

Well Name: W LYBROOK UNIT	Well Location: T23N / R9W / SEC 27 / NENW /	County or Parish/State:
Well Number: 763H	Type of Well: OIL WELL	Allottee or Tribe Name: EASTERN NAVAJO
Lease Number: NMNM118731	Unit or CA Name:	Unit or CA Number: NMNM135216A
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: ENDURING RESOURCES LLC

Notice of Intent

Sundry ID: 2644135

Type of Submission: Notice of Intent	Type of Action: Drilling Operations
Date Sundry Submitted: 11/12/2021	Time Sundry Submitted: 03:03
Date proposed operation will begin: 12/01/2021	

Procedure Description: Enduring Resources requests to change the BHL of the W LYBROOK UNTI 763H well per attached updated: C-102 OPS Plan Directional Plan Wellbore Diagram Previously approved BHL: 1,612' FNL & 2,308' FEL - Section 21, T23N, R9W Proposed BHL: 222' FNL & 1,740' FWL - Section 21, T23N, R9W

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

- Procedure Description
- WLU_763H_WBD_11082021_20211112145828.pdf
 - WLU_763H_Drilling_Prog_11082021_20211112145808.pdf
 - Enduring_W_Lybrook_Unit_No._763H_rev0__11913__20211112145746.pdf
 - Scanned_from_a_Xerox_Multifunction_Printer_1_20211112144642.pdf

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Well Number: 763H	Type of Well: OIL WELL	Allottee or Tribe Name: EASTERN NAVAJO
Lease Number: NMNM118731	Unit or CA Name:	Unit or CA Number: NMNM135216A
US Well Number:	Well Status: Approved Application for Permit to Drill	Operator: ENDURING RESOURCES LLC

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: KHEM SUTHIWAN	Signed on: NOV 12, 2021 03:01 PM
Name: ENDURING RESOURCES LLC	
Title: Project Regulatory Specialist	
Street Address: 6400 W 60TH AVE	
City: ARVADA	State: CO
Phone: (303) 962-5508	
Email address: KHEM.SUTHIWAN@WSP.COM	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5055647742	BLM POC Email Address: krennick@blm.gov
Disposition: Approved	Disposition Date: 11/16/2021
Signature: Kenneth Rennick	

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

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

*API Number		*Pool Code	*Pool Name
		98157	LYBROOK MANCOS W
*Property Code	*Property Name		*Well Number
321259	W LYBROOK UNIT		763H
*GRID No.	*Operator Name		*Elevation
372286	ENDURING RESOURCES, LLC		6641'

¹⁰ Surface Location

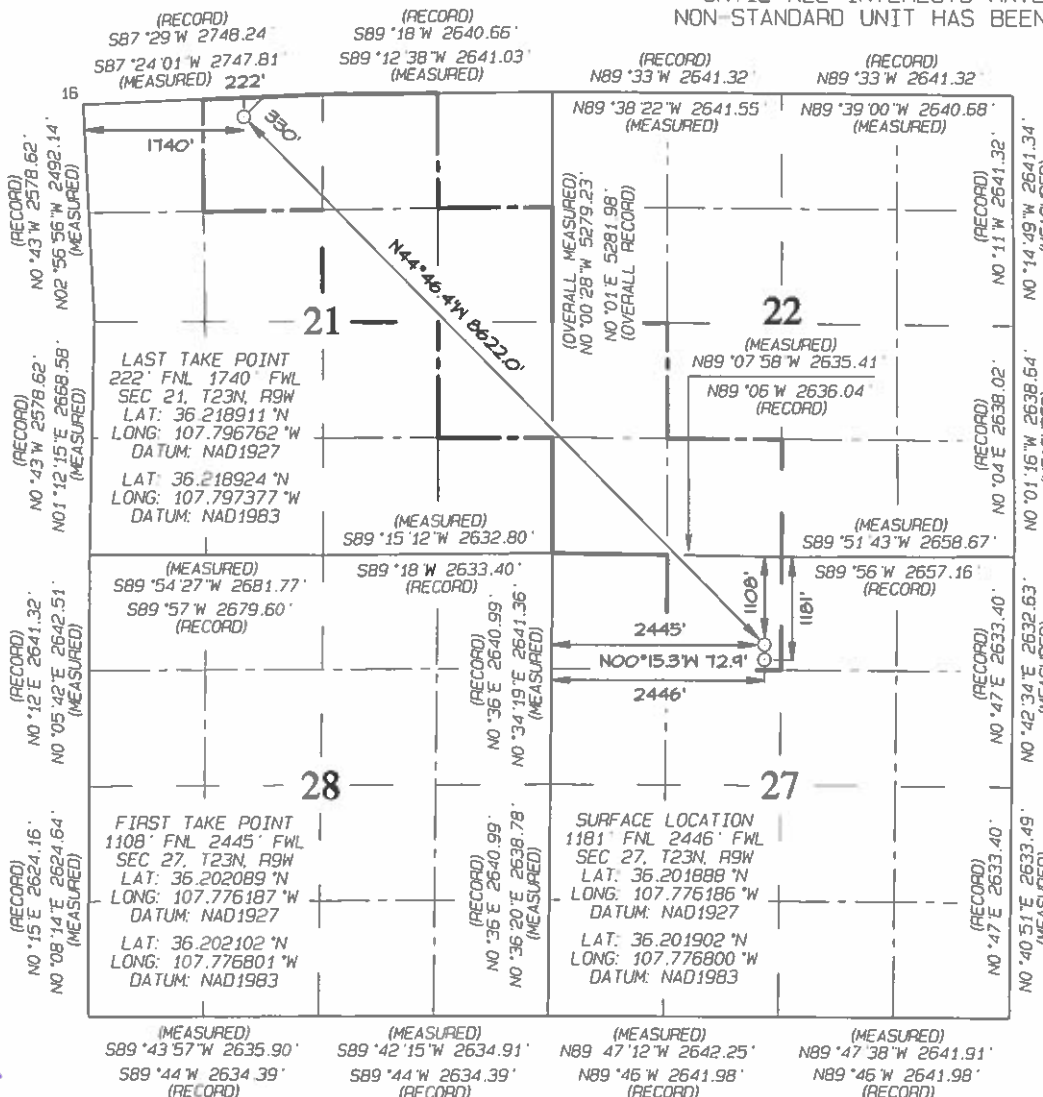
UL or Lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	27	23N	9W		1181	NORTH	2446	WEST	SAN JUAN

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	21	23N	9W		222	NORTH	1740	WEST	SAN JUAN

¹² Dedicated Acres		¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
360.00 NE/4 NW/4 - Section 27 NE/4 NW/4, NW/4 NE/4 S/2 NE/4, NE/4 SE/4 - Section 21 W/2 SW/4, SE/4 SW/4 - Section 22				R-14051 - 12,807.24 Acres

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



¹⁷ 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: 11/8/2021

Printed Name: Khem Suthiwan

E-mail Address: khem.suthiwan@wsp.com

¹⁸ 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: OCTOBER 26, 2021
Date of Survey: MARCH 10, 2016

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
15269

JASON C. EDWARDS
Certificate Number 15269



Well: W Lybrook Unit No. 763H
Site: W Lybrook Unit
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig:

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=6641+25 @ 6666.00ft

 Easting | Latitude |

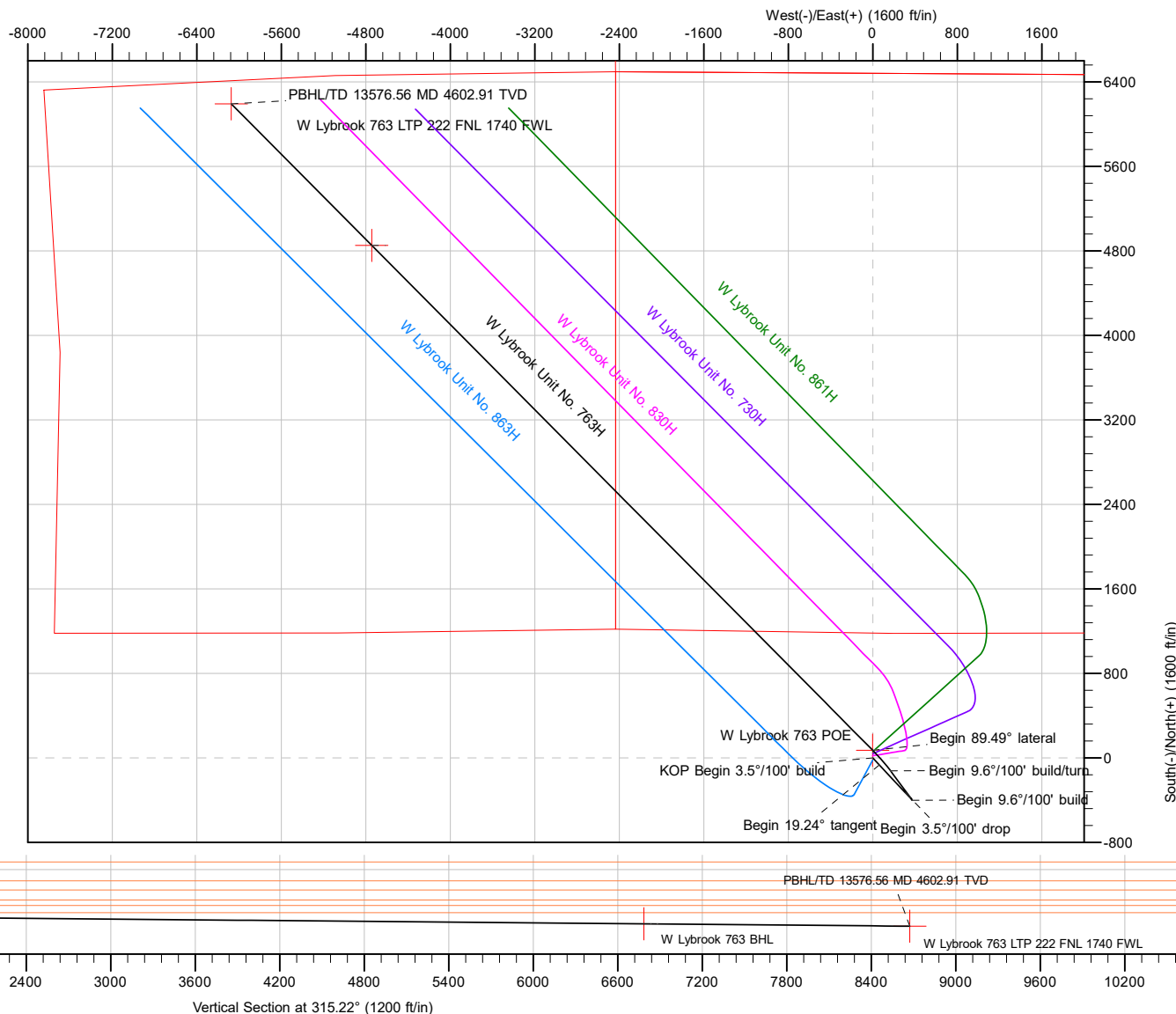
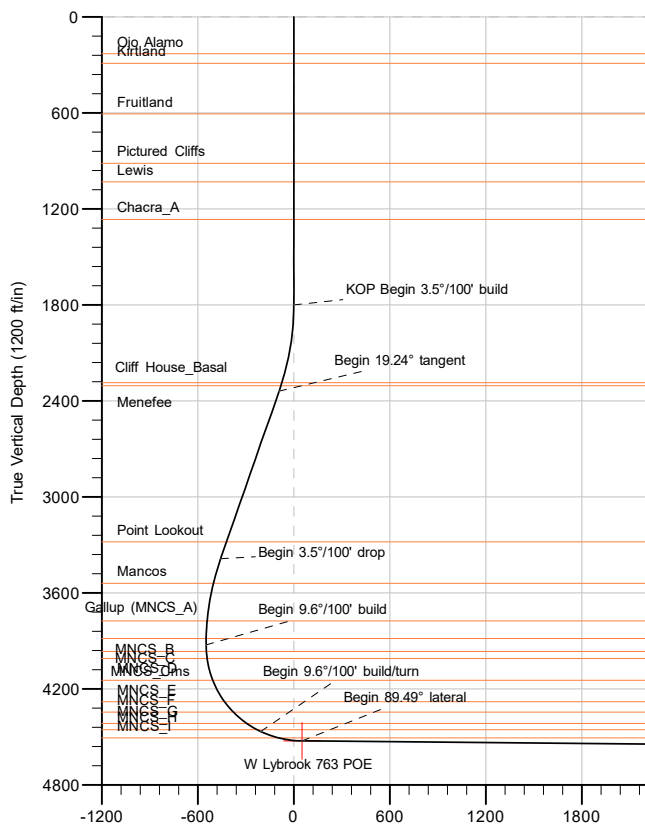
Northing	Easting	Latitude	Longitude
1892794.671	2739770.786	36.201902000	-107.776800000

Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 8.727°



Azimuths to Grid North
True North: -0.03°
Magnetic North: 8.73°

Magnetic Field
Strength: 49258.0nT
Dip Angle: 62.82°
Date: 11/11/2021
Model: IGRF2015





Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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		W Lybrook Unit			
Site Position:		Northing:	1,897,416.802 usft	Latitude:	36.214585000
From:	Lat/Long	Easting:	2,747,156.265 usft	Longitude:	-107.751754000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	W Lybrook Unit No. 763H, Surf loc: 1181 FNL 2446 FWL Section 27-T23N-R09W					
Well Position	+N/-S	0.00 ft	Northing:	1,892,794.671 usft	Latitude:	36.201902000
	+E/-W	0.00 ft	Easting:	2,739,770.786 usft	Longitude:	-107.776800000
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,641.00 ft
Grid Convergence:		0.033 °				

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/11/2021	8.760	62.824	49,258.03128707

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	315.22	

Plan Survey Tool Program	Date	11/11/2021			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	13,576.56	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	



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Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,349.66	19.24	136.85	2,339.39	-66.69	62.52	3.50	3.50	0.00	136.848	
3,458.82	19.24	136.85	3,386.61	-333.31	312.48	0.00	0.00	0.00	0.000	
4,008.48	0.00	0.00	3,926.00	-400.00	375.00	3.50	-3.50	0.00	180.000	
4,686.69	65.08	323.39	4,467.50	-122.67	168.95	9.60	9.60	0.00	323.388	
4,954.04	89.49	315.22	4,526.00	72.81	-0.34	9.60	9.13	-3.05	-19.147	W Lybrook 763 POE
11,687.66	89.49	315.22	4,586.06	4,852.65	-4,742.83	0.00	0.00	0.00	0.000	W Lybrook 763 BHL
13,576.56	89.49	315.22	4,602.91	6,193.48	-6,073.17	0.00	0.00	0.00	0.000	W Lybrook 763 LTP 2



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Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
231.00	0.00	0.00	231.00	0.00	0.00	0.00	0.00	0.00	0.00
Ojo Alamo									
291.00	0.00	0.00	291.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
606.00	0.00	0.00	606.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruitland									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
916.00	0.00	0.00	916.00	0.00	0.00	0.00	0.00	0.00	0.00
Pictured Cliffs									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,031.00	0.00	0.00	1,031.00	0.00	0.00	0.00	0.00	0.00	0.00
Lewis									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,266.00	0.00	0.00	1,266.00	0.00	0.00	0.00	0.00	0.00	0.00
Chacra_A									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3.5°/100' build									
1,900.00	3.50	136.85	1,899.94	-2.23	2.09	-3.05	3.50	3.50	0.00
2,000.00	7.00	136.85	1,999.50	-8.90	8.35	-12.20	3.50	3.50	0.00
2,100.00	10.50	136.85	2,098.32	-20.00	18.75	-27.40	3.50	3.50	0.00
2,200.00	14.00	136.85	2,196.03	-35.47	33.26	-48.61	3.50	3.50	0.00
2,293.44	17.27	136.85	2,286.00	-53.84	50.48	-73.78	3.50	3.50	0.00
Cliff House_Basal									
2,300.00	17.50	136.85	2,292.26	-55.27	51.82	-75.74	3.50	3.50	0.00
2,314.42	18.00	136.85	2,306.00	-58.48	54.83	-80.13	3.50	3.50	0.00
Menefee									
2,349.66	19.24	136.85	2,339.39	-66.69	62.52	-91.38	3.50	3.50	0.00
Begin 19.24° tangent									
2,400.00	19.24	136.85	2,386.92	-78.79	73.87	-107.96	0.00	0.00	0.00
2,420.21	19.24	136.85	2,406.00	-83.65	78.42	-114.61	0.00	0.00	0.00
9 5/8" Csg									
2,500.00	19.24	136.85	2,481.33	-102.83	96.40	-140.89	0.00	0.00	0.00
2,600.00	19.24	136.85	2,575.75	-126.87	118.94	-173.83	0.00	0.00	0.00
2,700.00	19.24	136.85	2,670.17	-150.91	141.47	-206.77	0.00	0.00	0.00
2,800.00	19.24	136.85	2,764.58	-174.94	164.01	-239.70	0.00	0.00	0.00
2,900.00	19.24	136.85	2,859.00	-198.98	186.54	-272.64	0.00	0.00	0.00



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Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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)
3,000.00	19.24	136.85	2,953.41	-223.02	209.08	-305.58	0.00	0.00	0.00
3,100.00	19.24	136.85	3,047.83	-247.06	231.62	-338.51	0.00	0.00	0.00
3,200.00	19.24	136.85	3,142.24	-271.09	254.15	-371.45	0.00	0.00	0.00
3,300.00	19.24	136.85	3,236.66	-295.13	276.69	-404.38	0.00	0.00	0.00
3,346.96	19.24	136.85	3,281.00	-306.42	287.27	-419.85	0.00	0.00	0.00
Point Lookout									
3,400.00	19.24	136.85	3,331.08	-319.17	299.22	-437.32	0.00	0.00	0.00
3,458.82	19.24	136.85	3,386.61	-333.31	312.48	-456.69	0.00	0.00	0.00
Begin 3.5°/100' drop									
3,500.00	17.80	136.85	3,425.66	-342.85	321.42	-469.77	3.50	-3.50	0.00
3,600.00	14.30	136.85	3,521.75	-363.01	340.32	-497.39	3.50	-3.50	0.00
3,619.84	13.60	136.85	3,541.00	-366.50	343.60	-502.17	3.50	-3.50	0.00
Mancos									
3,700.00	10.80	136.85	3,619.34	-378.86	355.18	-519.10	3.50	-3.50	0.00
3,800.00	7.30	136.85	3,718.08	-390.33	365.93	-534.82	3.50	-3.50	0.00
3,858.27	5.26	136.85	3,776.00	-394.98	370.29	-541.19	3.50	-3.50	0.00
Gallup (MNCS_A)									
3,900.00	3.80	136.85	3,817.60	-397.38	372.54	-544.48	3.50	-3.50	0.00
3,968.47	1.40	136.85	3,886.00	-399.64	374.67	-547.58	3.50	-3.50	0.00
MNCS_B									
4,008.48	0.00	0.00	3,926.00	-400.00	375.00	-548.07	3.50	-3.50	0.00
Begin 9.6°/100' build									
4,048.51	3.84	323.39	3,966.00	-398.92	374.20	-546.74	9.60	9.60	0.00
MNCS_C									
4,050.00	3.98	323.39	3,967.49	-398.84	374.14	-546.64	9.60	9.60	0.00
4,093.77	8.18	323.39	4,011.00	-395.12	371.37	-542.05	9.60	9.60	0.00
MNCS_Cms									
4,100.00	8.78	323.39	4,017.16	-394.38	370.83	-541.14	9.60	9.60	0.00
4,150.00	13.58	323.39	4,066.20	-386.60	365.04	-531.55	9.60	9.60	0.00
4,200.00	18.38	323.39	4,114.25	-375.56	356.84	-517.93	9.60	9.60	0.00
4,233.79	21.62	323.39	4,146.00	-366.28	349.95	-506.49	9.60	9.60	0.00
MNCS_D									
4,250.00	23.18	323.39	4,160.99	-361.32	346.26	-500.38	9.60	9.60	0.00
4,300.00	27.97	323.39	4,206.08	-344.00	333.39	-479.02	9.60	9.60	0.00
4,350.00	32.77	323.39	4,249.20	-323.71	318.32	-454.00	9.60	9.60	0.00
4,388.65	36.48	323.39	4,281.00	-306.09	305.23	-432.27	9.60	9.60	0.00
MNCS_E									
4,400.00	37.57	323.39	4,290.06	-300.60	301.15	-425.50	9.60	9.60	0.00
4,450.00	42.37	323.39	4,328.37	-274.83	282.00	-393.72	9.60	9.60	0.00
4,474.32	44.70	323.39	4,346.00	-261.38	272.01	-377.14	9.60	9.60	0.00
MNCS_F									
4,500.00	47.17	323.39	4,363.86	-246.57	261.01	-358.87	9.60	9.60	0.00
4,550.00	51.96	323.39	4,396.28	-216.03	238.32	-321.21	9.60	9.60	0.00
4,583.20	55.15	323.39	4,416.00	-194.60	222.39	-294.78	9.60	9.60	0.00
MNCS_G									
4,600.00	56.76	323.39	4,425.40	-183.43	214.09	-281.00	9.60	9.60	0.00
4,650.00	61.56	323.39	4,451.03	-148.98	188.50	-238.52	9.60	9.60	0.00
4,660.61	62.58	323.39	4,456.00	-141.45	182.90	-229.24	9.60	9.60	0.00
MNCS_H									
4,686.69	65.08	323.39	4,467.50	-122.67	168.95	-206.07	9.60	9.60	0.00
Begin 9.6°/100' build/turn									
4,700.00	66.29	322.93	4,472.98	-112.96	161.67	-194.06	9.60	9.07	-3.44
4,750.00	70.83	321.28	4,491.26	-76.25	133.09	-147.87	9.60	9.09	-3.30



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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)
4,800.00	75.39	319.72	4,505.78	-39.35	102.66	-100.24	9.60	9.12	-3.12
4,800.89	75.47	319.70	4,506.00	-38.69	102.11	-99.39	9.60	9.13	-3.05
MNCS_I									
4,850.00	79.96	318.23	4,516.44	-2.51	70.60	-51.51	9.60	9.14	-2.99
4,900.00	84.54	316.77	4,523.19	34.01	37.14	-2.02	9.60	9.15	-2.91
4,954.04	89.49	315.22	4,526.00	72.81	-0.34	51.92	9.60	9.16	-2.86
Begin 89.49° lateral									
5,000.00	89.49	315.22	4,526.41	105.43	-32.71	97.88	0.00	0.00	0.00
5,100.00	89.49	315.22	4,527.30	176.42	-103.14	197.87	0.00	0.00	0.00
5,200.00	89.49	315.22	4,528.19	247.40	-173.57	297.87	0.00	0.00	0.00
5,300.00	89.49	315.22	4,529.09	318.39	-244.00	397.87	0.00	0.00	0.00
5,400.00	89.49	315.22	4,529.98	389.37	-314.43	497.86	0.00	0.00	0.00
5,500.00	89.49	315.22	4,530.87	460.36	-384.86	597.86	0.00	0.00	0.00
5,600.00	89.49	315.22	4,531.76	531.34	-455.29	697.85	0.00	0.00	0.00
5,700.00	89.49	315.22	4,532.65	602.33	-525.72	797.85	0.00	0.00	0.00
5,800.00	89.49	315.22	4,533.55	673.31	-596.15	897.85	0.00	0.00	0.00
5,900.00	89.49	315.22	4,534.44	744.30	-666.58	997.84	0.00	0.00	0.00
6,000.00	89.49	315.22	4,535.33	815.28	-737.01	1,097.84	0.00	0.00	0.00
6,100.00	89.49	315.22	4,536.22	886.27	-807.44	1,197.83	0.00	0.00	0.00
6,200.00	89.49	315.22	4,537.11	957.25	-877.87	1,297.83	0.00	0.00	0.00
6,300.00	89.49	315.22	4,538.01	1,028.24	-948.30	1,397.83	0.00	0.00	0.00
6,400.00	89.49	315.22	4,538.90	1,099.22	-1,018.73	1,497.82	0.00	0.00	0.00
6,500.00	89.49	315.22	4,539.79	1,170.20	-1,089.16	1,597.82	0.00	0.00	0.00
6,600.00	89.49	315.22	4,540.68	1,241.19	-1,159.59	1,697.81	0.00	0.00	0.00
6,700.00	89.49	315.22	4,541.57	1,312.17	-1,230.02	1,797.81	0.00	0.00	0.00
6,800.00	89.49	315.22	4,542.47	1,383.16	-1,300.45	1,897.81	0.00	0.00	0.00
6,900.00	89.49	315.22	4,543.36	1,454.14	-1,370.88	1,997.80	0.00	0.00	0.00
7,000.00	89.49	315.22	4,544.25	1,525.13	-1,441.31	2,097.80	0.00	0.00	0.00
7,100.00	89.49	315.22	4,545.14	1,596.11	-1,511.74	2,197.79	0.00	0.00	0.00
7,200.00	89.49	315.22	4,546.03	1,667.10	-1,582.17	2,297.79	0.00	0.00	0.00
7,300.00	89.49	315.22	4,546.93	1,738.08	-1,652.60	2,397.79	0.00	0.00	0.00
7,400.00	89.49	315.22	4,547.82	1,809.07	-1,723.03	2,497.78	0.00	0.00	0.00
7,500.00	89.49	315.22	4,548.71	1,880.05	-1,793.46	2,597.78	0.00	0.00	0.00
7,600.00	89.49	315.22	4,549.60	1,951.04	-1,863.89	2,697.77	0.00	0.00	0.00
7,700.00	89.49	315.22	4,550.49	2,022.02	-1,934.32	2,797.77	0.00	0.00	0.00
7,800.00	89.49	315.22	4,551.39	2,093.01	-2,004.75	2,897.77	0.00	0.00	0.00
7,900.00	89.49	315.22	4,552.28	2,163.99	-2,075.18	2,997.76	0.00	0.00	0.00
8,000.00	89.49	315.22	4,553.17	2,234.97	-2,145.61	3,097.76	0.00	0.00	0.00
8,100.00	89.49	315.22	4,554.06	2,305.96	-2,216.04	3,197.75	0.00	0.00	0.00
8,200.00	89.49	315.22	4,554.95	2,376.94	-2,286.47	3,297.75	0.00	0.00	0.00
8,300.00	89.49	315.22	4,555.84	2,447.93	-2,356.90	3,397.75	0.00	0.00	0.00
8,400.00	89.49	315.22	4,556.74	2,518.91	-2,427.33	3,497.74	0.00	0.00	0.00
8,500.00	89.49	315.22	4,557.63	2,589.90	-2,497.76	3,597.74	0.00	0.00	0.00
8,600.00	89.49	315.22	4,558.52	2,660.88	-2,568.19	3,697.73	0.00	0.00	0.00
8,700.00	89.49	315.22	4,559.41	2,731.87	-2,638.62	3,797.73	0.00	0.00	0.00
8,800.00	89.49	315.22	4,560.30	2,802.85	-2,709.05	3,897.73	0.00	0.00	0.00
8,900.00	89.49	315.22	4,561.20	2,873.84	-2,779.48	3,997.72	0.00	0.00	0.00
9,000.00	89.49	315.22	4,562.09	2,944.82	-2,849.91	4,097.72	0.00	0.00	0.00
9,100.00	89.49	315.22	4,562.98	3,015.81	-2,920.34	4,197.71	0.00	0.00	0.00
9,200.00	89.49	315.22	4,563.87	3,086.79	-2,990.77	4,297.71	0.00	0.00	0.00
9,300.00	89.49	315.22	4,564.76	3,157.78	-3,061.20	4,397.71	0.00	0.00	0.00
9,400.00	89.49	315.22	4,565.66	3,228.76	-3,131.63	4,497.70	0.00	0.00	0.00
9,500.00	89.49	315.22	4,566.55	3,299.74	-3,202.06	4,597.70	0.00	0.00	0.00



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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)
9,600.00	89.49	315.22	4,567.44	3,370.73	-3,272.49	4,697.69	0.00	0.00	0.00
9,700.00	89.49	315.22	4,568.33	3,441.71	-3,342.92	4,797.69	0.00	0.00	0.00
9,800.00	89.49	315.22	4,569.22	3,512.70	-3,413.35	4,897.69	0.00	0.00	0.00
9,900.00	89.49	315.22	4,570.12	3,583.68	-3,483.78	4,997.68	0.00	0.00	0.00
10,000.00	89.49	315.22	4,571.01	3,654.67	-3,554.21	5,097.68	0.00	0.00	0.00
10,100.00	89.49	315.22	4,571.90	3,725.65	-3,624.64	5,197.67	0.00	0.00	0.00
10,200.00	89.49	315.22	4,572.79	3,796.64	-3,695.07	5,297.67	0.00	0.00	0.00
10,300.00	89.49	315.22	4,573.68	3,867.62	-3,765.50	5,397.67	0.00	0.00	0.00
10,400.00	89.49	315.22	4,574.58	3,938.61	-3,835.93	5,497.66	0.00	0.00	0.00
10,500.00	89.49	315.22	4,575.47	4,009.59	-3,906.36	5,597.66	0.00	0.00	0.00
10,600.00	89.49	315.22	4,576.36	4,080.58	-3,976.79	5,697.65	0.00	0.00	0.00
10,700.00	89.49	315.22	4,577.25	4,151.56	-4,047.22	5,797.65	0.00	0.00	0.00
10,800.00	89.49	315.22	4,578.14	4,222.55	-4,117.65	5,897.65	0.00	0.00	0.00
10,900.00	89.49	315.22	4,579.04	4,293.53	-4,188.08	5,997.64	0.00	0.00	0.00
11,000.00	89.49	315.22	4,579.93	4,364.51	-4,258.51	6,097.64	0.00	0.00	0.00
11,100.00	89.49	315.22	4,580.82	4,435.50	-4,328.94	6,197.64	0.00	0.00	0.00
11,200.00	89.49	315.22	4,581.71	4,506.48	-4,399.37	6,297.63	0.00	0.00	0.00
11,300.00	89.49	315.22	4,582.60	4,577.47	-4,469.80	6,397.63	0.00	0.00	0.00
11,400.00	89.49	315.22	4,583.50	4,648.45	-4,540.23	6,497.62	0.00	0.00	0.00
11,500.00	89.49	315.22	4,584.39	4,719.44	-4,610.66	6,597.62	0.00	0.00	0.00
11,600.00	89.49	315.22	4,585.28	4,790.42	-4,681.09	6,697.62	0.00	0.00	0.00
11,687.66	89.49	315.22	4,586.06	4,852.65	-4,742.83	6,785.27	0.00	0.00	0.00
11,700.00	89.49	315.22	4,586.17	4,861.41	-4,751.52	6,797.61	0.00	0.00	0.00
11,800.00	89.49	315.22	4,587.06	4,932.39	-4,821.95	6,897.61	0.00	0.00	0.00
11,900.00	89.49	315.22	4,587.96	5,003.38	-4,892.38	6,997.60	0.00	0.00	0.00
12,000.00	89.49	315.22	4,588.85	5,074.36	-4,962.81	7,097.60	0.00	0.00	0.00
12,100.00	89.49	315.22	4,589.74	5,145.35	-5,033.24	7,197.60	0.00	0.00	0.00
12,200.00	89.49	315.22	4,590.63	5,216.33	-5,103.67	7,297.59	0.00	0.00	0.00
12,300.00	89.49	315.22	4,591.52	5,287.32	-5,174.10	7,397.59	0.00	0.00	0.00
12,400.00	89.49	315.22	4,592.42	5,358.30	-5,244.53	7,497.58	0.00	0.00	0.00
12,500.00	89.49	315.22	4,593.31	5,429.28	-5,314.96	7,597.58	0.00	0.00	0.00
12,600.00	89.49	315.22	4,594.20	5,500.27	-5,385.39	7,697.58	0.00	0.00	0.00
12,700.00	89.49	315.22	4,595.09	5,571.25	-5,455.82	7,797.57	0.00	0.00	0.00
12,800.00	89.49	315.22	4,595.98	5,642.24	-5,526.25	7,897.57	0.00	0.00	0.00
12,900.00	89.49	315.22	4,596.88	5,713.22	-5,596.68	7,997.56	0.00	0.00	0.00
13,000.00	89.49	315.22	4,597.77	5,784.21	-5,667.11	8,097.56	0.00	0.00	0.00
13,100.00	89.49	315.22	4,598.66	5,855.19	-5,737.54	8,197.56	0.00	0.00	0.00
13,200.00	89.49	315.22	4,599.55	5,926.18	-5,807.97	8,297.55	0.00	0.00	0.00
13,300.00	89.49	315.22	4,600.44	5,997.16	-5,878.40	8,397.55	0.00	0.00	0.00
13,400.00	89.49	315.22	4,601.34	6,068.15	-5,948.83	8,497.54	0.00	0.00	0.00
13,500.00	89.49	315.22	4,602.23	6,139.13	-6,019.26	8,597.54	0.00	0.00	0.00
13,576.56	89.49	315.22	4,602.91	6,193.48	-6,073.17	8,674.09	0.00	0.00	0.00
PBHL/TD 13576.56 MD 4602.91 TVD									



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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
W Lybrook 763 POE - plan hits target center - Point	0.00	0.00	4,526.00	72.81	-0.34	1,892,867.480	2,739,770.450	36.202102014	-107.776800996
W Lybrook 763 BHL - plan misses target center by 0.12ft at 11687.66ft MD (4586.06 TVD, 4852.65 N, -4742.83 E) - Point	0.00	0.00	4,586.00	4,852.58	-4,742.90	1,897,647.240	2,735,027.900	36.215238999	-107.792868992
W Lybrook 763 LTP 222 - plan hits target center - Point	0.00	0.00	4,602.91	6,193.48	-6,073.17	1,898,988.133	2,733,697.624	36.218924000	-107.797377000

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2	
2,420.21	2,406.00	9 5/8" Csg	9-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
231.00	231.00	Ojo Alamo				
291.00	291.00	Kirtland				
606.00	606.00	Fruitland				
916.00	916.00	Pictured Cliffs				
1,031.00	1,031.00	Lewis				
1,266.00	1,266.00	Chacra_A				
2,293.44	2,286.00	Cliff House_Basal				
2,314.42	2,306.00	Menefee				
3,346.96	3,281.00	Point Lookout				
3,619.84	3,541.00	Mancos				
3,858.27	3,776.00	Gallup (MNCS_A)				
3,968.47	3,886.00	MNCS_B				
4,048.51	3,966.00	MNCS_C				
4,093.77	4,011.00	MNCS_Cms				
4,233.79	4,146.00	MNCS_D				
4,388.65	4,281.00	MNCS_E				
4,474.32	4,346.00	MNCS_F				
4,583.20	4,416.00	MNCS_G				
4,660.61	4,456.00	MNCS_H				
4,800.89	4,506.00	MNCS_I				



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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)		
1,800.00	1,800.00	0.00	0.00	KOP Begin 3.5°/100' build	
2,349.66	2,339.39	-66.69	62.52	Begin 19.24° tangent	
3,458.82	3,386.61	-333.31	312.48	Begin 3.5°/100' drop	
4,008.48	3,926.00	-400.00	375.00	Begin 9.6°/100' build	
4,686.69	4,467.50	-122.67	168.95	Begin 9.6°/100' build/turn	
4,954.04	4,526.00	72.81	-0.34	Begin 89.49° lateral	
11,687.66	4,586.06	4,852.65	-4,742.83		
13,576.56	4,602.91	6,193.48	-6,073.17	PBHL/TD 13576.56 MD 4602.91 TVD	



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	W Lybrook Unit				
Site Position:		Northing:	1,897,416.802 usft	Latitude:	36.214585000
From:	Lat/Long	Easting:	2,747,156.265 usft	Longitude:	-107.751754000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	W Lybrook Unit No. 763H, Surf loc: 1181 FNL 2446 FWL Section 27-T23N-R09W					
Well Position	+N/-S	0.00 ft	Northing:	1,892,794.671 usft	Latitude:	36.201902000
	+E/-W	0.00 ft	Easting:	2,739,770.786 usft	Longitude:	-107.776800000
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,641.00 ft
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/11/2021	8.760	62.824	49,258.03128707

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	315.22

Plan Survey Tool Program	Date			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,576.56 rev0 (Original Hole)		



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,349.66	19.24	136.85	2,339.39	-66.69	62.52	3.50	3.50	0.00	136.848	
3,458.82	19.24	136.85	3,386.61	-333.31	312.48	0.00	0.00	0.00	0.000	
4,008.48	0.00	0.00	3,926.00	-400.00	375.00	3.50	-3.50	0.00	180.000	
4,686.69	65.08	323.39	4,467.50	-122.67	168.95	9.60	9.60	0.00	323.388	
4,954.04	89.49	315.22	4,526.00	72.81	-0.34	9.60	9.13	-3.05	-19.147	W Lybrook 763 POE
11,687.66	89.49	315.22	4,586.06	4,852.65	-4,742.83	0.00	0.00	0.00	0.000	W Lybrook 763 BHL
13,576.56	89.49	315.22	4,602.91	6,193.48	-6,073.17	0.00	0.00	0.00	0.000	W Lybrook 763 LTP 2



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	0.00	0.00	0.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
100.00	0.00	0.00	100.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
200.00	0.00	0.00	200.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
231.00	0.00	0.00	231.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Ojo Alamo									
291.00	0.00	0.00	291.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Kirtland									
300.00	0.00	0.00	300.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
350.00	0.00	0.00	350.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
13 3/8" Csg									
400.00	0.00	0.00	400.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
500.00	0.00	0.00	500.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
600.00	0.00	0.00	600.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
606.00	0.00	0.00	606.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Fruitland									
700.00	0.00	0.00	700.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
800.00	0.00	0.00	800.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
900.00	0.00	0.00	900.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
916.00	0.00	0.00	916.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Pictured Cliffs									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,031.00	0.00	0.00	1,031.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Lewis									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,266.00	0.00	0.00	1,266.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
Chacra_A									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	1,892,794.671	2,739,770.786	36.201902000	-107.776800000
KOP Begin 3.5°/100' build									
1,900.00	3.50	136.85	1,899.94	-2.23	2.09	1,892,792.444	2,739,772.875	36.201895877	-107.776792926
2,000.00	7.00	136.85	1,999.50	-8.90	8.35	1,892,785.769	2,739,779.132	36.201877532	-107.776771731
2,100.00	10.50	136.85	2,098.32	-20.00	18.75	1,892,774.673	2,739,789.534	36.201847033	-107.776736493
2,200.00	14.00	136.85	2,196.03	-35.47	33.26	1,892,759.196	2,739,804.044	36.201804494	-107.776687345
2,293.44	17.27	136.85	2,286.00	-53.84	50.48	1,892,740.827	2,739,821.265	36.201754004	-107.776629011
Cliff House_Basal									
2,300.00	17.50	136.85	2,292.26	-55.27	51.82	1,892,739.397	2,739,822.606	36.201750073	-107.776624469
2,314.42	18.00	136.85	2,306.00	-58.48	54.83	1,892,736.188	2,739,825.614	36.201741253	-107.776614279
Menefee									
2,349.66	19.24	136.85	2,339.39	-66.69	62.52	1,892,727.980	2,739,833.309	36.201718693	-107.776588214
Begin 19.24° tangent									
2,400.00	19.24	136.85	2,386.92	-78.79	73.87	1,892,715.880	2,739,844.653	36.201685433	-107.776549787
2,420.21	19.24	136.85	2,406.00	-83.65	78.42	1,892,711.022	2,739,849.208	36.201672080	-107.776534360
9 5/8" Csg									
2,500.00	19.24	136.85	2,481.33	-102.83	96.40	1,892,691.842	2,739,867.189	36.201619363	-107.776473452
2,600.00	19.24	136.85	2,575.75	-126.87	118.94	1,892,667.804	2,739,889.724	36.201553292	-107.776397116
2,700.00	19.24	136.85	2,670.17	-150.91	141.47	1,892,643.766	2,739,912.260	36.201487221	-107.776320782
2,800.00	19.24	136.85	2,764.58	-174.94	164.01	1,892,619.728	2,739,934.795	36.201421151	-107.776244447
2,900.00	19.24	136.85	2,859.00	-198.98	186.54	1,892,595.691	2,739,957.331	36.201355080	-107.776168112



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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
3,000.00	19.24	136.85	2,953.41	-223.02	209.08	1,892,571.653	2,739,979.866	36.201289009	-107.776091777
3,100.00	19.24	136.85	3,047.83	-247.06	231.62	1,892,547.615	2,740,002.401	36.201222938	-107.776015443
3,200.00	19.24	136.85	3,142.24	-271.09	254.15	1,892,523.577	2,740,024.937	36.201156867	-107.775939109
3,300.00	19.24	136.85	3,236.66	-295.13	276.69	1,892,499.539	2,740,047.472	36.201090796	-107.775862775
3,346.96	19.24	136.85	3,281.00	-306.42	287.27	1,892,488.251	2,740,058.055	36.201059768	-107.775826927
Point Lookout									
3,400.00	19.24	136.85	3,331.08	-319.17	299.22	1,892,475.501	2,740,070.008	36.201024725	-107.775786441
3,458.82	19.24	136.85	3,386.61	-333.31	312.48	1,892,461.363	2,740,083.263	36.200985863	-107.775741542
Begin 3.5°/100' drop									
3,500.00	17.80	136.85	3,425.66	-342.85	321.42	1,892,451.821	2,740,092.208	36.200959638	-107.775711243
3,600.00	14.30	136.85	3,521.75	-363.01	340.32	1,892,431.659	2,740,111.110	36.200904217	-107.775647214
3,619.84	13.60	136.85	3,541.00	-366.50	343.60	1,892,428.170	2,740,114.381	36.200894628	-107.775636135
Mancos									
3,700.00	10.80	136.85	3,619.34	-378.86	355.18	1,892,415.813	2,740,125.966	36.200860663	-107.775596895
3,800.00	7.30	136.85	3,718.08	-390.33	365.93	1,892,404.344	2,740,136.718	36.200829138	-107.775560473
3,858.27	5.26	136.85	3,776.00	-394.98	370.29	1,892,399.696	2,740,141.075	36.200816364	-107.775545715
Gallup (MNCS_A)									
3,900.00	3.80	136.85	3,817.60	-397.38	372.54	1,892,397.293	2,740,143.328	36.200809759	-107.775538084
3,968.47	1.40	136.85	3,886.00	-399.64	374.67	1,892,395.029	2,740,145.451	36.200803535	-107.775530893
MNCS_B									
4,008.48	0.00	0.00	3,926.00	-400.00	375.00	1,892,394.672	2,740,145.785	36.200802554	-107.775529761
Begin 9.6°/100' build									
4,048.51	3.84	323.39	3,966.00	-398.92	374.20	1,892,395.749	2,740,144.986	36.200805514	-107.775532470
MNCS_C									
4,050.00	3.98	323.39	3,967.49	-398.84	374.14	1,892,395.830	2,740,144.925	36.200805738	-107.775532676
4,093.77	8.18	323.39	4,011.00	-395.12	371.37	1,892,399.553	2,740,142.159	36.200815970	-107.775542043
MNCS_Cms									
4,100.00	8.78	323.39	4,017.16	-394.38	370.83	1,892,400.291	2,740,141.611	36.200817998	-107.775543900
4,150.00	13.58	323.39	4,066.20	-386.60	365.04	1,892,408.071	2,740,135.830	36.200839381	-107.775563477
4,200.00	18.38	323.39	4,114.25	-375.56	356.84	1,892,419.117	2,740,127.624	36.200869737	-107.775591270
4,233.79	21.62	323.39	4,146.00	-366.28	349.95	1,892,428.391	2,740,120.733	36.200895225	-107.775614606
MNCS_D									
4,250.00	23.18	323.39	4,160.99	-361.32	346.26	1,892,433.350	2,740,117.049	36.200908853	-107.775627083
4,300.00	27.97	323.39	4,206.08	-344.00	333.39	1,892,450.670	2,740,104.180	36.200956456	-107.775670666
4,350.00	32.77	323.39	4,249.20	-323.71	318.32	1,892,470.957	2,740,089.107	36.201012211	-107.775721714
4,388.65	36.48	323.39	4,281.00	-306.09	305.23	1,892,488.582	2,740,076.012	36.201060649	-107.775766062
MNCS_E									
4,400.00	37.57	323.39	4,290.06	-300.60	301.15	1,892,494.069	2,740,071.936	36.201075728	-107.775779868
4,450.00	42.37	323.39	4,328.37	-274.83	282.00	1,892,519.842	2,740,052.787	36.201146562	-107.775844721
4,474.32	44.70	323.39	4,346.00	-261.38	272.01	1,892,533.287	2,740,042.798	36.201183512	-107.775878551
MNCS_F									
4,500.00	47.17	323.39	4,363.86	-246.57	261.01	1,892,548.098	2,740,031.794	36.201224217	-107.775915819
4,550.00	51.96	323.39	4,396.28	-216.03	238.32	1,892,578.637	2,740,009.104	36.201308147	-107.775992663
4,583.20	55.15	323.39	4,416.00	-194.60	222.39	1,892,600.072	2,739,993.178	36.201367058	-107.776046601
MNCS_G									
4,600.00	56.76	323.39	4,425.40	-183.43	214.09	1,892,611.245	2,739,984.876	36.201397766	-107.776074716
4,650.00	61.56	323.39	4,451.03	-148.98	188.50	1,892,645.695	2,739,959.281	36.201492444	-107.776161401
4,660.61	62.58	323.39	4,456.00	-141.45	182.90	1,892,653.220	2,739,953.690	36.201513125	-107.776180336
MNCS_H									
4,686.69	65.08	323.39	4,467.50	-122.67	168.95	1,892,672.005	2,739,939.733	36.201564752	-107.776227605
Begin 9.6°/100' build/turn									
4,700.00	66.29	322.93	4,472.98	-112.96	161.67	1,892,681.713	2,739,932.460	36.201591431	-107.776252237
4,750.00	70.83	321.28	4,491.26	-76.25	133.09	1,892,718.422	2,739,903.876	36.201692323	-107.776349048



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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
4,800.00	75.39	319.72	4,505.78	-39.35	102.66	1,892,755.325	2,739,873.449	36.201793747	-107.776452108
4,800.89	75.47	319.70	4,506.00	-38.69	102.11	1,892,755.981	2,739,872.892	36.201795550	-107.776453992
MNCS_I									
4,850.00	79.96	318.23	4,516.44	-2.51	70.60	1,892,792.162	2,739,841.390	36.201894995	-107.776560695
4,900.00	84.54	316.77	4,523.19	34.01	37.14	1,892,828.676	2,739,807.926	36.201995356	-107.776674048
4,954.04	89.49	315.22	4,526.00	72.81	-0.34	1,892,867.480	2,739,770.450	36.202102014	-107.776800996
Begin 89.49° lateral									
5,000.00	89.49	315.22	4,526.41	105.43	-32.71	1,892,900.106	2,739,738.079	36.202191691	-107.776910651
5,100.00	89.49	315.22	4,527.30	176.42	-103.14	1,892,971.090	2,739,667.650	36.202386805	-107.777149232
5,200.00	89.49	315.22	4,528.19	247.40	-173.57	1,893,042.075	2,739,597.220	36.202581919	-107.777387814
5,300.00	89.49	315.22	4,529.09	318.39	-244.00	1,893,113.059	2,739,526.790	36.202777031	-107.777626398
5,400.00	89.49	315.22	4,529.98	389.37	-314.43	1,893,184.044	2,739,456.360	36.202972144	-107.777864983
5,500.00	89.49	315.22	4,530.87	460.36	-384.86	1,893,255.028	2,739,385.930	36.203167256	-107.778103568
5,600.00	89.49	315.22	4,531.76	531.34	-455.29	1,893,326.013	2,739,315.500	36.203362368	-107.778342155
5,700.00	89.49	315.22	4,532.65	602.33	-525.72	1,893,396.997	2,739,245.071	36.203557479	-107.778580744
5,800.00	89.49	315.22	4,533.55	673.31	-596.15	1,893,467.982	2,739,174.641	36.203752589	-107.778819333
5,900.00	89.49	315.22	4,534.44	744.30	-666.58	1,893,538.966	2,739,104.211	36.203947699	-107.779057923
6,000.00	89.49	315.22	4,535.33	815.28	-737.01	1,893,609.951	2,739,033.781	36.204142809	-107.779296515
6,100.00	89.49	315.22	4,536.22	886.27	-807.44	1,893,680.935	2,738,963.351	36.204337918	-107.779535108
6,200.00	89.49	315.22	4,537.11	957.25	-877.87	1,893,751.920	2,738,892.921	36.204533027	-107.779773702
6,300.00	89.49	315.22	4,538.01	1,028.24	-948.30	1,893,822.904	2,738,822.491	36.204728135	-107.780012298
6,400.00	89.49	315.22	4,538.90	1,099.22	-1,018.73	1,893,893.889	2,738,752.062	36.204923242	-107.780250894
6,500.00	89.49	315.22	4,539.79	1,170.20	-1,089.16	1,893,964.873	2,738,681.632	36.205118350	-107.780489492
6,600.00	89.49	315.22	4,540.68	1,241.19	-1,159.59	1,894,035.858	2,738,611.202	36.205313456	-107.780728091
6,700.00	89.49	315.22	4,541.57	1,312.17	-1,230.02	1,894,106.842	2,738,540.772	36.205508562	-107.780966691
6,800.00	89.49	315.22	4,542.47	1,383.16	-1,300.45	1,894,177.827	2,738,470.342	36.205703668	-107.781205292
6,900.00	89.49	315.22	4,543.36	1,454.14	-1,370.88	1,894,248.811	2,738,399.912	36.205898774	-107.781443894
7,000.00	89.49	315.22	4,544.25	1,525.13	-1,441.31	1,894,319.796	2,738,329.483	36.206093878	-107.781682498
7,100.00	89.49	315.22	4,545.14	1,596.11	-1,511.74	1,894,390.780	2,738,259.053	36.206288983	-107.781921103
7,200.00	89.49	315.22	4,546.03	1,667.10	-1,582.17	1,894,461.765	2,738,188.623	36.206484086	-107.782159708
7,300.00	89.49	315.22	4,546.93	1,738.08	-1,652.60	1,894,532.749	2,738,118.193	36.206679190	-107.782398316
7,400.00	89.49	315.22	4,547.82	1,809.07	-1,723.03	1,894,603.734	2,738,047.763	36.206874293	-107.782636924
7,500.00	89.49	315.22	4,548.71	1,880.05	-1,793.46	1,894,674.718	2,737,977.333	36.207069395	-107.782875533
7,600.00	89.49	315.22	4,549.60	1,951.04	-1,863.89	1,894,745.703	2,737,906.904	36.207264497	-107.783114144
7,700.00	89.49	315.22	4,550.49	2,022.02	-1,934.32	1,894,816.687	2,737,836.474	36.207459598	-107.783352756
7,800.00	89.49	315.22	4,551.39	2,093.01	-2,004.75	1,894,887.672	2,737,766.044	36.207654699	-107.783591369
7,900.00	89.49	315.22	4,552.28	2,163.99	-2,075.18	1,894,958.657	2,737,695.614	36.207849800	-107.783829983
8,000.00	89.49	315.22	4,553.17	2,234.97	-2,145.61	1,895,029.641	2,737,625.184	36.208044900	-107.784068599
8,100.00	89.49	315.22	4,554.06	2,305.96	-2,216.04	1,895,100.626	2,737,554.754	36.208239999	-107.784307215
8,200.00	89.49	315.22	4,554.95	2,376.94	-2,286.47	1,895,171.610	2,737,484.325	36.208435098	-107.784545833
8,300.00	89.49	315.22	4,555.84	2,447.93	-2,356.90	1,895,242.595	2,737,413.895	36.208630197	-107.784784452
8,400.00	89.49	315.22	4,556.74	2,518.91	-2,427.33	1,895,313.579	2,737,343.465	36.208825295	-107.785023072
8,500.00	89.49	315.22	4,557.63	2,589.90	-2,497.76	1,895,384.564	2,737,273.035	36.209020392	-107.785261694
8,600.00	89.49	315.22	4,558.52	2,660.88	-2,568.19	1,895,455.548	2,737,202.605	36.209215489	-107.785500316
8,700.00	89.49	315.22	4,559.41	2,731.87	-2,638.62	1,895,526.533	2,737,132.175	36.209410586	-107.785738940
8,800.00	89.49	315.22	4,560.30	2,802.85	-2,709.05	1,895,597.517	2,737,061.746	36.209605682	-107.785977565
8,900.00	89.49	315.22	4,561.20	2,873.84	-2,779.48	1,895,668.502	2,736,991.316	36.209800778	-107.786216191
9,000.00	89.49	315.22	4,562.09	2,944.82	-2,849.91	1,895,739.486	2,736,920.886	36.209995873	-107.786454818
9,100.00	89.49	315.22	4,562.98	3,015.81	-2,920.34	1,895,810.471	2,736,850.456	36.210190968	-107.786693447
9,200.00	89.49	315.22	4,563.87	3,086.79	-2,990.77	1,895,881.455	2,736,780.026	36.210386062	-107.786932076
9,300.00	89.49	315.22	4,564.76	3,157.78	-3,061.20	1,895,952.440	2,736,709.596	36.210581156	-107.787170707
9,400.00	89.49	315.22	4,565.66	3,228.76	-3,131.63	1,896,023.424	2,736,639.167	36.210776249	-107.787409339
9,500.00	89.49	315.22	4,566.55	3,299.74	-3,202.06	1,896,094.409	2,736,568.737	36.210971342	-107.787647972
9,600.00	89.49	315.22	4,567.44	3,370.73	-3,272.49	1,896,165.393	2,736,498.307	36.211166434	-107.787886607



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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	89.49	315.22	4,568.33	3,441.71	-3,342.92	1,896,236.378	2,736,427.877	36.211361526	-107.788125242	
9,800.00	89.49	315.22	4,569.22	3,512.70	-3,413.35	1,896,307.362	2,736,357.447	36.211556617	-107.788363879	
9,900.00	89.49	315.22	4,570.12	3,583.68	-3,483.78	1,896,378.347	2,736,287.017	36.211751708	-107.788602517	
10,000.00	89.49	315.22	4,571.01	3,654.67	-3,554.21	1,896,449.331	2,736,216.588	36.211946798	-107.788841156	
10,100.00	89.49	315.22	4,571.90	3,725.65	-3,624.64	1,896,520.316	2,736,146.158	36.212141888	-107.789079796	
10,200.00	89.49	315.22	4,572.79	3,796.64	-3,695.07	1,896,591.300	2,736,075.728	36.212336977	-107.789318438	
10,300.00	89.49	315.22	4,573.68	3,867.62	-3,765.50	1,896,662.285	2,736,005.298	36.212532066	-107.789557081	
10,400.00	89.49	315.22	4,574.58	3,938.61	-3,835.93	1,896,733.269	2,735,934.868	36.212727155	-107.789795723	
10,500.00	89.49	315.22	4,575.47	4,009.59	-3,906.36	1,896,804.254	2,735,864.438	36.212922243	-107.790034368	
10,600.00	89.49	315.22	4,576.36	4,080.58	-3,976.79	1,896,875.238	2,735,794.008	36.213117330	-107.790273015	
10,700.00	89.49	315.22	4,577.25	4,151.56	-4,047.22	1,896,946.223	2,735,723.579	36.213312417	-107.790511662	
10,800.00	89.49	315.22	4,578.14	4,222.55	-4,117.65	1,897,017.207	2,735,653.149	36.213507504	-107.790750311	
10,900.00	89.49	315.22	4,579.04	4,293.53	-4,188.08	1,897,088.192	2,735,582.719	36.213702590	-107.790988960	
11,000.00	89.49	315.22	4,579.93	4,364.51	-4,258.51	1,897,159.177	2,735,512.289	36.213897675	-107.791227611	
11,100.00	89.49	315.22	4,580.82	4,435.50	-4,328.94	1,897,230.161	2,735,441.859	36.214092760	-107.791466264	
11,200.00	89.49	315.22	4,581.71	4,506.48	-4,399.37	1,897,301.146	2,735,371.429	36.214287845	-107.791704917	
11,300.00	89.49	315.22	4,582.60	4,577.47	-4,469.80	1,897,372.130	2,735,301.000	36.214482929	-107.791943571	
11,400.00	89.49	315.22	4,583.50	4,648.45	-4,540.23	1,897,443.115	2,735,230.570	36.214678013	-107.792182227	
11,500.00	89.49	315.22	4,584.39	4,719.44	-4,610.66	1,897,514.099	2,735,160.140	36.214873096	-107.792420884	
11,600.00	89.49	315.22	4,585.28	4,790.42	-4,681.09	1,897,585.084	2,735,089.710	36.215068178	-107.792659542	
11,687.66	89.49	315.22	4,586.06	4,852.65	-4,742.83	1,897,647.310	2,735,027.970	36.215239190	-107.792868754	
11,700.00	89.49	315.22	4,586.17	4,861.41	-4,751.52	1,897,656.068	2,735,019.280	36.215263260	-107.792898201	
11,800.00	89.49	315.22	4,587.06	4,932.39	-4,821.95	1,897,727.053	2,734,948.850	36.215458342	-107.793136862	
11,900.00	89.49	315.22	4,587.96	5,003.38	-4,892.38	1,897,798.037	2,734,878.421	36.215653423	-107.793375523	
12,000.00	89.49	315.22	4,588.85	5,074.36	-4,962.81	1,897,869.022	2,734,807.991	36.215848504	-107.793614186	
12,100.00	89.49	315.22	4,589.74	5,145.35	-5,033.24	1,897,940.006	2,734,737.561	36.216043584	-107.793852850	
12,200.00	89.49	315.22	4,590.63	5,216.33	-5,103.67	1,898,010.991	2,734,667.131	36.216238664	-107.794091515	
12,300.00	89.49	315.22	4,591.52	5,287.32	-5,174.10	1,898,081.975	2,734,596.701	36.216433743	-107.794330182	
12,400.00	89.49	315.22	4,592.42	5,358.30	-5,244.53	1,898,152.960	2,734,526.271	36.216628822	-107.794568849	
12,500.00	89.49	315.22	4,593.31	5,429.28	-5,314.96	1,898,223.944	2,734,455.842	36.216823900	-107.794807518	
12,600.00	89.49	315.22	4,594.20	5,500.27	-5,385.39	1,898,294.929	2,734,385.412	36.217018978	-107.795046188	
12,700.00	89.49	315.22	4,595.09	5,571.25	-5,455.82	1,898,365.913	2,734,314.982	36.217214056	-107.795284859	
12,800.00	89.49	315.22	4,595.98	5,642.24	-5,526.25	1,898,436.898	2,734,244.552	36.217409132	-107.795523531	
12,900.00	89.49	315.22	4,596.88	5,713.22	-5,596.68	1,898,507.882	2,734,174.122	36.217604209	-107.795762205	
13,000.00	89.49	315.22	4,597.77	5,784.21	-5,667.11	1,898,578.867	2,734,103.692	36.217799285	-107.796000880	
13,100.00	89.49	315.22	4,598.66	5,855.19	-5,737.54	1,898,649.851	2,734,033.263	36.217994360	-107.796239555	
13,200.00	89.49	315.22	4,599.55	5,926.18	-5,807.97	1,898,720.836	2,733,962.833	36.218189435	-107.796478233	
13,300.00	89.49	315.22	4,600.44	5,997.16	-5,878.40	1,898,791.820	2,733,892.403	36.218384510	-107.796716911	
13,400.00	89.49	315.22	4,601.34	6,068.15	-5,948.83	1,898,862.805	2,733,821.973	36.218579584	-107.796955590	
13,500.00	89.49	315.22	4,602.23	6,139.13	-6,019.26	1,898,933.789	2,733,751.543	36.218774657	-107.797194271	
13,576.56	89.49	315.22	4,602.91	6,193.48	-6,073.17	1,898,988.133	2,733,697.624	36.218924000	-107.797377000	
PBHL/TD 13576.56 MD 4602.91 TVD										



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well W Lybrook Unit No. 763H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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
W Lybrook 763 POE - plan hits target center - Point	0.00	0.00	4,526.00	72.81	-0.34	1,892,867.480	2,739,770.450	36.202102014	-107.776800996
W Lybrook 763 BHL - plan misses target center by 0.12ft at 11687.66ft MD (4586.06 TVD, 4852.65 N, -4742.83 E) - Point	0.00	0.00	4,586.00	4,852.58	-4,742.90	1,897,647.240	2,735,027.900	36.215238999	-107.792868992
W Lybrook 763 LTP 222 - plan hits target center - Point	0.00	0.00	4,602.91	6,193.48	-6,073.17	1,898,988.133	2,733,697.624	36.218924000	-107.797377000

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2	
2,420.21	2,406.00	9 5/8" Csg	9-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
231.00	231.00	Ojo Alamo				
291.00	291.00	Kirtland				
606.00	606.00	Fruitland				
916.00	916.00	Pictured Cliffs				
1,031.00	1,031.00	Lewis				
1,266.00	1,266.00	Chacra_A				
2,293.44	2,286.00	Cliff House_Basal				
2,314.42	2,306.00	Menefee				
3,346.96	3,281.00	Point Lookout				
3,619.84	3,541.00	Mancos				
3,858.27	3,776.00	Gallup (MNCS_A)				
3,968.47	3,886.00	MNCS_B				
4,048.51	3,966.00	MNCS_C				
4,093.77	4,011.00	MNCS_Cms				
4,233.79	4,146.00	MNCS_D				
4,388.65	4,281.00	MNCS_E				
4,474.32	4,346.00	MNCS_F				
4,583.20	4,416.00	MNCS_G				
4,660.61	4,456.00	MNCS_H				
4,800.89	4,506.00	MNCS_I				



Planning Report - Geographic

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Company:	Enduring Resources LLC	TVD Reference:	RKB=6641+25 @ 6666.00ft
Project:	San Juan County, New Mexico NAD83 NM W	MD Reference:	RKB=6641+25 @ 6666.00ft
Site:	W Lybrook Unit	North Reference:	Grid
Well:	W Lybrook Unit No. 763H	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)		
1,800.00	1,800.00	0.00	0.00	KOP Begin 3.5°/100' build	
2,349.66	2,339.39	-66.69	62.52	Begin 19.24° tangent	
3,458.82	3,386.61	-333.31	312.48	Begin 3.5°/100' drop	
4,008.48	3,926.00	-400.00	375.00	Begin 9.6°/100' build	
4,686.69	4,467.50	-122.67	168.95	Begin 9.6°/100' build/turn	
4,954.04	4,526.00	72.81	-0.34	Begin 89.49° lateral	
11,687.66	4,586.06	4,852.65	-4,742.83		
13,576.56	4,602.91	6,193.48	-6,073.17	PBHL/TD 13576.56 MD 4602.91 TVD	



ENDURING RESOURCES IV, LLC
1050 SEVENTEENTH STREET, SUITE 2500
DENVER, COLORADO 80265

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

WELL INFORMATION:

Name: W LYBROOK UNIT 763H

API Number: 30-045-38200

AFE Number: not yet assigned

ER Well Number: not yet assigned

State: New Mexico

County: San Juan

Surface Elevation: 6,641 ft ASL (GL)

6,666 ft ASL (KB)

Surface Location: 27-23N-09W Sec-Twn-Rng

1,181 ft FNL

2,446 ft FWL

36.201902 ° N latitude

107.7768 ° W longitude

(NAD 83)

BH Location: 21-23N-09W Sec-Twn-Rng

222 ft FNL

1,740 ft FWL

36.218924 ° N latitude

107.793777 ° 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 38.3 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 0.5 miles to fork, Right (West) exiting CR #7890 onto access road for W Lybrook Unit 720H pad for 0.6 miles to fork, Left (West) onto access road for W Lybrook Unit 726H pad for 0.7 miles to fork, Left (West) for 1.4 miles to fork. Left (Southeast) for 0.6 miles to W Lybrook Unit 730H Pad (wells: 730H, 763H, 830H, 861H, 863H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,435	231	231	W	normal
	Kirtland	6,375	291	291	W	normal
	Fruitland	6,060	606	606	G, W	sub
	Pictured Cliffs	5,750	916	916	G, W	sub
	Lewis	5,635	1,031	1,031	G, W	normal
	Chacra	5,400	1,266	1,266	G, W	normal
	Cliff House	4,380	2,286	2,293	G, W	sub
	Menefee	4,360	2,306	2,314	G, W	normal
	Point Lookout	3,385	3,281	3,347	G, W	normal
	Mancos	3,125	3,541	3,620	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,890	3,776	3,858	O,G	sub (~0.38)
	MNCS_B	2,780	3,886	3,969	O,G	sub (~0.38)
	MNCS_C	2,700	3,966	4,049	O,G	sub (~0.38)
	MNCS_Cms	2,655	4,011	4,094	O,G	sub (~0.38)
	MNCS_D	2,520	4,146	4,234	O,G	sub (~0.38)
	MNCS_E	2,385	4,281	4,389	O,G	sub (~0.38)
	MNCS_F	2,320	4,346	4,474	O,G	sub (~0.38)
	MNCS_G	2,250	4,416	4,583	O,G	sub (~0.38)
	MNCS_H	2,210	4,456	4,661	O,G	sub (~0.38)
	MNCS_I	2,160	4,506	4,801	O,G	sub (~0.38)
	P.O.E. TARGET	2,140	4,526	4,954	O,G	sub (~0.38)
	PROJECTED TD	2,080	4,586	13,577	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:	1,980	psi			
Maximum anticipated surface pressure, assuming partially evacuated hole:	980	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; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.

MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD

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: Aztec

Rig No.: 1000

Draw Works: E80 AC 1,500 hp

Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)

Top Drive: NOV IDS-350PE (350 ton)

Prime Movers: 4 - GE Jenbacher Natural Gas Generator

Pumps: 2 - RS F-1600 (7,500 psi)

BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)

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

Choke: Cameron (4", 10,000 psi)

KB-GL (ft): 25

NOTE: A different rig may be used to drill the well depending on rig availability

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.
- 2) 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.
- 3) 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.
- 4) 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.

- 5) 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.

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	525	116,634	116,634
Min. S.F.					7.39	5.20	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 Summary: 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)
	Class G	15.8	1.174	5.15	0.6946	100%	0	414

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

Halliburton HALCEM surface cementing 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	2,420 ft (MD)	Hole Section Length:	2,070 ft
350 ft (TVD)	to	2,406 ft (TVD)	Casing Required:	2,420 ft

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	

Hole Size: 12-1/4"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a 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					1,051	1,118	175,973	175,973
Min. S.F.					1.92	3.15	3.21	2.57

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): Minimum: 3,400 Optimum: 4,530 Maximum: 5,660

Casing Summary: 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)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	70%	0	529
Tail	Class G	15.8	1.148	4.98	20%	1,920	164

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

Halliburton ECONOCHEM & HALCEM cementing blend

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.

2,420 ft (MD)	to	13,577 ft (MD)	Hole Section Length:	11,157 ft
2,406 ft (TVD)	to	4,586 ft (TVD)	Casing Required:	13,577 ft

Estimated KOP:	4,009 ft (MD)	3,926 ft (TVD)
Estimated Landing Point (P.O.E.):	4,954 ft (MD)	4,526 ft (TVD)
Estimated Lateral Length:	8,623 ft (MD)	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (FW)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	OBM as contingency

Hole Size: 8-1/2"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD 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:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
<i>Specs</i>	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
<i>Loading</i>					2,265	8,929	299,167	299,167
<i>Min. S.F.</i>					3.29	1.19	1.83	1.49

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 100,000 lbs over-pull

MU Torque (ft lbs): Minimum: 3,470 Optimum: 4,620 Maximum: 5,780

Casing Summary: Float shoe, 1 jt casing, float collar, 1 jt casing, float collar, 1 jt casing, toe-initiation sleeve, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub, casing to surface. The bottom 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 azimuth of the well.

Casing Summary: Float shoe, 1 jt casing, float collar, NCS debris catcher, 1 jt casing, float collar, 1 jt casing, toe-initiation sleeve (**WFT**

Centralizers: Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.

Lateral: 1 centralizer per joint

Curve: 1 centralizer per joint from landing point to KOP

KOP to surf: 1 centralizer per 2 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
<i>Lead</i>	G:POZ blend	12.4	1.907	9.981	50%	0	772
<i>Tail</i>	G:POZ blend	13.3	1.360	5.999	10%	3,858	1,801

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

Halliburton ECONOCHEM & EXTENDACHEM cementing 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 bottom 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, cap well, RDMO.

COMPLETION AND PRODUCTION PLAN:

Frac: 40 plug-and-perf stages with 240,000 bbls slickwater fluid and 11,000,000 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: TBD

Completion: TBD

Production: TBD

Prepared by: Alec Bridge 1/21/2020

Updated by: Alec Bridge 11/8/2021 - updated BHL and directional plan for combination unit (LL increase 1,889')



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

COMMENTS

Action 65934

COMMENTS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 65934
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 12/13/2021	12/13/2021

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CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD conditions of approval.	12/13/2021