

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NOG13121826
2. Name of Operator ENDURING RESOURCES LLC		6. If Indian, Allottee or Tribe Name EASTERN NAVAJO
Contact: LACEY GRANILLO E-Mail: lgranillo@enduringresources.com		7. If Unit or CA/Agreement, Name and/or No. NMNM130812A
3a. Address 1050 17TH STREET SUITE 2500 DENVER, CO 80265	3b. Phone No. (include area code) Ph: 505-636-9743	8. Well Name and No. S ESCAVADA UNIT 350H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 27 T22N R7W NESE 2091FSL 436FEL 36.108441 N Lat, 107.555677 W Lon		9. API Well No. 30-043-21318-00-S1
		10. Field and Pool or Exploratory Area BASIN MANCOS RUSTY GALLUP
		11. County or Parish, State SANDOVAL COUNTY, NM

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
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ 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 recompletable 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 recompletable 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 determined that the site is ready for final inspection.

A summary of the requested changes to the approved APD is outlined below. Please reference the attachments for additional details.

C102

Moved BHL from section 22 to section 28

Moved POE from section 27 to section 27

Drilling Program

Directional plan updated based on new POE and BHL

Casing program change

Surface: 9-5/8" to 13-3/8"

Intermediate: 7" to 9-5/8"

Production: 4-1/2" liner to 5-1/2" long-string

NMOCD

MAR 12 2020

ADHERE TO PREVIOUS NMOC
CONDITIONS OF APPROVAL

NONSENSE

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #506555 verified by the BLM Well Information System
For ENDURING RESOURCES LLC, sent to the Farmington
Committed to AFMSS for processing by JOE KILLINS on 03/10/2020 (20JK0164SE)**

Name (Printed/Typed) LACEY GRANILLO

Title PERMITTING SPECIALIST

Signature (Electronic Submission)

Date 03/10/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JOE KILLINS

Title PETROLEUM ENGINEER

Date 03/11/2020

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 Farmington

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)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

NMOCD

Additional data for EC transaction #506555 that would not fit on the form

32. Additional remarks, continued

Frac Program

Fluid type: change from nitrogen foam to slick-water

Water volume: increase from not provided bbls to 270,000 bbls (estimated)

Sand weight: increase from 6.4 million lbs to 12.5 million lbs (estimated)

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 30-043-21318		*Pool Code 52860		*Pool Name RUSTY GALLUP OIL POOL	
*Property Code 322151		*Property Name S ESCAVADA UNIT			*Well Number 350H
*GRID No. 372286		*Operator Name ENDURING RESOURCES, LLC			*Elevation 6749'

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
I	27	22N	7W		2091	SOUTH	436	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

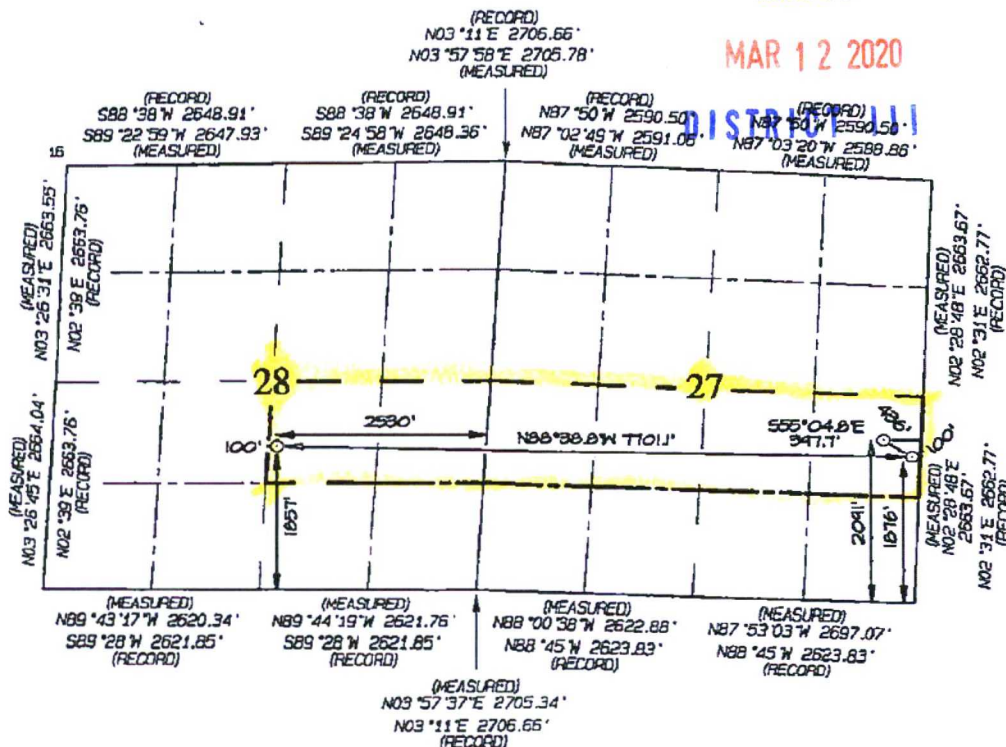
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	28	22N	7W		1857	SOUTH	2530	EAST	SANDOVAL

*Dedicated Acres 240.00	N/2 SE/4 - Section 28 N/2 S/2 - Section 27	*Joint or Infill	*Consolidation Code	*Order No. R-14347
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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

NMOC

MAR 12 2020



END-OF-LATERAL
1857' FSL 2530' FEL
SEC 28, T22N, R7W
LAT: 36.108025°N
LONG: 107.580021°W
DATUM: NAD1927
LAT: 36.108041°N
LONG: 107.580629°W
DATUM: NAD1983

POINT-OF-ENTRY
1876' FSL 100' FEL
SEC 27, T22N, R7W
LAT: 36.107812°N
LONG: 107.553956°W
DATUM: NAD1927
LAT: 36.107828°N
LONG: 107.554563°W
DATUM: NAD1983

SURFACE LOCATION
2091' FSL 436' FEL
SEC 27, T22N, R7W
LAT: 36.108425°N
LONG: 107.555070°W
DATUM: NAD1927
LAT: 36.108441°N
LONG: 107.555677°W
DATUM: NAD1983

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 negotiated with the division.

Signature: *[Signature]* Date: 3/10/20
Printed Name: *[Name]*
E-mail Address: *[Address]*

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: FEBRUARY 27, 2020
Date of Survey: MAY 1, 2017

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



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

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

WELL INFORMATION:

Name: S ESCAVADA UNIT 350H

API Number: 30-043-21318

AFE Number: not yet assigned

ER Well Number: not yet assigned

State: New Mexico

County: Sandoval

Surface Elevation: 6,749 ft ASL (GL)

6,774 ft ASL (KB)

Surface Location: 27-22N-07W Sec-Twn-Rng

2,091 ft FSL

436 ft FEL

36.108441 ° N latitude 107.555677 ° W longitude

(NAD 83)

BH Location: 28-22N-07W Sec-Twn-Rng

1,857 ft FSL

2,530 ft FEL

36.108041 ° N latitude 107.580629 ° 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 48.9 miles to MM 103; Right (South) on Atkins Road for 3.2 miles to fork; Left (South) continuing on Atkins Road for 1.1 miles to 4-way intersection; Straight (south) for 1.6 miles to 4-way intersection; Straight (South) for 1.9 miles to fork; Left (South) for 0.4 miles to fork; Right (South) for 0.3 miles to S Escavada Unit 350H access road; Left (South) along 350H access road for 0.7 miles to S Escavada Unit 350H Pad (Wells: 347H, 350H & 351H).

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,290	484	484	W	normal
	Kirtland	6,180	594	594	W	normal
	Fruitland	6,055	719	719	G, W	sub
	Pictured Cliffs	5,705	1,069	1,069	G, W	sub
	Lewis	5,610	1,164	1,164	G, W	normal
	Chacra	5,335	1,439	1,443	G, W	normal
	Cliff House	4,290	2,484	2,571	G, W	sub
	Menefee	4,270	2,504	2,593	G, W	normal
	Point Lookout	3,330	3,444	3,614	G, W	normal
	Mancos	3,145	3,629	3,806	O, G	sub (~0.38)
	Gallup (MNCS_A)	2,870	3,904	4,084	O, G	sub (~0.38)
	MNCS_B	2,760	4,014	4,194	O, G	sub (~0.38)
	MNCS_C	2,665	4,109	4,289	O, G	sub (~0.38)
	MNCS_Cms	2,635	4,139	4,319	O, G	sub (~0.38)
	MNCS_D	2,490	4,284	4,470	O, G	sub (~0.38)
	MNCS_E	2,350	4,424	4,632	O, G	sub (~0.38)
	MNCS_F	2,310	4,464	4,685	O, G	sub (~0.38)
	MNCS_G	2,235	4,539	4,800	O, G	sub (~0.38)
	MNCS_H	2,180	4,594	4,912	O, G	sub (~0.38)
	P.O.E. TARGET	2,130	4,644	5,201	O, G	sub (~0.38)
	PROJECTED TD	2,175	4,599	12,903	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: 2,000 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 980 psi

Temperature: Maximum anticipated BHT is 130° 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 double & single 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	567	116,634	116,634
Min. S.F.					7.39	4.82	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 NMOC & 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	2,702 ft (MD)	Hole Section Length:	2,352 ft
350 ft (TVD)	to	2,604 ft (TVD)	Casing Required:	2,702 ft

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	

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
Loading					1,137	1,129	184,826
Min. S.F.					1.78	3.12	3.05

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	605
Tail	Class G	15.8	1.148	4.98	20%	2,202	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 ECONOCEM & 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.

2,702 ft (MD)	to	12,903 ft (MD)	Hole Section Length:	10,201 ft
2,604 ft (TVD)	to	4,599 ft (TVD)	Casing Required:	12,903 ft

Estimated KOP:	4,250 ft (MD)	4,070 ft (TVD)
Estimated Landing Point (P.O.E.):	5,201 ft (MD)	4,644 ft (TVD)
Estimated Lateral Length:	7,702 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)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,272	8,930	289,280	289,280
Min. S.F.					3.28	1.19	1.89	1.54

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 the azimuth of the well.

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)
Lead	G:POZ blend	12.4	1.907	9.981	50%	0	821
Tail	G:POZ blend	13.3	1.360	5.999	10%	4,084	1,634

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 ECONOCEM & EXTENDACEM 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.
 S Escavada Unit Order Number is R-14347.

FINISH WELL: ND BOP, cap well, RDMO.

COMPLETION AND PRODUCTION PLAN:

Frac: 45 plug-and-perf stages with 270,000 bbls slickwater fluid and 12,500,000 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 1/28/2020

Updated by: Alec Bridge 3/5/2020 - updated BHL, POE, and directional plan per new unit development plan

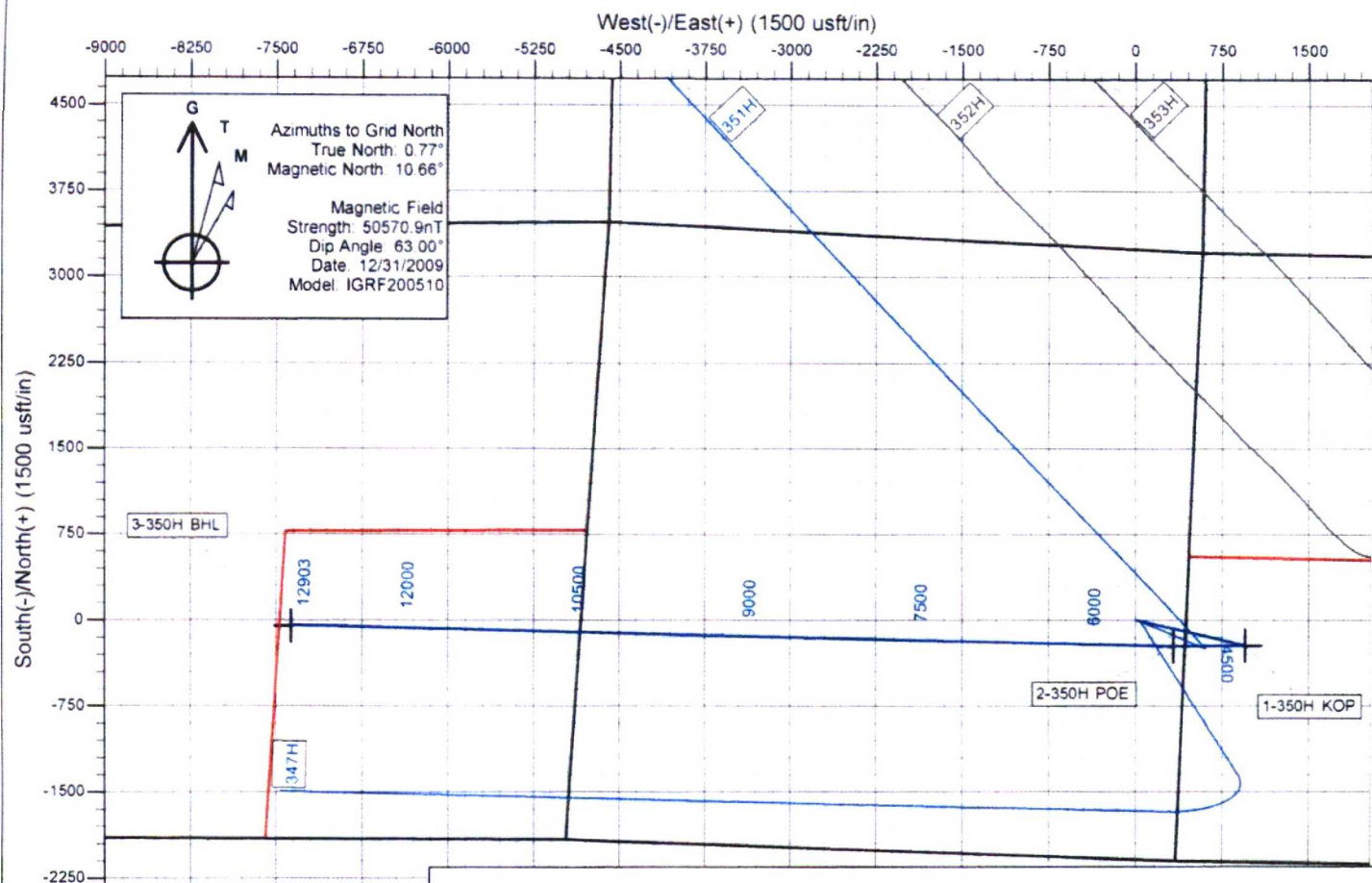


Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

S Escavada Unit 350H

Sandoval County, New Mexico
T22N - R07W - Sec.27 - Lot I
Surface Latitude: 36.108441°N
Surface Longitude: 107.555677°W
Ground Level: 6749.0
Reference Elevation: KB @ 6774.0usft (Original Well Elev)

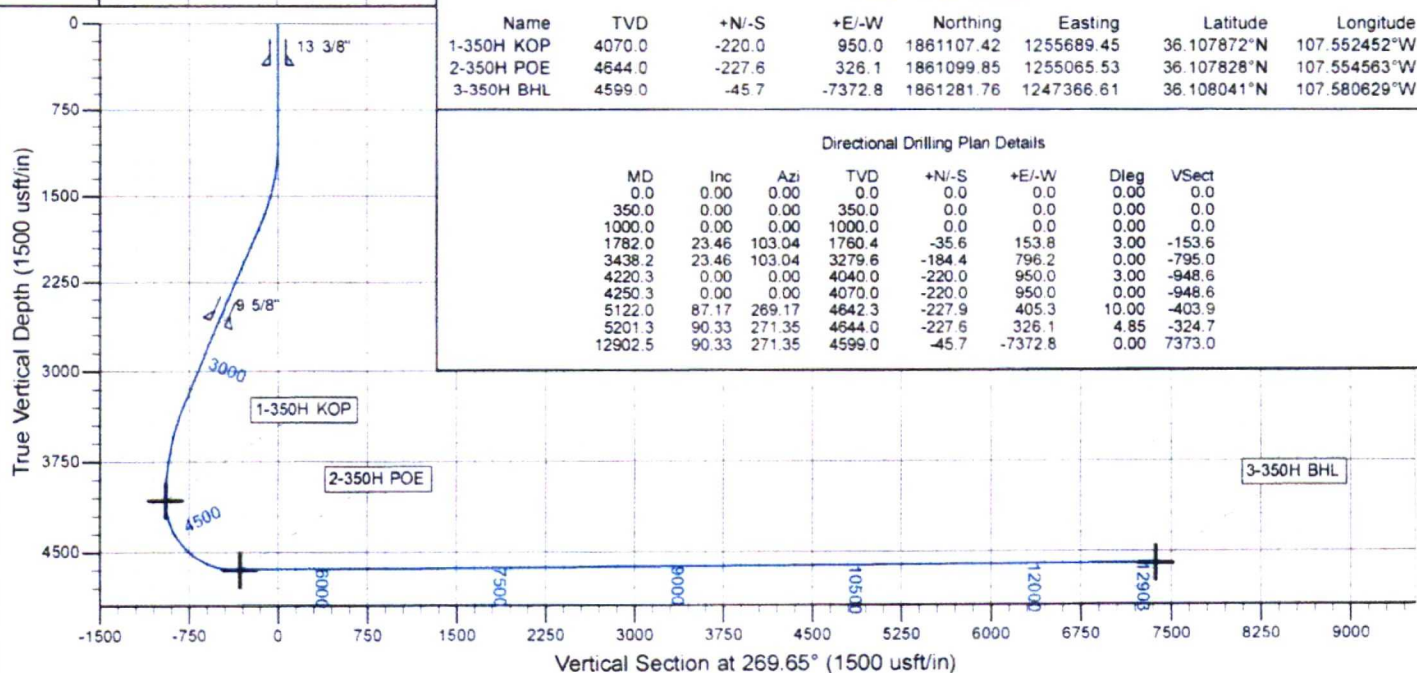


Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
1-350H KOP	4070.0	-220.0	950.0	1861107.42	1255689.45	36.107872°N	107.552452°W
2-350H POE	4644.0	-227.6	326.1	1861099.85	1255065.53	36.107828°N	107.554563°W
3-350H BHL	4599.0	-45.7	-7372.8	1861281.76	1247366.61	36.108041°N	107.580629°W

Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.0
1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.0
1782.0	23.46	103.04	1760.4	-35.6	153.8	3.00	-153.6
3438.2	23.46	103.04	3279.6	-184.4	796.2	0.00	-795.0
4220.3	0.00	0.00	4040.0	-220.0	950.0	3.00	-948.6
4250.3	0.00	0.00	4070.0	-220.0	950.0	0.00	-948.6
5122.0	87.17	269.17	4642.3	-227.9	405.3	10.00	-403.9
5201.3	90.33	271.35	4644.0	-227.6	326.1	4.85	-324.7
12902.5	90.33	271.35	4599.0	-45.7	-7372.8	0.00	7373.0





Enduring Resources LLC

San Juan Basin - S Escavada Unit & Terra Wash CA

350H Pad

350H

Wellbore #2

Plan: Design #1

Standard Planning Report

05 March, 2020



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - S Escavada Unit & Terra Wash CA
Site: 350H Pad
Well: 350H
Wellbore: Wellbore #2
Design: Design #1

Local Co-ordinate Reference: Well 350H
TVD Reference: KB @ 6774.0usft (Original Well Elev)
MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	San Juan Basin - S Escavada Unit & Terra Wash CA		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	350H Pad, Sandoval County, New Mexico		
Site Position:		Northing:	1,861,327.42 usft
From:	Lat/Long	Easting:	1,254,739.45 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	36 108441"N
		Longitude:	107 555677"W
		Grid Convergence:	-0.77 °

Well	350H		
Well Position	+N/-S	0.0 usft	Northing: 1,861,327.42 usft
	+E/-W	0.0 usft	Easting: 1,254,739.45 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 36 108441"N
			Longitude: 107 555677"W
			Ground Level: 6,749.0 usft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.89	63.00	50,570.92039609

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	269.65

Plan Survey Tool Program	Date	3/3/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	12,902.5	Design #1 (Wellbore #2)	MWD
				OWSG MWD - Standard



Planning Report

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Design: Design #1

Local Co-ordinate Reference: Well 350H
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MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,782.0	23.46	103.04	1,760.4	-35.6	153.8	3.00	3.00	0.00	103.04	
3,438.2	23.46	103.04	3,279.6	-184.4	796.2	0.00	0.00	0.00	0.00	
4,220.3	0.00	0.00	4,040.0	-220.0	950.0	3.00	-3.00	0.00	180.00	
4,250.3	0.00	0.00	4,070.0	-220.0	950.0	0.00	0.00	0.00	0.00	1-350H KOP
5,122.0	87.17	269.17	4,642.3	-227.9	405.3	10.00	10.00	0.00	269.17	
5,201.3	90.33	271.35	4,644.0	-227.6	326.1	4.85	3.99	2.76	34.70	2-350H POE
12,902.5	90.33	271.35	4,599.0	-45.7	-7,372.8	0.00	0.00	0.00	0.00	3-350H BHL



Planning Report

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Design: Design #1

Local Co-ordinate Reference: Well 350H
TVD Reference: KB @ 6774.0usft (Original Well Elev)
MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8"									
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
484.0	0.00	0.00	484.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
594.0	0.00	0.00	594.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
719.0	0.00	0.00	719.0	0.0	0.0	0.0	0.00	0.00	0.00
Fruitland									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1000.0	0.00	0.00	1000.0	0.0	0.0	0.0	0.00	0.00	0.00
1069.0	2.07	103.04	1069.0	-0.3	1.2	-1.2	3.00	3.00	0.00
Pictured Cliffs									
1100.0	3.00	103.04	1100.0	-0.6	2.5	-2.5	3.00	3.00	0.00
1164.2	4.93	103.04	1164.0	-1.6	6.9	-6.9	3.00	3.00	0.00
Lewis									
1200.0	6.00	103.04	1199.6	-2.4	10.2	-10.2	3.00	3.00	0.00
1300.0	9.00	103.04	1298.8	-5.3	22.9	-22.9	3.00	3.00	0.00
1400.0	12.00	103.04	1397.1	-9.4	40.7	-40.6	3.00	3.00	0.00
1443.0	13.29	103.04	1439.0	-11.5	49.8	-49.7	3.00	3.00	0.00
Chacra									
1500.0	15.00	103.04	1494.3	-14.7	63.4	-63.3	3.00	3.00	0.00
1600.0	18.00	103.04	1590.2	-21.1	91.1	-90.9	3.00	3.00	0.00
1700.0	21.00	103.04	1684.4	-28.6	123.6	-123.4	3.00	3.00	0.00
1782.0	23.46	103.04	1760.4	-35.6	153.8	-153.6	3.00	3.00	0.00
1800.0	23.46	103.04	1776.8	-37.2	160.8	-160.5	0.00	0.00	0.00
1900.0	23.46	103.04	1868.6	-46.2	199.6	-199.3	0.00	0.00	0.00
2000.0	23.46	103.04	1960.3	-55.2	238.4	-238.0	0.00	0.00	0.00
2100.0	23.46	103.04	2052.0	-64.2	277.1	-276.7	0.00	0.00	0.00
2200.0	23.46	103.04	2143.8	-73.2	315.9	-315.5	0.00	0.00	0.00
2300.0	23.46	103.04	2235.5	-82.1	354.7	-354.2	0.00	0.00	0.00
2400.0	23.46	103.04	2327.2	-91.1	393.5	-392.9	0.00	0.00	0.00
2500.0	23.46	103.04	2419.0	-100.1	432.3	-431.7	0.00	0.00	0.00
2570.9	23.46	103.04	2484.0	-106.5	459.8	-459.1	0.00	0.00	0.00
Cliff House									
2592.7	23.46	103.04	2504.0	-108.4	468.2	-467.6	0.00	0.00	0.00
Menefee									
2600.0	23.46	103.04	2510.7	-109.1	471.1	-470.4	0.00	0.00	0.00
2700.0	23.46	103.04	2602.4	-118.1	509.9	-509.1	0.00	0.00	0.00
2701.7	23.46	103.04	2604.0	-118.2	510.5	-509.8	0.00	0.00	0.00
9 5/8"									
2800.0	23.46	103.04	2694.2	-127.1	548.6	-547.8	0.00	0.00	0.00
2900.0	23.46	103.04	2785.9	-136.0	587.4	-586.6	0.00	0.00	0.00
3000.0	23.46	103.04	2877.6	-145.0	626.2	-625.3	0.00	0.00	0.00



Planning Report

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Local Co-ordinate Reference: Well 350H
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MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,100.0	23.46	103.04	2,969.4	-154.0	665.0	-664.0	0.00	0.00	0.00
3,200.0	23.46	103.04	3,061.1	-163.0	703.8	-702.8	0.00	0.00	0.00
3,300.0	23.46	103.04	3,152.8	-172.0	742.6	-741.5	0.00	0.00	0.00
3,400.0	23.46	103.04	3,244.6	-180.9	781.4	-780.2	0.00	0.00	0.00
3,438.2	23.46	103.04	3,279.6	-184.4	796.2	-795.0	0.00	0.00	0.00
3,500.0	21.61	103.04	3,336.7	-189.7	819.2	-818.1	3.00	-3.00	0.00
3,600.0	18.61	103.04	3,430.6	-197.5	852.7	-851.5	3.00	-3.00	0.00
3,614.1	18.18	103.04	3,444.0	-198.5	857.1	-855.8	3.00	-3.00	0.00
Point Lookout									
3,700.0	15.61	103.04	3,526.2	-204.1	881.4	-880.1	3.00	-3.00	0.00
3,800.0	12.61	103.04	3,623.1	-209.6	905.1	-903.8	3.00	-3.00	0.00
3,806.0	12.43	103.04	3,629.0	-209.9	906.4	-905.1	3.00	-3.00	0.00
Mancos									
3,900.0	9.61	103.04	3,721.2	-214.0	923.9	-922.6	3.00	-3.00	0.00
4,000.0	6.61	103.04	3,820.2	-217.1	937.6	-936.3	3.00	-3.00	0.00
4,084.1	4.08	103.04	3,904.0	-218.9	945.3	-943.9	3.00	-3.00	0.00
Gallup (MNCS A)									
4,100.0	3.61	103.04	3,919.8	-219.1	946.3	-944.9	3.00	-3.00	0.00
4,194.3	0.78	103.04	4,014.0	-220.0	949.8	-948.4	3.00	-3.00	0.00
MNCS_B									
4,200.0	0.61	103.04	4,019.7	-220.0	949.9	-948.5	3.00	-3.00	0.00
4,220.3	0.00	0.00	4,040.0	-220.0	950.0	-948.6	3.00	-3.00	0.00
4,250.3	0.00	0.00	4,070.0	-220.0	950.0	-948.6	0.00	0.00	0.00
4,289.3	3.90	269.17	4,109.0	-220.0	948.7	-947.3	10.00	10.00	0.00
MNCS_C									
4,300.0	4.97	269.17	4,119.7	-220.0	947.8	-946.5	10.00	10.00	0.00
4,319.4	6.92	269.17	4,139.0	-220.1	945.8	-944.4	10.00	10.00	0.00
MNCS_Crms									
4,400.0	14.97	269.17	4,218.0	-220.3	930.5	-929.2	10.00	10.00	0.00
4,469.6	21.93	269.17	4,284.0	-220.6	908.5	-907.2	10.00	10.00	0.00
MNCS_D									
4,500.0	24.97	269.17	4,311.9	-220.8	896.4	-895.0	10.00	10.00	0.00
4,600.0	34.97	269.17	4,398.4	-221.5	846.5	-845.2	10.00	10.00	0.00
4,631.8	38.16	269.17	4,424.0	-221.8	827.6	-826.2	10.00	10.00	0.00
MNCS_E									
4,684.7	43.44	269.17	4,464.0	-222.3	793.1	-791.7	10.00	10.00	0.00
MNCS_F									
4,700.0	44.97	269.17	4,475.0	-222.4	782.4	-781.0	10.00	10.00	0.00
4,799.7	54.94	269.17	4,539.0	-223.6	706.2	-704.8	10.00	10.00	0.00
MNCS_G									
4,800.0	54.97	269.17	4,539.2	-223.6	705.9	-704.5	10.00	10.00	0.00
4,900.0	64.97	269.17	4,589.2	-224.8	619.5	-618.1	10.00	10.00	0.00
4,911.7	66.14	269.17	4,594.0	-225.0	608.8	-607.4	10.00	10.00	0.00
MNCS_H									
5,000.0	74.97	269.17	4,623.4	-226.2	525.6	-524.2	10.00	10.00	0.00
5,100.0	84.97	269.17	4,640.8	-227.6	427.3	-425.9	10.00	10.00	0.00
5,122.0	87.17	269.17	4,642.3	-227.9	405.3	-403.9	10.00	10.00	0.00
5,200.0	90.28	271.32	4,644.0	-227.6	327.4	-326.0	4.85	3.99	2.76
5,201.3	90.33	271.35	4,644.0	-227.6	326.1	-324.7	4.85	3.99	2.76
5,300.0	90.33	271.35	4,643.4	-225.2	227.4	-226.0	0.00	0.00	0.00
5,400.0	90.33	271.35	4,642.8	-222.9	127.4	-126.1	0.00	0.00	0.00
5,500.0	90.33	271.35	4,642.3	-220.5	27.5	-26.1	0.00	0.00	0.00



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,600.0	90.33	271.35	4,641.7	-218.2	-72.5	73.8	0.00	0.00	0.00
5,700.0	90.33	271.35	4,641.1	-215.8	-172.5	173.8	0.00	0.00	0.00
5,800.0	90.33	271.35	4,640.5	-213.4	-272.4	273.8	0.00	0.00	0.00
5,900.0	90.33	271.35	4,639.9	-211.1	-372.4	373.7	0.00	0.00	0.00
6,000.0	90.33	271.35	4,639.3	-208.7	-472.4	473.7	0.00	0.00	0.00
6,100.0	90.33	271.35	4,638.7	-206.3	-572.3	573.6	0.00	0.00	0.00
6,200.0	90.33	271.35	4,638.2	-204.0	-672.3	673.6	0.00	0.00	0.00
6,300.0	90.33	271.35	4,637.6	-201.6	-772.3	773.5	0.00	0.00	0.00
6,400.0	90.33	271.35	4,637.0	-199.3	-872.3	873.5	0.00	0.00	0.00
6,500.0	90.33	271.35	4,636.4	-196.9	-972.2	973.4	0.00	0.00	0.00
6,600.0	90.33	271.35	4,635.8	-194.5	-1,072.2	1,073.4	0.00	0.00	0.00
6,700.0	90.33	271.35	4,635.2	-192.2	-1,172.2	1,173.3	0.00	0.00	0.00
6,800.0	90.33	271.35	4,634.7	-189.8	-1,272.1	1,273.3	0.00	0.00	0.00
6,900.0	90.33	271.35	4,634.1	-187.4	-1,372.1	1,373.2	0.00	0.00	0.00
7,000.0	90.33	271.35	4,633.5	-185.1	-1,472.1	1,473.2	0.00	0.00	0.00
7,100.0	90.33	271.35	4,632.9	-182.7	-1,572.0	1,573.2	0.00	0.00	0.00
7,200.0	90.33	271.35	4,632.3	-180.4	-1,672.0	1,673.1	0.00	0.00	0.00
7,300.0	90.33	271.35	4,631.7	-178.0	-1,772.0	1,773.1	0.00	0.00	0.00
7,400.0	90.33	271.35	4,631.2	-175.6	-1,872.0	1,873.0	0.00	0.00	0.00
7,500.0	90.33	271.35	4,630.6	-173.3	-1,971.9	1,973.0	0.00	0.00	0.00
7,600.0	90.33	271.35	4,630.0	-170.9	-2,071.9	2,072.9	0.00	0.00	0.00
7,700.0	90.33	271.35	4,629.4	-168.6	-2,171.9	2,172.9	0.00	0.00	0.00
7,800.0	90.33	271.35	4,628.8	-166.2	-2,271.8	2,272.8	0.00	0.00	0.00
7,900.0	90.33	271.35	4,628.2	-163.8	-2,371.8	2,372.8	0.00	0.00	0.00
8,000.0	90.33	271.35	4,627.6	-161.5	-2,471.8	2,472.7	0.00	0.00	0.00
8,100.0	90.33	271.35	4,627.1	-159.1	-2,571.8	2,572.7	0.00	0.00	0.00
8,200.0	90.33	271.35	4,626.5	-156.7	-2,671.7	2,672.6	0.00	0.00	0.00
8,300.0	90.33	271.35	4,625.9	-154.4	-2,771.7	2,772.6	0.00	0.00	0.00
8,400.0	90.33	271.35	4,625.3	-152.0	-2,871.7	2,872.6	0.00	0.00	0.00
8,500.0	90.33	271.35	4,624.7	-149.7	-2,971.6	2,972.5	0.00	0.00	0.00
8,600.0	90.33	271.35	4,624.1	-147.3	-3,071.6	3,072.5	0.00	0.00	0.00
8,700.0	90.33	271.35	4,623.6	-144.9	-3,171.6	3,172.4	0.00	0.00	0.00
8,800.0	90.33	271.35	4,623.0	-142.6	-3,271.5	3,272.4	0.00	0.00	0.00
8,900.0	90.33	271.35	4,622.4	-140.2	-3,371.5	3,372.3	0.00	0.00	0.00
9,000.0	90.33	271.35	4,621.8	-137.8	-3,471.5	3,472.3	0.00	0.00	0.00
9,100.0	90.33	271.35	4,621.2	-135.5	-3,571.5	3,572.2	0.00	0.00	0.00
9,200.0	90.33	271.35	4,620.6	-133.1	-3,671.4	3,672.2	0.00	0.00	0.00
9,300.0	90.33	271.35	4,620.1	-130.8	-3,771.4	3,772.1	0.00	0.00	0.00
9,400.0	90.33	271.35	4,619.5	-128.4	-3,871.4	3,872.1	0.00	0.00	0.00
9,500.0	90.33	271.35	4,618.9	-126.0	-3,971.3	3,972.0	0.00	0.00	0.00
9,600.0	90.33	271.35	4,618.3	-123.7	-4,071.3	4,072.0	0.00	0.00	0.00
9,700.0	90.33	271.35	4,617.7	-121.3	-4,171.3	4,172.0	0.00	0.00	0.00
9,800.0	90.33	271.35	4,617.1	-118.9	-4,271.2	4,271.9	0.00	0.00	0.00
9,900.0	90.33	271.35	4,616.5	-116.6	-4,371.2	4,371.9	0.00	0.00	0.00
10,000.0	90.33	271.35	4,616.0	-114.2	-4,471.2	4,471.8	0.00	0.00	0.00
10,100.0	90.33	271.35	4,615.4	-111.9	-4,571.2	4,571.8	0.00	0.00	0.00
10,200.0	90.33	271.35	4,614.8	-109.5	-4,671.1	4,671.7	0.00	0.00	0.00
10,300.0	90.33	271.35	4,614.2	-107.1	-4,771.1	4,771.7	0.00	0.00	0.00
10,400.0	90.33	271.35	4,613.6	-104.8	-4,871.1	4,871.6	0.00	0.00	0.00
10,500.0	90.33	271.35	4,613.0	-102.4	-4,971.0	4,971.6	0.00	0.00	0.00
10,600.0	90.33	271.35	4,612.5	-100.1	-5,071.0	5,071.5	0.00	0.00	0.00
10,700.0	90.33	271.35	4,611.9	-97.7	-5,171.0	5,171.5	0.00	0.00	0.00
10,800.0	90.33	271.35	4,611.3	-95.3	-5,271.0	5,271.4	0.00	0.00	0.00



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - S Escavada Unit & Terra Wash CA
Site: 350H Pad
Well: 350H
Wellbore: Wellbore #2
Design: Design #1

Local Co-ordinate Reference: Well 350H
TVD Reference: KB @ 6774.0usft (Original Well Elev)
MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,900.0	90.33	271.35	4,610.7	-93.0	-5,370.9	5,371.4	0.00	0.00	0.00
11,000.0	90.33	271.35	4,610.1	-90.6	-5,470.9	5,471.4	0.00	0.00	0.00
11,100.0	90.33	271.35	4,609.5	-88.2	-5,570.9	5,571.3	0.00	0.00	0.00
11,200.0	90.33	271.35	4,608.9	-85.9	-5,670.8	5,671.3	0.00	0.00	0.00
11,300.0	90.33	271.35	4,608.4	-83.5	-5,770.8	5,771.2	0.00	0.00	0.00
11,400.0	90.33	271.35	4,607.8	-81.2	-5,870.8	5,871.2	0.00	0.00	0.00
11,500.0	90.33	271.35	4,607.2	-78.8	-5,970.7	5,971.1	0.00	0.00	0.00
11,600.0	90.33	271.35	4,606.6	-76.4	-6,070.7	6,071.1	0.00	0.00	0.00
11,700.0	90.33	271.35	4,606.0	-74.1	-6,170.7	6,171.0	0.00	0.00	0.00
11,800.0	90.33	271.35	4,605.4	-71.7	-6,270.7	6,271.0	0.00	0.00	0.00
11,900.0	90.33	271.35	4,604.9	-69.3	-6,370.6	6,370.9	0.00	0.00	0.00
12,000.0	90.33	271.35	4,604.3	-67.0	-6,470.6	6,470.9	0.00	0.00	0.00
12,100.0	90.33	271.35	4,603.7	-64.6	-6,570.6	6,570.8	0.00	0.00	0.00
12,200.0	90.33	271.35	4,603.1	-62.3	-6,670.5	6,670.8	0.00	0.00	0.00
12,300.0	90.33	271.35	4,602.5	-59.9	-6,770.5	6,770.8	0.00	0.00	0.00
12,400.0	90.33	271.35	4,601.9	-57.5	-6,870.5	6,870.7	0.00	0.00	0.00
12,500.0	90.33	271.35	4,601.4	-55.2	-6,970.5	6,970.7	0.00	0.00	0.00
12,600.0	90.33	271.35	4,600.8	-52.8	-7,070.4	7,070.6	0.00	0.00	0.00
12,700.0	90.33	271.35	4,600.2	-50.4	-7,170.4	7,170.6	0.00	0.00	0.00
12,800.0	90.33	271.35	4,599.6	-48.1	-7,270.4	7,270.5	0.00	0.00	0.00
12,900.0	90.33	271.35	4,599.0	-45.7	-7,370.3	7,370.5	0.00	0.00	0.00
12,902.5	90.33	271.35	4,599.0	-45.7	-7,372.8	7,373.0	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
1-350H KOP - plan hits target center - Point	0.00	360.00	4,070.0	-220.0	950.0	1,861,107.42	1,255,689.45	36.107872°N	107.552452°W
3-350H BHL - plan hits target center - Point	0.00	360.00	4,599.0	-45.7	-7,372.8	1,861,281.76	1,247,366.61	36.108041°N	107.580629°W
2-350H POE - plan hits target center - Point	0.00	0.00	4,644.0	-227.6	326.1	1,861,099.85	1,255,065.53	36.107828°N	107.554563°W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
350.0	350.0	13 3/8"	13-3/8	17-1/2
2,701.7	2,604.0	9 5/8"	9-5/8	12-1/4



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - S Escavada Unit & Terra Wash CA
Site: 350H Pad
Well: 350H
Wellbore: Wellbore #2
Design: Design #1

Local Co-ordinate Reference: Well 350H
TVD Reference: KB @ 6774.0usft (Original Well Elev)
MD Reference: KB @ 6774.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
484.0	484.0	Ojo Alamo		0.00	
594.0	594.0	Kirtland		0.00	
719.0	719.0	Fruitland		0.00	
1,069.0	1,069.0	Pictured Cliffs		0.00	
1,164.2	1,164.0	Lewis		0.00	
1,443.0	1,439.0	Chacra		0.00	
2,570.9	2,484.0	Cliff House		0.00	
2,592.7	2,504.0	Menefee		0.00	
3,614.1	3,444.0	Point Lookout		0.00	
3,806.0	3,629.0	Mancos		0.00	
4,084.1	3,904.0	Gallup (MNCS A)		0.00	
4,194.3	4,014.0	MNCS_B		0.00	
4,289.3	4,109.0	MNCS_C		0.00	
4,319.4	4,139.0	MNCS_Cms		0.00	
4,469.6	4,284.0	MNCS_D		0.00	
4,631.8	4,424.0	MNCS_E		0.00	
4,684.7	4,464.0	MNCS_F		0.00	
4,799.7	4,539.0	MNCS_G		0.00	
4,911.7	4,594.0	MNCS_H		0.00	

WELL NAME: S ESCAVADA UNIT 350H**OBJECTIVE:** Drill, complete, and equip single lateral in the Mancos-M formation**API Number:** 30-043-21318**AFE Number:** not yet assigned**ER Well Number:** not yet assigned**State:** New Mexico**County:** Sandoval

Surface Elev.: 6,749 ft ASL (GL) 6,774 ft ASL (KB)
Surface Location: 27-22N-07W Sec-Twn- Rng 2,091 ft FSL 436 ft FEL
BH Location: 28-22N-07W Sec-Twn- Rng 1,857 ft FSL 2530 ft FEL

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

South on US Hwy 550 for 48.9 miles to MM 103; Right (South) on Atkins Road for 3.2 miles to fork; Left (South) continuing on Atkins Road for 1.1 miles to 4-way intersection; Straight (south) for 1.6 miles to 4-way intersection; Straight (South) for 1.9 miles to fork; Left (South) for 0.4 miles to fork; Right (South) for 0.3 miles to S Escavada Unit 350H access road; Left (South) along 350H access road for 0.7 miles to S Escavada Unit 350H Pad (Wells: 347H, 350H & 351H).

QUICK REFERENCE	
Sur TD (MD)	350 ft
Int TD (MD)	2,702 ft
KOP (MD)	4,250 ft
KOP (TVD)	4,070 ft
Target (TVD)	4,644 ft
Curve BUR	10 °/100 ft
POE (MD)	5,201 ft
TD (MD)	12,903 ft
Lat Len (ft)	7,702 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	2,702	9.625	36.0	J-55	LTC	0	2,702
Production	8.500	12,903	5.500	17.0	P-110	LTC	0	12,903

CEMENT PROPERTIES SUMMARY:

	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	Class G	15.8	1.174	5.15	0.6946	100%	0	414
Inter. (Lead)	G:POZ Blend	12.3	1.987	10.16	0.3627	70%	0	605
Inter. (Tail)	Class G	15.8	1.148	4.98	0.3132	20%	2,202	164
Prod. (Lead)	G:POZ blend	12.4	1.907	9.981	0.2691	50%	0	821
Prod. (Tail)	G:POZ blend	13.3	1.360	5.999	0.2291	10%	4,084	1,634

COMPLETION / PRODUCTION SUMMARY:**Frac:** 45 plug-and-perf stages with 270,000 bbls slickwater fluid and 12,500,000 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

Topo	TVD (ft KB)	MD (ft KB)
Ojo Alamo	484	484
Kirtland	594	594
Fruitland	719	719
Pictured Cliffs	1,069	1,069
Lewis	1,164	1,164
Chaco	1,439	1,443
Cibola House	2,494	2,571
Mancos	2,504	2,593
Poiet Lookout	3,444	3,614
Mancos	3,629	3,806
Gallup (MNCS_A)	3,804	4,084
MNCS_B	4,014	4,194
MNCS_C	4,109	4,289
MNCS_Cms	4,189	4,319
MNCS_D	4,284	4,470
MNCS_E	4,424	4,632
MNCS_F	4,464	4,685
MNCS_G	4,539	4,800
MNCS_H	4,594	4,912
P.O.E. TARGET	4,644	5,201
PROJECTED TD	4,599	12,903