AT5-14-1066

Form 3160-3
(March 2012)

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

OCD Artesia

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HIGH CAVEKARST

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM 0556542
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	6. If Indian, Allotee or Tribe Name N/A
2. Name of Operator NADEL AND GUSSMAN PERMIAN, L.L.C.	7. If Unit or CA Agreement, Name and No. N/A
3a. Address 601 NORTH MARIENFELD, SUITE 508 MIDLAND, TX 79701	8. Lease Name and Well No. <314054> CHICKEN FRY FEDERAL COM #1H
3b. Phone No. *(include area code)* (432) 682-4429	9. API Well No. 30-015-42882
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface 475' FNL, 200' FEL At proposed prod. zone 330 FSL, 330' FEL	10. Field and Pool, or Exploratory <96712> PIERCE CROSSING; WOLFCAMP
14. Distance in miles and direction from nearest town or post office* Non-Standard Location APPROX. 1 MILE SOUTH OF MALAGA, NM	11. Sec., T. R. M. or Blk.and Survey or Area SEC. 22, T-24-S, R28-E
	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) 200 FT	16. No. of acres in lease 200	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1500 FT AMINOIL FEDERAL #1	19. Proposed Depth 14,935 MD, 10,575 TVD	20. BLM/BIA Bond No. on file NM 2812
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2999' GL	22. Approximate date work will start* 01/15/2015	23. Estimated duration 45 DAYS

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
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 BLM.

25. Signature	Name *(Printed/Typed)* JASON GOSS	Date 08/21/2014
Title DRILLING ENGINEER		
Approved by *(Signature)* Steve Caffey	Name *(Printed/Typed)*	Date DEC 19 2014
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

Accepted for record
NMOCD 1/6/2015

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 30 2014

Carlsbad Controlled Water Basin

RECEIVED

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

OPERATOR CERTIFICATION

I 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 that presently 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 herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or 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 false statements. Executed the 21st day of August 2014.

Name: Jason Goss
Position: Drilling Engineer
Address: 601 N. Marienfeld Suite 508
Telephone: 432-682-4429
Email: jgoss@naguss.com

Signed: _____

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
30-015-42882	96712	Pierce Crossing; Wolfcamp

Property Code	Property Name	Well Number
314054	CHICKEN FRY FEDERAL COM	1H

OGRID No.	Operator Name	Elevation
155615	NADEL & GUSSMAN PERMIAN, LLC	2999'

Surface Location

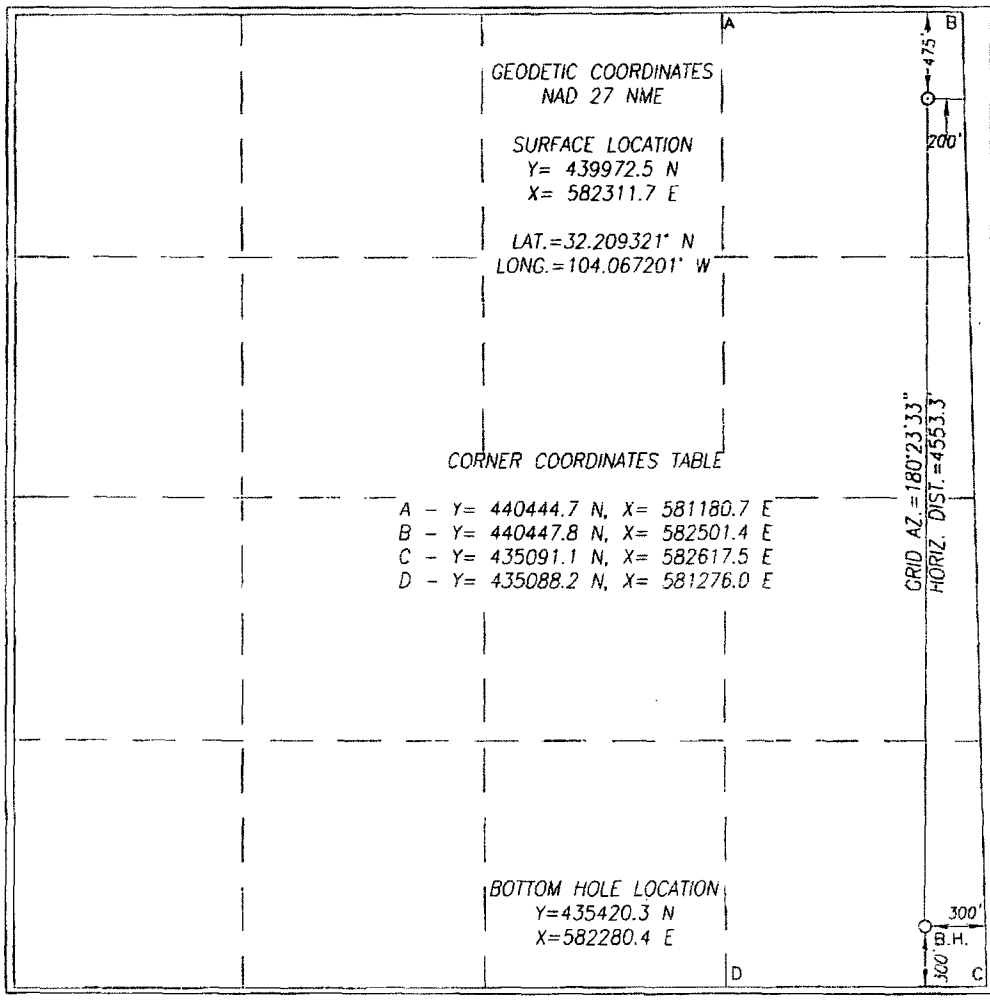
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	22	24-S	28-E		475	NORTH	200	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	22	24-S	28-E		330	SOUTH	330	EAST	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



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.

8/19/14

Signature Date

Jason Goss

Printed Name

jgoss@nagguss.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.

JULY 25, 2014

Date of Survey

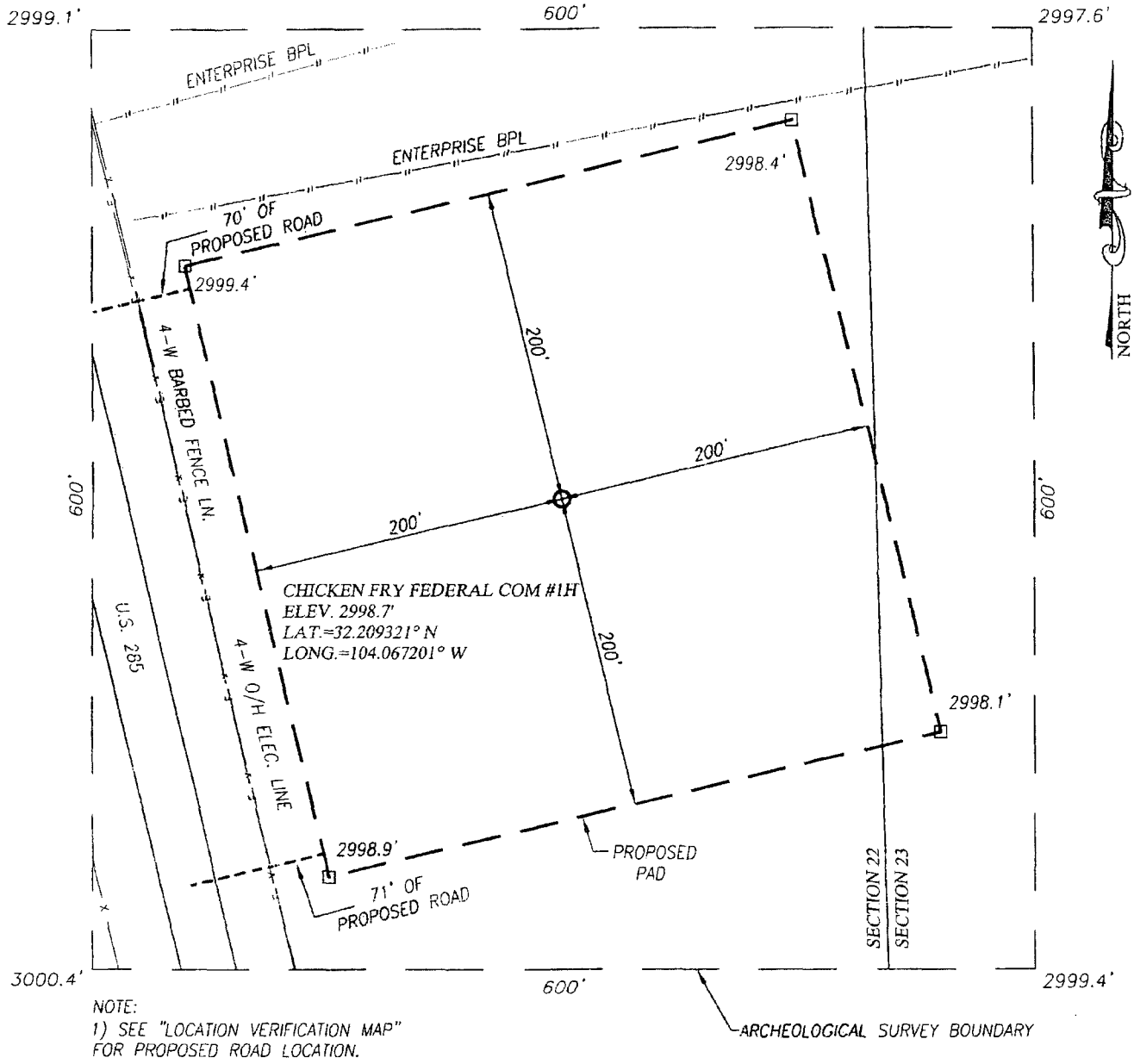
Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 08/05/2014

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

LSL JWSC W.O.: 14.11.0759



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

100 0 100 200 Feet

Scale: 1"=100'

DIRECTIONS TO CHICKEN FRY FEDERAL COM #1H

FROM THE INTERSECTION OF U.S. 285 AND C.R. 720 (DUARTE) IN MALAGA, GO SOUTH ON U.S. 285 APPROX 1.1 MILES TO PROPOSED ROAD SURVEY TURN LEFT AND GO EAST 88' TO NW. PAD CORNER.

NADEL & GUSSMAN PERMIAN, LLC

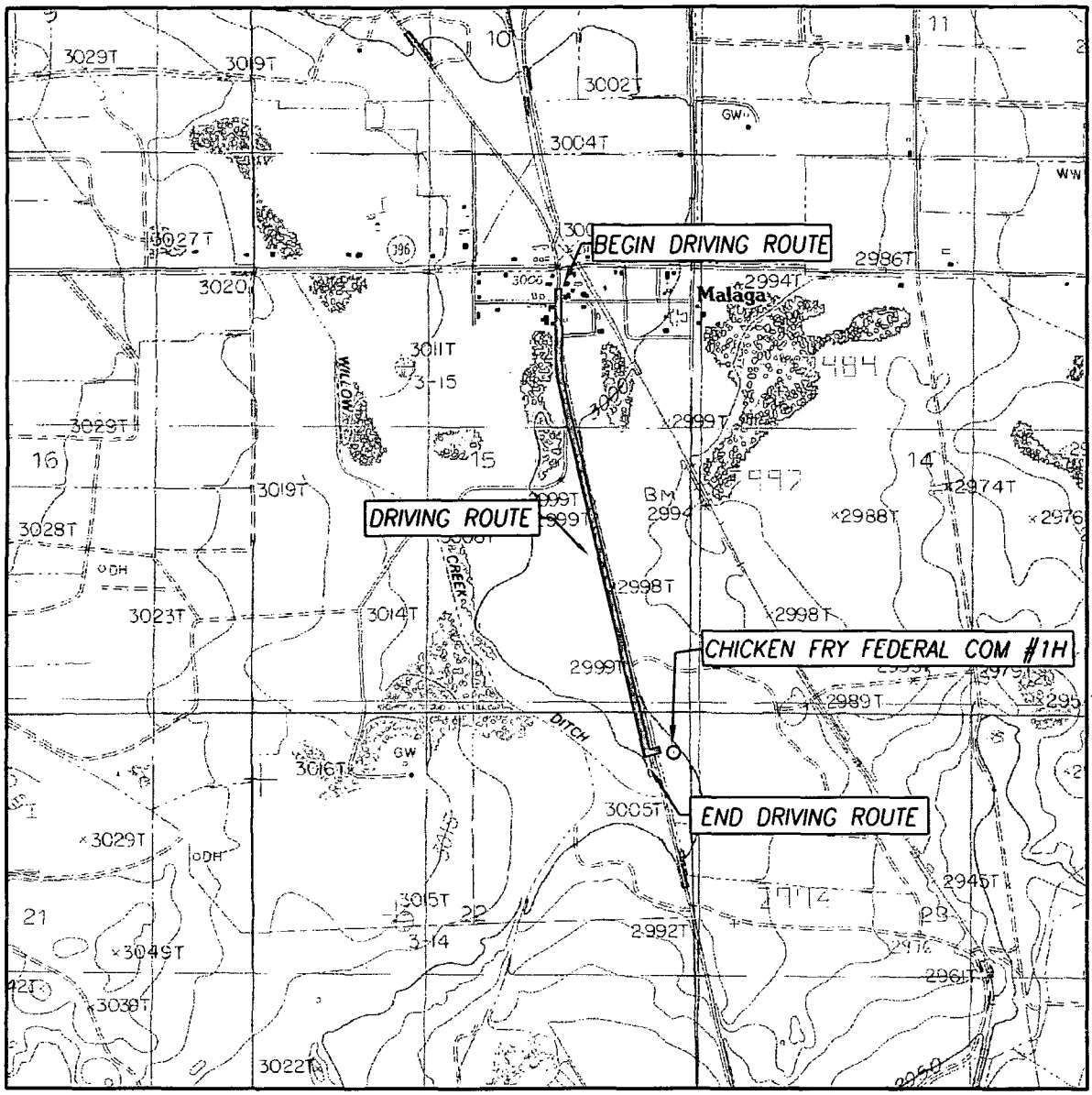
CHICKEN FRY FEDERAL COM #1H WELL
LOCATED 475 FEET FROM THE NORTH LINE
AND 200 FEET FROM THE EAST LINE OF SECTION 22,
TOWNSHIP 24 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 7/25/14	CAD Date: 7/30/14	Drawn By: LSL
W.O. No.: 14110759	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
TBPLS# 10021000

© DRAFTING\Lorenzo\2014\NADEL AND GUSSMAN PERMIAN LLC\WELLS

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALAGA, N.M. – 10'

SEC. 22 TWP. 24-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 475' FNL & 200' FEL

ELEVATION 2999'

OPERATOR NADEL & GUSSMAN PERMIAN, LLC

LEASE CHICKEN FRY FEDERAL COM

U.S.G.S. TOPOGRAPHIC MAP
MALAGA, N.M.

DIRECTIONS TO CHICKEN FRY FEDERAL COM #1H

FROM THE INTERSECTION OF U.S. 285 AND C.R. 720 (DUARTE) IN MALAGA, GO SOUTH ON U.S. 285 APPROX 1.1 MILES TO PROPOSED ROAD SURVEY TURN LEFT AND GO EAST 70' TO NW. THE PAD CORNER.

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SINCE 1946
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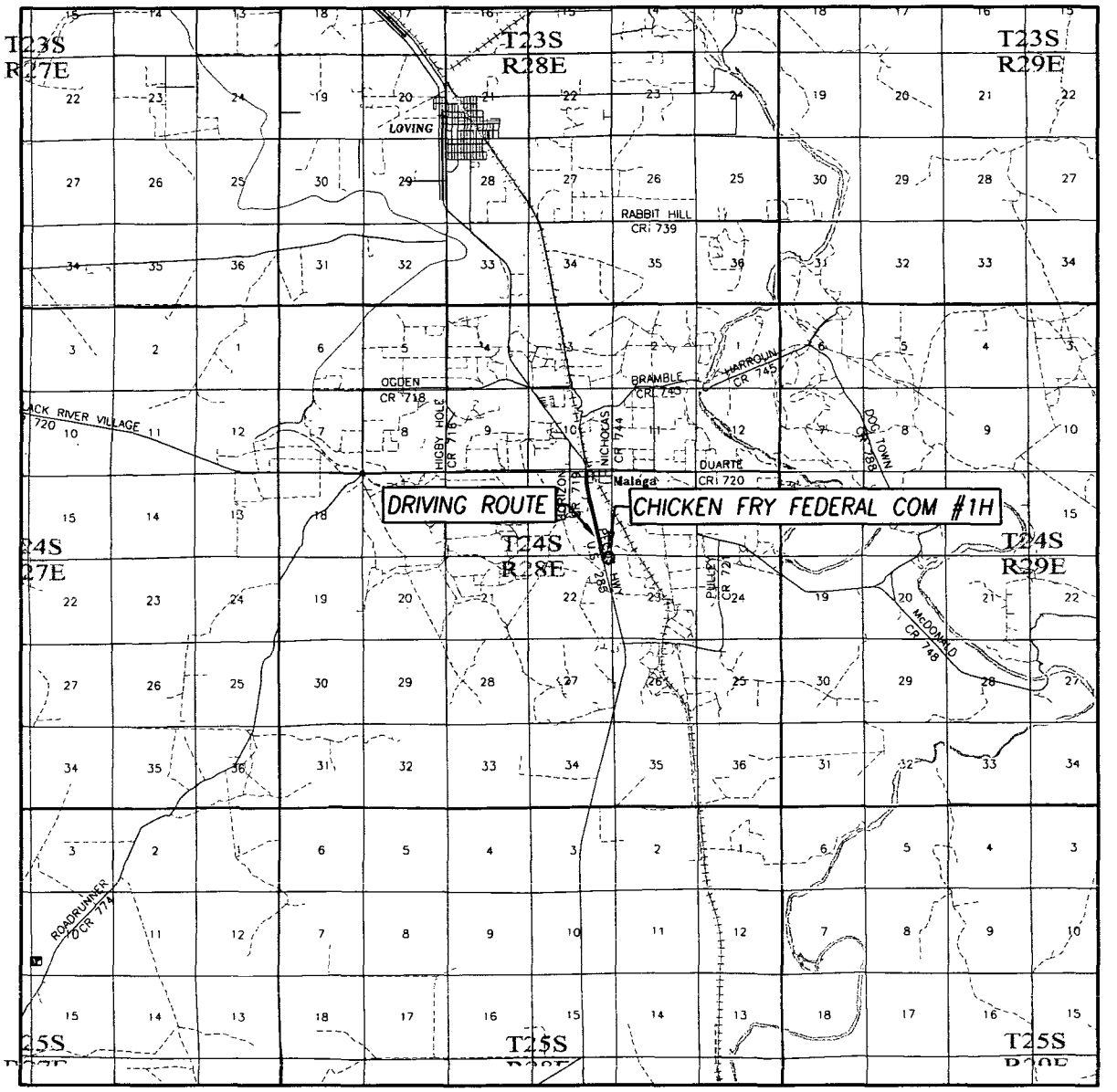
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

VICINITY MAP



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE LOCATION VERIFICATION MAP

SEC. 22 TWP. 24-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 475' FNL & 200' FEL

ELEVATION 2999'

OPERATOR NADEL & GUSSMAN PERMIAN, LLC

LEASE CHICKEN FRY FEDERAL COM

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
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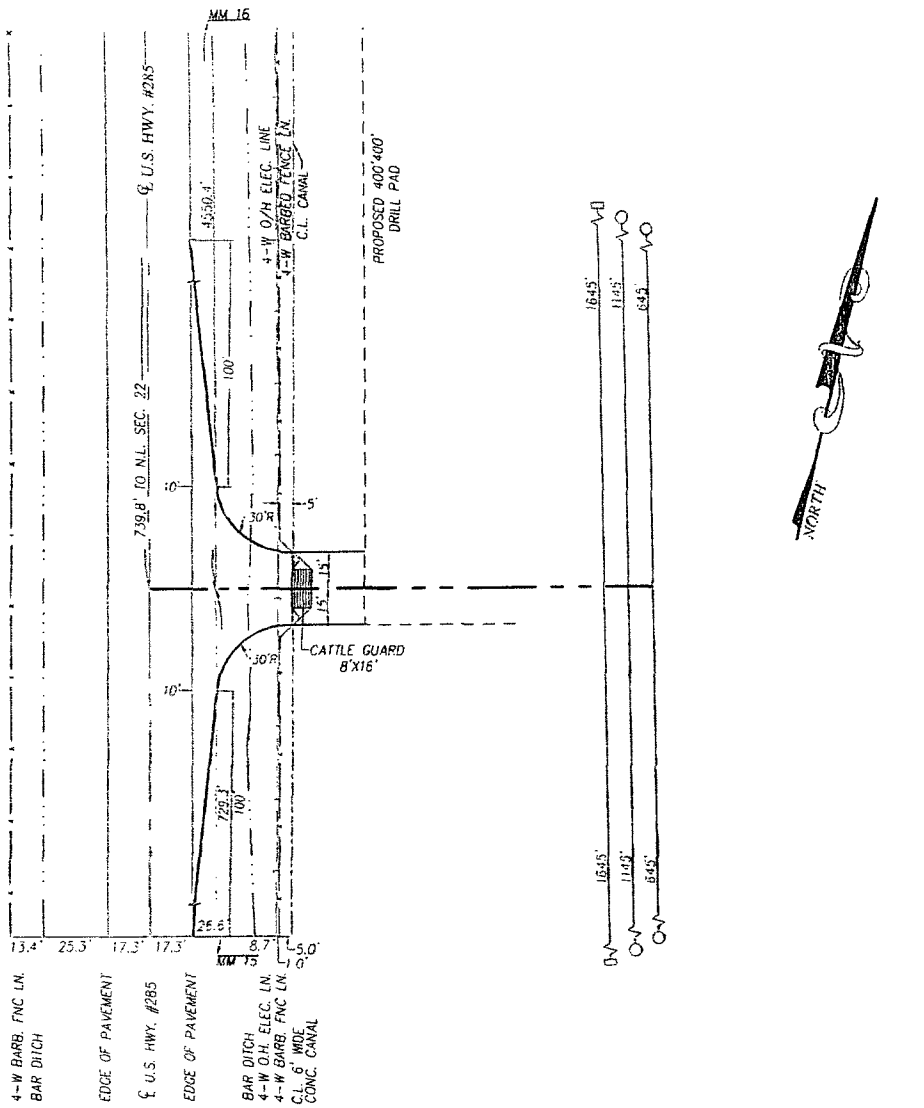
TBPLS# 10021000



LEGEND

NOTE: Warning Signs Will Be Placed 1500 Feet In Both Directions During Construction.

NOTE: □ = Shoulder Work Ahead
○ = Be Prepared To Stop
○ = Flagman Ahead

" SHOULDER WORK AHEAD and BE PREPARED TO STOP" signs shall remain in place from the time construction starts until it is completed.

"FLAGMAN AHEAD" signs will be in place during the hours construction men and equipment are working. A flagman will be on duty all the time that construction men and/or equipment are working. Signs will be 48"x48" in size. Color will be black on orange and will meet the reflective quality specified in the New Mexico State Highway & Transportation Standard Specifications.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 08/14/2014

NEW MEXICO 3239 PROFESSIONAL SURVEYOR

60 0 60 120 Feet

Scale: 1"=60'

NADEL & GUSSMAN PERMIAN, LLC

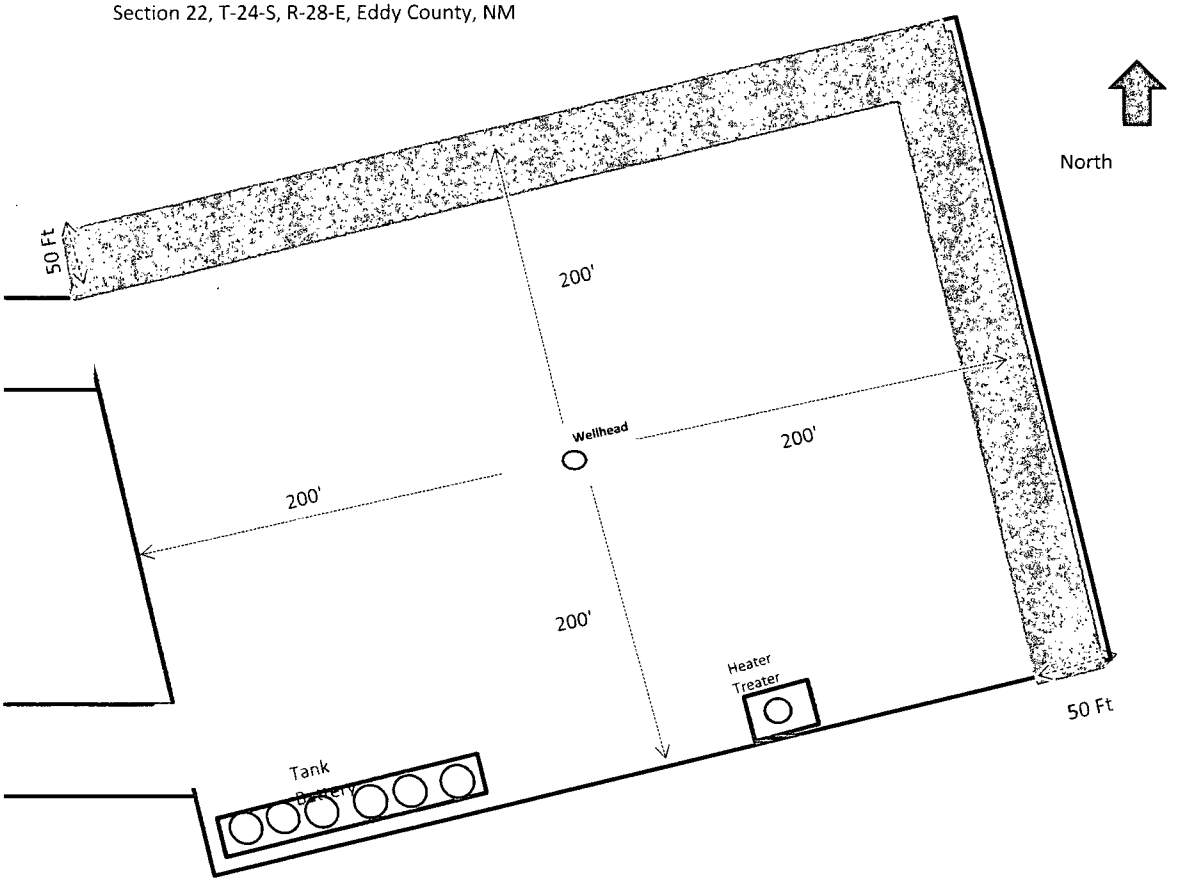
A PROPOSED ROAD TURN OUT
ON U.S. HIGHWAY #285 TO CHICKEN FRY FEDERAL COM #1H WELL PAD LOCATED IN SECTION 22, TOWNSHIP 24 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO

Survey Date: 7/25/14	CAD Date: 8/4/14		Drawn By: ACK
W.O. No.: 14110759	Rev: 8/14/14	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
TBPLS# 10021000

© Anjelicc\2014\Nadel & Gussman Permian, LLC\Road Turn_Out

LOCATION/BATTERY DIAGRAM
Chicken Fry Federal Com #1H
Section 22, T-24-S, R-28-E, Eddy County, NM



If well is found productive a tank battery will be constructed
Battery will be burmed and lined approx. 3-500 bbls oil tanks &
3-500 bbl water tanks
Gray area to be reclaimed and seeded to BLM Regulations

Push top soil to East side and stocked piled for later use

Will use generator for power

T24.0S-R28.0E

ADAMS EXPLORATION CO
ANN COM
1

15

AMINOIL USA INC
WILLOW LAKE U
3

ENRON OIL & GAS CO
WILLOW LAKE `15`
2

14

AMINOIL USA INC
WILLOW LAKE UNIT
4

POGO PRODUCING CO
LIGHTFOOT COM
1

ENRON OIL & GAS CO
WILLOW LAKE `15`
1

POGO PRODUCING CO
LIGHTFOOT COM
2

BURMAH OIL & GAS CO
WILLOW LAKE U FED #1
1

KAISER-FRANCIS OIL
WILLOW LAKE #2
2

NADEL AND GUSSMEN PERMIAN
CHICKEN FRY FEDERAL COM #1H

DEVON ENERGY PROD
GUITAR EARL
1

22

DINERO OPERATING CO
AMINOIL FEDERAL
DINERO OPERATING CO
AMINOIL FEDERAL #1
1

23

CHI OPERATING INC
GUMBY
1

NADEL &GUSSMAN
AMINOIL FEDERAL
3

DINERO OPERATING CO
AMINOIL STATE
1

POGO PRODUCING CO
STATE V 492
2

POGO PRODUCING CO
STATE `V`492`
1

POGO PRODUCING CO
IMC #1
1

EOG RESOURCES INC
ROCK SPUR 26 FEE COM
1

HANSON EA-DENISON SD
TODHUNTER
1

WILLS NEIL
STATE
1

BUNNEL ROBERT E
REED-STATE
COLLINS & WARE INC
MALAGA
1

27

26

MEWBOURNE OIL CO
RUSTLER BREAKS `26` FEE COM
1

MEWBOURNE OIL CO
RUSTLER BREAKS 26 W2MD FEE COM
1H

0 1,158
FEET

PETRA 8/15/2014 10:45:16 AM

R:\MLH PROSPECTS\NEW MEXICO\REGIONAL\MLH MASTER NM OVERLAY\MLH MASTER NM OVERLAY BACK-UP.OVL

DRILLING AND OPERATIONS PLAN
NADEL AND GUSSMAN PERMIAN, L.L.C.
CHICKEN FRY FEDERAL COM #1H

Surface: 475' FNL & 200' FEL, UL A
BHL: 330' FSL & 330' FEL, UL P
Sec 22, T-24-S, R-28-E
Eddy County, New Mexico

1. Geological Surface Formation: **Permian and Quaternary Alluvium.**
2. Horizontal Oil well. No pilot hole, total depth 14,935', depth to Fresh Water 200'. **Elevation 2999'**

3. **TOPS OF IMPORTANT GEOLOGICAL MARKERS:** TVD

Rustler	surface
Top Salt	1774'
BX (base salt)	2311'
Delaware Mountain Group	2510'
Bell Canyon	2633'
Cherry Canyon	3470'
Brushy Canyon	5036'
Bone Springs Ls	6270'
Avalon Shale	6597'
1st Bone Springs Sand	7226'
2nd Bone Springs Sand	8000'
3rd Bone Spring Sand	9170'
Wolfcamp	9450'
Wolfcamp Horizontal Target	**10,575'**

4. **Estimated Depth of Anticipated/Possible Water, Oil or Gas:**

Rustler/Castile	0-200'	Fresh Water
Bell Canyon	2633	Oil, gas and water
Brushy Canyon	5036	Oil, gas and water
Bone Springs	6270	Oil, gas and water
Wolfcamp	9450	Oil, gas and water

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water will be protected by setting 13 3/8" casing at 400' and circulating cement back to surface, all other intervals will be isolated by the 9 5/8 intermediate and 7" production casing.

5. **Proposed Casing Program**

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH	TOP CEMENT
Conductor	20"	94# H-40	8rd STC	40'	Surface**
17.5"	13 3/8" (new)	48# H-40	8rd STC	400'	Surface**
12.25"	9 5/8" (new)	36# J-55	8rd LTC	2,600'	Surface**
8.75"	7" (new)	26# P-110	8rd BTC	10,500'	Surface**
*6.125"	4 1/2" (new)	13.5# P-110	8rd LTC	10,000'-15,100'	liner top**

*start 6.125" hole at end of curve 10,500' md, 4.5" casing set with liner hanger.

** Casing will be kept liquid filled and void of air while running in hole

MINIMUM SAFETY FACTORS: **BURST 1.125** **COLLAPSE 1.125** **TENSION 1.8**

ALL CASING WILL BE NEW API APPROVED

CEMENT PROGRAM-ALL CEMENT BLENDS WILL BE TESTED TO BLM MINIMUM REQUIREMENTS.

A. **13 3/8"** **SURFACE** CEMENT TO SURFACE **100% EXCESS OVER CALCULATED**

450 SACKS CLASS "C"+2%CACL+.25# CELLO-FLAKE+.25% DEFOAMER, 14.8 PPG, 1.35 YIELD, 6.34 GAL/SK

See COA

B. **9 5/8"** **INTERMEDIATE** CEMENT TO SURFACE **75% EXCESS LEAD, 50% TAIL**

LEAD 600 SACKS CLASS "C" 35/65 +6% BENTONITE+5% SALT+.25% DEFOAMER 12.8 PPG, 1.9 YIELD, 11.2 GAL/SK

TAIL 200 SACKS CLASS "C" + .25% DEFOAMER, 14.8 PPG, 1.33 YIELD, 6.34 GAL/SK

C. **7"** **PRODUCTION** CEMENT TO SURFACE **50% EXCESS OVER CALCULATED.**

LEAD 800 SACKS CLASS C 50/50 +10% BENTONITE +.15% C-20 RETARDER +3# STAR SEAL +.3% C-12 FLUID LOSS+3% SALT+.25% DEFOAMER, 11.8 PPG, 2.37 YIELD, 13.52 GL/SK

TAIL 250 SACKS CLASS "H" +.5% FL-10+.2%C-20, 15.6 PPG, 1.2 YIELD, 5.5 GAL/SK

See COA

D. **4.5" PRODUCTION LINER** CEMENT TO LINER TOP **50% EXCESS OVER CALCULATED**

TAIL SLURRY: 750 SACKS PVL ACIDSOLID +30% CALCIUM CARBONATE, +5%PF174, +.7% PF606 + .2% PF153 +.4% PF813 + .4 PPS PF46, 13.0 PPG 1.87 YIELD 9.517 GALLONS/SACK MIX WATER

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT: (EXHIBIT #5)

A 2000# WP Annular will be installed after running the 13-3/8" casing. A 5,000# WP Double Ram BOP and 5,000 annular will be installed after running the 9-5/8" & 7" casing. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use, float sub will be available. 7" and 9-5/8" BOP will be tested to 5000# and the annular to 5000# with a third party testing company before drilling below each shoe. If operations last more than 30 days from 1st test, will test again as per BLM Onshore Oil and Gas order #2.

MUD PROGRAM:

Spud and drill 17 ½" surface hole with **fresh water (8.4 to 8.7 ppg)** to a depth of approx 400'. Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 12 ¼" hole from 400' to 2,600' with **Brine (10.0 ppg).** Control lost circulation with paper and LCM pills. Viscosity 28-36, no fluid loss control. Salt water gel sweeps.

Drill 8 ¾" production hole from 2,600' to 10,500' **cut brine (8.8 to 10.0 ppg).** Control lost circulation with paper and LCM pills. Clean hole with salt water sweeps as necessary. System properties: viscosity 28-32, fluid loss <30 ml/30min.

Drill 6 1/8" horizontal production hole from 10,500'-15,100' with **Brine water (10.5-12.8 ppg)**, control filtrate and increase viscosity with Xanthan gum and Poly Anionic Cellulose. System Properties funnel viscosity 35-50 seconds, fluid loss <10 ml/30min, chlorides 150k.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

Mud monitoring system: Mud will be maintained and checked daily for mud weight, viscosity, API water loss, pH, etc. Additional electronic monitoring will include a pit volume totalizer to monitor mud volume in active system, pump rate, and mud return flow percentage. H2S monitors and alarms will be located on rig floor, shale shakers, and mud tanks (see rig plat). Gas chromatograph with monitor hydrocarbon gas content of mud from 2,600' to TD. Third party corrosion company will utilize H2S/oxygen scavengers to monitor for corrosion and limit damage to tubulars.

Auxiliary Equipment

A. A Kelly cock will be in the drill string at all times.

B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times

C. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 4 ½" liner is run and set and rigging down operations have begun.

TESTING, LOGGING & CORING PROGRAM: - See COA

a. Testing: No DST's will be conducted.

b. Cased hole Gamma and Cement bond log
c. Mud logging will take place from 2,600ft to TD 10ft samples
d. Gyro survey will be run at KOP of 10,086'
e. MWD (directional surveys) and LWD (gamma) surveys will be taken from KOP (10,086') to TD 14,935ft

POTENTIAL HAZARDS:

No significant hazards are expected. Slightly above normal pressure gradient expected. Normal temperature gradient is expected, **estimated pressure gradient of .55 psi/ft. 5816 psi at 10,575 ft.** Expected temperature at 10,575 TVD is **160 deg F** based on data from Kyle 34 Federal #1. No H_2S is expected, but the operator will utilize a 3rd party H_2S monitoring package from 400' to TD. No losses or H2s occurred in the Kyle Federal #1 or #2H. If H2S is encountered the operator will comply with the provisions of onshore oil and gas order no 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

ANTICIPATED STARTING DATE & DURATION:

Nadel & Gussman Permian, LLC anticipates drilling operations to begin around January 15, 2015 and completed in approximately 45 days. An additional 15 days will be needed for completion activities. Road and location construction will begin after the BLM has approved the APD.

Jason Goss, Drilling Engineer Date
Nadel & Gussman Permian, LLC

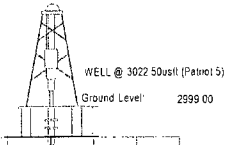
Nadel and Gussman Permian, LLC

Project: Eddy County, New Mexico (NAD27)
Site: Chicken Fry Federal Com
Well: 1H
Wellbore: Wellbore #1 Job #1411544
Design: Plan #1 08-19-14
Rig: Patriot 5

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.14°
Magnetic North: 7.28°

Magnetic Field
Strength: 48239.4snT
Dip Angle: 60.01°
Date: 08/18/2014
Model: IGRF2010_14



WELL DETAILS

Ground Level: 2999.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	439972.50	582311.70	32° 12' 33.55701 N	104° 4' 1.92440 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	10086.67	0.00	0.00	10086.67	0.00	0.00	0.00	0.00	0.00		KOP: Start Build 12.00°/100'
3	10711.67	75.00	198.70	10547.87	-335.21	-113.46	12.00	198.70	336.59		Start Build-Turn 12.00°/100'
4	10918.09	90.00	178.76	10575.00	-535.95	-143.65	12.00	-54.50	537.70		LP: 90° Inc at 178.76° Azm
5	14935.21	90.00	178.76	10575.00	-4552.13	-56.41	0.00	0.00	4552.48	BHL Chicken Fry Fed Com 1H	TD at 14935.21

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL Chicken Fry Fed Com 1H	10575.00	-4552.13	-56.41	435420.37	582255.29	32° 11' 48.50912 N	104° 4' 2.71209 W	Point

CASING DETAILS

No casing data is available

LEGEND

Plan #1 08-19-14

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° 12' 33.5570 I N
Longitude: 104° 4' 1.92440 W

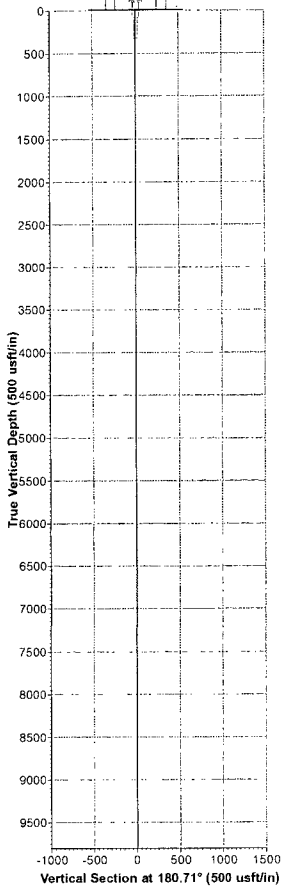
Grid East: 582311.70
Grid North: 439972.50
Scale Factor: 1.000

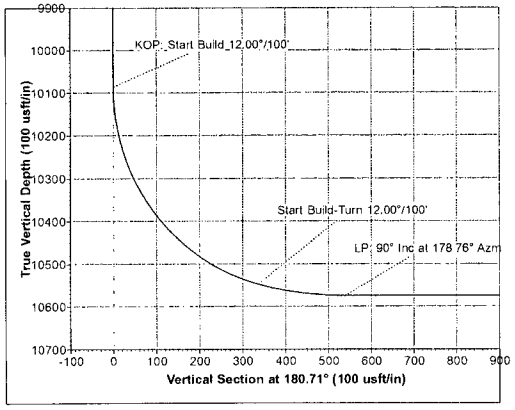
Geomagnetic Model: IGRF2010_14
Sample Date: 18-Aug-14
Magnetic Declination: 7.42°
Dip Angle from Horizontal: 60.01°
Magnetic Field Strength: 48239

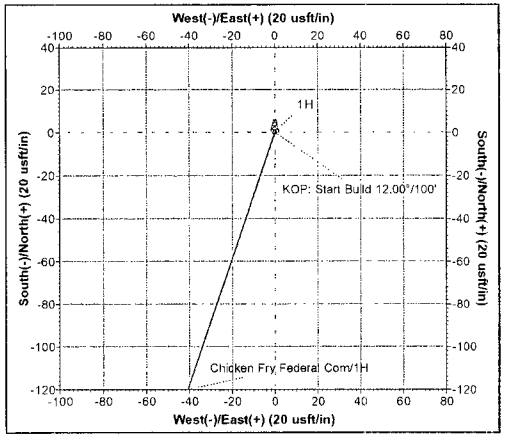
To convert a Magnetic Direction to a Grid Direction, Add 7.28°
To convert a Magnetic Direction to a True Direction, Add 7.42° East
To convert a True Direction to a Grid Direction, Subtract 0.14°

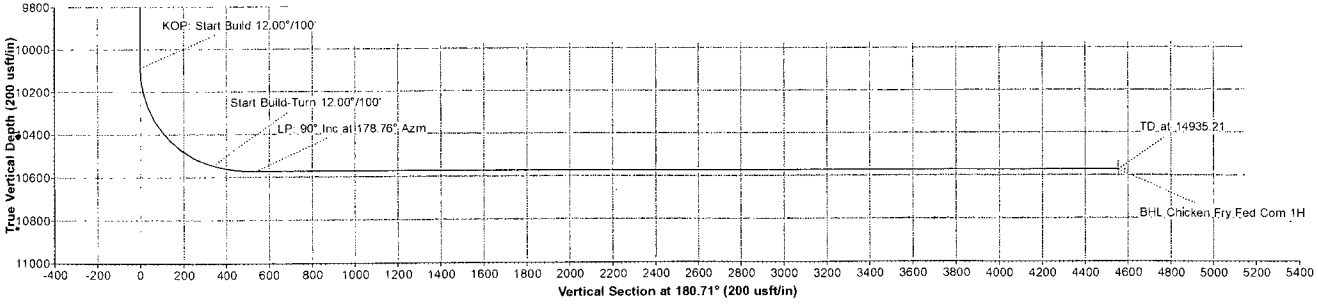
FORMATION TOP DETAILS

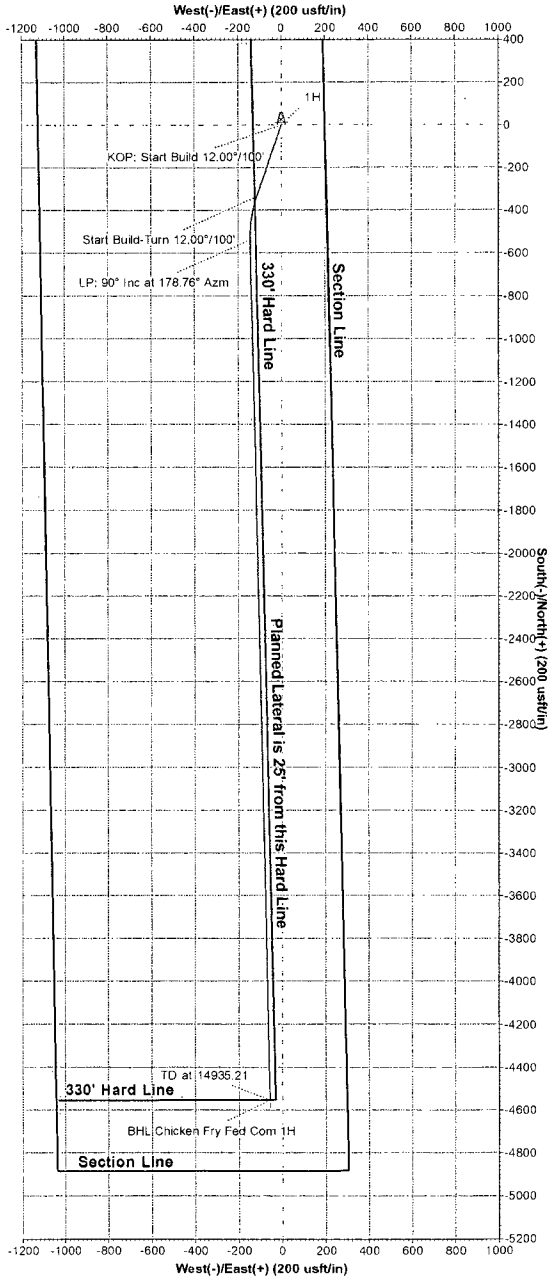
No formation data is available











Created By: Justin Andoe Date: 9:06, August 19 2014

Nadel and Gussman Permian, LLC

Eddy County, New Mexico (NAD27)
Chicken Fry Federal Com
1H

Wellbore #1 Job #1411544

Plan: Plan #1 08-19-14

Standard Planning Report

19 August, 2014

PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services

Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	Compass 5000 GCR DB	**Local Co-ordinate Reference:**	Well 1H
Company:	Nadel and Gussman Permian, LLC	**TVD Reference:**	WELL @ 3022.50usft (Patriot 5)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	WELL @ 3022.50usft (Patriot 5)
Site:	Chicken Fry Federal Com	**North Reference:**	Grid
Well:	1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1 Job #1411544		
Design:	Plan #1 08-19-14		

Project Eddy County, New Mexico (NAD27)

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 Chicken Fry Federal Com

Site Position:		**Northing:**	439,972.50 usft	**Latitude:**	32° 12' 33.55702 N
From:	Map	**Easting:**	582,311.70 usft	**Longitude:**	104° 4' 1.92440 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.14 °

Well 1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	439,972.50 usft	**Latitude:**	32° 12' 33.55702 N
	+E/-W	0.00 usft	**Easting:**	582,311.70 usft	**Longitude:**	104° 4' 1.92440 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	2,999.00 usft

Wellbore Wellbore #1 Job #1411544

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	08/18/14	7.42	60.01	48,239

Design Plan #1 08-19-14

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.71

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	
10,086.67	0.00	0.00	10,086.67	0.00	0.00	0.00	0.00	0.00	0.00	
10,711.67	75.00	198.70	10,547.87	-335.21	-113.46	12.00	12.00	0.00	198.70	
10,918.09	90.00	178.76	10,575.00	-535.96	-143.65	12.00	7.27	-9.66	-54.50	
14,935.21	90.00	178.76	10,575.00	-4,552.13	-56.42	0.00	0.00	0.00	0.00	BHL Chicken Fry Fed

Database:	Compass 5000 GCR DB	**Local Co-ordinate Reference:**	Well 1H
Company:	Nadel and Gussman Permian, LLC	**TVD Reference:**	WELL @ 3022.50usft (Patriot 5)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	WELL @ 3022.50usft (Patriot 5)
Site:	Chicken Fry Federal Com	**North Reference:**	Grid
Well:	1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1 Job #1411544		
Design:	Plan #1 08-19-14		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	Compass 5000 GCR DB	**Local Co-ordinate Reference:**	Well 1H
Company:	Nadel and Gussman Permian, LLC	**TVD Reference:**	WELL @ 3022.50usft (Patriot 5)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	WELL @ 3022.50usft (Patriot 5)
Site:	Chicken Fry Federal Com	**North Reference:**	Grid
Well:	1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1 Job #1411544		
Design:	Plan #1 08-19-14		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,086.67	0.00	0.00	10,086.67	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Start Build 12.00°/100'									
10,100.00	1.60	198.70	10,100.00	-0.18	-0.06	0.18	12.00	12.00	0.00
10,125.00	4.60	198.70	10,124.96	-1.46	-0.49	1.46	12.00	12.00	0.00
10,150.00	7.60	198.70	10,149.81	-3.97	-1.34	3.99	12.00	12.00	0.00
10,175.00	10.60	198.70	10,174.50	-7.72	-2.61	7.75	12.00	12.00	0.00

Database:	Compass 5000 GCR DB	**Local Co-ordinate Reference:**	Well 1H
Company:	Nadel and Gussman Permian, LLC	**TVD Reference:**	WELL @ 3022.50usft (Patriot 5)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	WELL @ 3022.50usft (Patriot 5)
Site:	Chicken Fry Federal Com	**North Reference:**	Grid
Well:	1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1 Job #1411544		
Design:	Plan #1 08-19-14		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.00	13.60	198.70	10,198.94	-12.68	-4.29	12.73	12.00	12.00	0.00
10,225.00	16.60	198.70	10,223.07	-18.85	-6.38	18.93	12.00	12.00	0.00
10,250.00	19.60	198.70	10,246.83	-26.20	-8.87	26.31	12.00	12.00	0.00
10,275.00	22.60	198.70	10,270.15	-34.73	-11.75	34.87	12.00	12.00	0.00
10,300.00	25.60	198.70	10,292.97	-44.40	-15.03	44.58	12.00	12.00	0.00
10,325.00	28.60	198.70	10,315.23	-55.18	-18.68	55.41	12.00	12.00	0.00
10,350.00	31.60	198.70	10,336.85	-67.06	-22.70	67.33	12.00	12.00	0.00
10,375.00	34.60	198.70	10,357.79	-79.99	-27.07	80.32	12.00	12.00	0.00
10,400.00	37.60	198.70	10,377.99	-93.94	-31.80	94.32	12.00	12.00	0.00
10,425.00	40.60	198.70	10,397.39	-108.87	-36.85	109.32	12.00	12.00	0.00
10,450.00	43.60	198.70	10,415.94	-124.74	-42.22	125.26	12.00	12.00	0.00
10,475.00	46.60	198.70	10,433.58	-141.52	-47.90	142.10	12.00	12.00	0.00
10,500.00	49.60	198.70	10,450.28	-159.14	-53.87	159.79	12.00	12.00	0.00
10,525.00	52.60	198.70	10,465.97	-177.57	-60.10	178.30	12.00	12.00	0.00
10,550.00	55.60	198.70	10,480.63	-196.75	-66.59	197.56	12.00	12.00	0.00
10,575.00	58.60	198.70	10,494.21	-216.63	-73.32	217.52	12.00	12.00	0.00
10,600.00	61.60	198.70	10,506.67	-237.15	-80.27	238.13	12.00	12.00	0.00
10,625.00	64.60	198.70	10,517.98	-258.27	-87.42	259.33	12.00	12.00	0.00
10,650.00	67.60	198.70	10,528.11	-279.91	-94.75	281.07	12.00	12.00	0.00
10,675.00	70.60	198.70	10,537.02	-302.03	-102.23	303.28	12.00	12.00	0.00
10,700.00	73.60	198.70	10,544.71	-324.56	-109.86	325.90	12.00	12.00	0.00
10,711.67	75.00	198.70	10,547.87	-335.21	-113.46	336.59	12.00	12.00	0.00
Start Build-Turn 12.00°/100'									
10,725.00	75.93	197.36	10,551.21	-347.48	-117.45	348.90	12.00	7.00	-10.07
10,750.00	77.70	194.87	10,556.91	-370.86	-124.21	372.37	12.00	7.07	-9.96
10,775.00	79.49	192.41	10,561.86	-394.67	-129.98	396.25	12.00	7.16	-9.82
10,800.00	81.30	189.99	10,566.03	-418.85	-134.77	420.49	12.00	7.24	-9.71
10,825.00	83.13	187.58	10,569.41	-443.32	-138.55	445.01	12.00	7.30	-9.61
10,850.00	84.96	185.20	10,572.01	-468.03	-141.32	469.75	12.00	7.35	-9.54
10,875.00	86.81	182.83	10,573.80	-492.90	-143.06	494.64	12.00	7.38	-9.49
10,900.00	88.66	180.46	10,574.79	-517.87	-143.78	519.61	12.00	7.40	-9.45
10,918.09	90.00	178.76	10,575.00	-535.96	-143.65	537.70	12.00	7.41	-9.44
LP: 90° Inc at 178.76° Azm									
11,000.00	90.00	178.76	10,575.00	-617.85	-141.88	619.56	0.00	0.00	0.00
11,100.00	90.00	178.76	10,575.00	-717.83	-139.70	719.50	0.00	0.00	0.00
11,200.00	90.00	178.76	10,575.00	-817.80	-137.53	819.44	0.00	0.00	0.00
11,300.00	90.00	178.76	10,575.00	-917.78	-135.36	919.39	0.00	0.00	0.00
11,400.00	90.00	178.76	10,575.00	-1,017.76	-133.19	1,019.33	0.00	0.00	0.00
11,500.00	90.00	178.76	10,575.00	-1,117.73	-131.02	1,119.27	0.00	0.00	0.00
11,600.00	90.00	178.76	10,575.00	-1,217.71	-128.85	1,219.21	0.00	0.00	0.00
11,700.00	90.00	178.76	10,575.00	-1,317.68	-126.67	1,319.15	0.00	0.00	0.00
11,800.00	90.00	178.76	10,575.00	-1,417.66	-124.50	1,419.09	0.00	0.00	0.00
11,900.00	90.00	178.76	10,575.00	-1,517.64	-122.33	1,519.04	0.00	0.00	0.00
12,000.00	90.00	178.76	10,575.00	-1,617.61	-120.16	1,618.98	0.00	0.00	0.00
12,100.00	90.00	178.76	10,575.00	-1,717.59	-117.99	1,718.92	0.00	0.00	0.00
12,200.00	90.00	178.76	10,575.00	-1,817.57	-115.82	1,818.86	0.00	0.00	0.00
12,300.00	90.00	178.76	10,575.00	-1,917.54	-113.64	1,918.80	0.00	0.00	0.00
12,400.00	90.00	178.76	10,575.00	-2,017.52	-111.47	2,018.75	0.00	0.00	0.00
12,500.00	90.00	178.76	10,575.00	-2,117.50	-109.30	2,118.69	0.00	0.00	0.00
12,600.00	90.00	178.76	10,575.00	-2,217.47	-107.13	2,218.63	0.00	0.00	0.00
12,700.00	90.00	178.76	10,575.00	-2,317.45	-104.96	2,318.57	0.00	0.00	0.00
12,800.00	90.00	178.76	10,575.00	-2,417.43	-102.79	2,418.51	0.00	0.00	0.00
12,900.00	90.00	178.76	10,575.00	-2,517.40	-100.61	2,518.45	0.00	0.00	0.00
13,000.00	90.00	178.76	10,575.00	-2,617.38	-98.44	2,618.40	0.00	0.00	0.00

Database:	Compass 5000 GCR DB	**Local Co-ordinate Reference:**	Well 1H
Company:	Nadel and Gussman Permian, LLC	**TVD Reference:**	WELL @ 3022.50usft (Patriot 5)
Project:	Eddy County, New Mexico (NAD27)	**MD Reference:**	WELL @ 3022.50usft (Patriot 5)
Site:	Chicken Fry Federal Com	**North Reference:**	Grid
Well:	1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1 Job #1411544		
Design:	Plan #1 08-19-14		

Planned Survey

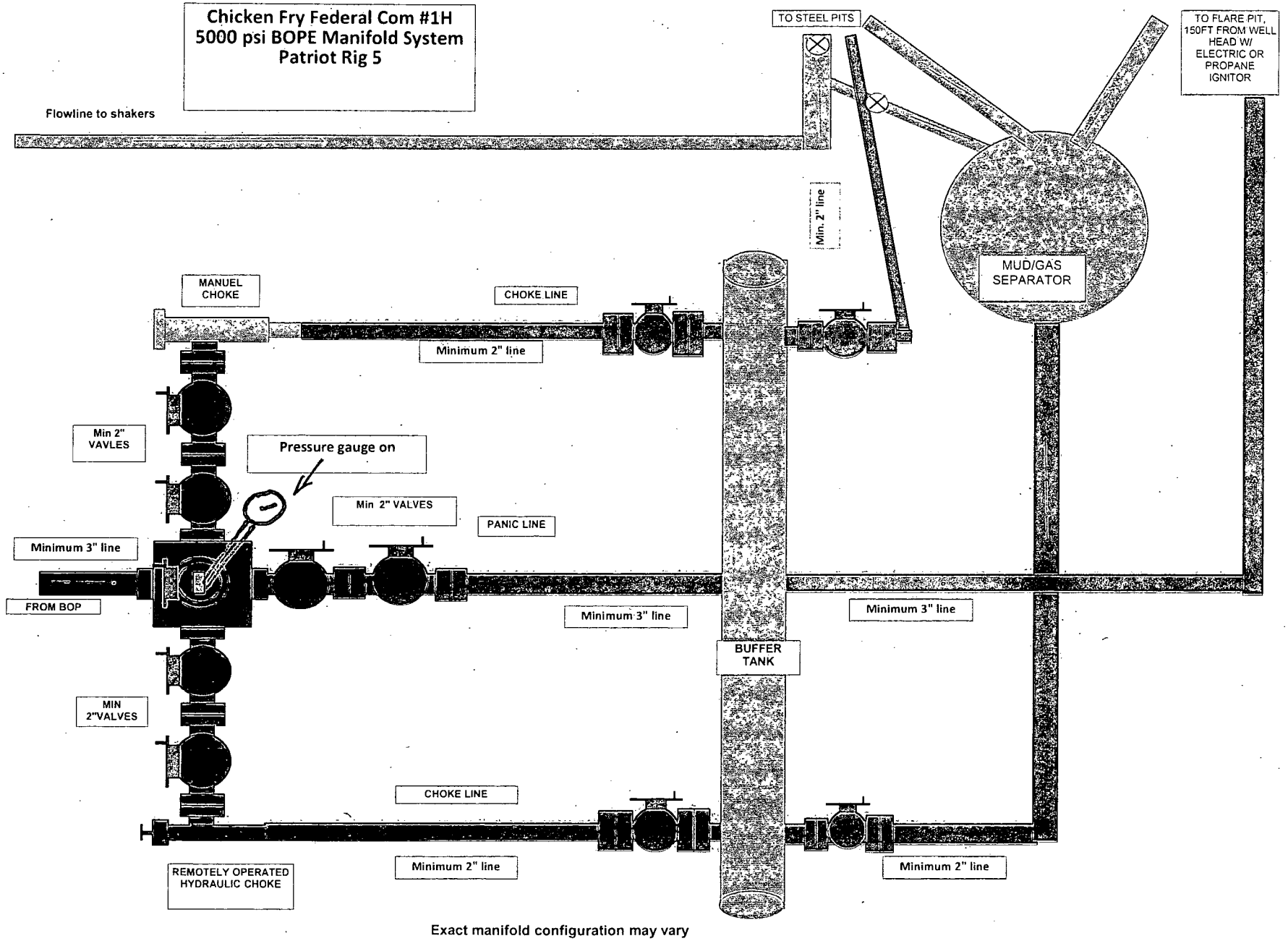
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,100.00	90.00	178.76	10,575.00	-2,717.35	-96.27	2,718.34	0.00	0.00	0.00
13,200.00	90.00	178.76	10,575.00	-2,817.33	-94.10	2,818.28	0.00	0.00	0.00
13,300.00	90.00	178.76	10,575.00	-2,917.31	-91.93	2,918.22	0.00	0.00	0.00
13,400.00	90.00	178.76	10,575.00	-3,017.28	-89.75	3,018.16	0.00	0.00	0.00
13,500.00	90.00	178.76	10,575.00	-3,117.26	-87.58	3,118.11	0.00	0.00	0.00
13,600.00	90.00	178.76	10,575.00	-3,217.24	-85.41	3,218.05	0.00	0.00	0.00
13,700.00	90.00	178.76	10,575.00	-3,317.21	-83.24	3,317.99	0.00	0.00	0.00
13,800.00	90.00	178.76	10,575.00	-3,417.19	-81.07	3,417.93	0.00	0.00	0.00
13,900.00	90.00	178.76	10,575.00	-3,517.17	-78.90	3,517.87	0.00	0.00	0.00
14,000.00	90.00	178.76	10,575.00	-3,617.14	-76.72	3,617.82	0.00	0.00	0.00
14,100.00	90.00	178.76	10,575.00	-3,717.12	-74.55	3,717.76	0.00	0.00	0.00
14,200.00	90.00	178.76	10,575.00	-3,817.09	-72.38	3,817.70	0.00	0.00	0.00
14,300.00	90.00	178.76	10,575.00	-3,917.07	-70.21	3,917.64	0.00	0.00	0.00
14,400.00	90.00	178.76	10,575.00	-4,017.05	-68.04	4,017.58	0.00	0.00	0.00
14,500.00	90.00	178.76	10,575.00	-4,117.02	-65.87	4,117.52	0.00	0.00	0.00
14,600.00	90.00	178.76	10,575.00	-4,217.00	-63.69	4,217.47	0.00	0.00	0.00
14,700.00	90.00	178.76	10,575.00	-4,316.98	-61.52	4,317.41	0.00	0.00	0.00
14,800.00	90.00	178.76	10,575.00	-4,416.95	-59.35	4,417.35	0.00	0.00	0.00
14,900.00	90.00	178.76	10,575.00	-4,516.93	-57.18	4,517.29	0.00	0.00	0.00
14,935.21	90.00	178.76	10,575.00	-4,552.13	-56.42	4,552.48	0.00	0.00	0.00
TD at 14935.21									

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
BHL Chicken Fry Fed Cc - plan hits target center - Point	0.00	0.00	10,575.00	-4,552.13	-56.42	435,420.37	582,255.29	32° 11' 48.50912 N	104° 4' 2.71209 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,086.67	10,086.67	0.00	0.00	KOP: Start Build 12.00°/100'
10,711.67	10,547.87	-335.21	-113.46	Start Build-Turn 12.00°/100'
10,918.09	10,575.00	-535.96	-143.65	LP: 90° Inc at 178.76° Azm
14,935.21	10,575.00	-4,552.13	-56.42	TD at 14935.21



Exact manifold configuration may vary

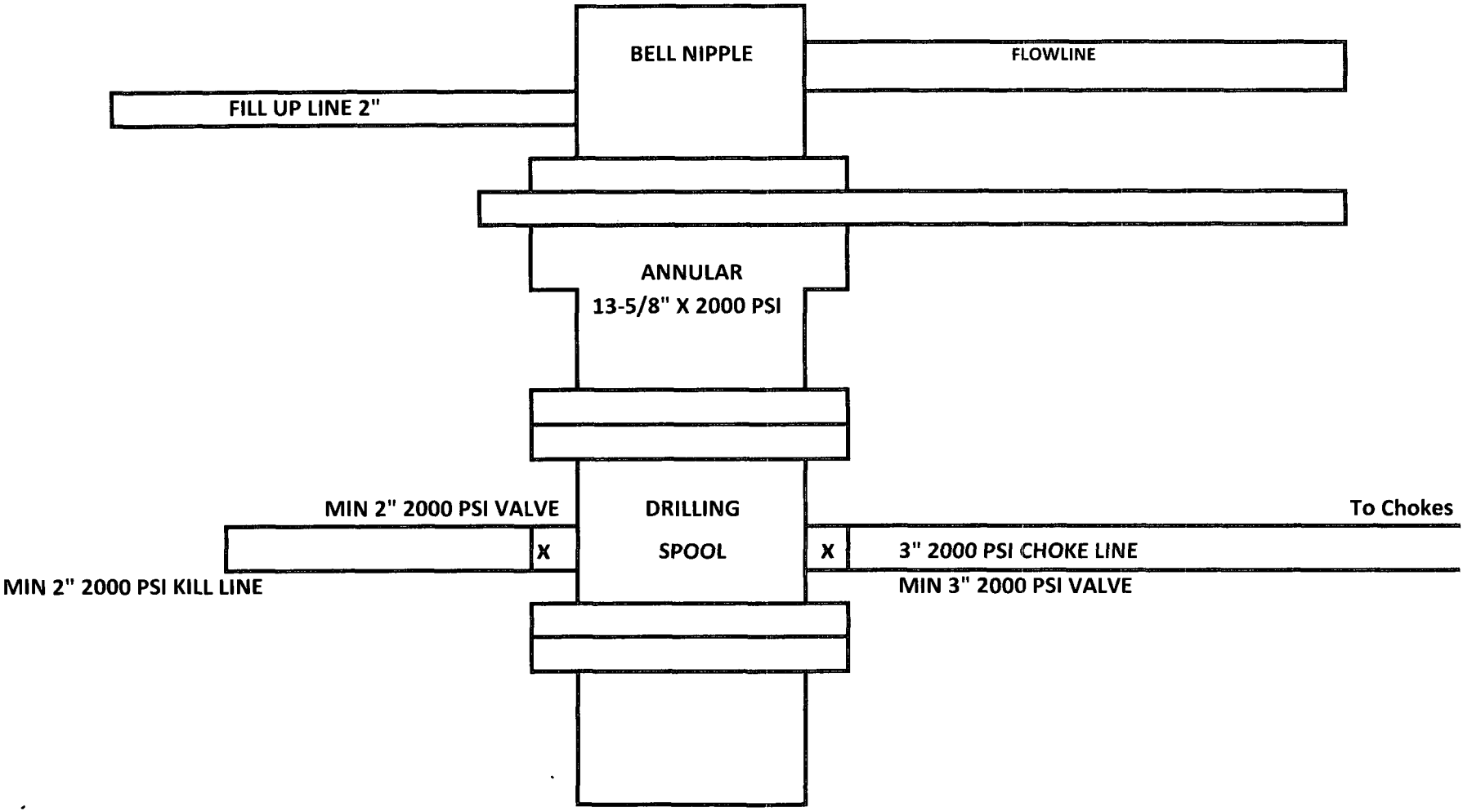
Well: Chicken Fry Federal Com #1H

475' FNL, 200' FEL, Sec. 22, T24S, R28E

Eddy County, New Mexico

Nadel and Gussman Permian, L.L.C.

BOP Scematic 12.25" hole



Well: Chicken Fry Federal Com #1H

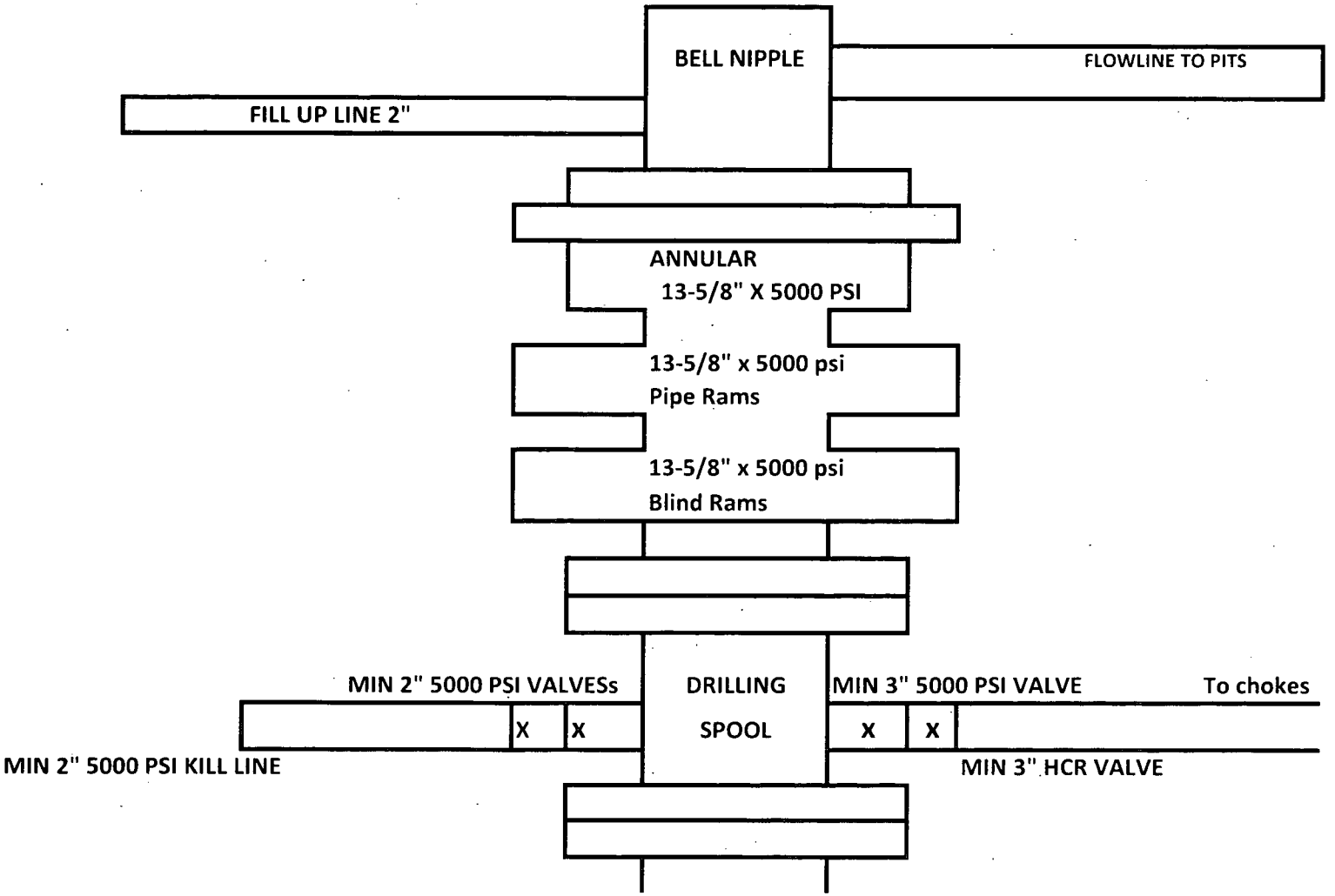
475' FNL, 200' FEL, Sec. 22, T24S, R28E

Eddy County, New Mexico

Nadel and Gussman Permian, L.L.C.

BOP Scematic 8.75" & 6-1/8" Hole

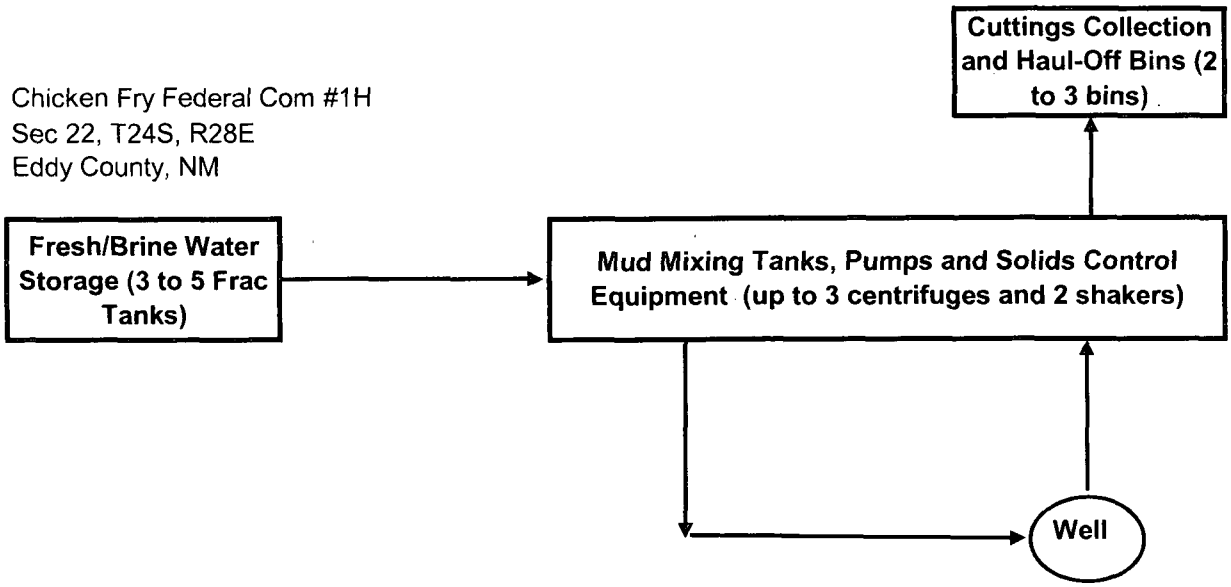
Patriot Drilling Rig 5: 5000psi BOP/BOPE



CLOSED-LOOP SYSTEM

Design Plan:

Chicken Fry Federal Com #1H
Sec 22, T24S, R28E
Eddy County, NM



Operating and Maintenance Plan:

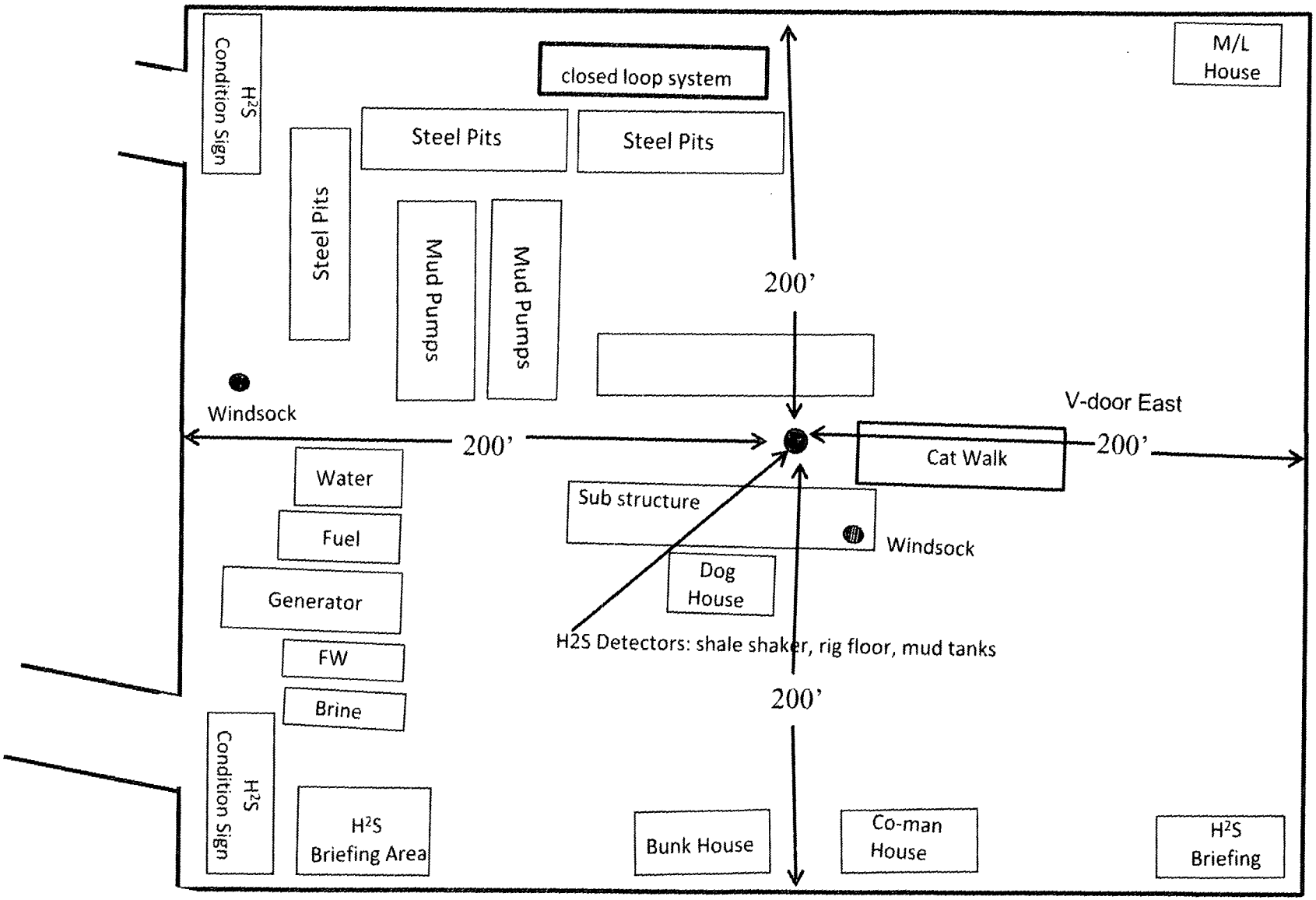
During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

Closed loop system will but up to the steel pits.
Secondary egress: West to U.S. Hwy 285

Prevailing wind out of SW



RIG 5

Patriot Drilling

North

terrain: Alfalfa Cultivation

Chicken Fry
Federal Com #1H
Sec. 22, T24S, R28E
Eddy County, NM

NADEL AND GUSSMAN PERMIAN, L.L.C.
601 N. MARIENFELD STE. 508
MIDLAND, TX 79701
(432) 682-4429 (Office)
(432) 682-4325 (Fax)

August 21, 2014

Mr. Ingram
Carlsbad BLM Field Office
620 E. Greene St.
Carlsbad, NM 88220

Re: Chicken Fry Federal Com #1H
SHL: 475' FNL & 200' FEL UL A
Sec. 22, T24S, R28E
Eddy County, NM
Rule 118 H2S Exposure

Dear Mr. Ingram,

Nadel and Gussman Permian, LLC have evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to drilling out the surface casing and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,

Jason Goss
Drilling Engineer

Hydrogen Sulfide Drilling Operations Plan
Chicken Fry Federal Com #1H
Sec 22, T24S, R28E
Eddy County N.M.

1. Company and contract personnel admitted on location should be trained by a qualified H_2S safety instructor to the recognize and handle following:
    A. Characteristics of H_2S gas
    B. Physical effects and hazards
    C. Proper use of safety equipment and life support systems
    D. Principle and operation of H_2S detectors, warning system and briefing knowledge
    E. Evacuation procedure, routes and first aid support
    F. Proper use of 30 minutes Pressure-on-Demand Air Pack

2. Supervisory personnel will be trained in the following areas:
    A. Effects of H2S on metal components.
    B. Corrective action and shut in procedures, blowout prevention, and well control procedure.
    C. Contents of Hydrogen Sulfide Drilling Operations Plan.

3. H_2S Detection and Alarm Systems (will be in place after setting surface casing and will not drill ahead without alarm system working)
    A. H_2S detectors and audio alarm system to be located at bell nipple, shale shaker and on derrick floor or doghouse installed and maintained by a third party safety company.
    B. Thirty minute self-contained work unit located in dog house and at briefing areas.

3. Windsock and/or Wind Streamers
    A. Windsock at mud pit area (high enough to be visible)
    B. Windsock on dog house (high enough to be visible)

4. Condition Flags and Signs
    A. H_2S warning signs on lease access road into location
    B. Flags displayed on sign at location entrance
        1. Green flag indicates "Normal Safe Conditions"
        2. Yellow Flag indicates "Potential Pressure and Danger"
        3. Red Flag indicates "Danger - H_2S Present in High Concentrations" *admit only emergency personnel*

5. Well Control Equipment
    A. See BOP, Choke, and Mud/Gas Separator exhibit.
    B. Blow out preventers will be equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit. Annular type blowout preventer will also be in place. Supplemental fuel will be provided for flaring noncombustible gas.

6. Communication
    A. While working under masks chalkboards will be used for communication
    B. Hand signals will be used where chalk board is inappropriate
    C. Two -way radios or cell phones used to communicate off location or minimally in Drilling Foreman's trailer or living quarters

7. Drillstem Testing (**not planned**)
    A. Exhausts watered
    B. Flare line equipped with electric Igniter/propane pilot light in case gas reaches surface

C. If location near dwelling closed DST will be performed

9. If H_2S encountered, mud system shall be addressed to maintain control of formation. A mud gas separator will be brought into service along with H_2S scavengers, if necessary. pH will be maintained at 10, to minimize h2S in the system. Hydrogen sulfide scavengers will also be used to minimize hazards while drilling the well.

10. Mud program: pH of 10 will be maintained with additives to minimize hazards of H2S. H2S scavengers will also be used to minimize effects on tubulars and well control equipment and control effects of H2S on metallurgy.

PUBLIC PROTECTION PLAN FOR EMERGENCY CONTACTS

NADEL AND GUSSMAN Permian, LLC (432) 682-4429

Company Personnel

Jason Goss	Drilling Engineer	432-682-4429
		512-784-2613
Kurt Hood	Foreman	575-513-1499
		575-746-1428

ARTESIA N.M.	
Ambulance	911
State Police	575-748-9718
City Police	575-746-5000
Sheriff's Office	575-746-9888
Fire Department	575-746-5050 or 575-746-5051
N.M.O.C.D	575-748-1283

CARLSBAD N.M.	
Ambulance	911
State Police	575-885-3138
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-885-3125 or 575-885-2111
Carlsbad BLM	575-234-5972

HOBBS N.M.	
Ambulance	911
State Police	575-392-5580
City Police	575-397-9265
Sheriff's Office	575-396-3611
Fire Department	575-397-9308
N.M.O.C.D	575-393-6161
Hobbs BLM	575-393-3612

Flight for Life (Lubbock Tx)	806-743-9911
Aerocare (Lubbock Tx)	806-747-8923
Med flight air Ambulance (Albuq NM)	505-842-4433
SB air Med Services (Albuq NM)	505-842-4949

Wild Well Control		281-784-4700	Emergency Number 24 Hour
Boots & Coots IWC		281-931-8884	Emergency Number 24 Hour
Cudd Pressure Control		713-849-2769	Emergency Number 24 Hour
BJ Services	(Artesia NM)	575-746-3569	
	(Hobbs NM)	575-392-5556	

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

SURFACE USE, EASEMENT, AND DAMAGE AGREEMENT

THIS SURFACE USE EASEMENT AND DAMAGE AGREEMENT, hereinafter referred to as "Agreement" is made effective November _____, 2014, by and between **RUSTLER HILLS II, LIMITED PARTNERSHIP,** herein represented by John Draper Brantley, Jr. and George Brantley, General Partners, whose mailing address is 706 W. Riverside Drive, Carlsbad, NM 88220, hereinafter referred to as "Owner" and **NADEL AND GUSSMAN PERMIAN, L. L. C.**, whose mailing address is 601 N. Marienfeld, Suite 508, Midland, Texas 79701, hereinafter referred to as "Operator". The entities above may be singularly referred to as "Party" or collectively as "Parties".

The purpose of this Agreement is to set forth pre-negotiated terms between the Parties regarding Operator's use of the surface estate and consideration to be paid to Owner for Easements and damages associated with the exploration, drilling, and development of oil and gas well(s) on, over and across said property, as described below.

The Owner's surface estate made subject to this Agreement shall include the following:

> **That certain tract of land situated in Section 22 and Section 23, Township 24 South, Range 28 East, Eddy County, New Mexico, being more particularly described in that certain Quitclaim Deed and Restriction on Future Development of Water Rights recorded on November 3, 2011, recorded in Book 872, at Page 283, of the County Records of Eddy County, New Mexico, hereinafter referred to as the "Lands."**

THAT Owner, for and in consideration of the payment made herewith, the receipt of which is hereby acknowledged by Owner, and covenants hereinafter stated, hereby grants to Operator the use of the Lands for roads, pipeline, electrical lines and surface use for drilling, completion and operating such roads, pipelines and electrical lines over, on top of, underground and across said Lands as are to be used by Operator as described below;

TO HAVE AND TO HOLD the same unto Operator, its successors and assigns, for a term as long as Operator, its successors or assigns continues oil and gas operations on the lands.

The Parties further agree as follows:

1. DRILL SITE PAD AND FACILITIES CONSTRUCTION:

Operator shall pay one-time fee of Twenty-Five Thousand ($25,000.00) dollars per Drill Site Pad not to exceed five (5) acres in size for drilling, development, operational, or production facilities used by Operator. In addition to leveling the Drill Site Pad area, Operator agrees to keep such Drill Site Pad and if constructed, Facilities Site, clean and orderly according to industry standards and free of trash and debris.

2. FRAC PIT AND FACILITIES CONSTRUCTION:

Operator shall pay one-time payment of Ten Thousand ($10,000.00) dollars per fracture stimulation holding pit not to exceed five (5) acres in size for construction and operation of fracture stimulation pit and associated facilities used by Operator. This one-time damages payment includes the right to lay temporary waterlines across the surface of the Lands. In addition to leveling the fracture stimulation pit area, Operator agrees to keep such fracture stimulation pit area, if constructed, clean and orderly according to industry standards and free of trash and debris. Owner may have use of the fracture stimulation pit for fresh water use only, in so far, and only in so far as Owner's use does not interfere with Operator's use. Operator will reclaim the fracture stimulation pit when Operator no longer has a need for said pit.

3. NEW OR ENHANCED ROAD CONSTRUCTION:

Operator shall have free use of existing roadways and be allowed to build a new (or enhance an existing) roadway(s) across Owner's property for two ($2.00 per linear foot) dollars. Operator shall discuss road location(s) with the Owner prior to construction. The road(s) will consist of eight inches (8") of caliche material packed down to approximately six inches (6") as a road base, with the width of the road not being more than thirty feet (30'). Operator shall be responsible to maintain all roads it uses on Owner's property in a state of good repair for the duration of this Agreement. Road use and construction shall be allowed for operations situated on such Lands and through such lands to adjoining property.

4. PIPELINES, FLOWLINES:

For each new gas gathering system pipeline Operator shall pay to Owner the sum of Eighty-Five ($85.00) dollars per rod for each such pipeline unless pipelines are located in the same ditch, in which case a single payment shall be made. There shall be no annual rental payment. Operator shall be responsible for backfilling, repacking and re-

contouring the surface so as not to interfere with Owner's operations. All pipelines shall be buried to the depth of at least five (5) feet below the surface.

5. POWER LINES:

All power lines constructed on the property shall be constructed to cause the least possible interference with Owner's existing operations. Operator shall pay Owner a one-time payment of Sixty-Five ($65.00) per rod for all overhead electrical right of way, unless such power line is installed in the same ditch and as the pipeline described herein, in which case there will be no duplication of payment.

6. FENCES, GATES, CATTLE GUARDS:

If any fences, gates or cattle guards have been modified or moved to accommodate Operator's construction, Operator will repair or replace (at its sole expense) said fences, gates or cattle guards in a manner that is reasonably consistent (in terms of structure and materials) with the Owner's existing improvements.

7. PAYMENT FOR CONSTRUCTION, DAMAGES AND REPAIR:

All payment(s) required by operator for building the Drill Site Pad, Facilities Site (if required), Pipelines, Electrical lines, the construction and or enhancement of a road(s), or replacement of fences, gates and or cattle guards shall be tendered by Operator within thirty (30) days from the completion of each activity.

8. LIMITATION OF OPERATOR ACCESS:

Operator, its agents or assigns shall be limited to the roads, drill pad(s) and Facilities Site(s) (if constructed). Operator shall be prohibited from entering on all other property located on Owner's Lands. Operator shall have no right to hunt and or fish on said lands.

9. INDEMNIFICATION:

Operator shall indemnify, defend and (hold Owner harmless from and against any and all liability, cost, expenses, losses, or damages resulting from or relating to operator's activities and maintenance of the well(s).

10. SUCCESSORS AND ASSIGNS:

The provisions hereof shall inure to the benefit of and are binding upon the parties hereto and their respective successors and assigns; but no change in the ownership of the Agreement or any interest therein or in the capacity or status of Owner, whether resulting from sale, inheritance or otherwise, shall impose any additional burdens on Operator nor shall any change in ownership or in the status or capacity of Owner impair the

effectiveness of payments to Owner unless the then record owner of the Agreement has been furnished, thirty (30) days before payment is due, with a certified copy of the recorded instrument or judgment evidencing such transfer, inheritance or sale evidence of such change in status or capacity of Owner. The furnishing of such evidence shall not affect the validity of payments theretofore made in advance.

11. PROPORTIONATE REDUCTION CLAUSE:

If at the time of the execution of this Agreement, or anytime thereafter, Owner owns a less interest in the land than the entire and undivided surface estate, any payments herein provided shall be paid to Owner only in the proportion which Owner's interest bears to the whole and undivided fee of the surface estate.

12. NOTICE TO THE OWNER:

Owner has received at least 30 day notice including:

a. Sufficient disclosure of the planned oil and gas operation enabling the owner to evaluate the effect of the operations on the property;
b. A copy of the Surface Owners Protection Act;
c. The name, address, telephone number, facsimile number, and electronic mail address of the operator and the operator's authorized representative; and
d. A proposed surface use and compensation agreement addressing:
    i. Placement, specifications, maintenance and design of the well pads, gathering pipelines, and roads to be constructed for oil and gas operations;
    ii. Terms of ingress and egress upon the surface of the land for oil and gas operations;
    iii. Construction, maintenance and placement of all pits and equipment used or planned for oil and gas operations;
    iv. Use and impoundment of water on the surface of the land;
    v. Removal and restoration of plant life;
    vi. Surface water drainage changes;
    vii. Actions to limit and effectively control precipitation runoff and erosion;
    viii. Control and management of noise, weeds, dust, traffic, trespass, litter and interference with the surface owner's use;
    ix. Interim and final reclamation;
    x. Actions to minimize surface damages to the property;
    xi. Operator indemnification for injury to persons caused by the operator;
    xii. An offer of compensation for damages to owner.

13. WATER:

Owner agrees to sell water to Operator from existing wells at the rate of One ($1.00) dollar per barrel (42 Gallons) of water. This payment includes the right to lay temporary waterlines across the surface of the lands owned by owner in Eddy County.

IN WITNESS WHEREOF, this instrument is effective on the date first above written.

RUSTLER HILLS II, LIMITED PARTNERSHIP

_____

George Brantley, General Partner

_____

John Draper Brantley, Jr., General Partner

ACKNOWLEDGMENT

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on the _____ day of _____, 2014, by George Brantley and John Draper Brantley, Jr., General Partners of Rustler Hills II, Limited Partnership

_____
Notary Public, State of _____
Printed Name:_____
Commission Expires:_____

Surface Use Plan
Nadel and Gussman Permian, LLC
Chicken Fry Federal Com
Section 22, T24S, R28E
475' FNL & 200' FEL
Eddy County, New Mexico

1. **Existing Roads:**
   Exhibit 1 contains the surveys and a map with proposed location and lease roads. The location is approximately 1 mile South of Malaga, NM. From the intersection of U.S. 285 and C.R. 720 in Malaga go South on U.S. 285 approximately 1.1 miles to proposed road. Turn left and go East 70' to NW pad corner. Nadel and Gussman Permian, LLC will improve or maintain existing roads in a condition the same as or better than before operations began. Nadel and Gussman Permian will repair pot holes, clear ditches, etc. All existing structures on the entire access route will be repaired or replaced if they are damaged or have deteriorated beyond practical use, BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

2. **Planned Access Roads:**
   70 feet of new road will be built access the Chicken Fry Federal Com #1H to the Southwest corner of the drilling pad, Drilling pad (approximately 200' x 200' location) will be constructed. See road plat. The maximum width of the driving surface will be 14 feet. The maximum width of surface disturbance needed to construct the road will be 25 feet. The road will be crowned and ditched with a 2 % slope from the tip of the crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

3. **Location of Existing Wells:**
   See 1 mile radius map, existing wells within 1 mile.

4. **Location of Tank Batteries, Electric Lines, Etc.:**
   a. In the event the well is found productive, the tank battery would be utilized and the necessary production equipment (tanks, separator) would be built on location see battery diagram.

   b. NGP will use generator initially; will run electric at a later date if the well is commercial.

5. **Location and Types of Water Supply:**
   This location will be drilled using a combination of water mud systems (outlined in the drilling program). Water will be obtained from commercial water stations in the area and hauled in by transport truck using the existing and proposed roads shown in the C-102.

Surface Use Plan
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Chicken Fry Federal Com
Section 22, T24S, R28E
475' FNL & 200' FEL
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6. **Sources of Construction Material:**
   Top soil will be stock piled on the East side of the location and will be used after drilling and completion operations to reduce location size and reclaim and reseeded to BLM specifications. All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM / State approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.

7. **Methods of Handling Waste Disposal:**
   a. All trash, junk, and other waste material will be contained in trash cages or trash bin to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill. The wellsite will be cleaned of all waste within 30 days of final completion of the well.

   b. A portable toilet will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

   c. Disposal of fluids to be transported by trucks to a nearby approved disposal.

   d. Closed loop solid control will be used. Drill solids waste will be collected in bins and hauled to permitted disposal facility in accordance with NM OCD rules.

8. **Ancillary Facilities:**
   Nadel and Gussman Permian will explore all options for obtaining water storage for stimulation and completion.

9. **Wellsite Layout**
   a. Rig Plat shows the relative location and dimensions of the well pad and major rig components.

   b. The land is under alfalfa cultivation.

   c. The pad area has been staked.

Surface Use Plan
Nadel and Gussman Permian, LLC
Chicken Fry Federal Com
Section 22, T24S, R28E
475' FNL & 200' FEL
Eddy County, New Mexico

10. **Plan for Restoration of the Surface:**
    a. After drilling and completion operations are completed, all equipment and other materials not needed for further operations will be removed. The location cleaned of all trash to leave the wellsite as pleasant in appearance as possible.

    b. If the proposed operation is nonproductive, all restoration and/or vegetation requirements of the BLM will be complied with, and will be accomplished as quickly as possible.

    c. Interim reclamation consists of minimizing the footprint of disturbance by reclaiming all portions of the well site not needed for production operations. Topsoil is respread over areas not needed for production operations and recontoured to the surrounding area and reseeded.

11. **Surface Ownership:**
    a. The surface owner of the well pad and road is Rustler Hill II, Limited Partnership, c/o John Draper Brantley, Jr., 706 W. Riverside Rd., Carlsbad, NM 88220. Phone Number: (575) 706-3169

12. **Other Information:**
    a. The mineral owner is The United States of America.

    b. An onsite was conducted on July 24, 2014 with Amanda Lynch of the BLM.

    c. The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

    d. Approximately .75 Miles North of Willow Lake

    e. An Archaeological Survey will be completed and a copy will be sent to the Carlsbad BLM office by Boone Archeological Services. There is no evidence of any significant archaeological, historical, or cultural sites in the area. Further, there are no occupied dwellings or windmills in the area.

    f. Should any incidental oil be recovered during testing of this well, this oil will be considered waste oil and not sellable due to contamination by drilling and/or completion fluids

Surface Use Plan
Nadel and Gussman Permian, LLC
Chicken Fry Federal Com
Section 22, T24S, R28E
475' FNL & 200' FEL
Eddy County, New Mexico

13. **Operator's Representative:**
The Nadel and Gussman Permian, LLC Company representatives responsible for ensuring compliance of the Surface Use plan are listed below.

Jason Goss, Drilling Engineer
Nadel and Gussman Permian, L.L.C.
601 N. Marienfeld, Suite 508
Midland, TX 79701
(432) 682-4429

Kurt Hood, Production Foreman

August 21, 2014

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Nadel & Gussman Permian LLC
LEASE NO.:	NM0556542
WELL NAME & NO.:	1H-Chicken Fry Federal Com
SURFACE HOLE FOOTAGE:	475'/N & 200'/E
BOTTOM HOLE FOOTAGE	330'/S & 330'/E
LOCATION:	Section 22, T. 24 S., R. 28 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. SPECIAL REQUIREMENT(S)

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.
The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

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

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

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

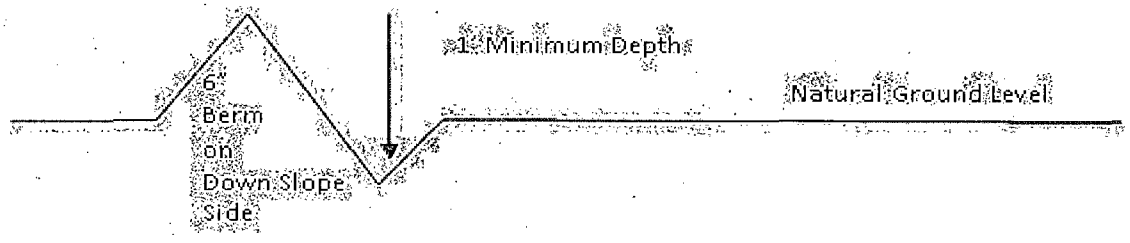
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattleguards
An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

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

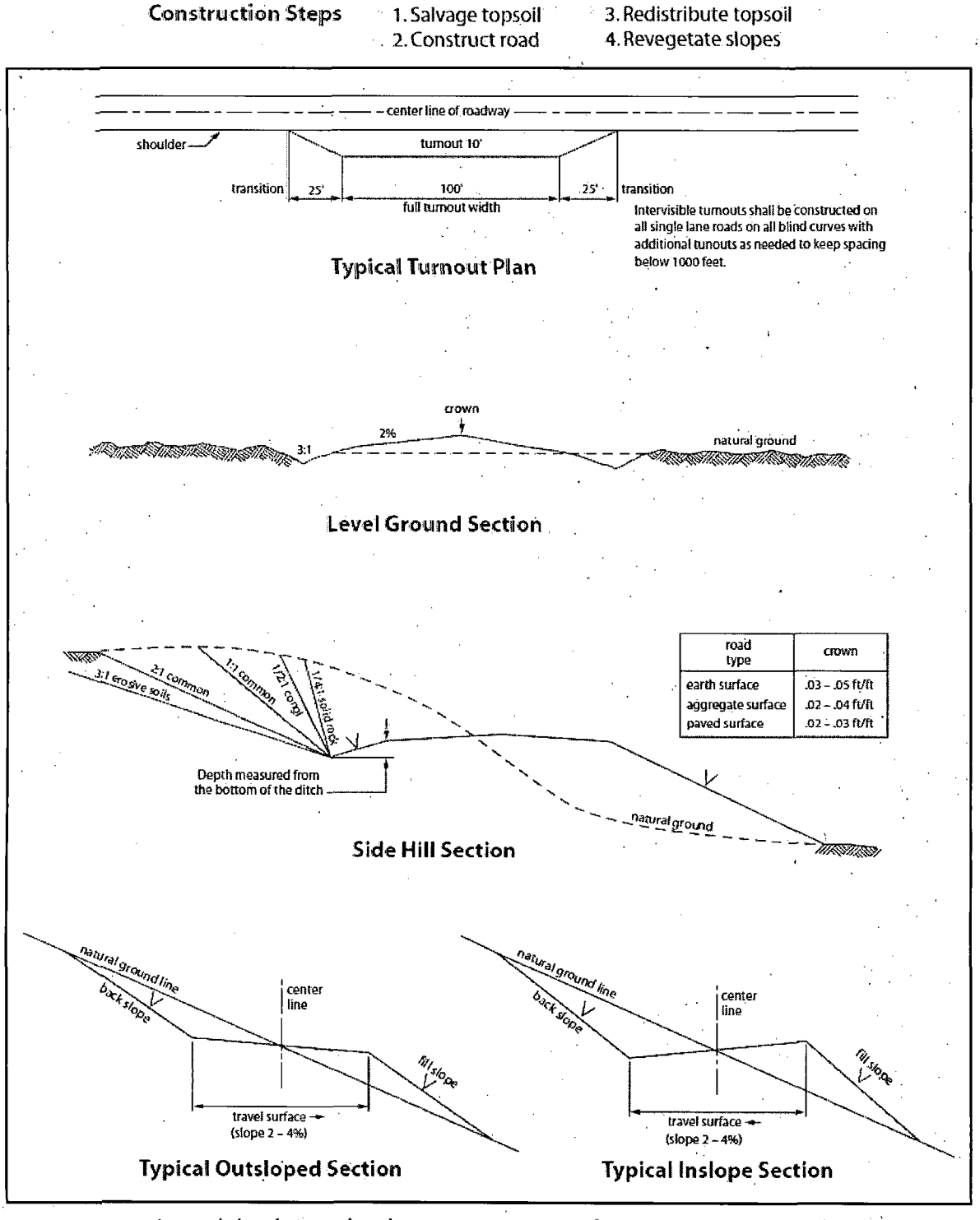


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. **Although 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.**

1. 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.**

2. 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.

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

A. CASING

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

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

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

High Cave Karst
Possible lost circulation in the Rustler and Delaware Group.
Possible water flows in the Castile and Salado Groups.

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

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet in a competent bed and if salt is encountered, set casing at least 25 feet above the salt and cemented to the surface. **Fresh water mud to be used to setting depth.**

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

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

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

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

2. The minimum required fill of cement behind the **9 5/8** inch intermediate casing which is to be set at **approximately 2600'** 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 or potash**

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

7 inch casing is to be kept liquid filled while running in hole to meet BLM minimum collapse safety factor

3. The minimum required fill of cement behind the **7** inch production casing is:

   ☒Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

   ☒ Cement should tie-back to top of liner which is at least 500 feet into previous casing string. Operator shall provide method of verification

5. 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.

B. 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. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

5. 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**. The operator also has the option of utilizing an independent tester to test without a plug (against the intermediate casing only, in this case) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within **500** feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

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.

EGF 111714

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

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

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

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

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

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

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

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

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

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

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

SEED MIXTURE 1 (LOAMY LOCATIONS)

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

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

Species to be planted in pounds of pure live seed* per acre **(note: if broadcasting seed, amounts are to be doubled):**

Species	**Pound/acre**
Plains Lovegrass (*Eragrostis intermedia*)	0.5
Sand Dropseed (*Sporobolus cryptandrus*)	1.0
Sideoats grama (*Bouteloua curtipendula*)	5.0

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