U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

02/22/2024

Well Name: HAYNES CANYON UNIT	**Well Location:** T23N / R6W / SEC 3 / SWSW /	**County or Parish/State:**
Well Number: 440H	**Type of Well:** OIL WELL	**Allottee or Tribe Name:**
Lease Number: NMNM130875	**Unit or CA Name:** Haynes Canyon Unit	**Unit or CA Number:** NMNM105770949
US Well Number: 3003931447	**Well Status:** Approved Application for Permit to Drill	**Operator:** ENDURING RESOURCES LLC

Notice of Intent

Sundry ID: 2775123

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/14/2024

Time Sundry Submitted: 11:45

Date proposed operation will begin: 02/14/2024

Procedure Description: Following the horizontal directional plan approved on 2/12/2024, DJR respectfully requests approval to revise the casing & cement design for the subject well. Change Surface to a 12.25” hole. 9.625” 36# K55 STC casing. 0 to 350’ MD. Change Intermediate to a 8.75” hole. 7” 26# K55 LTC casing. 0 to 5923’ MD. Change Production to a 6.125” hole. 4.5” 11.6# P110 BTC casing. TOL: 5773’ BOL: 12332’ MD. Attachments: new calculated slurry volumes and proposed wellbore diagram with new FTP target.

NOI Attachments

Procedure Description

440H_Casing___Cement_Rev3_20240214114527.pdf

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Operator

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

Operator Electronic Signature: SHAW-MARIE FORD

Signed on: FEB 14, 2024 11:45 AM

Name: ENDURING RESOURCES LLC

Title: Regulatory Specialist

Street Address: 1 ROAD 3263

City: AZTEC **State:** NM

Phone: (505) 632-3476

Email address: SFORD@DJRLLC.COM

Field

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: 02/21/2024

Signature: Kenneth Rennick

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: 12-1/4"
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	9.625	36.0	K-55	STC	2,020	3,520	564,000	423,000
Loading					153	1,173	110,988	110,988
Min. S.F.					**13.21**	**3.00**	**5.08**	**3.81**

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

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**Hole Cap. (cuft/ft)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**	**Total Cmt (cu ft)**
Redi-Mix	TYPE I-II	14.5	1.61	7.41	0.3132	50%	0	114	184

Calculated cement volumes assume gauge hole and the excess noted in table Csg ID 8.921

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

350 ft (MD)	**to**	**5,923 ft (MD)**	**Hole Section Length:**	**5,573 ft**
350 ft (TVD)	**to**	**5,492 ft (TVD)**	**Casing Required:**	**5,923 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	No OBM

Hole Size: 8.75

MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional

Logging: None

Casing Specs:		**Wt (lb/ft)**	**Grade**	**Conn.**	**Collapse (psi)**	**Burst (psi)**	**Tens. Body (lbs)**	**Tens. Conn (lbs)**
Specs	7	26.0	K-55	LTC	4,320	4,980	415,000	367,000
Loading					2,399	1,484	234,294	234,294
Min. S.F.					**1.80**	**3.36**	**1.77**	**1.57**

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

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**	**Total Cmt (cu ft)**
Lead	III:POZ Blend	12.5	2.140	12.05	70%	0	534	1,142
Tail	Type III	14.6	1.380	6.64	20%	4,591	181	250

Annular Capacity	0.16681	cuft/ft	7" casing x 9-5/8" casing annulus	Shoe Track L	44
	0.1503	cuft/ft	9-5/8" casing x 12-1/4" hole annulus	Casing ID	6.276
	0.2148	cuft/ft	7" casing casing volume		

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

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

5,923	ft (MD)	to	12,332	ft (MD)	Hole Section Length:	6,409 ft	
5,492	ft (TVD)	to	5,521	ft (TVD)	Casing Required:	6,559 ft	
		Estimated KOP:	5,123	ft (MD)	4,928	ft (TVD)	
		Estimated Liner Top:	5,773	ft (MD)	5,447	ft (TVD)	
		Estimated Landing Point (FTP):	5,823	ft (MD)	5,466	ft (TVD)	
		Estimated Lateral Length:	6,509	ft (MD)			

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments	Comments
	WBM	8.7 - 9.0	NC	+20	±2	9-9.5	prod water	OBM as contingency

Hole Size: 6.125

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

Liner/Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	4.500	11.6	P-110	BTC	7,560	10,690	367,000	385,000
Loading					2,727	8,816	223,440	223,440
Min. S.F.					**2.77**	**1.21**	**1.64**	**1.72**

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. Tension calculations assume vertical hole to approximate drag in lateral.

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Tail	G:POZ blend	13.3	1.560	7.70	30%	5,773	546	852

Displacement	159	est bbls		
Annular Capacity	0.1044	cuft/ft	4-1/2" casing x 7" casing annulus	
	0.09417	cuft/ft	4-1/2" casing x 6-1/8" hole annulus	
	0.0873	cuft/ft	4-1/2" casing vol	est shoe jt ft 100
	0.0102	bbls/ft	4" DP capacity	

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

Spacer	S-8 Silica Flour 163.7 lbs/bbl	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	ASTM Type I/II	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	Type G 50%	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

WELL NAME: **Haynes Canyon Unit 440H**

OBJECTIVE: **Drill, complete, and equip single lateral in the Mancos-Gallup formation**

API Number: *30-039-31447*

AFE Number: *Not yet assigned*

ER Well Number: *Not yet assigned*

State: New Mexico

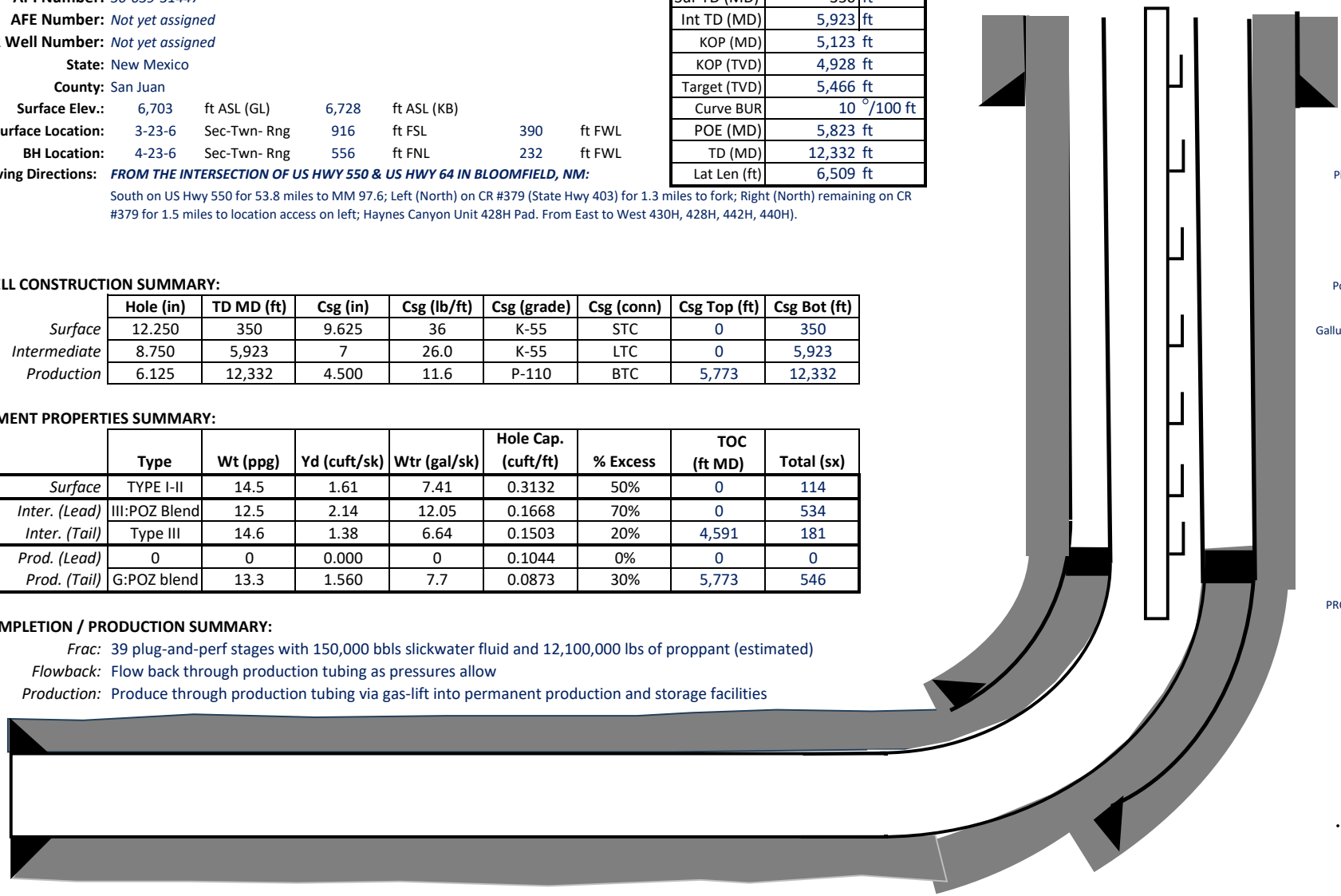
County: San Juan

Surface Elev.:	6,703	ft ASL (GL)	6,728	ft ASL (KB)		
Surface Location:	3-23-6	Sec-Twn- Rng	916	ft FSL	390	ft FWL
BH Location:	4-23-6	Sec-Twn- Rng	556	ft FNL	232	ft FWL

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

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379 for 1.5 miles to location access on left; Haynes Canyon Unit 428H Pad. From East to West 430H, 428H, 442H, 440H).

QUICK REFERENCE		
Sur TD (MD)	350	ft
Int TD (MD)	5,923	ft
KOP (MD)	5,123	ft
KOP (TVD)	4,928	ft
Target (TVD)	5,466	ft
Curve BUR	10	°/100 ft
POE (MD)	5,823	ft
TD (MD)	12,332	ft
Lat Len (ft)	6,509	ft



Tops	TVD (ft KB)	MD (ft KB)
Ojo Alamo	1,403	1,406
Kirtland	1,503	1,509
Fruitland	1,728	1,746
Pictured Cliffs	1,963	1,998
Lewis	2,113	2,158
Chacra	2,408	2,473
Cliff House	3,517	3,660
Menefee	3,522	3,665
Point Lookout	4,222	4,411
Mancos	4,497	4,691
Gallup (MNCS_A)	4,836	5,032
MNCS_B	4,927	5,122
MNCS_C	5,062	5,258
MNCS_Cms	5,127	5,326
MNCS_D	5,202	5,409
MNCS_E	5,287	5,511
MNCS_F	5,332	5,572
MNCS_G	5,418	5,710
MNCS_H	5,458	5,800
MNCS_I	0	0
FTP TARGET	5,466	5,823
PROJECTED TD	5,521	12,332

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	12.250	350	9.625	36	K-55	STC	0	350
Intermediate	8.750	5,923	7	26.0	K-55	LTC	0	5,923
Production	6.125	12,332	4.500	11.6	P-110	BTC	5,773	12,332

CEMENT PROPERTIES SUMMARY:

	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	TYPE I-II	14.5	1.61	7.41	0.3132	50%	0	114
Inter. (Lead)	III:POZ Blend	12.5	2.14	12.05	0.1668	70%	0	534
Inter. (Tail)	Type III	14.6	1.38	6.64	0.1503	20%	4,591	181
Prod. (Lead)	0	0	0.000	0	0.1044	0%	0	0
Prod. (Tail)	G:POZ blend	13.3	1.560	7.7	0.0873	30%	5,773	546

COMPLETION / PRODUCTION SUMMARY:

Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated)

Flowback: Flow back through production tubing as pressures allow

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

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 316723

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 316723
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	3/4/2024