

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996

LM

APR 23 2009

SUNDRY NOTICES AND REPORTS ON WELLS
*Do not use this form for proposals to drill or to re-enter an
abandoned well. Use form 3160-3 (APD) for such proposals.*

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NM-0556811
2. Name of Operator Cimarex Energy Co. of Colorado		6. If Indian, Allottee or Tribe Name
3a. Address 5215 N. O'Connor Blvd Ste 1500 Irving Tx 75039	3b. Phone No. (include area code) 972-401-3111	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL 1980 FNL & 330 FWL 23-16S-29E BHL 1980 FNL & 330 FEL		8. Well Name and No. High Lonesome 23 Federal No. 1
		9. API Well No. 30-015-35934
		10. Field and Pool, or Exploratory Area County Line Tank; Abo ✓
		11. County or Parish, State Eddy County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>Change Location</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>and rig</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, included estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Because of, Cimarex has decided to move the High Lonesome 23 Federal No. 1 well as shown below:

Permitted Location

23-16S-29E
SHL 1980 FNL & 330 FWL
BHL 1980 FNL & 330 FEL

New Proposed Location

23-16S-29E
SHL 2310 FNL & 660 FEL
BHL 2310 FNL & 330 FWL

Please see attached revised drilling plans, plats, and preliminary directional survey. We are also switching to a haul-off bin system as shown on the attached revised rig plat. MOA application is in progress in lieu of an archaeological report. A Federal ROW application is in progress for the proposed acces road.

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Natalie Krueger

Signature

Natalie Krueger

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Title
Regulatory Analyst
Date

March 23, 2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ Don Peterson

Title

Date

APR 16 2009

Conditions of Approval, if any, are attached. 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.

Office

CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001, makes 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.

(Instructions on reverse)

NML

Revised Drilling Plan
High Lonesome 23 Federal No. 1
 Cimarex Energy Co. of Colorado
 23-16S-29E
 SHL 2310 FNL & 660 FEL
 BHL 2310 FNL & 330 FWL
 Eddy County, NM

Revised Drilling Plan

Hole	Hole Size	Depth			Casing OD		Weight	Thread	Collar	Grade
Surface	17½"	0'	to	340'	New	13¾"	48#	8-R	STC	H-40
Intermediate	12¼"	0'	to	2700'	New	9¾"	40#	8-R	LTC	J-55
Pilot Hole	8¾"	0'	to	7600'	New	7"	26#	8-R	LTC	P-110
Lateral (to EOC)	6⅝"	6620'	to	7469'	New	4½"	11.6#	8-R	BTC	P-110
Lateral (to TD)	6⅝"	7469'	to	11299'	New	4½"	11.6#	8-R	LTC	P-110

For **Lateral**, Set whipstock plug @ 6732'. Mill window from 6710' to 6725' and kick off 6⅝" hole at 6720'. Drill to TD of MD 11299' TVD 7240'. Install 4½" Peak Completion Assembly 11.6# P-110 **BTC** casing from Liner Hanger at 6620' to EOC at 7469' and cross over to **LTC** from 7469' to 11299'.

4½" liner will be PEAK completion liner and will not require cement.

Revised Mud Program

Hole	Depth			Mud Wt	Visc	Fluid Loss	Type Mud
Surface	0'	to	340'	8.4 - 8.6	28	NC	FW
Intermediate	340'	to	2,700'	10.0	30-32	NC	Brine water
Pilot Hole	2,700'	to	7,600'	8.4 - 9.5	30-32	NC	FW, brine
Lateral	6,620'	to	11,299'	9	28-32	May lose circ	2% KCl

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87506

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-35934	Pool Code 97197	Pool Name County Line Tank; Abo
Property Code	Property Name HIGH LONESOME "23" FEDERAL	Well Number 1
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3710'

Surface Location

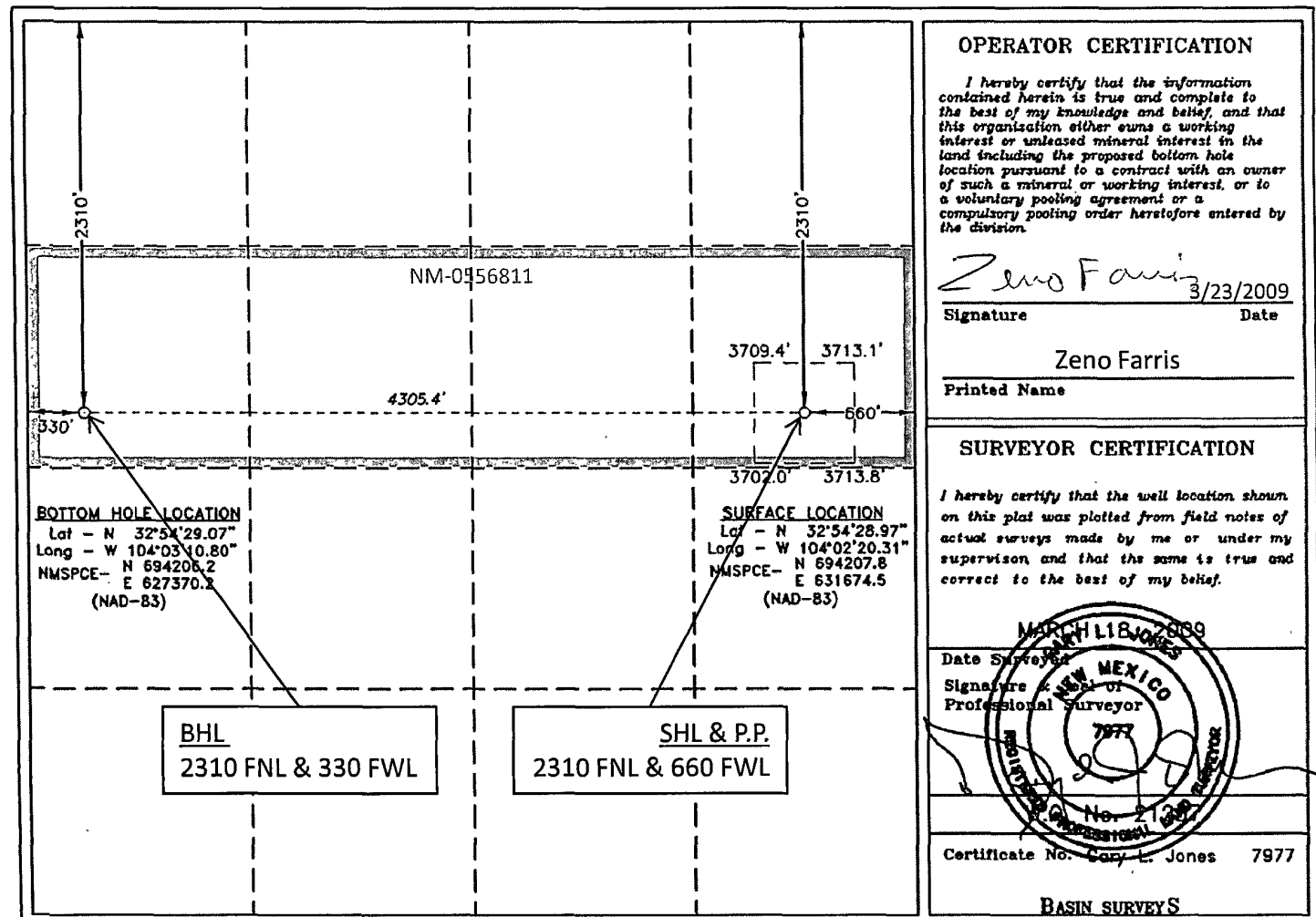
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	23	16 S	29 E		2310	NORTH	660	EAST	EDDY

Bottom Hole Location If Different From Surface

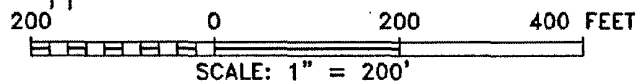
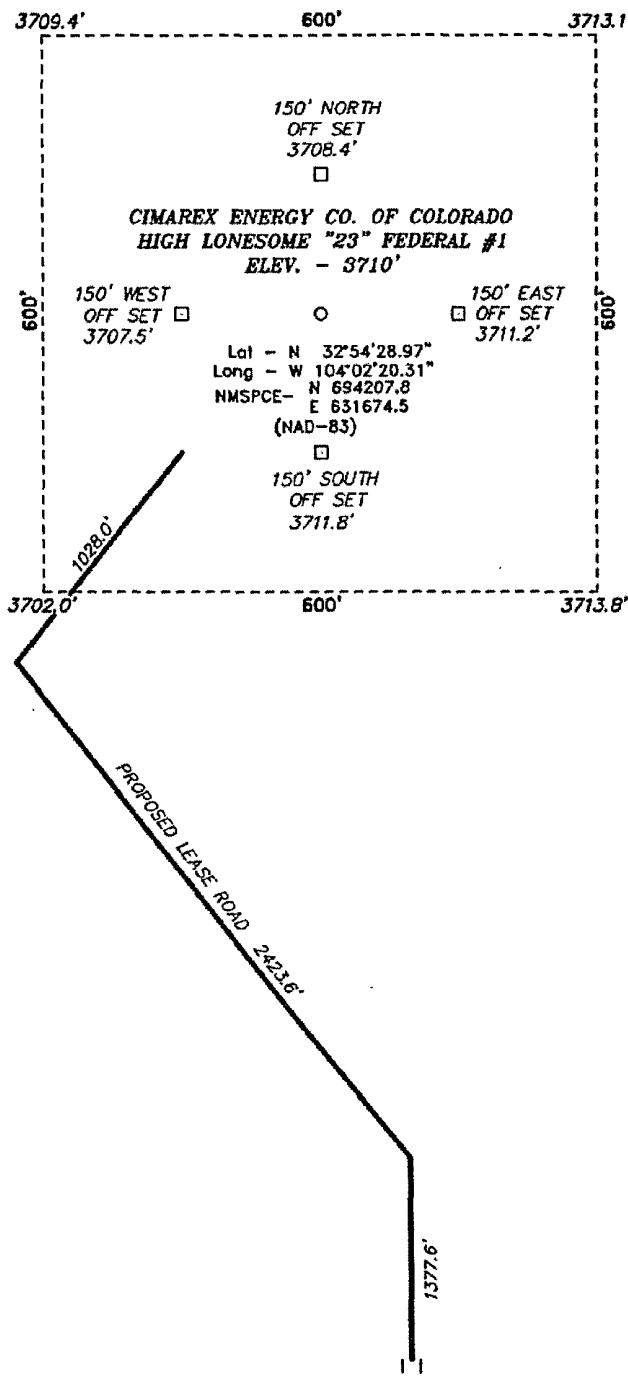
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	23	16 S	29 E		2310	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SECTION 23, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF HWY 82 AND CO. RD. 215,
GO NORTH ON CO. RD. 215 FOR 5.3 MILES TO
LEASE ROAD, ON LEASE ROAD GO NORTH 0.25 MILES
TO LEASE ROAD, ON LEASE ROAD GO
NORTHWESTERLY 0.6 MILES TO PROPOSED LEASE
ROAD.

CIMAREX ENERGY CO. OF COLORADO

REF: HIGH LONESOME "23" FEDERAL #1 / WELL PAD TOPO

THE HIGH LONESOME "23" FEDERAL #1 LOCATED 2310'
FROM THE NORTH LINE AND 660' FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 16 SOUTH, RANGE 29 EAST,

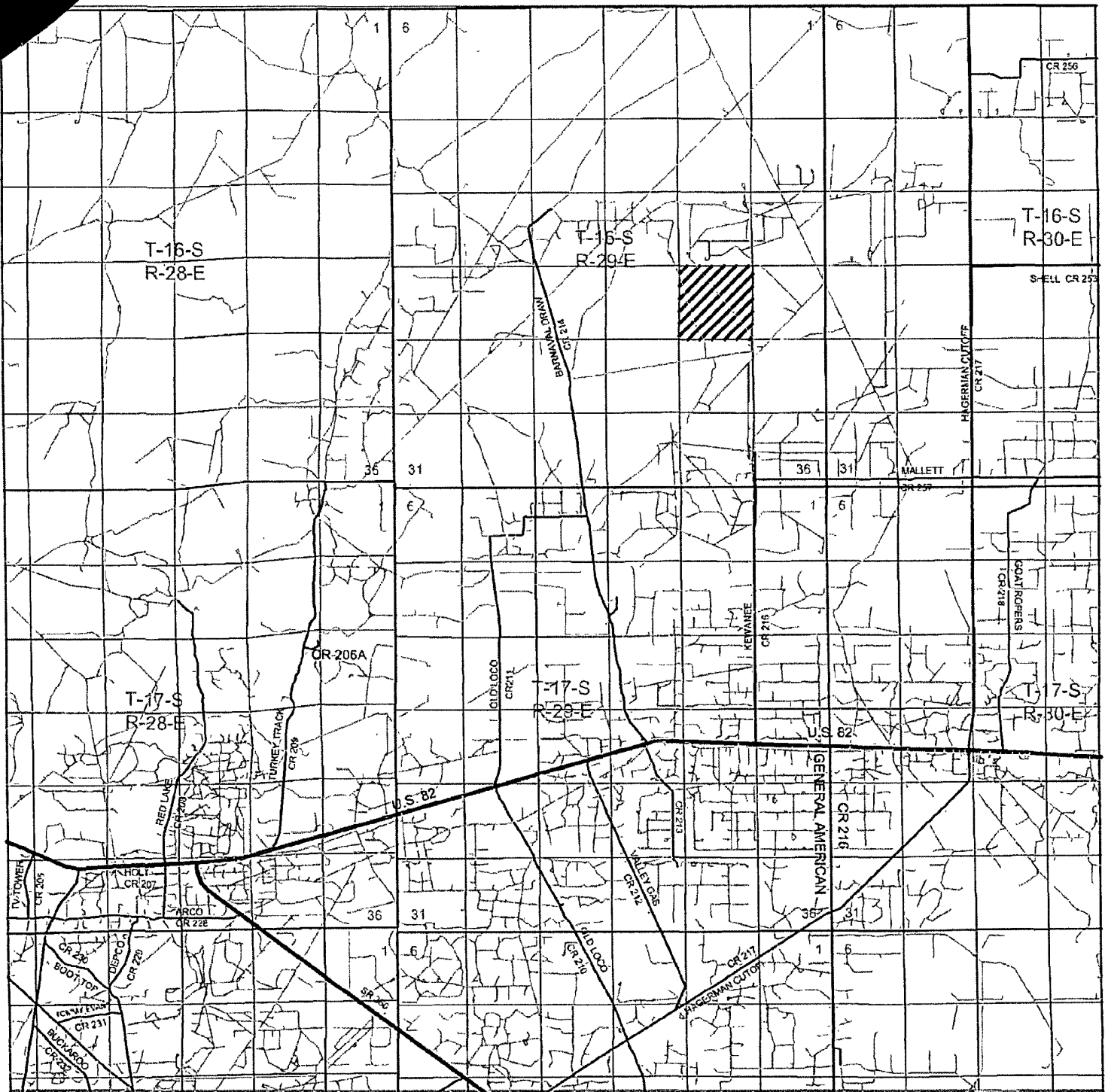
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Basin Surveys P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 21237 Drawn By: J. SMALL

Date: 03-20-2009 Disk: JMS 21237

Survey Date: 03-18-2009 Sheet 1 of 1 Sheets



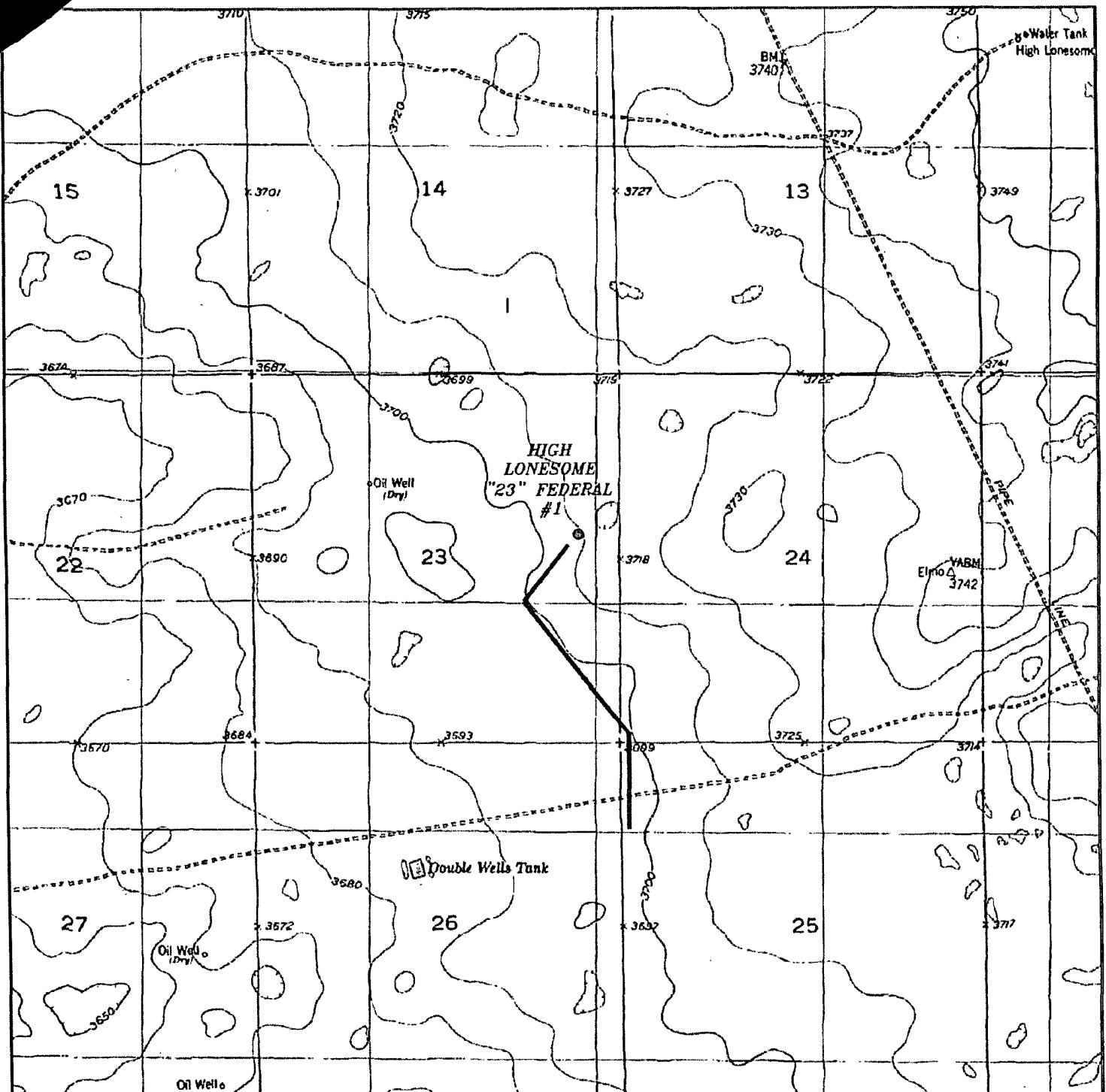
HIGH LONESOME "23" FEDERAL #1
 Located 2310' FNL and 660' FEL
 Section 23, Township 16 South, Range 29 East,
 N.M.P.M., Eddy County, New Mexico.

basin
surveys
 focused on excellence
 in the oilfield

P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

W.O. Number: JMS 21237
 Survey Date: 03-18-2009
 Scale: 1" = 2 Miles
 Date: 03-20-2009

CIMAREX
ENERGY CO.
OF COLORADO



HIGH LONESOME "23" FEDERAL #1
 Located 2310' FNL and 660' FEL
 Section 23, Township 16 South, Range 29 East,
 N.M.P.M., Eddy County, New Mexico.

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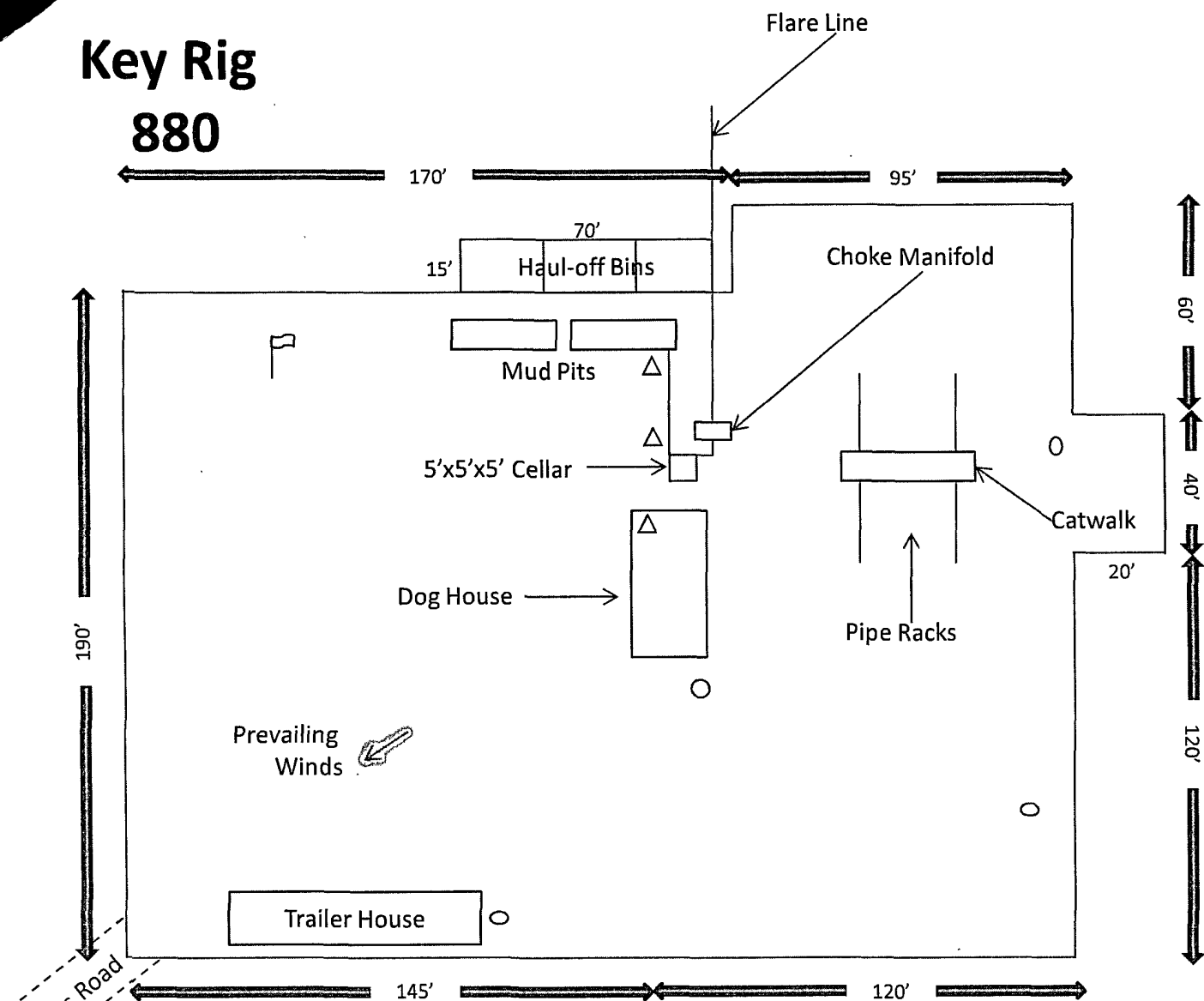
Survey Date: 03-18-2009

Scale: 1" = 2000'

Date: 03-20-2009

CIMAREX
ENERGY CO.
OF COLORADO

Key Rig 880



- Wind Direction Indicators
(wind sock or streamers)
- △ H2S Monitors
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit

Rig Diagram
High Lonesome 23 Federal No. 1
 Cimarex Energy Co. of Colorado
 23-16S-29E
 SHL 2310 FNL & 660 FEL
 BHL 2310 FNL & 330 FWL
 Eddy County, NM



Cimarex Energy Co.

Location: Eddy County, NM
Field: (Lonesome 23) Sec 23, T16S, R29E
Facility: High Lonesome 23 Fed Com No. 1H

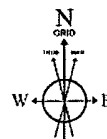
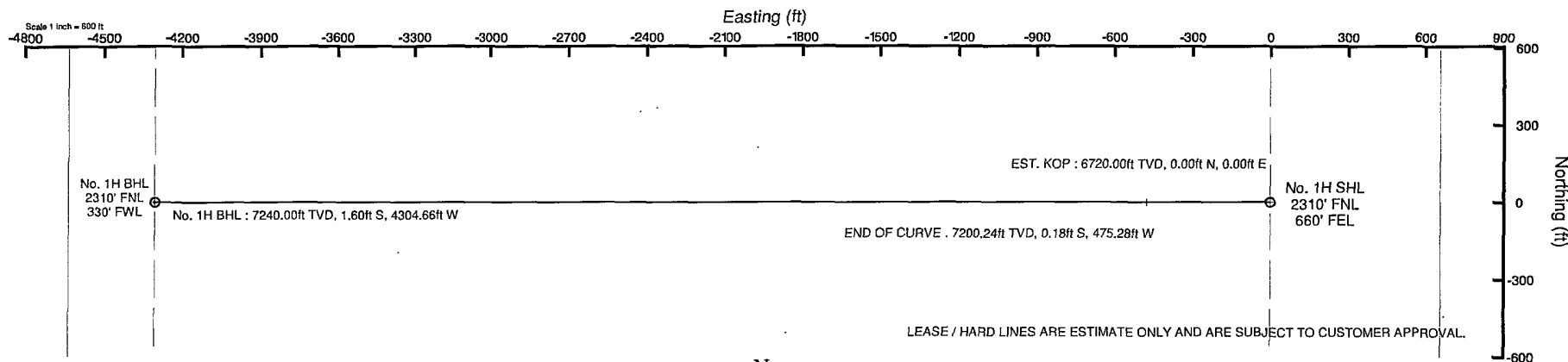
Slot: No. 1H SHL
Well: No. 1H
Wellbore: No. 1H PWB



INTEQ

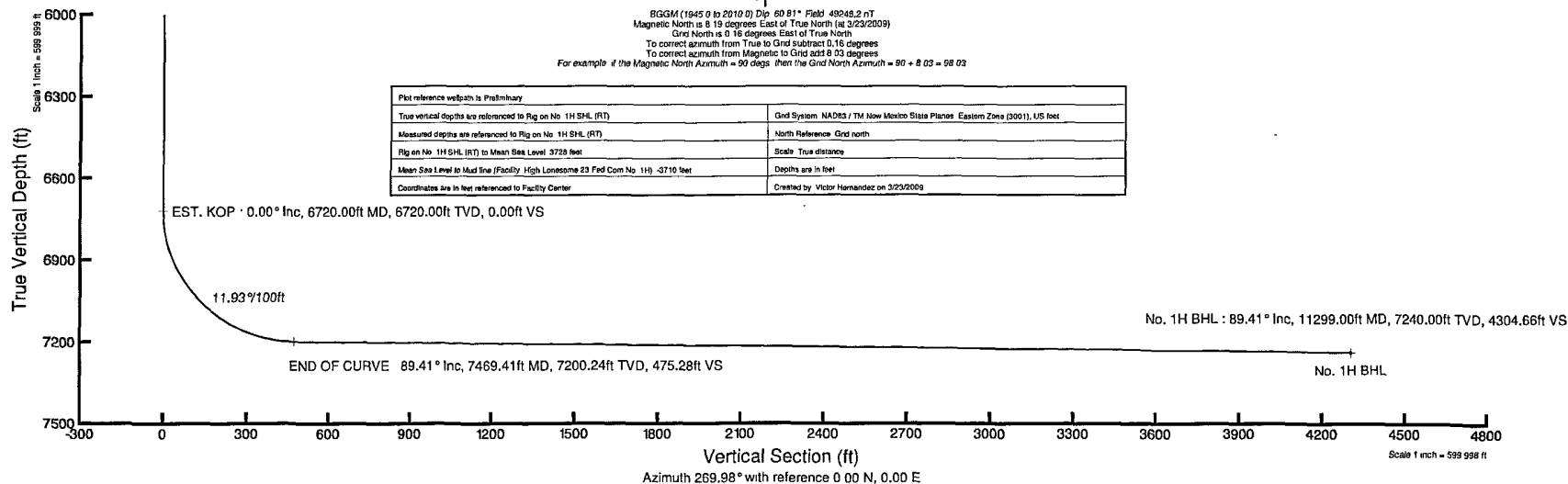
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	0.00	0.000	269.979	0.00	0.00	0.00	0.00	0.00
EST. KOP	6720.00	0.000	269.979	6720.00	0.00	0.00	0.00	0.00
END OF CURVE	7469.41	89.405	269.979	7200.24	-0.18	-475.28	11.93	475.28
No. 1H BHL	11299.00	89.405	269.979	7240.00	-1.60	-4304.66	0.00	4304.66



8GGM (1945 0 to 2010 0) Dip 60.81° Field 49048.2 nT
Magnetic North is 8.19 degrees East of True North (at 3/23/2009)
Grid North is 0.16 degrees East of True North
To correct azimuth from True to Grid subtract 0.16 degrees
To correct azimuth from Magnetic to Grid add 8.03 degrees
For example if the Magnetic North Azimuth = 90 degs then the Grid North Azimuth = 90 + 8.03 = 98.03

Plot reference wellpath is Preliminary	
True vertical depths are referenced to Rig on No. 1H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes Eastern Zone (2001), US feet
Measured depths are referenced to Rig on No. 1H SHL (RT)	North Reference: Grid north
Rig on No. 1H SHL (RT) to Mean Sea Level 3728 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: High Lonesome 23 Fed Com No. 1H) -3710 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 3/23/2009





Planned Wellpath Report

Preliminary

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Lonesome 23) Sec 23, T16S, R29E	Wellbore	No. 1H PWB
Facility	High Lonesome 23 Fed Com No. 1H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999918	Report Generated	3/23/2009 at 2:06:51 PM
Convergence at slot	0.16° East	Database/Source file	WA_Midland/No. 1H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	631674.50	694207.80	32°54'28.968"N	104°02'20.310"W
Facility Reference Pt			631674.50	694207.80	32°54'28.968"N	104°02'20.310"W
Field Reference Pt			631674.50	694207.80	32°54'28.968"N	104°02'20.310"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 1H SHL (RT) to Mean Sea Level	3728.00ft
Vertical Reference Pt	Rig on No. 1H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.98°



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Lonesome 23) Sec 23, T16S, R29E	Wellbore	No. 1H PWB
Facility	High Lonesome 23 Fed Com No. 1H		

WELLPATH DATA (52 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	269.979	0.00	0.00	0.00	0.00	0.00	Tie On
2400.00†	0.000	269.979	2400.00	0.00	0.00	0.00	0.00	San Andres
5950.00†	0.000	269.979	5950.00	0.00	0.00	0.00	0.00	Abo Shale
6720.00	0.000	269.979	6720.00	0.00	0.00	0.00	0.00	EST. KOP
6820.00†	11.930	269.979	6819.28	10.37	0.00	-10.37	11.93	
6920.00†	23.860	269.979	6914.27	41.05	-0.02	-41.05	11.93	
7020.00†	35.790	269.979	7000.87	90.69	-0.03	-90.69	11.93	
7120.00†	47.720	269.979	7075.33	157.17	-0.06	-157.17	11.93	
7220.00†	59.650	269.979	7134.45	237.60	-0.09	-237.60	11.93	
7320.00†	71.580	269.979	7175.66	328.51	-0.12	-328.51	11.93	
7420.00†	83.510	269.979	7197.19	425.98	-0.16	-425.98	11.93	
7458.40†	88.092	269.979	7200.00	464.27	-0.17	-464.27	11.93	Lower Abo Dolomite
7469.41	89.405	269.979	7200.24	475.28	-0.18	-475.28	11.93	END OF CURVE
7520.00†	89.405	269.979	7200.77	525.86	-0.20	-525.86	0.00	
7620.00†	89.405	269.979	7201.80	625.86	-0.23	-625.86	0.00	
7720.00†	89.405	269.979	7202.84	725.85	-0.27	-725.85	0.00	
7820.00†	89.405	269.979	7203.88	825.85	-0.31	-825.85	0.00	
7920.00†	89.405	269.979	7204.92	925.84	-0.34	-925.84	0.00	
8020.00†	89.405	269.979	7205.96	1025.84	-0.38	-1025.84	0.00	
8120.00†	89.405	269.979	7207.00	1125.83	-0.42	-1125.83	0.00	
8220.00†	89.405	269.979	7208.03	1225.83	-0.46	-1225.83	0.00	
8320.00†	89.405	269.979	7209.07	1325.82	-0.49	-1325.82	0.00	
8420.00†	89.405	269.979	7210.11	1425.81	-0.53	-1425.81	0.00	
8520.00†	89.405	269.979	7211.15	1525.81	-0.57	-1525.81	0.00	
8620.00†	89.405	269.979	7212.19	1625.80	-0.60	-1625.80	0.00	
8720.00†	89.405	269.979	7213.22	1725.80	-0.64	-1725.80	0.00	
8820.00†	89.405	269.979	7214.26	1825.79	-0.68	-1825.79	0.00	
8920.00†	89.405	269.979	7215.30	1925.79	-0.72	-1925.79	0.00	
9020.00†	89.405	269.979	7216.34	2025.78	-0.75	-2025.78	0.00	
9120.00†	89.405	269.979	7217.38	2125.78	-0.79	-2125.78	0.00	



Planned Wellpath Report

Preliminary

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Lonesome 23) Sec 23, T16S, R29E	Wellbore	No. 1H PWB
Facility	High Lonesome 23 Fed Com No. 1H		

WELLPATH DATA (52 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
9220.00†	89.405	269.979	7218.42	2225.77	-0.83	-2225.77	0.00	
9320.00†	89.405	269.979	7219.45	2325.77	-0.86	-2325.77	0.00	
9420.00†	89.405	269.979	7220.49	2425.76	-0.90	-2425.76	0.00	
9520.00†	89.405	269.979	7221.53	2525.76	-0.94	-2525.76	0.00	
9620.00†	89.405	269.979	7222.57	2625.75	-0.98	-2625.75	0.00	
9720.00†	89.405	269.979	7223.61	2725.74	-1.01	-2725.74	0.00	
9820.00†	89.405	269.979	7224.64	2825.74	-1.05	-2825.74	0.00	
9920.00†	89.405	269.979	7225.68	2925.73	-1.09	-2925.73	0.00	
10020.00†	89.405	269.979	7226.72	3025.73	-1.12	-3025.73	0.00	
10120.00†	89.405	269.979	7227.76	3125.72	-1.16	-3125.72	0.00	
10220.00†	89.405	269.979	7228.80	3225.72	-1.20	-3225.72	0.00	
10320.00†	89.405	269.979	7229.84	3325.71	-1.24	-3325.71	0.00	
10420.00†	89.405	269.979	7230.87	3425.71	-1.27	-3425.71	0.00	
10520.00†	89.405	269.979	7231.91	3525.70	-1.31	-3525.70	0.00	
10620.00†	89.405	269.979	7232.95	3625.70	-1.35	-3625.70	0.00	
10720.00†	89.405	269.979	7233.99	3725.69	-1.38	-3725.69	0.00	
10820.00†	89.405	269.979	7235.03	3825.69	-1.42	-3825.68	0.00	
10920.00†	89.405	269.979	7236.07	3925.68	-1.46	-3925.68	0.00	
11020.00†	89.405	269.979	7237.10	4025.67	-1.50	-4025.67	0.00	
11120.00†	89.405	269.979	7238.14	4125.67	-1.53	-4125.67	0.00	
11220.00†	89.405	269.979	7239.18	4225.66	-1.57	-4225.66	0.00	
11299.00	89.405	269.979	7240.00†	4304.66	-1.60	-4304.66	0.00	No. 1H BHL



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Lonesome 23) Sec 23, T16S, R29E	Wellbore	No. 1H PWB
Facility	High Lonesome 23 Fed Com No. 1H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 1H BHL	11299.00	7240.00	-1.60	-4304.66	627370.20	694206.20	32°54'29.068"N	104°03'10.801"W	point

SURVEY PROGRAM: Ref Wellbore: No. 1H PWB Ref Wellpath: Preliminary				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	11299.00	NaviTrak (Standard)		No. 1H PWB

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Company of Colorado
LEASE NO.:	NM-0556811
WELL NAME & NO.:	High Lonesome 23 Federal # 1
SURFACE HOLE FOOTAGE:	2310' FNL & 660' FEL
BOTTOM HOLE FOOTAGE:	2310' FNL & 330' FWL
LOCATION:	Section 23, T. 16 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Hydrology
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☒ **Road Section Diagram**
- ☒ **Drilling**
 - Pilot hole plug
 - Cement volume from original APD used for calculations
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Closed Loop System/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

V-Door South

BERMING

Berming of the well pad and tank battery facility to contain/control any spills or leaks on the pad is required.

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) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

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

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. Closed Loop System

Closed Loop System V- Door South

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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. 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. 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 thirty (30) feet.

Surfacing

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

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

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

Crowning

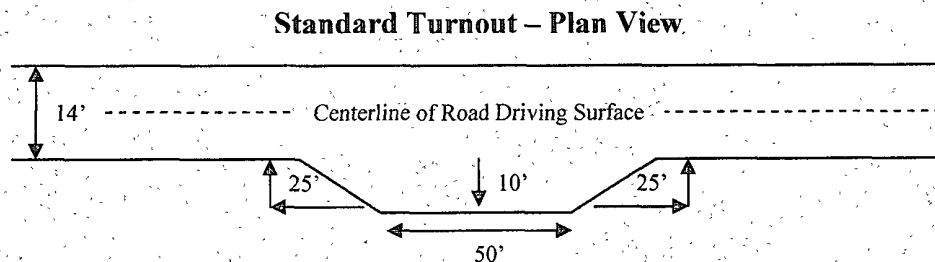
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

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

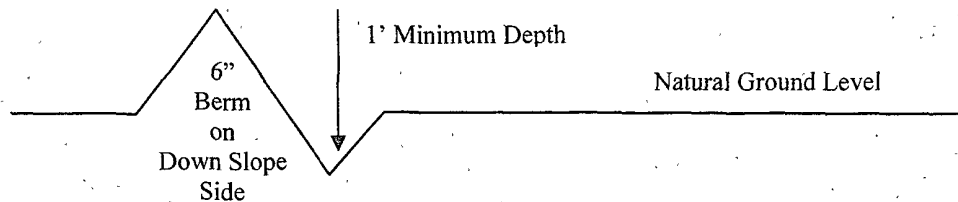


Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Culvert Installations

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

Cattleguards

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

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

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

Fence Requirement

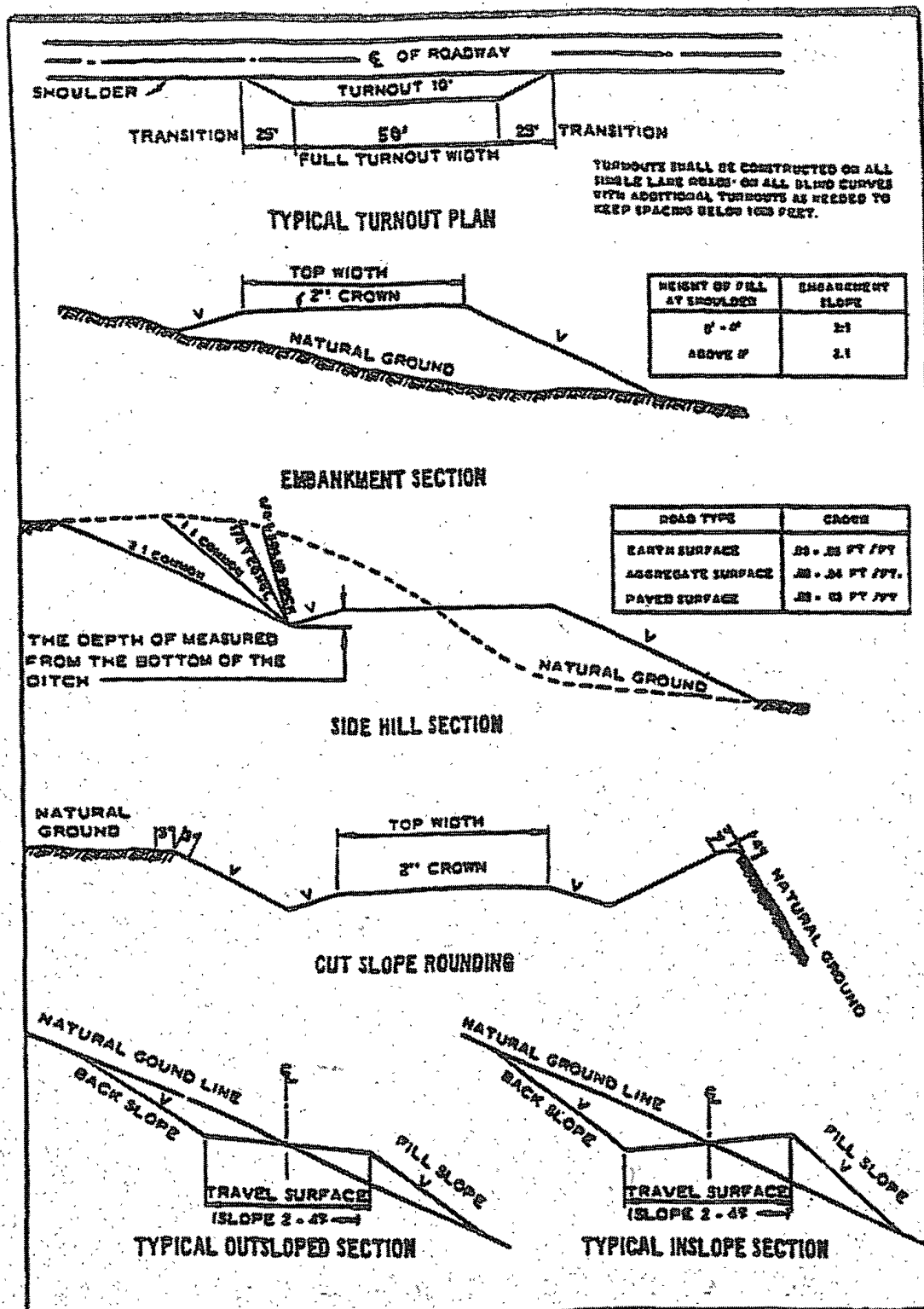
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 - Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

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

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values 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.
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 are located, this does not include the dog house or stairway area.

B. CASING NOTE – CEMENT VOLUMES USED FROM ORIGINAL APD

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Possible lost circulation in the Grayburg and San Andres formations.

Possible high pressure gas bursts from the Wolfcamp formation.

1. The 13-3/8 inch surface casing shall be set at **approximately 340 feet** and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - 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 action 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.

Tag cement at bottom of pilot hole and report on subsequent report. NOTE: Pilot hole will require proper plug when well is plugged as a plug is required at the top of the Wolfcamp formation.
3. The minimum required fill of cement behind the 7 inch production casing is:
☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
☒ No cement required as operator is using a Peak Completion Assembly.
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. 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.
 - d. 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.
 - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.
 - f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

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

WWI 041509

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.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

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, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

C. ELECTRIC LINES

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

BLM SERIAL #:
COMPANY REFERENCE:
WELL # & NAME:

Seed Mixture 1, for Loamy Sites

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

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

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

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed
(Insert Seed Mixture Here)

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.