

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021**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.

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

3a. Address

3b. Phone No. (include area code)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

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

8. Well Name and No.

9. API Well No.

10. Field and Pool or Exploratory Area

11. Country or Parish, State

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

TYPE OF SUBMISSION	TYPE OF ACTION				
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

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

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SESW / 191 FSL / 1345 FWL / TWSP: 23N / RANGE: 9W / SECTION: 25 / LAT: 36.191179 / LONG: -107.744868 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 3 / 379 FNL / 1614 FWL / TWSP: 23N / RANGE: 9W / SECTION: 36 / LAT: 36.189612 / LONG: -107.743962 (TVD: 4049 feet, MD: 4070 feet)

PPP: NESE / 379 FNL / 1614 FWL / TWSP: 23N / RANGE: 9W / SECTION: 36 / LAT: 36.189612 / LONG: -107.743962 (TVD: 4049 feet, MD: 4070 feet)

PPP: NENW / 379 FNL / 1614 FWL / TWSP: 23N / RANGE: 9W / SECTION: 36 / LAT: 36.189612 / LONG: -107.743962 (TVD: 4049 feet, MD: 4070 feet)

BHL: NENW / 514 FNL / 2299 FWL / TWSP: 22N / RANGE: 8W / SECTION: 6 / LAT: 36.174694 / LONG: -107.723703 (TVD: 4626 feet, MD: 13308 feet)

CONFIDENTIAL

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code 97232		³ Pool Name BASIN MANCOS	
⁴ Property Code 321253		⁵ Property Name RODEO UNIT			⁶ Well Number 512H
⁷ GRID No. 372286		⁸ Operator Name ENDURING RESOURCES, LLC			⁹ Elevation 6798'

¹⁰ Surface Location

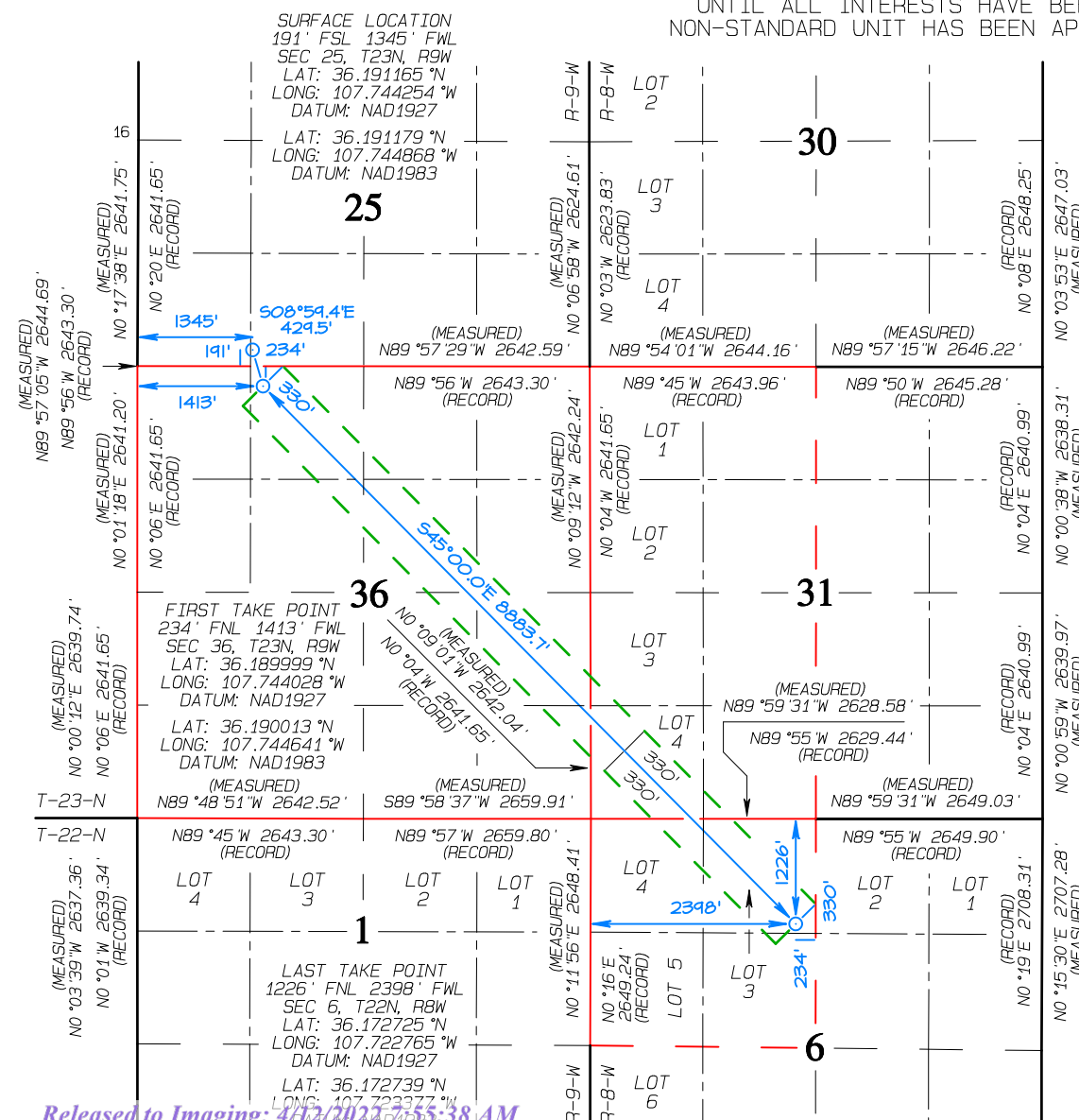
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	23N	9W		191	SOUTH	1345	WEST	SAN JUAN

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
C	6	22N	8W	3	1226	NORTH	2398	WEST	SAN JUAN

¹² Dedicated Acres
1121.69W/2 - Section 31, T23NR8W
Entire Section 36, T23NR9W
NW/4 - Section 6, T22NR8W¹³ Joint or Infill¹⁴ Consolidation Code¹⁵ Order No.

R-14313

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION
UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A
NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION¹⁷ OPERATOR CERTIFICATION

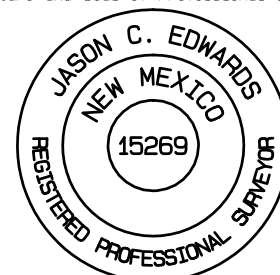
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this 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.

Signature: Khem Suthiwan Date: 3/22/2022Printed Name: Khem Suthiwan
E-mail Address: ksuthiwan@enduringresources.com¹⁸ 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.

Date Revised: MARCH 1, 2022
Survey Date: JANUARY 24, 2017

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269



Well: Rodeo Unit #512H
Site: Rodeo Unit 511 pad (511, 512 & 513)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig: Ensign 773

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	North	East	Latitude	Longitude
Rodeo 512 LTP 1226 FNL 2398 FWL 330 perp	4622.00	-6706.04	6349.01	1882192.303	2755544.293	36.172739000	-107.723377000
Rodeo 512 FTP 234 FNL 1413 FWL 330 perp	4687.00	-424.22	248.25	1888474.109	2749443.547	36.190013000	-107.744028000

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Depth Reference: RKB=6798+28 @ 6826.00ft (Ensign 773)
Surface location:

North: 188898.328 East: 2749195.296 Lat: 36.191179000 Long: -107.744868000

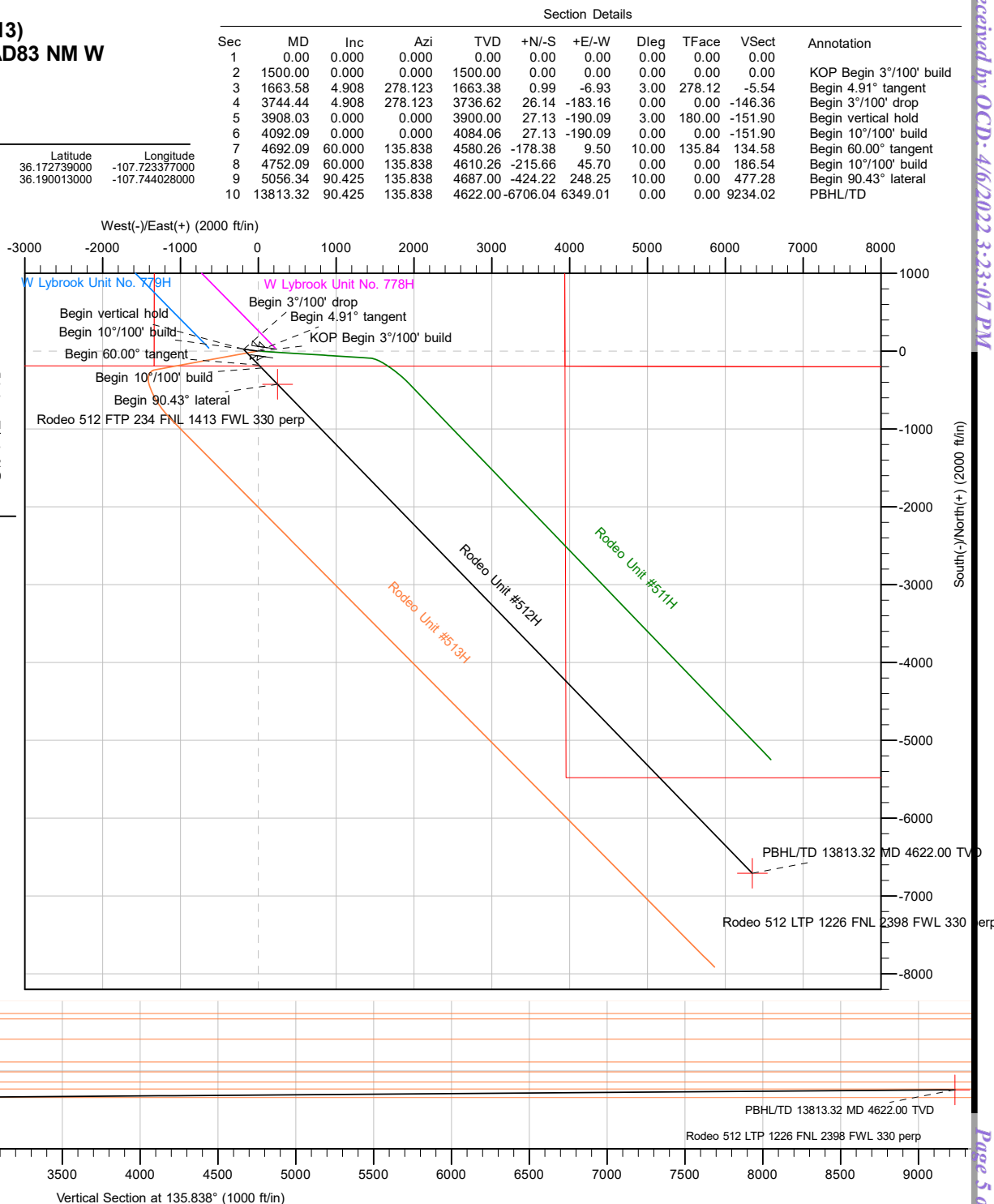
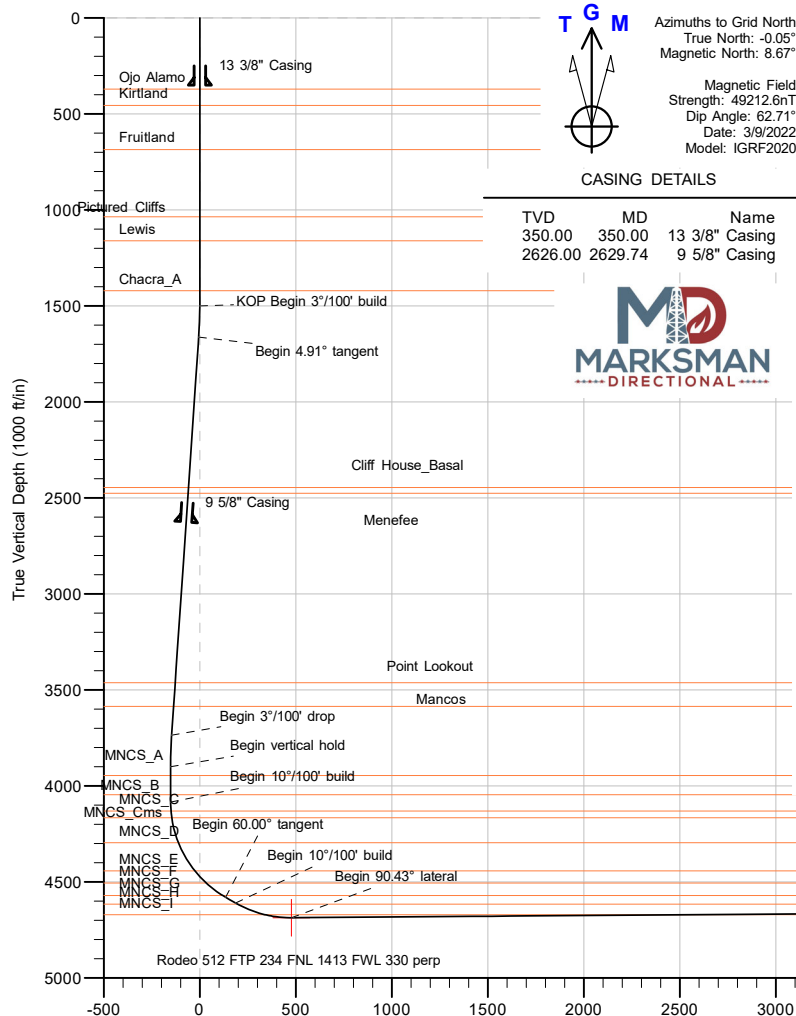
Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 8.67°



Azimuths to Grid North
True North: -0.05°
Magnetic North: 8.67°
Magnetic Field
Strength: 49212.6nT
Dip Angle: 62.71°
Date: 3/9/2022
Model: IGRF2020

CASING DETAILS

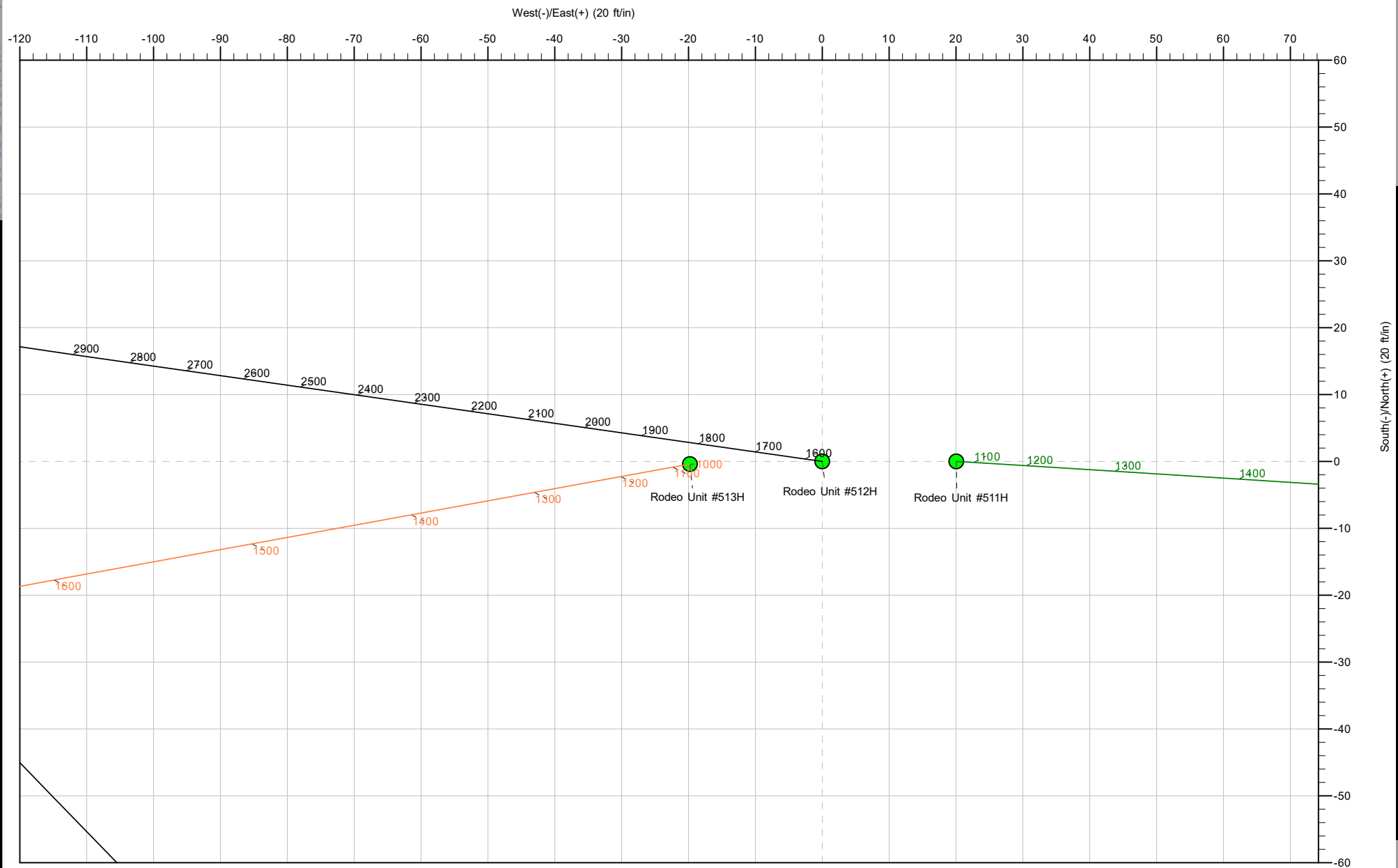
TVD	MD	Name
350.00	350.00	13 3/8" Casing
2626.00	2629.74	9 5/8" Casing



Vertical Section at 135.838° (1000 ft/in)



Well: Rodeo Unit #512H
Site: Rodeo Unit 511 pad (511, 512 & 513)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig: Ensign 773





Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project	San Juan County, New Mexico NAD83 NM W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Rodeo Unit 511 pad (511, 512 & 513)			
Site Position:		Northing:	1,888,898.347 usft	Latitude: 36.191179000
From:	Lat/Long	Easting:	2,749,215.362 usft	Longitude: -107.744800000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	

Well	Rodeo Unit #512H, Surf loc: 191 FSL 1345 FWL Section 25-T23N-R09W			
Well Position	+N/-S	0.00 ft	Northing:	1,888,898.328 usft
	+E/-W	0.00 ft	Easting:	2,749,195.297 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
Grid Convergence:		0.05 °	Ground Level:	6,798.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.72	62.71	49,212.58385949

Design	rev0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	135.838

Plan Survey Tool Program	Date	3/29/2022		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,813.32 rev0 (Original Hole)	MWD	
			OWSG MWD - Standard	



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.000	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,663.58	4.908	278.122	1,663.38	0.99	-6.93	3.00	3.00	0.00	278.12	
3,744.44	4.908	278.122	3,736.62	26.14	-183.16	0.00	0.00	0.00	0.00	
3,908.03	0.000	0.000	3,900.00	27.13	-190.09	3.00	-3.00	0.00	180.00	
4,092.09	0.000	0.000	4,084.06	27.13	-190.09	0.00	0.00	0.00	0.00	
4,692.09	60.000	135.838	4,580.26	-178.38	9.50	10.00	10.00	0.00	135.84	
4,752.09	60.000	135.838	4,610.26	-215.66	45.70	0.00	0.00	0.00	0.00	
5,056.34	90.425	135.838	4,687.00	-424.22	248.25	10.00	10.00	0.00	0.00	
13,813.32	90.425	135.838	4,622.00	-6,706.04	6,349.01	0.00	0.00	0.00	0.00	Rodeo 512 LTP 1226



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.000	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.000	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.000	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
371.00	0.000	0.000	371.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo									
400.00	0.000	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
456.00	0.000	0.000	456.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland									
500.00	0.000	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.000	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
686.00	0.000	0.000	686.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland									
700.00	0.000	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.000	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.000	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.000	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,036.00	0.000	0.000	1,036.00	0.00	0.00	0.00	0.00	0.00	0.00
Pictured Cliffs									
1,100.00	0.000	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,161.00	0.000	0.000	1,161.00	0.00	0.00	0.00	0.00	0.00	0.00
Lewis									
1,200.00	0.000	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.000	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.000	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,421.00	0.000	0.000	1,421.00	0.00	0.00	0.00	0.00	0.00	0.00
Chacra_A									
1,500.00	0.000	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
1,600.00	3.000	278.122	1,599.95	0.37	-2.59	-2.07	3.00	3.00	0.00
1,663.58	4.908	278.122	1,663.38	0.99	-6.93	-5.54	3.00	3.00	0.00
Begin 4.91° tangent									
1,700.00	4.908	278.122	1,699.67	1.43	-10.02	-8.00	0.00	0.00	0.00
1,800.00	4.908	278.122	1,799.30	2.64	-18.48	-14.77	0.00	0.00	0.00
1,900.00	4.908	278.122	1,898.93	3.85	-26.95	-21.54	0.00	0.00	0.00
2,000.00	4.908	278.122	1,998.57	5.06	-35.42	-28.30	0.00	0.00	0.00
2,100.00	4.908	278.122	2,098.20	6.26	-43.89	-35.07	0.00	0.00	0.00
2,200.00	4.908	278.122	2,197.83	7.47	-52.36	-41.84	0.00	0.00	0.00
2,300.00	4.908	278.122	2,297.47	8.68	-60.83	-48.61	0.00	0.00	0.00
2,400.00	4.908	278.122	2,397.10	9.89	-69.30	-55.37	0.00	0.00	0.00
2,449.08	4.908	278.122	2,446.00	10.48	-73.45	-58.70	0.00	0.00	0.00
Cliff House_Basal									
2,479.19	4.908	278.122	2,476.00	10.85	-76.00	-60.73	0.00	0.00	0.00
Menefee									
2,500.00	4.908	278.122	2,496.73	11.10	-77.77	-62.14	0.00	0.00	0.00
2,600.00	4.908	278.122	2,596.37	12.31	-86.24	-68.91	0.00	0.00	0.00
2,700.00	4.908	278.122	2,696.00	13.52	-94.71	-75.68	0.00	0.00	0.00
2,800.00	4.908	278.122	2,795.63	14.73	-103.17	-82.44	0.00	0.00	0.00
2,900.00	4.908	278.122	2,895.27	15.93	-111.64	-89.21	0.00	0.00	0.00
3,000.00	4.908	278.122	2,994.90	17.14	-120.11	-95.98	0.00	0.00	0.00
3,100.00	4.908	278.122	3,094.53	18.35	-128.58	-102.75	0.00	0.00	0.00
3,200.00	4.908	278.122	3,194.17	19.56	-137.05	-109.51	0.00	0.00	0.00
3,300.00	4.908	278.122	3,293.80	20.77	-145.52	-116.28	0.00	0.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,400.00	4.908	278.122	3,393.43	21.98	-153.99	-123.05	0.00	0.00	0.00
3,469.82	4.908	278.122	3,463.00	22.82	-159.90	-127.77	0.00	0.00	0.00
Point Lookout									
3,500.00	4.908	278.122	3,493.07	23.19	-162.46	-129.82	0.00	0.00	0.00
3,593.27	4.908	278.122	3,586.00	24.31	-170.36	-136.13	0.00	0.00	0.00
Mancos									
3,600.00	4.908	278.122	3,592.70	24.39	-170.93	-136.58	0.00	0.00	0.00
3,700.00	4.908	278.122	3,692.33	25.60	-179.39	-143.35	0.00	0.00	0.00
3,744.44	4.908	278.122	3,736.62	26.14	-183.16	-146.36	0.00	0.00	0.00
Begin 3°/100' drop									
3,800.00	3.241	278.122	3,792.03	26.70	-187.07	-149.48	3.00	-3.00	0.00
3,908.03	0.000	0.000	3,900.00	27.13	-190.09	-151.90	3.00	-3.00	0.00
Begin vertical hold									
3,954.03	0.000	0.000	3,946.00	27.13	-190.09	-151.90	0.00	0.00	0.00
MNCS_A									
4,000.00	0.000	0.000	3,991.97	27.13	-190.09	-151.90	0.00	0.00	0.00
4,054.03	0.000	0.000	4,046.00	27.13	-190.09	-151.90	0.00	0.00	0.00
MNCS_B									
4,092.09	0.000	0.000	4,084.06	27.13	-190.09	-151.90	0.00	0.00	0.00
Begin 10°/100' build									
4,100.00	0.791	135.838	4,091.97	27.09	-190.05	-151.84	10.00	10.00	0.00
4,139.08	4.699	135.838	4,131.00	25.75	-188.75	-149.97	10.00	10.00	0.00
MNCS_C									
4,150.00	5.791	135.838	4,141.87	25.03	-188.05	-148.97	10.00	10.00	0.00
4,174.31	8.222	135.838	4,166.00	22.91	-185.99	-146.01	10.00	10.00	0.00
MNCS_Cms									
4,200.00	10.791	135.838	4,191.33	19.86	-183.03	-141.76	10.00	10.00	0.00
4,250.00	15.791	135.838	4,239.98	11.62	-175.03	-130.27	10.00	10.00	0.00
4,300.00	20.791	135.838	4,287.44	0.36	-164.10	-114.59	10.00	10.00	0.00
4,309.19	21.710	135.838	4,296.00	-2.02	-161.78	-111.26	10.00	10.00	0.00
MNCS_D									
4,350.00	25.791	135.838	4,333.35	-13.81	-150.33	-94.82	10.00	10.00	0.00
4,400.00	30.791	135.838	4,377.36	-30.81	-133.82	-71.13	10.00	10.00	0.00
4,450.00	35.791	135.838	4,419.14	-50.49	-114.71	-43.70	10.00	10.00	0.00
4,479.99	38.790	135.838	4,443.00	-63.52	-102.05	-25.53	10.00	10.00	0.00
MNCS_E									
4,500.00	40.791	135.838	4,458.38	-72.71	-93.13	-12.72	10.00	10.00	0.00
4,550.00	45.791	135.838	4,494.76	-97.30	-69.25	21.55	10.00	10.00	0.00
4,566.37	47.428	135.838	4,506.00	-105.83	-60.97	33.44	10.00	10.00	0.00
MNCS_F									
4,600.00	50.791	135.838	4,528.01	-124.07	-43.25	58.87	10.00	10.00	0.00
4,650.00	55.791	135.838	4,557.89	-152.81	-15.34	98.94	10.00	10.00	0.00
4,674.06	58.198	135.838	4,571.00	-167.29	-1.28	119.12	10.00	10.00	0.00
MNCS_G									
4,692.09	60.000	135.838	4,580.26	-178.38	9.50	134.58	10.00	10.00	0.00
Begin 60.00° tangent									
4,700.00	60.000	135.838	4,584.21	-183.30	14.27	141.43	0.00	0.00	0.00
4,752.09	60.000	135.838	4,610.26	-215.66	45.70	186.54	0.00	0.00	0.00
Begin 10°/100' build									
4,763.78	61.170	135.838	4,616.00	-222.97	52.80	196.73	10.00	10.00	0.00
MNCS_H									
4,800.00	64.791	135.838	4,632.45	-246.11	75.27	228.99	10.00	10.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,850.00	69.791	135.838	4,651.75	-279.18	107.39	275.10	10.00	10.00	0.00
4,900.00	74.791	135.838	4,666.95	-313.34	140.57	322.71	10.00	10.00	0.00
4,916.29	76.420	135.838	4,671.00	-324.66	151.56	338.49	10.00	10.00	0.00
MNCS_I									
4,950.00	79.791	135.838	4,677.95	-348.32	174.54	371.47	10.00	10.00	0.00
5,000.00	84.791	135.838	4,684.65	-383.85	209.05	421.01	10.00	10.00	0.00
5,050.00	89.791	135.838	4,687.01	-419.67	243.83	470.94	10.00	10.00	0.00
5,056.34	90.425	135.838	4,687.00	-424.22	248.25	477.28	10.00	10.00	0.00
Begin 90.43° lateral									
5,100.00	90.425	135.838	4,686.68	-455.54	278.66	520.93	0.00	0.00	0.00
5,200.00	90.425	135.838	4,685.94	-527.27	348.33	620.93	0.00	0.00	0.00
5,300.00	90.425	135.838	4,685.19	-599.01	418.00	720.93	0.00	0.00	0.00
5,400.00	90.425	135.838	4,684.45	-670.74	487.67	820.93	0.00	0.00	0.00
5,500.00	90.425	135.838	4,683.71	-742.48	557.33	920.92	0.00	0.00	0.00
5,600.00	90.425	135.838	4,682.97	-814.21	627.00	1,020.92	0.00	0.00	0.00
5,700.00	90.425	135.838	4,682.22	-885.95	696.67	1,120.92	0.00	0.00	0.00
5,800.00	90.425	135.838	4,681.48	-957.68	766.34	1,220.91	0.00	0.00	0.00
5,900.00	90.425	135.838	4,680.74	-1,029.42	836.00	1,320.91	0.00	0.00	0.00
6,000.00	90.425	135.838	4,680.00	-1,101.15	905.67	1,420.91	0.00	0.00	0.00
6,100.00	90.425	135.838	4,679.26	-1,172.89	975.34	1,520.91	0.00	0.00	0.00
6,200.00	90.425	135.838	4,678.51	-1,244.62	1,045.01	1,620.90	0.00	0.00	0.00
6,300.00	90.425	135.838	4,677.77	-1,316.36	1,114.67	1,720.90	0.00	0.00	0.00
6,400.00	90.425	135.838	4,677.03	-1,388.09	1,184.34	1,820.90	0.00	0.00	0.00
6,500.00	90.425	135.838	4,676.29	-1,459.83	1,254.01	1,920.90	0.00	0.00	0.00
6,600.00	90.425	135.838	4,675.54	-1,531.56	1,323.67	2,020.89	0.00	0.00	0.00
6,700.00	90.425	135.838	4,674.80	-1,603.30	1,393.34	2,120.89	0.00	0.00	0.00
6,800.00	90.425	135.838	4,674.06	-1,675.03	1,463.01	2,220.89	0.00	0.00	0.00
6,900.00	90.425	135.838	4,673.32	-1,746.77	1,532.68	2,320.88	0.00	0.00	0.00
7,000.00	90.425	135.838	4,672.57	-1,818.50	1,602.34	2,420.88	0.00	0.00	0.00
7,100.00	90.425	135.838	4,671.83	-1,890.24	1,672.01	2,520.88	0.00	0.00	0.00
7,200.00	90.425	135.838	4,671.09	-1,961.97	1,741.68	2,620.88	0.00	0.00	0.00
7,300.00	90.425	135.838	4,670.35	-2,033.71	1,811.35	2,720.87	0.00	0.00	0.00
7,400.00	90.425	135.838	4,669.61	-2,105.44	1,881.01	2,820.87	0.00	0.00	0.00
7,500.00	90.425	135.838	4,668.86	-2,177.18	1,950.68	2,920.87	0.00	0.00	0.00
7,600.00	90.425	135.838	4,668.12	-2,248.91	2,020.35	3,020.87	0.00	0.00	0.00
7,700.00	90.425	135.838	4,667.38	-2,320.65	2,090.02	3,120.86	0.00	0.00	0.00
7,800.00	90.425	135.838	4,666.64	-2,392.38	2,159.68	3,220.86	0.00	0.00	0.00
7,900.00	90.425	135.838	4,665.89	-2,464.12	2,229.35	3,320.86	0.00	0.00	0.00
8,000.00	90.425	135.838	4,665.15	-2,535.85	2,299.02	3,420.85	0.00	0.00	0.00
8,100.00	90.425	135.838	4,664.41	-2,607.59	2,368.69	3,520.85	0.00	0.00	0.00
8,200.00	90.425	135.838	4,663.67	-2,679.32	2,438.35	3,620.85	0.00	0.00	0.00
8,300.00	90.425	135.838	4,662.92	-2,751.06	2,508.02	3,720.85	0.00	0.00	0.00
8,400.00	90.425	135.838	4,662.18	-2,822.79	2,577.69	3,820.84	0.00	0.00	0.00
8,500.00	90.425	135.838	4,661.44	-2,894.53	2,647.36	3,920.84	0.00	0.00	0.00
8,600.00	90.425	135.838	4,660.70	-2,966.26	2,717.02	4,020.84	0.00	0.00	0.00
8,700.00	90.425	135.838	4,659.96	-3,038.00	2,786.69	4,120.83	0.00	0.00	0.00
8,800.00	90.425	135.838	4,659.21	-3,109.73	2,856.36	4,220.83	0.00	0.00	0.00
8,900.00	90.425	135.838	4,658.47	-3,181.47	2,926.02	4,320.83	0.00	0.00	0.00
9,000.00	90.425	135.838	4,657.73	-3,253.20	2,995.69	4,420.83	0.00	0.00	0.00
9,100.00	90.425	135.838	4,656.99	-3,324.94	3,065.36	4,520.82	0.00	0.00	0.00
9,200.00	90.425	135.838	4,656.24	-3,396.67	3,135.03	4,620.82	0.00	0.00	0.00
9,300.00	90.425	135.838	4,655.50	-3,468.41	3,204.69	4,720.82	0.00	0.00	0.00
9,400.00	90.425	135.838	4,654.76	-3,540.14	3,274.36	4,820.82	0.00	0.00	0.00



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,500.00	90.425	135.838	4,654.02	-3,611.88	3,344.03	4,920.81	0.00	0.00	0.00	
9,600.00	90.425	135.838	4,653.28	-3,683.61	3,413.70	5,020.81	0.00	0.00	0.00	
9,700.00	90.425	135.838	4,652.53	-3,755.35	3,483.36	5,120.81	0.00	0.00	0.00	
9,800.00	90.425	135.838	4,651.79	-3,827.08	3,553.03	5,220.80	0.00	0.00	0.00	
9,900.00	90.425	135.838	4,651.05	-3,898.82	3,622.70	5,320.80	0.00	0.00	0.00	
10,000.00	90.425	135.838	4,650.31	-3,970.55	3,692.37	5,420.80	0.00	0.00	0.00	
10,100.00	90.425	135.838	4,649.56	-4,042.29	3,762.03	5,520.80	0.00	0.00	0.00	
10,200.00	90.425	135.838	4,648.82	-4,114.02	3,831.70	5,620.79	0.00	0.00	0.00	
10,300.00	90.425	135.838	4,648.08	-4,185.76	3,901.37	5,720.79	0.00	0.00	0.00	
10,400.00	90.425	135.838	4,647.34	-4,257.49	3,971.04	5,820.79	0.00	0.00	0.00	
10,500.00	90.425	135.838	4,646.59	-4,329.23	4,040.70	5,920.79	0.00	0.00	0.00	
10,600.00	90.425	135.838	4,645.85	-4,400.96	4,110.37	6,020.78	0.00	0.00	0.00	
10,700.00	90.425	135.838	4,645.11	-4,472.70	4,180.04	6,120.78	0.00	0.00	0.00	
10,800.00	90.425	135.838	4,644.37	-4,544.43	4,249.71	6,220.78	0.00	0.00	0.00	
10,900.00	90.425	135.838	4,643.63	-4,616.17	4,319.37	6,320.77	0.00	0.00	0.00	
11,000.00	90.425	135.838	4,642.88	-4,687.90	4,389.04	6,420.77	0.00	0.00	0.00	
11,100.00	90.425	135.838	4,642.14	-4,759.64	4,458.71	6,520.77	0.00	0.00	0.00	
11,200.00	90.425	135.838	4,641.40	-4,831.37	4,528.37	6,620.77	0.00	0.00	0.00	
11,300.00	90.425	135.838	4,640.66	-4,903.11	4,598.04	6,720.76	0.00	0.00	0.00	
11,400.00	90.425	135.838	4,639.91	-4,974.84	4,667.71	6,820.76	0.00	0.00	0.00	
11,500.00	90.425	135.838	4,639.17	-5,046.58	4,737.38	6,920.76	0.00	0.00	0.00	
11,600.00	90.425	135.838	4,638.43	-5,118.31	4,807.04	7,020.75	0.00	0.00	0.00	
11,700.00	90.425	135.838	4,637.69	-5,190.05	4,876.71	7,120.75	0.00	0.00	0.00	
11,800.00	90.425	135.838	4,636.94	-5,261.78	4,946.38	7,220.75	0.00	0.00	0.00	
11,900.00	90.425	135.838	4,636.20	-5,333.52	5,016.05	7,320.75	0.00	0.00	0.00	
12,000.00	90.425	135.838	4,635.46	-5,405.25	5,085.71	7,420.74	0.00	0.00	0.00	
12,100.00	90.425	135.838	4,634.72	-5,476.99	5,155.38	7,520.74	0.00	0.00	0.00	
12,200.00	90.425	135.838	4,633.98	-5,548.72	5,225.05	7,620.74	0.00	0.00	0.00	
12,300.00	90.425	135.838	4,633.23	-5,620.46	5,294.72	7,720.74	0.00	0.00	0.00	
12,400.00	90.425	135.838	4,632.49	-5,692.19	5,364.38	7,820.73	0.00	0.00	0.00	
12,500.00	90.425	135.838	4,631.75	-5,763.93	5,434.05	7,920.73	0.00	0.00	0.00	
12,600.00	90.425	135.838	4,631.01	-5,835.66	5,503.72	8,020.73	0.00	0.00	0.00	
12,700.00	90.425	135.838	4,630.26	-5,907.40	5,573.39	8,120.72	0.00	0.00	0.00	
12,800.00	90.425	135.838	4,629.52	-5,979.13	5,643.05	8,220.72	0.00	0.00	0.00	
12,900.00	90.425	135.838	4,628.78	-6,050.87	5,712.72	8,320.72	0.00	0.00	0.00	
13,000.00	90.425	135.838	4,628.04	-6,122.60	5,782.39	8,420.72	0.00	0.00	0.00	
13,100.00	90.425	135.838	4,627.30	-6,194.34	5,852.05	8,520.71	0.00	0.00	0.00	
13,200.00	90.425	135.838	4,626.55	-6,266.07	5,921.72	8,620.71	0.00	0.00	0.00	
13,300.00	90.425	135.838	4,625.81	-6,337.81	5,991.39	8,720.71	0.00	0.00	0.00	
13,400.00	90.425	135.838	4,625.07	-6,409.54	6,061.06	8,820.71	0.00	0.00	0.00	
13,500.00	90.425	135.838	4,624.33	-6,481.28	6,130.72	8,920.70	0.00	0.00	0.00	
13,600.00	90.425	135.838	4,623.58	-6,553.01	6,200.39	9,020.70	0.00	0.00	0.00	
13,700.00	90.425	135.838	4,622.84	-6,624.75	6,270.06	9,120.70	0.00	0.00	0.00	
13,800.00	90.425	135.838	4,622.10	-6,696.48	6,339.73	9,220.69	0.00	0.00	0.00	
13,813.32	90.425	135.838	4,622.00	-6,706.04	6,349.01	9,234.02	0.00	0.00	0.00	
PBHL/TD 13813.32 MD 4622.00 TVD										



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rodeo 512 LTP 1226 FM - plan hits target center - Point	0.000	0.000	4,622.00	-6,706.04	6,349.01	1,882,192.302	2,755,544.293	36.172739000	-107.723377000
Rodeo 512 FTP 234 FNI - plan hits target center - Point	0.000	0.000	4,687.00	-424.22	248.25	1,888,474.109	2,749,443.548	36.190013000	-107.744028000

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Casing	13-5/8	17-1/2
2,629.74	2,626.00	9 5/8" Casing	9-5/8	12-1/4

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
371.00	371.00	Ojo Alamo				
456.00	456.00	Kirtland				
686.00	686.00	Fruitland				
1,036.00	1,036.00	Pictured Cliffs				
1,161.00	1,161.00	Lewis				
1,421.00	1,421.00	Chacra_A				
2,449.08	2,446.00	Cliff House_Basal		0.00		
2,479.19	2,476.00	Menefee				
3,469.82	3,463.00	Point Lookout				
3,593.27	3,586.00	Mancos				
3,954.03	3,946.00	MNCS_A				
4,054.03	4,046.00	MNCS_B				
4,139.08	4,131.00	MNCS_C				
4,174.31	4,166.00	MNCS_Cms				
4,309.19	4,296.00	MNCS_D				
4,479.99	4,443.00	MNCS_E				
4,566.37	4,506.00	MNCS_F				
4,674.06	4,571.00	MNCS_G				
4,763.78	4,616.00	MNCS_H				
4,916.29	4,671.00	MNCS_I				



Planning Report

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,500.00	1,500.00	0.00	0.00	KOP Begin 3°/100' build	
1,663.58	1,663.38	0.99	-6.93	Begin 4.91° tangent	
3,744.44	3,736.62	26.14	-183.16	Begin 3°/100' drop	
3,908.03	3,900.00	27.13	-190.09	Begin vertical hold	
4,092.09	4,084.06	27.13	-190.09	Begin 10°/100' build	
4,692.09	4,580.26	-178.38	9.50	Begin 60.00° tangent	
4,752.09	4,610.26	-215.66	45.70	Begin 10°/100' build	
5,056.34	4,687.00	-424.22	248.25	Begin 90.43° lateral	
13,813.32	4,622.00	-6,706.04	6,349.01	PBHL/TD 13813.32 MD 4622.00 TVD	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project	San Juan County, New Mexico NAD83 NM W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Rodeo Unit 511 pad (511, 512 & 513)				
Site Position:		Northing:	1,888,898.347 usft	Latitude:	36.191179000
From:	Lat/Long	Easting:	2,749,215.362 usft	Longitude:	-107.744800000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Rodeo Unit #512H, Surf loc: 191 FSL 1345 FWL Section 25-T23N-R09W						
Well Position	+N/-S	0.00 ft	Northing:	1,888,898.328	usft	Latitude:	36.191179000
	+E/-W	0.00 ft	Easting:	2,749,195.297	usft	Longitude:	-107.744868000
Position Uncertainty		0.00 ft	Wellhead Elevation:		ft	Ground Level:	6,798.00 ft
Grid Convergence:		0.05 °					

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/9/2022	8.72	62.71	49,212.58385949

Design	rev0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	135.838

Plan Survey Tool Program	Date	3/29/2022		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,813.32 rev0 (Original Hole)	MWD	
			OWSG MWD - Standard	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.000	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,663.58	4.908	278.122	1,663.38	0.99	-6.93	3.00	3.00	0.00	278.12	
3,744.44	4.908	278.122	3,736.62	26.14	-183.16	0.00	0.00	0.00	0.00	
3,908.03	0.000	0.000	3,900.00	27.13	-190.09	3.00	-3.00	0.00	180.00	
4,092.09	0.000	0.000	4,084.06	27.13	-190.09	0.00	0.00	0.00	0.00	
4,692.09	60.000	135.838	4,580.26	-178.38	9.50	10.00	10.00	0.00	135.84	
4,752.09	60.000	135.838	4,610.26	-215.66	45.70	0.00	0.00	0.00	0.00	
5,056.34	90.425	135.838	4,687.00	-424.22	248.25	10.00	10.00	0.00	0.00	
13,813.32	90.425	135.838	4,622.00	-6,706.04	6,349.01	0.00	0.00	0.00	0.00	Rodeo 512 LTP 1226



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.000	0.000	0.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
100.00	0.000	0.000	100.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
200.00	0.000	0.000	200.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
300.00	0.000	0.000	300.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
371.00	0.000	0.000	371.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Ojo Alamo										
400.00	0.000	0.000	400.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
456.00	0.000	0.000	456.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Kirtland										
500.00	0.000	0.000	500.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
600.00	0.000	0.000	600.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
686.00	0.000	0.000	686.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Fruitland										
700.00	0.000	0.000	700.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
800.00	0.000	0.000	800.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
900.00	0.000	0.000	900.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,000.00	0.000	0.000	1,000.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,036.00	0.000	0.000	1,036.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Pictured Cliffs										
1,100.00	0.000	0.000	1,100.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,161.00	0.000	0.000	1,161.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Lewis										
1,200.00	0.000	0.000	1,200.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,300.00	0.000	0.000	1,300.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,400.00	0.000	0.000	1,400.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
1,421.00	0.000	0.000	1,421.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
Chacra_A										
1,500.00	0.000	0.000	1,500.00	0.00	0.00	1,888,898.328	2,749,195.297	36.191179000	-107.744868000	
KOP Begin 3°/100' build										
1,600.00	3.000	278.122	1,599.95	0.37	-2.59	1,888,898.698	2,749,192.706	36.191180022	-107.744876780	
1,663.58	4.908	278.122	1,663.38	0.99	-6.93	1,888,899.318	2,749,188.366	36.191181734	-107.744891487	
Begin 4.91° tangent										
1,700.00	4.908	278.122	1,699.67	1.43	-10.02	1,888,899.758	2,749,185.282	36.191182951	-107.744901937	
1,800.00	4.908	278.122	1,799.30	2.64	-18.48	1,888,900.966	2,749,176.813	36.191186293	-107.744930635	
1,900.00	4.908	278.122	1,898.93	3.85	-26.95	1,888,902.175	2,749,168.344	36.191189635	-107.744959333	
2,000.00	4.908	278.122	1,998.57	5.06	-35.42	1,888,903.384	2,749,159.875	36.191192976	-107.744988030	
2,100.00	4.908	278.122	2,098.20	6.26	-43.89	1,888,904.593	2,749,151.406	36.191196318	-107.745016728	
2,200.00	4.908	278.122	2,197.83	7.47	-52.36	1,888,905.801	2,749,142.937	36.191199659	-107.745045425	
2,300.00	4.908	278.122	2,297.47	8.68	-60.83	1,888,907.010	2,749,134.468	36.191203001	-107.745074123	
2,400.00	4.908	278.122	2,397.10	9.89	-69.30	1,888,908.219	2,749,125.999	36.191206343	-107.745102821	
2,449.08	4.908	278.122	2,446.00	10.48	-73.45	1,888,908.812	2,749,121.842	36.191207983	-107.745116905	
Cliff House_Basal										
2,479.19	4.908	278.122	2,476.00	10.85	-76.00	1,888,909.176	2,749,119.292	36.191208989	-107.745125546	
Menefee										
2,500.00	4.908	278.122	2,496.73	11.10	-77.77	1,888,909.427	2,749,117.530	36.191209684	-107.745131518	
2,600.00	4.908	278.122	2,596.37	12.31	-86.24	1,888,910.636	2,749,109.061	36.191213026	-107.745160216	
2,700.00	4.908	278.122	2,696.00	13.52	-94.71	1,888,911.845	2,749,100.592	36.191216367	-107.745188914	
2,800.00	4.908	278.122	2,795.63	14.73	-103.17	1,888,913.054	2,749,092.123	36.191219709	-107.745217611	
2,900.00	4.908	278.122	2,895.27	15.93	-111.64	1,888,914.262	2,749,083.654	36.191223051	-107.745246309	
3,000.00	4.908	278.122	2,994.90	17.14	-120.11	1,888,915.471	2,749,075.185	36.191226392	-107.745275006	
3,100.00	4.908	278.122	3,094.53	18.35	-128.58	1,888,916.680	2,749,066.716	36.191229734	-107.745303704	
3,200.00	4.908	278.122	3,194.17	19.56	-137.05	1,888,917.888	2,749,058.247	36.191233075	-107.745332402	
3,300.00	4.908	278.122	3,293.80	20.77	-145.52	1,888,919.097	2,749,049.778	36.191236417	-107.745361099	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,400.00	4.908	278.122	3,393.43	21.98	-153.99	1,888,920.306	2,749,041.309	36.191239758	-107.745389797
3,469.82	4.908	278.122	3,463.00	22.82	-159.90	1,888,921.150	2,749,035.396	36.191242091	-107.745409834
Point Lookout									
3,500.00	4.908	278.122	3,493.07	23.19	-162.46	1,888,921.514	2,749,032.840	36.191243100	-107.745418495
3,593.27	4.908	278.122	3,586.00	24.31	-170.36	1,888,922.642	2,749,024.941	36.191246217	-107.745445262
Mancos									
3,600.00	4.908	278.122	3,592.70	24.39	-170.93	1,888,922.723	2,749,024.371	36.191246441	-107.745447192
3,700.00	4.908	278.122	3,692.33	25.60	-179.39	1,888,923.932	2,749,015.902	36.191249783	-107.745475890
3,744.44	4.908	278.122	3,736.62	26.14	-183.16	1,888,924.469	2,749,012.138	36.191251268	-107.745488644
Begin 3°/100' drop									
3,800.00	3.241	278.122	3,792.03	26.70	-187.07	1,888,925.027	2,749,008.231	36.191252810	-107.745501885
3,908.03	0.000	0.000	3,900.00	27.13	-190.09	1,888,925.458	2,749,005.207	36.191254003	-107.745512131
Begin vertical hold									
3,954.03	0.000	0.000	3,946.00	27.13	-190.09	1,888,925.458	2,749,005.207	36.191254003	-107.745512131
MNCS_A									
4,000.00	0.000	0.000	3,991.97	27.13	-190.09	1,888,925.458	2,749,005.207	36.191254003	-107.745512131
4,054.03	0.000	0.000	4,046.00	27.13	-190.09	1,888,925.458	2,749,005.207	36.191254003	-107.745512131
MNCS_B									
4,092.09	0.000	0.000	4,084.06	27.13	-190.09	1,888,925.458	2,749,005.207	36.191254003	-107.745512131
Begin 10°/100' build									
4,100.00	0.791	135.838	4,091.97	27.09	-190.05	1,888,925.419	2,749,005.245	36.191253895	-107.745512002
4,139.08	4.699	135.838	4,131.00	25.75	-188.75	1,888,924.077	2,749,006.549	36.191250204	-107.745507588
MNCS_C									
4,150.00	5.791	135.838	4,141.87	25.03	-188.05	1,888,923.361	2,749,007.245	36.191248235	-107.745505233
4,174.31	8.222	135.838	4,166.00	22.91	-185.99	1,888,921.233	2,749,009.310	36.191242386	-107.745498238
MNCS_Cms									
4,200.00	10.791	135.838	4,191.33	19.86	-183.03	1,888,918.190	2,749,012.266	36.191234018	-107.745488231
4,250.00	15.791	135.838	4,239.98	11.62	-175.03	1,888,909.946	2,749,020.272	36.191211352	-107.745461124
4,300.00	20.791	135.838	4,287.44	0.36	-164.10	1,888,898.693	2,749,031.201	36.191180410	-107.745424119
4,309.19	21.710	135.838	4,296.00	-2.02	-161.78	1,888,896.304	2,749,033.521	36.191173843	-107.745416266
MNCS_D									
4,350.00	25.791	135.838	4,333.35	-13.81	-150.33	1,888,884.515	2,749,044.971	36.191141427	-107.745377499
4,400.00	30.791	135.838	4,377.36	-30.81	-133.82	1,888,867.520	2,749,061.475	36.191094700	-107.745321617
4,450.00	35.791	135.838	4,419.14	-50.49	-114.71	1,888,847.838	2,749,080.589	36.191040584	-107.745256899
4,479.99	38.790	135.838	4,443.00	-63.52	-102.05	1,888,834.806	2,749,093.246	36.191004751	-107.745214046
MNCS_E									
4,500.00	40.791	135.838	4,458.38	-72.71	-93.13	1,888,825.619	2,749,102.168	36.190979492	-107.745183838
4,550.00	45.791	135.838	4,494.76	-97.30	-69.25	1,888,801.031	2,749,126.047	36.190911888	-107.745102989
4,566.37	47.428	135.838	4,506.00	-105.83	-60.97	1,888,792.500	2,749,134.332	36.190888432	-107.745074938
MNCS_F									
4,600.00	50.791	135.838	4,528.01	-124.07	-43.25	1,888,774.263	2,749,152.044	36.190838287	-107.745014969
4,650.00	55.791	135.838	4,557.89	-152.81	-15.34	1,888,745.517	2,749,179.961	36.190759248	-107.744920446
4,674.06	58.198	135.838	4,571.00	-167.29	-1.28	1,888,731.041	2,749,194.019	36.190719446	-107.744872846
MNCS_G									
4,692.09	60.000	135.838	4,580.26	-178.38	9.50	1,888,719.947	2,749,204.794	36.190688942	-107.744836367
Begin 60.00° tangent									
4,700.00	60.000	135.838	4,584.21	-183.30	14.27	1,888,715.031	2,749,209.567	36.190675428	-107.744820205
4,752.09	60.000	135.838	4,610.26	-215.66	45.70	1,888,682.671	2,749,240.995	36.190586451	-107.744713798
Begin 10°/100' build									
4,763.78	61.170	135.838	4,616.00	-222.97	52.80	1,888,675.363	2,749,248.092	36.190566357	-107.744689767
MNCS_H									
4,800.00	64.791	135.838	4,632.45	-246.11	75.27	1,888,652.222	2,749,270.566	36.190502730	-107.744613676
4,850.00	69.791	135.838	4,651.75	-279.18	107.39	1,888,619.144	2,749,302.690	36.190411782	-107.744504912



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,900.00	74.791	135.838	4,666.95	-313.34	140.57	1,888,584.986	2,749,335.863	36.190317863	-107.744392594
4,916.29	76.420	135.838	4,671.00	-324.66	151.56	1,888,573.668	2,749,346.855	36.190286742	-107.744355377
MNCS_I									
4,950.00	79.791	135.838	4,677.95	-348.32	174.54	1,888,550.008	2,749,369.833	36.190221688	-107.744277579
5,000.00	84.791	135.838	4,684.65	-383.85	209.05	1,888,514.475	2,749,404.342	36.190123988	-107.744160741
5,050.00	89.791	135.838	4,687.01	-419.67	243.83	1,888,478.658	2,749,439.127	36.190025507	-107.744042969
5,056.34	90.425	135.838	4,687.00	-424.22	248.25	1,888,474.109	2,749,443.545	36.190012999	-107.744028011
Begin 90.43° lateral									
5,100.00	90.425	135.838	4,686.68	-455.54	278.66	1,888,442.790	2,749,473.960	36.189926887	-107.743925031
5,200.00	90.425	135.838	4,685.94	-527.27	348.33	1,888,371.055	2,749,543.628	36.189729647	-107.743689157
5,300.00	90.425	135.838	4,685.19	-599.01	418.00	1,888,299.321	2,749,613.295	36.189532407	-107.743453284
5,400.00	90.425	135.838	4,684.45	-670.74	487.67	1,888,227.586	2,749,682.962	36.189335167	-107.743217413
5,500.00	90.425	135.838	4,683.71	-742.48	557.33	1,888,155.851	2,749,752.629	36.189137927	-107.742981542
5,600.00	90.425	135.838	4,682.97	-814.21	627.00	1,888,084.116	2,749,822.297	36.188940685	-107.742745673
5,700.00	90.425	135.838	4,682.22	-885.95	696.67	1,888,012.381	2,749,891.964	36.188743443	-107.742509805
5,800.00	90.425	135.838	4,681.48	-957.68	766.34	1,887,940.646	2,749,961.631	36.188546201	-107.742273938
5,900.00	90.425	135.838	4,680.74	-1,029.42	836.00	1,887,868.912	2,750,031.298	36.188348958	-107.742038072
6,000.00	90.425	135.838	4,680.00	-1,101.15	905.67	1,887,797.177	2,750,100.966	36.188151714	-107.741802208
6,100.00	90.425	135.838	4,679.26	-1,172.89	975.34	1,887,725.442	2,750,170.633	36.187954471	-107.741566344
6,200.00	90.425	135.838	4,678.51	-1,244.62	1,045.01	1,887,653.707	2,750,240.300	36.187757226	-107.741330482
6,300.00	90.425	135.838	4,677.77	-1,316.36	1,114.67	1,887,581.972	2,750,309.967	36.187559982	-107.741094621
6,400.00	90.425	135.838	4,677.03	-1,388.09	1,184.34	1,887,510.238	2,750,379.635	36.187362736	-107.740858761
6,500.00	90.425	135.838	4,676.29	-1,459.83	1,254.01	1,887,438.503	2,750,449.302	36.187165491	-107.740622902
6,600.00	90.425	135.838	4,675.54	-1,531.56	1,323.67	1,887,366.768	2,750,518.969	36.186968244	-107.740387045
6,700.00	90.425	135.838	4,674.80	-1,603.30	1,393.34	1,887,295.033	2,750,588.636	36.186770998	-107.740151189
6,800.00	90.425	135.838	4,674.06	-1,675.03	1,463.01	1,887,223.298	2,750,658.304	36.186573751	-107.739915334
6,900.00	90.425	135.838	4,673.32	-1,746.77	1,532.68	1,887,151.563	2,750,727.971	36.186376503	-107.739679480
7,000.00	90.425	135.838	4,672.57	-1,818.50	1,602.34	1,887,079.829	2,750,797.638	36.186179255	-107.739443627
7,100.00	90.425	135.838	4,671.83	-1,890.24	1,672.01	1,887,008.094	2,750,867.305	36.185982006	-107.739207775
7,200.00	90.425	135.838	4,671.09	-1,961.97	1,741.68	1,886,936.359	2,750,936.973	36.185784757	-107.738971925
7,300.00	90.425	135.838	4,670.35	-2,033.71	1,811.35	1,886,864.624	2,751,006.640	36.185587508	-107.738736076
7,400.00	90.425	135.838	4,669.61	-2,105.44	1,881.01	1,886,792.889	2,751,076.307	36.185390258	-107.738500228
7,500.00	90.425	135.838	4,668.86	-2,177.18	1,950.68	1,886,721.155	2,751,145.974	36.185193008	-107.738264381
7,600.00	90.425	135.838	4,668.12	-2,248.91	2,020.35	1,886,649.420	2,751,215.641	36.184995757	-107.738028535
7,700.00	90.425	135.838	4,667.38	-2,320.65	2,090.02	1,886,577.685	2,751,285.309	36.184798505	-107.737792691
7,800.00	90.425	135.838	4,666.64	-2,392.38	2,159.68	1,886,505.950	2,751,354.976	36.184601253	-107.737556847
7,900.00	90.425	135.838	4,665.89	-2,464.12	2,229.35	1,886,434.215	2,751,424.643	36.184404001	-107.737321005
8,000.00	90.425	135.838	4,665.15	-2,535.85	2,299.02	1,886,362.480	2,751,494.310	36.184206748	-107.737085164
8,100.00	90.425	135.838	4,664.41	-2,607.59	2,368.69	1,886,290.746	2,751,563.978	36.184009495	-107.736849325
8,200.00	90.425	135.838	4,663.67	-2,679.32	2,438.35	1,886,219.011	2,751,633.645	36.183812241	-107.736613486
8,300.00	90.425	135.838	4,662.92	-2,751.06	2,508.02	1,886,147.276	2,751,703.312	36.183614987	-107.736377649
8,400.00	90.425	135.838	4,662.18	-2,822.79	2,577.69	1,886,075.541	2,751,772.979	36.183417733	-107.736141813
8,500.00	90.425	135.838	4,661.44	-2,894.53	2,647.36	1,886,003.806	2,751,842.647	36.183220478	-107.735905977
8,600.00	90.425	135.838	4,660.70	-2,966.26	2,717.02	1,885,932.072	2,751,912.314	36.183023222	-107.735670144
8,700.00	90.425	135.838	4,659.96	-3,038.00	2,786.69	1,885,860.337	2,751,981.981	36.182825966	-107.735434311
8,800.00	90.425	135.838	4,659.21	-3,109.73	2,856.36	1,885,788.602	2,752,051.648	36.182628709	-107.735198480
8,900.00	90.425	135.838	4,658.47	-3,181.47	2,926.02	1,885,716.867	2,752,121.316	36.182431452	-107.734962649
9,000.00	90.425	135.838	4,657.73	-3,253.20	2,995.69	1,885,645.132	2,752,190.983	36.182234195	-107.734726820
9,100.00	90.425	135.838	4,656.99	-3,324.94	3,065.36	1,885,573.398	2,752,260.650	36.182036937	-107.734490992
9,200.00	90.425	135.838	4,656.24	-3,396.67	3,135.03	1,885,501.663	2,752,330.317	36.181839679	-107.734255166
9,300.00	90.425	135.838	4,655.50	-3,468.41	3,204.69	1,885,429.928	2,752,399.985	36.181642420	-107.734019340
9,400.00	90.425	135.838	4,654.76	-3,540.14	3,274.36	1,885,358.193	2,752,469.652	36.181445160	-107.733783516
9,500.00	90.425	135.838	4,654.02	-3,611.88	3,344.03	1,885,286.458	2,752,539.319	36.181247901	-107.733547692
9,600.00	90.425	135.838	4,653.28	-3,683.61	3,413.70	1,885,214.723	2,752,608.986	36.181050640	-107.733311870



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude Longitude		
9,700.00	90.425	135.838	4,652.53	-3,755.35	3,483.36	1,885,142.989	2,752,678.654	36.180853380	-107.733076050	
9,800.00	90.425	135.838	4,651.79	-3,827.08	3,553.03	1,885,071.254	2,752,748.321	36.180656118	-107.732840230	
9,900.00	90.425	135.838	4,651.05	-3,898.82	3,622.70	1,884,999.519	2,752,817.988	36.180458857	-107.732604411	
10,000.00	90.425	135.838	4,650.31	-3,970.55	3,692.37	1,884,927.784	2,752,887.655	36.180261595	-107.732368594	
10,100.00	90.425	135.838	4,649.56	-4,042.29	3,762.03	1,884,856.049	2,752,957.322	36.180064332	-107.732132778	
10,200.00	90.425	135.838	4,648.82	-4,114.02	3,831.70	1,884,784.315	2,753,026.990	36.179867069	-107.731896963	
10,300.00	90.425	135.838	4,648.08	-4,185.76	3,901.37	1,884,712.580	2,753,096.657	36.179669805	-107.731661149	
10,400.00	90.425	135.838	4,647.34	-4,257.49	3,971.04	1,884,640.845	2,753,166.324	36.179472541	-107.731425337	
10,500.00	90.425	135.838	4,646.59	-4,329.23	4,040.70	1,884,569.110	2,753,235.991	36.179275277	-107.731189526	
10,600.00	90.425	135.838	4,645.85	-4,400.96	4,110.37	1,884,497.375	2,753,305.659	36.179078012	-107.730953715	
10,700.00	90.425	135.838	4,645.11	-4,472.70	4,180.04	1,884,425.640	2,753,375.326	36.178880746	-107.730717906	
10,800.00	90.425	135.838	4,644.37	-4,544.43	4,249.71	1,884,353.906	2,753,444.993	36.178683481	-107.730482099	
10,900.00	90.425	135.838	4,643.63	-4,616.17	4,319.37	1,884,282.170	2,753,514.660	36.178486214	-107.730246292	
11,000.00	90.425	135.838	4,642.88	-4,687.90	4,389.04	1,884,210.435	2,753,584.328	36.178288947	-107.730010486	
11,100.00	90.425	135.838	4,642.14	-4,759.64	4,458.71	1,884,138.700	2,753,653.995	36.178091680	-107.729774682	
11,200.00	90.425	135.838	4,641.40	-4,831.37	4,528.37	1,884,066.965	2,753,723.662	36.177894412	-107.729538879	
11,300.00	90.425	135.838	4,640.66	-4,903.11	4,598.04	1,883,995.231	2,753,793.329	36.177697144	-107.729303077	
11,400.00	90.425	135.838	4,639.91	-4,974.84	4,667.71	1,883,923.496	2,753,862.997	36.177499875	-107.729067276	
11,500.00	90.425	135.838	4,639.17	-5,046.58	4,737.38	1,883,851.761	2,753,932.664	36.177302606	-107.728831477	
11,600.00	90.425	135.838	4,638.43	-5,118.31	4,807.04	1,883,780.026	2,754,002.331	36.177105337	-107.728595679	
11,700.00	90.425	135.838	4,637.69	-5,190.05	4,876.71	1,883,708.291	2,754,071.998	36.176908066	-107.728359881	
11,800.00	90.425	135.838	4,636.94	-5,261.78	4,946.38	1,883,636.557	2,754,141.666	36.176710796	-107.728124085	
11,900.00	90.425	135.838	4,636.20	-5,333.52	5,016.05	1,883,564.822	2,754,211.333	36.176513525	-107.727888291	
12,000.00	90.425	135.838	4,635.46	-5,405.25	5,085.71	1,883,493.087	2,754,281.000	36.176316253	-107.727652497	
12,100.00	90.425	135.838	4,634.72	-5,476.99	5,155.38	1,883,421.352	2,754,350.667	36.176118981	-107.727416705	
12,200.00	90.425	135.838	4,633.98	-5,548.72	5,225.05	1,883,349.617	2,754,420.335	36.175921709	-107.727180913	
12,300.00	90.425	135.838	4,633.23	-5,620.46	5,294.72	1,883,277.882	2,754,490.002	36.175724436	-107.726945123	
12,400.00	90.425	135.838	4,632.49	-5,692.19	5,364.38	1,883,206.148	2,754,559.669	36.175527162	-107.726709334	
12,500.00	90.425	135.838	4,631.75	-5,763.93	5,434.05	1,883,134.413	2,754,629.336	36.175329889	-107.726473547	
12,600.00	90.425	135.838	4,631.01	-5,835.66	5,503.72	1,883,062.678	2,754,699.003	36.175132614	-107.726237760	
12,700.00	90.425	135.838	4,630.26	-5,907.40	5,573.39	1,882,990.943	2,754,768.671	36.174935339	-107.726001975	
12,800.00	90.425	135.838	4,629.52	-5,979.13	5,643.05	1,882,919.208	2,754,838.338	36.174738064	-107.725766190	
12,900.00	90.425	135.838	4,628.78	-6,050.87	5,712.72	1,882,847.474	2,754,908.005	36.174540788	-107.725530407	
13,000.00	90.425	135.838	4,628.04	-6,122.60	5,782.39	1,882,775.739	2,754,977.672	36.174343512	-107.725294626	
13,100.00	90.425	135.838	4,627.30	-6,194.34	5,852.05	1,882,704.004	2,755,047.340	36.174146235	-107.725058845	
13,200.00	90.425	135.838	4,626.55	-6,266.07	5,921.72	1,882,632.269	2,755,117.007	36.173948958	-107.724823066	
13,300.00	90.425	135.838	4,625.81	-6,337.81	5,991.39	1,882,560.534	2,755,186.674	36.173751681	-107.724587287	
13,400.00	90.425	135.838	4,625.07	-6,409.54	6,061.06	1,882,488.799	2,755,256.341	36.173554403	-107.724351510	
13,500.00	90.425	135.838	4,624.33	-6,481.28	6,130.72	1,882,417.065	2,755,326.009	36.173357124	-107.724115734	
13,600.00	90.425	135.838	4,623.58	-6,553.01	6,200.39	1,882,345.330	2,755,395.676	36.173159845	-107.723879960	
13,700.00	90.425	135.838	4,622.84	-6,624.75	6,270.06	1,882,273.595	2,755,465.343	36.172962566	-107.723644186	
13,800.00	90.425	135.838	4,622.10	-6,696.48	6,339.73	1,882,201.860	2,755,535.010	36.172765286	-107.723408414	
13,813.32	90.425	135.838	4,622.00	-6,706.04	6,349.01	1,882,192.302	2,755,544.293	36.172739000	-107.723377000	
PBHL/TD 13813.32 MD 4622.00 TVD										



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Rodeo 512 LTP 1226 FM	0.000	0.000	4,622.00	-6,706.04	6,349.01	1,882,192.302	2,755,544.293	36.172739000	-107.723377000
- plan hits target center									
- Point									
Rodeo 512 FTP 234 FNI	0.000	0.000	4,687.00	-424.22	248.25	1,888,474.109	2,749,443.548	36.190013000	-107.744028000
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
350.00	350.00	13 3/8" Casing		13-5/8	17-1/2
2,629.74	2,626.00	9 5/8" Casing		9-5/8	12-1/4

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
371.00	371.00	Ojo Alamo		0.00		
456.00	456.00	Kirtland				
686.00	686.00	Fruitland				
1,036.00	1,036.00	Pictured Cliffs				
1,161.00	1,161.00	Lewis				
1,421.00	1,421.00	Chacra_A				
2,449.08	2,446.00	Cliff House_Basal				
2,479.19	2,476.00	Menefee				
3,469.82	3,463.00	Point Lookout				
3,593.27	3,586.00	Mancos				
3,954.03	3,946.00	MNCS_A				
4,054.03	4,046.00	MNCS_B				
4,139.08	4,131.00	MNCS_C				
4,174.31	4,166.00	MNCS_Cms				
4,309.19	4,296.00	MNCS_D				
4,479.99	4,443.00	MNCS_E				
4,566.37	4,506.00	MNCS_F				
4,674.06	4,571.00	MNCS_G				
4,763.78	4,616.00	MNCS_H				
4,916.29	4,671.00	MNCS_I				



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Rodeo Unit #512H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6798+28 @ 6826.00ft (Ensign 773)
Site:	Rodeo Unit 511 pad (511, 512 & 513)	North Reference:	Grid
Well:	Rodeo Unit #512H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,500.00	1,500.00	0.00	0.00	KOP Begin 3°/100' build	
1,663.58	1,663.38	0.99	-6.93	Begin 4.91° tangent	
3,744.44	3,736.62	26.14	-183.16	Begin 3°/100' drop	
3,908.03	3,900.00	27.13	-190.09	Begin vertical hold	
4,092.09	4,084.06	27.13	-190.09	Begin 10°/100' build	
4,692.09	4,580.26	-178.38	9.50	Begin 60.00° tangent	
4,752.09	4,610.26	-215.66	45.70	Begin 10°/100' build	
5,056.34	4,687.00	-424.22	248.25	Begin 90.43° lateral	
13,813.32	4,622.00	-6,706.04	6,349.01	PBHL/TD 13813.32 MD 4622.00 TVD	



ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

DRILLING PLAN: *Drill, complete, and equip single lateral in the Mancos-I formation*

WELL INFORMATION:

Name: RODEO UNIT 512H

API Number: 30-045-35874

AFE Number: not yet assigned

ER Well Number: not yet assigned

State: New Mexico

County: San Juan

Surface Elevation: 6,798 ft ASL (GL) 6,826 ft ASL (KB)

Surface Location: 25-23N-09W Sec-Twn-Rng 191 ft FSL 1,345 ft FWL

36.191179 ° N latitude 107.744868 ° W longitude (NAD 83)

BH Location (LTP): 6-22N-08W Sec-Twn-Rng 1,226 ft FNL 2,398 ft FWL

36.172739 ° N latitude 107.723377 ° W longitude (NAD 83)

Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:

South on US Hwy 550 for 37.8 miles to MM 113.4; Right (Southwest) on CR #7890 for 0.8 miles to fork; Left (South) remaining on CR #7890 for 1.3 miles to 4-way intersection; Left (Southeast) remaining on CR #7890 for 0.6 miles to fork; Right (Southwest) on CR #7890 for 1.5 miles to access road; Left on access road for 0.5 mile to Rodeo Unit 511H Pad (three wells planned to be drilled: 511H, 512H, 513H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,455	371	371	W	normal
	Kirtland	6,370	456	456	W	normal
	Fruitland	6,140	686	686	G, W	sub
	Pictured Cliffs	5,790	1,036	1,036	G, W	sub
	Lewis	5,665	1,161	1,161	G, W	normal
	Chacra	5,405	1,421	1,421	G, W	normal
	Cliff House	4,380	2,446	2,449	G, W	sub
	Menefee	4,350	2,476	2,479	G, W	normal
	Point Lookout	3,363	3,463	3,470	G, W	normal
	Mancos	3,240	3,586	3,593	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,880	3,946	3,954	O,G	sub (~0.38)
	MNCS_B	2,780	4,046	4,054	O,G	sub (~0.38)
	MNCS_C	2,695	4,131	4,139	O,G	sub (~0.38)
	MNCS_Cms	2,660	4,166	4,174	O,G	sub (~0.38)
	MNCS_D	2,530	4,296	4,309	O,G	sub (~0.38)
	MNCS_E	2,383	4,443	4,480	O,G	sub (~0.38)
	MNCS_F	2,320	4,506	4,566	O,G	sub (~0.38)
	MNCS_G	2,255	4,571	4,674	O,G	sub (~0.38)
	MNCS_H	2,210	4,616	4,764	O,G	sub (~0.38)
	MNCS_I	2,155	4,671	4,916	O,G	sub (~0.38)
	FTP (LP) TARGET	2,139	4,687	5,056	O,G	sub (~0.38)
	LTP (TD) TARGET	2,204	4,622	13,813	O,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup

Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations

Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,020 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 990 psi

Temperature: Maximum anticipated BHT is 125° F or less

H₂S INFORMATION:

H₂S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs: None planned; gas detection from drill out of 13-3/8" casing to TD; remote geo-steering from drill out of 9-5/8" casing to TD.

MWD / LWD: MWD surveys with inclination and azimuth in 100' stations (minimum) from drill out of 13-3/8" casing to TD; Gamma Ray from drill out of 9-5/8" casing to TD; Gamma Ray optional in 12-1/4" intermediate hole

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Ensign

Rig No.: 773

Draw Works: Pacific Rim 1500AC

Mast: ADR 1500S Cantilever Triple (142 ft, 800,000 lbs, 12 lines)

Top Drive: Tesco 500-ESI-1350 (500 ton, 1,350 hp)

Prime Movers: 3 - CAT 3512 (1,475 hp)

Pumps: 3 - Gardner-Denver PZ11 (7,500 psi)

BOPE 1: Cameron single gate ram & double gate ram (13-5/8", 10,000 psi)

BOPE 2: Cameron annular (13-5/8", 5,000 psi)

Choke 3", 10,000 psi

KB-GL (ft): 28

Note: Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

- 1) Rig will be equipped with upper and lower kelly cocks with handles available.
- 2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
- 3) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
- 4) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
- 5) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
- 6) Manual locking devices (hand wheels) shall be installed on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device. The valve will be maintained in the open position and shall only be closed when there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimize the amount of fluids and solids that require disposal.

Fluid Disposal: Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal: Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for specifics and fluid program from Newpark. Sufficient weighting agent will be on location to weight up mud system to balance the maximum expected pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: *Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.*

0 ft (MD)	to	350 ft (MD)	Hole Section Length:	350 ft
0 ft (TVD)	to	350 ft (TVD)	Casing Required:	350 ft

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, deviation survey

Logging: None

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	571	116,634	116,634
Min. S.F.					7.39	4.78	7.31	7.79

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient

Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient

Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): Minimum: N/A Optimum: N/A Maximum: N/A

Make-up as per API Buttress Connection running procedure.

Casing Details: Float shoe, 1 jt casing, float collar, casing to surface

Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	350

Calculated cement volumes assume gauge hole and the excess noted in table

Drake Endergy Services Surface Blend

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: *Drill as per directional plan to casing setting depth, run casing, cement casing to surface.*

350 ft (MD)	to	2,630 ft (MD)	Hole Section Length:	2,280 ft
-------------	----	---------------	----------------------	----------

350 ft (TVD)	to	2,626 ft (TVD)	Casing Required:	2,630 ft
--------------	----	----------------	------------------	----------

***TARGET CSG SHOE DEPTH IS 150' TVD BELOW MENEFFEE TOP**

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (KCI)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBM

Hole Size: 12-1/4"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD surveys with inclination and azimuth in 100' stations (minimum), GR optional

Logging: None

Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,147	1,140	182,566	182,566
Min. S.F.					1.76	3.09	3.09	2.48

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient

Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient

Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): Minumum: 3,900 Optimum: 5,200 Maximum: 6,500

Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface

Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 2 jts (floating) to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	III:POZ Blend	12.5	2.140	12.05	70%	0	530
Tail	Type III	14.6	1.380	6.64	20%	2,130	136

Annular Capacity 0.3627 cuft/ft 9-5/8" casing x 13-3/8" casing annulus

0.3132 cuft/ft 9-5/8" casing x 12-1/4" hole annulus

Calculated cement volumes assume gauge hole and the excess noted in table

Drake Intermediate Cementing Program

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: Drill to TD following directional plan, run casing, cement casing to surface.

2,630 ft (MD)	to	13,813 ft (MD)	Hole Section Length:	11,183 ft
2,626 ft (TVD)	to	4,622 ft (TVD)	Casing Required:	13,813 ft

Estimated KOP:	4,092 ft (MD)	4,084 ft (TVD)
Estimated Landing Point (FTP):	5,056 ft (MD)	4,687 ft (TVD)
Estimated Lateral Length:	8,757 ft (MD)	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	ES	OWR
	OBM	8.7 - 9.0	10 - 15	10 - 20	6 - 10	500+	80:20

Hole Size: 8-1/2"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD surveys with inclination and azimuth in 100' stations (minimum) before KOP, every joint from KOP to POE, every 100' (minimum) from POE to TD; Gamma Ray from drill out of 9-5/8" shoe to TD

Logging: MWD Gamma Ray for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	Size (in)	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,283	8,933	352,629	352,629

Min. S.F.		3.27	1.19	1.55	1.26
-----------	--	------	------	------	------

Assumptions: Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)

Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient

Tension: buoyed weight in 9.0 ppg fluid with 150,000 lbs over-pull

MU Torque (ft lbs): Minimum: 3,400 Optimum: 4,530 Maximum: 5,660

Casing Summary: Float shoe, 1 jt casing, float collar, 1 jt casing, float collar, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub at KOP (+/-), casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the the azimuth of the well. **Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.**

Centralizers: Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys (**ARSENAL**)

Lateral: 1 centralizer per joint

POE to 9-5/8" shoe: 1 centralizer per joint

9-5/8" shoe to surface: 1 centralizer per 2 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	Type I / II	12.4	2.360	13.40	65%	0	576
Tail	G:POZ blend	13.3	1.560	7.70	10%	3,593	1,651

Annular Capacity 0.2691 cuft/ft 5-1/2" casing x 9-5/8" casing annulus

0.2291 cuft/ft 5-1/2" casing x 8-1/2" hole annulus

Calculated cement volumes assume gauge hole and the excess noted in table

American Cementing Liner & Production Blend

Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defined by NMAC 19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ND BOP. RDMO Drilling Rig.

COMPLETION AND PRODUCTION PLAN:

Frac: 40 plug-and-perf stages with 360,000 bbls slickwater fluid and 15,000,000 lbs of proppant (estimated)

Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assistance)

Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: 7/1/2022

Completion: 8/15/2022

Production: 9/29/2022

Prepared by: Alec Bridge 2/7/2020

Updated by: Alec Bridge 3/31/2022 - updated drilling prog & directional plans for new development plan & current program

WELL NAME: **RODEO UNIT 512H**
OBJECTIVE: **Drill, complete, and equip single lateral in the Mancos-I formation**
API Number: 30-045-35874
State: New Mexico
County: San Juan

Surface Elev.: 6,798 ft ASL (GL) 6,826 ft ASL (KB)
Surface Location: 25-23N-09W Sec-Twn- Rng 191 ft FSL 1,345 ft FWL
BH Location: 6-22N-08W Sec-Twn- Rng 1226 ft FNL 2398 ft FWL

Driving Directions: **FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:**
South on US Hwy 550 for 37.8 miles to MM 113.4; Right (Southwest) on CR #7890 for 0.8 miles to fork; Left (South) remaining on CR #7890 for 1.3 miles to 4-way intersection; Left (Southeast) remaining on CR #7890 for 0.6 miles to fork; Right (Southwest) on CR #7890 for 1.5 miles to access road; Left on access road for 0.5 mile to Rodeo Unit 511H Pad (three wells planned to be drilled: 511H, 512H, 513H).

QUICK REFERENCE	
Sur TD (MD)	350 ft
Int TD (MD)	2,630 ft
KOP (MD)	4,092 ft
KOP (TVD)	4,084 ft
Target (TVD)	4,687 ft
Curve BUR	10 °/100 ft
POE (MD)	5,056 ft
TD (MD)	13,813 ft
Lat Len (ft)	8,757 ft

WELL CONSTRUCTION SUMMARY:

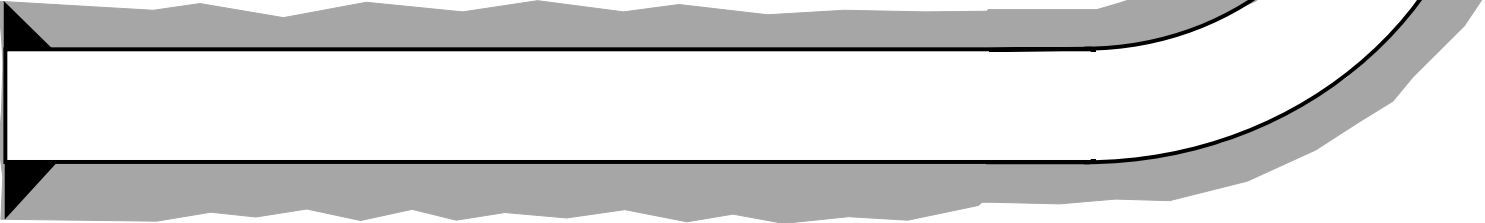
	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	350	13.375	54.5	J-55	BTC	0	350
Intermediate	12.250	2,630	9.625	36.0	J-55	LTC	0	2,630
Production	8.500	13,813	5.500	17.0	P-110	LTC	0	13,813

CEMENT PROPERTIES SUMMARY:

	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	TYPE III	14.6	1.39	6.686	0.6946	100%	0	350
Inter. (Lead)	III:POZ Blend	12.5	2.14	12.05	0.3627	70%	0	530
Inter. (Tail)	Type III	14.6	1.38	6.64	0.3132	20%	2,130	136
Prod. (Lead)	Type I / II	12.4	2.360	13.40	0.2691	65%	0	576
Prod. (Tail)	G:POZ blend	13.3	1.560	7.70	0.2291	10%	3,593	1,651

COMPLETION / PRODUCTION SUMMARY:

Frac: 40 plug-and-perf stages with 360,000 bbls slickwater fluid and 15,000,000 lbs of proppant (estimated)
Flowback: Flow back through production tubing as pressures allow (ESP may be used for load recovery assistance)
Production: Produce through production tubing via gas-lift into permanent production and storage facilities



	Tops	TVD (ft KB)	MD (ft KB)
	Ojo Alamo	371	371
	Kirtland	456	456
	Fruitland	686	686
	Pictured Cliffs	1,036	1,036
	Lewis	1,161	1,161
	Chacra	1,421	1,421
	Cliff House	2,446	2,449
	Menefee	2,476	2,479
	Point Lookout	3,463	3,470
	Mancos	3,586	3,593
	Gallup (MNCS_A)	3,946	3,954
	MNCS_B	4,046	4,054
	MNCS_C	4,131	4,139
	MNCS_Cms	4,166	4,174
	MNCS_D	4,296	4,309
	MNCS_E	4,443	4,480
	MNCS_F	4,506	4,566
	MNCS_G	4,571	4,674
	MNCS_H	4,616	4,764
	MNCS_I	4,671	4,916
	FTP (LP) TARGET	4,687	5,056
	LTP (TD) TARGET	4,622	13,813

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 96540

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 96540
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	• NSL Will require an administrative order for non-standard location prior to placing the well on production.	4/12/2022
kpickford	Adhere to previous NMOCD Conditions of Approval	4/12/2022