

Carlsbad Field Office

OCD Artesia

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

ATS-15-156
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <i>5AL</i> NMNM116027 / <i>nmnm 96208</i>
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator CHEVRON USA INC		7. If Unit or CA Agreement, Name and No.
3a. Address 1616 W. BENDER BLVD HOBBS, NM 88240		8. Lease Name and Well No. WHITE CITY 30 24 27 FED #1H
3b. Phone No. (include area code) 575-263-0431		9. API Well No. <i>30-015-43296</i>
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 175' FNL & 606' FEL At proposed prod. zone 250' FNL & 660' FEL		10. Field and Pool, or Exploratory WILDCAT; BONE SPRING
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 11 MILES FROM MALAGA, NM		11. Sec., T. R. M. or Blk. and Survey or Area SEC 31 T24S, R27E; UL A (SHL) SEC 30 T24S, R27E; UL A (BHL)
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 175" FNL	16. No. of acres in lease NMNM 116207 - 624.80 ACRES	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 950 FT FROM DOC HOLLIDAY 32 ST A1	19. Proposed Depth TVD 7545' MD 12570'	20. BLM/BIA Bond No. on file CA 0329
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3418' 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:

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

25. Signature <i>Cindy Herrera-Murillo</i>	Name (Printed/Typed) CINDY HERRERA-MURILLO	Date 10/29/2014
Title PERMITTING SPECIALIST		
Approved by (Signature) <i>Steve Caffey</i>	Name (Printed/Typed)	Date JUL 30 2015
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 3 2015

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Carlsbad Controlled Water Basin

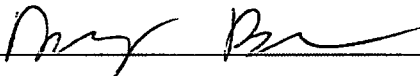
Approval Subject to General Requirements
& Special Stipulations Attached

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 29th day of October, 2014

Name: 

Danny Boone – Project Manager

Address: 1400 Smith Street

Houston, TX 77002

Room 40135

Office: 713-372-5390

E-mail: DBPR@CHEVRON.COM

NM OIL CONSERVATION ARTESIA DISTRICT

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) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

AUG 3 2015
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Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43296	² Pool Code 96415	³ Pool Name WILDCAT; BONE SPRING : West
⁴ Property Code 315125	⁵ Property Name WHITE CITY 30 24 27 FED encl	
⁷ OGRID No. 4323	⁸ Operator Name CHEVRON U.S.A. INC.	⁶ Well Number 1H
		⁹ Elevation 3418'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	31	24 SOUTH	27 EAST, N.M.P.M.		175'	NORTH	606'	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

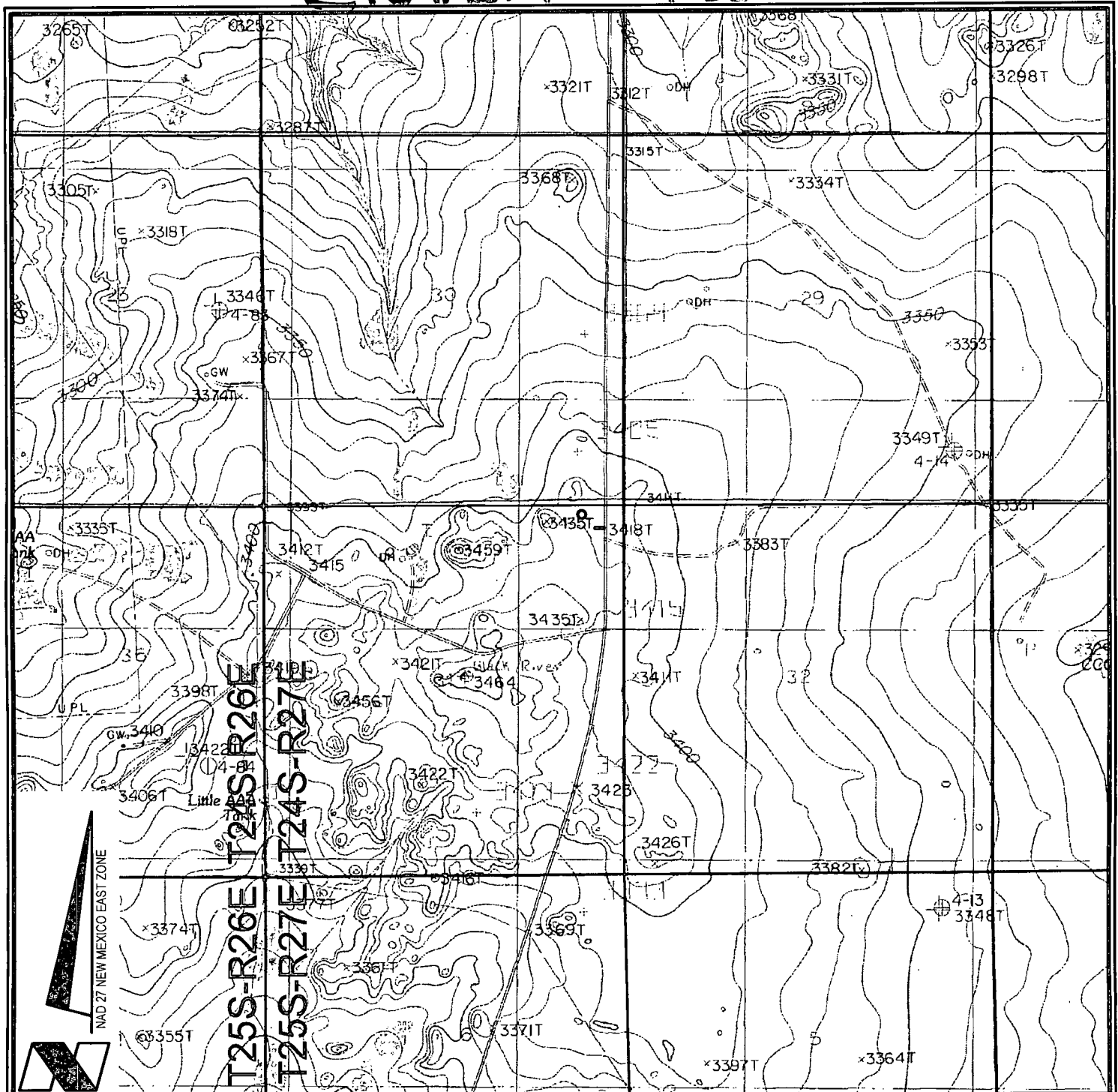
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	30	24 SOUTH	27 EAST, N.M.P.M.		250'	NORTH	660'	EAST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
160			

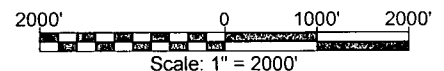
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>PROPOSED BOTTOM HOLE LOCATION (SECTION 30)</p> <p>X= 534,185 NAD 27 Y= 434,576 LAT. 32.194718 LONG. 104.222824</p> <p>X= 575,368 NAD83 Y= 434,634 LAT. 32.194838 LONG. 104.223322</p>	<p>Proposed Last Take Point 330' FNL, 659' FEL (Section 30)</p>	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>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.</p> <p>Cindy Herrera-Murillo 10-22-14 Signature Date Cindy Herrera-Murillo Printed Name Cherreramurillo@chevron.com E-mail Address</p>
<p>CORNER COORDINATES TABLE (NAD 27)</p> <p>A - Y=434,826.21, X=533,542.80 B - Y=434,825.89, X=534,845.61 C - Y=429,513.66, X=533,534.21 D - Y=429,523.14, X=534,828.73 E - Y=428,198.70, X=533,531.35 F - Y=428,207.34, X=534,826.25</p>	<p>Proposed First Take Point 330' FSL, 611' FEL (Section 30)</p>	<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>7-9-14 Date of Survey Signature and Seal of Professional Surveyor: WMA J. DANIEL III NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 15078 Certificate Number #15078</p>

Exhibit A-2



VICINITY MAP



CHEVRON U.S.A. INC.
 WHITE CITY 30 24 27 FED. NO. 1H WELL
 LOCATED 175' FNL AND 606' FEL
 SECTION 31, T24S-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

DRAWN BY: BMO

PROJ. MGR.: GDG

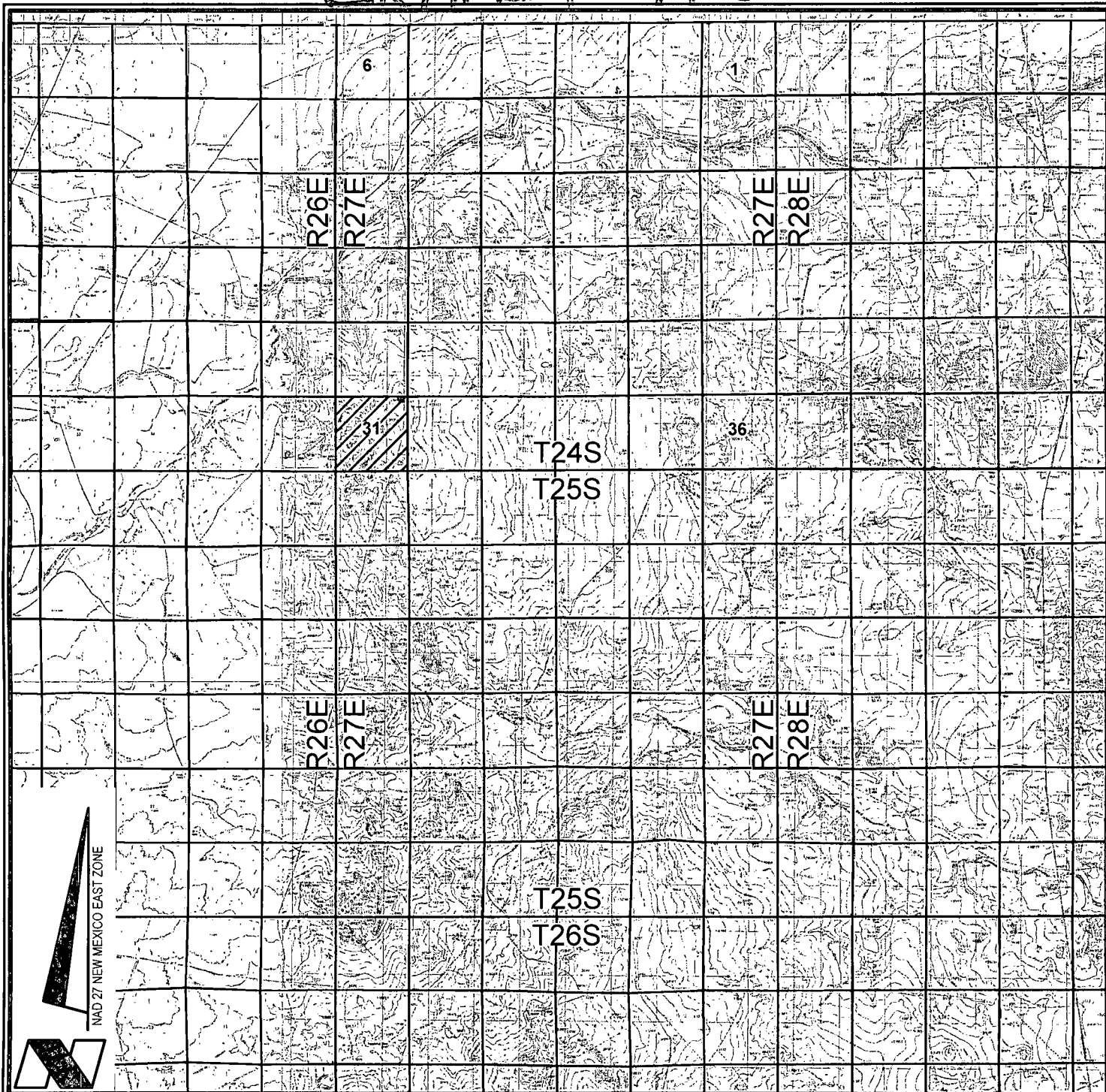
REVISED: 10/28/2014 GDG

DATE: JUNE 23, 2014

SHEET 1 OF 3 SHEETS

FILENAME: T:\2014\2145504\DWG\White City 30 24 27 Fed 1H APD.dwg

Exhibit A-3



VICINITY MAP

10,000' 0 5,000' 10,000'
Scale: 1" = 10,000'

CHEVRON U.S.A. INC.

WHITE CITY 30 24 27 FED NO. 1H WELL

LOCATED 175' FNL AND 606' FEL

SECTION 31, T24S-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

DRAWN BY: BOR

REVISED: 10/28/2014 GDG

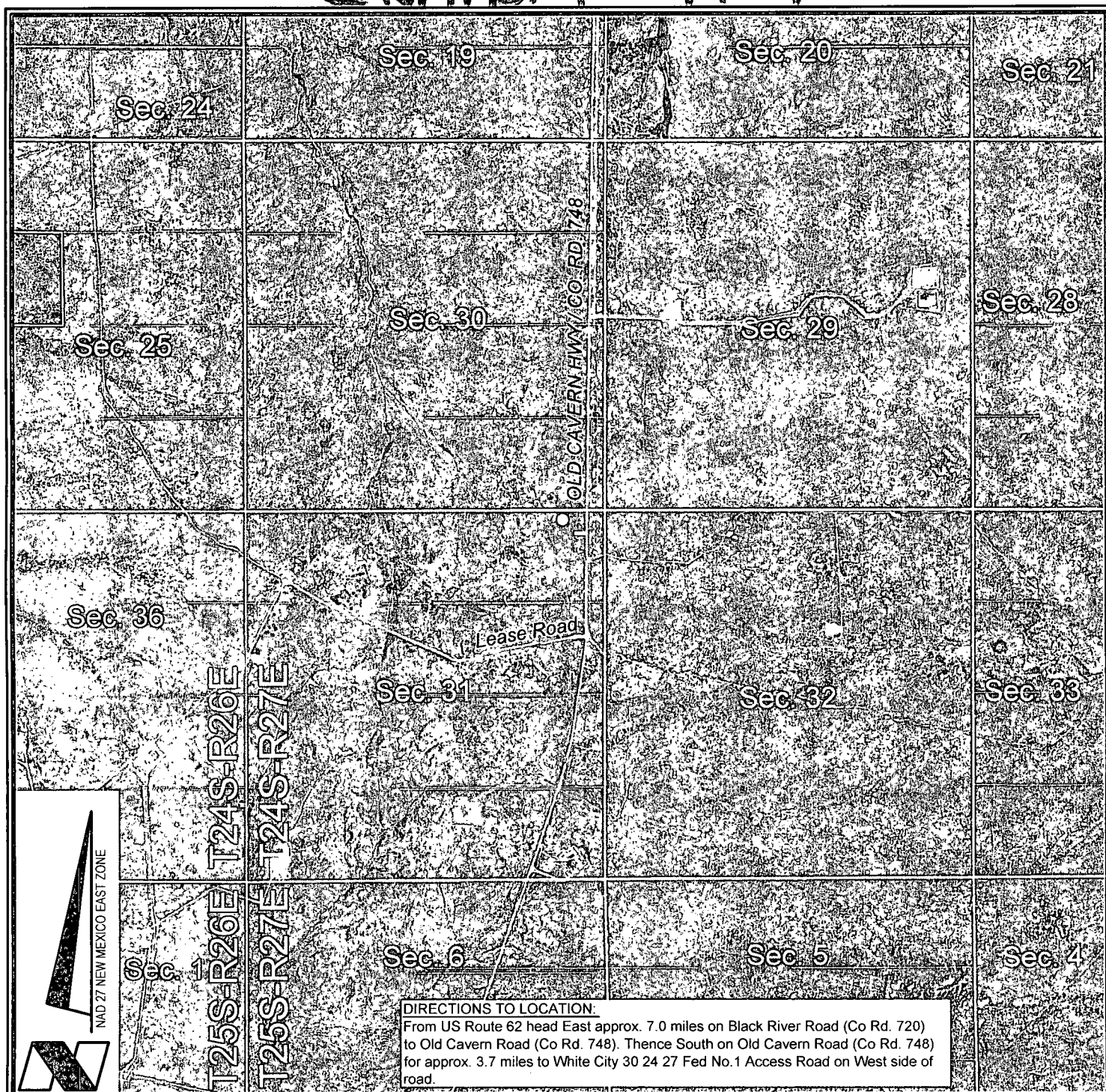
DATE: JUNE 23, 2014

PROJ. MGR.: GDG

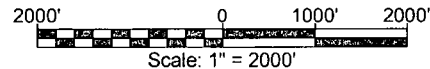
SHEET 2 OF 3 SHEETS

FILENAME: T:\2014\2145504\DWG\White City 30 24 27 Fed 1H APD.dwg

Exhibit A-4



VICINITY MAP



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

CHEVRON U.S.A. INC.
WHITE CITY 30 24 27 FED NO. 1H WELL
 LOCATED 175' FNL AND 606' FEL
 SECTION 31, T24S-R27E
 EDDY COUNTY, NEW MEXICO



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 Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: BMO

REVISED: 10/28/2014 GDG

DATE: JUNE 23, 2014

PROJ. MGR.: GDG

SHEET 3 OF 3 SHEETS

FILENAME: T:\2014\2145504\DWG\White City 30 24 27 Fed 1H APD.dwg

24

19

20

MOCK 1
30015011280000

PREACHER '19' FEDER 3H
30015418870000

MOCK 2
30015011290000

PREACHER '19' FEDER 3H
30015418870100

SERRANO '29' FEDERA 1H
30015377630100
SERRANO 29 FEDERAL 1
30015377630000

EL PASO-FED /29/ 1
30015220840000

25

30

29

BOWDEN-FEDERA 25 1
30015208120000

DOC HOLLIDAY 32 STA 3
30015411510000
DOC HOLLIDAY 32 STA 1
30015411450000

KATIE MOCK 1
30015011350000

WHITE CITY 30-24-27 FED 1H
WHITECITY30-24-271H

STATE FEDERAL 1
30015011380000
30015235260000

COLES /31/ FEDERAL 1
30015210260000

SHL

HUMBLE-FEDERAL
30015402530000

FEDERAL-WIGGS 1
30015011370000

EL PASO 'B' STATE 1
30015232750000

DOC HOLLIDAY 32 STA 1H
30015411457000

NEW MEXICO 'DM' STA 1
30015245130000

DOC HOLLIDAY 32 STA 2
30015411460000

White City 30-24-27 Fed 1H

Mile Radius Map

Chevron NAEP



TAOS FEDERAL 7H
30015417600000

TAOS FEDERAL 6H
30015417590000

TAOS FEDERAL 4

31

WOLF CREEK 32 STATE 1
30015367490000

DOC HOLLIDAY 32 STA 4
30015411620000

DOC HOLLIDAY 32 STA 4

32

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA	KBTVD	MD
Rustler	0	0	
Salado	0	0	
Castile	2,969	480	
Lamar	1,190	2,259	
Bell Canyon	1,125	2,324	
Cherry Canyon	364	3,085	
Brushy Canyon	-748	4,197	
Bone Spring Limestone	-2,325	5,774	
1st Bone Spring	-3,704	7,153	
2nd Bone Spring	-3,911	7,360	
Lateral TD (2nd Bone Spring)	(4,096)	7,545	12,570

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	Rustler	0
Water	Bell Canyon	2,324
Oil/Gas	Cherry Canyon	3,085
Oil/Gas	Brushy Canyon	4,197
Oil/Gas	Bone Spring Limestone	5,774
Oil/Gas	1st Bone Spring	7,153
Oil/Gas	2nd Bone Spring	7,360

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

3. BOP EQUIPMENT * See COA

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 ~~na~~ See COA 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.

Chevron requests a variance to use a GE/Vetco SH-2 Multibowl wellhead, which will be run through the rig floor 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. See COA

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'	450'	17-1/2"	13-3/8"	48 #	H-40	STC	New
Intermediate	0'	2,250'	12-1/4"	9-5/8"	40 #	HCK-55	LTC	New
Production	0'	12,570'	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
Burst Design			
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
Collapse Design			
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
Tension Design			
100k lb overpull	X	X	X

* See COA

5. CEMENTING PROGRAM

Slurry	Type	Top	Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C+2%CaCl	0'	450'	14.8	1.36	125	530	6.39
Intermediate								
Lead	Class C+4%Gel +1%CaCl	0'	1,650'	13.7	1.68	100	548	9.72
Tail	Class C+1%CaCl	1,650'	2,250'	14.8	1.33	100	311	6.24
Production								
1st Lead	50% Class H+ 50% Silicalite +2% Gel	1,750'	7,065'	11.3	2.54	100	1009	15.07
2nd Lead	50% Class H+ 50% Silicalite +2% Gel	7,065'	11,545'	12.5	1.81	35	847	8.10
Tail	Acid Soluble Cement	11,545'	12,570'	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'	450'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
450'	2,250'	Brine	9.5 - 10.1	28 - 29	NC - NC
2,250'	7,065'	FW/Cut Brine	8.3 - 9.5	28 - 29	NC - NC
7,065'	7,818'	Cut Brine	8.3 - 9.5	28 - 30	15 - 25
7,818'	12,570'	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

** See COA*

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

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

*COA Will Require
GR/N to TD
Horizontal well to vertical portion
of hole to Surface*

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
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

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

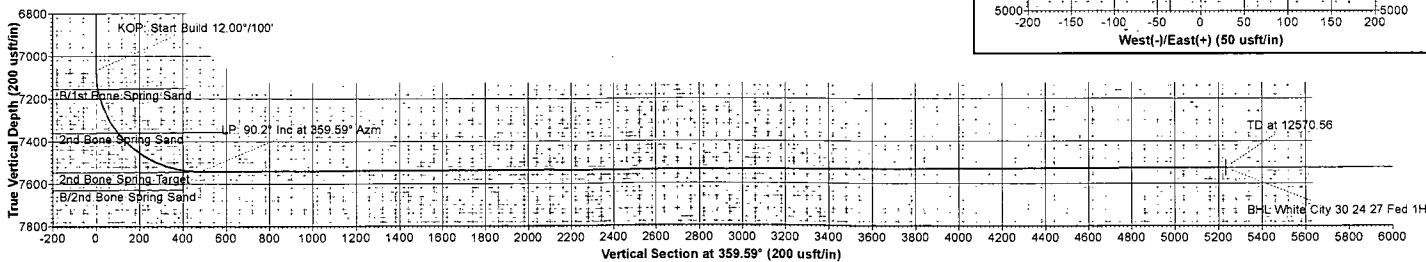
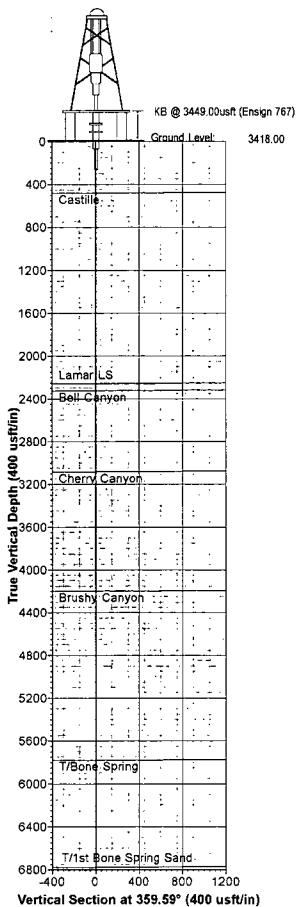
8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- No abnormal pressures or temperatures are expected. Estimated BHP is: 4025 psi
- Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Project: Eddy County NM (NAD27 NME)
 Site: White City 30 24 27 Fed
 Well: 1H
 Wellbore: Wellbore #1
 Design: Plan 1 10-16-14
 Rig: Ensign 767



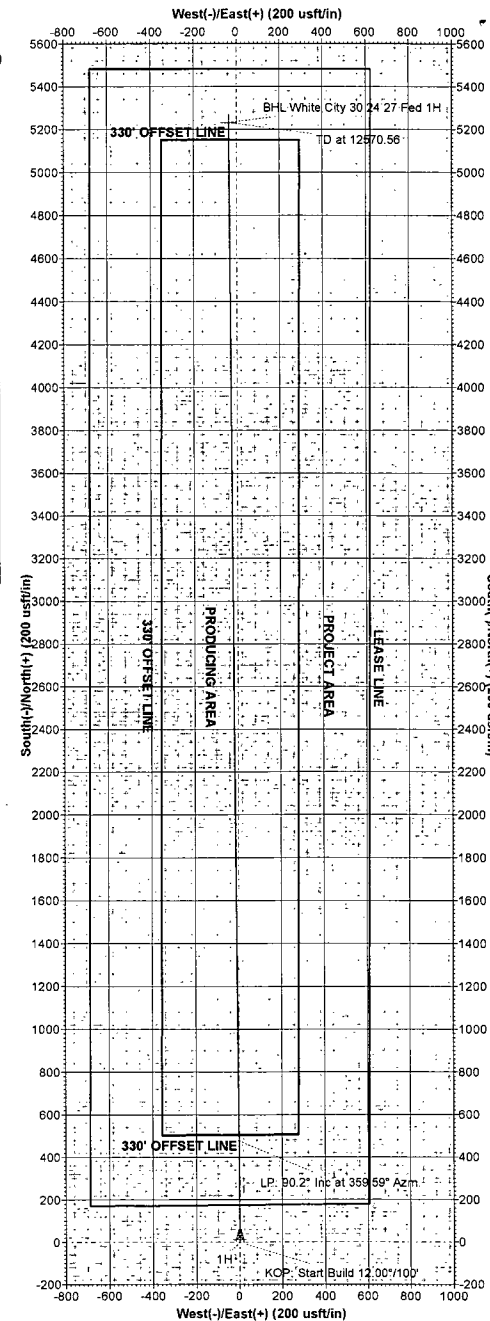
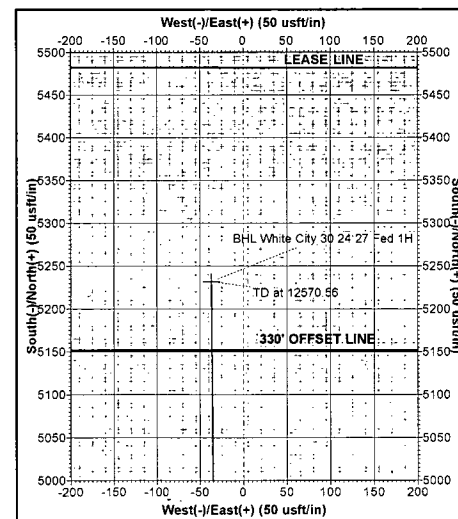
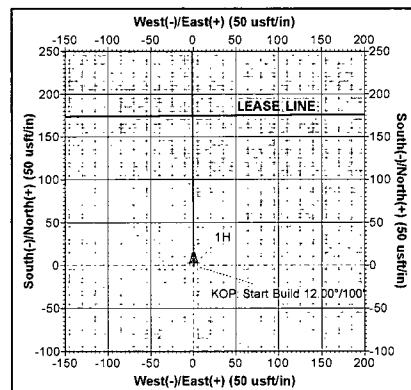
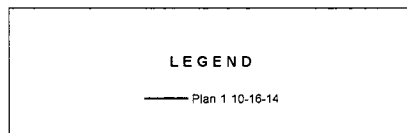
Azimuths to Grid North
 True North: -0.06°
 Magnetic North: 7.58°
 Magnetic Field
 Strength: 48134.9nT
 Dip Angle: 59.94°
 Date: 10/16/2014
 Model: BGGM2014



WELL DETAILS									
	+N/-S	+E/-W	Northing	Ground Level: Easting	3418.00	Latitude	Longitude		
	0.00	0.00	429344.00	534222.00		32° 10' 49.20708 N	104° 13' 21.79519 W		

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V/Sect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7065.87	0.00	0.00	7065.87	0.00	0.00	0.00	0.00	0.00	0.00	KOP: Start Build 12.00°/100°
3	7817.54	90.20	359.59	7543.33	479.12	-3.39	12.00	359.59	479.13		LP: 90.2° Inc at 359.59° Azm
4	12570.56	90.20	359.59	7526.74	5232.00	-37.00	0.00	0.00	5232.13	BHL White City 30 24 27 Fed 1H	TD at 12570.56

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
BHL White City 30 24 27 Fed 1H	7526.74	5232.00	-37.00	434576.00	534185.00	32° 11' 40.88554 N	104° 13' 22.16317 W	Point	- plan hits target center



NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 3 2015

RECEIVED

Chevron

Eddy County NM (NAD27 NME)

White City 30 24 27 Fed

1H

Wellbore #1

Plan: Plan 1 10-16-14

Standard Planning Report

16 October, 2014

Phoenix Technology Services

Planning Report

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well 1H
Company:	Chevron	TVD Reference:	KB @ 3449.00usft (Ensign 767)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3449.00usft (Ensign 767)
Site:	White City 30 24 27 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1 10-16-14		

Project	Eddy County NM (NAD27 NME)		
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 30 24 27 Fed		
Site Position:		Northing:	429,344.00 usft
From:	Map	Easting:	534,222.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 49.20709 N
		Longitude:	104° 13' 21.79519 W
		Grid Convergence:	0.06 °

Well	1H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 10' 49.20709 N
		Longitude:	104° 13' 21.79519 W
		Ground Level:	3,418.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	BGGM2014	10/16/14	7.64
			Dip Angle
			(°)
			59.94
			Field Strength
			(nT)
			48,135

Design	Plan 1 10-16-14		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			359.59

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,065.87	0.00	0.00	7,065.87	0.00	0.00	0.00	0.00	0.00	0.00	
7,817.54	90.20	359.59	7,543.33	479.12	-3.39	12.00	12.00	0.00	359.59	
12,570.56	90.20	359.59	7,526.74	5,232.00	-37.00	0.00	0.00	0.00	0.00	BHL White City 30 24

Phoenix Technology Services

Planning Report

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well 1H
Company:	Chevron	TVD Reference:	KB @ 3449.00usft (Ensign 767)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3449.00usft (Ensign 767)
Site:	White City 30 24 27 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1 10-16-14		

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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Phoenix Technology Services

Planning Report

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well 1H
Company:	Chevron	TVD Reference:	KB @ 3449.00usft (Ensign 767)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3449.00usft (Ensign 767)
Site:	White City 30 24 27 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1 10-16-14		

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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,065.87	0.00	0.00	7,065.87	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Start Build 12.00°/100'									
7,075.00	1.10	359.59	7,075.00	0.09	0.00	0.09	12.00	12.00	0.00
7,100.00	4.10	359.59	7,099.97	1.22	-0.01	1.22	12.00	12.00	0.00
7,125.00	7.10	359.59	7,124.85	3.66	-0.03	3.66	12.00	12.00	0.00
7,150.00	10.10	359.59	7,149.57	7.39	-0.05	7.39	12.00	12.00	0.00
7,175.00	13.10	359.59	7,174.05	12.42	-0.09	12.42	12.00	12.00	0.00
7,200.00	16.10	359.59	7,198.24	18.72	-0.13	18.72	12.00	12.00	0.00
7,225.00	19.10	359.59	7,222.07	26.27	-0.19	26.27	12.00	12.00	0.00
7,250.00	22.10	359.59	7,245.47	35.07	-0.25	35.07	12.00	12.00	0.00
7,275.00	25.10	359.59	7,268.38	45.07	-0.32	45.07	12.00	12.00	0.00
7,300.00	28.10	359.59	7,290.73	56.26	-0.40	56.26	12.00	12.00	0.00
7,325.00	31.10	359.59	7,312.47	68.61	-0.49	68.61	12.00	12.00	0.00
7,350.00	34.10	359.59	7,333.53	82.07	-0.58	82.08	12.00	12.00	0.00
7,375.00	37.10	359.59	7,353.85	96.62	-0.68	96.62	12.00	12.00	0.00
7,400.00	40.10	359.59	7,373.39	112.22	-0.79	112.22	12.00	12.00	0.00
7,425.00	43.10	359.59	7,392.08	128.81	-0.91	128.81	12.00	12.00	0.00
7,450.00	46.10	359.59	7,409.88	146.36	-1.04	146.36	12.00	12.00	0.00
7,475.00	49.10	359.59	7,426.74	164.82	-1.17	164.82	12.00	12.00	0.00
7,500.00	52.10	359.59	7,442.61	184.13	-1.30	184.14	12.00	12.00	0.00
7,525.00	55.10	359.59	7,457.44	204.25	-1.44	204.26	12.00	12.00	0.00
7,550.00	58.10	359.59	7,471.20	225.12	-1.59	225.12	12.00	12.00	0.00
7,575.00	61.10	359.59	7,483.86	246.68	-1.74	246.68	12.00	12.00	0.00
7,600.00	64.10	359.59	7,495.36	268.87	-1.90	268.88	12.00	12.00	0.00
7,625.00	67.10	359.59	7,505.69	291.63	-2.06	291.64	12.00	12.00	0.00
7,650.00	70.10	359.59	7,514.81	314.90	-2.23	314.91	12.00	12.00	0.00
7,675.00	73.10	359.59	7,522.70	338.62	-2.39	338.63	12.00	12.00	0.00
7,700.00	76.10	359.59	7,529.34	362.72	-2.57	362.73	12.00	12.00	0.00
7,725.00	79.10	359.59	7,534.71	387.13	-2.74	387.14	12.00	12.00	0.00
7,750.00	82.10	359.59	7,538.80	411.79	-2.91	411.80	12.00	12.00	0.00
7,775.00	85.10	359.59	7,541.59	436.63	-3.09	436.65	12.00	12.00	0.00
7,800.00	88.10	359.59	7,543.07	461.59	-3.26	461.60	12.00	12.00	0.00
7,817.54	90.20	359.59	7,543.33	479.12	-3.39	479.14	12.00	12.00	0.00
LP: 90.2° Inc at 359.59° Azm									
7,900.00	90.20	359.59	7,543.04	561.58	-3.97	561.60	0.00	0.00	0.00
8,000.00	90.20	359.59	7,542.69	661.58	-4.68	661.59	0.00	0.00	0.00

Phoenix Technology Services

Planning Report

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well 1H
Company:	Chevron	TVD Reference:	KB @ 3449.00usft (Ensign 767)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3449.00usft (Ensign 767)
Site:	White City 30 24 27 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1 10-16-14		

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)
8,100.00	90.20	359.59	7,542.35	761.57	-5.39	761.59	0.00	0.00	0.00
8,200.00	90.20	359.59	7,542.00	861.57	-6.09	861.59	0.00	0.00	0.00
8,300.00	90.20	359.59	7,541.65	961.57	-6.80	961.59	0.00	0.00	0.00
8,400.00	90.20	359.59	7,541.30	1,061.57	-7.51	1,061.59	0.00	0.00	0.00
8,500.00	90.20	359.59	7,540.95	1,161.56	-8.21	1,161.59	0.00	0.00	0.00
8,600.00	90.20	359.59	7,540.60	1,261.56	-8.92	1,261.59	0.00	0.00	0.00
8,700.00	90.20	359.59	7,540.25	1,361.56	-9.63	1,361.59	0.00	0.00	0.00
8,800.00	90.20	359.59	7,539.90	1,461.55	-10.34	1,461.59	0.00	0.00	0.00
8,900.00	90.20	359.59	7,539.55	1,561.55	-11.04	1,561.59	0.00	0.00	0.00
9,000.00	90.20	359.59	7,539.20	1,661.55	-11.75	1,661.59	0.00	0.00	0.00
9,100.00	90.20	359.59	7,538.85	1,761.54	-12.46	1,761.59	0.00	0.00	0.00
9,200.00	90.20	359.59	7,538.51	1,861.54	-13.16	1,861.59	0.00	0.00	0.00
9,300.00	90.20	359.59	7,538.16	1,961.54	-13.87	1,961.59	0.00	0.00	0.00
9,400.00	90.20	359.59	7,537.81	2,061.53	-14.58	2,061.59	0.00	0.00	0.00
9,500.00	90.20	359.59	7,537.46	2,161.53	-15.29	2,161.59	0.00	0.00	0.00
9,600.00	90.20	359.59	7,537.11	2,261.53	-15.99	2,261.58	0.00	0.00	0.00
9,700.00	90.20	359.59	7,536.76	2,361.53	-16.70	2,361.58	0.00	0.00	0.00
9,800.00	90.20	359.59	7,536.41	2,461.52	-17.41	2,461.58	0.00	0.00	0.00
9,900.00	90.20	359.59	7,536.06	2,561.52	-18.11	2,561.58	0.00	0.00	0.00
10,000.00	90.20	359.59	7,535.71	2,661.52	-18.82	2,661.58	0.00	0.00	0.00
10,100.00	90.20	359.59	7,535.36	2,761.51	-19.53	2,761.58	0.00	0.00	0.00
10,200.00	90.20	359.59	7,535.01	2,861.51	-20.24	2,861.58	0.00	0.00	0.00
10,300.00	90.20	359.59	7,534.67	2,961.51	-20.94	2,961.58	0.00	0.00	0.00
10,400.00	90.20	359.59	7,534.32	3,061.50	-21.65	3,061.58	0.00	0.00	0.00
10,500.00	90.20	359.59	7,533.97	3,161.50	-22.36	3,161.58	0.00	0.00	0.00
10,600.00	90.20	359.59	7,533.62	3,261.50	-23.06	3,261.58	0.00	0.00	0.00
10,700.00	90.20	359.59	7,533.27	3,361.49	-23.77	3,361.58	0.00	0.00	0.00
10,800.00	90.20	359.59	7,532.92	3,461.49	-24.48	3,461.58	0.00	0.00	0.00
10,900.00	90.20	359.59	7,532.57	3,561.49	-25.19	3,561.58	0.00	0.00	0.00
11,000.00	90.20	359.59	7,532.22	3,661.48	-25.89	3,661.58	0.00	0.00	0.00
11,100.00	90.20	359.59	7,531.87	3,761.48	-26.60	3,761.58	0.00	0.00	0.00
11,200.00	90.20	359.59	7,531.52	3,861.48	-27.31	3,861.58	0.00	0.00	0.00
11,300.00	90.20	359.59	7,531.18	3,961.48	-28.02	3,961.57	0.00	0.00	0.00
11,400.00	90.20	359.59	7,530.83	4,061.47	-28.72	4,061.57	0.00	0.00	0.00
11,500.00	90.20	359.59	7,530.48	4,161.47	-29.43	4,161.57	0.00	0.00	0.00
11,600.00	90.20	359.59	7,530.13	4,261.47	-30.14	4,261.57	0.00	0.00	0.00
11,700.00	90.20	359.59	7,529.78	4,361.46	-30.84	4,361.57	0.00	0.00	0.00
11,800.00	90.20	359.59	7,529.43	4,461.46	-31.55	4,461.57	0.00	0.00	0.00
11,900.00	90.20	359.59	7,529.08	4,561.46	-32.26	4,561.57	0.00	0.00	0.00
12,000.00	90.20	359.59	7,528.73	4,661.45	-32.97	4,661.57	0.00	0.00	0.00
12,100.00	90.20	359.59	7,528.38	4,761.45	-33.67	4,761.57	0.00	0.00	0.00
12,200.00	90.20	359.59	7,528.03	4,861.45	-34.38	4,861.57	0.00	0.00	0.00
12,300.00	90.20	359.59	7,527.68	4,961.44	-35.09	4,961.57	0.00	0.00	0.00
12,400.00	90.20	359.59	7,527.34	5,061.44	-35.79	5,061.57	0.00	0.00	0.00
12,500.00	90.20	359.59	7,526.99	5,161.44	-36.50	5,161.57	0.00	0.00	0.00
12,570.56	90.20	359.59	7,526.74	5,232.00	-37.00	5,232.13	0.00	0.00	0.00
TD at 12570.56									

Phoenix Technology Services

Planning Report

Database:	Compass 5000 GCR DB	Local Co-ordinate Reference:	Well 1H
Company:	Chevron	TVD Reference:	KB @ 3449.00usft (Ensign 767)
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3449.00usft (Ensign 767)
Site:	White City 30 24 27 Fed	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1 10-16-14		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
BHL White City 30 24 27	0.00	0.00	7,526.74	5,232.00	-37.00	434,576.00	534,185.00	32° 11' 40.98555 N	104° 13' 22.16317 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
480.00	480.00	Castille		-0.20	359.59	
2,259.00	2,259.00	Lamar LS		-0.20	359.59	
2,324.00	2,324.00	Bell Canyon		-0.20	359.59	
3,085.00	3,085.00	Cherry Canyon		-0.20	359.59	
4,197.00	4,197.00	Brushy Canyon		-0.20	359.59	
5,774.00	5,774.00	T/Bone Spring		-0.20	359.59	
6,775.00	6,775.00	T/1st Bone Spring Sand		-0.20	359.59	
7,153.46	7,152.97	B/1st Bone Spring Sand		-0.20	359.59	
7,382.31	7,359.65	2nd Bone Spring Sand		-0.20	359.59	
7,815.67	7,543.33	2nd Bone Spring Target		-0.20	359.59	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
7,065.87	7,065.87	0.00	0.00	KOP: Start Build 12.00°/100'
7,817.54	7,543.33	479.12	-3.39	LP: 90.2° Inc at 359.59° Azm
12,570.56	7,526.74	5,232.00	-37.00	TD at 12570.56

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 5,000 psi

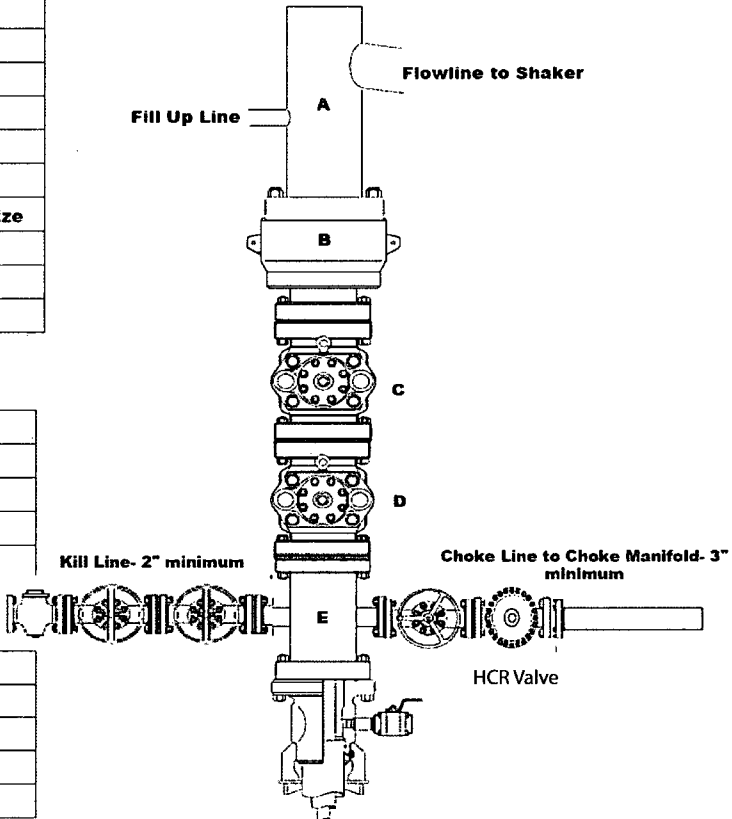
SIZE	PRESSURE	DESCRIPTION
A	N/A	Bell Nipple
B	13 5/8" 5,000 psi	Annular
C	13 5/8" 5,000 psi	Pipe Ram
D	13 5/8" 5,000 psi	Blind Ram
E	13 5/8" 5,000 psi	Mud Cross
F		
DSA	As required for each hole size	
C-Sec		
B-Sec	13-5/8" 5K x 11" 5K	
A-Sec	13-3/8" SOW x 13-5/8" 5K	

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

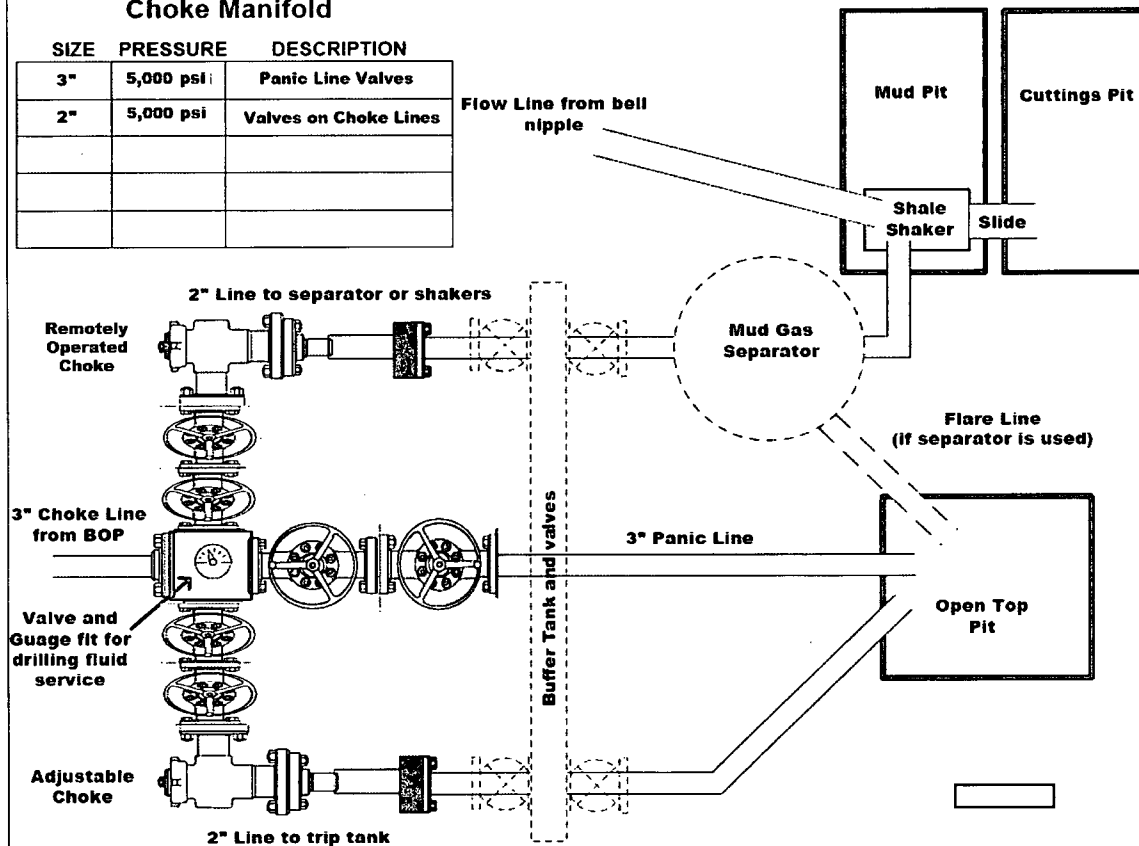
Minimum Requirements

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 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.
- ☐ 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 tress, 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 3rd 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 3rd parties.

Wellname: _____

Representative: _____

Date: _____



H₂S Preparedness and Contingency Plan Summary

White City 30-24-27 Fed 1H

Training

MCBU Drilling and Completions H₂S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H₂S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H₂S, who are not required to perform work in H₂S areas, will be provided with an awareness level of H₂S training prior to entering any H₂S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H₂S
2. Health hazards of H₂S
3. Personal protective equipment
4. Information regarding potential sources of H₂S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

Advanced Level H₂S Training

Employees and contractors required to work in areas that may contain H₂S will be provided with Advanced Level H₂S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H₂S training will include:

1. H₂S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H₂S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H₂S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H₂S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H₂S training;
6. Proficiency examination covering all course material.

Advanced H₂S training courses will be instructed by personnel who have successfully completed an appropriate H₂S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.



H₂S Preparedness and Contingency Plan Summary

H₂S Training Certification

All employees and visitors will be issued an H₂S training certification card (or certificate) upon successful completion of the appropriate H₂S training course. Personnel working in an H₂S environment will carry a current H₂S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H₂S Equipment

Respiratory Protection

- a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.
- b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

- a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.
- b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H₂S Detection and Monitoring System

- a) H₂S monitoring system (sensor head, warning light and siren) placed throughout rig.
 - Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
 - Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.



H₂S Preparedness and Contingency Plan Summary

Well Control Equipment

- a) Flare Line 150' from wellhead with igniter.
- b) Choke manifold with a remotely operated choke.
- c) Mud / gas separator

Mud Program

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

- 1. Use of a degasser
- 2. Use of a zinc based mud treatment
- 3. Increasing mud weight

Public Safety - Emergency Assistance

<u>Agency</u>	<u>Telephone Number</u>
Eddy County Sheriff's Department	575-887-7551
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-628-5450
Poison Control Center	800-222-1222



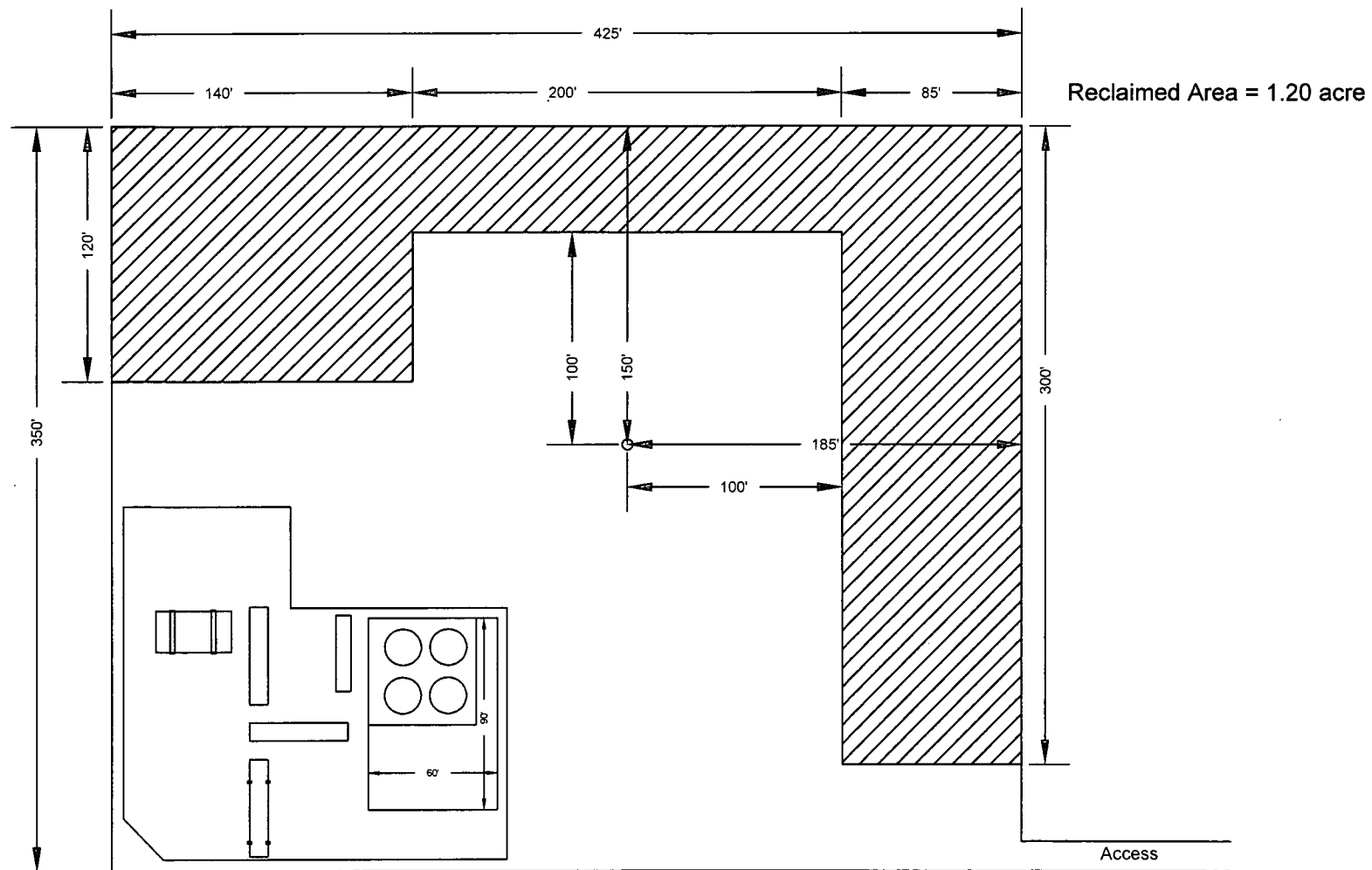
H₂S Preparedness and Contingency Plan Summary

Chevron MCBU D&C Emergency Notifications

Below are lists of contacts to be used in emergency situations.

	Name	Title	Office Number	Cell Phone
1.	Matt Kubachka	Drilling Engineer	(713) 372-5721	(432) 438-2482
2.	Phil Clark	Superintendent	(713) 372-7588	(832) 741-4175
5.	Kim McHugh	Drilling Manager	(713) 372-7591	(713) 204- 8550
6.	Darrell Hammons	Operations Manager	(713) 372-5747	(281) 352 2302
7.	Andrea Calhoun	D&C HES	(713) 372-7586	(832) 588-0100

Exhibit E



Chevron
Midcontinent Business Unit

DELAWARE BASIN
Whit City 30-Interim Reclamation Plan

SURFACE USE PLAN

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

White City 30-24-27 Fed #1H

175' FNL and 606' FEL

Section 31, Township 24 South, Range 27 East

Eddy County, New Mexico

1. EXISTING ROADS/LEASE ROADS

Driving directions are from Malaga, NM., West on Black River Village Road (CR 720) and go 8 miles west and turn south onto John D. Forehand (CR 742) and go approximately 3.5 miles and location will be on the west side of the road approximately 175' from the road.

The existing lease road is approximately 20' in travel way width and approximately 606 feet in length.

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. **See Exhibits A-1 to A-4.**

2. NEW OR RECONSTRUCTED ACCESS ROADS

The access road has not been constructed.

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 feet driving surface with 25 feet max disturbance to include ditching

Maximum Grade: Road gradient less than 8%

Crown Design: 2%

Turnouts will be installed along the proposed access route as needed.

Ditch design: Drainage, interception and outlet.

Erosion Control: 6" rock under road.

Cattle guard(s) will be installed as needed.

Major Cuts and Fills: 3:1 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.

3. LOCATION OF EXISTING WELLS

All wells located within a 1-mile radius of the proposed location. **See Exhibit B.**

4. LOCATION OF PRODUCTION FACILITIES

It is anticipated that production facilities will be located on the west side of the proposed location and oil to be sold at that tank battery.

The production line will be a buried 3 1/2" Fiberglass Pipe with a working pressure greater than 100 psi constructed within existing disturbances.

Oil and gas measurement will be installed on this well location. **See Exhibit C.**

5. LOCATION AND TYPES OF WATER SUPPLY

Water will be obtained from a private water source.

Chevron will utilize the frac pond in section 16-T25-R27 for fresh water.

A temporary 4" poly pipe transfer line will run approx. 5 plus miles from the frac pond in section 16 to the proposed well. All transfer lines will be laid on disturbed areas.

6. CONSTRUCTION MATERIALS

If surface materials are needed, material will be purchased from the nearest Private, BLM, or State pit.

The entire location will be fenced with barb/woven wire and bermed with spoil dirt or non-permeable material.

7. 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.

a. Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.

b. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.

c. Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.

d. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.

e. The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

8. ANCILLARY FACILITIES

None

9. WELLSITE LAYOUT

The proposed site layout plat is attached showing the Ensign Rig # 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-4.

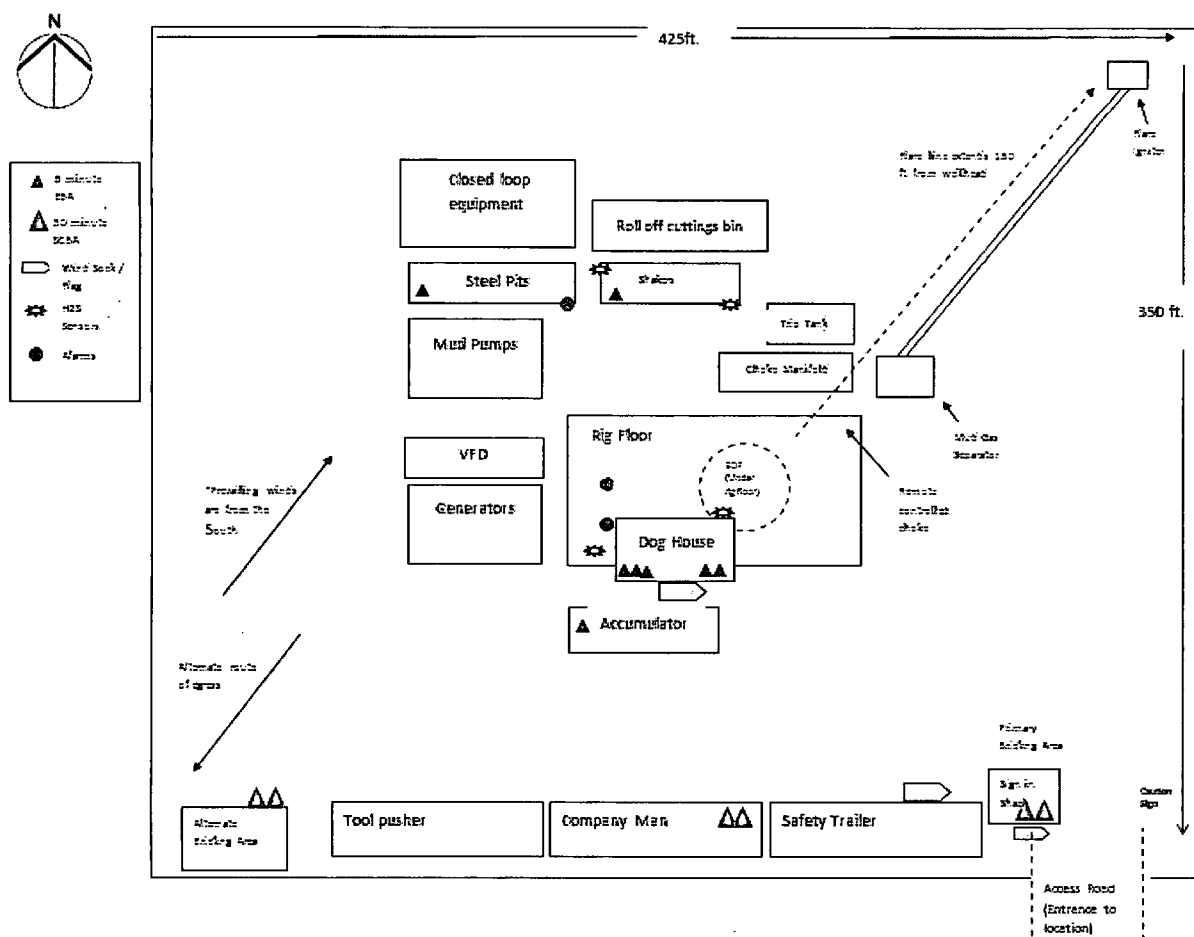
A locking gate will be installed at the site entrance.

Any fences damaged during construction will be repaired. Cattle guards will be installed, if needed.

10. PLANS FOR RECLAMATION OF THE SURFACE

In the Event of Production

H₂S Preparedness and Contingency Plan Summary



Interim reclamation will consist of reclaiming the pad back to what is needed for daily operations. See Exhibit E for the proposed interim reclamation.

In the Event of a Dry Hole/Final Reclamation

Upon final abandonment of the well, surface material will be removed from the well pad and access road . All clean material will be utilized for fill material needed for contouring site, road repair, construction of other well pads, backfilling remediation sites, or flipping under pad Topsoil will be distributed over the reclamation area and cross ripped to control erosion; the site will be seeded with the approved BLM mixture.

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.

11. SURFACE TENANT

Ogden Farm & Cattle Company
159 West Ogden Road
Loving, New Mexico 88256

ROAD OWNERSHIP

All access roads are located on Federal & State lands.

12. ADDITIONAL INFORMATION

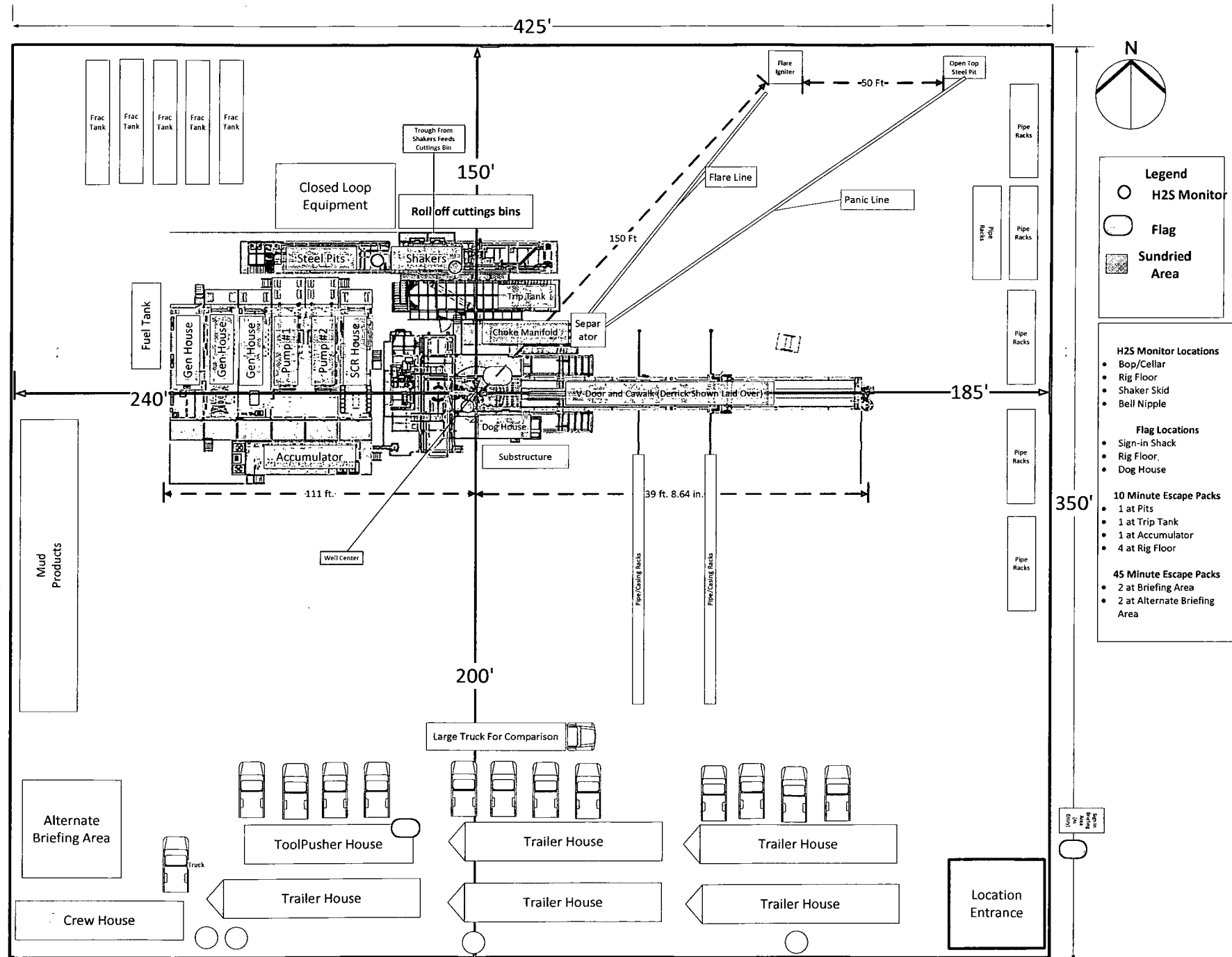
Class III cultural resource inventory report was prepared by Boone Archaeological Services, Carlsbad, New Mexico for the proposed location. A copy of the report has been sent to the BLM office under separate cover and is also attached for reference.

13. Chevron REPRESENTATIVES

Project Manager Danny Boone 1400 Smith Street, 40135 Houston, TX 77002 Office: 713-372-5390 fredverner@chevron.com	Drilling Engineer Matt Kubachka 1400 Smith Street, 43128 Houston, TX 77002 Office: 713-372-5721 kyle.johnson@chevron.com
Field Representative Stephen Tarr 15 Smith Road, 5103 Claydesta Plaza Midland, TX 79705 Office: 432-687-7956 Cell: 432-238-6316 starr@chevron.com	Execution Technical Team Lead Clayton Williams 1400 Smith Street, 40029 Houston, TX 77002 Office: 713-372-0978 etvr@chevron.com
Geologist Jeff Fabre 1400 Smith Street, 40138 Houston, TX 77002 Office: 713-372-0523 ryanjensen@chevron.com	Land Representative Vadal Bolds 1400 Smith Street, 45112 Houston, TX 77002 Office: 713-372-3488 jlevine@Chevron.com
Regulatory Specialist Cindy Herrera-Murillo 1616 Bender Blvd Hobbs, NM 88240 Office: 575-463-0431 Cherreramurillo@Chevron.com	

Exhibit D

Ensign 767 Pad Layout (350' x 425')





Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

August 7, 2013

Customer: Odessa

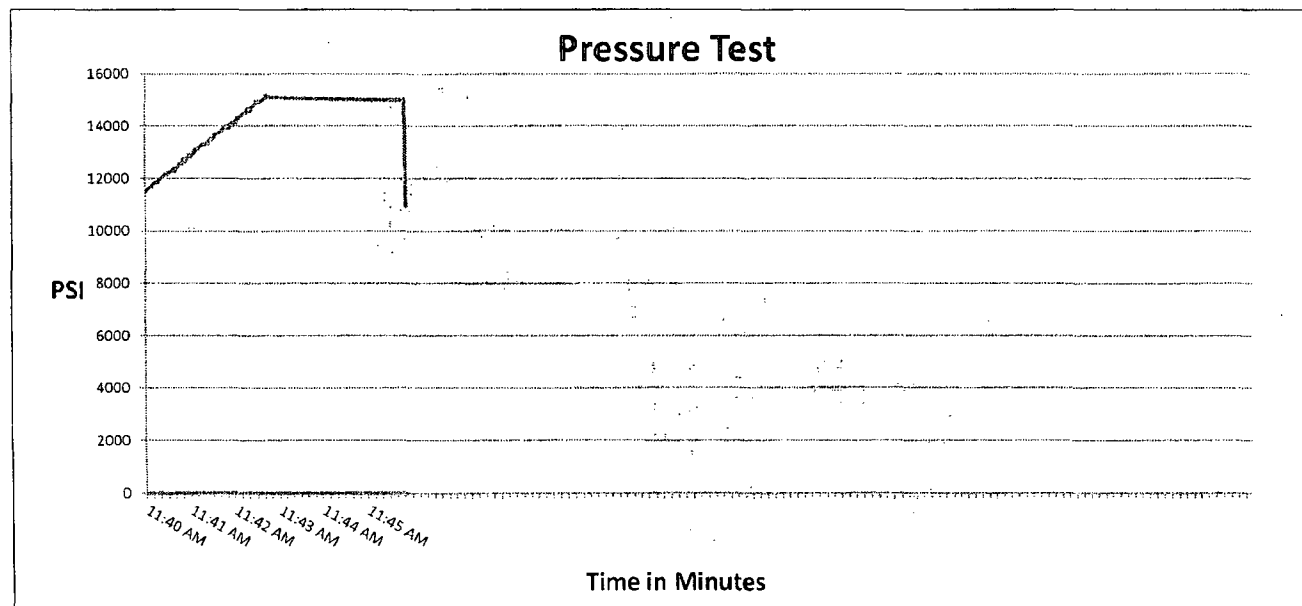
Pick Ticket #: 212332

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 2/4 Minutes

Actual Burst Pressure

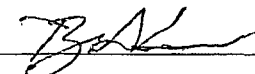
Peak Pressure
15263 PSI

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

Tested By: Ryan Malone

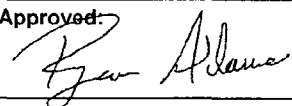
Approved By: Ryan Adams

x _____

x 

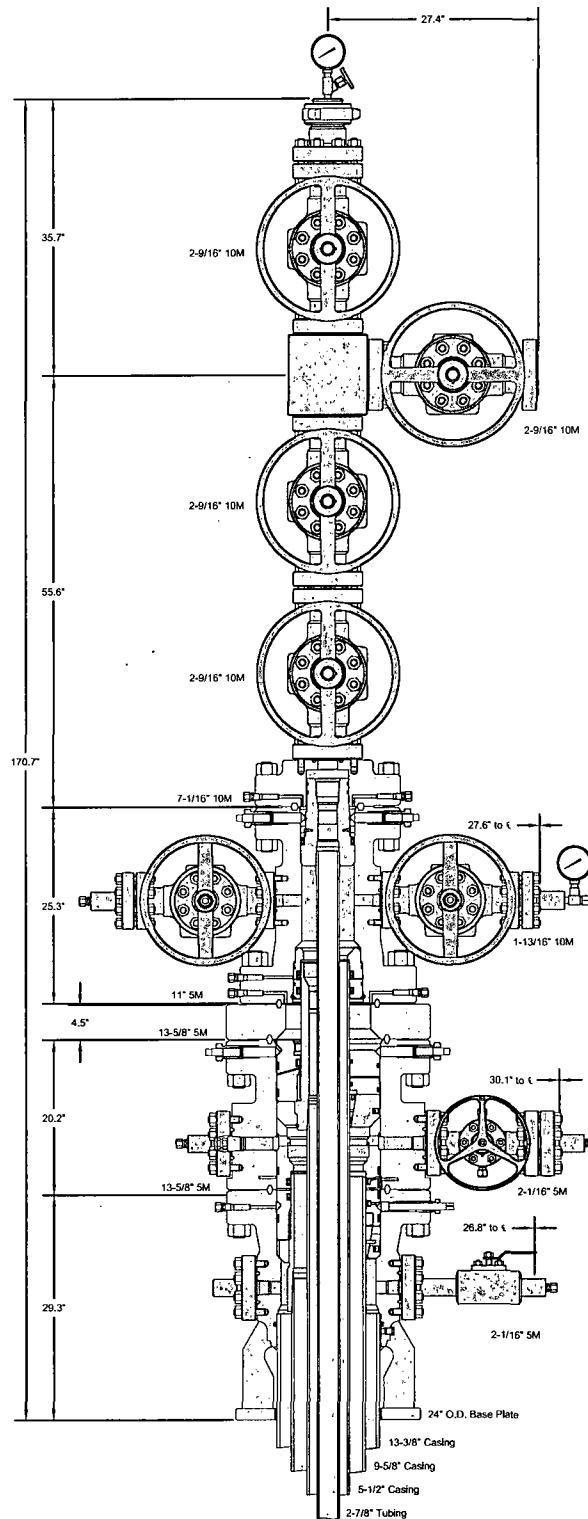


Midwest Hose
& Specialty, Inc.

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: 



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

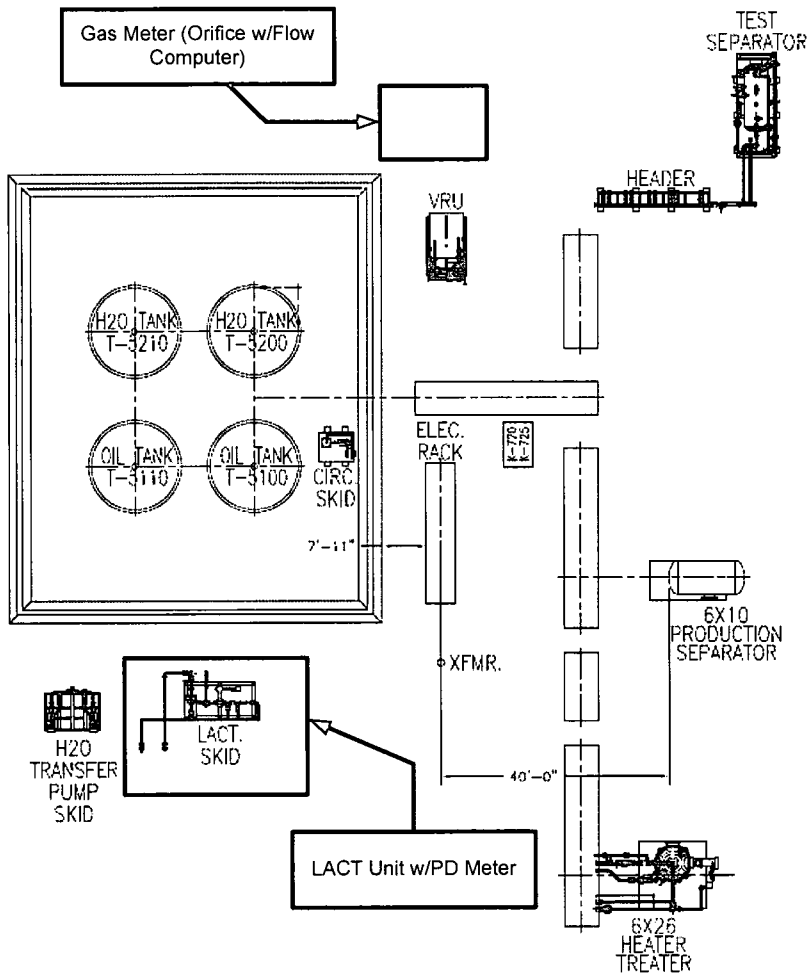
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APPRV	KN	19MAR13

FOR REFERENCE ONLY

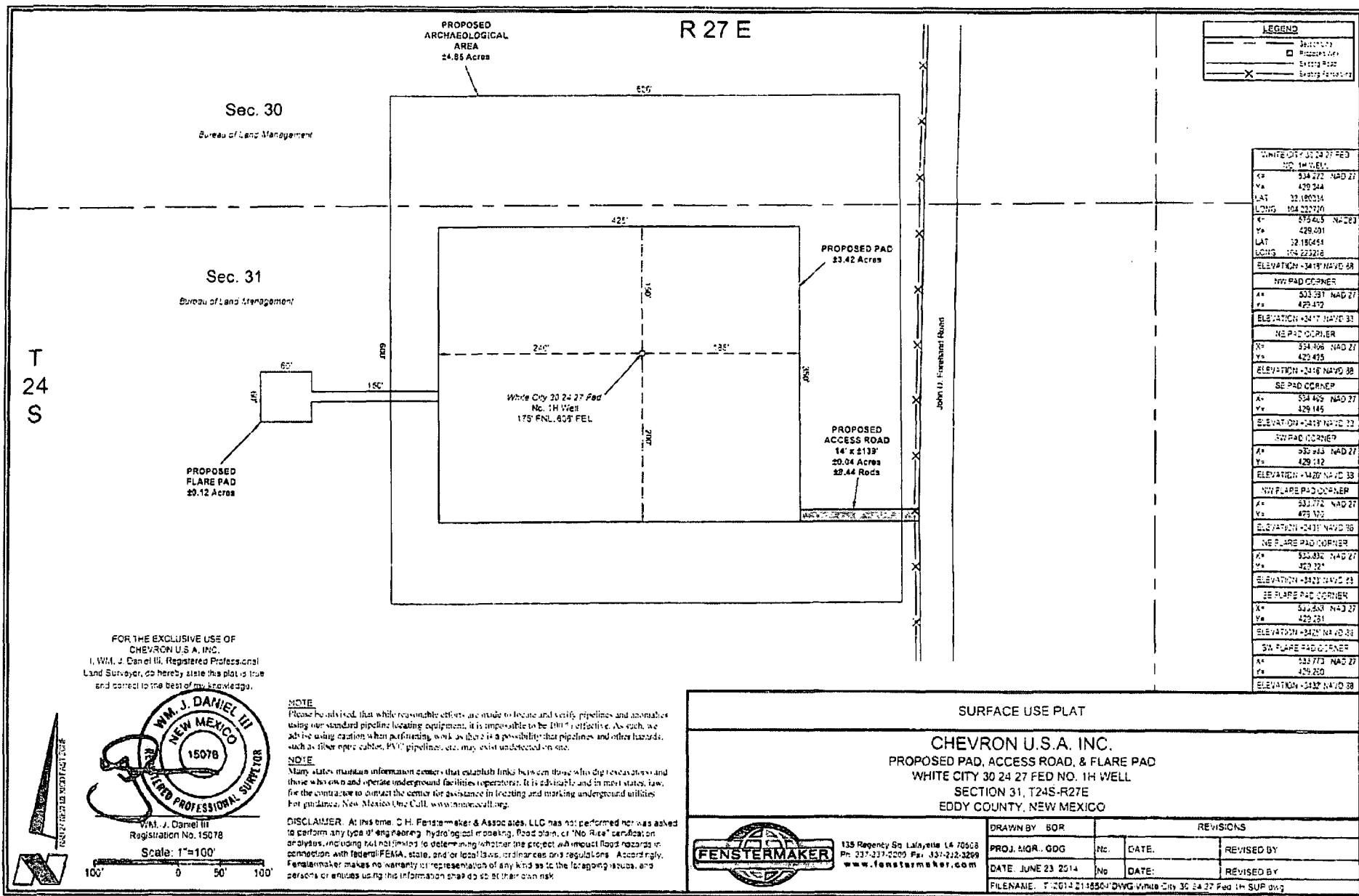
DRAWING NO.

AE23705

Exhibit C



REVISION				Chevron			
NO	DATE	DESCRIPTION	BY	CHKD	Midcontinent/Alaska Business Unit		
1	08/13/74	FOR REVIEW	JLB	FW	MIDLAND TEXAS		
					MIDCONTINENT BUSINESS UNIT		
					SALADO DRAW		
					SCALABLE TANK BATTERY		
					PLOT PLAN - 1,000 BBL		
DRAWING NO. :		NO. :	DATE :		SCALE :		
SHEET NO. :		SHEET :	DATE :		BY :		
FILE :		DATE :	BY :		SCALE :		
					SCALABLE PLOT PLAN		



**PECOS DISTRICT
CONDITIONS OF APPROVAL**

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 3 2015
RECEIVED

OPERATOR'S NAME:	Chevron USA Inc
LEASE NO.:	NMNM116027
WELL NAME & NO.:	White City 30 24 27 Fed-01H
SURFACE HOLE FOOTAGE:	175'/N & 606'/E
BOTTOM HOLE FOOTAGE	250'/N & 660'/E
LOCATION:	Section 31, T.24 S., R.27 E., NMPM
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**
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Cement Requirements
 - H2S Requirements
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☐ **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)

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Watershed

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Cattle Guard Requirement

Where entry is granted across a fence line for an access road, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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 cattle guards that are in place and are utilized during lease operations. Once the road is abandoned, the fence would be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

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

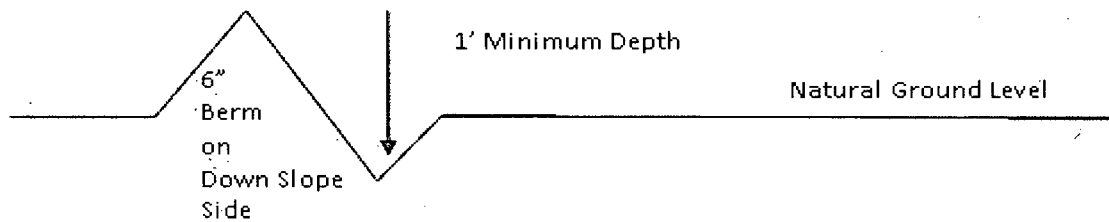
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

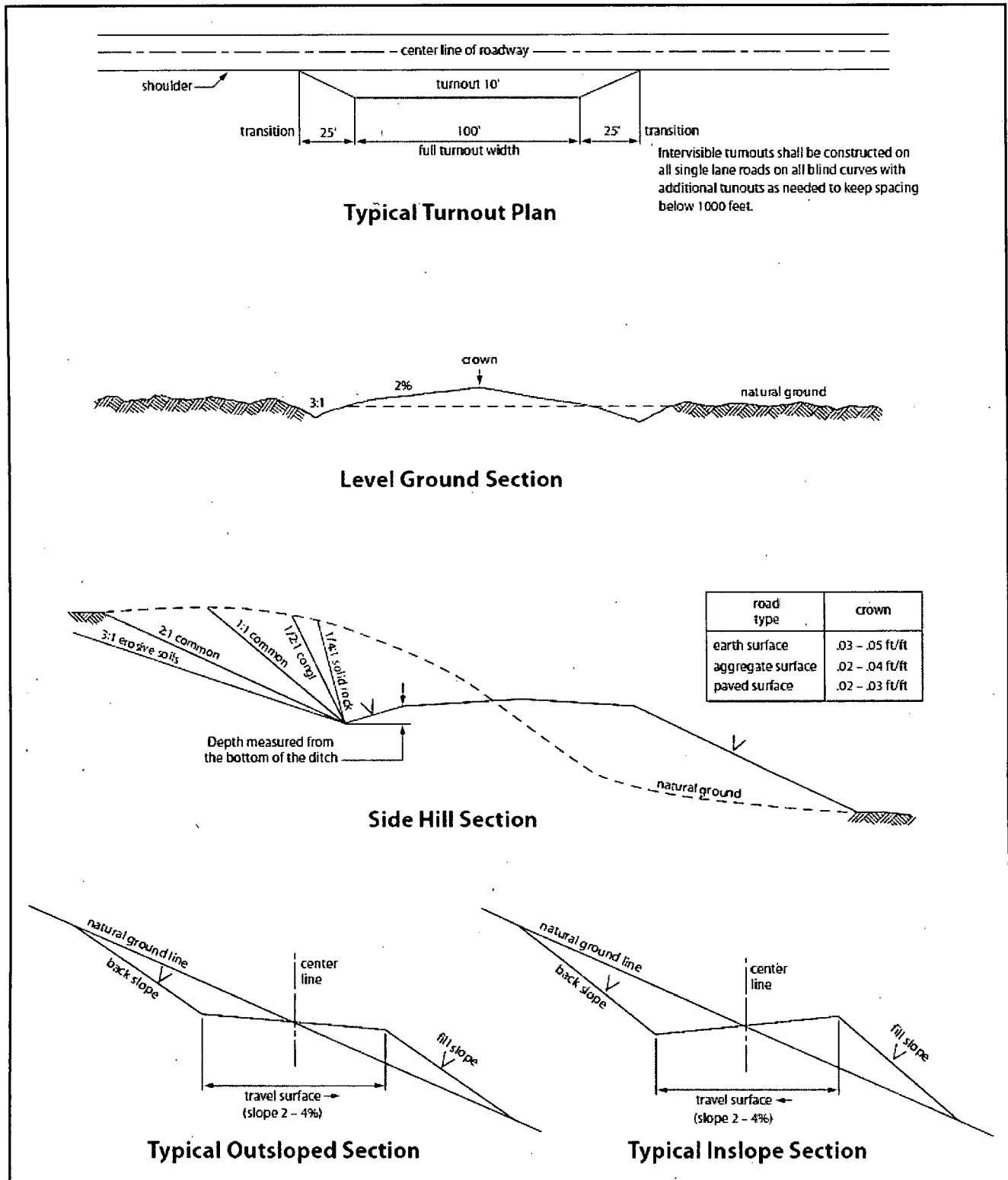


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. 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 Rustler top and 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 or are Non-API. 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.).

The initial wellhead installed on the well will remain on the well with spools used as needed.

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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

Possibility of water flows in the Salado and in the Castille.

Possibility of lost circulation in the Red Beds and in the Delaware.

1. The 13-3/8 inch surface casing shall be set at approximately **450 feet (if salt is encountered, set casing at least 25 feet above the salt)** and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with 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 inch 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.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately **2250 feet (which is in the Lamar Limestone)**, 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 inch 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.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

☒ Cement should tie-back at least **500 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 53.
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. 5M system required an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
 - 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.

KGR 07292015

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).

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 (GYPSUM LOCATIONS)

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 months prior to purchase. Commercial seed will be 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 to 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 double the amounts listed below. 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 (note: if broadcasting seed, amounts are to be doubled):

Species

Pound/acre

Alkali Sacaton (*Sporobolus airoides*)

1.0

De-winged Seed Four-wing Saltbush (*Atriplex canescens*)

5.0

* Pounds of pure live seed = (Pounds of seed) x (Percent purity) x (Percent germination)