13-977

UNORTHODOX LOCATION

OCD Artesia

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM113954

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

CONFIDENTIAL

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone Multiple Zone

8. Lease Name and Well No. HAYHURST 17 FEDERAL 1H <40276>

2. Name of Operator CHEVRON U.S.A. INC. <43237>
Contact: DENISE PINKERTON
E-Mail: leakejd@chevron.com

9. API Well No. 30-015-41845

3a. Address
15 SMITH ROAD
MIDLAND, TX 79705

3b. Phone No. (include area code)
Ph: 432-687-7375

10. Field and Pool, or Exploratory
COTTONWOOD DRAW; BONE SPR <97494>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface 55FNL 190FWL

At proposed prod. zone 250FSL 800FWL

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 17 T25S R27E Mer NMP

14. Distance in miles and direction from nearest town or post office*
27.5

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
55

16. No. of Acres in Lease
640.00

17. Spacing Unit dedicated to this well
160.00

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
2732

19. Proposed Depth
12091 MD
7303 TVD

20. BLM/BIA Bond No. on file
CA0329

21. Elevations (Show whether DF, KB, RT, GL, etc.
3245 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, shall be attached to this form:

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

25. Signature	Name (Printed/Typed)	Date
(Electronic Submission)	DENISE PINKERTON Ph: 432-687-7375	07/09/2013

Title: REGULATORY SPECIALIST

Approved by (Signature)	Name (Printed/Typed)	Date
/S/ James Stovall		DEC 5 2013
Title	Office: BLM Carlsbad Field Office	

Application approval does not warrant or certify 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.

Additional Operator Remarks (see next page)

Electronic Submission #212918 verified by the BLM Well Information System
For CHEVRON U.S.A. INC., sent to the Carlsbad

CARLSBAD CONTROLLED WATER BASIN

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

RECEIVED
DEC 06 2013
NMOCD ARTESIA

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

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 2nd day of July, 2013

Name: K McLachlan
Kelly McLachlan - Project Manager

Address: 1400 Smith Street, 40039
Houston, TX 77027

Office 713-372-9691

E-mail: kellyanne@chevron.com

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-41845	97494	Cottonwood Draw; Bone Spring

Property Code	Property Name	Well Number
40276	HAYHURST 17 FEDERAL	1H

OGRID No.	Operator Name	Elevation
4323	CHEVRON USA INC	3245'

Surface Location

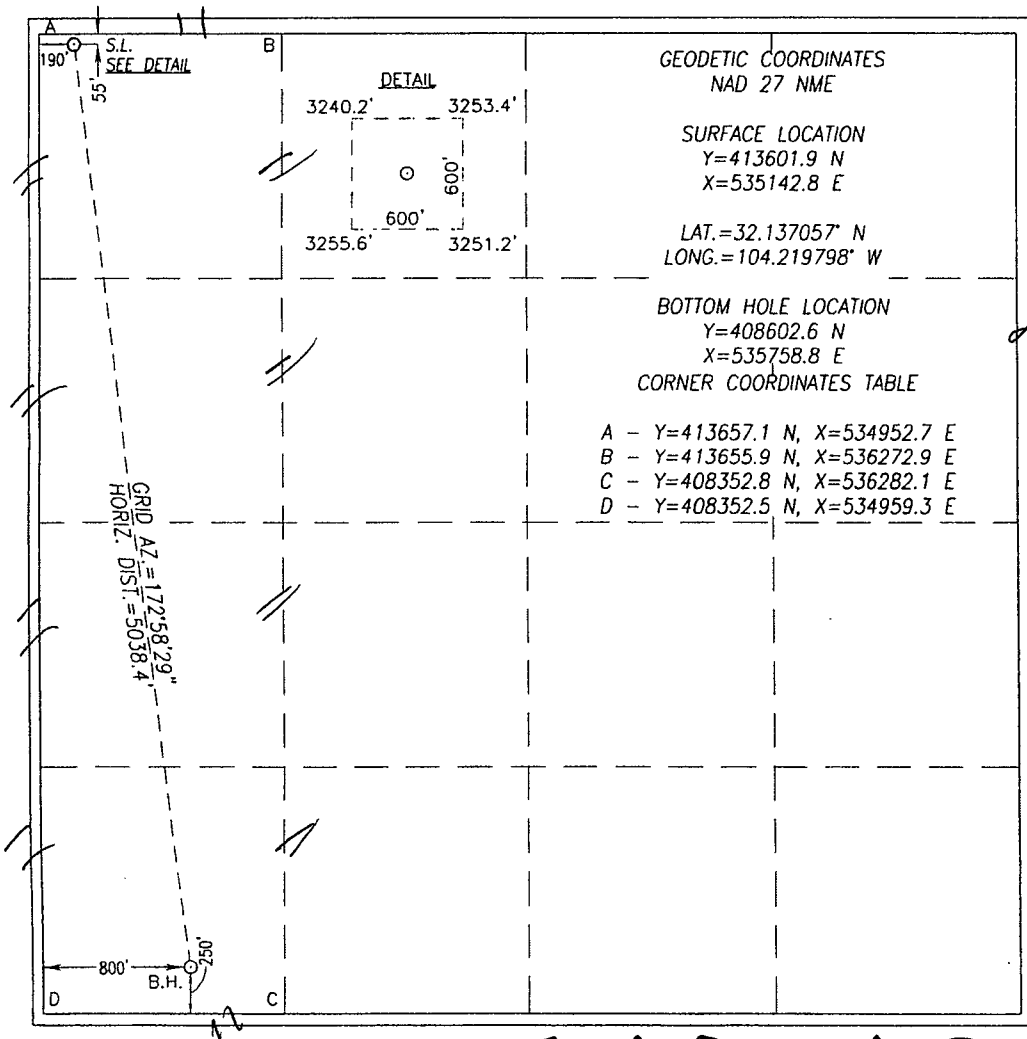
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	25-S	27-E		55	NORTH	190	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	17	25-S	27-E		250	SOUTH	800	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	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



GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=413601.9 N
X=535142.8 E

LAT.=32.137057° N
LONG.=104.219798° W

BOTTOM HOLE LOCATION
Y=408602.6 N
X=535758.8 E

CORNER COORDINATES TABLE

A - Y=413657.1 N, X=534952.7 E
B - Y=413655.9 N, X=536272.9 E
C - Y=408352.8 N, X=536282.1 E
D - Y=408352.5 N, X=534959.3 E

OPERATOR CERTIFICATION

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

Denise Pinkerton 07/09/13
Signature Date

Denise Pinkerton
Printed Name

leakejd@chevron.com
E-mail Address

SURVEYOR CERTIFICATION

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

JUNE 4, 2013
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 07/19/2013

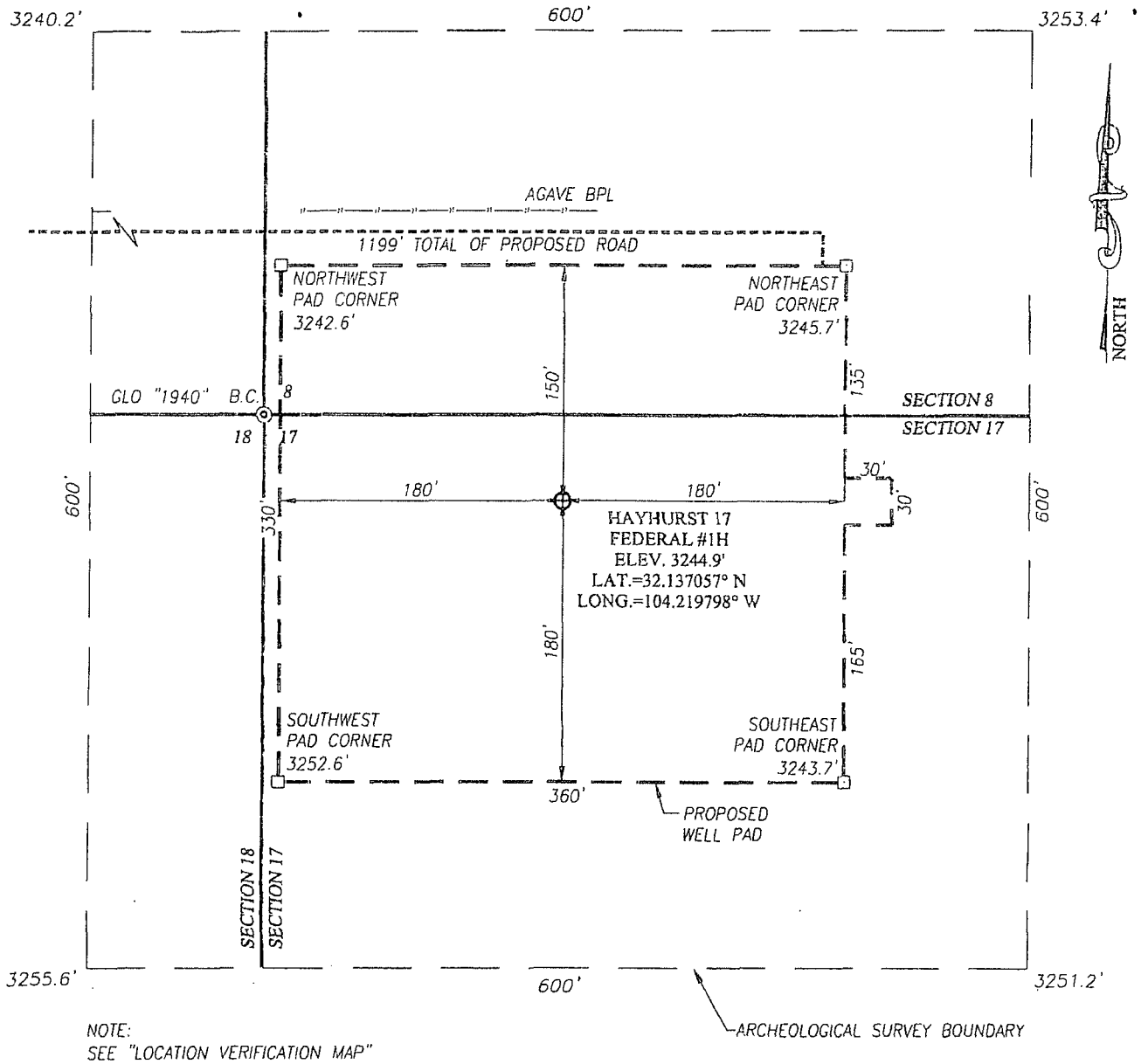
Certificate Number	Gary L. Eidson	12641
	Ronald J. Eidson	3239

ACK JWSC W.O.: 13.11.0327

EXHIBIT A-2

SECTION 17, TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



NOTE:
SEE "LOCATION VERIFICATION MAP" FOR PROPOSED ROAD LOCATION.

EXHIBIT A-1

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO RD. #724 (JOHN D. FOREHAND) AND CO. RD. #720 (BLACK RIVER VILLAGE), GO SOUTH APPROX. 6.5 MILES. TURN LEFT AND GO EAST APPROX. 0.7 MILES TO NORTHWEST CORNER OF THIS LOCATION.

100 0 100 200 Feet

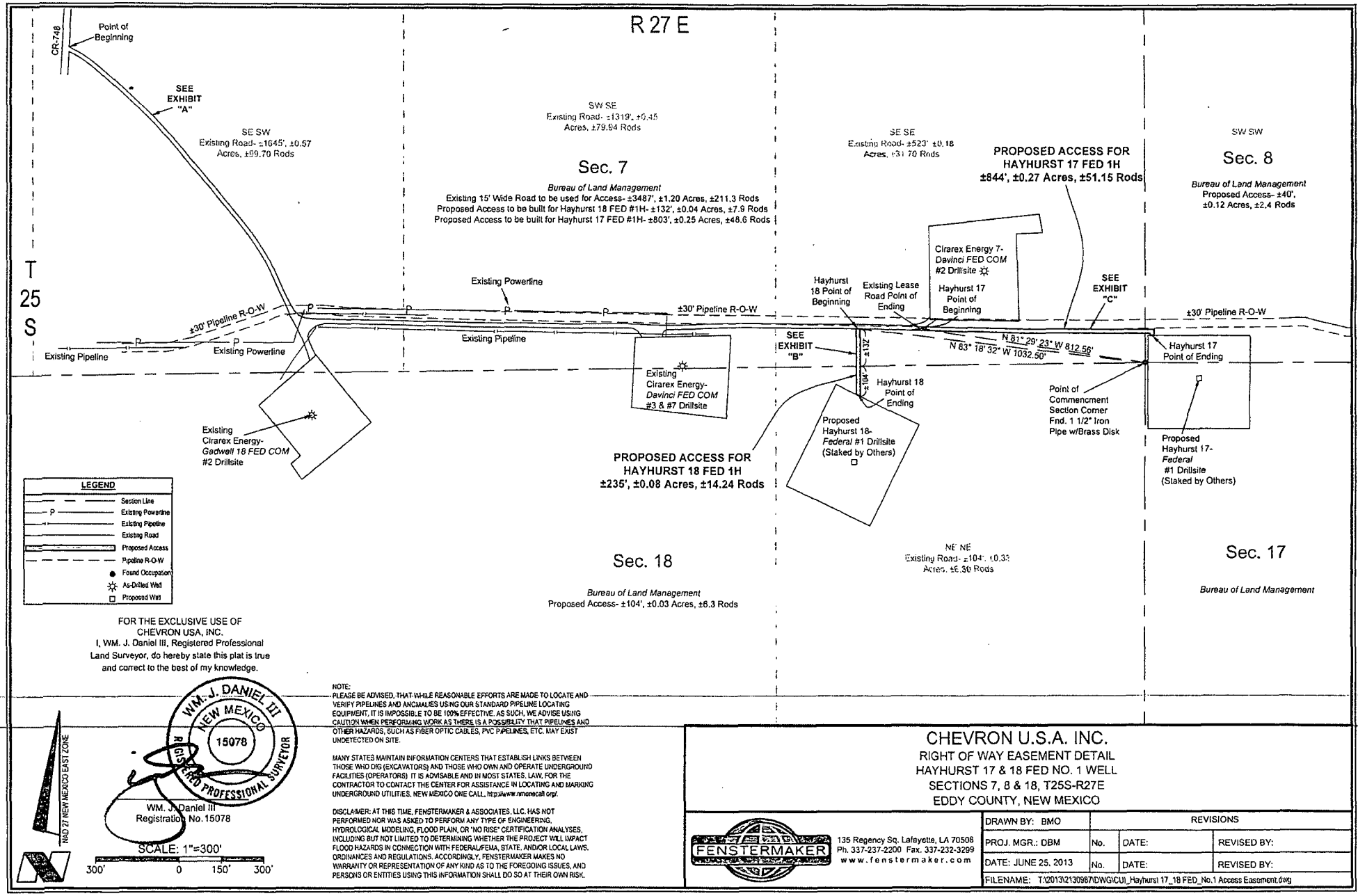
Scale: 1"=100'

CHEVRON USA INC

HAYHURST 17 FEDERAL #1H WELL
LOCATED 55 FEET FROM THE NORTH LINE
AND 190 FEET FROM THE WEST LINE OF SECTION 17,
TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 6/4/13	CAD Date: 6/18/13	Drawn By: ACK
W.O. No.: 13110327	Rev: .	Rel. W.O.:	Sheet 1 of 1

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



FOR THE EXCLUSIVE USE OF CHEVRON USA, INC.

I, WM. J. Daniel III, Registered Professional Land Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

WM. J. DANIEL III NEW MEXICO 15078 REGISTERED PROFESSIONAL SURVEYOR

WM. J. Daniel III
Registration No. 15078

NOTE:
PLEASE BE ADVISED, THAT WHILE REASONABLE EFFORTS ARE MADE TO LOCATE AND VERIFY PIPELINES AND ANOMALIES USING OUR STANDARD PIPELINE LOCATING EQUIPMENT, IT IS IMPOSSIBLE TO BE 100% EFFECTIVE. AS SUCH, WE ADVISE USING CAUTION WHEN PERFORMING WORK AS THERE IS A POSSIBILITY THAT PIPELINES AND OTHER HAZARDS, SUCH AS FIBER OPTIC CABLES, PVC PIPELINES, ETC. MAY EXIST UNDETECTED ON SITE.

MANY STATES MAINTAIN INFORMATION CENTERS THAT ESTABLISH LINKS BETWEEN THOSE WHO DIG (EXCAVATORS) AND THOSE WHO OWN AND OPERATE UNDERGROUND FACILITIES (OPERATORS). IT IS ADVISABLE AND IN MOST STATES, LAW, FOR THE CONTRACTOR TO CONTACT THE CENTER FOR ASSISTANCE IN LOCATING AND MARKING UNDERGROUND UTILITIES. NEW MEXICO ONE CALL, http://www.nmonecall.org/.

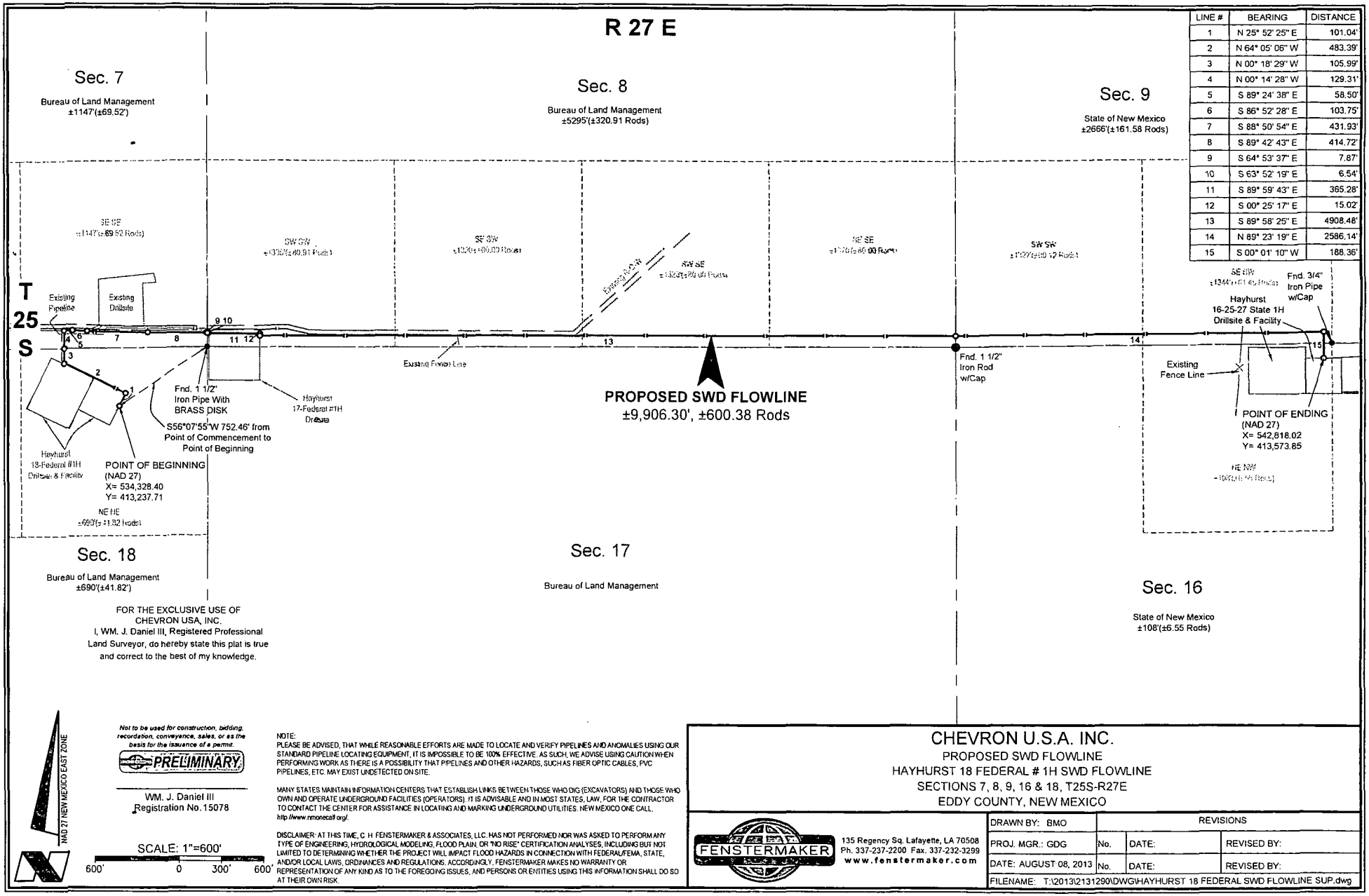
DISCLAIMER: AT THIS TIME, FENSTERMAKER & ASSOCIATES, LLC. HAS NOT PERFORMED NOR WAS ASKED TO PERFORM ANY TYPE OF ENGINEERING, HYDROLOGICAL MODELING, FLOOD PLAIN, OR "NO RISE" CERTIFICATION ANALYSES, INCLUDING BUT NOT LIMITED TO DETERMINING WHETHER THE PROJECT WILL IMPACT FLOOD HAZARDS IN CONNECTION WITH FEDERAL/FEMA, STATE, AND/OR LOCAL LAWS, ORDINANCES AND REGULATIONS. ACCORDINGLY, FENSTERMAKER MAKES NO WARRANTY OR REPRESENTATION OF ANY KIND AS TO THE FOREGOING ISSUES, AND PERSONS OR ENTITIES USING THIS INFORMATION SHALL DO SO AT THEIR OWN RISK.

CHEVRON U.S.A. INC.

RIGHT OF WAY EASEMENT DETAIL
HAYHURST 17 & 18 FED NO. 1 WELL
SECTIONS 7, 8 & 18, T25S-R27E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: BMO	REVISIONS		
PROJ. MGR.: DBM	No.	DATE:	REVISED BY:
DATE: JUNE 25, 2013	No.	DATE:	REVISED BY:
FILENAME: T:\2013\2130987\DWG\CU_Hayhurst 17_18 FED_No.1 Access Easement.dwg			



LINE #	BEARING	DISTANCE
1	N 25° 52' 25" E	101.04'
2	N 64° 05' 06" W	483.39'
3	N 00° 18' 29" W	105.99'
4	N 00° 14' 28" W	129.31'
5	S 89° 24' 38" E	58.50'
6	S 86° 52' 28" E	103.75'
7	S 88° 50' 54" E	431.93'
8	S 89° 42' 43" E	414.72'
9	S 64° 53' 37" E	7.87'
10	S 63° 52' 19" E	6.54'
11	S 89° 59' 43" E	365.28'
12	S 00° 25' 17" E	15.02'
13	S 89° 58' 25" E	4908.48'
14	N 89° 23' 19" E	2586.14'
15	S 00° 01' 10" W	188.36'

FOR THE EXCLUSIVE USE OF CHEVRON USA, INC.
I, WM. J. Daniel III, Registered Professional Land Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

NAD 27 NEW MEXICO EAST ZONE

Not to be used for construction, bidding, recordation, conveyance, sales, or as the basis for the issuance of a permit.

PRELIMINARY

WM. J. Daniel III
Registration No. 15078

SCALE: 1"=600'

600' 0 300' 600'

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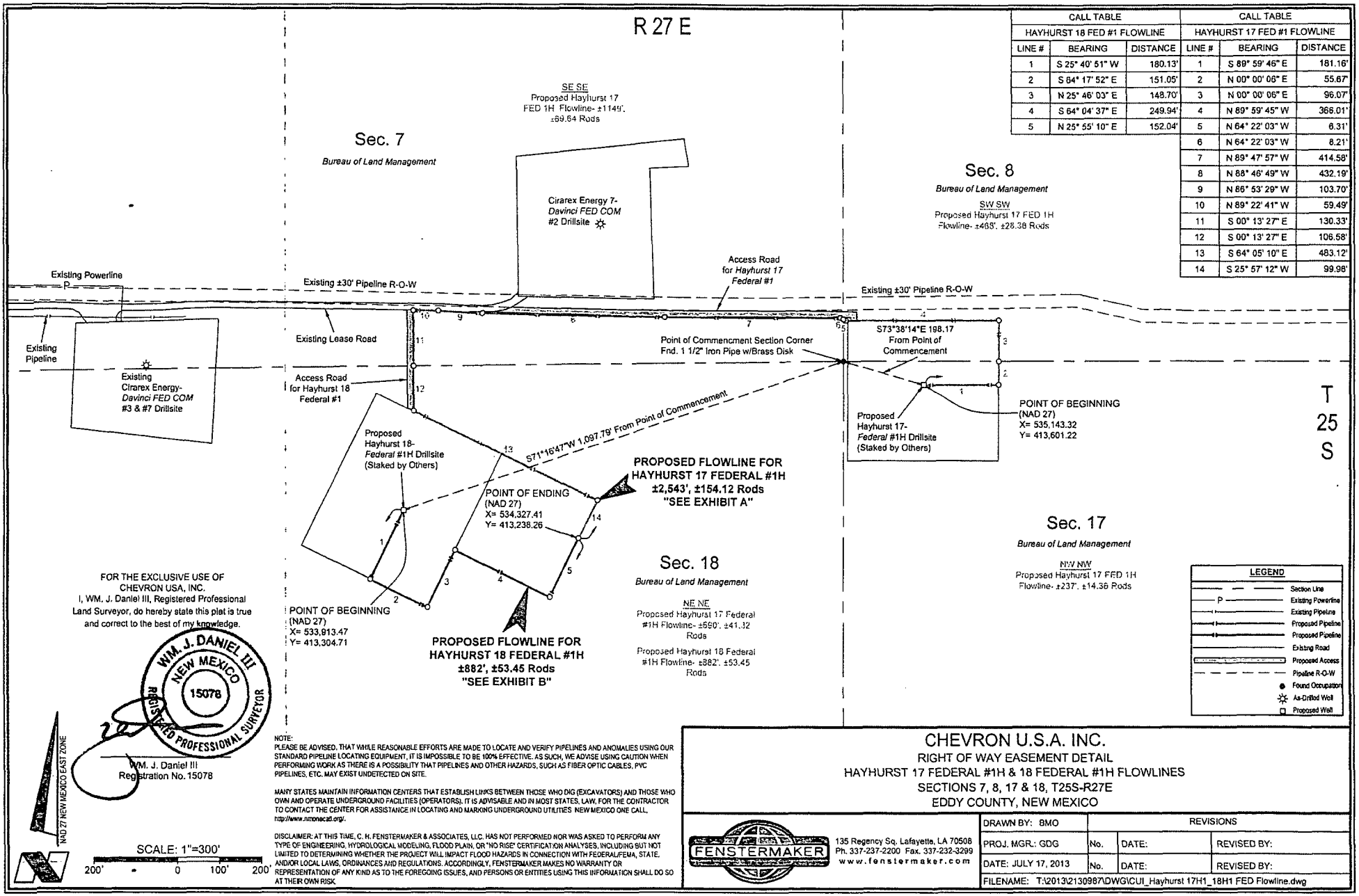
CHEVRON U.S.A. INC.

PROPOSED SWD FLOWLINE
HAYHURST 18 FEDERAL # 1H SWD FLOWLINE
SECTIONS 7, 8, 9, 16 & 18, T25S-R27E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: BMO	REVISIONS		
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: AUGUST 08, 2013	No.	DATE:	REVISED BY:
FILENAME: T:\2013\2131290\DWG\HAYHURST 18 FEDERAL SWD FLOWLINE SUP.dwg			



CALL TABLE HAYHURST 18 FED #1 FLOWLINE		
LINE #	BEARING	DISTANCE
1	S 25° 40' 51" W	180.13'
2	S 64° 17' 52" E	151.05'
3	N 25° 46' 03" E	148.70'
4	S 64° 04' 37" E	249.94'
5	N 25° 55' 10" E	152.04'

CALL TABLE HAYHURST 17 FED #1 FLOWLINE		
LINE #	BEARING	DISTANCE
1	S 89° 59' 46" E	181.16'
2	N 00° 00' 06" E	55.67'
3	N 00° 00' 06" E	96.07'
4	N 89° 59' 45" W	366.01'
5	N 64° 22' 03" W	6.31'
6	N 64° 22' 03" W	8.21'
7	N 89° 47' 57" W	414.58'
8	N 88° 46' 49" W	432.19'
9	N 86° 53' 29" W	103.70'
10	N 89° 22' 41" W	59.49'
11	S 00° 13' 27" E	130.33'
12	S 00° 13' 27" E	106.58'
13	S 64° 05' 10" E	483.12'
14	S 25° 57' 12" W	99.98'

FOR THE EXCLUSIVE USE OF CHEVRON USA, INC.
I, WM. J. Daniel III, Registered Professional Land Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

WM. J. DANIEL III NEW MEXICO 15078 REGISTERED PROFESSIONAL SURVEYOR

WM. J. Daniel III
Registration No. 15078

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CHEVRON U.S.A. INC.

RIGHT OF WAY EASEMENT DETAIL
HAYHURST 17 FEDERAL #1H & 18 FEDERAL #1H FLOWLINES
SECTIONS 7, 8, 17 & 18, T25S-R27E
EDDY COUNTY, NEW MEXICO

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Ph. 337-237-2200 Fax. 337-232-3299
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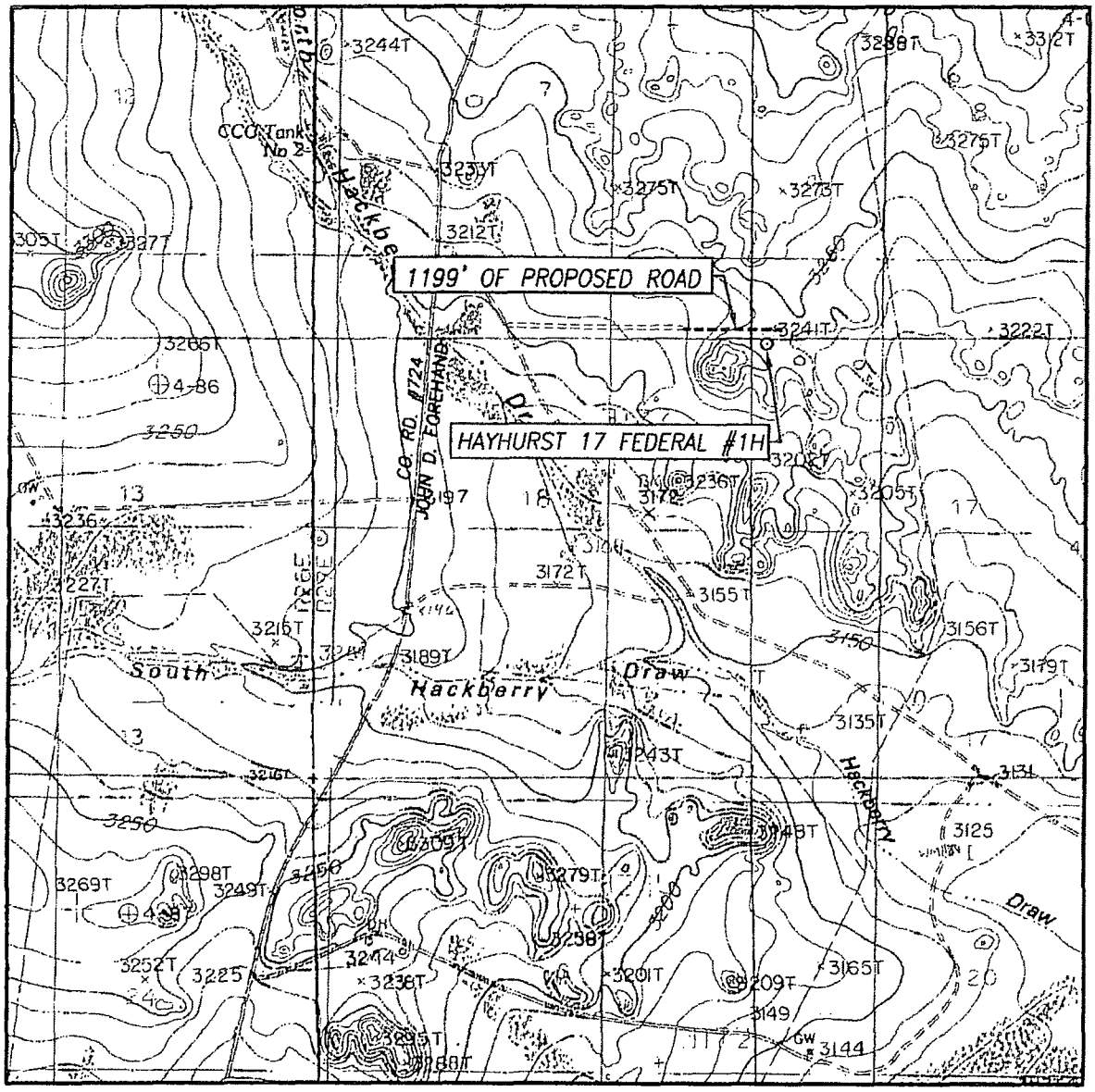
DRAWN BY: BMO	REVISIONS		
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: JULY 17, 2013	No.	DATE:	REVISED BY:
FILENAME: T:\2013\2130987\DWG\CUI_Hayhurst 17H1_18H1 FED Flowline.dwg			

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
BOND DRAW, N.M. - 10'
COTTONWOOD HILLS, N.M. - 10'

SEC. 17 TWP. 25-S RGE. 27-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 55' FNL & 190' FWL

ELEVATION 3245'

OPERATOR CHEVRON USA INC

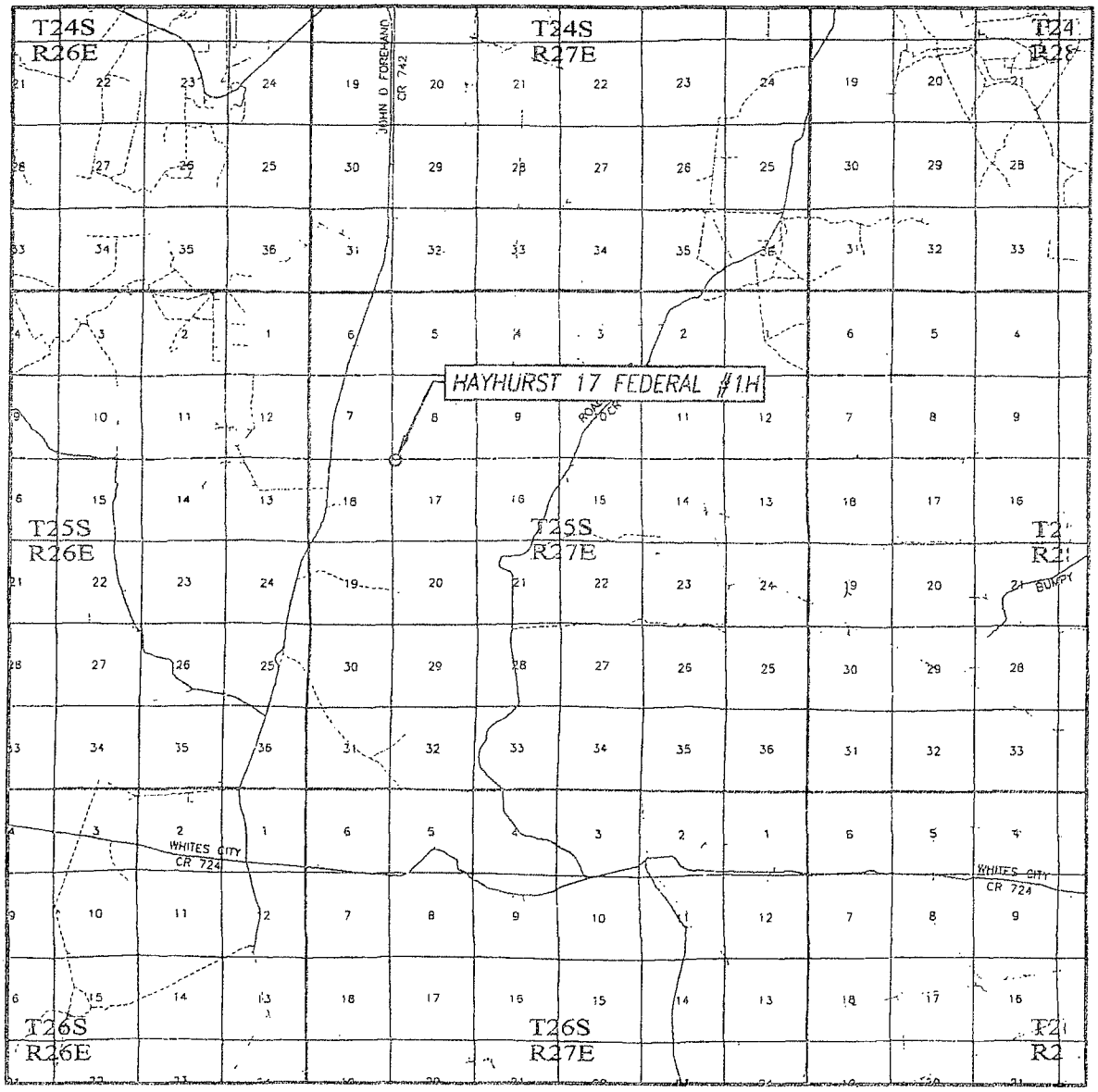
LEASE HAYHURST 17 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
BOND DRAW, N.M.

EXHIBIT A-3

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

VICINITY MAP.



SCALE: 1" = 2 MILES

SEC. 17 TWP. 25-S RGE. 27-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 55' FNL & 190' FWL

ELEVATION 3245'

OPERATOR CHEVRON USA INC

LEASE HAYHURST 17 FEDERAL

Exhibit A-4

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

(3) One Mile Radius Map

Summary:

As Previously Defined in APD:	As Now Defined:
Not defined.	Original map included 1-mile radius around SHL only. Map has been updated to include SHL and BHL.

1 mile radii around surface and bottom-hole locations for Chevron Hayhurst 17 Federal 1H

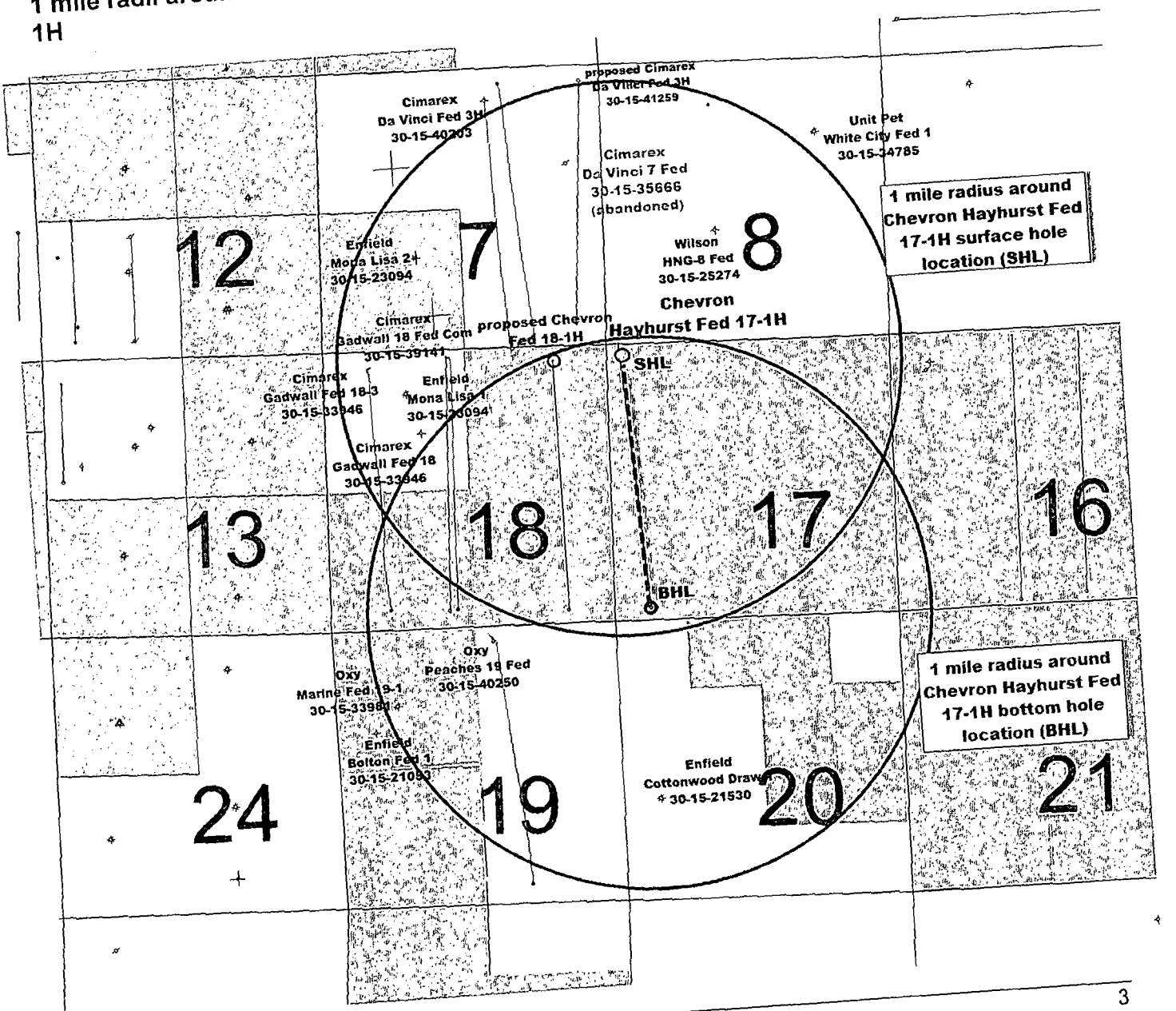
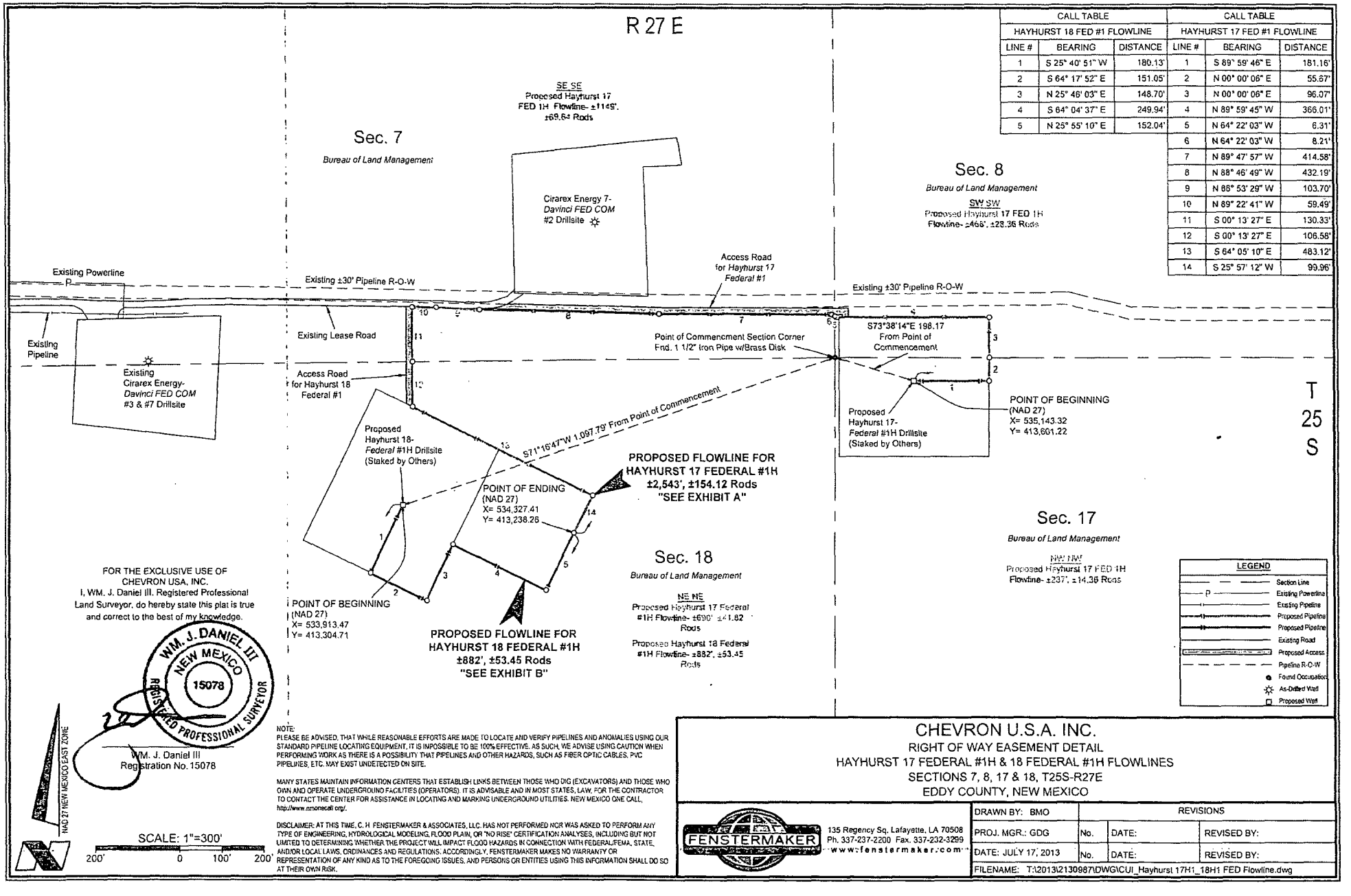


Exhibit C



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2	S 64° 17' 52" E	151.05'
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4	S 64° 04' 37" E	249.94'
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6	N 64° 22' 03" W	8.21'
7	N 89° 47' 57" W	414.58'
8	N 88° 46' 49" W	432.19'
9	N 86° 53' 29" W	103.70'
10	N 89° 22' 41" W	59.49'
11	S 00° 13' 27" E	130.33'
12	S 00° 13' 27" E	106.58'
13	S 64° 05' 10" E	483.12'
14	S 25° 57' 12" W	99.96'

FOR THE EXCLUSIVE USE OF CHEVRON USA, INC.
I, WM. J. Daniel III, Registered Professional Land Surveyor, do hereby state this plat is true and correct to the best of my knowledge.

WM. J. DANIEL III NEW MEXICO 15078 REGISTERED PROFESSIONAL SURVEYOR

WM. J. Daniel III
Registration No. 15078

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PLEASE BE ADVISED, THAT WHILE REASONABLE EFFORTS ARE MADE TO LOCATE AND VERIFY PIPELINES AND ANOMALIES USING OUR STANDARD PIPELINE LOCATING EQUIPMENT, IT IS IMPOSSIBLE TO BE 100% EFFECTIVE. AS SUCH, WE ADVISE USING CAUTION WHEN PERFORMING WORK AS THERE IS A POSSIBILITY THAT PIPELINES AND OTHER HAZARDS, SUCH AS FIBER OPTIC CABLES, PVC PIPELINES, ETC. MAY EXIST UNDETECTED ON SITE.

MANY STATES MAINTAIN INFORMATION CENTERS THAT ESTABLISH LINKS BETWEEN THOSE WHO DIG (EXCAVATORS) AND THOSE WHO OWN AND OPERATE UNDERGROUND FACILITIES (OPERATORS). IT IS ADVISABLE AND IN MOST STATES, LAW, FOR THE CONTRACTOR TO CONTACT THE CENTER FOR ASSISTANCE IN LOCATING AND MARKING UNDERGROUND UTILITIES. NEW MEXICO ONE CALL, http://www.nmonecall.org/.

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CHEVRON U.S.A. INC.
RIGHT OF WAY EASEMENT DETAIL
HAYHURST 17 FEDERAL #1H & 18 FEDERAL #1H FLOWLINES
SECTIONS 7, 8, 17 & 18, T25S-R27E
EDDY COUNTY, NEW MEXICO

FENSTERMAKER
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: BMO	REVISIONS			
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:	
DATE: JULY 17, 2013	No.	DATE:	REVISED BY:	
FILENAME: T:\2013\2130987\DWG\CUI_Hayhurst 17H1_18H1 FED Flowline.dwg				

9 Point Drilling Plan

Chevron U.S.A
Hayhurst 17 Federal 1H
Eddy County, New Mexico
Section 17, Twp. 25S, Rge. 27E
55 FNL and 190 FEL

1. Formation Tops

Formation & Geologic Feature Tops	Depth (MD)
Surf Alluv. / Rustler	0
Castile	457
Lamar LS	2165
Bell Canyon	2217
Cherry Canyon	3058
Brushy Canyon	4141
T/Bone Spring	5688
T/1st Bone Spring Sand	6615
T/2nd Bone Spring Sand	7268
B/2nd Bone Spring Sand	7,463

2. Zones Containing Oil, Gas, Water, and Other Minerals

Formation & Geologic Feature Tops	Depth (MD)	Fluids (O, G, W)
Bell Canyon	2,166	W
Cherry Canyon	3,009	W
Brushy Canyon	4,091	OGW
T/1st Bone Spring Sand	6,570	OGW
T/2nd Bone Spring Sand	7,220	OGW
T/3rd Bone Spring Sand	7,904	OGW
Wolfcamp	8,543	OGW

Base of fresh water is 450 ft. These sands will be protected by setting surface casing 200' below the base of fresh water and bringing surface casing cement to surface.

3. Blow-Out Prevention

Will have a minimum of a 3000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified in the attached testing requirements.

Sy COA

4. Casing Program

2,000'

400'

The operator proposes to drill a horizontal well in the 2nd Bone Spring. We will drill a 17-1/2" hole to ~~650'~~ and 13-3/8", 48#, H-40 casing will be run and cemented to surface. After sufficient W.O.C. time, a 12-1/4" hole will be drilled to ~~2,250'~~ and 9-5/8", 40#, HC K-55 casing will then be run and cemented to surface. After sufficient W.O.C. time, an 8-3/4" vertical hole will be drilled to KOP at 6,644' and OH logs will be run. Kick off @ +/-6,644 ' with an 8-3/4" bit to drill the build and lateral sections to 12,091' (MD) and 7,303' (TVD) *+/- 50'* with a toe up design. A 5-1/2", 17#, HC P-110, CDC casing

string will be installed and cemented in place. All casing is new. WOC times for primary cement jobs will be 18 hours or 500 psi compressive strength, whichever is greater.

See COA

Hole Size	String	Csg Size	Wt	Grade	Conn	Depth
17-1/2"	Surf	13-3/8"	48#	H-40	STC	~~650'~~ 400'
12-1/4"	Int	9-5/8"	40#	HC K-55	LTC	~~2,250~~ 2,000'
8-3/4"	Prod	5-1/2"	17#	HC P-110	CDC	12,091'

Casing design subject to revision based on geologic conditions encountered.

*****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.**

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

Surface Casing: 1500'

Intermediate Casing: 4750'

Production Casing: 15,250' MD/10,500' TVD (5000' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension
Surface	1.28	1.14	1.94
Shallow Intermediate	1.28	1.25	1.99
Production	1.34	1.65	1.76

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

Burst Design	Surf	Int	Prod
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			X

P internal:	Leak just below surf, 8.7 ppg packer fluid			
Collapse Design				
Full Evacuation		X	X	X
P external:	Water gradient in cement, mud above TOC			
P internal:	none			
Cementing- Surf, Int, Prod Csg		X	X	X
P external:	Wet cement			
P internal:	water			
Tension Design				
100k lb overpull		X	X	X

5. Cement Program

The cement volumes are approximate and are calculated on the assumption that a gauge hole will be achieved.

The surface and intermediate casing strings will have centralizers on the bottom 3 joints of casing (a minimum of one centralizer per joint) and then every 3rd joint to surface. The production string will have centralizers on every joint in the lateral for the first 1,000' then every other joint through the horizontal to the base of the curve and every 3rd joint through the build section and every 4th joint into the intermediate casing shoe. The casing shoe will not be drilled out until a minimum of 500 psi compressive strength is achieved.

Casing	Slurry	Sacks	Density ppg	Yield ft3/sk	Water Req's. gal/sk	% Excess	TOC
13-3/8" Lead	ExtendaCem CZ (Premium Plus Cement + 4% Gel + 2% CaCl)	339	13.5	1.75	9.24	100%	Surface
13-3/8" Tail	Premium Plus Cement + 2% CaCl	230	14.8	1.36	6.75	100%	250'
9-5/8" Lead	Halliburton Light C (65% Premium Plus - 35% Poz - 6% Gel) + 5% Salt + 5 lb/sk Kol Seal	386	12.9	1.9	9.87	50%	Surface
9-5/8" Tail	HalCem-C	220	14.8	1.36	6.57	50%	1,650
5-1/2" Lead	PBSH2 (65% Premium + 30% Silicalite + 5% Poz) + .55% Halad-344 + .35% CFR-3 + 3% Salt + .2% HR-601	925	13.2	1.64	8.48	35%	~~1,250'~~ See COA
5-1/2" Tail	Premium + .5% GasStop + .4% CFR-3	1,828	15.6	1.19	5.23	35%	5,744'

6. Circulating Medium

Visual monitoring will be used from surface to TD. Sufficient materials to maintain mud properties will be available on location while drilling. The cut brine will be mudded up for logging.

See COA

Interval	Mud Type	Density	Viscosity	Fluid Loss
0 – 650' 400'	FW/Spud mud	8.6 – 8.9	32 – 36	NC
650' – 2,250' 2,000'	Brine	10 – 10.1	28 – 30	NC
2,250' – 6,644'	Cut Brine	8.8 – 9.2	28 – 30	NC
Build/Lateral 6,644' – 12,091'	Cut Brine	8.8 – 9.3	28 - 30	NC

7. Testing, Logging, and Coring

Logs: Quad Combo and O/H GR-Neutran from TD to 2150'.
GR in lateral from kickoff to TD.
GR-Neut from Csg (2250) to Surf in cased hole.

DST's: None planned

Cores: None planned

8. Anticipated Pressures, Abnormal/Hazardous Drilling Conditions –

Normal pressures and temperatures are expected to TD. Maximum anticipated bottom hole pressure is approximately 4,000 psi. Maximum bottom hole temperature is anticipated to be 150 degrees.
The BLM has reports of H2S from the Delaware within an 1/8 of a mile. H2S detection and breathing equipment will be in operation after drilling out the surface shoe and until the 5-1/2" is cemented in place.

9. Other Facets of the Proposal

Anticipated Start Date: Dec 2013
Drilling Days: 35 days
Completion Days: 12 days

Proposed Perforation Interval	
Top	Bottom
7,850'	12,062'

* Perforation interval may need to be adjusted from the above based on the as-drilled wellbore and standard set back requirements.

Attached: Proposed directional design, plan view, and vertical section in true vertical and measured depths.

Chevron

Chevron

Eddy County NM (NAD27 NME)
Hayhurst 17 Federal
#1H

OH/Job #1310971

Plan: Plan #1 07-31-13

Standard Planning Report

09 August, 2013

Database:	GCR.DB	Local Co-ordinate Reference:	Well #1H
Company:	Chevron	TVD Reference:	KB @ 3270.00usft
Project:	Eddy County NM (NAD27-NME)	MD Reference:	KB @ 3270.00usft
Site:	Hayhurst 17 Federal	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH/Job #1310971		
Design:	Plan #1 07-31-13		

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 Hayhurst 17 Federal

Site Position:		Northing:	413,601.90 usft	Latitude:	32° 8' 13.40641 N
From:	Map	Easting:	535,142.80 usft	Longitude:	104° 13' 11.27404 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.06 °

Well #1H

Well Position	+N/-S	0.00 usft	Northing:	413,601.90 usft	Latitude:	32° 8' 13.40641 N
	+E/-W	0.00 usft	Easting:	535,142.80 usft	Longitude:	104° 13' 11.27404 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,245.00 usft

Wellbore OH/Job #1310971

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	07/31/13	7.62	59.94	48,281

Design Plan #1 07-31-13

Audit Notes:

Version:		Phase:	PLAN	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	172.98

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,882.50	0.00	0.00	6,882.50	0.00	0.00	0.00	0.00	0.00	0.00	
7,638.62	90.72	167.00	7,360.00	-471.15	108.77	12.00	12.00	0.00	167.00	
7,981.94	90.72	173.87	7,355.69	-809.46	165.79	2.00	0.00	2.00	89.99	
12,196.22	90.72	173.87	7,303.00	-4,999.30	616.00	0.00	0.00	0.00	0.00	PBHL-Hayhurst 17 Fe

Database:	GCR DB	Local Co-ordinate Reference:	Well #1H
Company:	Chevron	TVD Reference:	KB @ 3270.00usft
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3270.00usft
Site:	Hayhurst 17 Federal	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH/Job #131097.1		
Design:	Plan #1 07-31-13		

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
457.00	0.00	0.00	457.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile									
2,165.00	0.00	0.00	2,165.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar LS									
2,217.00	0.00	0.00	2,217.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
3,058.00	0.00	0.00	3,058.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
4,141.00	0.00	0.00	4,141.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
5,688.00	0.00	0.00	5,688.00	0.00	0.00	0.00	0.00	0.00	0.00
T/Bone Spring									
6,615.00	0.00	0.00	6,615.00	0.00	0.00	0.00	0.00	0.00	0.00
T/1st Bone Spring Sand									
6,882.50	0.00	0.00	6,882.50	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 12.00									
6,900.00	2.10	167.00	6,900.00	-0.31	0.07	0.32	12.00	12.00	0.00
7,000.00	14.10	167.00	6,998.82	-14.01	3.24	14.30	12.00	12.00	0.00
7,100.00	26.10	167.00	7,092.56	-47.43	10.95	48.42	12.00	12.00	0.00
7,200.00	38.09	167.00	7,177.12	-99.11	22.88	101.16	12.00	12.00	0.00
7,300.00	50.09	167.00	7,248.81	-166.79	38.51	170.24	12.00	12.00	0.00
7,327.10	53.34	167.00	7,265.59	-187.51	43.29	191.39	12.00	12.00	0.00
T/2nd Bone Spring Sand									
7,400.00	62.09	167.00	7,304.49	-247.50	57.14	252.63	12.00	12.00	0.00
7,500.00	74.09	167.00	7,341.74	-337.74	77.97	344.74	12.00	12.00	0.00
7,600.00	86.09	167.00	7,358.92	-433.54	100.09	442.53	12.00	12.00	0.00
7,638.62	90.72	167.00	7,360.00	-471.15	108.77	480.91	12.00	12.00	0.00
LP Start DLS 2.00 TFO 89.99									
7,700.00	90.72	168.23	7,359.23	-531.10	121.94	542.02	2.00	0.00	2.00
7,800.00	90.72	170.23	7,357.97	-629.32	140.63	641.79	2.00	0.00	2.00
7,880.00	90.72	171.83	7,356.97	-708.33	153.10	721.74	2.00	0.00	2.00
7880' MD Point									
7,900.00	90.72	172.23	7,356.72	-728.14	155.87	741.73	2.00	0.00	2.00
7,981.94	90.72	173.87	7,355.69	-809.46	165.79	823.66	2.00	0.00	2.00
Start 4214.29 hold at 7981.94 MD									
8,000.00	90.72	173.87	7,355.47	-827.42	167.72	841.72	0.00	0.00	0.00
8,100.00	90.72	173.87	7,354.22	-926.84	178.40	941.70	0.00	0.00	0.00
8,200.00	90.72	173.87	7,352.97	-1,026.26	189.09	1,041.68	0.00	0.00	0.00
8,300.00	90.72	173.87	7,351.71	-1,125.68	199.77	1,141.66	0.00	0.00	0.00
8,400.00	90.72	173.87	7,350.46	-1,225.10	210.45	1,241.64	0.00	0.00	0.00
8,500.00	90.72	173.87	7,349.21	-1,324.52	221.14	1,341.62	0.00	0.00	0.00
8,600.00	90.72	173.87	7,347.96	-1,423.94	231.82	1,441.60	0.00	0.00	0.00
8,700.00	90.72	173.87	7,346.71	-1,523.36	242.50	1,541.58	0.00	0.00	0.00
8,800.00	90.72	173.87	7,345.46	-1,622.78	253.18	1,641.56	0.00	0.00	0.00
8,900.00	90.72	173.87	7,344.21	-1,722.20	263.87	1,741.54	0.00	0.00	0.00
9,000.00	90.72	173.87	7,342.96	-1,821.62	274.55	1,841.52	0.00	0.00	0.00
9,100.00	90.72	173.87	7,341.71	-1,921.04	285.23	1,941.50	0.00	0.00	0.00
9,200.00	90.72	173.87	7,340.46	-2,020.46	295.92	2,041.48	0.00	0.00	0.00
9,300.00	90.72	173.87	7,339.21	-2,119.88	306.60	2,141.46	0.00	0.00	0.00
9,400.00	90.72	173.87	7,337.96	-2,219.30	317.28	2,241.44	0.00	0.00	0.00
9,500.00	90.72	173.87	7,336.71	-2,318.72	327.96	2,341.42	0.00	0.00	0.00

Database:	GCR DB	Local Co-ordinate Reference:	Well #1H
Company:	Chevron	TVD Reference:	KB @ 3270.00usft
Project:	Eddy County NM (NAD27 NME)	MD Reference:	KB @ 3270.00usft
Site:	Hayhurst 17 Federal	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH/Job #131097.1		
Design:	Plan #1 07-31-13		

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)
9,600.00	90.72	173.87	7,335.46	-2,418.14	338.65	2,441.40	0.00	0.00	0.00
9,700.00	90.72	173.87	7,334.21	-2,517.56	349.33	2,541.38	0.00	0.00	0.00
9,800.00	90.72	173.87	7,332.96	-2,616.98	360.01	2,641.36	0.00	0.00	0.00
9,900.00	90.72	173.87	7,331.71	-2,716.40	370.70	2,741.34	0.00	0.00	0.00
10,000.00	90.72	173.87	7,330.46	-2,815.82	381.38	2,841.32	0.00	0.00	0.00
10,100.00	90.72	173.87	7,329.21	-2,915.24	392.06	2,941.30	0.00	0.00	0.00
10,200.00	90.72	173.87	7,327.96	-3,014.66	402.75	3,041.28	0.00	0.00	0.00
10,300.00	90.72	173.87	7,326.71	-3,114.08	413.43	3,141.26	0.00	0.00	0.00
10,400.00	90.72	173.87	7,325.46	-3,213.50	424.11	3,241.24	0.00	0.00	0.00
10,500.00	90.72	173.87	7,324.21	-3,312.92	434.79	3,341.22	0.00	0.00	0.00
10,600.00	90.72	173.87	7,322.96	-3,412.34	445.48	3,441.20	0.00	0.00	0.00
10,700.00	90.72	173.87	7,321.71	-3,511.76	456.16	3,541.18	0.00	0.00	0.00
10,800.00	90.72	173.87	7,320.46	-3,611.18	466.84	3,641.16	0.00	0.00	0.00
10,900.00	90.72	173.87	7,319.21	-3,710.60	477.53	3,741.14	0.00	0.00	0.00
11,000.00	90.72	173.87	7,317.96	-3,810.02	488.21	3,841.12	0.00	0.00	0.00
11,100.00	90.72	173.87	7,316.71	-3,909.44	498.89	3,941.10	0.00	0.00	0.00
11,200.00	90.72	173.87	7,315.46	-4,008.86	509.57	4,041.08	0.00	0.00	0.00
11,300.00	90.72	173.87	7,314.21	-4,108.28	520.26	4,141.06	0.00	0.00	0.00
11,400.00	90.72	173.87	7,312.96	-4,207.70	530.94	4,241.04	0.00	0.00	0.00
11,500.00	90.72	173.87	7,311.71	-4,307.12	541.62	4,341.03	0.00	0.00	0.00
11,600.00	90.72	173.87	7,310.45	-4,406.54	552.31	4,441.01	0.00	0.00	0.00
11,700.00	90.72	173.87	7,309.20	-4,505.96	562.99	4,540.99	0.00	0.00	0.00
11,800.00	90.72	173.87	7,307.95	-4,605.38	573.67	4,640.97	0.00	0.00	0.00
11,900.00	90.72	173.87	7,306.70	-4,704.80	584.35	4,740.95	0.00	0.00	0.00
12,000.00	90.72	173.87	7,305.45	-4,804.22	595.04	4,840.93	0.00	0.00	0.00
12,100.00	90.72	173.87	7,304.20	-4,903.64	605.72	4,940.91	0.00	0.00	0.00
12,196.22	90.72	173.87	7,303.00	-4,999.30	616.00	5,037.11	0.00	0.00	0.00
TD at 12196.22 - PBHL-Hayhurst 17 Fed #1H									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL-Hayhurst 17 Fed ;	-90.72	173.87	7,303.00	-4,999.30	616.00	408,602.60	535,758.80	32° 7' 23.92430 N	104° 13' 4.17205 W
- plan hits target center									
- Rectangle (sides W100.00 H20.00 D4,553.95)									

Database:	GCR DB	**Local Co-ordinate Reference:**	Well #1H
Company:	Chevron	**TVD Reference:**	KB @ 3270.00usft
Project:	Eddy County NM (NAD27 NME)	**MD Reference:**	KB @ 3270.00usft
Site:	Hayhurst 17 Federal	**North Reference:**	Grid
Well:	#1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH/Job #1310971		
Design:	Plan #1 07-31-13		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
457.00	457.00	Castile		-0.72	172.98
2,165.00	2,165.00	Lamar LS		-0.72	172.98
2,217.00	2,217.00	Bell Canyon		-0.72	172.98
3,058.00	3,058.00	Cherry Canyon		-0.72	172.98
4,141.00	4,141.00	Brushy Canyon		-0.72	172.98
5,688.00	5,688.00	T/Bone Spring		-0.72	172.98
6,615.00	6,615.00	T/1st Bone Spring Sand		-0.72	172.98
7,327.10	7,265.59	T/2nd Bone Spring Sand		-0.72	172.98

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,882.50	6,882.50	0.00	0.00	KOP Start Build 12.00
7,638.62	7,360.00	-471.15	108.77	LP Start DLS 2.00 TFO 89.99
7,880.00	7,356.97	-708.33	153.10	7880' MD Point
7,981.94	7,355.69	-809.46	165.79	Start 4214.29 hold at 7981.94 MD
12,196.22	7,303.00	-4,999.30	616.00	TD at 12196.22

Chevron

Project: Eddy County NM (NAD27 NME)
Site: Hayhurst 17 Federal
Well: #1H
Wellbore: OH/Job #1310971
Design: Plan #1 07-31-13

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.06°
Magnetic North: 7.56°

Magnetic Field
Strength: 48281.1snT
Dip Angle: 59.94°
Date: 07/31/2013
Model: IGRF2010_14

WELL DETAILS

Ground Level: 3245.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	413601.90	535142.80	32° 8' 13.40641 N	104° 13' 11.27404 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	6882.50	0.00	0.00	6882.50	0.00	0.00	0.00	0.00	0.00		KOP Start Build 12.00
3	7638.62	90.72	167.00	7360.00	-471.15	108.77	12.00	167.00	480.91		LP Start DLS 2.00 TFO 89.99
4	7981.94	90.72	173.87	7355.69	-809.46	165.79	2.00	89.99	823.66		Start 4214.29 hold at 7981.94 MD
5	12196.22	90.72	173.87	7303.00	-4999.30	616.00	0.00	0.00	5037.11	PBHL-Hayhurst 17 Fed #1H	TD at 12196.22

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Hayhurst 17 Fed #1H - plan hits target center	7303.00	-4999.30	616.00	408602.60	535758.80	32° 7' 23.92430 N	104° 13' 4.17205 W	Rectangle (Sides: L20.00 W100.00)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
457.00	457.00	Castile	-0.72	172.98
2165.00	2165.00	Lamar LS	-0.72	172.98
2217.00	2217.00	Bell Canyon	-0.72	172.98
3058.00	3058.00	Cherry Canyon	-0.72	172.98
4141.00	4141.00	Brushy Canyon	-0.72	172.98
5688.00	5688.00	T/Bone Spring	-0.72	172.98
6615.00	6615.00	T/1st Bone Spring Sand	-0.72	172.98
7265.59	7327.10	T/2nd Bone Spring Sand	-0.72	172.98

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well #1H, Grid North

Latitude: 32° 8' 13.40641 N
Longitude: 104° 13' 11.27404 W

Grid East: 535142.80
Grid North: 413601.90
Scale Factor: 1.000

Geomagnetic Model: IGRF2010_14
Sample Date: 31-Jul-13
Magnetic Declination: 7.62°
Dip Angle from Horizontal: 59.94°
Magnetic Field Strength: 48281

To convert a Magnetic Direction to a Grid Direction, Add 7.55°
To convert a Magnetic Direction to a True Direction, Add 7.62° East
To convert a True Direction to a Grid Direction, Subtract 0.06°

PROJECT DETAILS: Eddy County NM (NAD27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

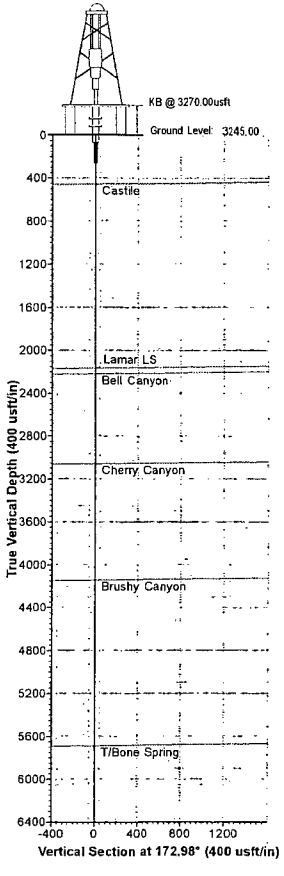
SITE DETAILS: Hayhurst 17 Federal

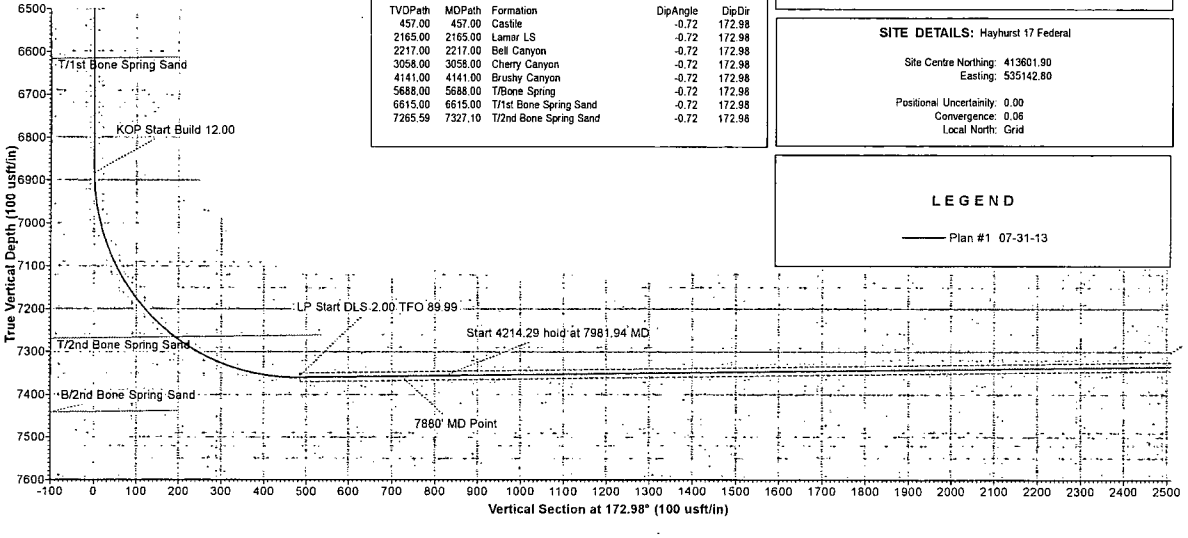
Site Centre Northing: 413601.90
Easting: 535142.80

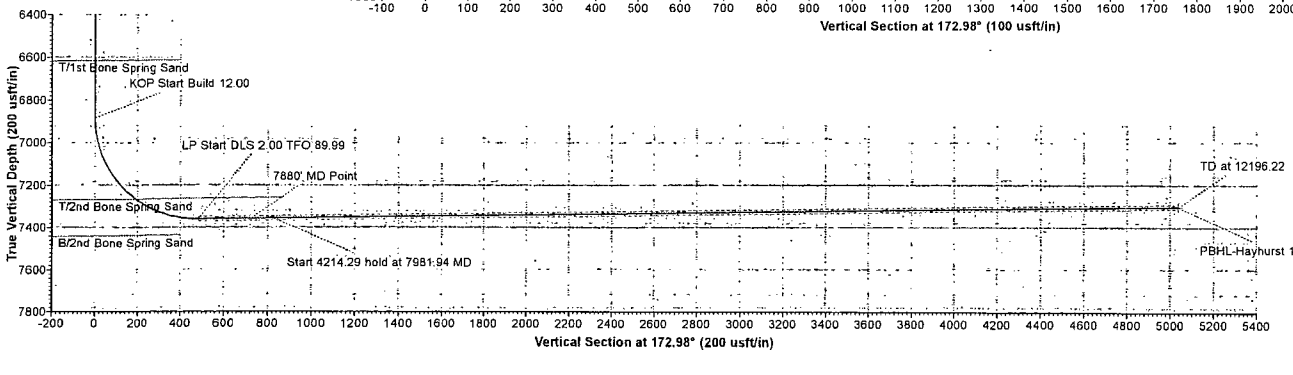
Positional Uncertainty: 0.00
Convergence: 0.06
Local North: Grid

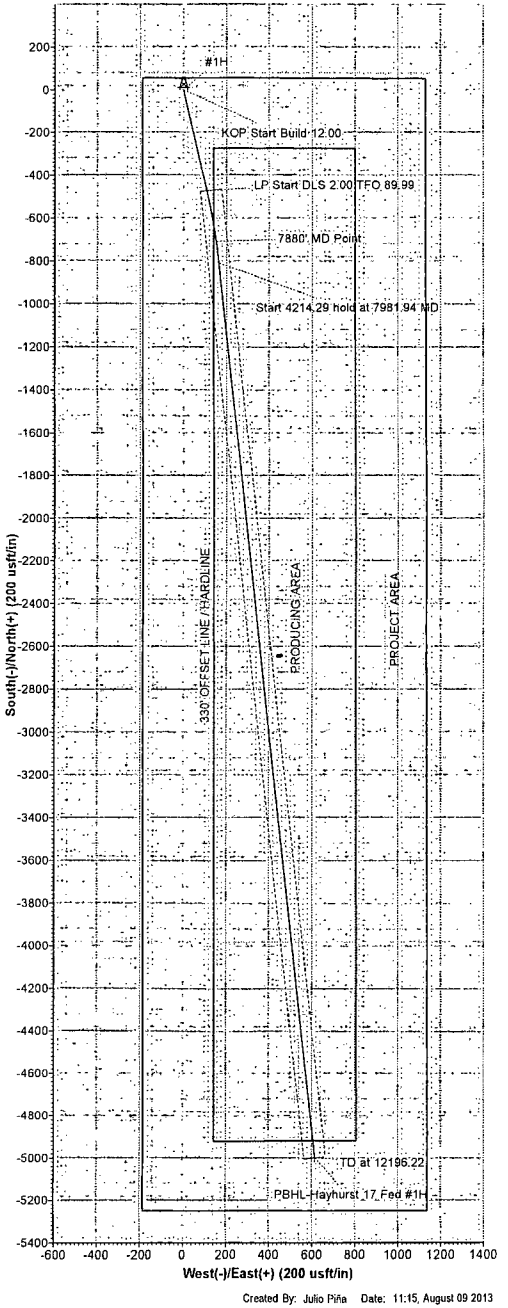
LEGEND

Plan #1 07-31-13









Created By: Julio Piña Date: 11:15, August 09 2013

Chevron

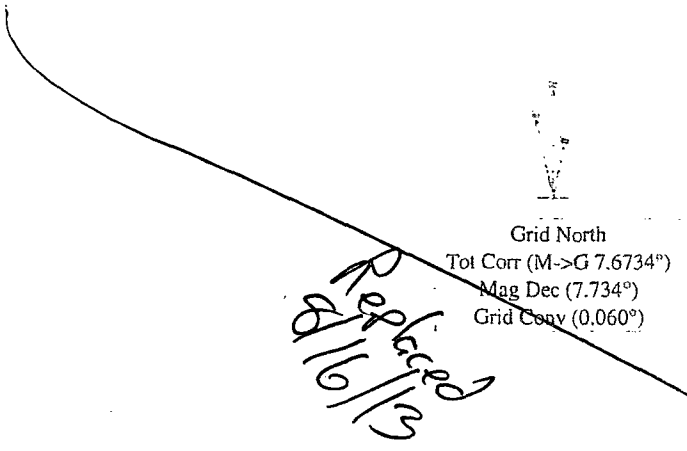
H&P 227

Chevron

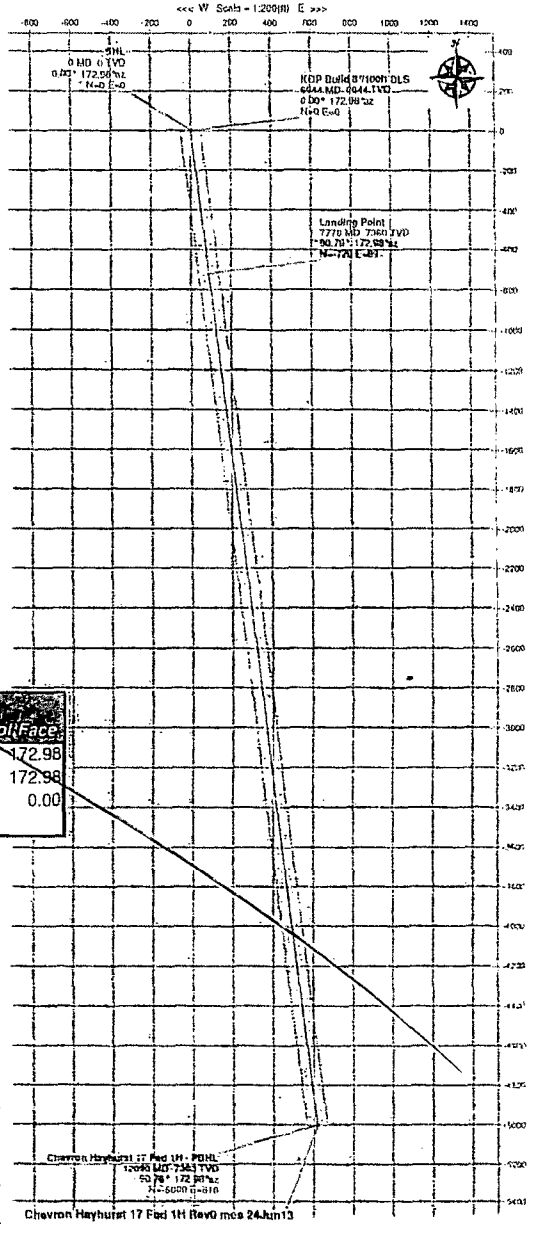
REV 0

PATHFINDER
A Schlumberger Company

Well	Field	Rig
Hayhurst 17 Fed 1H	Eddy County, NM (NAD 27)	H&P 227

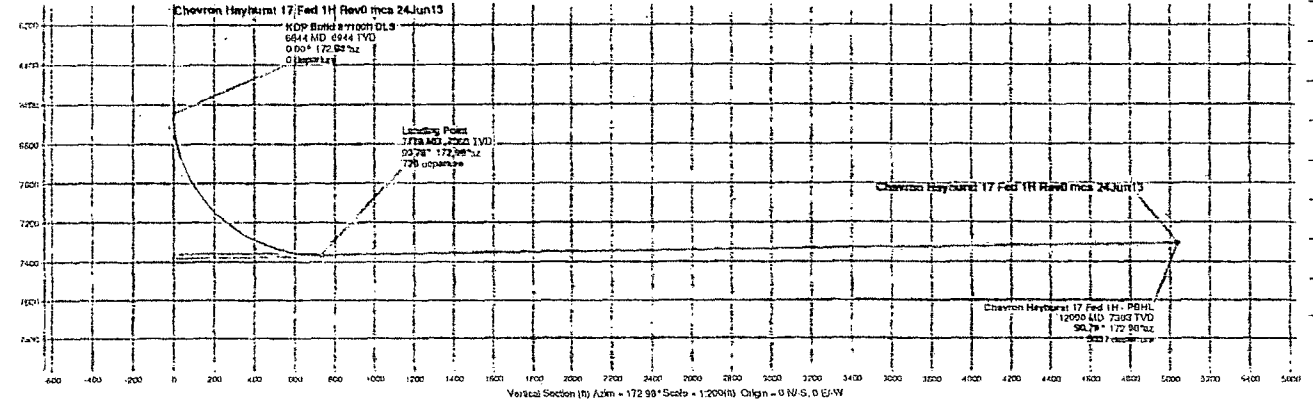


Replaced 8/16/13



Critical Points

Comments	Survey MD	Inc	Azim	TVD	SSTVD	VS	NS	EW		Longitude		Latitude		Easting	Northing	DLS	Tool Face
SHL	0.00	0.00	172.98	0.00	-3269.90	0.00	0.00	0.00	N	32 8 13.405	W	104 13 11.273		535142.91	413601.78		172.98
KOP Build 8°/100ft DLS	6643.87	0.00	172.98	6643.87	3373.97	0.00	0.00	0.00	N	32 8 13.405	W	104 13 11.273		535142.91	413601.78	0.00	172.98
Landing Point	7778.34	90.76	172.98	7360.00	4090.10	725.67	-720.22	88.73	N	32 8 6.277	W	104 13 10.250		535231.63	412881.62	8.00	0.00
PBHL	12090.48	90.76	172.98	7303.00	4033.10	5037.43	-4999.64	615.95	N	32 7 23.924	W	104 13 4.172		535758.80	408602.60	0.00	



Chevron

PATHFINDER
A Schlumberger Company

Chevron Hayhurst 17 Fed 1H Rev0 mcs 24Jun13 Proposal Geodetic Report

(Def Plan)

Report Date:	June 24, 2013 - 04:35 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	172.977 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron Hayhurst 17 Fed 1H / Chevron Hayhurst 17 Fed 1H	**TVD Reference Datum:**	RKB
Well:	Chevron Hayhurst 17 Fed 1H	**TVD Reference Elevation:**	3269.900 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3244.900 ft above MSL
UWI / API#:	H&P 227 / Unknown	**Magnetic Declination:**	7.734 °
Survey Name:	Chevron Hayhurst 17 Fed 1H Rev0 mcs 24Jun13	**Total Gravity Field Strength:**	998.4945mgn (9.80665 Based)
Survey Date:	June 24, 2013	**Total Magnetic Field Strength:**	48253.183 nT
Tort / AHD / DDI / ERD Ratio:	90.757 ° / 5037.435 ft / 5.876 / 0.684	**Magnetic Dip Angle:**	59.894 °
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Declination Date:**	June 24, 2013
Location Lat / Long:	N 32° 8' 13.40520", W 104° 13' 11.27280"	**Magnetic Declination Model:**	BGGM 2012
Location Grid N/E Y/X:	N 413601.778 ftUS, E 535142.907 ftUS	**North Reference:**	Grid North
CRS Grid Convergence Angle:	0.0604 °	**Grid Convergence Used:**	0.0604 °
Grid Scale Factor:	0.99991051	**Total Corr Mag North->Grid North:**	7.6734 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	172.98	0.00	-3269.90	0.00	0.00	0.00	N/A	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	100.00	0.00	172.98	100.00	-3169.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	200.00	0.00	172.98	200.00	-3069.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	300.00	0.00	172.98	300.00	-2969.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	400.00	0.00	172.98	400.00	-2869.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	500.00	0.00	172.98	500.00	-2769.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	600.00	0.00	172.98	600.00	-2669.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	700.00	0.00	172.98	700.00	-2569.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	800.00	0.00	172.98	800.00	-2469.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	900.00	0.00	172.98	900.00	-2369.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1000.00	0.00	172.98	1000.00	-2269.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1100.00	0.00	172.98	1100.00	-2169.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1200.00	0.00	172.98	1200.00	-2069.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1300.00	0.00	172.98	1300.00	-1969.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1400.00	0.00	172.98	1400.00	-1869.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1500.00	0.00	172.98	1500.00	-1769.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1600.00	0.00	172.98	1600.00	-1669.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1700.00	0.00	172.98	1700.00	-1569.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1800.00	0.00	172.98	1800.00	-1469.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	1900.00	0.00	172.98	1900.00	-1369.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2000.00	0.00	172.98	2000.00	-1269.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2100.00	0.00	172.98	2100.00	-1169.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2200.00	0.00	172.98	2200.00	-1069.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2300.00	0.00	172.98	2300.00	-969.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2400.00	0.00	172.98	2400.00	-869.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2500.00	0.00	172.98	2500.00	-769.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2600.00	0.00	172.98	2600.00	-669.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2700.00	0.00	172.98	2700.00	-569.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2800.00	0.00	172.98	2800.00	-469.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	2900.00	0.00	172.98	2900.00	-369.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	3000.00	0.00	172.98	3000.00	-269.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3100.00	0.00	172.98	3100.00	-169.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3200.00	0.00	172.98	3200.00	-69.90	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3300.00	0.00	172.98	3300.00	30.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3400.00	0.00	172.98	3400.00	130.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3500.00	0.00	172.98	3500.00	230.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3600.00	0.00	172.98	3600.00	330.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3700.00	0.00	172.98	3700.00	430.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3800.00	0.00	172.98	3800.00	530.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	3900.00	0.00	172.98	3900.00	630.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4000.00	0.00	172.98	4000.00	730.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4100.00	0.00	172.98	4100.00	830.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4200.00	0.00	172.98	4200.00	930.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4300.00	0.00	172.98	4300.00	1030.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4400.00	0.00	172.98	4400.00	1130.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4500.00	0.00	172.98	4500.00	1230.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4600.00	0.00	172.98	4600.00	1330.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4700.00	0.00	172.98	4700.00	1430.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4800.00	0.00	172.98	4800.00	1530.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	4900.00	0.00	172.98	4900.00	1630.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5000.00	0.00	172.98	5000.00	1730.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5100.00	0.00	172.98	5100.00	1830.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5200.00	0.00	172.98	5200.00	1930.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5300.00	0.00	172.98	5300.00	2030.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5400.00	0.00	172.98	5400.00	2130.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5500.00	0.00	172.98	5500.00	2230.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5600.00	0.00	172.98	5600.00	2330.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5700.00	0.00	172.98	5700.00	2430.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5800.00	0.00	172.98	5800.00	2530.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	5900.00	0.00	172.98	5900.00	2630.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6000.00	0.00	172.98	6000.00	2730.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6100.00	0.00	172.98	6100.00	2830.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6200.00	0.00	172.98	6200.00	2930.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6300.00	0.00	172.98	6300.00	3030.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6400.00	0.00	172.98	6400.00	3130.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6500.00	0.00	172.98	6500.00	3230.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6600.00	0.00	172.98	6600.00	3330.10	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
KOP Build 8°/100ft DLS	6643.87	0.00	172.98	6643.87	3373.97	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
	6700.00	4.49	172.98	6699.94	3430.04	2.20	-2.18	0.27	8.00	413599.60	535143.18	N 32 8 13.38	W 104 13 11.27
	6800.00	12.49	172.98	6798.77	3528.87	16.95	-16.82	2.07	8.00	413584.96	535144.98	N 32 8 13.24	W 104 13 11.25
	6900.00	20.49	172.98	6894.58	3624.68	45.31	-44.97	5.54	8.00	413556.81	535148.45	N 32 8 12.96	W 104 13 11.21
	7000.00	28.49	172.98	6985.50	3715.60	86.73	-86.08	10.61	8.00	413515.70	535153.51	N 32 8 12.55	W 104 13 11.15
	7100.00	36.49	172.98	7069.78	3799.88	140.41	-139.35	17.17	8.00	413462.44	535160.07	N 32 8 12.03	W 104 13 11.07
	7200.00	44.49	172.98	7145.77	3875.87	205.29	-203.74	25.10	8.00	413398.05	535168.01	N 32 8 11.39	W 104 13 10.98
	7300.00	52.49	172.98	7211.99	3942.09	280.11	-278.01	34.25	8.00	413323.80	535177.15	N 32 8 10.65	W 104 13 10.86
	7400.00	60.49	172.98	7267.16	3997.26	363.42	-360.69	44.44	8.00	413241.12	535187.34	N 32 8 9.84	W 104 13 10.76
	7500.00	68.49	172.98	7310.19	4040.29	453.60	-450.19	55.46	8.00	413151.62	535198.37	N 32 8 8.95	W 104 13 10.63
	7600.00	76.49	172.98	7340.25	4070.35	548.89	-544.77	67.11	8.00	413057.06	535210.02	N 32 8 8.01	W 104 13 10.50
	7700.00	84.49	172.98	7356.76	4086.86	647.43	-642.58	79.16	8.00	412959.26	535222.06	N 32 8 7.05	W 104 13 10.36
Landing Point	7778.34	90.76	172.98	7360.00	4090.10	725.67	-720.22	88.73	8.00	412881.62	535231.63	N 32 8 6.28	W 104 13 10.25
	7800.00	90.76	172.98	7359.72	4089.82	747.33	-741.72	91.38	0.00	412860.13	535234.28	N 32 8 6.06	W 104 13 10.22
	7900.00	90.76	172.98	7358.40	4088.50	847.32	-840.96	103.61	0.00	412760.90	535246.50	N 32 8 5.08	W 104 13 10.08
	8000.00	90.76	172.98	7357.07	4087.17	947.31	-940.20	115.83	0.00	412661.66	535258.73	N 32 8 4.10	W 104 13 9.94
	8100.00	90.76	172.98	7355.75	4085.85	1047.30	-1039.44	128.06	0.00	412562.43	535270.95	N 32 8 3.12	W 104 13 9.80
	8200.00	90.76	172.98	7354.43	4084.53	1147.29	-1138.68	140.28	0.00	412463.20	535283.18	N 32 8 2.14	W 104 13 9.66

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	8300.00	90.76	172.98	7353.11	4083.21	1247.28	-1237.92	152.51	0.00	412363.97	535295.40	N 32 8 1.15	W 104 13 9.51
	8400.00	90.76	172.98	7351.79	4081.89	1347.27	-1337.16	164.74	0.00	412264.74	535307.63	N 32 8 0.17	W 104 13 9.37
	8500.00	90.76	172.98	7350.46	4080.56	1447.26	-1436.40	176.96	0.00	412165.51	535319.85	N 32 7 59.19	W 104 13 9.23
	8600.00	90.76	172.98	7349.14	4079.24	1547.26	-1535.65	189.19	0.00	412066.27	535332.08	N 32 7 58.21	W 104 13 9.09
	8700.00	90.76	172.98	7347.82	4077.92	1647.25	-1634.89	201.42	0.00	411967.04	535344.30	N 32 7 57.22	W 104 13 8.95
	8800.00	90.76	172.98	7346.50	4076.60	1747.24	-1734.13	213.64	0.00	411867.81	535356.53	N 32 7 56.24	W 104 13 8.81
	8900.00	90.76	172.98	7345.18	4075.28	1847.23	-1833.37	225.87	0.00	411768.58	535368.76	N 32 7 55.26	W 104 13 8.67
	9000.00	90.76	172.98	7343.85	4073.95	1947.22	-1932.61	238.10	0.00	411669.35	535380.98	N 32 7 54.28	W 104 13 8.53
	9100.00	90.76	172.98	7342.53	4072.63	2047.21	-2031.85	250.32	0.00	411570.11	535393.21	N 32 7 53.30	W 104 13 8.39
	9200.00	90.76	172.98	7341.21	4071.31	2147.20	-2131.09	262.55	0.00	411470.88	535405.43	N 32 7 52.31	W 104 13 8.25
	9300.00	90.76	172.98	7339.89	4069.99	2247.19	-2230.33	274.77	0.00	411371.65	535417.66	N 32 7 51.33	W 104 13 8.10
	9400.00	90.76	172.98	7338.57	4068.67	2347.19	-2329.57	287.00	0.00	411272.42	535429.88	N 32 7 50.35	W 104 13 7.96
	9500.00	90.76	172.98	7337.25	4067.35	2447.18	-2428.81	299.23	0.00	411173.19	535442.11	N 32 7 49.37	W 104 13 7.82
	9600.00	90.76	172.98	7335.92	4066.02	2547.17	-2528.05	311.45	0.00	411073.95	535454.33	N 32 7 48.39	W 104 13 7.68
	9700.00	90.76	172.98	7334.60	4064.70	2647.16	-2627.30	323.68	0.00	410974.72	535466.56	N 32 7 47.40	W 104 13 7.54
	9800.00	90.76	172.98	7333.28	4063.38	2747.15	-2726.54	335.91	0.00	410875.49	535478.78	N 32 7 46.42	W 104 13 7.40
	9900.00	90.76	172.98	7331.96	4062.06	2847.14	-2825.78	348.13	0.00	410776.26	535491.01	N 32 7 45.44	W 104 13 7.26
	10000.00	90.76	172.98	7330.64	4060.74	2947.13	-2925.02	360.36	0.00	410677.03	535503.23	N 32 7 44.46	W 104 13 7.12
	10100.00	90.76	172.98	7329.31	4059.41	3047.12	-3024.26	372.59	0.00	410577.80	535515.46	N 32 7 43.47	W 104 13 6.98
	10200.00	90.76	172.98	7327.99	4058.09	3147.12	-3123.50	384.81	0.00	410478.56	535527.68	N 32 7 42.49	W 104 13 6.84
	10300.00	90.76	172.98	7326.67	4056.77	3247.11	-3222.74	397.04	0.00	410379.33	535539.91	N 32 7 41.51	W 104 13 6.70
	10400.00	90.76	172.98	7325.35	4055.45	3347.10	-3321.98	409.26	0.00	410280.10	535552.13	N 32 7 40.53	W 104 13 6.55
	10500.00	90.76	172.98	7324.03	4054.13	3447.09	-3421.22	421.49	0.00	410180.87	535564.36	N 32 7 39.55	W 104 13 6.41
	10600.00	90.76	172.98	7322.70	4052.80	3547.08	-3520.46	433.72	0.00	410081.64	535576.58	N 32 7 38.56	W 104 13 6.27
	10700.00	90.76	172.98	7321.38	4051.48	3647.07	-3619.71	445.94	0.00	409982.40	535588.81	N 32 7 37.58	W 104 13 6.13
	10800.00	90.76	172.98	7320.06	4050.16	3747.06	-3718.95	458.17	0.00	409883.17	535601.03	N 32 7 36.60	W 104 13 5.99
	10900.00	90.76	172.98	7318.74	4048.84	3847.05	-3818.19	470.40	0.00	409783.94	535613.26	N 32 7 35.62	W 104 13 5.85
	11000.00	90.76	172.98	7317.42	4047.52	3947.05	-3917.43	482.62	0.00	409684.71	535625.49	N 32 7 34.63	W 104 13 5.71
	11100.00	90.76	172.98	7316.09	4046.19	4047.04	-4016.67	494.85	0.00	409585.48	535637.71	N 32 7 33.65	W 104 13 5.57
	11200.00	90.76	172.98	7314.77	4044.87	4147.03	-4115.91	507.08	0.00	409486.24	535649.94	N 32 7 32.67	W 104 13 5.43
	11300.00	90.76	172.98	7313.45	4043.55	4247.02	-4215.15	519.30	0.00	409387.01	535662.16	N 32 7 31.69	W 104 13 5.29
	11400.00	90.76	172.98	7312.13	4042.23	4347.01	-4314.39	531.53	0.00	409287.78	535674.39	N 32 7 30.71	W 104 13 5.15
	11500.00	90.76	172.98	7310.81	4040.91	4447.00	-4413.63	543.75	0.00	409188.55	535686.61	N 32 7 29.72	W 104 13 5.00
	11600.00	90.76	172.98	7309.48	4039.58	4546.99	-4512.87	555.98	0.00	409089.32	535698.84	N 32 7 28.74	W 104 13 4.86
	11700.00	90.76	172.98	7308.16	4038.26	4646.98	-4612.11	568.21	0.00	408990.09	535711.06	N 32 7 27.76	W 104 13 4.72
	11800.00	90.76	172.98	7306.84	4036.94	4746.98	-4711.36	580.43	0.00	408890.85	535723.29	N 32 7 26.78	W 104 13 4.58
	11900.00	90.76	172.98	7305.52	4035.62	4846.97	-4810.60	592.66	0.00	408791.62	535735.51	N 32 7 25.80	W 104 13 4.44
	12000.00	90.76	172.98	7304.20	4034.30	4946.96	-4909.84	604.89	0.00	408692.39	535747.74	N 32 7 24.81	W 104 13 4.30
Chevron Hayhurst 17 Fed 1H - PBHL	12090.48	90.76	172.98	7303.00	4033.10	5037.43	-4999.64	615.95	0.00	408602.60	535758.80	N 32 7 23.92	W 104 13 4.17

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	25.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / Chevron Hayhurst 17 Fed 1H Rev0 mcs
	25.000	12090.484	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Chevron Hayhurst 17 Fed 1H Rev0 mcs

Chevron

PATHFINDER
A Schlumberger Company

Chevron Hayhurst 17 Fed 1H Rev0 mcs 24Jun13 Proposal Geodetic Report

(Def Plan)

Report Date:	June 24, 2013 - 04:34 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	172.977 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron Hayhurst 17 Fed 1H / Chevron Hayhurst 17 Fed 1H	**TVD Reference Datum:**	RKB
Well:	Chevron Hayhurst 17 Fed 1H	**TVD Reference Elevation:**	3269.900 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3244.900 ft above MSL
UWI / API#:	H&P 227 / Unknown	**Magnetic Declination:**	7.734 °
Survey Name:	Chevron Hayhurst 17 Fed 1H Rev0 mcs 24Jun13	**Total Gravity Field Strength:**	998.4945mgn (9.80665 Based)
Survey Date:	June 24, 2013	**Total Magnetic Field Strength:**	48253.183 nT
Tort / AHD / DDI / ERD Ratio:	90.757 ° / 5037.435 ft / 5.876 / 0.584	**Magnetic Dip Angle:**	59.894 °
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Declination Date:**	June 24, 2013
Location Lat / Long:	N 32° 8' 13.40520", W 104° 13' 11.27280"	**Magnetic Declination Model:**	BGGM 2012
Location Grid N/E Y/X:	N 413601.778 ftUS, E 535142.907 ftUS	**North Reference:**	Grid North
CRS Grid Convergence Angle:	0.0604 °	**Grid Convergence Used:**	0.0604 °
Grid Scale Factor:	0.99991051	**Total Corr Mag North->Grid North:**	7.6734 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	172.98	0.00	-3269.90	0.00	0.00	0.00	N/A	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
KOP Build 8°/100ft DLS	6643.87	0.00	172.98	6543.87	3373.97	0.00	0.00	0.00	0.00	413601.78	535142.91	N 32 8 13.41	W 104 13 11.27
Landing Point	7778.34	90.76	172.98	7360.00	4090.10	725.67	-720.22	88.73	8.00	412881.62	535231.63	N 32 8 6.28	W 104 13 10.25
Chevron Hayhurst 17 Fed 1H - PBHL	12090.48	90.76	172.98	7303.00	4033.10	5037.43	-4999.64	615.95	0.00	408602.60	535758.80	N 32 7 23.92	W 104 13 4.17

Survey Type: Def Plan

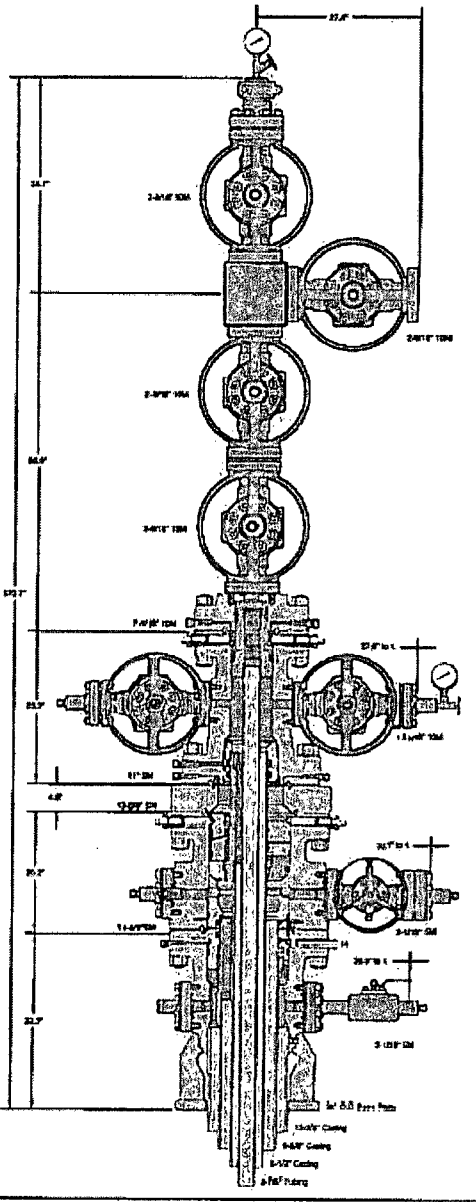
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	12090.484	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Chevron Hayhurst 17 Fed 1H Rev0 mcs

Chevron respectfully requests utilization of GE/Vetco SH-2 Multibowl Wellhead. An electronic copy of the SH-2 Wellhead Assembly running procedure has been provided for reference. Chevron respectfully requests to nipple up and test BOPE on the surface casing to at least 3,000 psi high and 250 psi low, and to perform subsequent BOPE tests as needed, not to exceed 21 days from the previous test. The field report from GE/Vetco representative and the BOPE test information will be provided in a subsequent report at the end of the well.

GE Oil & Gas



CHEVRON USA, INC.
DELAWARE BASIN

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

DRAWN	VJK	19MAR13
APPRV	KN	19MAR13

FOR REFERENCE ONLY
DRAWING NO. AE23705

Minimum Requirement Blowout Preventor Schematic

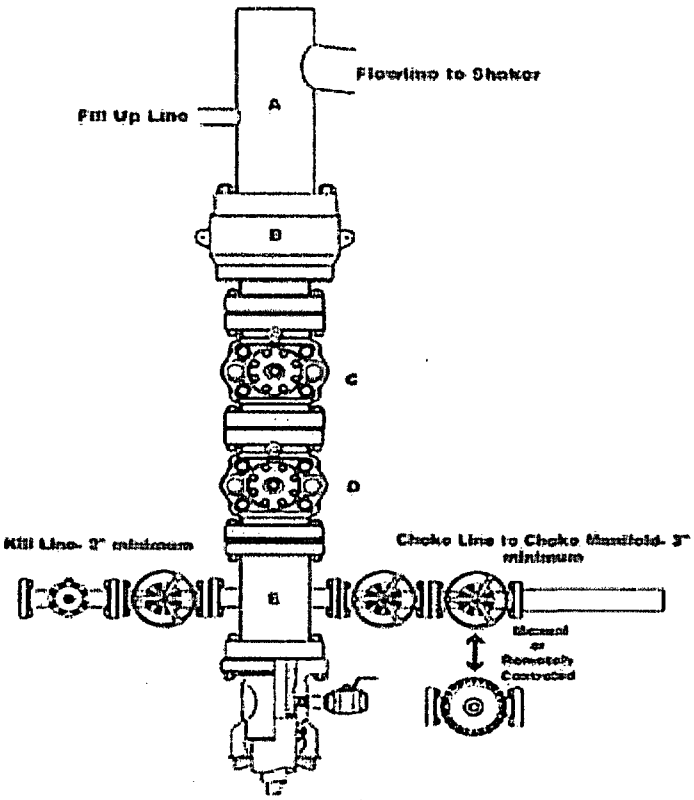
BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 3000 PSI

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



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	3,000 psi	Check Valve
2"	3,000 psi	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	3,000 psi	Gate Valve
3"	3,000 psi	Gate Valve Or Remotely Controlled 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 though flow.
- ☐ The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tees, 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: _____

Minimum Choke Manifold Schematic

CHOKE MANIFOLD SCHEMATIC

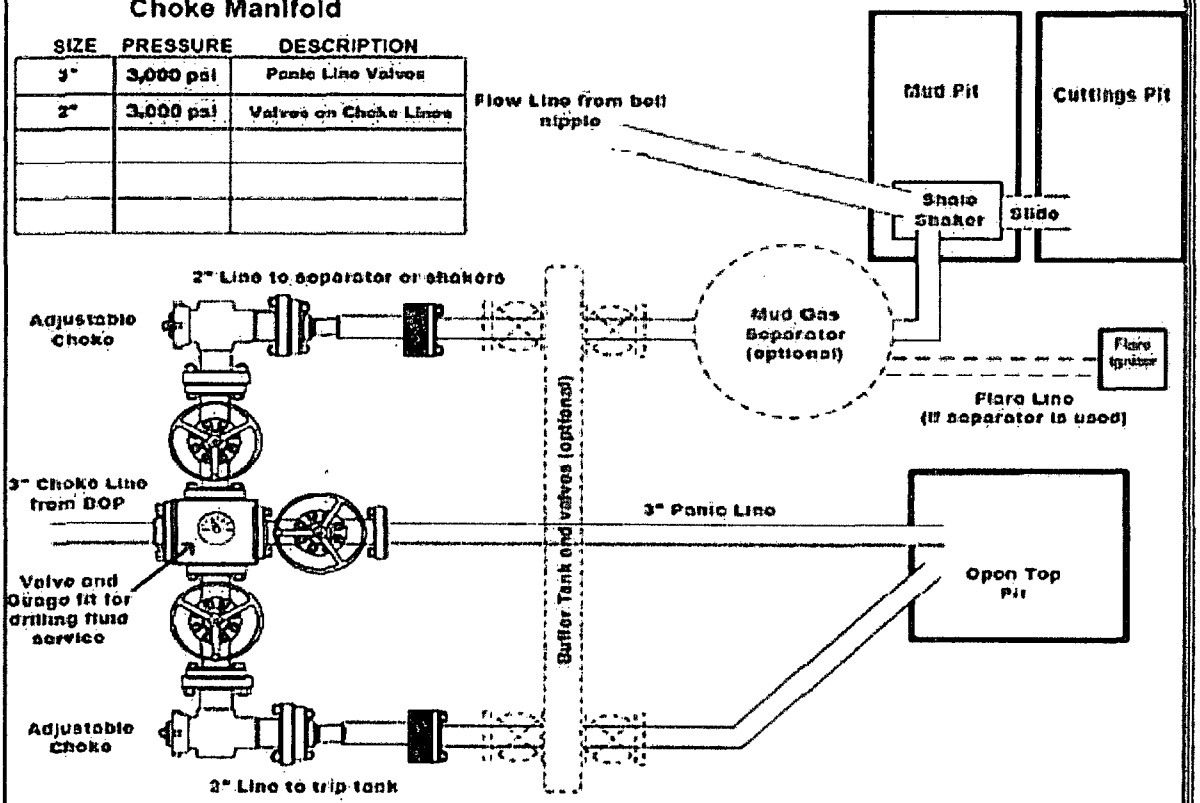
Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 3000 PSI

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	3,000 psi	Panic Line Valves
2"	3,000 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 tees, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.
- ☐ All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.
- ☐ All manual valves will have hand wheels installed.
- ☐ If used, flare system will have effective method for ignition
- ☐ All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)
- ☐ If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

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

Wellname: _____

Representative: _____

Date: _____

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

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

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

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
☐	1500 psi	1500 psi	750 psi	800 psi	700 psi
☐	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
☐	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. Reservior 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 3,000 psi (high).**

☐ **Annular type preventer will be tested to 250 psi (low) and 1,500 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**

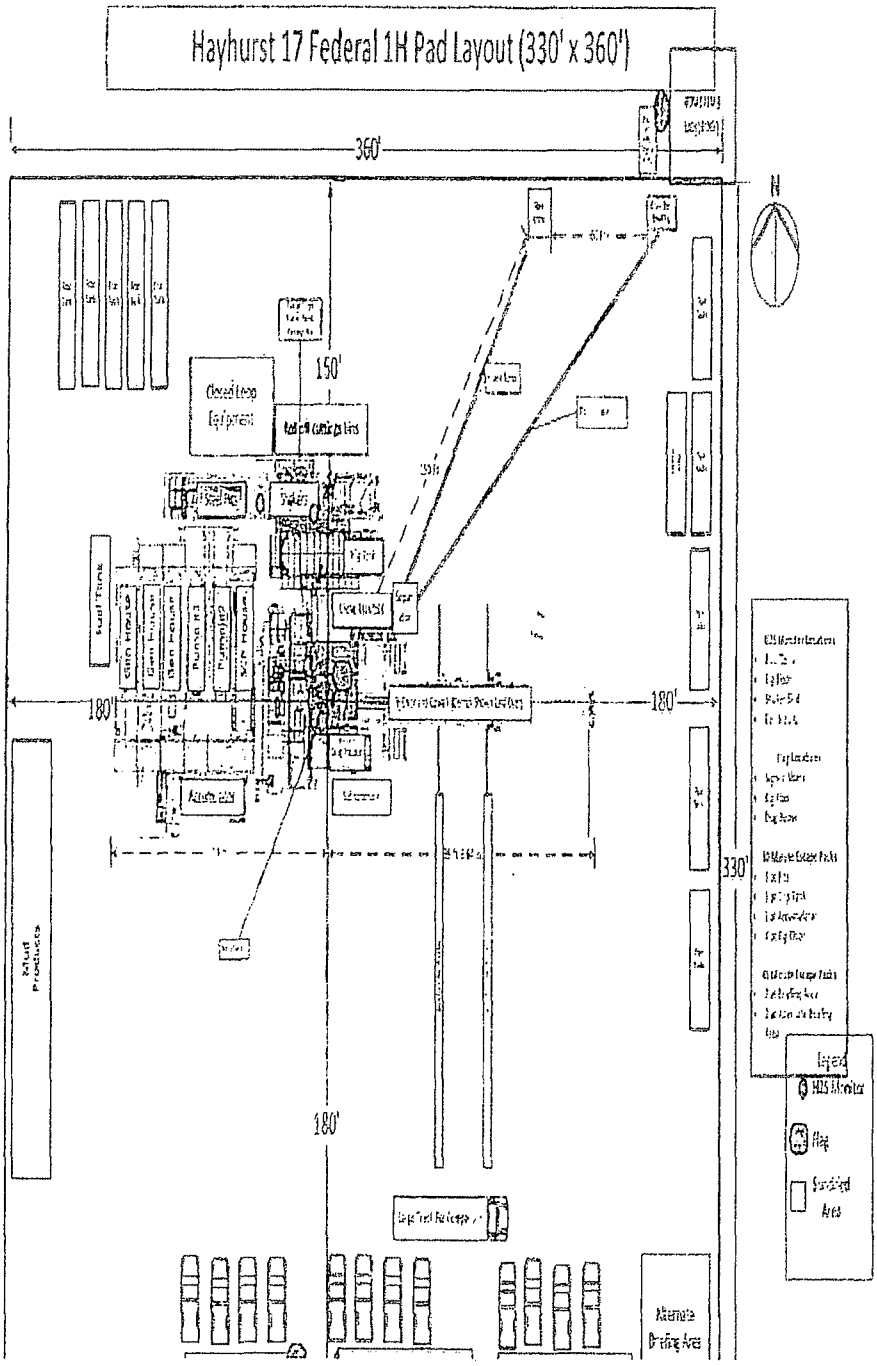
After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer along with any/all BOP and accumulator test charts and reports from 3rd parties.

Wellname: _____

Representative: _____

Date: _____

Exhibit D


Hayhurst 17 Federal 1H Pad Layout (330' x 360')
360'
N
150'
180'
180'
330'
180'

Operating and Maintenance Plan

- Cuttings will be discharged from shaker into cuttings bins/tanks
- Cuttings bins/tanks will be monitored so that it will not be overfilled
- The cuttings bins/tanks will be visually inspected for fluid integrity on a daily basis
- Documentation of fluid inspection will be captured on daily reports

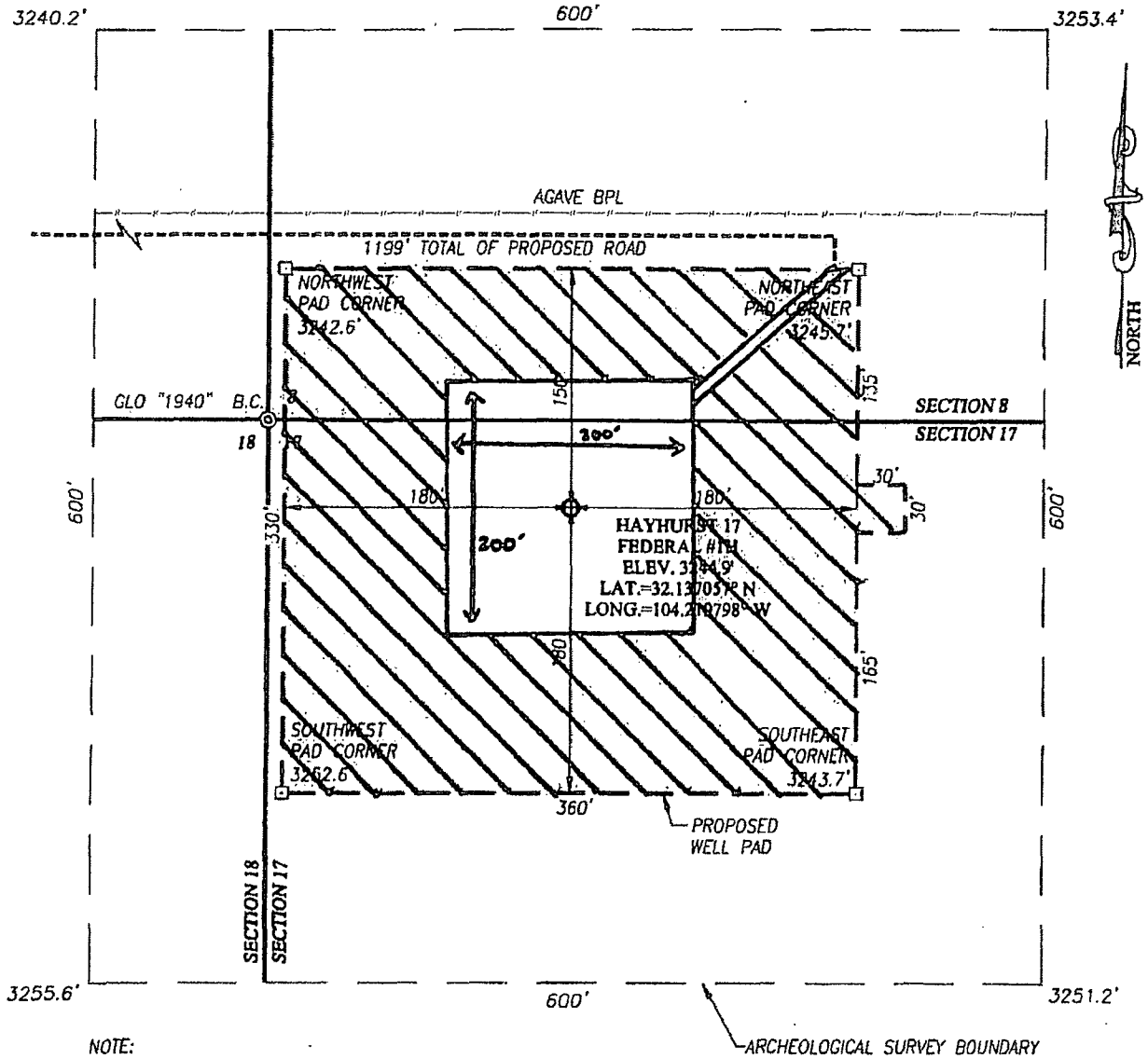
Closure Plan

- Drilled cuttings will be removed from the cuttings bins/tanks using a backhoe and placed in a suitable transport container.
- Drilled cuttings will be disposed of at a suitable off-location waste facility

Exhibit E

SECTION 17, TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



NOTE:
SEE "LOCATION VERIFICATION MAP" FOR PROPOSED ROAD LOCATION.

INTERIM RECLAMATION PLAN

100 0 100 200 Feet

Scale: 1"=100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #724 (JOHN D. FOREHAND) AND CO. RD. #720 (BLACK RIVER VILLAGE), GO SOUTH APPROX. 6.5 MILES. TURN LEFT AND GO EAST APPROX. 0.7 MILES TO NORTHWEST CORNER OF THIS LOCATION.

CHEVRON USA INC

HAYHURST 17 FEDERAL #1H WELL
LOCATED 55 FEET FROM THE NORTH LINE
AND 190 FEET FROM THE WEST LINE OF SECTION 17,
TOWNSHIP 25 SOUTH, RANGE 27 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 6/4/13	CAD Date: 6/18/13	Drawn By: ACK
W.O. No.: 13110327	Rev: .	Rel. W.O.:	Sheet 1 of 1

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

Exhibit C

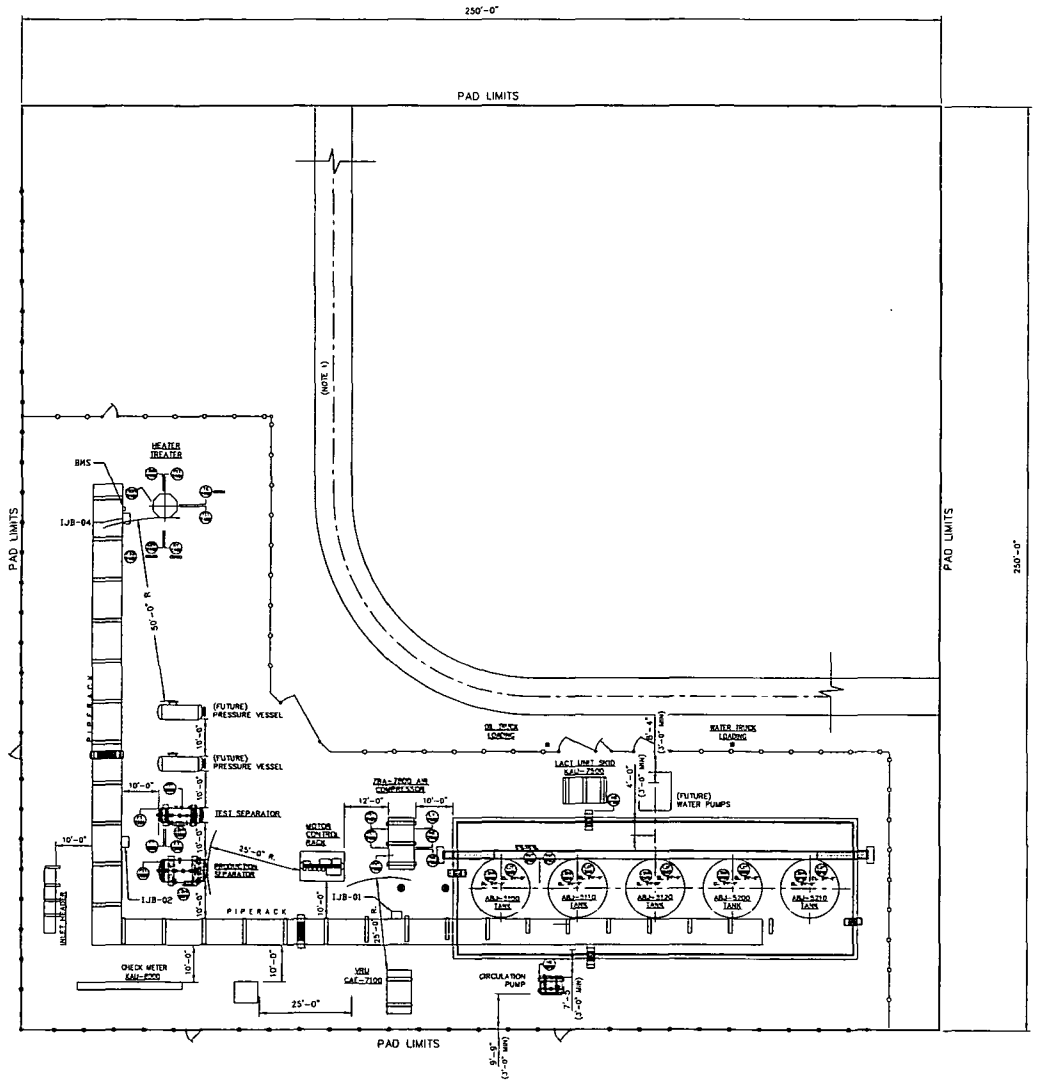
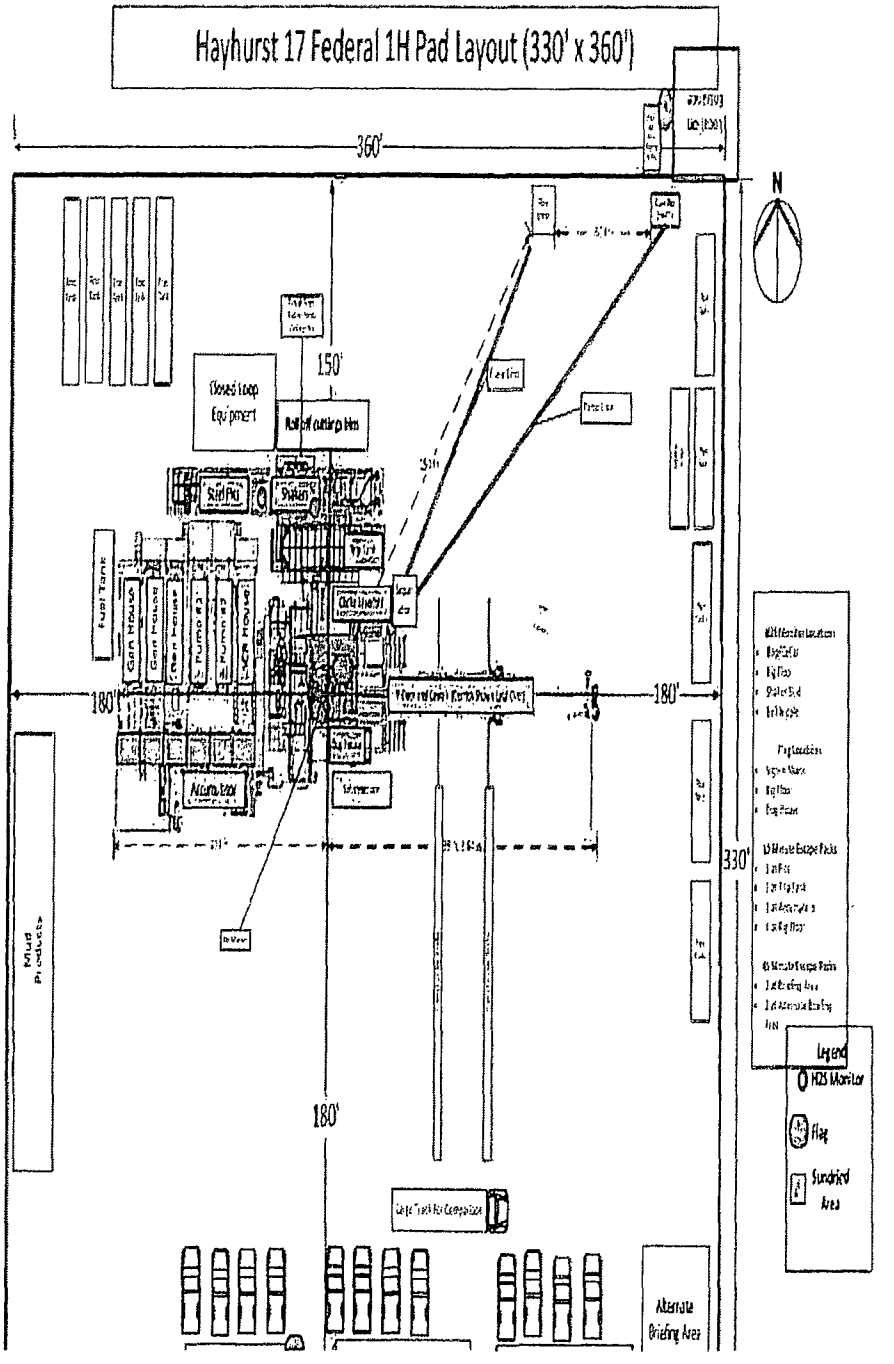

250'-0"
PAD LIMITS
PAD LIMITS
PAD LIMITS
250'-0"
(NOTE 1)
HEATER TREATER
BMS
IJB-04
50'-0" R
(FUTURE) PRESSURE VESSEL
(FUTURE) PRESSURE VESSEL
TEST SEPARATOR
PRODUCTION SEPARATOR
IJB-02
IJB-01
PIPERACK
MOTOR CONTROL RACK
ZRA-7900 AIR COMPRESSOR
OIL TRUCK LOADING
WATER TRUCK LOADING
LACT UNIT SKID ARJ-7500
(FUTURE) WATER PUMPS
ARJ-7100 TANK
ARJ-7110 TANK
ARJ-7120 TANK
ARJ-7200 TANK
ARJ-7210 TANK
CHECK METER KAJ-7200
VRU GAT-7100
CIRCULATION PUMP
25'-0"
N

Exhibit D


Hayhurst 17 Federal 1H Pad Layout (330' x 360')
360'
N
150'
Closed Loop Equipment
Roll off cuttings bins
Fuel Tank
Gen House
Gen House
Gen House
Gen House
SCR House
SCR House
Automation
Mud Products
180'
180'
180'
330'
Legend
H2S Monitor
Flag
Windsock
Area
Alternate Briefing Area

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

Hayhurst 17 Fed 1H
55' FNL and 190' FWL
Section 17, Township 25 South, Range 27 East
Eddy County, New Mexico

1. EXISTING ROADS/LEASE ROADS

Driving directions are from Malaga NM. South on HWY 285 11.2 miles to White City Road (CR724), Turn West and go approximately 11 miles to an existing John Dee Forehand(CR742) road, go North 6 miles. Then turn East, go ½ mile and you are in Section 18, go ¼ of mile to the East and you are at the well location. The location is 27.5 miles from the nearest town, which is Malaga , NM.

The proposed access road 844' in length and 14' in travel way width with a maximum disturbance area of 30' will be used, and in accordance with guidelines set forth in the BLM Onshore Orders. No turnouts are expected.

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

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

Location, access, and vicinity plats attached hereto. **See Exhibits A-1 to A-4.**

2. NEW OR RECONSTRUCTED ACCESS ROADS

There will be 844' of new access to be constructed.

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

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

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

Road Width: 14 – 20 feet traveling surface.

Maximum Grade: Road gradient less than 8%

Crown Design: 2%

Turnouts will be installed along the access route as needed.

Ditch design: Drainage, interception and outlet.

Erosion Control: 6" rock under road.

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

Cattle guard(s) will be installed as needed.

Major Cuts and Fills: 2:1 Slope.

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

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 east side of the Heritage 18 Federal #1H well pad and oil to be sold at that tank battery.

The production line will be surface-laid 2-7/8" steel pipe with a working pressure less than 100 psig ran along existing disturbances.

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

The production facilities supporting the Hayhurst 17 Federal #1H will require a water transfer pipeline and electrical power lines. Both of these will extend from the production facility in section 18-25-27 to the east ~6200 ft until they enter section 16-25-27. The 6" HDPE water pipeline continues to section 02-26-27 where the water will be injected into a disposal well, and the power line continues to section 27-26-27 where it will be energized by a temporary power plant.

5. LOCATION AND TYPES OF WATER SUPPLY

Water will be obtained from a private water source.

Chevron will utilize the fresh water holding pond in Section 16-25-27 and/or Section 2-26-27 for fresh water.

Water to be hauled into or piped by a private provider into Section 16 or Section 2.

A temporary 10" aluminum transfer line will run approx. 7.00 mile from the pond in section 2 to the location. All transfer lines will be laid on a pre-disturbed area.

6. CONSTRUCTION MATERIALS

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

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

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

The entire location will be fenced with barb/woven wire and bermed with spoil dirt or gravel.

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.

Disposal of cuttings: Controlled Recovery Inc (CRI)

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.

(3) Safe containment and disposal of sewage / gray water

Summary:

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

A locking gate will be installed at the site entrance.

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

10. PLANS FOR RECLAMATION OF THE SURFACE

In the Event of Production

Interim reclamation will consist of reclaiming the pad to +-50 feet outside the anchors or approximately 200 x 200 feet. **See Exhibit E.**

In the Event of a Dry Hole/Final Reclamation

Upon final abandonment of the well, caliche material from the well pad and access road will be removed and utilized to re-contour to a final contour that blends with the surrounding topography as much as possible. Any caliche material not used will be utilized to repair roads within the lease. Topsoil will be distributed over the reclamation area and cross ripped to control erosion; the site will be seeded with an 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 and Cattle Company
159 West Ogden Road
Loving NM, 88256

ROAD OWNERSHIP

All access roads are located on Federal 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. **Exhibit F.**

Chevron REPRESENTATIVES

Project Manager Kelly McLachlan 1400 Smith Street, 40039 Houston, TX 77002 Office: 713-372-2371 Kellyanne@chevron.com	**Drilling Engineer** Vicente Ruiz 1400 Smith Street, 43104 Houston, TX 77002 Office: 713-372-6181 vruiz@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	**Asset Manager** Vince Lemieux 1400 Smith Street, 45050 Houston, TX 77002 VLeMieux@chevron.com
Geologist Greg Minnery 1400 Smith Street, 40029 Houston, TX 77002 Office: 713-372-2371 minnery@chevron.com	**Land Team Lead** Pam Bikun 1400 Smith Street, 45004 Houston, TX 77002 Office: 713-372-1373 PamBikun@Chevron.com
Regulatory Specialist Denise Pinkerton 15 Smith Road, 4229 Claydesta Plaza Midland, TX 79705 Office: 432-687-7375 leakejd@Chevron.com	

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Chevron U.S.A. Inc.**
LEASE NO.:	**NMNM-113954**
WELL NAME & NO.:	**Hayhurst 17 Federal 1H**
SURFACE HOLE FOOTAGE:	**0055' FNL & 0190' FWL**
BOTTOM HOLE FOOTAGE	**0250' FSL & 0800' FWL**
LOCATION:	**Section 17, T. 25 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.

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

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.

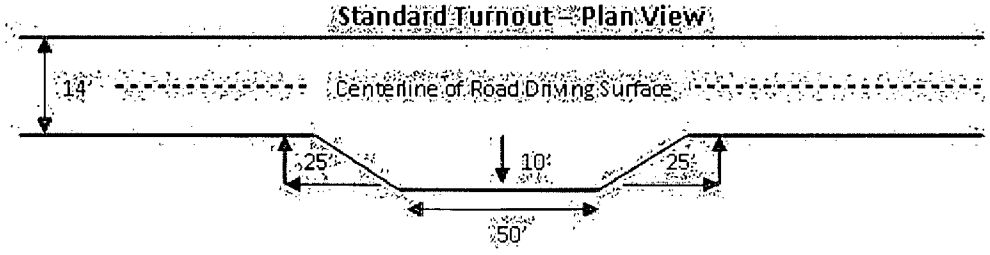
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

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.

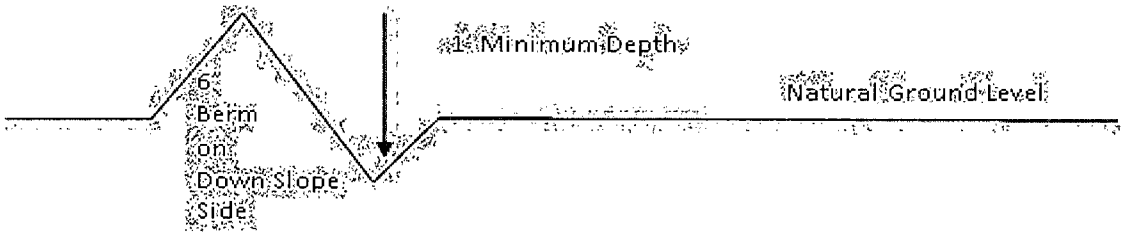
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

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

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

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

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

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

Fence Requirement

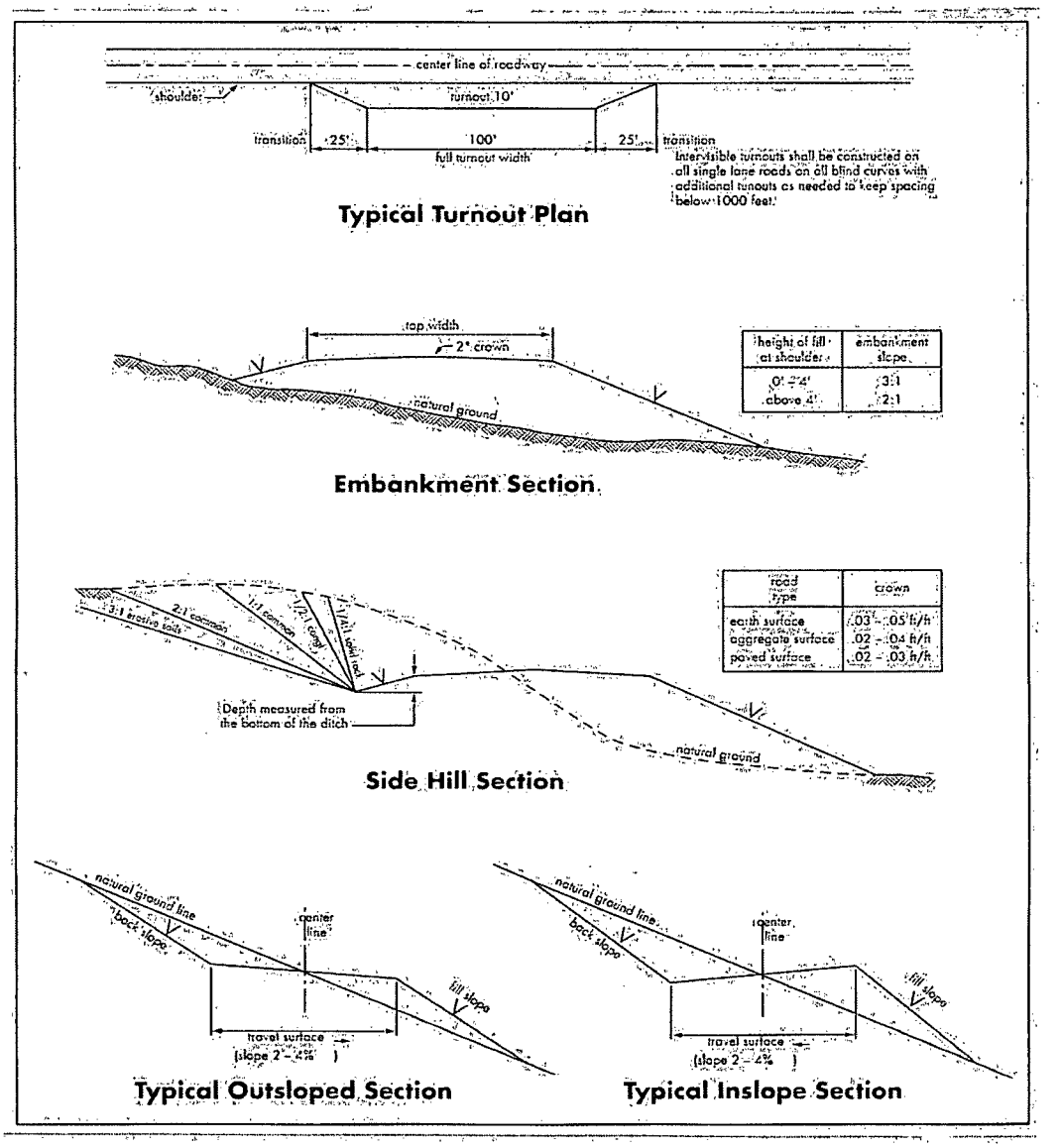
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VI. 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 Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

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

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

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

Medium Cave/Karst
Possible water flows in the Castile and Delaware.
Possible lost circulation in the Salado, Delaware, and Bone Spring.

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

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at approximately **2000** feet, is:

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

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Centralizers are approved as written.

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

   ☒ Cement as proposed by operator. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. **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 3000 (3M) psi.**

   a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
   b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
   c. **Manufacturer representative shall install the test plug for the initial BOP test.**
   d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
   e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, 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.

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.

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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).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

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

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other

VII. 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

pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless

otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	(4) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

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

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

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

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et

seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

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

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

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

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

adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object)

discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

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

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

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

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roasting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180

days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes with native soil.

VIII. 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 1, for Loamy Sites Well Pad and Road

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

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

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

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

Seed Mixture 4, for Gypsum Sites Buried Pipeline and Overhead Electric Line

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

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

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

Species	lb/acre
Alkali Sacaton (Sporobolus airoides)	1.0
DWS Four-wing saltbush (Atriplex canescens)	5.0

DWS: DeWinged Seed

*Pounds of pure live seed:

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