147.73	0.00	0.00	0.00	0.00
<b>Start Drop @ 6792.43 MD - Drop Rate = 3.00%/100'</b>										
6,800.00	4.77	178.91	6,793.63	-148.35	2.82	-148.38	3.00	-3.00	0.00	0.00
6,900.00	1.77	178.91	6,893.45	-154.06	2.93	-154.08	3.00	-3.00	0.00	0.00
6,931.26	0.84	178.91	6,924.70	-154.77	2.95	-154.80	3.00	-3.00	0.00	0.00
<b>Base 1st Bone Spring Sand</b>										
6,959.10	0.00	0.00	6,952.54	-154.97	2.95	-155.00	3.00	-3.00	0.00	0.00
<b>End Drop/Start Build @ 6959.10 MD - Build Rate = 12.00%/100'</b>										
7,000.00	4.91	358.91	6,993.39	-153.22	2.92	-153.25	12.00	12.00	0.00	0.00
7,100.00	16.91	358.91	7,091.41	-134.33	2.56	-134.36	12.00	12.00	0.00	0.00
7,200.00	28.91	358.91	7,183.35	-95.49	1.82	-95.50	12.00	12.00	0.00	0.00
7,292.10	39.96	358.91	7,259.20	-43.50	0.83	-43.50	12.00	12.00	0.00	0.00
<b>2nd Bone Spring Sand</b>										
7,300.00	40.91	358.91	7,265.21	-38.37	0.73	-38.38	12.00	12.00	0.00	0.00
7,400.00	52.91	358.91	7,333.40	34.51	-0.66	34.51	12.00	12.00	0.00	0.00

Planning Report

Database:	STXWP.EDM	Local Co-ordinate Reference:	Well: White City 21-25-27 Com 5H
Company:	Chevron USA Inc.	TVD Reference:	GL 3128.0 - KB 31.0 @ 3159.00usft (TBD)
Project:	Eddy County, NM	MD Reference:	GL 3128.0 - KB 31.0 @ 3159.00usft (TBD)
Site:	White City	North Reference:	Grid
Well:	White City 21-25-27 Com 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,500.00	64.91	358.91	7,384.95	119.97	-2.28	119.99	12.00	12.00	0.00	
7,600.00	76.91	358.91	7,417.60	214.28	-4.08	214.32	12.00	12.00	0.00	
7,700.00	88.91	358.91	7,429.92	313.31	-5.96	313.37	12.00	12.00	0.00	
7,711.22	90.25	358.91	7,430.00	324.53	-6.17	324.59	12.00	12.00	0.00	
<b>End Build @ 7711.22 MD - Hold Angle @ 90.25 - Tgt. Line</b>										
7,800.00	90.26	358.91	7,429.61	413.30	-7.86	413.37	0.00	0.00	0.00	
7,900.00	90.26	358.91	7,429.16	513.28	-9.76	513.37	0.00	0.00	0.00	
8,000.00	90.26	358.91	7,428.71	613.26	-11.67	613.37	0.00	0.00	0.00	
8,100.00	90.26	358.91	7,428.27	713.24	-13.57	713.37	0.00	0.00	0.00	
8,200.00	90.26	358.91	7,427.82	813.22	-15.47	813.37	0.00	0.00	0.00	
8,300.00	90.26	358.91	7,427.38	913.20	-17.37	913.37	0.00	0.00	0.00	
8,400.00	90.26	358.91	7,426.93	1,013.18	-19.28	1,013.36	0.00	0.00	0.00	
8,500.00	90.26	358.91	7,426.49	1,113.16	-21.18	1,113.36	0.00	0.00	0.00	
8,600.00	90.26	358.91	7,426.04	1,213.14	-23.08	1,213.36	0.00	0.00	0.00	
8,700.00	90.26	358.91	7,425.60	1,313.12	-24.98	1,313.36	0.00	0.00	0.00	
8,800.00	90.26	358.91	7,425.15	1,413.10	-26.89	1,413.36	0.00	0.00	0.00	
8,900.00	90.26	358.91	7,424.71	1,513.09	-28.79	1,513.36	0.00	0.00	0.00	
9,000.00	90.26	358.91	7,424.26	1,613.07	-30.69	1,613.36	0.00	0.00	0.00	
9,100.00	90.26	358.91	7,423.82	1,713.05	-32.59	1,713.36	0.00	0.00	0.00	
9,200.00	90.26	358.91	7,423.37	1,813.03	-34.49	1,813.36	0.00	0.00	0.00	
9,300.00	90.26	358.91	7,422.93	1,913.01	-36.40	1,913.36	0.00	0.00	0.00	
9,400.00	90.26	358.91	7,422.48	2,012.99	-38.30	2,013.35	0.00	0.00	0.00	
9,500.00	90.26	358.91	7,422.04	2,112.97	-40.20	2,113.35	0.00	0.00	0.00	
9,600.00	90.26	358.91	7,421.59	2,212.95	-42.10	2,213.35	0.00	0.00	0.00	
9,700.00	90.26	358.91	7,421.15	2,312.93	-44.01	2,313.35	0.00	0.00	0.00	
9,800.00	90.26	358.91	7,420.70	2,412.91	-45.91	2,413.35	0.00	0.00	0.00	
9,900.00	90.26	358.91	7,420.26	2,512.89	-47.81	2,513.35	0.00	0.00	0.00	
10,000.00	90.26	358.91	7,419.81	2,612.88	-49.71	2,613.35	0.00	0.00	0.00	
10,100.00	90.26	358.91	7,419.37	2,712.86	-51.62	2,713.35	0.00	0.00	0.00	
10,200.00	90.26	358.91	7,418.92	2,812.84	-53.52	2,813.35	0.00	0.00	0.00	
10,300.00	90.26	358.91	7,418.48	2,912.82	-55.42	2,913.35	0.00	0.00	0.00	
10,400.00	90.26	358.91	7,418.03	3,012.80	-57.32	3,013.34	0.00	0.00	0.00	
10,500.00	90.26	358.91	7,417.59	3,112.78	-59.22	3,113.34	0.00	0.00	0.00	
10,600.00	90.26	358.91	7,417.14	3,212.76	-61.13	3,213.34	0.00	0.00	0.00	
10,700.00	90.26	358.91	7,416.70	3,312.74	-63.03	3,313.34	0.00	0.00	0.00	
10,800.00	90.26	358.91	7,416.25	3,412.72	-64.93	3,413.34	0.00	0.00	0.00	
10,900.00	90.26	358.91	7,415.81	3,512.70	-66.83	3,513.34	0.00	0.00	0.00	
11,000.00	90.26	358.91	7,415.36	3,612.68	-68.74	3,613.34	0.00	0.00	0.00	
11,100.00	90.26	358.91	7,414.92	3,712.67	-70.64	3,713.34	0.00	0.00	0.00	
11,200.00	90.26	358.91	7,414.47	3,812.65	-72.54	3,813.34	0.00	0.00	0.00	
11,300.00	90.26	358.91	7,414.03	3,912.63	-74.44	3,913.34	0.00	0.00	0.00	
11,400.00	90.26	358.91	7,413.58	4,012.61	-76.35	4,013.33	0.00	0.00	0.00	
11,500.00	90.26	358.91	7,413.14	4,112.59	-78.25	4,113.33	0.00	0.00	0.00	
11,600.00	90.26	358.91	7,412.69	4,212.57	-80.15	4,213.33	0.00	0.00	0.00	
11,700.00	90.26	358.91	7,412.25	4,312.55	-82.05	4,313.33	0.00	0.00	0.00	
11,800.00	90.26	358.91	7,411.80	4,412.53	-83.95	4,413.33	0.00	0.00	0.00	
11,900.00	90.26	358.91	7,411.36	4,512.51	-85.86	4,513.33	0.00	0.00	0.00	
12,000.00	90.26	358.91	7,410.91	4,612.49	-87.76	4,613.33	0.00	0.00	0.00	
12,024.51	90.26	358.91	7,410.80	4,637.00	-88.23	4,637.84	0.00	0.00	0.00	
<b>White City 21-25-27 Com 5H BHL</b>										
12,100.00	90.26	358.91	7,410.47	4,712.47	-89.66	4,713.33	0.00	0.00	0.00	
12,200.00	90.26	358.91	7,410.02	4,812.46	-91.56	4,813.33	0.00	0.00	0.00	
12,204.50	90.26	358.91	7,410.00	4,816.96	-91.65	4,817.83	0.00	0.00	0.00	

Planning Report

Database:	STXWP EDM	Local Co-ordinate Reference:	Well: White City 21 25 27 Com 5H
Company:	Chevron USA, Inc	TVD Reference:	GL 3128.0 - KB 31.0 @ 3159.00usft (TBD)
Project:	Eddy County NM	MD Reference:	GL 3128.0 - KB 31.0 @ 3159.00usft (TBD)
Site:	White City	North Reference:	Grid
Well:	White City 21 25 27 Com 5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD @ 12204.50' MD - White City 21 25 27 Com 5H BHL 2									

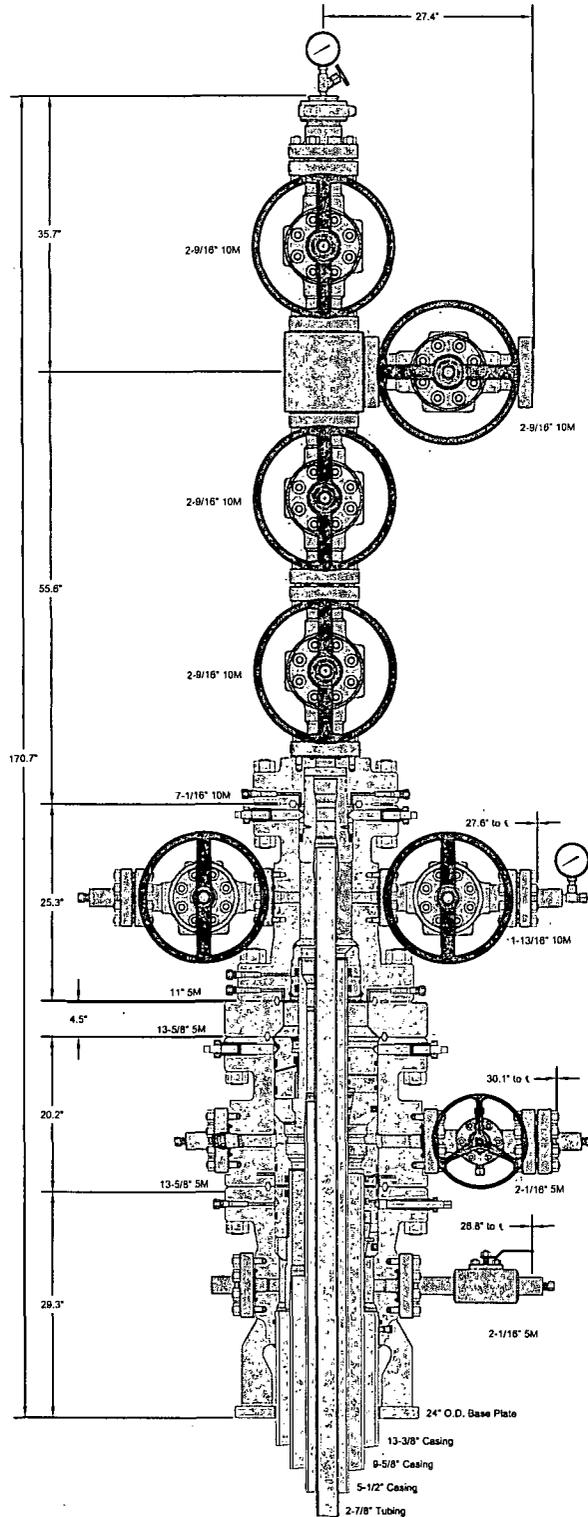
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
White City 21 25 27 C	-	-0.26	358.91	7,410.00	4,816.96	-91.65	408,217.96	541,243.35	32° 7' 20.055 N	104° 12' 0.400 W
	-	plan hits target center								
	-	Rectangle (sides W100.00 H4,493.24 D20.00)								
White City 21 25 27 C	-	0.00	0.00	7,410.80	4,637.00	-88.00	408,038.00	541,247.00	32° 7' 18.274 N	104° 12' 0.360 W
	-	plan misses target center by 0.23usft at 12024.51usft MD (7410.80 TVD, 4637.00 N, -88.23 E)								
	-	Point								

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
519.00	519.00	Castile		-0.26	358.91
2,085.00	2,085.00	Lamar LS		-0.26	358.91
2,129.00	2,129.00	Bell Canyon		-0.26	358.91
2,933.00	2,933.00	Cherry Canyon		-0.26	358.91
4,104.00	4,104.00	Brushy Canyon		-0.26	358.91
5,651.22	5,649.22	T/Bone Spring		-0.26	358.91
5,948.47	5,945.34	Avalon		-0.26	358.91
6,605.23	6,599.60	1st Bone Spring Sand		-0.26	358.91
6,931.26	6,924.70	Base 1st Bone Spring Sand		-0.26	358.91
7,292.10	7,259.20	2nd Bone Spring Sand		-0.26	358.91
7,711.22	7,430.00	Tgt. Line		-0.26	358.91

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
5,014.13	5,014.13	0.00	0.00	Start Build @ 5014.13' MD
5,014.13	5,014.13	0.00	0.00	Build Rate = 3.00°/100'
5,180.80	5,180.59	-7.27	0.14	End Build @ 5180.80' MD
5,180.80	5,180.59	-7.27	0.14	Hold Angle @ 5.00°
6,792.43	6,786.08	-147.70	2.81	Start Drop @ 6792.43' MD
6,792.43	6,786.09	-147.70	2.81	Drop Rate = 3.00°/100'
6,959.10	6,952.54	-154.97	2.95	End Drop/Start Build @ 6959.10' MD
6,959.10	6,952.54	-154.97	2.95	Build Rate = 12.00°/100'
7,711.22	7,430.00	324.53	-6.17	End Build @ 7711.22' MD
7,711.22	7,430.00	324.53	-6.17	Hold Angle @ 90.25°
12,204.50	7,410.00	4,816.96	-91.65	TD @ 12204.50' MD



GE Oil & Gas



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CHEVRON USA, INC.  
DELAWARE BASIN

13-3/8" x 9-5/8" x 5-1/2" x 2-7/8" 10M SH2/Conventional  
Wellhead Assembly, With DSA, T-EBS-F Tubing Head,  
T-EN Tubing Hanger and A5PEN Adapter Flange

DRAWN	VJK	19MAR13
APPRV	KN	19MAR13

FOR REFERENCE ONLY	
DRAWING NO.	AE23705

# BLOWOUT PREVENTOR SCHEMATIC

## Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 5,000 psi

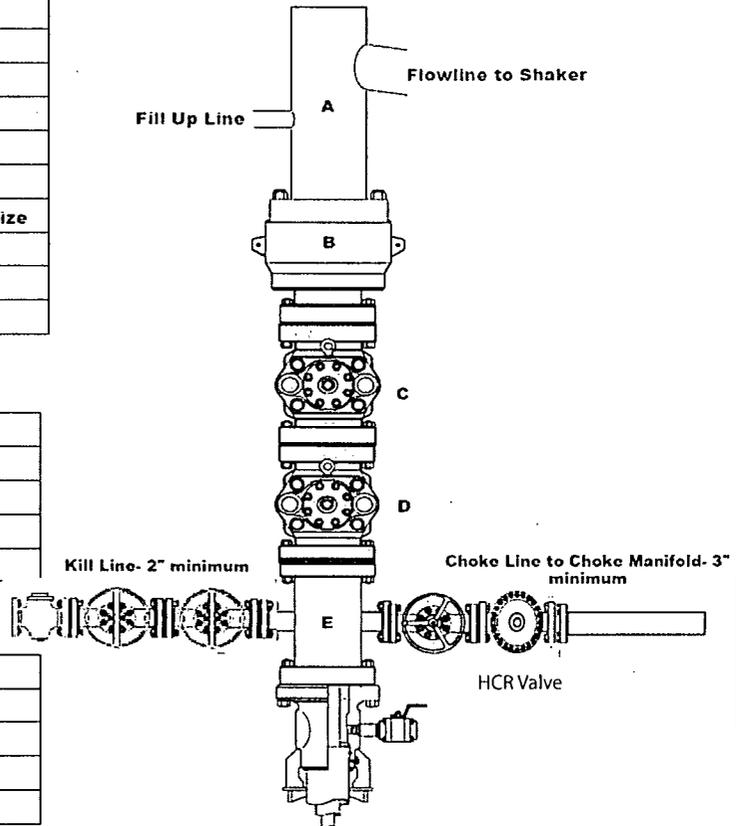
SIZE	PRESSURE	DESCRIPTION
A	N/A	Bell Nipple
B	13 5/8"	5,000 psi Annular
C	13 5/8"	5,000 psi Pipe Ram
D	13 5/8"	5,000 psi Blind Ram
E	13 5/8"	5,000 psi Mud Cross
F		
DSA	As required for each hole size	
C-Sec		
B-Sec	13-5/8" 5K x 11" 5K	
A-Sec	13-3/8" SOW x 13-5/8" 5K	

### Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

### Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



### Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- All valves on the kill line and choke line will be full opening and will allow straight through flow.
- The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tress, and will be anchored to prevent whip and reduce vibration.
- Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.
- A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.
- Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: \_\_\_\_\_

Representative: \_\_\_\_\_

Date: \_\_\_\_\_

# CHOKE MANIFOLD SCHEMATIC

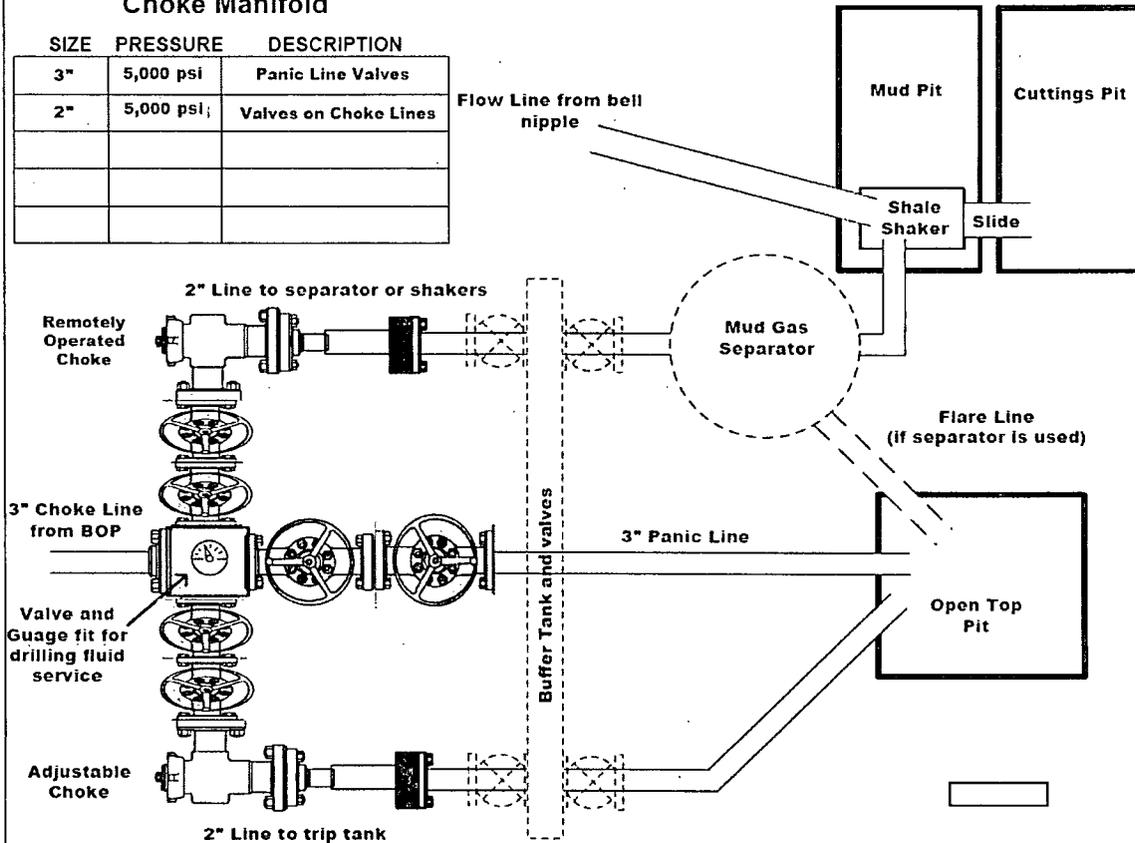
## Minimum Requirements

**OPERATION** : Intermediate and Production Hole Sections

**Minimum System Pressure Rating** : 5,000 psi

### Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valves
2"	5,000 psi	Valves on Choke Lines



### Installation Checklist

The following items must be verified and checked off prior to pressure testing of BOP equipment.

- The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.
- Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.
- The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.
- All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.
- All manual valves will have hand wheels installed.
- If used, flare system will have effective method for ignition
- All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)
- If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

**Wellname:** \_\_\_\_\_

**Representative:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# BOPE Testing

## Minimum Requirements

### Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

- Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
<input type="checkbox"/>	1500 psi	1500 psi	750 psi	800 psi	700 psi
<input type="checkbox"/>	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
<input type="checkbox"/>	3000 psi	3000 psi	1000 psi	1100 psi	900 psi

- Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well.
- Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservoir capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.
- Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.
- Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.
- With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.
- Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)
- Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.
- Record accumulator tests in drilling reports and IADC sheet

### BOPE Test Checklist

The following item must be checked off prior to beginning test

- BLM will be given at least 4 hour notice prior to beginning BOPE testing
- Valve on casing head below test plug will be open
- Test will be performed using clear water.

The following item must be performed during the BOPE testing and then checked off

- BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 days intervals. Test pressure and times will be recorded by a 3<sup>rd</sup> party on a test chart and kept on location through the end of the well.
- Test plug will be used
- Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).
- Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).
- Valves will be tested from the working pressure side with all down stream valves open. The check valve will be held open to test the kill line valve(s)
- Each pressure test will be held for 10 minutes with no allowable leak off.
- Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOP testing
- Record BOP tests and pressures in drilling reports and IADC sheet

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer along with any/all BOP and accumulator test charts and reports from 3<sup>rd</sup> parties.

Wellname: \_\_\_\_\_

Representative: \_\_\_\_\_

Date: \_\_\_\_\_



# Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST CERTIFICATE		
Customer: ODESSA		Customer P.O. Number: 193072
HOSE SPECIFICATIONS		
Type: Rotary/CHOKE KILL GRADE E / API 7K	Hose Length: 25' FEET	
I.D. 3" INCHES	O.D. 4.77 INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE N/A PSI
COUPLINGS		
Part Number E3.0X64WB E3.0X64WB	Stem Lot Number	Ferrule Lot Number L08301765 L08301765
Type of Coupling: SWAGE-IT	Die Size: 5.25	
PROCEDURE		
<i>Hose assembly pressure tested with water at ambient temperature.</i>		
TIME HELD AT TEST PRESSURE 3 1/2 MIN.	ACTUAL BURST PRESSURE: N/A PSI	
Hose Assembly Serial Number: 212332	Hose Serial Number: 8104	
Comments:		
Date: 8/7/2013	Tested:	Approved: <i>[Signature]</i>



Midwest Hose  
& Specialty, Inc.

# Internal Hydrostatic Test Graph

August 7, 2013

Customer: Odessa

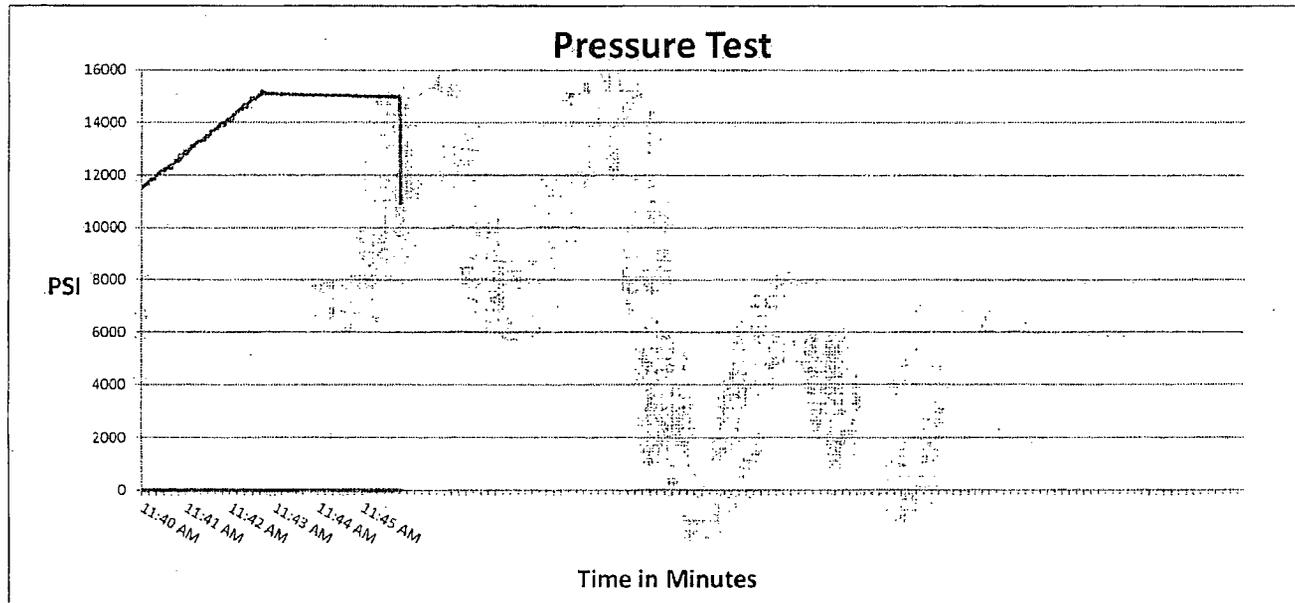
Pick Ticket #: 212332

### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
E	25'
<u>I.D.</u>	<u>O.D.</u>
3"	4.77"
<u>Working Pressure</u>	<u>Burst Pressure</u>
7500 PSI	Standard Safety Multiplier Applies

### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4 1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
5.25"	5.31"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
8104	212332



Test Pressure  
15000 PSI

Time Held at Test Pressure  
3 3/4 Minutes

Actual Burst Pressure

Peak Pressure  
15263 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Ryan Malone

**Approved By:** Ryan Adams

x \_\_\_\_\_

x 



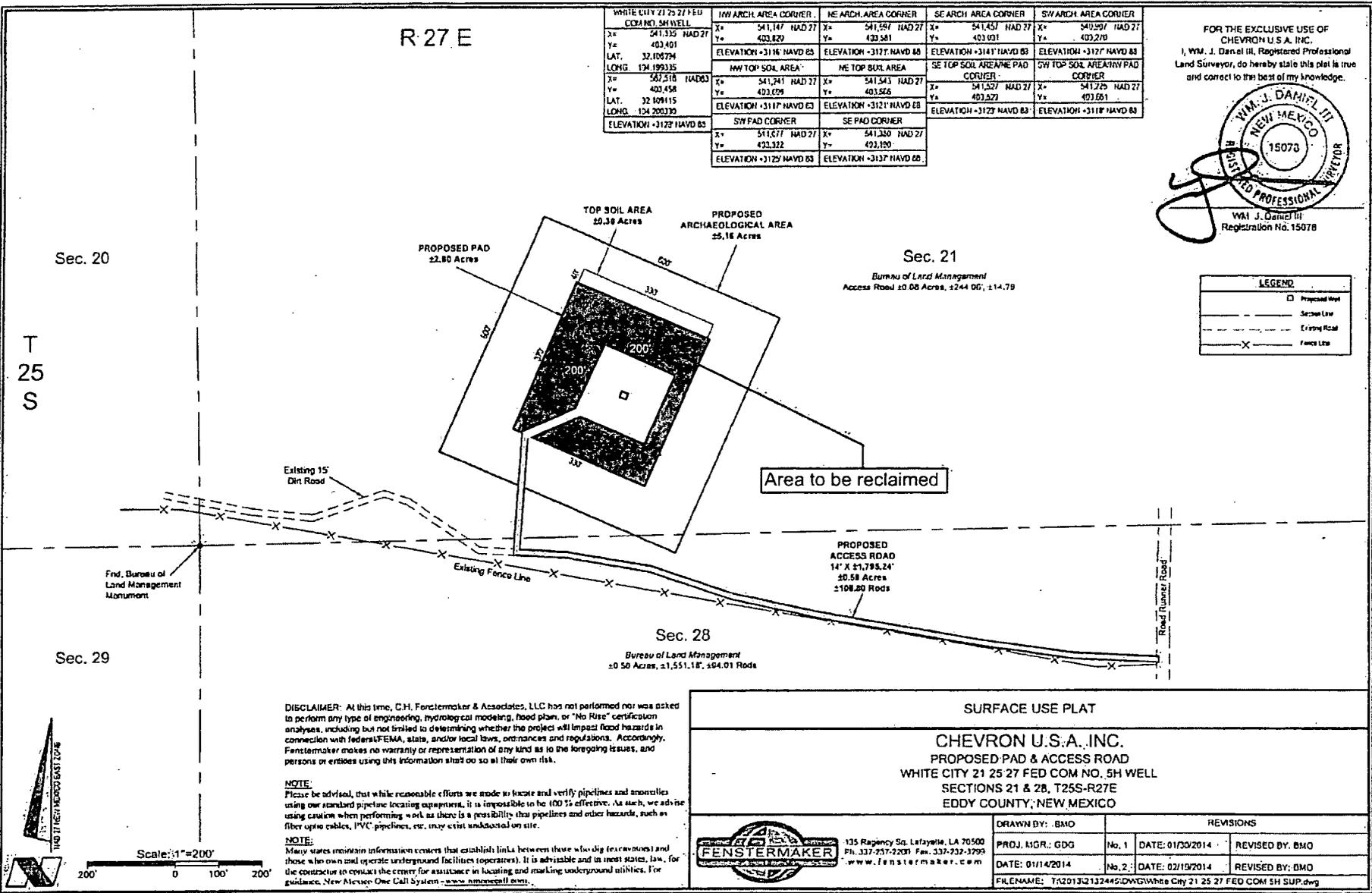
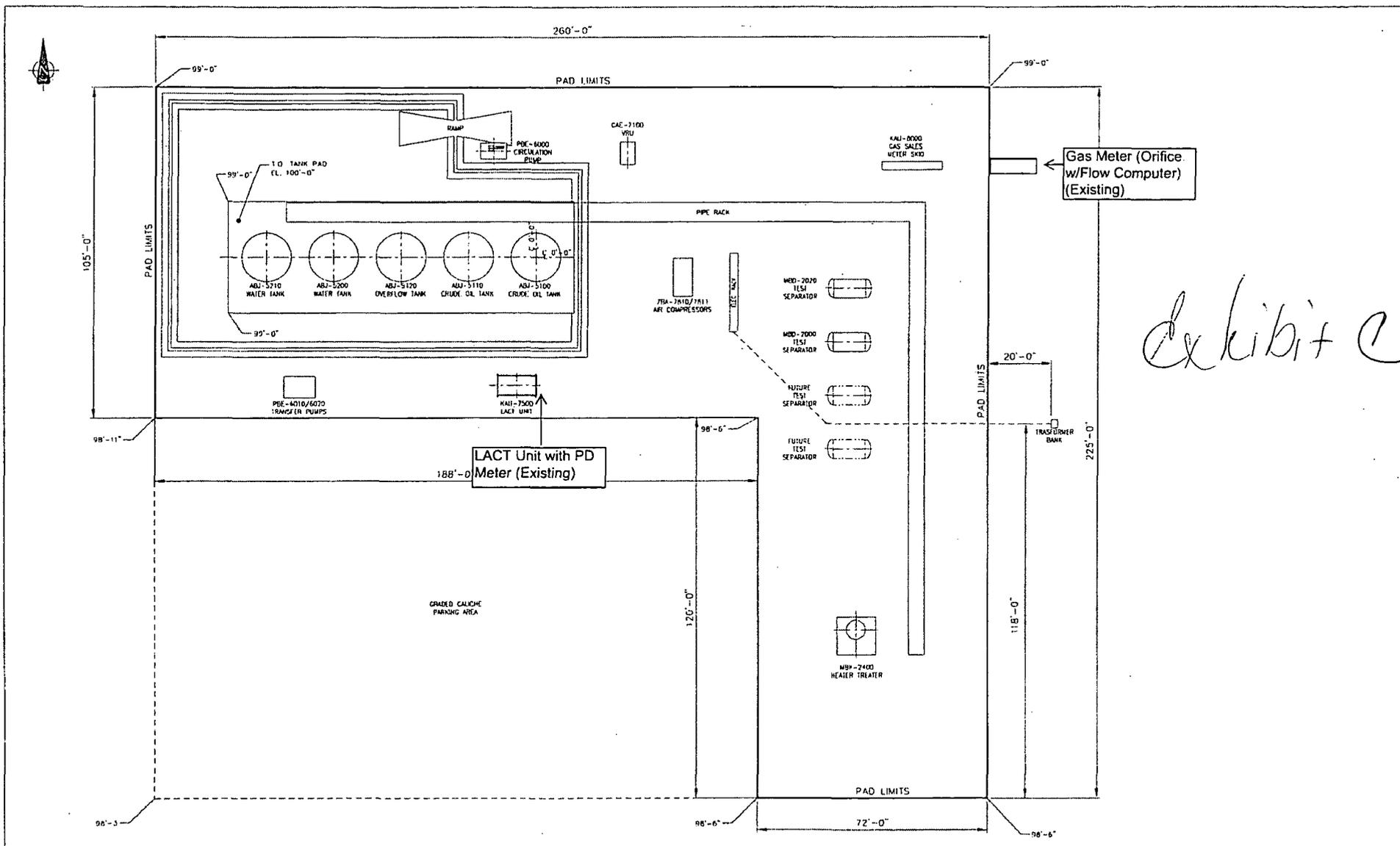


Exhibit C



ISSUED FOR CONSTRUCTION J. VALDES 2/25/14 150	REVISIONS		<b>ISSUED FOR CONSTRUCTION</b>	Chevron U.S.A. Inc.	EUNICE FMT-DELAWARE BASIN HAYHURST 17-18 MTB-EDDY COUNTY, NEW MEXICO PLOT PLAN		
						API	LEASE
						EU-HH17MTB-04-01	

ONSHORE OIL & GAS ORDER NO. 1  
Approval of Operations on Onshore  
Federal and Indian Oil and Gas Leases

**White City 21 25 27 Fed Com 5H**

330' FSL and 990' FWL  
Section 21, Township 25, Range 27  
Eddy County, New Mexico

**A. EXISTING ROADS/LEASE ROADS**

Driving directions are from Malaga, New Mexico. The location is approximately 10 miles from the nearest town, which is Malaga, New Mexico.

The proposed access to the location is approximately 0.3 of a mile off of Roadrunner Road (CR 774). The road is approximately 1,795' in length and 14' in travel way width with a maximum disturbance area of 20' will be used, in accordance with guidelines set forth in the BLM Onshore Orders. No turnouts are expected.

Existing county and lease roads will be used to enter proposed access road.

Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

Location, access, and vicinity plats attached hereto. **See Exhibits A-1 to A-3.**

*Note:* Exhibit A-2 (SUP) shows compressor station adjacent to the facility pad. Chevron only plans to construct compressor station when low pressure gas takeaway is not available.

Chevron will improve or maintain existing roads in a condition the same as or better than before operations begin. Chevron will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.)

**B. NEW OR RECONSTRUCTED ACCESS ROADS**

There will be approximately **1,795'** of new access to be constructed.

The new access road will be upgraded to a crowned and ditched road and will be graveled as needed for drilling. If requested by the surface owner, upgrading of this portion of the road will be kept to a minimum.

All existing roads (previously improved) will be used "as is" with the exception of minor blading as needed.

Surface disturbance and vehicular travel will be limited to the approved access route. Any additional area will be approved in advance.

Road Width: 14 – 20 feet traveling surface.

Maximum Grade: Road gradient less than 8%

Crown Design: 2%

Turnouts will be installed along the access route as needed.

Ditch design: Drainage, interception and outlet.

Erosion Control: 6" rock under road.

Re-vegetation of Disturbed Area: All disturbed areas will be seeded by Broadcast or Drill and Crimp. Ground conditions will determine the method used.

Cattle guard(s) will be installed as needed.

Major Cuts and Fills: 2:1 Slope.

Surfacing material (road base derived from caliche or river rock) will be placed on the access road during construction. All surface disturbing activities will be discussed with and agreed to with the surface owner.

**C. LOCATION OF EXISTING WELLS**

All wells located within a 1-mile radius of the Surface & Bottom Hole Location. **See Exhibit B.**

**D. LOCATION OF PRODUCTION FACILITIES**

It is anticipated that the existing Hayhurst 17 production facility, located in Section 17-25-27, will be utilized and oil to be sold at that tank battery.

The production line will be dual surface-laid 4" flex pipe with a working pressure less than 125 psig ran along existing disturbances.

Oil and gas measurement will be installed at the production facility location. **See Exhibit C.**

The existing water disposal system at the Hayhurst 17 production facility will be utilized.

The permanent electrical supply route will be determined prior to construction of permanent distribution lines. A generator will be utilized until permanent power is connected.

**E. LOCATION AND TYPES OF WATER SUPPLY**

Chevron will utilize the fresh water holding pond i in Section 16-25-27 for fresh water.

During frac operations, Chevron will lay a temporary 12" flowline from the frac pond to the well. The flowline will follow within 5 feet along the access road from the frac pond to the well using the same route as the proposed access roads depicted on **Exhibit A2.**

Water will be obtained from a private water source. Water to be hauled into or piped by a private provider into Section 16.

**F. CONSTRUCTION MATERIALS**

All construction materials will be used from the nearest Private, BLM, or State pit. All material (i.e. shale) will be acquired from private or commercial sources.

No construction material will be needed for well pad construction; subsurface spoil material will be utilized.

Surfacing material (caliche) will be purchased from a supplier having a permitted source of materials.

The entire location will be fenced with barb/woven wire.

**G. METHODS FOR HANDLING WASTE DISPOSAL**

A closed system will be utilized consisting of above ground steel tanks.

All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in a state approved facility.

Disposal of cuttings: **Tervita, LLC**

Sewage and gray water before and after treatment are not allowed to be discharged to the ground. They are collected from storage tank(s) and portable potty at drilling and completions locations and transported by an approved transporter to be disposed of at a Chevron's select-for-use disposal facility.

**H. ANCILLARY FACILITIES**

None.

**I. WELLSITE LAYOUT**

The proposed site layout plat is attached showing the Ensign 767 orientation and equipment location. **See Exhibit D.**

In order to level the location, cut and fill will be required. Please see attached Well Location and Acreage Dedication Plat – **Exhibits A-1 to A-3.**

A locking gate will be installed at the site entrance.

Any fences cut will be repaired. Cattle guards will be installed, if needed.

**J. PLANS FOR RECLAMATION OF THE SURFACE**

Within 6 months, Chevron will contact BLM Surface Management Specialists to devise the best strategies to reduce the size of the location. Current plans for interim reclamation will consist of reclaiming the pad to +/-50 feet outside the anchors, or approximately 200 x 200 feet. **See Exhibit E.**

In addition, the following procedures shall be followed:

- i. Caliche will be removed from reclaimed areas to increase the success of revegetation. Removed caliche that is free of contaminants may be reused for future projects.
- ii. The portions of the cleared well site not needed for operational and safety purposes will be re-contoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Sufficient level area remains for setup of a workover rig and to park vehicles/equipment.

- iii. All surface soil materials (topsoil) are to be removed from the entire cut and fill area and temporarily stockpiled for reuse during interim reclamation. Topsoil will be respread over areas not needed for all-weather operations to ensure successful revegetation. Any topsoil pile set aside should be revegetated to prevent it from eroding and to help maintain its biological viability.
- iv. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture advised by the BLM. The seed mix will be evenly and uniformly distributed over the disturbed area. Seeding will be accomplished by using a drilling or, when drilling is not available, by broadcasting the seed. When broadcasting the seed, the amount of seed shall be doubled.
- v. Weed control will be used on disturbed land, including the roads, pads, associated pipeline corridor, and adjacent land affected by the operations. There shall be no primary or secondary noxious weeds in the seed mixture used for reseeding.

### **In the Event of a Dry Hole/Final Reclamation**

Upon final abandonment of the well, a new reclamation plan will be submitted with the Notice of Intent to Abandon (NIA) or Subsequent Report Plug and Abandon (SRA) using the Sundry Notices and Reports on Wells Form 3160-5. The location will be restored to as near as original condition as possible. Reclamation of the surface shall be done in strict compliance with the existing New Mexico Oil Conservation Division regulations and BLM regulations.

In addition, the following procedures shall be followed:

- i. Caliche material from the well pad and access road will be removed and utilized to re-contour to a final contour that blends with the surrounding topography as much as possible. Any caliche material not used will be utilized to repair roads within the lease.
- ii. On sloped ground, the topsoil and interim vegetation will be restripped from portions of the site that are not at the original contour, the well pad recontoured, and the topsoil will be respread over the entire disturbed.
- iii. Topsoil will be distributed over the reclamation area and cross ripped to control erosion
- iv. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture advised by the BLM. The seed mix will be evenly and uniformly distributed over the disturbed area. Seeding will be accomplished by using a drilling or, when drilling is not available, by broadcasting the seed. When broadcasting the seed, the amount of seed shall be doubled.  
Weed control will be used on disturbed land, including the roads, pads, associated pipeline corridor, and adjacent land affected by the operations. There shall be no primary or secondary noxious weeds in the seed mixture used for reseeding.

- K. SURFACE TENANT**  
Hayhurst- Rook Family Educational Trust  
518 Orchard Lane  
Carlsbad, New Mexico 88220

**ROAD OWNERSHIP**

All access roads are located on **County Road 774** which passes through **Federal, State and private** lands. The county road passes through the oil & gas lease.

- L. ADDITIONAL INFORMATION**

Class III cultural resource inventory report was prepared by Boone Arch Services of NM, Carlsbad, New Mexico for the proposed location. A copy of the report has been sent to the BLM office under separate cover.

**M. CHEVRON REPRESENTATIVES**

<p><b>Project Manager</b> Kelly Wojtasek 1400 Smith Street, 40095 Houston, TX 77002 Office: 713-372-9691 <a href="mailto:Kellyanne@chevron.com">Kellyanne@chevron.com</a></p>	<p><b>Drilling Engineer</b> Matt Kubachka 1400 Smith Street, 43128 Houston, TX 77002 Office: +1 (713) 372-5721 <a href="mailto:Matt.Kubachka@chevron.com">Matt.Kubachka@chevron.com</a></p>
<p><b>Surface Land Representative</b> Stephen Tarr 15 Smith Road, 5103 Claydesta Plaza Midland, TX 79705 Office: +1 432-687-7956 Cell: +1 432-238-6316 <a href="mailto:STarr@chevron.com">STarr@chevron.com</a></p>	<p><b>Facility Engineer</b> Jimmy Batton 15 Smith Road, 6216C Claydesta Plaza Midland, TX 79705 Office: +1 432-687-7648 <a href="mailto:KOJR@chevron.com">KOJR@chevron.com</a></p>
<p><b>Geologist</b> Terry Belsher 1400 Smith Street, 42196 Houston, TX 77002 Office: +1 (713) 372-3460 <a href="mailto:TBEL@chevron.com">TBEL@chevron.com</a></p>	<p><b>Asset Manager</b> David McKay 1400 Smith Street. 40188 Houston, TX 77002 <a href="mailto:DVMC@chevron.com">DVMC@chevron.com</a></p>
<p><b>Regulatory Specialist</b> Denise Pinkerton 15 Smith Road, 4229 Claydesta Plaza Midland, TX 79705 Office: +1 (432) 687-7375 <a href="mailto:leakejd@chevron.com">leakejd@chevron.com</a></p>	<p><b>Land Team Lead</b> Pam Bikun 1400 Smith Street. 45004 Houston, TX 77002 Office: 713-372-1373 <a href="mailto:PamBikun@Chevron.com">PamBikun@Chevron.com</a></p>

Summary of Exhibits

Exhibit A1	White City 21 25 27 Fed Com 5H C102 cert
Exhibit A2	White City 21 25 27 Fed Com 5H SUP cert
Exhibit A3	White City 21 25 27 Fed Com 5H vicinity map
Exhibit B	1 mile radius of surface and bottom hole locations.
Exhibit C	Production Facility layout
Exhibit D	Wellsite layout
Exhibit E	Area to be reclaimed

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chevron USA Inc
LEASE NO.:	NM107369
WELL NAME & NO.:	5H-White City 21 25 27 Fed Com
SURFACE HOLE FOOTAGE:	330'S & 990'W
BOTTOM HOLE FOOTAGE:	330'N & 990'W
LOCATION:	Sec. 21, T. 25 S., R. 27 E.
COUNTY:	Eddy County, New Mexico

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Communitization Agreement
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Drilling**
  - Cement Requirements
  - High Cave/Karst
  - Logging Requirements
  - Waste Material and Fluids
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **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)

### Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## **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) 234-5909 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. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

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

### **D. 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.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**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 twenty-five (25) 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**

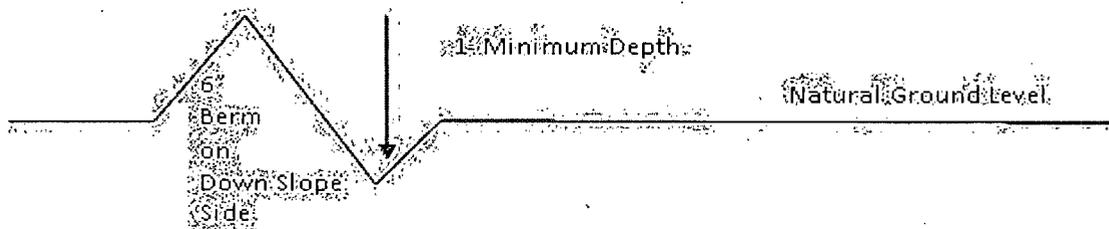
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**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:

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

### Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

### Fence Requirement

Where entry is granted 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 fences.

### Public Access

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

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

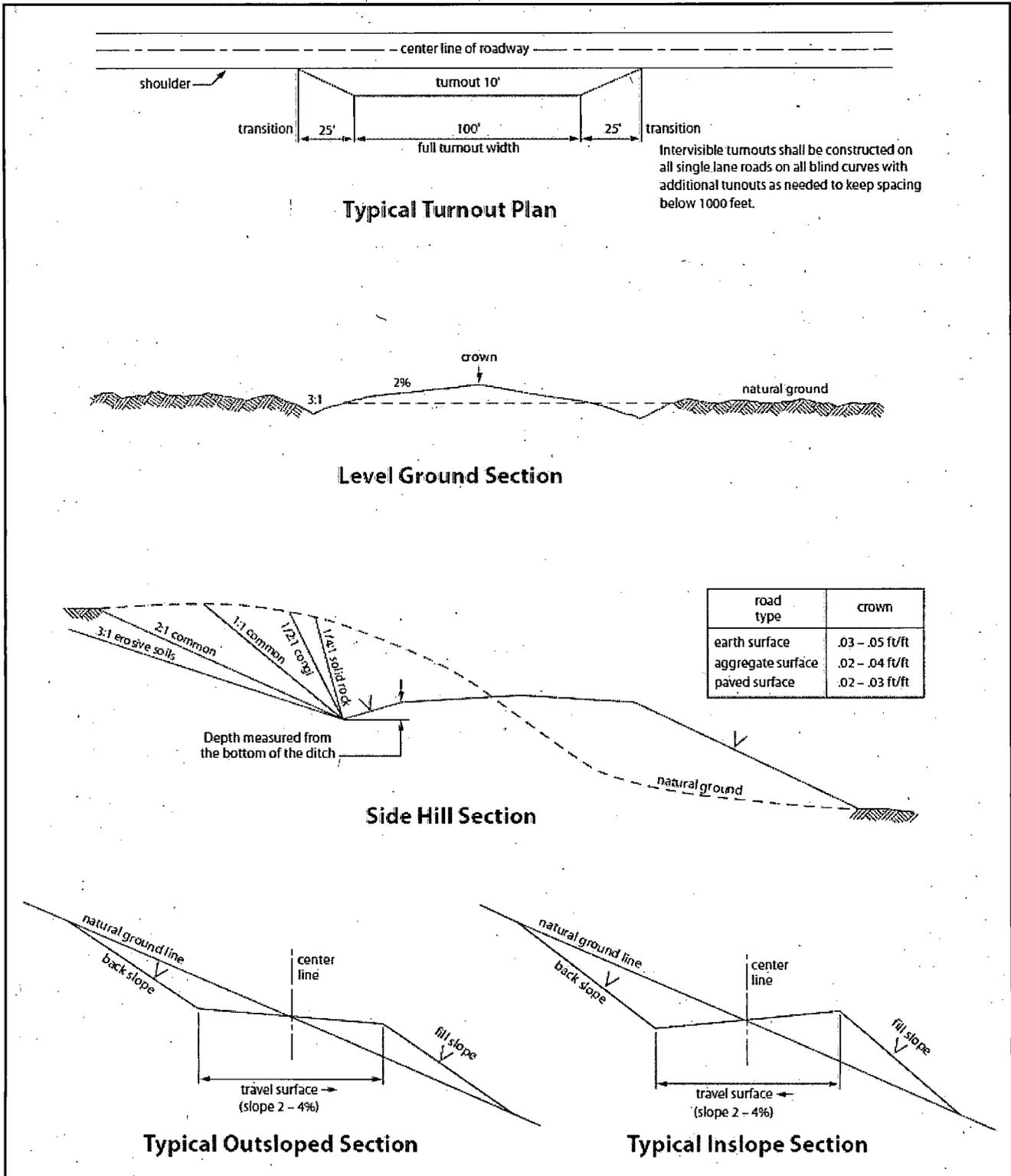


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

**Eddy County**

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

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall 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 top and bottom of Salt are to be recorded on the Completion Report.**

## B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

### Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

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

### High Cave/Karst

**A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. ON A THREE STRING DESIGN; IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.**

Possible water flows in the Castile and Delaware.

Possible lost circulation in the Salado, Delaware, and Bone Spring.

1. The 13-3/8 inch surface casing shall be set at approximately 400 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
  - 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.

**Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately 2100 feet, is:

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

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to 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.

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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**
  - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
  - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
  - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
  - d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
  - e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**
4. 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, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**

- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. 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.**
- f. 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. This test shall be performed prior to the test at full stack pressure.

#### **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.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**CRW 030215**

## 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.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

### **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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **Pipeline**

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   20   feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

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 or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of   24   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.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

## **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).

Seed Mixture 4, for Gypsum 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 no 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

Alkali Sacaton (*Sporobolus airoides*)

1.0

DWS Four-wing saltbush (*Atriplex canescens*)

5.0

DWS: DeWinged Seed

\*Pounds of pure live seed:

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