

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 2/8/2019

Well information;

Operator Enduring, Well Name and Number S. Escobar Unit 300H

API# 30-043-21330, Section 30, Township 28 N/S, Range 6 E/W

Conditions of Approval: (See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
 - ☐ Hold C-104 for NSL, NSP, DHC
 - ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
 - ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
 - ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
 - ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Brandon Drenell
NMOCD Approved by Signature

5/13/19
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM021455
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No. /A/SOUTH ESCAVADA UNI / NMNM1308 12X
2. Name of Operator ENDURING RESOURCES LLC		8. Lease Name and Well No. S ESCAVADA UNIT 360H
3a. Address 1050 17TH ST STE 2500 DENVER CO 80265	3b. Phone No. (include area code) (505)386-8205	9. API Well No. 30-043-21330
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface A NENE / 49 FNL / 981 FEL / LAT 36.116737 / LONG -107.504372 At proposed prod. zone S NWSE / 1947 FSL / 2280 FEL / LAT 36.137192 / LONG -107.526084		10. Field and Pool, or Exploratory MANCOS / RUSTY GALLUP OIL POOL
11. Sec., T. R. M. or Blk. and Survey or Area SEC 30 / T22N / R6W / NMP		12. County or Parish SANDOVAL
13. State NM		14. Distance in miles and direction from nearest town or post office* 53.9 miles
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 20 feet	16. No of acres in lease 963.1	17. Spacing Unit dedicated to this well 441.16
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 49 feet	19. Proposed Depth 4991 feet / 15712 feet	20. BLM/BIA Bond No. in file FED: NMB001492
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6906 feet	22. Approximate date work will start* 05/01/2019	23. Estimated duration 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Lacey Granillo / Ph: (505)974-1704	Date 02/08/2019
Title Permitting Specialist		
Approved by (Signature) 	Name (Printed/Typed) Richard A. Fields	Date APR 12 2019
Title Field Manager		
Office FARMINGTON		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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.

**DRILLING OPERATIONS
AUTHORIZED ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"**

**BLM'S APPROVAL OR ACCEPTANCE OF
THIS ACTION DOES NOT RELIEVE THE
LESSEE AND OPERATOR FROM
OBTAINING ANY OTHER AUTHORIZATION
REQUIRED FOR OPERATIONS ON
FEDERAL AND INDIAN LANDS**

This action is subject to technical
and procedural review pursuant to
43 CFR 3165.3 and appeal
pursuant to 43 CFR 3165.4

(Continued on page 2)

*(Instructions on page 2)

NMOCDA

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

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30.043-21330	*Pool Code 52860	*Pool Name RUSTY GALLUP OIL POOL
*Property Code 322151	*Property Name S ESCAVADA UNIT	*Well Number 360H
*GRID No. 372286	*Operator Name ENDURING RESOURCES, LLC	*Elevation 6906'

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
A	30	22N	6W		49	NORTH	981	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

U.L. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	13	22N	7W		1947	SOUTH	2280	EAST	SANDOVAL

12 Dedicated Acres 441.16 NE/4 NE/4 - Section 24 NW/4 SE/4, S/2 SE/4 - Section 13 W/2 NW/4, SE/4 NW/4, NE/4 SW/4 N/2 SE/4, SE/4 SE/4 - Section 19	13 Joint or Infill	14 Consolidation Code	15 Order No. R-14347
NO ALLOWABLE WILL BE ASS			

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 the owner of such a mineral or working interest or a voluntary pooling agreement or a compulsory pooling order hereinafter by this my division.

Signature Deay Granio Date _____
Printed Name Deay Granio
E-mail 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.

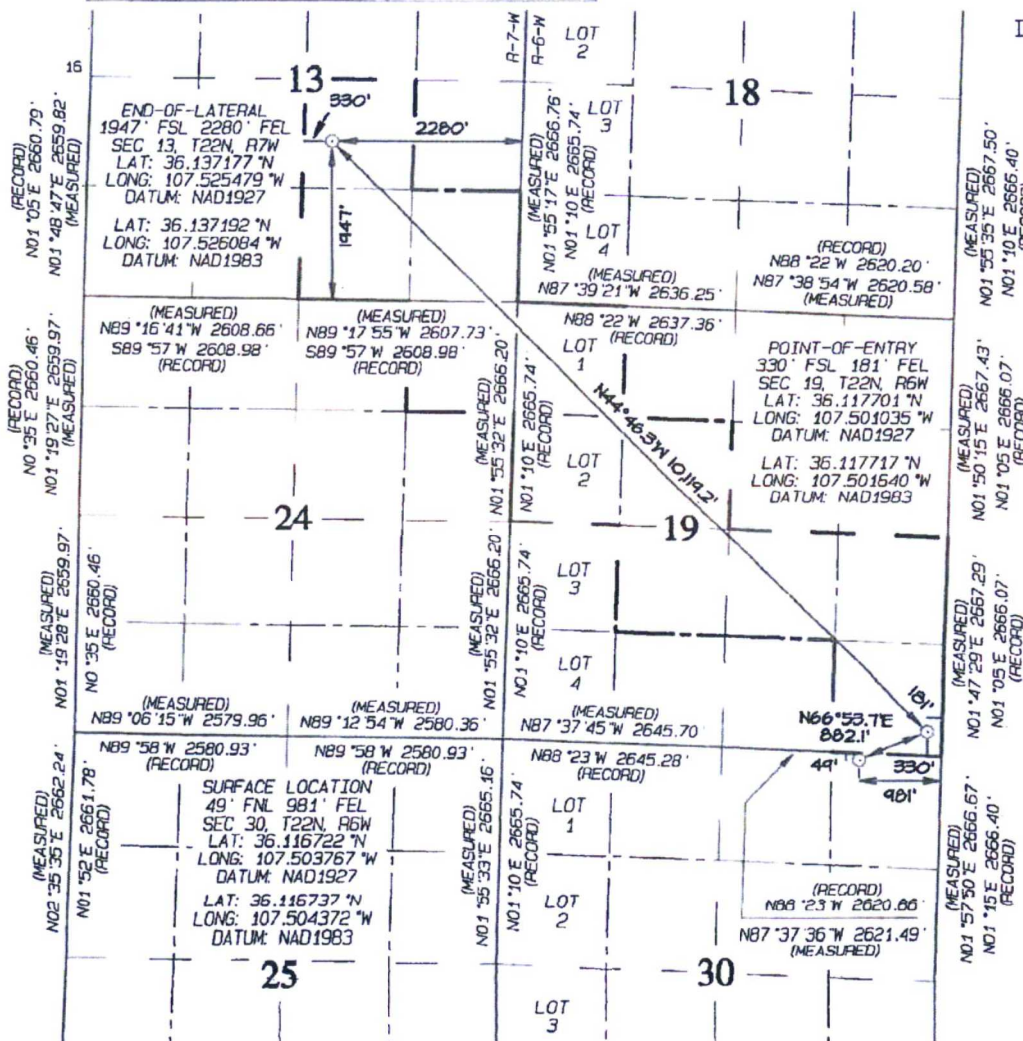
Date Revised: JANUARY 10, 2019
Date of Survey: JULY 17, 2018

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269



Surface = Indian



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 360H

API Number: 30-043-

State: New Mexico

County: Sandoval

Surface Elevation: 6,906 ft ASL (GL) 6,931 ft ASL (KB)

Surface Location: 30-22N-06W Sec-Twn-Rng 49 ft FNL 981 ft FEL
36.116737 ° N latitude 107.504372 ° W longitude (NAD 83)

BH Location: 13-22N-07W Sec-Twn-Rng 1,947 ft FSL 2,280 ft FEL
36.137192 ° N latitude 107.525084 ° W longitude (NAD 83)

Driving Directions: From the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM: South on US Hwy 550 for 54.4 miles to MM 97.5, right (south) onto Indian Service Route #46 for 3.5 miles to fork, right (south) remaining on ISR #46 for 1.1 miles to fork, right (south) remaining on ISR #46 for 3.4 miles to fork, right (west) exiting ISR #46 onto existing roadway for 0.7 miles to fork, right (west) proceeding down the hill on existing roadway for 0.1 miles, right on access road for 0.2 miles to S Escavada Unit 359H Pad.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,115	816	816	W	normal
	Kirtland	6,025	906	906	W	normal
	Fruitland	5,845	1,086	1,086	G, W	sub
	Pictured Cliffs	5,565	1,366	1,366	G, W	sub
	Lewis	5,420	1,511	1,511	G, W	normal
	Chacra	5,178	1,753	1,754	G, W	normal
	Cliff House	4,105	2,826	2,916	G, W	sub
	Menefee	4,068	2,863	2,958	G, W	normal
	Point Lookout	3,195	3,736	3,940	G, W	normal
	Mancos	3,050	3,881	4,103	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,715	4,216	4,477	O,G	sub (~0.38)
	P.O.E. TARGET	1,997	4,934	5,593	O,G	sub (~0.38)
	PROJECTED TD	1,940	4,991	15,712	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: 2,150 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 1,060 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 gate ram (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

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	240 ft (MD)	Hole Section Length:	240 ft
0 ft (TVD)	to	240 ft (TVD)	Casing Required:	240 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
Loading					105	636	111,406
Min. S.F.					10.78	4.29	7.66

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

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

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

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

Make-up as per API Buttress Connection running procedure.

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

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	Class G	15.8	1.174	5.15	0.6946	100%	0	284

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.

240 ft (MD)	to	3,070 ft (MD)	Hole Section Length:	2,830 ft
240 ft (TVD)	to	2,963 ft (TVD)	Casing Required:	3,070 ft

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND	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					1,294	1,229	196,379
Min. S.F.					1.56	2.86	2.87

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

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	0.3132	40%	0	567
Tail	Class G	15.8	1.148	4.98	0.3132	10%	2,570	150

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.

3,070 ft (MD)	to	15,712 ft (MD)	Hole Section Length:	12,642 ft
2,963 ft (TVD)	to	4,991 ft (TVD)	Casing Required:	15,712 ft

Estimated KOP:	4,388 ft (MD)	4,135 ft (TVD)
Estimated Landing Point (P.O.E.):	5,593 ft (MD)	4,934 ft (TVD)
Estimated Lateral Length:	10,119 ft (MD)	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND	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					2,466	8,967	330,487	330,487
Min. S.F.					3.03	1.19	1.65	1.35

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 Details: Float shoe, float collar, 2 jts 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'. Place Floatation Sub at KOP. Continue running casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

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

Lateral: 1 centralizer per joint

POE to KOP: 1 centralizer per joint from landing point to KOP

KOP to surface: 1 centralizer per 2 joints from KOP to 9-5/8" shoe, 1 per 3 joints from 9-5/8" shoe to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ blend	12.4	1.9068	9.981	0.2691	40%	0	843
Tail	G:POZ blend	13.3	1.3602	5.999	0.2291	10%	4,477	2,082

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

Halliburton ECONOCEM & EXTENDACEM cementing blend

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

Note: The lateral may be drilled past applicable setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled past the setback, the toe initiation sleeve and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2). S Escavada Unit Order No. is R-14347.

FINISH WELL: ND BOP, NU WH, RDMO.

COMPLETION AND PRODUCTION PLAN:

Frac: Lateral will be fracture-stimulated in approximately 60 plug-and-perf stages with approximately 240,000 bbls slickwater fluid and 20,000,000 lbs of proppant.

Flowback: Well will be flowed back through production tubing. An ESP may be used to assist in load water recovery.

Production: Well will produce up production tubing via gas-lift into permanent production and storage facilities.

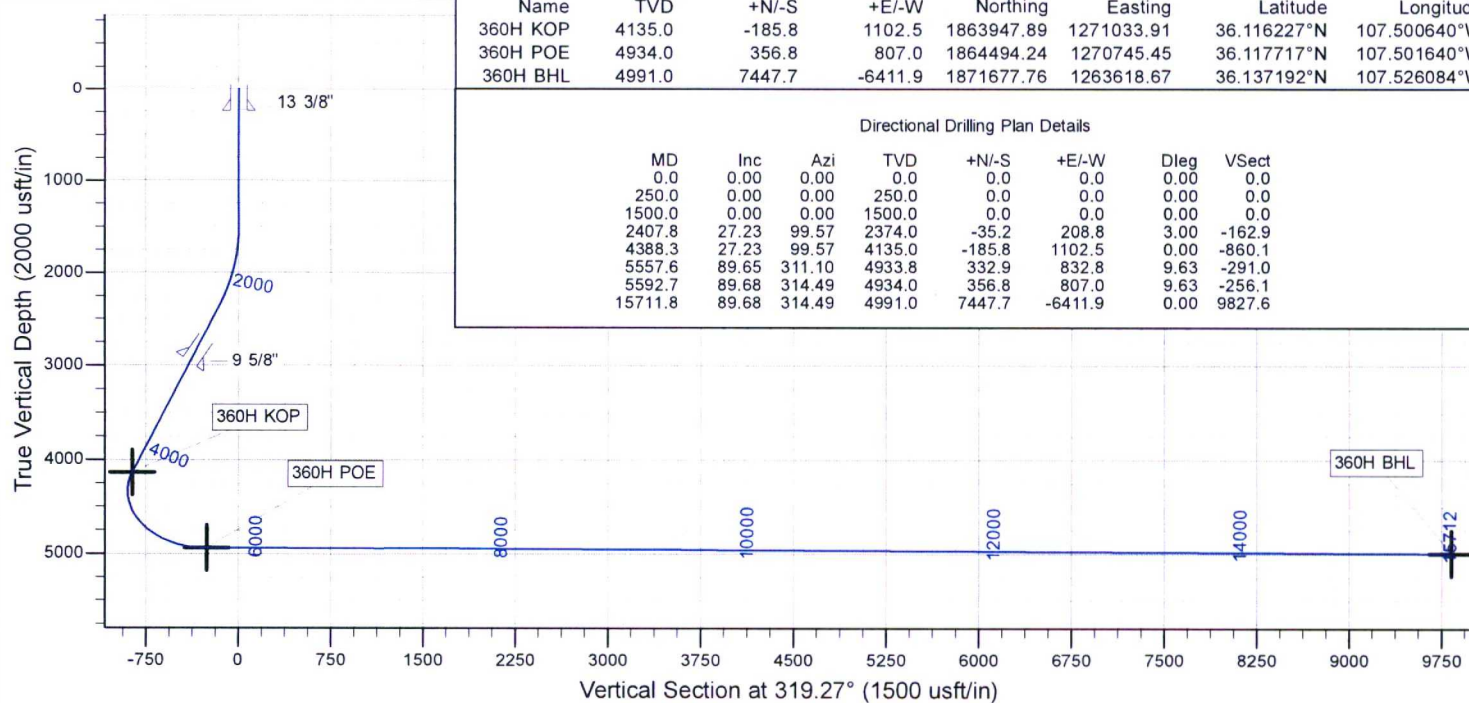
ESTIMATED START DATES:

Drilling: 7/1/2019

Completion: 8/15/2019

Production: 9/14/2019

Prepared by: Alec Bridge 1/30/2019





Enduring Resources LLC

San Juan Basin - S Escavada Unit

359H Pad

360H

Wellbore #1

Plan: Design #1

Standard Planning Report

30 January, 2019



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 360H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 6931.0usft
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 6931.0usft
Site:	359H Pad	North Reference:	True
Well:	360H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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

Site	359H Pad, Sandoval County, New Mexico				
Site Position:		Northing:	1,864,147.68 usft	Latitude:	36.116735°N
From:	Lat/Long	Easting:	1,269,894.02 usft	Longitude:	107.504507°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.74

Well	360H					
Well Position	+N/-S	0.7 usft	Northing:	1,864,147.89 usft	Latitude:	36.116737°N
	+E/-W	39.9 usft	Easting:	1,269,933.90 usft	Longitude:	107.504372°W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,906.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.87	63.02	50,581.45865468

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	319.27

Plan Survey Tool Program	Date	1/30/2019			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	15,711.8	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

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	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,407.8	27.23	99.57	2,374.0	-35.2	208.8	3.00	3.00	0.00	99.57	
4,388.3	27.23	99.57	4,135.0	-185.8	1,102.5	0.00	0.00	0.00	0.00	360H KOP
5,557.6	89.65	311.10	4,933.8	332.9	832.8	9.63	5.34	-12.70	-145.49	
5,592.7	89.68	314.49	4,934.0	356.8	807.0	9.63	0.08	9.63	89.55	360H POE
15,711.8	89.68	314.49	4,991.0	7,447.7	-6,411.9	0.00	0.00	0.00	0.00	360H BHL



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 360H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 6931.0usft
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 6931.0usft
Site:	359H Pad	North Reference:	True
Well:	360H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
250.0	0.00	0.00	250.0	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
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
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
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
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	3.00	99.57	1,600.0	-0.4	2.6	-2.0	3.00	3.00	0.00
1,700.0	6.00	99.57	1,699.6	-1.7	10.3	-8.0	3.00	3.00	0.00
1,800.0	9.00	99.57	1,798.8	-3.9	23.2	-18.1	3.00	3.00	0.00
1,900.0	12.00	99.57	1,897.1	-6.9	41.2	-32.1	3.00	3.00	0.00
2,000.0	15.00	99.57	1,994.3	-10.8	64.2	-50.1	3.00	3.00	0.00
2,100.0	18.00	99.57	2,090.2	-15.5	92.2	-71.9	3.00	3.00	0.00
2,200.0	21.00	99.57	2,184.4	-21.1	125.1	-97.6	3.00	3.00	0.00
2,300.0	24.00	99.57	2,276.8	-27.4	162.8	-127.0	3.00	3.00	0.00
2,400.0	27.00	99.57	2,367.1	-34.6	205.3	-160.1	3.00	3.00	0.00
2,407.8	27.23	99.57	2,374.0	-35.2	208.8	-162.9	3.00	3.00	0.00
2,500.0	27.23	99.57	2,456.0	-42.2	250.4	-195.3	0.00	0.00	0.00
2,600.0	27.23	99.57	2,544.9	-49.8	295.5	-230.5	0.00	0.00	0.00
2,700.0	27.23	99.57	2,633.8	-57.4	340.6	-265.7	0.00	0.00	0.00
2,800.0	27.23	99.57	2,722.7	-65.0	385.8	-300.9	0.00	0.00	0.00
2,900.0	27.23	99.57	2,811.6	-72.6	430.9	-336.1	0.00	0.00	0.00
3,000.0	27.23	99.57	2,900.6	-80.2	476.0	-371.4	0.00	0.00	0.00
3,100.0	27.23	99.57	2,989.5	-87.8	521.1	-406.6	0.00	0.00	0.00
3,200.0	27.23	99.57	3,078.4	-95.4	566.3	-441.8	0.00	0.00	0.00
3,300.0	27.23	99.57	3,167.3	-103.0	611.4	-477.0	0.00	0.00	0.00
3,400.0	27.23	99.57	3,256.2	-110.6	656.5	-512.2	0.00	0.00	0.00
3,500.0	27.23	99.57	3,345.1	-118.2	701.6	-547.4	0.00	0.00	0.00
3,600.0	27.23	99.57	3,434.0	-125.8	746.8	-582.6	0.00	0.00	0.00
3,700.0	27.23	99.57	3,523.0	-133.4	791.9	-617.8	0.00	0.00	0.00
3,800.0	27.23	99.57	3,611.9	-141.0	837.0	-653.0	0.00	0.00	0.00
3,900.0	27.23	99.57	3,700.8	-148.7	882.1	-688.2	0.00	0.00	0.00
4,000.0	27.23	99.57	3,789.7	-156.3	927.3	-723.4	0.00	0.00	0.00
4,100.0	27.23	99.57	3,878.6	-163.9	972.4	-758.6	0.00	0.00	0.00
4,200.0	27.23	99.57	3,967.5	-171.5	1,017.5	-793.8	0.00	0.00	0.00
4,300.0	27.23	99.57	4,056.5	-179.1	1,062.6	-829.0	0.00	0.00	0.00
4,388.3	27.23	99.57	4,135.0	-185.8	1,102.5	-860.1	0.00	0.00	0.00
4,400.0	26.31	98.13	4,145.4	-186.6	1,107.7	-864.1	9.63	-7.88	-12.31
4,500.0	19.28	80.89	4,237.6	-187.1	1,146.0	-889.5	9.63	-7.03	-17.24
4,600.0	15.24	50.92	4,333.3	-176.2	1,172.6	-898.6	9.63	-4.04	-29.97
4,700.0	16.56	15.55	4,429.7	-154.1	1,186.6	-891.0	9.63	1.32	-35.37
4,800.0	22.30	351.90	4,524.1	-121.5	1,187.8	-867.1	9.63	5.74	-23.65
4,900.0	30.03	338.69	4,613.9	-79.3	1,176.0	-827.4	9.63	7.72	-13.21
5,000.0	38.56	330.69	4,696.5	-28.7	1,151.6	-773.1	9.63	8.53	-8.00



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 360H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 6931.0usft
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 6931.0usft
Site:	359H Pad	North Reference:	True
Well:	360H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
5,100.0	47.46	325.27	4,769.5	28.9	1,115.3	-705.8	9.63	8.90	-5.42
5,200.0	56.55	321.22	4,831.0	91.8	1,068.0	-627.3	9.63	9.09	-4.05
5,300.0	65.75	317.96	4,879.3	158.3	1,011.3	-539.8	9.63	9.20	-3.27
5,400.0	75.01	315.13	4,912.8	226.6	946.5	-445.8	9.63	9.26	-2.82
5,500.0	84.30	312.54	4,930.8	294.6	875.6	-348.0	9.63	9.29	-2.59
5,557.6	89.65	311.10	4,933.8	332.9	832.8	-291.0	9.63	9.30	-2.51
5,592.7	89.68	314.49	4,934.0	356.8	807.0	-256.1	9.63	0.08	9.63
5,600.0	89.68	314.49	4,934.0	361.9	801.8	-248.8	0.00	0.00	0.00
5,700.0	89.68	314.49	4,934.6	432.0	730.5	-149.2	0.00	0.00	0.00
5,800.0	89.68	314.49	4,935.2	502.1	659.1	-49.5	0.00	0.00	0.00
5,900.0	89.68	314.49	4,935.7	572.1	587.8	50.1	0.00	0.00	0.00
6,000.0	89.68	314.49	4,936.3	642.2	516.4	149.7	0.00	0.00	0.00
6,100.0	89.68	314.49	4,936.9	712.3	445.1	249.4	0.00	0.00	0.00
6,200.0	89.68	314.49	4,937.4	782.4	373.8	349.0	0.00	0.00	0.00
6,300.0	89.68	314.49	4,938.0	852.4	302.4	448.7	0.00	0.00	0.00
6,400.0	89.68	314.49	4,938.5	922.5	231.1	548.3	0.00	0.00	0.00
6,500.0	89.68	314.49	4,939.1	992.6	159.7	648.0	0.00	0.00	0.00
6,600.0	89.68	314.49	4,939.7	1,062.7	88.4	747.6	0.00	0.00	0.00
6,700.0	89.68	314.49	4,940.2	1,132.7	17.1	847.3	0.00	0.00	0.00
6,800.0	89.68	314.49	4,940.8	1,202.8	-54.3	946.9	0.00	0.00	0.00
6,900.0	89.68	314.49	4,941.4	1,272.9	-125.6	1,046.6	0.00	0.00	0.00
7,000.0	89.68	314.49	4,941.9	1,343.0	-197.0	1,146.2	0.00	0.00	0.00
7,100.0	89.68	314.49	4,942.5	1,413.0	-268.3	1,245.9	0.00	0.00	0.00
7,200.0	89.68	314.49	4,943.1	1,483.1	-339.6	1,345.5	0.00	0.00	0.00
7,300.0	89.68	314.49	4,943.6	1,553.2	-411.0	1,445.2	0.00	0.00	0.00
7,400.0	89.68	314.49	4,944.2	1,623.3	-482.3	1,544.8	0.00	0.00	0.00
7,500.0	89.68	314.49	4,944.7	1,693.3	-553.6	1,644.5	0.00	0.00	0.00
7,600.0	89.68	314.49	4,945.3	1,763.4	-625.0	1,744.1	0.00	0.00	0.00
7,700.0	89.68	314.49	4,945.9	1,833.5	-696.3	1,843.8	0.00	0.00	0.00
7,800.0	89.68	314.49	4,946.4	1,903.6	-767.7	1,943.4	0.00	0.00	0.00
7,900.0	89.68	314.49	4,947.0	1,973.6	-839.0	2,043.1	0.00	0.00	0.00
8,000.0	89.68	314.49	4,947.6	2,043.7	-910.3	2,142.7	0.00	0.00	0.00
8,100.0	89.68	314.49	4,948.1	2,113.8	-981.7	2,242.4	0.00	0.00	0.00
8,200.0	89.68	314.49	4,948.7	2,183.8	-1,053.0	2,342.0	0.00	0.00	0.00
8,300.0	89.68	314.49	4,949.2	2,253.9	-1,124.4	2,441.7	0.00	0.00	0.00
8,400.0	89.68	314.49	4,949.8	2,324.0	-1,195.7	2,541.3	0.00	0.00	0.00
8,500.0	89.68	314.49	4,950.4	2,394.1	-1,267.0	2,641.0	0.00	0.00	0.00
8,600.0	89.68	314.49	4,950.9	2,464.1	-1,338.4	2,740.6	0.00	0.00	0.00
8,700.0	89.68	314.49	4,951.5	2,534.2	-1,409.7	2,840.3	0.00	0.00	0.00
8,800.0	89.68	314.49	4,952.1	2,604.3	-1,481.1	2,939.9	0.00	0.00	0.00
8,900.0	89.68	314.49	4,952.6	2,674.4	-1,552.4	3,039.6	0.00	0.00	0.00
9,000.0	89.68	314.49	4,953.2	2,744.4	-1,623.7	3,139.2	0.00	0.00	0.00
9,100.0	89.68	314.49	4,953.8	2,814.5	-1,695.1	3,238.9	0.00	0.00	0.00
9,200.0	89.68	314.49	4,954.3	2,884.6	-1,766.4	3,338.5	0.00	0.00	0.00
9,300.0	89.68	314.49	4,954.9	2,954.7	-1,837.8	3,438.2	0.00	0.00	0.00
9,400.0	89.68	314.49	4,955.4	3,024.7	-1,909.1	3,537.8	0.00	0.00	0.00
9,500.0	89.68	314.49	4,956.0	3,094.8	-1,980.4	3,637.5	0.00	0.00	0.00
9,600.0	89.68	314.49	4,956.6	3,164.9	-2,051.8	3,737.1	0.00	0.00	0.00
9,700.0	89.68	314.49	4,957.1	3,235.0	-2,123.1	3,836.8	0.00	0.00	0.00
9,800.0	89.68	314.49	4,957.7	3,305.0	-2,194.4	3,936.4	0.00	0.00	0.00
9,900.0	89.68	314.49	4,958.3	3,375.1	-2,265.8	4,036.1	0.00	0.00	0.00
10,000.0	89.68	314.49	4,958.8	3,445.2	-2,337.1	4,135.7	0.00	0.00	0.00
10,100.0	89.68	314.49	4,959.4	3,515.3	-2,408.5	4,235.4	0.00	0.00	0.00
10,200.0	89.68	314.49	4,960.0	3,585.3	-2,479.8	4,335.0	0.00	0.00	0.00



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 360H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 6931.0usft
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 6931.0usft
Site:	359H Pad	North Reference:	True
Well:	360H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
10,300.0	89.68	314.49	4,960.5	3,655.4	-2,551.1	4,434.7	0.00	0.00	0.00
10,400.0	89.68	314.49	4,961.1	3,725.5	-2,622.5	4,534.3	0.00	0.00	0.00
10,500.0	89.68	314.49	4,961.6	3,795.6	-2,693.8	4,634.0	0.00	0.00	0.00
10,600.0	89.68	314.49	4,962.2	3,865.6	-2,765.2	4,733.6	0.00	0.00	0.00
10,700.0	89.68	314.49	4,962.8	3,935.7	-2,836.5	4,833.3	0.00	0.00	0.00
10,800.0	89.68	314.49	4,963.3	4,005.8	-2,907.8	4,932.9	0.00	0.00	0.00
10,900.0	89.68	314.49	4,963.9	4,075.9	-2,979.2	5,032.6	0.00	0.00	0.00
11,000.0	89.68	314.49	4,964.5	4,145.9	-3,050.5	5,132.2	0.00	0.00	0.00
11,100.0	89.68	314.49	4,965.0	4,216.0	-3,121.9	5,231.9	0.00	0.00	0.00
11,200.0	89.68	314.49	4,965.6	4,286.1	-3,193.2	5,331.5	0.00	0.00	0.00
11,300.0	89.68	314.49	4,966.1	4,356.2	-3,264.5	5,431.2	0.00	0.00	0.00
11,400.0	89.68	314.49	4,966.7	4,426.2	-3,335.9	5,530.8	0.00	0.00	0.00
11,500.0	89.68	314.49	4,967.3	4,496.3	-3,407.2	5,630.5	0.00	0.00	0.00
11,600.0	89.68	314.49	4,967.8	4,566.4	-3,478.5	5,730.1	0.00	0.00	0.00
11,700.0	89.68	314.49	4,968.4	4,636.5	-3,549.9	5,829.8	0.00	0.00	0.00
11,800.0	89.68	314.49	4,969.0	4,706.5	-3,621.2	5,929.4	0.00	0.00	0.00
11,900.0	89.68	314.49	4,969.5	4,776.6	-3,692.6	6,029.1	0.00	0.00	0.00
12,000.0	89.68	314.49	4,970.1	4,846.7	-3,763.9	6,128.7	0.00	0.00	0.00
12,100.0	89.68	314.49	4,970.7	4,916.8	-3,835.2	6,228.4	0.00	0.00	0.00
12,200.0	89.68	314.49	4,971.2	4,986.8	-3,906.6	6,328.0	0.00	0.00	0.00
12,300.0	89.68	314.49	4,971.8	5,056.9	-3,977.9	6,427.7	0.00	0.00	0.00
12,400.0	89.68	314.49	4,972.3	5,127.0	-4,049.3	6,527.3	0.00	0.00	0.00
12,500.0	89.68	314.49	4,972.9	5,197.1	-4,120.6	6,627.0	0.00	0.00	0.00
12,600.0	89.68	314.49	4,973.5	5,267.1	-4,191.9	6,726.6	0.00	0.00	0.00
12,700.0	89.68	314.49	4,974.0	5,337.2	-4,263.3	6,826.3	0.00	0.00	0.00
12,800.0	89.68	314.49	4,974.6	5,407.3	-4,334.6	6,925.9	0.00	0.00	0.00
12,900.0	89.68	314.49	4,975.2	5,477.3	-4,406.0	7,025.6	0.00	0.00	0.00
13,000.0	89.68	314.49	4,975.7	5,547.4	-4,477.3	7,125.2	0.00	0.00	0.00
13,100.0	89.68	314.49	4,976.3	5,617.5	-4,548.6	7,224.9	0.00	0.00	0.00
13,200.0	89.68	314.49	4,976.9	5,687.6	-4,620.0	7,324.5	0.00	0.00	0.00
13,300.0	89.68	314.49	4,977.4	5,757.6	-4,691.3	7,424.2	0.00	0.00	0.00
13,400.0	89.68	314.49	4,978.0	5,827.7	-4,762.6	7,523.8	0.00	0.00	0.00
13,500.0	89.68	314.49	4,978.5	5,897.8	-4,834.0	7,623.5	0.00	0.00	0.00
13,600.0	89.68	314.49	4,979.1	5,967.9	-4,905.3	7,723.1	0.00	0.00	0.00
13,700.0	89.68	314.49	4,979.7	6,037.9	-4,976.7	7,822.8	0.00	0.00	0.00
13,800.0	89.68	314.49	4,980.2	6,108.0	-5,048.0	7,922.4	0.00	0.00	0.00
13,900.0	89.68	314.49	4,980.8	6,178.1	-5,119.3	8,022.1	0.00	0.00	0.00
14,000.0	89.68	314.49	4,981.4	6,248.2	-5,190.7	8,121.7	0.00	0.00	0.00
14,100.0	89.68	314.49	4,981.9	6,318.2	-5,262.0	8,221.4	0.00	0.00	0.00
14,200.0	89.68	314.49	4,982.5	6,388.3	-5,333.4	8,321.0	0.00	0.00	0.00
14,300.0	89.68	314.49	4,983.0	6,458.4	-5,404.7	8,420.7	0.00	0.00	0.00
14,400.0	89.68	314.49	4,983.6	6,528.5	-5,476.0	8,520.3	0.00	0.00	0.00
14,500.0	89.68	314.49	4,984.2	6,598.5	-5,547.4	8,620.0	0.00	0.00	0.00
14,600.0	89.68	314.49	4,984.7	6,668.6	-5,618.7	8,719.6	0.00	0.00	0.00
14,700.0	89.68	314.49	4,985.3	6,738.7	-5,690.1	8,819.3	0.00	0.00	0.00
14,800.0	89.68	314.49	4,985.9	6,808.8	-5,761.4	8,918.9	0.00	0.00	0.00
14,900.0	89.68	314.49	4,986.4	6,878.8	-5,832.7	9,018.6	0.00	0.00	0.00
15,000.0	89.68	314.49	4,987.0	6,948.9	-5,904.1	9,118.2	0.00	0.00	0.00
15,100.0	89.68	314.49	4,987.6	7,019.0	-5,975.4	9,217.9	0.00	0.00	0.00
15,200.0	89.68	314.49	4,988.1	7,089.1	-6,046.8	9,317.5	0.00	0.00	0.00
15,300.0	89.68	314.49	4,988.7	7,159.1	-6,118.1	9,417.2	0.00	0.00	0.00
15,400.0	89.68	314.49	4,989.2	7,229.2	-6,189.4	9,516.8	0.00	0.00	0.00
15,500.0	89.68	314.49	4,989.8	7,299.3	-6,260.8	9,616.5	0.00	0.00	0.00
15,600.0	89.68	314.49	4,990.4	7,369.4	-6,332.1	9,716.1	0.00	0.00	0.00



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 360H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 6931.0usft
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 6931.0usft
Site:	359H Pad	North Reference:	True
Well:	360H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
15,700.0	89.68	314.49	4,990.9	7,439.4	-6,403.4	9,815.8	0.00	0.00	0.00
15,711.8	89.68	314.49	4,991.0	7,447.7	-6,411.9	9,827.6	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
360H KOP - plan hits target center - Point	0.00	359.26	4,135.0	-185.8	1,102.5	1,863,947.89	1,271,033.90	36.116227°N	107.500640°W
360H POE - plan hits target center - Point	0.00	359.26	4,934.0	356.8	807.0	1,864,494.24	1,270,745.44	36.117717°N	107.501640°W
360H BHL - plan hits target center - Point	0.00	359.25	4,991.0	7,447.7	-6,411.9	1,871,677.76	1,263,618.67	36.137192°N	107.526084°W

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (")	Hole Diameter (")
240.0	240.0	13 3/8"			13-3/8	17-1/2
3,070.2	2,963.0	9 5/8"			9-5/8	12-1/4



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - S Escavada Unit
Site: 359H Pad
Well: 360H
Wellbore: Wellbore #1
Design: Design #1

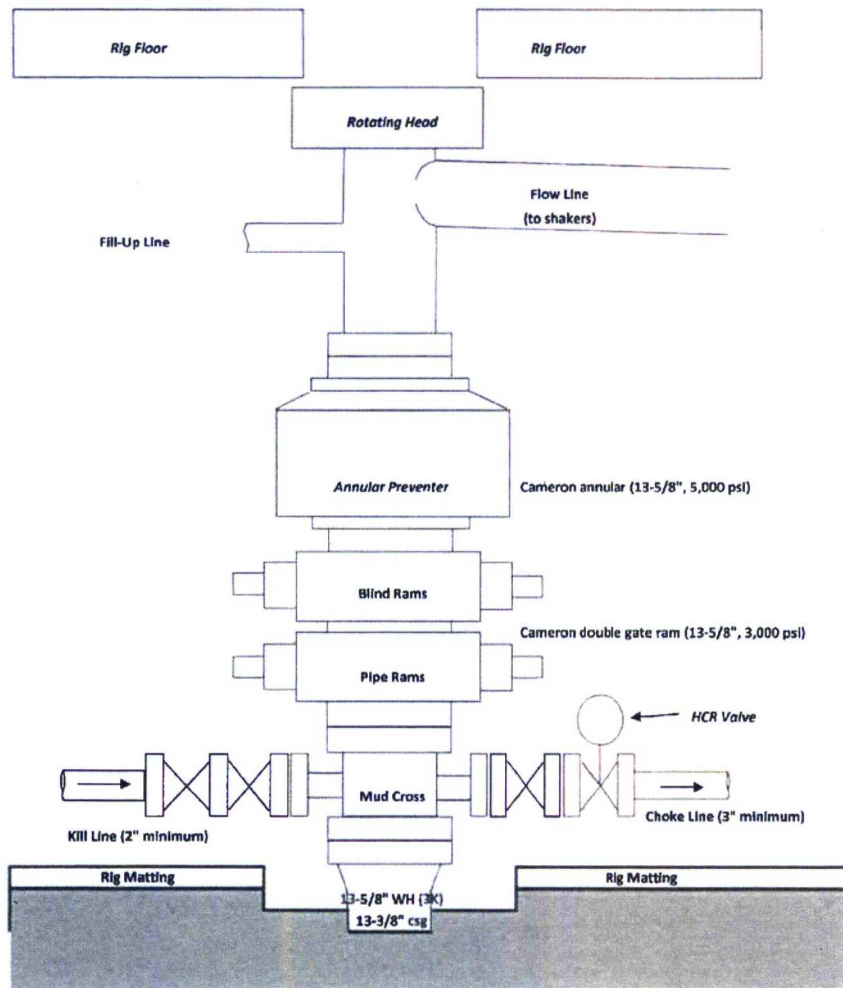
Local Co-ordinate Reference: Well 360H
TVD Reference: KB @ 6931.0usft
MD Reference: KB @ 6931.0usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

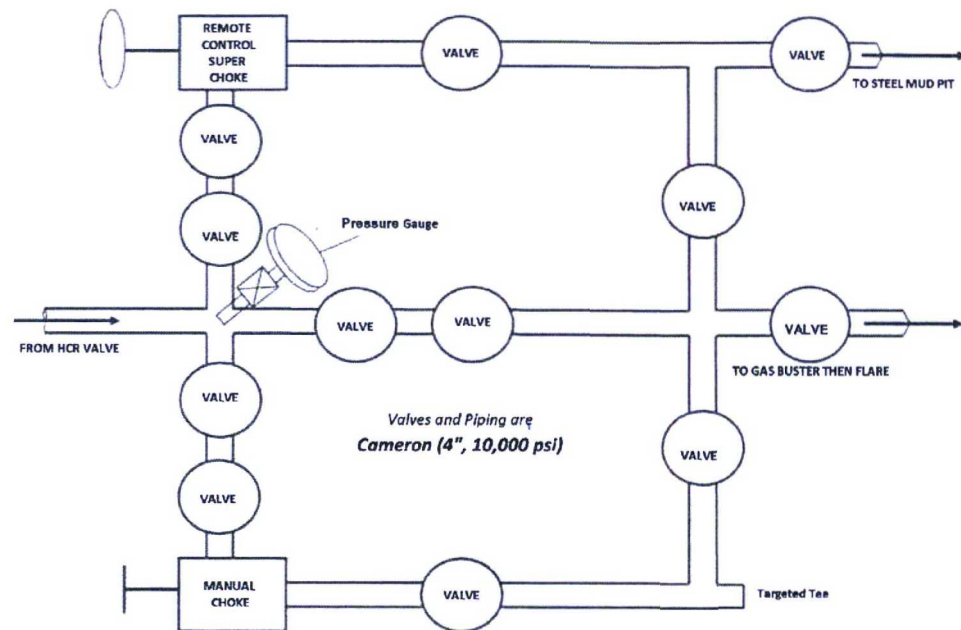
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
816.0	816.0	Ojo Alamo		0.00	
906.0	906.0	Kirtland		0.00	
1,086.0	1,086.0	Fruitland		0.00	
1,366.0	1,366.0	Pictured Cliffs		0.00	
1,511.0	1,511.0	Lewis		0.00	
1,753.7	1,753.0	Chacra		0.00	
2,916.1	2,826.0	Cliff House		0.00	
2,957.8	2,863.0	Menefee		0.00	
3,939.6	3,736.0	Point Lookout		0.00	
4,102.7	3,881.0	Mancos		0.00	
4,477.0	4,216.0	Gallup (MNCS A)		0.00	
4,592.4	4,326.0	MNCS_B		0.00	
4,680.5	4,411.0	MNCS_C		0.00	
4,719.1	4,448.0	MNCS_Cms		0.00	
4,862.6	4,581.0	MNCS_D		0.00	
5,038.7	4,726.0	MNCS_E		0.00	
5,105.2	4,773.0	MNCS_F		0.00	
5,228.1	4,846.0	MNCS_G		0.00	
5,375.5	4,906.0	MNCS_H		0.00	
5,592.7	4,934.0	TARGET		0.00	

BOPE & CHOKE MANIFOLD DIAGRAMS

BOPE



CHOKE MANIFOLD



Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC S Escavada Unit #360H

49' FNL & 981' FEL, Section 30, T22N, R6W, N.M.P.M., Sandoval County, NM

Latitude: 36.116722°N Longitude: 107.503767°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 54.4 miles to Mile Marker 97.5;

Go Right (Southerly) exiting US Hwy #550 onto Indian Service Route #46 for 3.5 miles to fork in roadway;

Go Right (Southerly) which is straight remaining on Indian Service Route #46 for 1.1 miles to fork in roadway;

Go Right (Southerly) which is straight remaining on Indian Service Route #46 for 3.4 miles to fork in roadway;

Go Right (Westerly) exiting Indian Service Route #46 onto existing roadway for 0.7 miles to fork in roadway;

Go Right (Westerly) proceeding down the hill on existing roadway for 0.1 mile to begin proposed access on right-hand side of roadway which continues for an additional 890.2' to staked Enduring S Escavada Unit #360H location.