NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 03 2015
OCD Artesia
RECEIVED

15-769

Form 3160-3
(March 2012)

FORM APPROVED
OMB No 1004-0137
Expires October 31 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL: NMNM094842; BHL: NMNM111530

6. If Indian, Allotee or Tribe Name

1a. Type of Work: [X] DRILL [ ] REENTER

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

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.
Gadwall 18 Federal Com #4H

2. Name of Operator
Cimarex Energy Co.

9. API Well No.
30-015-43487

3a. Address
600 N. Marienfield St. Ste. 600 Midland Tx 79071

3b Phone No. *(include area code)*
432-571-7800

10. Field and Pool, or Exploratory
BONESPRING

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface: 130 FNL & 611 FWL
At proposed prod. Zone: 330 FSL & 660 FWL *Bone Spring*

11. Sec., T. R. M. or Blk. and Survey and Area
18, 25S, 27E

14. *Distance in miles and direction from nearest town or post office**
White City , NM is +/- 9.0 miles northwesterly

12. *County or Parish*: EDDY

13. *State*: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line if any): 130'

16. No of acres in lease
NMNM094842=159.02 acres
NMNM111530=478.86 acres

17. Spacing Unit dedicated to this well: 160.00

18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft: 199' to the Gadwall 18 Federal Com #3

19. Proposed Depth
Pilot Hole TD: N/A
~~12,000~~ 11870 MD 7,235 TVD

20. BLM/BIA Bond No. on File
NMB001188 COO1189

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3203 GR

22. Approximate date work will start*: 7/27/15

23. Estimated duration: 30 days

24. Attachments

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

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

25. Signature: Hope Knauls
Name *(Printed Typed)*: Hope Knauls
Date: 6/5/15

Title: Regulatory Compliance

Approved By *(Signature)*: Steve Caffey
Name (Printed/Typed)
Date: DEC 3 2015

Title: FIELD MANAGER
Office: CARLSBAD FIELD OFFICE

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

APPROVAL FOR TWO YEARS

Title 18 U.S.S 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)

(Form 3160-3, page 1)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Operator Certification Statement
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
UL: D, Sec. 18, 25S, 27E
EDDY Co., NM

Operator's Representative
Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 571-7800

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

I am responsible under the terms and conditions of the lease to conduct lease operations in conjunction with the application. Bond coverage pursuant to 43, 25 or 36 CFR for lease activities is being provided by Cimarex Energy Co. under their (Lease, Statewide, Nationwide, Unit or Permit) Bond, BLM/BIA/FS Bond No. NMB01188.

Executed this 5 day of June, 2015

NAME: Hope Knauls
Hope Knauls
TITLE: Regulatory Compliance
ADDRESS: 600 N. Marienfield St. Ste. 600 Midland Tx 79071
TELEPHONE: 432-571-7800
EMAIL: hknauls@cimarex.com
Field Representative: Same as above

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015- 43487	97494	Cottonwood Draw; B.S.
4 Property Code	**5 Property Name**	**6 Well Number**
34114	GADWALL 18 FEDERAL Com	4H
7 OGRID No.	**8 Operator Name**	**9 Elevation**
162683	CIMAREX ENERGY CO.	3203.8'

10 Surface Location

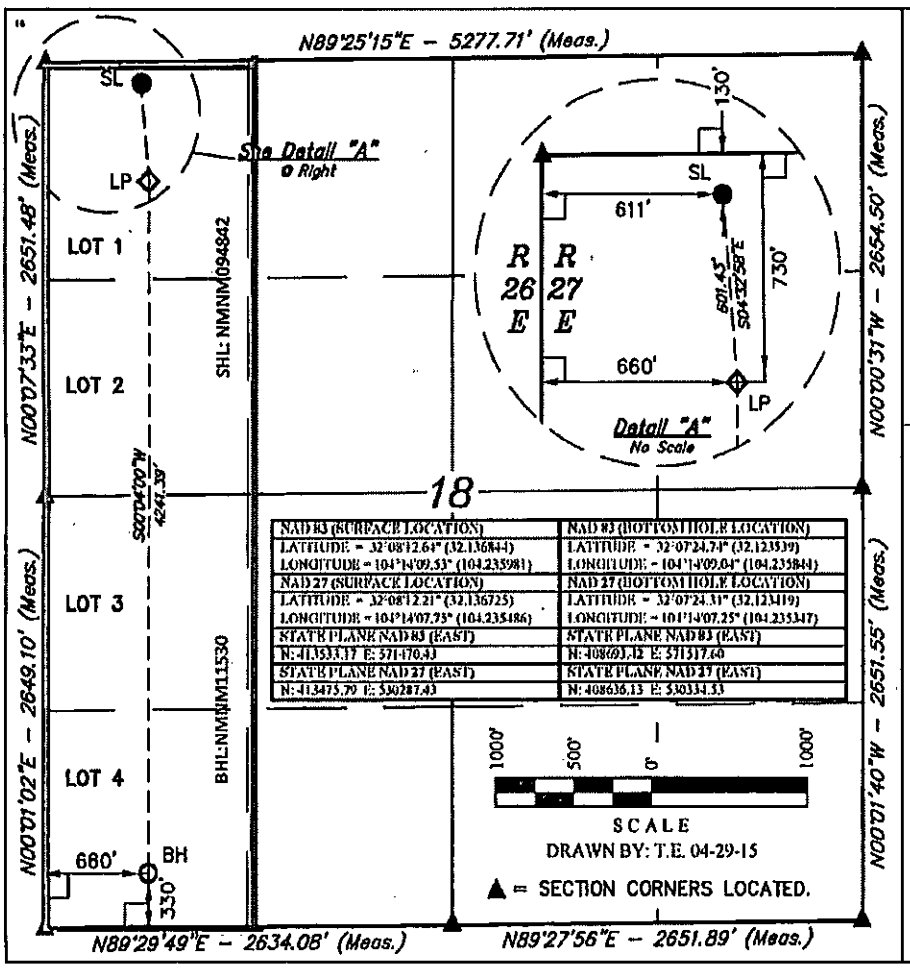
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 1	18	25S	27E		130	NORTH	611	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 4	18	25S	27E		330	SOUTH	660	WEST	EDDY

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

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



NAD 83 (SURFACE LOCATION)	NAD 83 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'12.64" (32.136844)	LATITUDE = 32°07'24.74" (32.123539)
LONGITUDE = 104°14'09.53" (104.235981)	LONGITUDE = 104°14'09.04" (104.235844)
NAD 27 (SURFACE LOCATION)	NAD 27 (BOTTOM HOLE LOCATION)
LATITUDE = 32°08'12.21" (32.136725)	LATITUDE = 32°07'24.31" (32.123419)
LONGITUDE = 104°14'07.73" (104.235486)	LONGITUDE = 104°14'07.25" (104.235347)
STATE PLANE NAD 83 (EAST)	STATE PLANE NAD 83 (EAST)
N: 413533.17 E: 571470.93	N: 408693.12 E: 571517.60
STATE PLANE NAD 27 (EAST)	STATE PLANE NAD 27 (EAST)
N: 413475.79 E: 530287.43	N: 408636.13 E: 530334.53

16 OPERATOR CERTIFICATION

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

Hope Knauls 6/4/15
Signature Date

Hope Knauls
Printed Name

hknauls@cimarex.com
E-mail Address

17 SURVEYOR CERTIFICATION

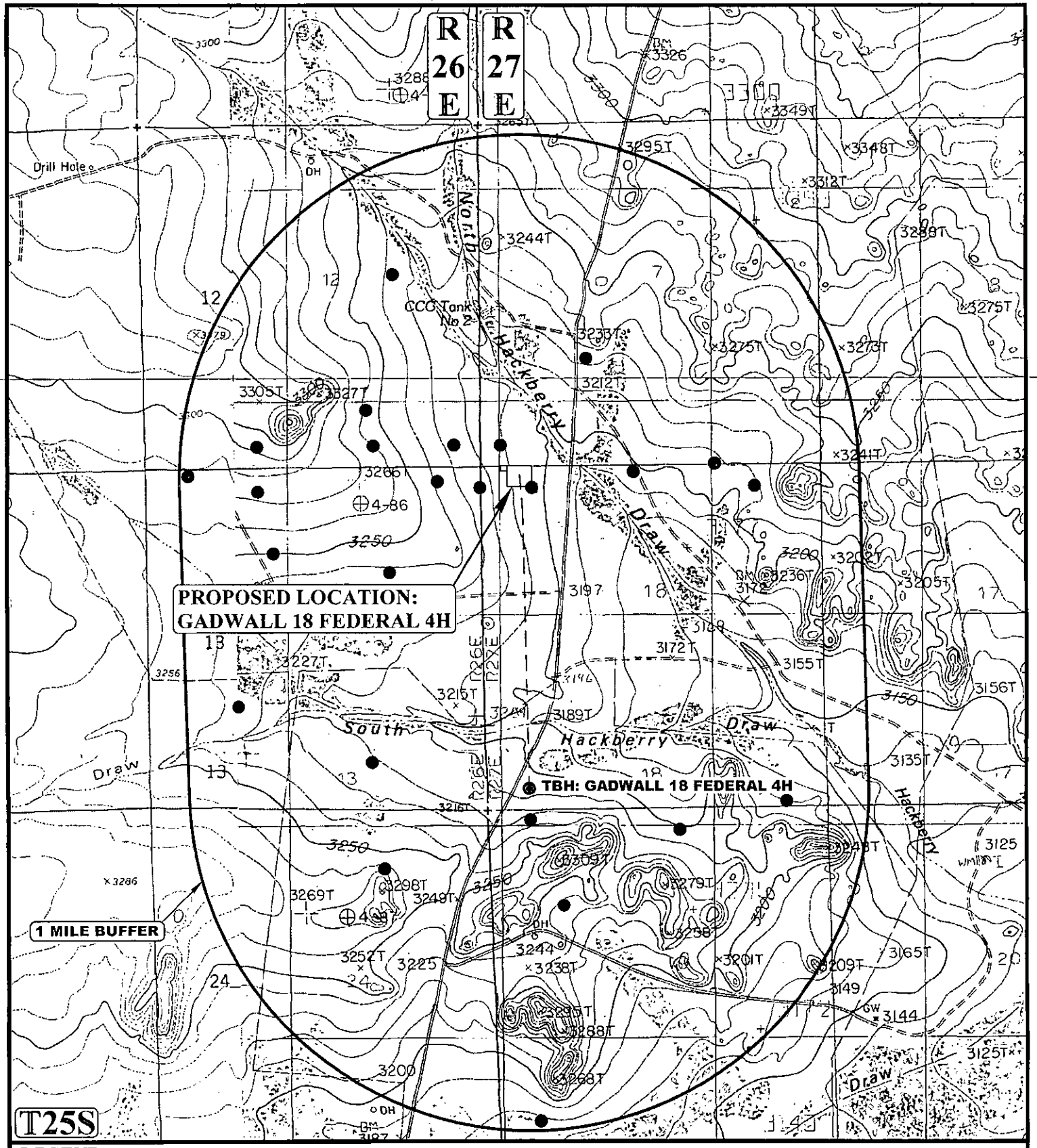
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

April 20, 2014
Date of Survey

Signature and Seal of Professional Surveyor:

PROFESSIONAL SURVEYOR NEW MEXICO 12446 NELSON J. MARSHALL 05-01-15

Certificate Number:



LEGEND:

● EXISTING WELLS

N

CIMAREX ENERGY CO.

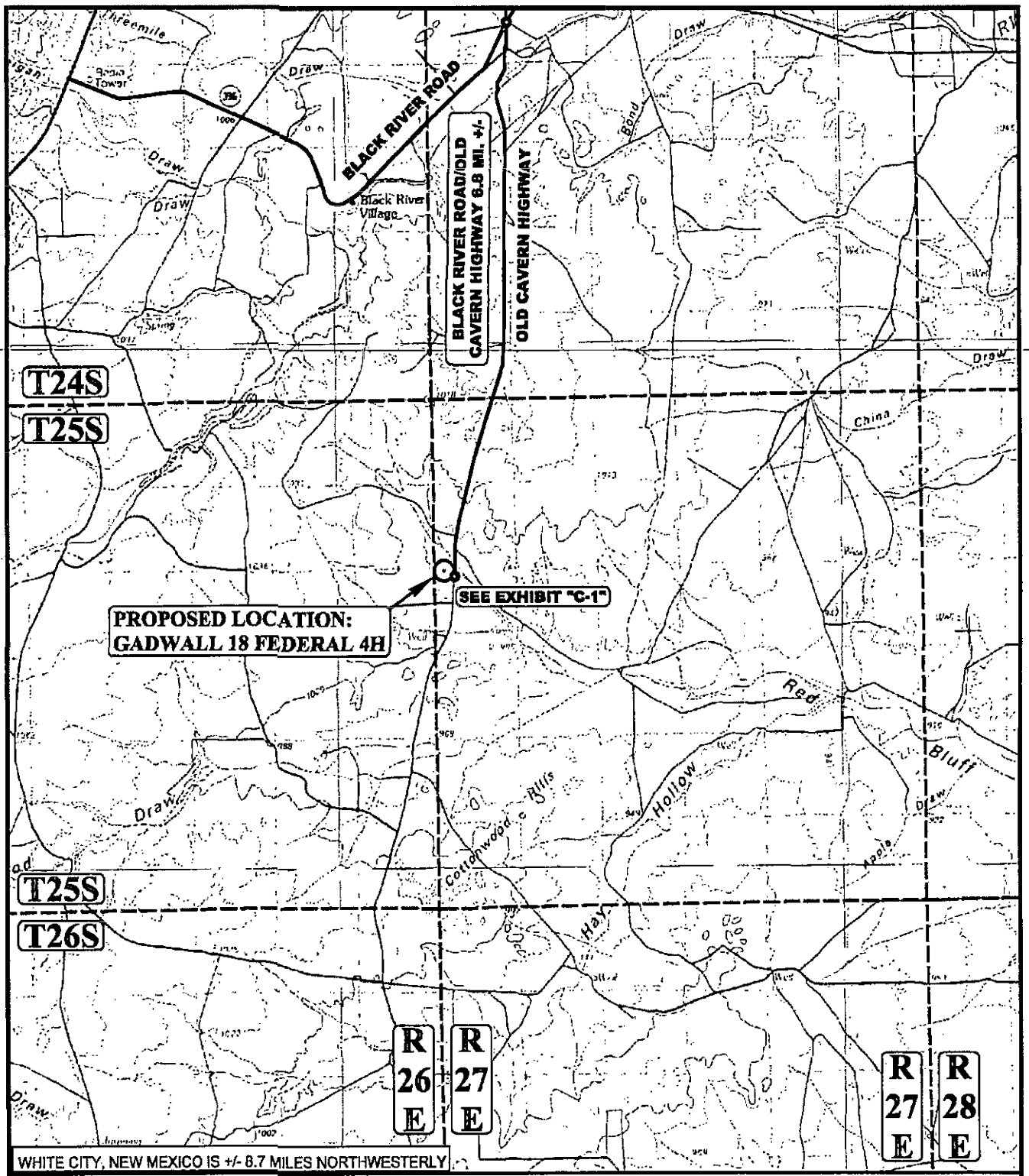
GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY: D.L.S.	DATE DRAWN: 06-05-15
SCALE: 1" = 2000'	REVISED: 00-00-00

ONE MILE RADIUS PLAT | **EXHIBIT A**

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



LEGEND:

⊙ PROPOSED LOCATION

N

CIMAREX ENERGY CO.

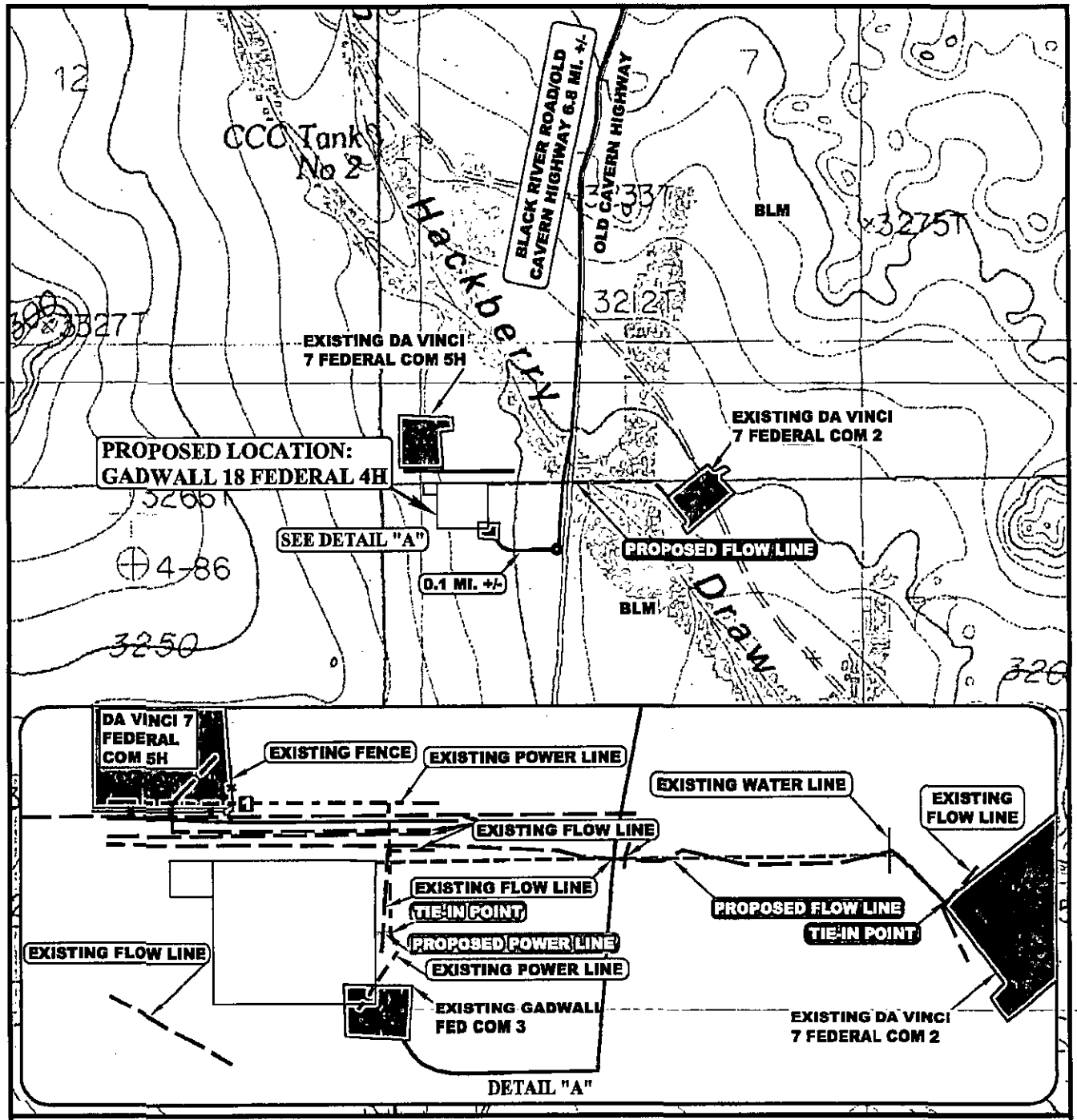
GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY: B.D.	DATE DRAWN: 05-07-15
SCALE: 1:100,000	REVISED: 00-00-00

PUBLIC ACCESS ROAD MAP | **EXHIBIT B**

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



APPROXIMATE TOTAL POWER LINE DISTANCE = 35' +/-

APPROXIMATE TOTAL FLOW LINE DISTANCE = 1368' +/-

NOTE: PARCEL DATA SHOWN HAS BEEN OBTAINED FROM VARIOUS SOURCES AND SHOULD BE USED FOR MAPPING, GRAPHIC AND PLANNING PURPOSES ONLY. NO WARRANTY IS MADE BY UINTAH ENGINEERING AND LAND SURVEYING (UELS) FOR ACCURACY OF THE PARCEL DATA.

LEGEND:

- PROPOSED POWER LINE
- EXISTING ROAD
- EXISTING FENCE
- EXISTING CATTLE GUARD
- EXISTING PIPELINE
- EXISTING WATER LINE
- EXISTING POWER LINE
- PROPOSED FLOW LINE

N

CIMAREX ENERGY CO.

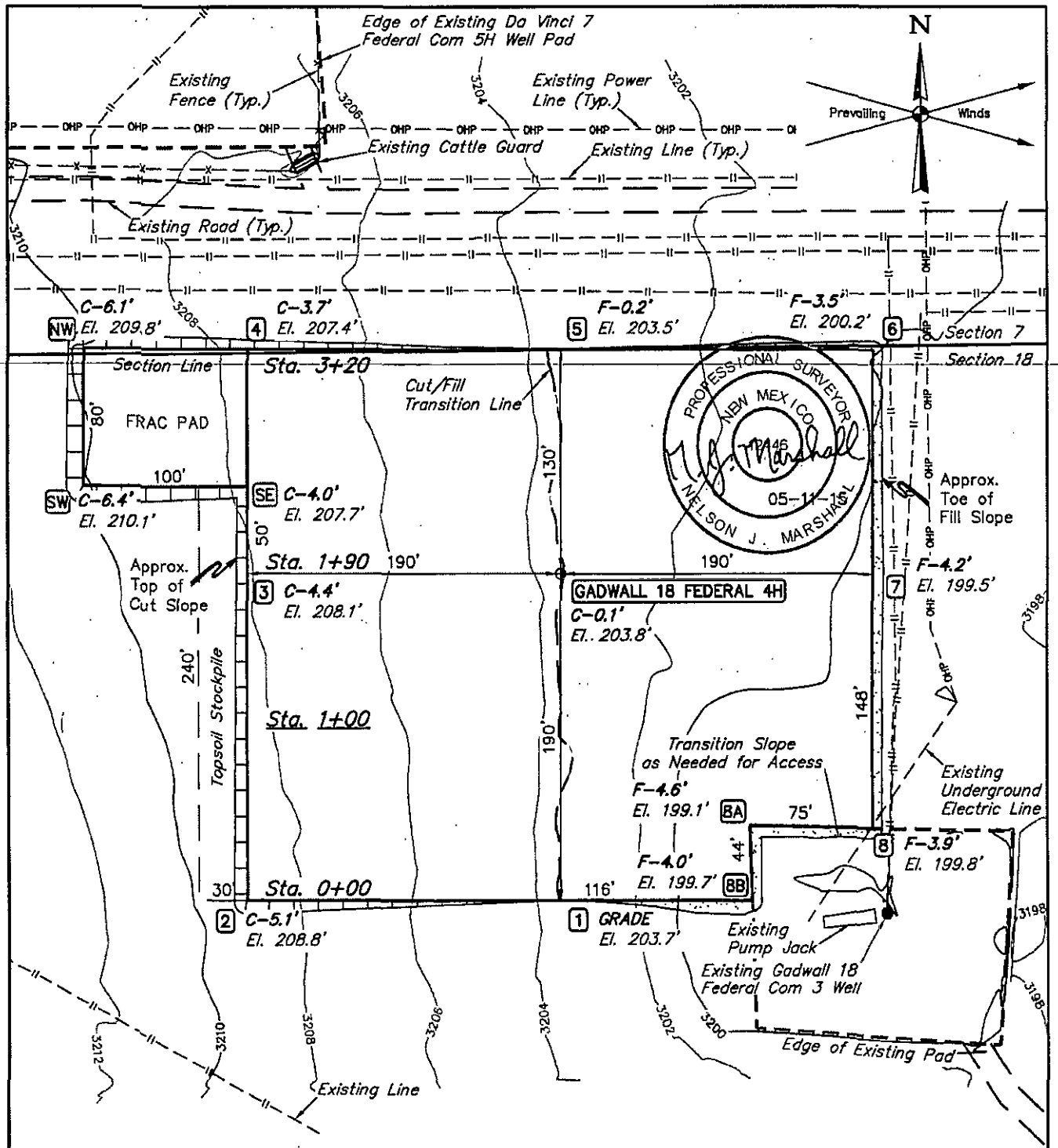
GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY: B.D.	DATE DRAWN: 05-07-15
SCALE: 1" = 1000'	REVISED: 00-00-00

ACCESS ROAD MAP | **EXHIBIT C-1**

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



FINISHED GRADE ELEVATION = **3203.7'**

NOTES:

- Contours shown at 2' intervals.
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.

CIMAREX ENERGY CO.

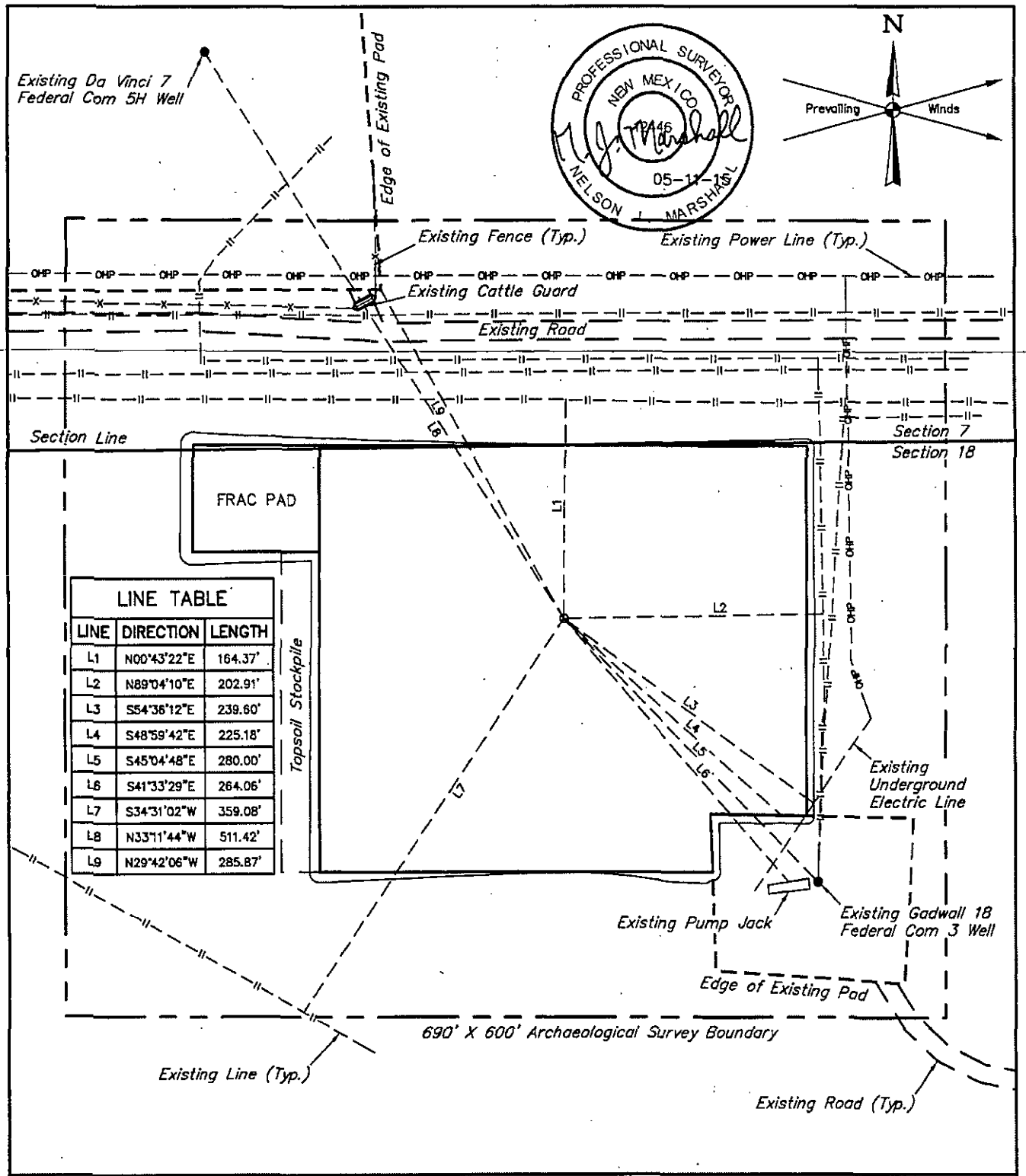
GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

DRAWN BY: T.E.	DATE DRAWN: 05-04-15
SCALE: 1" = 80'	REVISED: 00-00-00

LOCATION LAYOUT | **EXHIBIT D**



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°43'22"E	164.37'
L2	N89°04'10"E	202.91'
L3	S54°36'12"E	239.60'
L4	S48°59'42"E	225.18'
L5	S45°04'48"E	280.00'
L6	S41°33'29"E	264.06'
L7	S34°31'02"W	359.08'
L8	N33°11'44"W	511.42'
L9	N29°42'06"W	285.87'

NOTES:

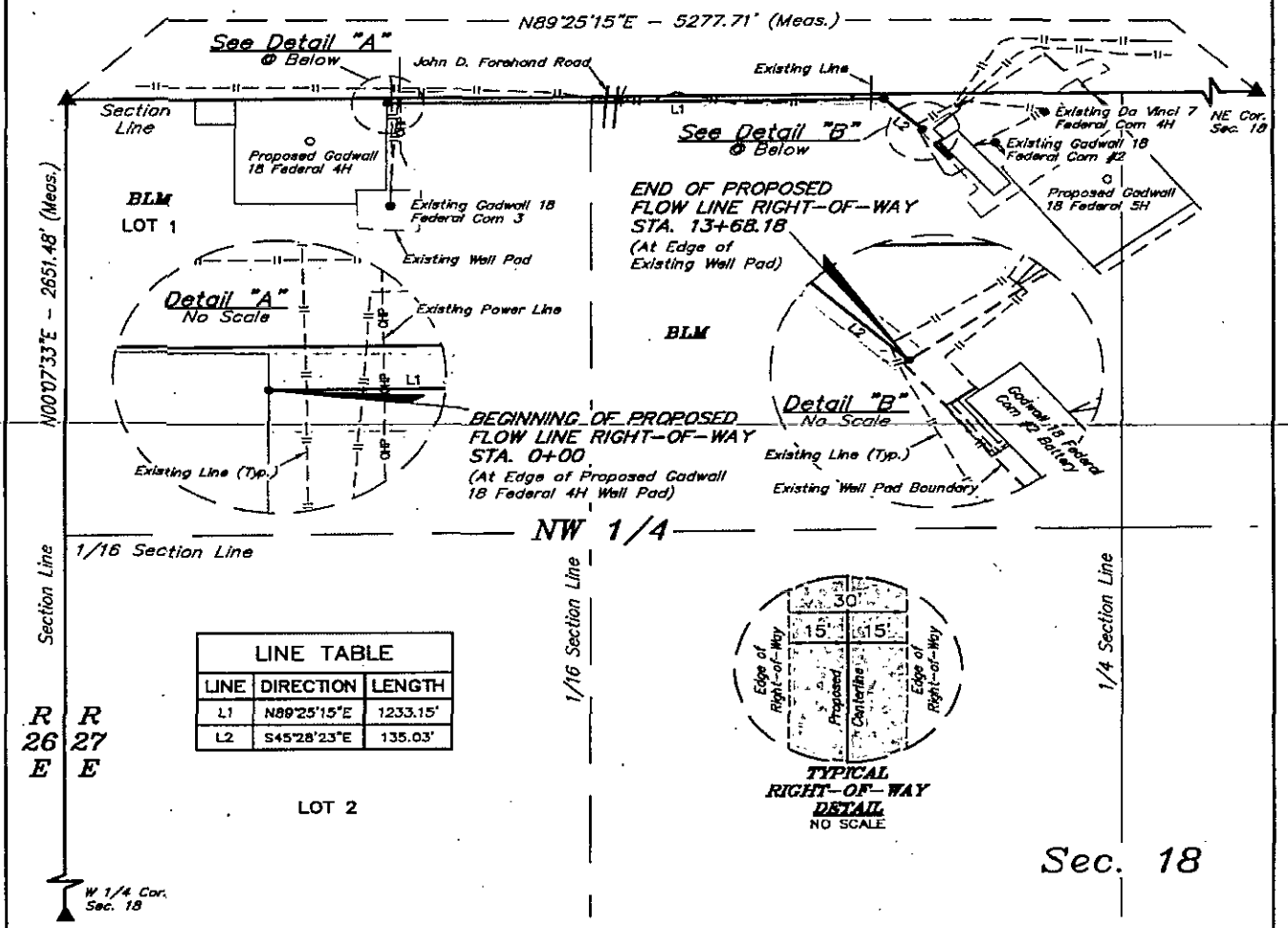
CIMAREX ENERGY CO.

GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

DRAWN BY: T.E.	DATE DRAWN: 05-04-15
SCALE: 1" = 100'	REVISED: 00-00-00
ARCHAEOLOGICAL SURVEY BOUNDARY	EXHIBIT D



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N89°25'15"E	1233.15'
L2	S45°28'23"E	135.03'

FLOW LINE RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

BEGINNING AT A POINT IN LOT 1 OF SECTION 18, T25S, R27E, N.M.P.M., WHICH BEARS S89°30'22"E 800.99' FROM THE NORTHWEST CORNER OF SAID SECTION 18, THENCE N89°25'15"E 1233.15'; THENCE S45°28'23"E 135.03' TO A POINT IN THE NE 1/4 NW 1/4 OF SAID SECTION 18, WHICH BEARS S87°36'14"E 2132.18' FROM THE NORTHWEST CORNER OF SAID SECTION 18. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 0.942 ACRES MORE OR LESS.

BEGINNING OF FLOW LINE STA. 0+00 BEARS S89°30'22"E 800.99' FROM THE NORTHWEST CORNER OF SECTION 18, T25S, R27E, N.M.P.M.

END OF FLOW LINE STA. 13+68.18 BEARS S87°36'14"E 2132.18' FROM THE NORTHWEST CORNER OF SECTION 18, T25S, R27E, N.M.P.M.

400' 200' 0' 400'

ACREAGE / LENGTH TABLE				
	OWNERSHIP	FEET	RODS	ACRES
(SEC. 18 NW 1/4)	BLM	1368.18	82.92	0.942

▲ = SECTION CORNERS LOCATED.

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PROFESSIONAL SURVEYOR NEW MEXICO 12446 MARSHALL

REGISTERED LAND SURVEYOR
REGISTRATION NO. 12446
STATE OF NEW MEXICO

05-11-15

NOTES:

N

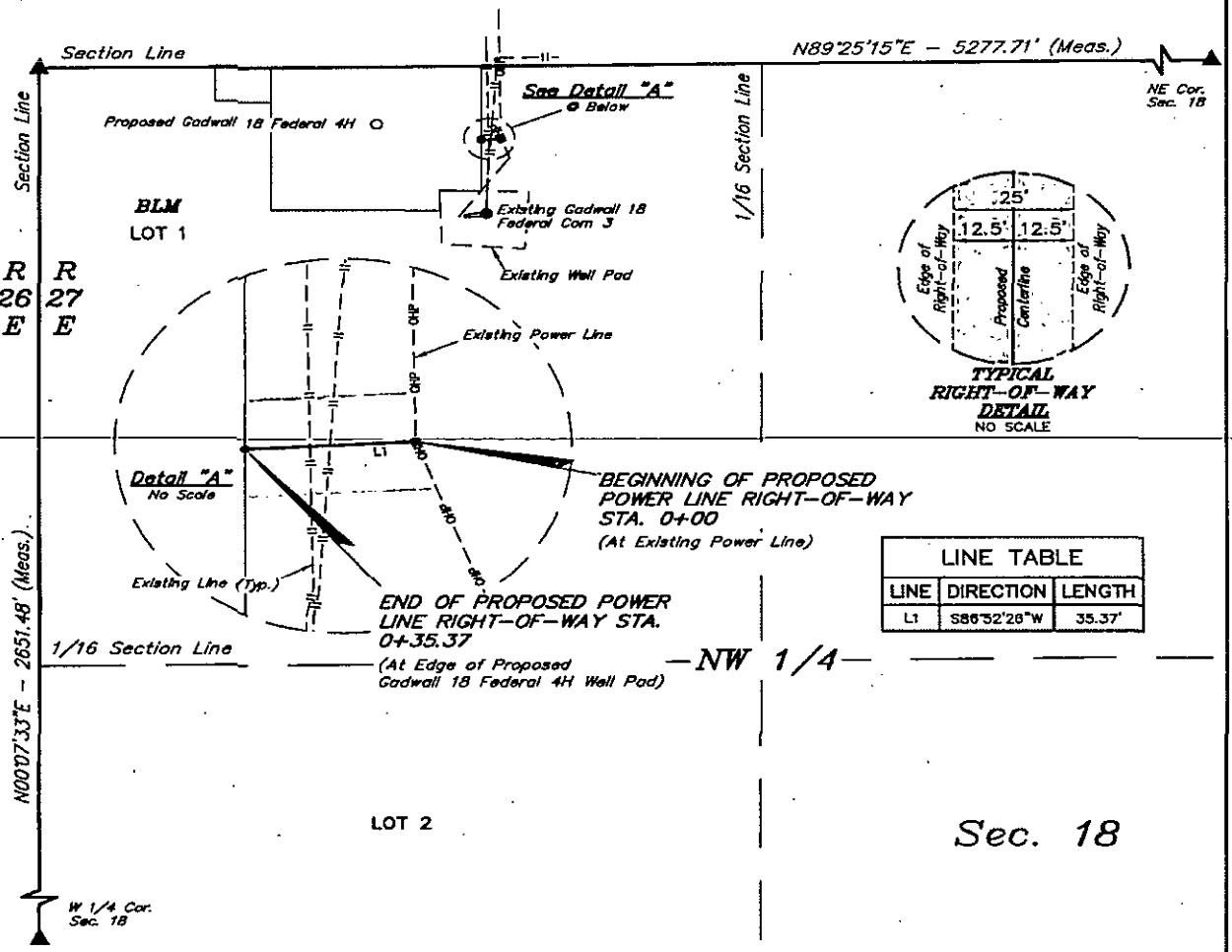
CIMAREX ENERGY CO.

GADWALL 18 FEDERAL 4H
SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY: T.E.	DATE DRAWN: 05-05-15
SCALE: 1" = 400'	REVISED: 00-00-00
FLOW LINE R-O-W	**EXHIBIT G-1**

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S86°52'26"W	35.37'

POWER LINE RIGHT-OF-WAY DESCRIPTION

A 25' WIDE RIGHT-OF-WAY 12.5' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

BEGINNING AT A POINT IN LOT 1 OF SECTION 18, T25S, R27E, N.M.P.M., WHICH BEARS S79°26'17"E 850.36' FROM THE NORTHWEST CORNER OF SAID SECTION 18, THENCE S86°52'26"W 35.37' TO A POINT IN LOT 1 OF SAID SECTION 18, WHICH BEARS S78°51'01"E 816.04' FROM THE NORTHWEST CORNER OF SAID SECTION 18. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 0.020 ACRES MORE OR LESS.

BEGINNING OF POWER LINE STA. 0+00 BEARS S79°26'17"E 850.36' FROM THE NORTHWEST CORNER OF SECTION 18, T25S, R27E, N.M.P.M.

END OF POWER LINE STA. 0+35.37 BEARS S78°51'01"E 816.04' FROM THE NORTHWEST CORNER OF SECTION 18, T25S, R27E, N.M.P.M.

300' 150' 0' 300'

ACREAGE / LENGTH TABLE				
	OWNERSHIP	FEET	RODS	ACRES
(SEC. 18 NW 1/4)	BLM	35.37	2.14	0.020

▲ = SECTION CORNERS LOCATED.

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NEW MEXICO PROFESSIONAL SURVEYOR — MEXICO — 12446 — MARSHALL

REGISTERED LAND SURVEYOR
REGISTRATION NO. 12446
STATE OF NEW MEXICO

05-11-15

NOTES:

N

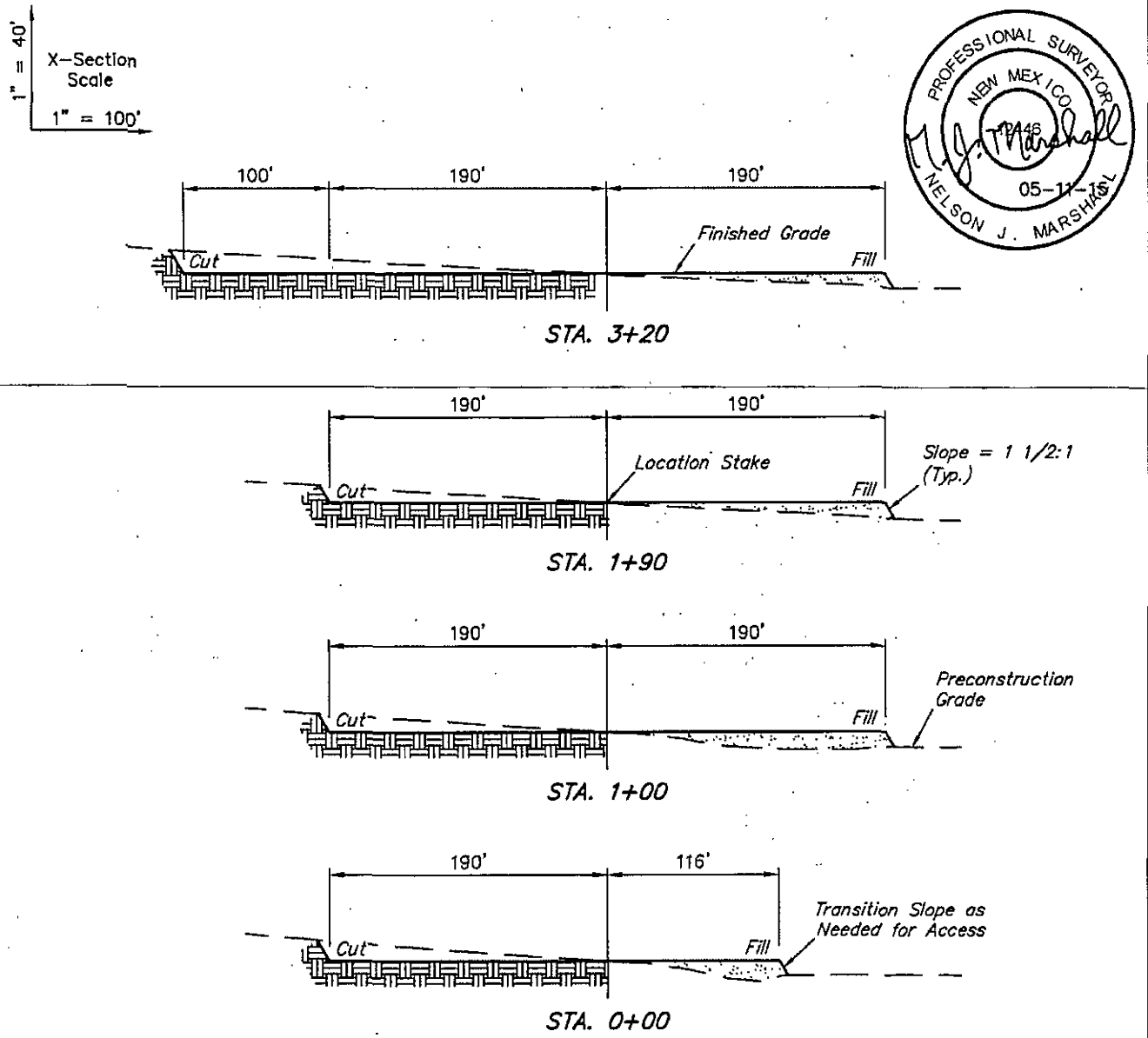
CIMAREX ENERGY CO.

GADWALL 18 FEDERAL 4H
SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DRAWN BY: T.E.	DATE DRAWN: 05-05-15
SCALE: 1" = 300'	REVISED: 00-00-00
POWER LINE R-O-W	EXHIBIT H

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017



PROFESSIONAL SURVEYOR NEW MEXICO 17146 NELSON J. MARSHALL 05-11-15

APPROXIMATE EARTHWORK QUANTITIES	
(3") TOPSOIL STRIPPING	1,250 Cu. Yds.
REMAINING LOCATION	6,220 Cu. Yds.
TOTAL CUT	**7,470 Cu. Yds.**
FILL	**6,220 Cu. Yds.**
EXCESS MATERIAL	1,250 Cu. Yds.
TOPSOIL	1,250 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	**0 Cu. Yds.**

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	**ACRES**
WELL SITE DISTURBANCE	NA	±3.067
30' WIDE FLOW LINE R-O-W DISTURBANCE	±1368.18'	±0.942
25' WIDE POWER LINE R-O-W DISTURBANCE	±35.37'	±0.020
TOTAL SURFACE USE AREA		**±4.029**

NOTES:

- *Fill quantity includes 5% for compaction.*

CIMAREX ENERGY CO.

GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

DRAWN BY: T.E.	DATE DRAWN: 05-04-15
SCALE: AS SHOWN	REVISED: 00-00-00

TYPICAL CROSS SECTIONS | **EXHIBIT D**

BEGINNING AT THE INTERSECTION OF BLACK RIVER ROAD/ OLD CAVERN HIGHWAY PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.8 MILES TO THE JUNCTION OF THIS ROAD AND THE EXISTING ACCESS ROAD FOR THE GADWALL FED COM 3 PAD TO THE WEST; TURN RIGHT AND PROCEED IN A WESTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 0.1 MILES TO THE EXISTING PAD AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF BLACK RIVER ROAD/ OLD CAVERN HIGHWAY TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 6.9 MILES.

CIMAREX ENERGY CO.

GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

DRAWN BY: B.D.	DATE DRAWN: 05-07-15
	REVISED: 00-00-00

ROAD DESCRIPTION | **EXHIBIT J**

1. Geological Formations

TVD of target 7,235 Pilot Hole TD N/A
MD at TD 12,000 Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Quarternary Fill		N/A	
Rustler		N/A	
SALADO (TOP SALT)	1125	N/A	H2S POSSIBLE
CASTILLE (BASE SALT)	1716	N/A	
BELL CANYON (DELAWARE GROUP)	1916	N/A	H2S POSSIBLE
CHERRY CANYON	2895	N/A	H2S POSSIBLE
BRUSHY CANYON	3930	N/A	
BRUSHY CANYON LOWER	4598	N/A	
BONE SPRING	5400	N/A	
1ST BONE SPRNG SS	6380	N/A	
2ND BONE SPRING LS	6617	N/A	
2ND BONE SPRING SS	6900	N/A	
2ND BS SS HORZ TARGET	7235	N/A	
3RD BONE SPRING LIMESTONE	7270	N/A	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension	Casing New or Used	Meets API Specifications
17 1/2	0	471	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	3.43	8.03	14.24	~~Used~~ New	No
12 1/4	0	1896	9-5/8"	36.00	J-55	LT&C	2.01	3.50	6.64	~~Used~~	No
8 3/4	0	6757	5-1/2"	17.00	L-80	LT&C	1.95	2.39	2.75	~~Used~~	No
8 3/4	6757	~~12000~~ 11876	5-1/2"	17.00	L-80	BT&C	1.82	2.24	48.86	~~Used~~	No
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet		

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	N
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	N
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	104	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	356	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	111	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	924	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	1088	14.80	1.34	6.32	9.5	Tail: Class C + LCM

Casing String	TOC	% Excess
Surface	0	34
Intermediate	0	44
Production	1696	17

See COA

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram	X	2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram	X	
			Pipe Ram		3M
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer? See COA

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 471'	FW Spud Mud	8.30 - 8.80	28	N/C
471' to 1896'	Brine Water	9.70 - 10.20	30-32	N/C
1896' to 12000'	FW/Cut Brine	8.70 - 9.20	30-32	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging and Testing procedures will be performed on following wells: N/A

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	3461 psi
Abnormal Temperature	No

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
X	H2S is present
X	H2S plan is attached

8. Other Facets of Operation

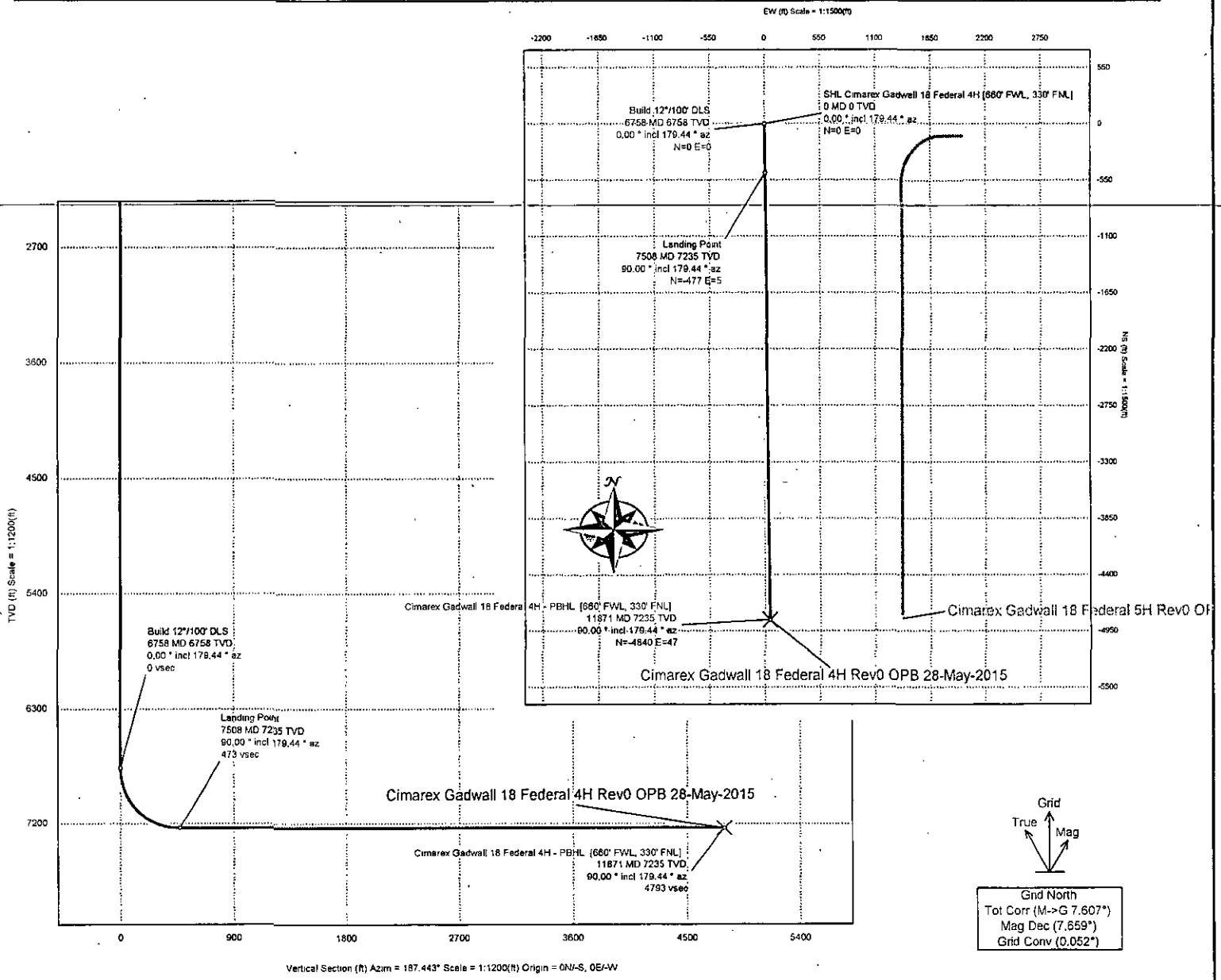
Schlumberger

Cimarex

CIMAREX

Borehole:	Well:	Field:	Structure:
Original Borehole	Gadwall 18 Federal 4H	NM Eddy County (NAD 83)	TBD

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: HDGM 2014 Dip: 59.915° Date: 28-May-2015	Lat: N 32 8 12.64 Northing: 413533.17ftUS Grid Conv: 0.0518°	Slot: Gadwall 18 Federal 4H TVD Ref: GL(3203.8ft above MSL)
MagDec: 7.659° FS: 48205.486nT Gravity FS: 998.445mgn (9.80665 Based)	Lon: W 104 14 9.53 Easting: 571470.43ftUS Scale Fact: 0.99991013	Plan: Cimarex Gadwall 18 Federal 4H Rev0 OPB 28-May-2015



Grid North
Tot Corr (M->G 7.607°)
Mag Dec (7.659°)
Grid Conv (0.052°)

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL Cimarex Gadwall 18 Federal 4H [660' FWL, 330' FNL]	0.00	0.00	179.44	0.00	0.00	0.00	0.00	
Build 12°/100' DLS	6757.54	0.00	179.44	6757.54	0.00	0.00	0.00	0.00
Landing Point	7507.54	90.00	179.44	7235.00	477.47	-477.44	4.65	12.00
Cimarex Gadwall 18 Federal 4H - PBHL [660' FWL, 330' FNL]	11870.50	90.00	179.44	7235.00	4840.42	-4840.19	47.17	0.00

D E C **CONTROLLED**

Plan ref	Cimarex Gadwall 18 Federal 4H Rev0 OPB 28-May-2015
Drawing ref	
Copy number	of 3
Date	28-May-2015

1	Client	
2	Client	
3	Office	
4	Office	

Copy number for

Schlumberger

Cimarex Gadwall 18 Federal 4H Rev0 OPB 28-May-2015 Proposal Geodetic Report

(Non-Def Plan)

CIMAREX

Report Date:	*May 28, 2015 - 05:41 PM*	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	179.442 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Gadwall 18 Federal 4H / Cimarex Gadwall 18 Federal 4H	**TVD Reference Datum:**	GL
Well:	Gadwall 18 Federal 4H	**TVD Reference Elevation:**	3203.800 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3203.800 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.659 °
Survey Name:	Cimarex Gadwall 18 Federal 4H Rev0 OPB 28-May-2015	**Total Gravity Field Strength:**	998.4461mgn (9.80665 Based)
Survey Date:	May 28, 2015	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	90.000 ° / 4840.425 ft / 5.854 / 0.669	**Total Magnetic Field Strength:**	48205.486 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.915 °
Location Lat / Long:	N 32° 8' 12.63845", W 104° 14' 9.53428"	**Declination Date:**	May 28, 2015
Location Grid N/E Y/X:	N 413533.170 ftUS, E 571470.430 ftUS	**Magnetic Declination Model:**	HDGM 2014
CRS Grid Convergence Angle:	0.0518 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99991013	**Grid Convergence Used:**	0.0518 °
Version / Patch:	2.8.572.0	**Total Corr Mag North->Grid North:**	7.6069 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Cimarex Gadwall 18 Federal 4H [660' FWL, 330' FNL]	0.00	0.00	179.44	0.00	0.00	0.00	0.00	N/A	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	100.00	0.00	179.44	100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	200.00	0.00	179.44	200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	300.00	0.00	179.44	300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	400.00	0.00	179.44	400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	500.00	0.00	179.44	500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	600.00	0.00	179.44	600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	700.00	0.00	179.44	700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	800.00	0.00	179.44	800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	900.00	0.00	179.44	900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1000.00	0.00	179.44	1000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1100.00	0.00	179.44	1100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1200.00	0.00	179.44	1200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1300.00	0.00	179.44	1300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1400.00	0.00	179.44	1400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1500.00	0.00	179.44	1500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1600.00	0.00	179.44	1600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1700.00	0.00	179.44	1700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1800.00	0.00	179.44	1800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	1900.00	0.00	179.44	1900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2000.00	0.00	179.44	2000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2100.00	0.00	179.44	2100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2200.00	0.00	179.44	2200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2300.00	0.00	179.44	2300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2400.00	0.00	179.44	2400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2500.00	0.00	179.44	2500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2600.00	0.00	179.44	2600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2700.00	0.00	179.44	2700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2800.00	0.00	179.44	2800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	2900.00	0.00	179.44	2900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3000.00	0.00	179.44	3000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3100.00	0.00	179.44	3100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3200.00	0.00	179.44	3200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3300.00	0.00	179.44	3300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3400.00	0.00	179.44	3400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3500.00	0.00	179.44	3500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3600.00	0.00	179.44	3600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3700.00	0.00	179.44	3700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3800.00	0.00	179.44	3800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	3900.00	0.00	179.44	3900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4000.00	0.00	179.44	4000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4100.00	0.00	179.44	4100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4200.00	0.00	179.44	4200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4300.00	0.00	179.44	4300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4400.00	0.00	179.44	4400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4500.00	0.00	179.44	4500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4600.00	0.00	179.44	4600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4700.00	0.00	179.44	4700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4800.00	0.00	179.44	4800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	4900.00	0.00	179.44	4900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5000.00	0.00	179.44	5000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5100.00	0.00	179.44	5100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5200.00	0.00	179.44	5200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5300.00	0.00	179.44	5300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5400.00	0.00	179.44	5400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5500.00	0.00	179.44	5500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5600.00	0.00	179.44	5600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5700.00	0.00	179.44	5700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5800.00	0.00	179.44	5800.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	5900.00	0.00	179.44	5900.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6000.00	0.00	179.44	6000.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6100.00	0.00	179.44	6100.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6200.00	0.00	179.44	6200.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6300.00	0.00	179.44	6300.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6400.00	0.00	179.44	6400.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6500.00	0.00	179.44	6500.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6600.00	0.00	179.44	6600.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6700.00	0.00	179.44	6700.00	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
Build 12°/100' DLS	6757.54	0.00	179.44	6757.54	0.00	0.00	0.00	0.00	413533.17	571470.43	N 32 8 12.64	W 104 14 9.53
	6800.00	5.10	179.44	6799.94	1.89	-1.89	0.02	12.00	413531.28	571470.45	N 32 8 12.62	W 104 14 9.53
	6900.00	17.10	179.44	6897.90	21.10	-21.09	0.21	12.00	413512.08	571470.64	N 32 8 12.43	W 104 14 9.53
	7000.00	29.10	179.44	6989.71	60.25	-60.25	0.59	12.00	413472.93	571471.02	N 32 8 12.04	W 104 14 9.53
	7100.00	41.10	179.44	7071.38	117.64	-117.63	1.15	12.00	413415.55	571471.58	N 32 8 11.47	W 104 14 9.52
	7200.00	53.10	179.44	7139.34	190.75	-190.74	1.86	12.00	413342.44	571472.29	N 32 8 10.75	W 104 14 9.51
	7300.00	65.10	179.44	7190.60	276.40	-276.39	2.69	12.00	413256.81	571473.12	N 32 8 9.90	W 104 14 9.51
	7400.00	77.10	179.44	7222.95	370.83	-370.81	3.61	12.00	413162.39	571474.04	N 32 8 8.97	W 104 14 9.50
	7500.00	89.10	179.44	7234.95	469.93	-469.90	4.58	12.00	413063.31	571475.01	N 32 8 7.99	W 104 14 9.49
Landing Point	7507.54	90.00	179.44	7235.00	477.47	-477.44	4.65	12.00	413055.77	571475.08	N 32 8 7.91	W 104 14 9.49
	7600.00	90.00	179.44	7235.00	569.92	-569.90	5.55	0.00	412963.32	571475.98	N 32 8 7.00	W 104 14 9.48
	7700.00	90.00	179.44	7235.00	669.92	-669.89	6.53	0.00	412863.34	571476.96	N 32 8 6.01	W 104 14 9.47
	7800.00	90.00	179.44	7235.00	769.92	-769.89	7.50	0.00	412763.35	571477.93	N 32 8 5.02	W 104 14 9.46
	7900.00	90.00	179.44	7235.00	869.92	-869.88	8.48	0.00	412663.37	571478.91	N 32 8 4.03	W 104 14 9.44
	8000.00	90.00	179.44	7235.00	969.92	-969.88	9.45	0.00	412563.38	571479.88	N 32 8 3.04	W 104 14 9.43
	8100.00	90.00	179.44	7235.00	1069.92	-1069.87	10.43	0.00	412463.39	571480.86	N 32 8 2.05	W 104 14 9.42
	8200.00	90.00	179.44	7235.00	1169.92	-1169.87	11.40	0.00	412363.41	571481.83	N 32 8 1.06	W 104 14 9.41
	8300.00	90.00	179.44	7235.00	1269.92	-1269.86	12.38	0.00	412263.42	571482.81	N 32 8 0.07	W 104 14 9.40
	8400.00	90.00	179.44	7235.00	1369.92	-1369.86	13.35	0.00	412163.44	571483.78	N 32 7 59.08	W 104 14 9.39
	8500.00	90.00	179.44	7235.00	1469.92	-1469.86	14.33	0.00	412063.45	571484.75	N 32 7 58.09	W 104 14 9.38
	8600.00	90.00	179.44	7235.00	1569.92	-1569.85	15.30	0.00	411963.46	571485.73	N 32 7 57.10	W 104 14 9.37
	8700.00	90.00	179.44	7235.00	1669.92	-1669.85	16.27	0.00	411863.48	571486.70	N 32 7 56.11	W 104 14 9.36
	8800.00	90.00	179.44	7235.00	1769.92	-1769.84	17.25	0.00	411763.49	571487.68	N 32 7 55.13	W 104 14 9.35
	8900.00	90.00	179.44	7235.00	1869.92	-1869.84	18.22	0.00	411663.51	571488.65	N 32 7 54.14	W 104 14 9.34
	9000.00	90.00	179.44	7235.00	1969.92	-1969.83	19.20	0.00	411563.52	571489.63	N 32 7 53.15	W 104 14 9.33
	9100.00	90.00	179.44	7235.00	2069.92	-2069.83	20.17	0.00	411463.53	571490.60	N 32 7 52.16	W 104 14 9.32
	9200.00	90.00	179.44	7235.00	2169.92	-2169.82	21.15	0.00	411363.55	571491.58	N 32 7 51.17	W 104 14 9.31
	9300.00	90.00	179.44	7235.00	2269.92	-2269.82	22.12	0.00	411263.56	571492.55	N 32 7 50.18	W 104 14 9.30
	9400.00	90.00	179.44	7235.00	2369.92	-2369.81	23.10	0.00	411163.58	571493.52	N 32 7 49.19	W 104 14 9.29
	9500.00	90.00	179.44	7235.00	2469.92	-2469.81	24.07	0.00	411063.59	571494.50	N 32 7 48.20	W 104 14 9.28
	9600.00	90.00	179.44	7235.00	2569.92	-2569.80	25.05	0.00	410963.60	571495.47	N 32 7 47.21	W 104 14 9.27
	9700.00	90.00	179.44	7235.00	2669.92	-2669.80	26.02	0.00	410863.62	571496.45	N 32 7 46.22	W 104 14 9.26
	9800.00	90.00	179.44	7235.00	2769.92	-2769.79	27.00	0.00	410763.63	571497.42	N 32 7 45.23	W 104 14 9.25
	9900.00	90.00	179.44	7235.00	2869.92	-2869.79	27.97	0.00	410663.65	571498.40	N 32 7 44.24	W 104 14 9.24
	10000.00	90.00	179.44	7235.00	2969.92	-2969.78	28.94	0.00	410563.66	571499.37	N 32 7 43.25	W 104 14 9.23
	10100.00	90.00	179.44	7235.00	3069.92	-3069.78	29.92	0.00	410463.67	571500.35	N 32 7 42.26	W 104 14 9.22
	10200.00	90.00	179.44	7235.00	3169.92	-3169.77	30.89	0.00	410363.69	571501.32	N 32 7 41.27	W 104 14 9.21
	10300.00	90.00	179.44	7235.00	3269.92	-3269.77	31.87	0.00	410263.70	571502.30	N 32 7 40.28	W 104 14 9.20
	10400.00	90.00	179.44	7235.00	3369.92	-3369.76	32.84	0.00	410163.71	571503.27	N 32 7 39.29	W 104 14 9.19
	10500.00	90.00	179.44	7235.00	3469.92	-3469.76	33.82	0.00	410063.73	571504.24	N 32 7 38.30	W 104 14 9.18
	10600.00	90.00	179.44	7235.00	3569.92	-3569.76	34.79	0.00	409963.74	571505.22	N 32 7 37.31	W 104 14 9.17
	10700.00	90.00	179.44	7235.00	3669.92	-3669.75	35.77	0.00	409863.76	571506.19	N 32 7 36.32	W 104 14 9.16
	10800.00	90.00	179.44	7235.00	3769.92	-3769.75	36.74	0.00	409763.77	571507.17	N 32 7 35.34	W 104 14 9.15
	10900.00	90.00	179.44	7235.00	3869.92	-3869.74	37.72	0.00	409663.78	571508.14	N 32 7 34.35	W 104 14 9.14
	11000.00	90.00	179.44	7235.00	3969.92	-3969.74	38.69	0.00	409563.80	571509.12	N 32 7 33.36	W 104 14 9.13
	11100.00	90.00	179.44	7235.00	4069.92	-4069.73	39.67	0.00	409463.81	571510.09	N 32 7 32.37	W 104 14 9.12

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11200.00	90.00	179.44	7235.00	4169.92	-4169.73	40.64	0.00	409363.83	571511.07	N 32 7 31.38	W 104 14 9.11
	11300.00	90.00	179.44	7235.00	4269.92	-4269.72	41.61	0.00	409263.84	571512.04	N 32 7 30.39	W 104 14 9.10
	11400.00	90.00	179.44	7235.00	4369.92	-4369.72	42.59	0.00	409163.85	571513.01	N 32 7 29.40	W 104 14 9.08
	11500.00	90.00	179.44	7235.00	4469.92	-4469.71	43.56	0.00	409063.87	571513.99	N 32 7 28.41	W 104 14 9.07
	11600.00	90.00	179.44	7235.00	4569.92	-4569.71	44.54	0.00	408963.88	571514.96	N 32 7 27.42	W 104 14 9.06
	11700.00	90.00	179.44	7235.00	4669.92	-4669.70	45.51	0.00	408863.90	571515.94	N 32 7 26.43	W 104 14 9.05
	11800.00	90.00	179.44	7235.00	4769.92	-4769.70	46.49	0.00	408763.91	571516.91	N 32 7 25.44	W 104 14 9.04
Cimarex Gadwall 18 Federal 4H - PBHL [660' FWL, 330' FNL]	11870.50	90.00	179.44	7235.00	4840.42	-4840.19	47.17	0.00	408693.42	571517.60	N 32 7 24.74	W 104 14 9.04

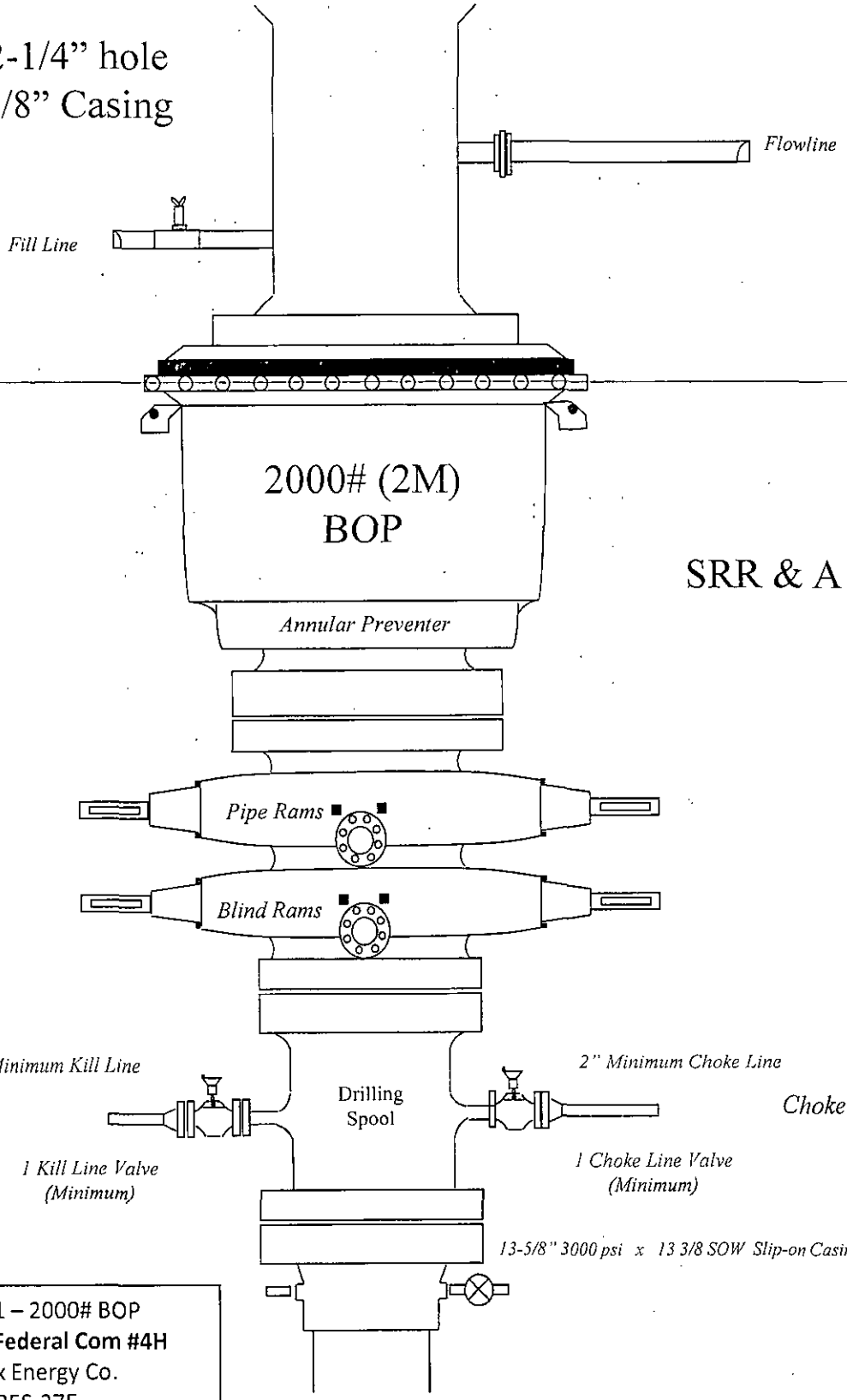
Survey Type: Non-Def Plan

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	11870.500	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Gadwall 18 Federal 4H Rev0 OPB

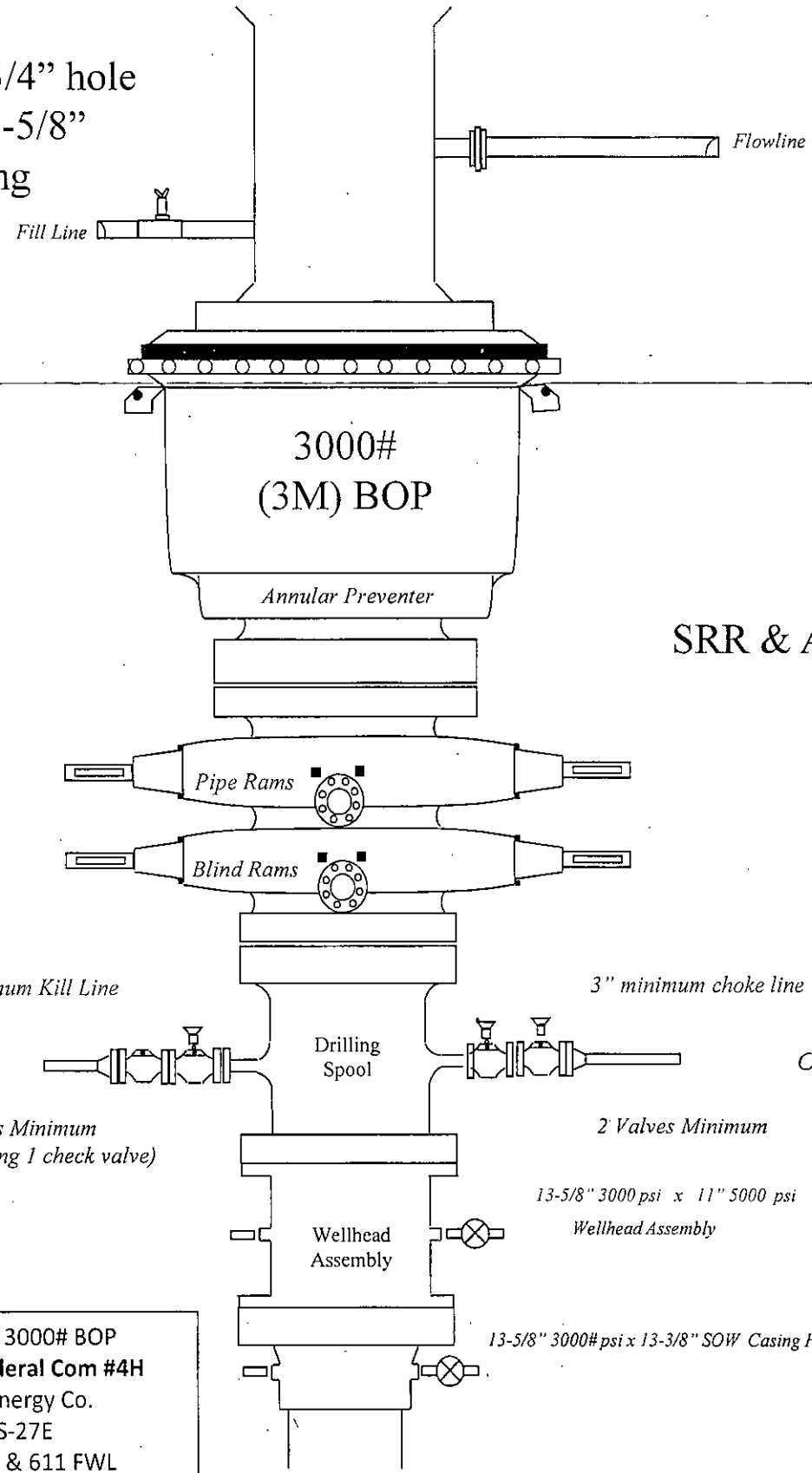
Drilling 12-1/4" hole
below 13 3/8" Casing



SRR & A

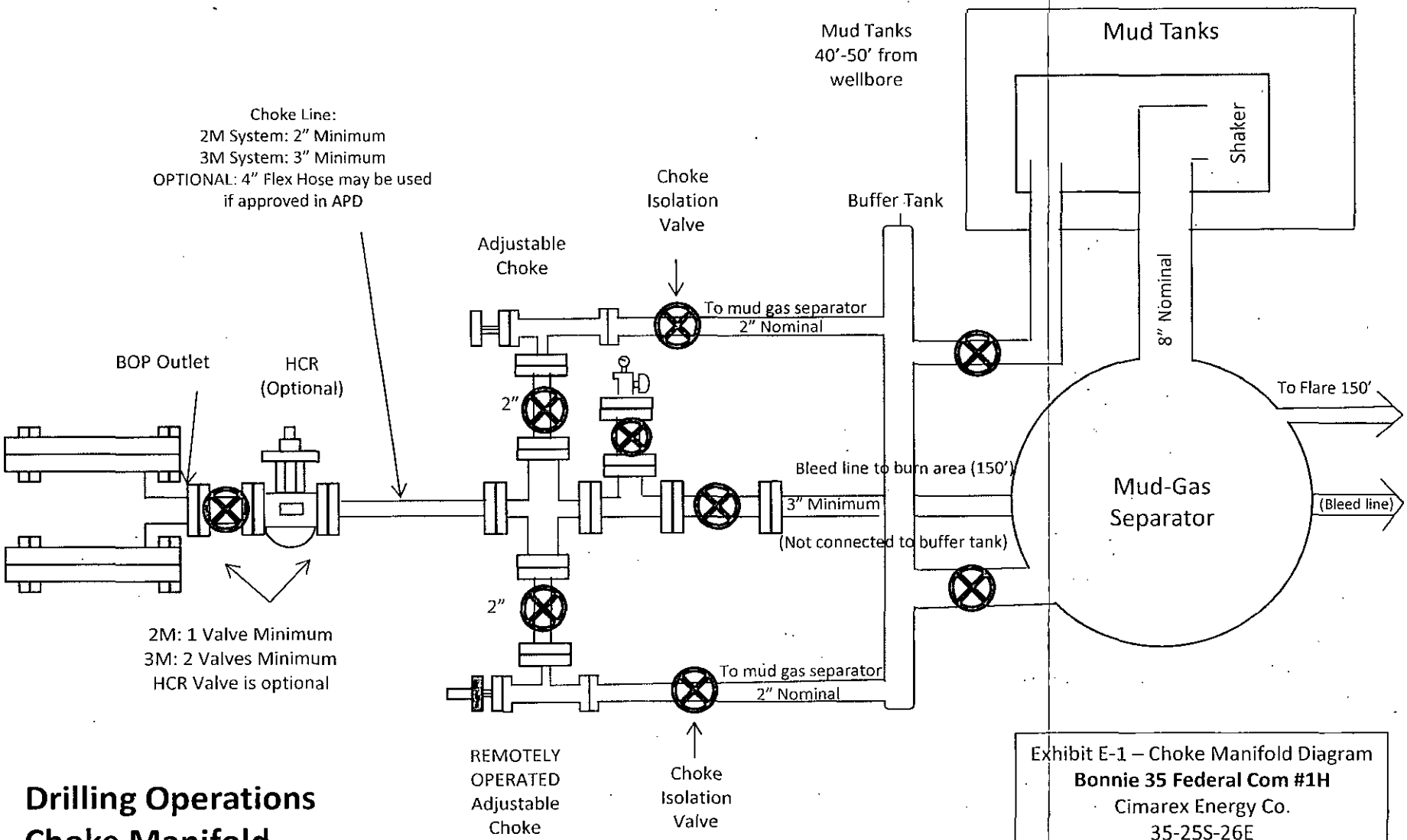
Exhibit E-1 – 2000# BOP
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Drilling 8-3/4" hole
below 9 -5/8"
Casing



SRR & A

Exhibit E-1 – 3000# BOP
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Bonnie 35 Federal Com #1H
Cimarex Energy Co.
35-25S-26E
SHL 200 FSL & 970 FEL
BHL 330 FNL & 710 FEL
Eddy County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type:	Hose Length:
Stainless Steel Armor Choke & Kill Hose	45'ft.

I.D.	O.D.
4 INCHES	9 INCHES

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 PSI	15,000 PSI	0 PSI

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling:	
Swage-It	

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 MIN.	0 PSI

Hose Assembly Serial Number:	Hose Serial Number:
79793	OKC

Comments:

Date:	Tested:	Approved:
3/8/2011	A. Jaime Jaime.	

Midwest Hose & Specialty, Inc.

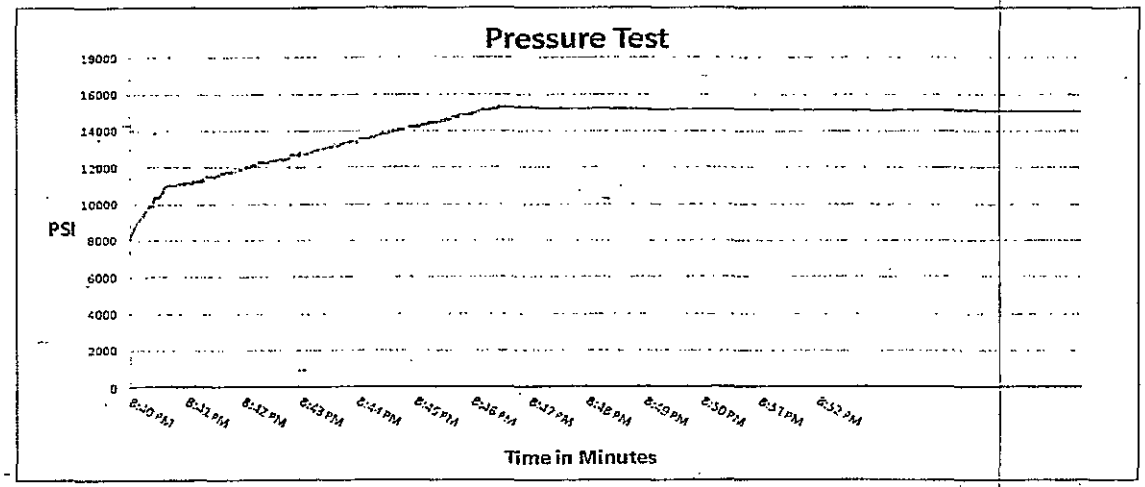
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type: C & K	Length: 45'	Type of Fitting: 4 1/16 10K	Coupling Method: Swage
I.D.: 4"	O.D.: 6.09"	Die Size: 6.38"	Final O.D.: 6.25"
Working Pressure: 10000 PSI	Burst Pressure: Standard Safety Multiplier Applies	Hose Serial #: 5544	Hose Assembly Serial #: 79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

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

Tested By: Zac Mcconnell

Approved By: Kim Thomas

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Gadwall 18 Federal Com #4H

Cimarex Energy Co.

18-25S-27E

SHL 130 FNL & 611 FWL

BHL 330 FSL & 660 FWL

Eddy County, NM

Exhibit F-2 – Co-Flex Hose
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: DEM	PO ODYD-271

SPECIFICATIONS

Sales Order 79793	Dated: 3/8/2011

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:	Date: 3/8/2011

Midwest Hose & Specialty, Inc.

Exhibit F -3– Co-Flex Hose
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

Exhibit F – Co-Flex Hose

Gadwall 18 Federal Com #4H

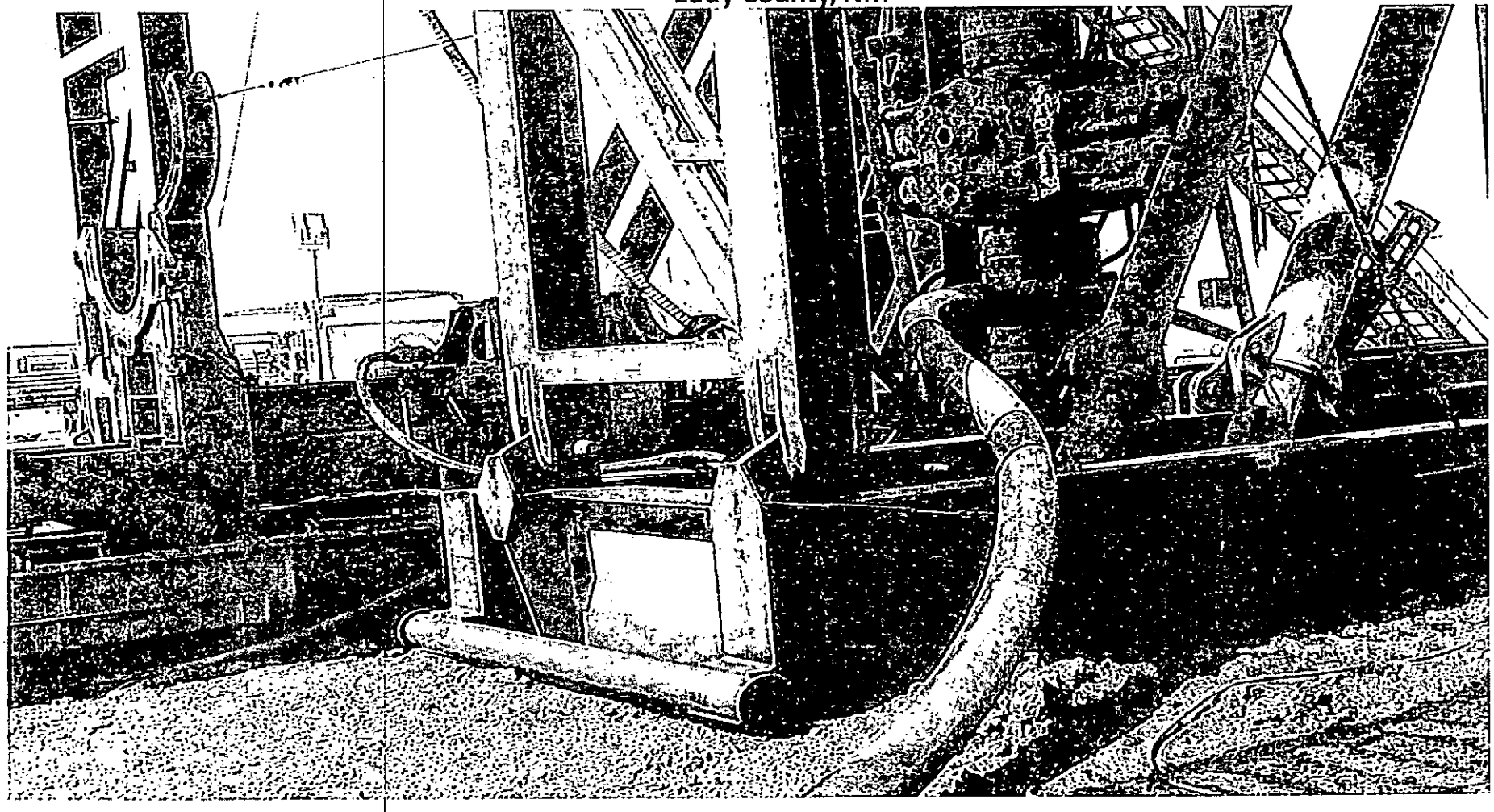
Cimarex Energy Co.

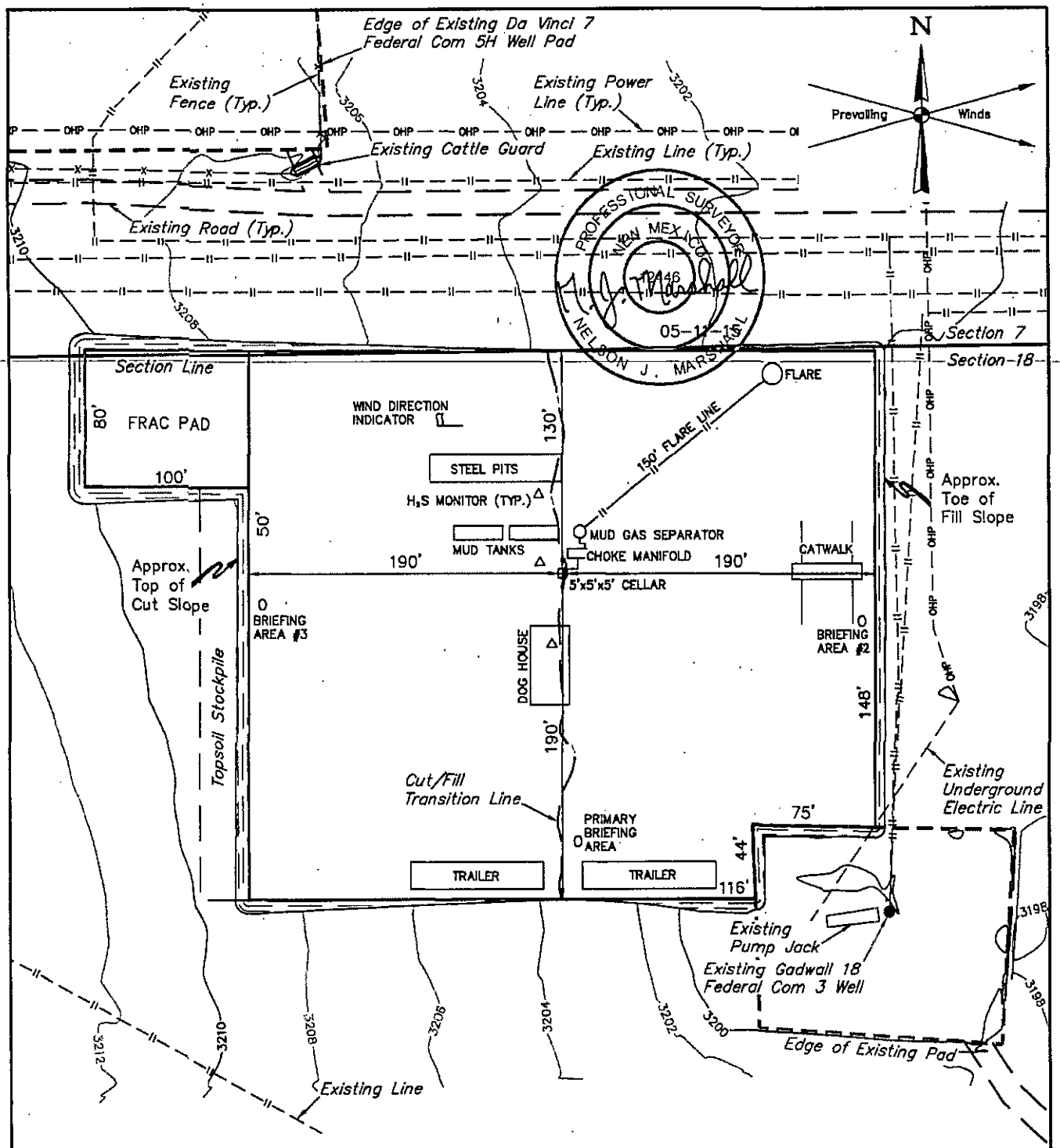
18-25S-27E

SHL 130 FNL & 611 FWL

BHL 330 FSL & 660 FWL

Eddy County, NM





NOTES:

- Flare pit is to be located a min. of 160' from the wellhead.
- Contours shown at 2' intervals.

CIMAREX ENERGY CO.

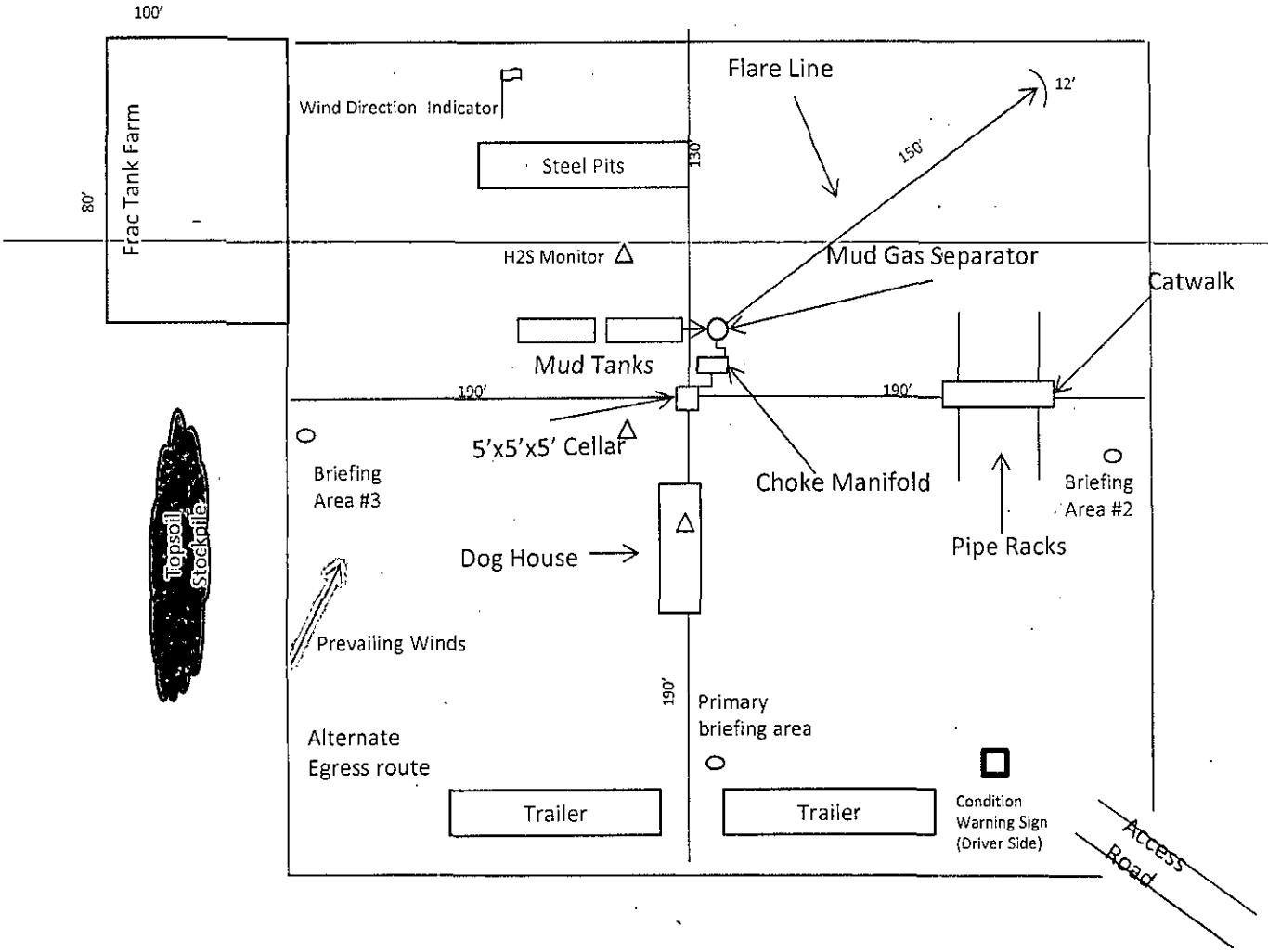
GADWALL 18 FEDERAL 4H
130' FNL 611' FWL
LOT 1, SECTION 18, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

DRAWN BY: T.E.	DATE DRAWN: 05-04-15
SCALE: 1" = 80'	REVISED: 00-00-00

TYPICAL RIG LAYOUT | **EXHIBIT D**



Wind Direction Indicators (wind sock or streamers)

△ • H2S Monitors (alarms at bell nipple and shale shaker)

○ Briefing Areas

N

Exhibit D-1 – Rig Diagram
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Gadwall 18 Federal Com 4H
Cimarex Energy Co.
UL: D, Sec.18, 25S, 27E
Eddy Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
   A. Characteristics of H_2S
   B. Physical effects and hazards
   C. Principal and operation of H2S detectors, warning system and briefing areas.
   D. Evacuation procedure, routes and first aid.
   E. Proper use of safety equipment & life support systems
   F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

2 H_2S Detection and Alarm Systems:
   A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
   B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:
   A. Windsock at mudpit area should be high enough to be visible.
   B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs
   A. Warning sign on access road to location.
   B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:
   A. See exhibit "E-1"

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 radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

H_2S Contingency Plan
Gadwall 18 Federal Com 4H
Cimarex Energy Co.
UL: D, Sec.18, 25S, 27E
Eddy Co., NM

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H_2S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H_2S and SO_2

Please see attached International Chemical Safety Cards.

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H_2S Contingency Plan Emergency Contacts

Gadwall 18 Federal Com 4H

Cimarex Energy Co.

UL: D, Sec.18, 25S, 27E

Eddy Co., NM

Company Office			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Doug McQuitty	Drilling Superintendent	432-620-1933	806-640-2605
Scott Lucas	Drilling Superintendent	432-620-1989	432-894-5572
Roy Shirley	Construction Superintendent		432-634-2136

Artesia	
Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	**575-746-2701**
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

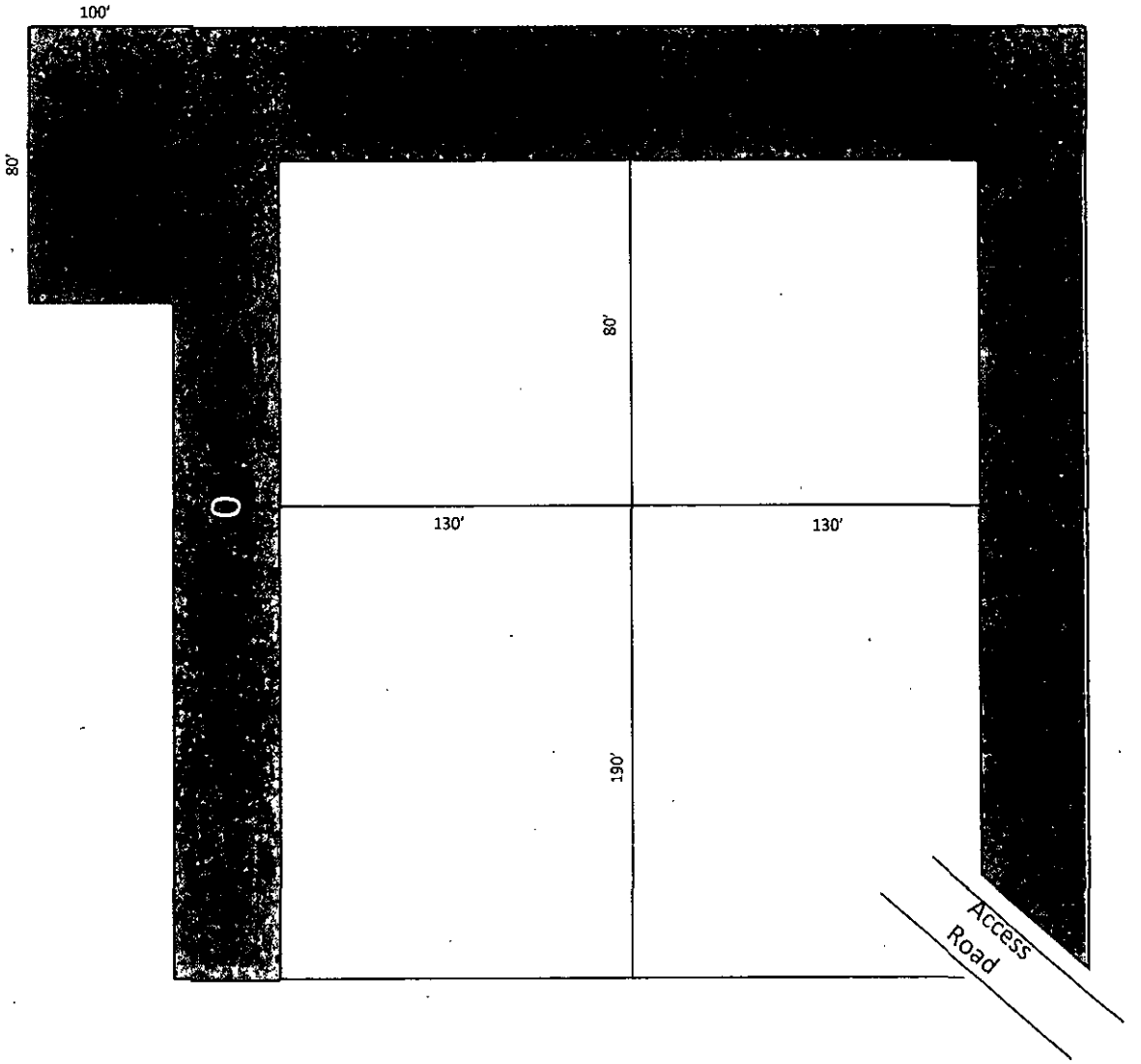
Carlsbad	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	**575-887-3798**
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

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

National	
National Emergency Response Center (Washington, D.C.)	800-424-8802

Medical	
Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other			
Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		



Wellbore

Interim Reclamation

N

Exhibit D-1
Interim Reclamation Diagram
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
18-25S-27E
SHL 130 FNL & 611 FWL
BHL 330 FSL & 660 FWL
Eddy County, NM

Surface Use Plan

Gadwall 18 Federal Com #4H

Cimarex Energy Co.

UL: D, Sec. 18, 25S, 27E

EDDY Co., NM

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what is submitted in this surface use plan without approval. If any other disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be submitted for approval prior to any new surface disturbance.

1. Existing Roads:

- Please see Exhibit B and C-1 for existing access road planned to be used to access the proposed project.
- Cimarex Energy will improve or maintain existing roads in a condition the same as or better than before the operations began. Cimarex Energy will repair pot holes, etc. All existing structures on the entire access route such as cattleguards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deterioated beyond practical use.
- Cimarex Energy will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
- Cimarex Energy will obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 14.' 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 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
- Existing access road route to the proposed project is depicted on the public access point map if applicable. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwiswe noted in the New or Reconstructed Access Roads section of the surface use plan.
  Beginning at the intersection of Black River road/ Old Cavern highway proeed in a south direction aprox 6.8 miles to the junction of this road and an existing access road for the Gadwall Fed 3 Pad to the west; turn right and proceed in a west direction, then in a north direction approx 0.1 miles to the

2. New of Reconstructed Access Roads:

- No new access road planned.

3. Well Radius Map

Please see Exhibit A for wells within one mile of the proposed well SHL and BHL.

Surface Use Plan
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
UL: D, Sec. 18, 25S, 27E
EDDY Co., NM

4. Proposed or Existing Production Facilities:

- If on completion this well is a producer, a tank battery will be used and the necessary production equipment will be installed and production will be sent to the Gadwall 18 Federal 2.
- Allocation will be based on well test. Route is on lease, please see G-1. Any changes to on lease route will be submited via sundry notice. If route is off lease, a right of way will be submitted to the BLM for approval.

5. Gas Pipeline

- No pipeline proposed.

6. Flowlines

- Cimarex Energy plans to construct on lease flowlines to service the well.
- Specifications of Polyline: 1 HP polyline for oil, gas, and water production. 1 HP polyline for gas lift.
- Both lines will be buried 10'-20' East of the access road.
- Length of Gas Lift Line: 1368.18'
- Length of Flowlines: 1368.18'
- MAOP: 1500 psi.
- Anticipated working pressure: 200-300 psi.

7. Salt Water Disposal

- No pipeline proposed.

8. Electric Lines

- Cimarex Energy plans to construct a new on lease electric line to service the well.
- Cimarex Energy plans to install and overhead electric line from the proposed well to an existing overhead electric line located in NW of section 18. The proposed electric line will be 35.37' in length, 1-40 poles, 480 volt, 4 wire, 3 phase. The electric line will exit off the East side of the well location and travel East 35.37' until it would intercept the existing electric line.
- The electric line will be routed on the West side of lease road and 25-35' from and parallel to lease road.
- Route is within lease boundaries, a right of way grant will not be acquired from the BLM. Please see Exhibit H. Any changes to E-Line route will be submited via sundry notice.

9. Water

Cimarex Energy plans to purchase fresh water from a 3rd party company. A local commercial source will truck water utilizing the access road. Please see Exhibit C-1 for access road route.

10. Construction Material

If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- An approximate 120' x 120' area is used within the proposed well site to remove caliche.
- Subsoil is removed and piled alongside the 120' by 120' area within the pad site.
- When caliche is found, material will be stockpiled within the pad site to build the location and road.
- Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit D – Rig Layout Diagram.

In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit.

Surface Use Plan
Gadwall 18 Federal Com #4H
Cimarex Energy Co.
UL: D, Sec. 18, 25S, 27E
EDDY Co., NM

11. Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be properly contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

12. Ancillary Facilities:

No camps or airstrips to be constructed.

13. Well Site Layout:

- Exhibit D: Rig Layout
- Exhibit D-2: Well Site layout plat
- Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit D-1: Interim Reclamation Diagram.

14. Interim and Final Reclamation

- Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.
- In areas planned for interim and final reclamation, surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
- If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.
- Should the well be a producer, those areas of the location not essential to porduction facilities and operations will be reclaimed and seeded per BLM requirements. Exhibit D-1 illustrates the proposed Interim Reclamation.

15. Surface Ownership:

- The wellsite is on surface owned by Bureau of Land Management, 620 E. Greene St. Carlsbad NM 88220, 575-234-5972.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

16. Other Information:

- Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- Archeological survey will be conducted for the well pad/location and proposed road and the arch report will be filed with the BLM.
- There are no known dwellings within 1½ miles of this location.

17. On Site Notes and Information:

Onsite with Barry Hunt on 4/21/14 :V-Door East, Top soil west. Frac pad NW corner west. Interim reclamation south, west & east. Short E-line staked from #3 well power. Access will be #3 access (No new road). Staked a gas/lift production line from NE corder east the the #1 Battery

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co
LEASE NO.:	NM111530
WELL NAME & NO.:	4H-Gadwall 18 Federal Com
SURFACE HOLE FOOTAGE:	130'/N & 611'/W
BOTTOM HOLE FOOTAGE	330'/S & 660'/W
LOCATION:	Section 18, T. 25 S., R. 27 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

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

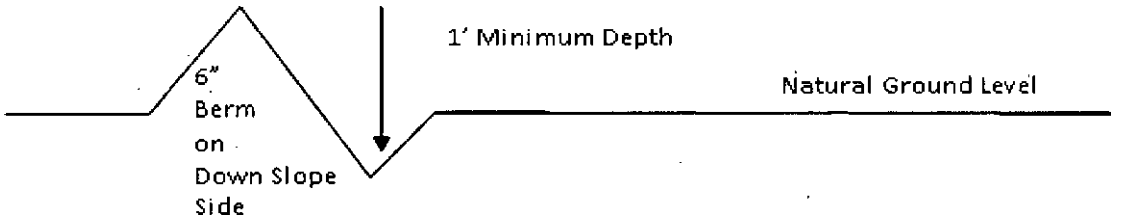
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattleguards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

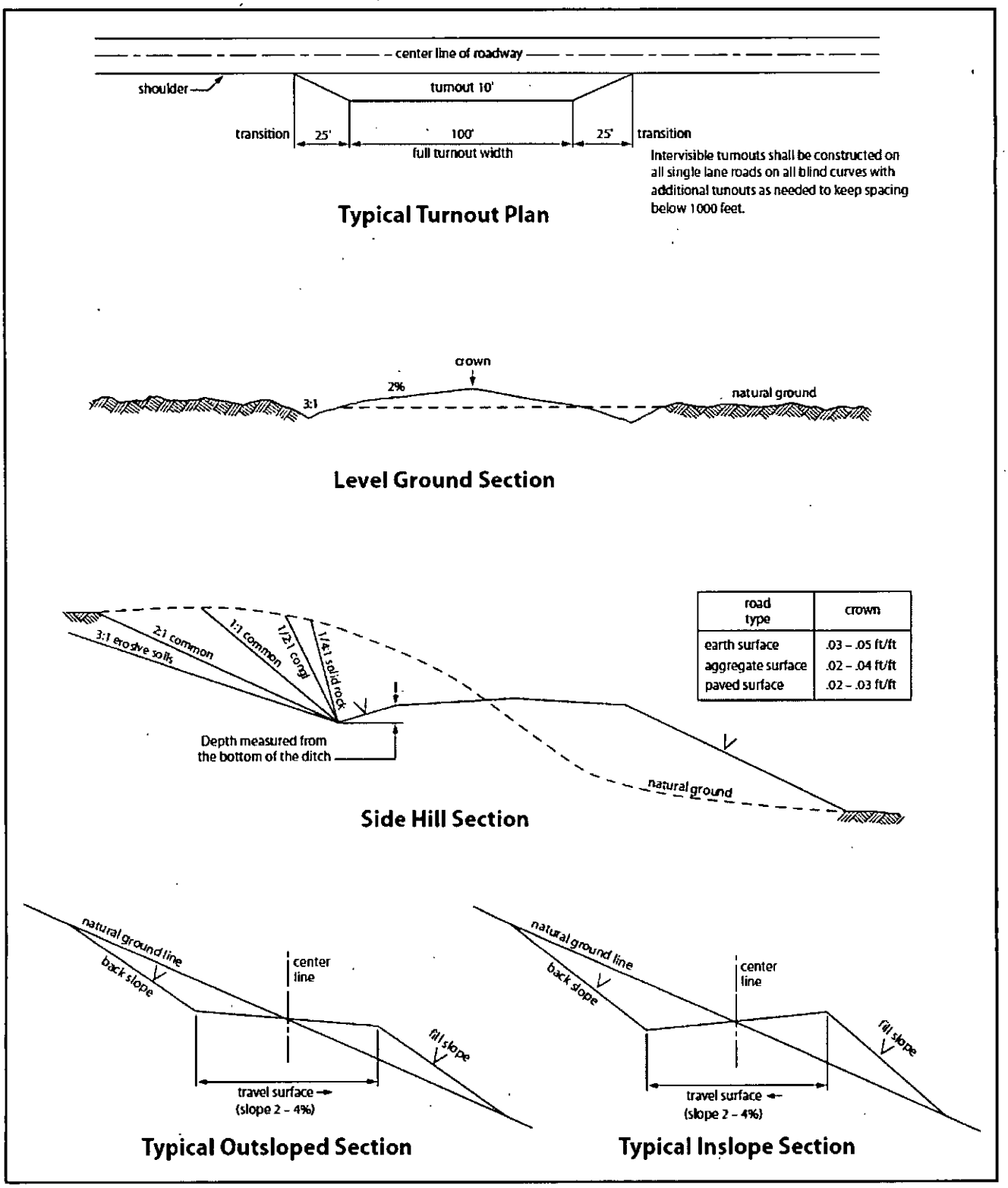


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

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

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

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

B. CASING

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

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

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

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

Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Delaware.

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

1. The **13-3/8** inch surface casing shall be set at approximately **471** feet and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt. Excess calculates to 15% - Additional cement may be required.**

    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 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.**

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

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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

C. PRESSURE CONTROL

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

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. 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.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.

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 (i.e. against the casing) 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

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

CRW 111015

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).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.