

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**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:** 5/15/2019

**Operator:** S Escavada Unit **Well Name and Number:** 370H

**API#:** 30-043-21332, **Section:** 29, **Township:** 22N, **Range:** 6 W

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

☒ Notify appropriate OCD district office 24hrs prior to casing & cement.

☒ If cement doesn't circulate on any casing string or stage tool a CBL will be required. Contact the regulatory agencies prior to proceeding.

☒ Hold C-104 for directional survey & "As Drilled" Plat

☒ Hold C-104 for: ☐ NSL, ☐ NSP, ☐ DHC, ☒ 5.9 Compliance

☐ 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 freshwater zone or zones and shall immediately set in cement the water protection string

☒ 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.

☒ OBM may not be used as a contingency for the intermediate casing through the Ojo Alamo.

  
\_\_\_\_\_  
NMOCD Approved by Signature

10/29/2020

\_\_\_\_\_  
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. <b>NMNM119281</b>
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. <b>NMNM130812A</b>
2. Name of Operator <b>ENDURING RESOURCES LLC</b>		8. Lease Name and Well No. <b>S ESCAVADA UNIT 370H</b>
3a. Address <b>1050 17TH ST STE 2500 DENVER CO 80265</b>	3b. Phone No. (include area code) <b>(505)386-8205</b>	9. API Well No. <b>30-043-21332</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>NENW / 163 FNL / 2230 FWL / LAT 36.116196 / LONG -107.493517</b> At proposed prod. zone <b>NWSW / 2334 FSL / 619 FWL / LAT 36.138208 / LONG -107.516246</b>		10. Field and Pool, or Exploratory <b>MANCOS / RUSTY GALLUP OIL POOL</b>
11. Sec., T, R, M. or Blk. and Survey or Area <b>SEC 29 / T22N / R6W / NMP</b>		12. County or Parish <b>SANDOVAL</b>
13. State <b>NM</b>		
14. Distance in miles and direction from nearest town or post office* <b>53.9 miles</b>		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>20 feet</b>	16. No of acres in lease <b>640</b>	17. Spacing Unit dedicated to this well <b>480.68</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>163 feet</b>	19. Proposed Depth <b>5146 feet / 16371 feet</b>	20. BLM/BIA Bond No. in file <b>FED: NMB001492</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>7028 feet</b>	22. Approximate date work will start* <b>07/01/2019</b>	23. Estimated duration <b>30 days</b>
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) <b>Lacey Granillo / Ph: (505)947-1704</b>	Date <b>05/15/2019</b>
Title <b>Permitting Specialist</b>		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) <b>Richard Fields / Ph: (505)564-7612</b>	Date <b>03/18/2020</b>
Title <b>Field Manager</b>		

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.





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 <b>30-043-21332</b>		*Pool Code 52860	*Pool Name RUSTY GALLUP OIL POOL
*Property Code 322151	*Property Name S ESCAVADA UNIT		*Well Number 370H
*GRID No. 372286	*Operator Name ENDURING RESOURCES, LLC		*Elevation 7028'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	29	22N	6W		163	NORTH	2230	WEST	SANDOVAL

<sup>11</sup> 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
L	18	22N	6W	3	2334	SOUTH	619	WEST	SANDOVAL

<sup>12</sup> Dedicated Acres  
SW/4 SE/4, SE/4 SW/4  
N/2 SW/4, SW/4 NW/4 - Section 20  
SE/4 NE/4, N/2 NE/4 - Section 19  
SW/4 SE/4, E/2 SW/4  
480.68 NW/4 SW/4 - Section 18

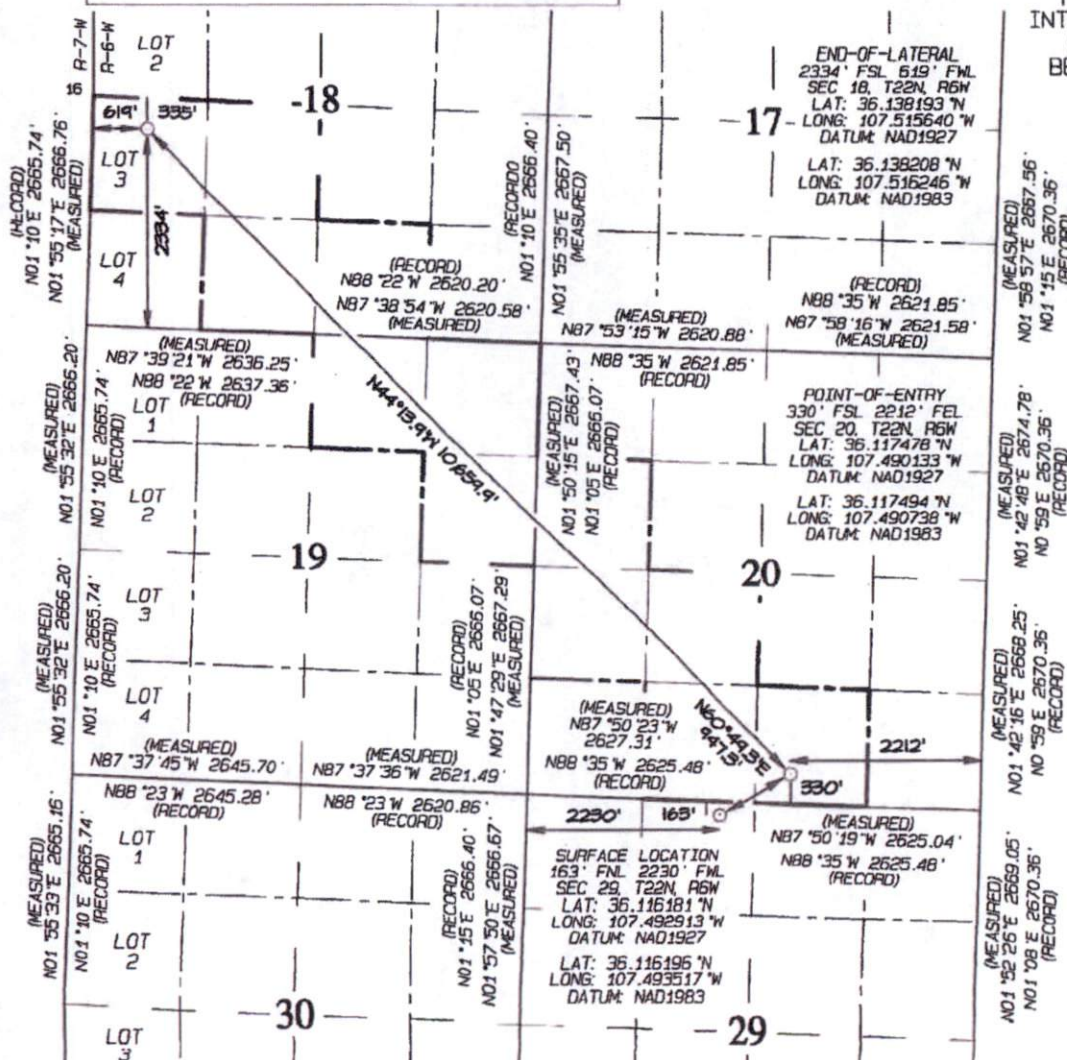
<sup>13</sup> Joint or Infill

<sup>14</sup> Consolidation Code

<sup>15</sup> Order No.

R-14347

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



<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *[Signature]* Date: 5/14/19

Printed Name: *[Signature]*

E-mail Address

<sup>18</sup> 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: MAY 13, 2019  
Survey Date: DECEMBER 12, 2018

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 370H

**API Number:** 30-043

**State:** New Mexico

**County:** Sandoval

**Surface Elevation:** 7,028 ft ASL (GL) 7,056 ft ASL (KB)

**Surface Location:** 29-22N-06W Sec-Twn-Rng 163 ft FNL 2,230 ft FWL  
36.116196 ° N latitude 107.493517 ° W longitude (NAD 83)

**BH Location:** 18-22N-06W Sec-Twn-Rng 2,365 ft FSL 620 ft FEL  
36.138208 ° N latitude 107.516246 ° 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 54.4 miles to MM 97.5; Right (S) on 550 on Indian Service Route #46 for 3.5 miles to fork; Right (S) on ISR #36 for 1.1 miles to fork; Right (S) on ISR #46 for 4.9 miles to fork; Right (W) on ISR #46 for 0.3 miles; Right (N) on access road into S Escavada Unit 368H Pad (Wells: 368H, 370H).

**GEOLOGIC AND RESERVOIR INFORMATION:**

<b>Prognosis:</b>	<b>Formation Tops</b>	<b>TVD (ft ASL)</b>	<b>TVD (ft KB)</b>	<b>MD (ft KB)</b>	<b>O / G / W</b>	<b>Pressure</b>
	Ojo Alamo	6,100	956	956	W	normal
	Kirtland	6,010	1,046	1,046	W	normal
	Fruitland	5,830	1,226	1,226	G, W	sub
	Pictured Cliffs	5,550	1,506	1,507	G, W	sub
	Lewis	5,405	1,651	1,655	G, W	normal
	Chacra	5,163	1,893	1,909	G, W	normal
	Cliff House	4,090	2,966	3,048	G, W	sub
	Menefee	4,053	3,003	3,087	G, W	normal
	Point Lookout	3,180	3,876	4,013	G, W	normal
	Mancos	3,035	4,021	4,167	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,685	4,371	4,539	O,G	sub (~0.38)
	MNCS_H	1,990	5,066	5,470	O,G	sub (~0.38)
	P.O.E. TARGET	1,960	5,096	5,711	O,G	sub (~0.38)
	B.H.L. TARGET	1,910	5,146	16,371	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: 2,220 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 1,090 psi

**Temperature:** Maximum anticipated BHT is 130° F or less

**H<sub>2</sub>S INFORMATION:**

**H<sub>2</sub>S Zones:** Encountering hydrogen-sulfide bearing zones is NOT anticipated.

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

## LOGGING, CORING, AND TESTING:

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

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

**Open Hole Logs:** None planned

**Testing:** None planned

**Coring:** None planned

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

## DRILLING RIG INFORMATION:

**Contractor:** Ensign

**Rig No.:** 773

**Draw Works:** Pacific Rim 1500AC

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

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

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

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

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

**BOPE 2:** Cameron annular (13-5/8", 10,000 psi)

**Choke** 3", 10,000 psi

**KB-GL (ft):** 28

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

## BOPE REQUIREMENTS:

*See attached diagram for details regarding BOPE specifications and configuration.*

- 1) Rig will be equipped with upper and lower kelly cocks with handles available.
- 2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
- 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:





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

350 ft (MD)	to	3,193 ft (MD)	Hole Section Length:	2,843 ft
350 ft (TVD)	to	3,103 ft (TVD)	Casing Required:	3,193 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	OBM as contingency

**Hole Size:** 12-1/4"

**Bit / Motor:** PDC w/mud motor

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

**Logging:** None

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

Casing Specs: Specs Loading Min. S.F.		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
					1,355	1,267	200,240	200,240
					1.49	2.78	2.82	2.26

**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: 3,900 Optimum: 5,200 Maximum: 6,500

**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)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.960	10.12	70%	0	747
Tail	Class G	15.8	1.148	4.98	20%	2,693	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 (estimated minimum WOC time for tail slurry is 6 hours).

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

3,193 ft (MD)	to	16,371 ft (MD)	Hole Section Length:	13,178 ft
3,103 ft (TVD)	to	5,146 ft (TVD)	Casing Required:	16,371 ft

Estimated KOP:	4,569 ft (MD)	4,400 ft (TVD)
Estimated Landing Point (P.O.E.):	5,711 ft (MD)	5,096 ft (TVD)
Estimated Lateral Length:	10,660 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 surveys with inclination and azimuth in 100' stations (minimum) before KOP, every joint from KOP to POE, every 100' (minimum) from POE to TD; Gamma Ray from drill out of 9-5/8" shoe to TD

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



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

<b>Casing Specs:</b>	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
<b>Specs</b>	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
<b>Loading</b>					2,542	8,982	340,154	340,154
<b>Min. S.F.</b>					2.93	1.18	1.61	1.31

**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: 3,400 Optimum: 4,530 Maximum: 5,660

**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

<b>Cement:</b>	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
<b>Lead</b>	G:POZ blend	12.3	1.960	10.11	50%	0	894
<b>Tail</b>	G:POZ blend	13.3	1.354	5.94	10%	4,539	2,202

**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 ECONOCER & EXTENDACER cementing blend

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

**Note:** The lateral may be drilled outside the applicable unit setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled outside the setback, the toe initiation sleeve(s) 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). South Escavada Unit Order Number is R-14347.

**FINISH WELL:** ND BOP. RDMO Drilling Rig.

## COMPLETION AND PRODUCTION PLAN:

**Frac:** 60 plug-and-perf stages with 240,000 bbls slickwater fluid and 20,000,000 lbs of proppant (estimated)

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

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

## ESTIMATED START DATES:

**Drilling:** 1/1/2020

**Completion:** 2/15/2020

**Production:** 3/16/2020

**Prepared by:** Alec Bridge 5/8/2019





# **Enduring Resources LLC**

**San Juan Basin - S Escavada Unit**

**368H Pad**

**370H**

**Wellbore #1**

**Plan: Design #2**

## **Standard Planning Report**

**08 May, 2019**



## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

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

Site		368H Pad, Sandoval County, New Mexico			
Site Position:		Northing:	1,863,914.26 usft	Latitude:	36.116207°N
From:	Lat/Long	Easting:	1,273,097.78 usft	Longitude:	107.493652°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.73 °

Well	370H					
Well Position	+N/-S	-4.5 usft	Northing:	1,863,909.75 usft	Latitude:	36.116196°N
	+E/-W	39.8 usft	Easting:	1,273,137.60 usft	Longitude:	107.493517°W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	7,028.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	9.87	63.02	50,581.63777298

<b>Design</b>	Design #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	320.79

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/8/2019		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	16,370.8	Design #2 (Wellbore #1)	MWD
				OWSG MWD - Standard

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,851.9	19.56	101.31	1,839.3	-21.6	108.0	3.00	3.00	0.00	101.31	
4,569.3	19.56	101.31	4,400.0	-200.0	1,000.0	0.00	0.00	0.00	0.00	370H KOP2
5,454.5	75.16	336.46	5,062.0	253.3	968.1	9.80	6.28	-14.10	-127.38	
5,710.8	89.73	315.77	5,096.0	462.0	827.0	9.80	5.69	-8.08	-56.37	370H POE2
16,370.8	89.73	315.77	5,146.0	8,100.0	-6,609.0	0.00	0.00	0.00	0.00	370H BHL2





## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

### 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
<b>13 3/8"</b>									
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
956.0	0.00	0.00	956.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Ojo Alamo</b>									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,046.0	0.00	0.00	1,046.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Kirtland</b>									
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
1,226.0	0.78	101.31	1,226.0	0.0	0.2	-0.1	3.00	3.00	0.00
<b>Fruitland</b>									
1,300.0	3.00	101.31	1,300.0	-0.5	2.6	-2.0	3.00	3.00	0.00
1,400.0	6.00	101.31	1,399.6	-2.1	10.3	-8.1	3.00	3.00	0.00
1,500.0	9.00	101.31	1,498.8	-4.6	23.1	-18.1	3.00	3.00	0.00
1,507.3	9.22	101.31	1,506.0	-4.8	24.2	-19.0	3.00	3.00	0.00
<b>Pictured Cliffs</b>									
1,600.0	12.00	101.31	1,597.1	-8.2	40.9	-32.2	3.00	3.00	0.00
1,655.3	13.66	101.31	1,651.0	-10.6	53.0	-41.7	3.00	3.00	0.00
<b>Lewis</b>									
1,700.0	15.00	101.31	1,694.3	-12.8	63.8	-50.2	3.00	3.00	0.00
1,800.0	18.00	101.31	1,790.2	-18.3	91.7	-72.2	3.00	3.00	0.00
1,851.9	19.56	101.31	1,839.3	-21.6	108.0	-85.0	3.00	3.00	0.00
1,900.0	19.56	101.31	1,884.6	-24.8	123.8	-97.5	0.00	0.00	0.00
1,908.9	19.56	101.31	1,893.0	-25.3	126.7	-99.8	0.00	0.00	0.00
<b>Chacra</b>									
2,000.0	19.56	101.31	1,978.9	-31.3	156.7	-123.3	0.00	0.00	0.00
2,100.0	19.56	101.31	2,073.1	-37.9	189.5	-149.1	0.00	0.00	0.00
2,200.0	19.56	101.31	2,167.3	-44.5	222.3	-175.0	0.00	0.00	0.00
2,300.0	19.56	101.31	2,261.6	-51.0	255.1	-200.8	0.00	0.00	0.00
2,400.0	19.56	101.31	2,355.8	-57.6	287.9	-226.7	0.00	0.00	0.00
2,500.0	19.56	101.31	2,450.0	-64.2	320.8	-252.5	0.00	0.00	0.00
2,600.0	19.56	101.31	2,544.3	-70.7	353.6	-278.3	0.00	0.00	0.00
2,700.0	19.56	101.31	2,638.5	-77.3	386.4	-304.2	0.00	0.00	0.00
2,800.0	19.56	101.31	2,732.7	-83.8	419.2	-330.0	0.00	0.00	0.00
2,900.0	19.56	101.31	2,827.0	-90.4	452.1	-355.8	0.00	0.00	0.00
3,000.0	19.56	101.31	2,921.2	-97.0	484.9	-381.7	0.00	0.00	0.00
3,047.6	19.56	101.31	2,966.0	-100.1	500.5	-394.0	0.00	0.00	0.00
<b>Cliff House</b>									
3,086.8	19.56	101.31	3,003.0	-102.7	513.4	-404.1	0.00	0.00	0.00
<b>Menefee</b>									
3,100.0	19.56	101.31	3,015.4	-103.5	517.7	-407.5	0.00	0.00	0.00
3,192.9	19.56	101.31	3,103.0	-109.6	548.2	-431.5	0.00	0.00	0.00
<b>9 5/8"</b>									





# Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

## 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)
3,200.0	19.56	101.31	3,109.6	-110.1	550.5	-433.4	0.00	0.00	0.00
3,300.0	19.56	101.31	3,203.9	-116.7	583.4	-459.2	0.00	0.00	0.00
3,400.0	19.56	101.31	3,298.1	-123.2	616.2	-485.0	0.00	0.00	0.00
3,500.0	19.56	101.31	3,392.3	-129.8	649.0	-510.9	0.00	0.00	0.00
3,600.0	19.56	101.31	3,486.6	-136.4	681.8	-536.7	0.00	0.00	0.00
3,700.0	19.56	101.31	3,580.8	-142.9	714.7	-562.5	0.00	0.00	0.00
3,800.0	19.56	101.31	3,675.0	-149.5	747.5	-588.4	0.00	0.00	0.00
3,900.0	19.56	101.31	3,769.3	-156.1	780.3	-614.2	0.00	0.00	0.00
4,000.0	19.56	101.31	3,863.5	-162.6	813.1	-640.1	0.00	0.00	0.00
4,013.3	19.56	101.31	3,876.0	-163.5	817.5	-643.5	0.00	0.00	0.00
<b>Point Lookout</b>									
4,100.0	19.56	101.31	3,957.7	-169.2	845.9	-665.9	0.00	0.00	0.00
4,167.1	19.56	101.31	4,021.0	-173.6	868.0	-683.2	0.00	0.00	0.00
<b>Mancos</b>									
4,200.0	19.56	101.31	4,052.0	-175.8	878.8	-691.7	0.00	0.00	0.00
4,300.0	19.56	101.31	4,146.2	-182.3	911.6	-717.6	0.00	0.00	0.00
4,400.0	19.56	101.31	4,240.4	-188.9	944.4	-743.4	0.00	0.00	0.00
4,500.0	19.56	101.31	4,334.7	-195.4	977.2	-769.2	0.00	0.00	0.00
4,538.6	19.56	101.31	4,371.0	-198.0	989.9	-779.2	0.00	0.00	0.00
<b>Gallup (MNCS A)</b>									
4,569.3	19.56	101.31	4,400.0	-200.0	1,000.0	-787.2	0.00	0.00	0.00
4,600.0	17.89	93.52	4,429.0	-201.3	1,009.7	-794.3	9.80	-5.45	-25.43
4,654.3	15.89	76.46	4,481.0	-200.1	1,025.3	-803.2	9.80	-3.68	-31.43
<b>MNCS_B</b>									
4,700.0	15.44	59.88	4,525.0	-195.5	1,036.6	-806.9	9.80	-0.98	-36.25
4,742.5	16.14	44.73	4,566.0	-188.5	1,045.7	-807.1	9.80	1.65	-35.62
<b>MNCS_C</b>									
4,781.2	17.61	32.67	4,603.0	-179.8	1,052.6	-804.7	9.80	3.80	-31.22
<b>MNCS_Cms</b>									
4,800.0	18.55	27.57	4,620.9	-174.7	1,055.6	-802.7	9.80	5.03	-27.12
4,900.0	25.25	8.08	4,713.7	-139.4	1,065.9	-781.9	9.80	6.70	-19.49
4,924.8	27.19	4.76	4,736.0	-128.5	1,067.2	-774.2	9.80	7.82	-13.38
<b>MNCS_D</b>									
5,000.0	33.44	356.97	4,800.9	-90.7	1,067.5	-745.1	9.80	8.31	-10.36
5,100.0	42.26	349.95	4,879.8	-29.9	1,060.1	-693.4	9.80	8.82	-7.02
5,101.6	42.40	349.86	4,881.0	-28.8	1,060.0	-692.4	9.80	9.00	-5.75
<b>MNCS_E</b>									
5,180.8	49.61	345.85	4,936.0	26.8	1,047.9	-641.7	9.80	9.10	-5.06
<b>MNCS_F</b>									
5,200.0	51.38	345.01	4,948.2	41.1	1,044.1	-628.2	9.80	9.20	-4.38
5,293.8	60.08	341.41	5,001.0	115.2	1,021.6	-556.6	9.80	9.28	-3.84
<b>MNCS_G</b>									
5,300.0	60.66	341.20	5,004.0	120.3	1,019.9	-551.6	9.80	9.33	-3.45
5,400.0	70.03	338.03	5,045.7	205.3	988.2	-465.6	9.80	9.37	-3.17
5,454.5	75.16	336.46	5,062.0	253.3	968.1	-415.8	9.80	9.41	-2.87
5,470.4	76.03	335.13	5,066.0	267.4	961.8	-400.9	9.80	5.45	-8.41
<b>MNCS_H</b>									
5,500.0	77.66	332.67	5,072.7	293.2	949.1	-372.8	9.80	5.52	-8.32
5,600.0	83.32	324.55	5,089.3	377.3	897.7	-275.2	9.80	5.66	-8.12
5,700.0	89.11	316.62	5,095.9	454.2	834.4	-175.6	9.80	5.79	-7.93
5,710.8	89.73	315.77	5,096.0	462.0	827.0	-164.9	9.80	5.82	-7.89
5,800.0	89.73	315.77	5,096.4	525.9	764.8	-76.0	0.00	0.00	0.00
5,900.0	89.73	315.77	5,096.9	597.6	695.0	23.7	0.00	0.00	0.00





# Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

## 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)
6,000.0	89.73	315.77	5,097.4	669.2	625.2	123.3	0.00	0.00	0.00
6,100.0	89.73	315.77	5,097.8	740.9	555.5	222.9	0.00	0.00	0.00
6,200.0	89.73	315.77	5,098.3	812.5	485.7	322.5	0.00	0.00	0.00
6,300.0	89.73	315.77	5,098.8	884.2	416.0	422.1	0.00	0.00	0.00
6,400.0	89.73	315.77	5,099.2	955.8	346.2	521.7	0.00	0.00	0.00
6,500.0	89.73	315.77	5,099.7	1,027.5	276.5	621.3	0.00	0.00	0.00
6,600.0	89.73	315.77	5,100.2	1,099.1	206.7	721.0	0.00	0.00	0.00
6,700.0	89.73	315.77	5,100.6	1,170.8	136.9	820.6	0.00	0.00	0.00
6,800.0	89.73	315.77	5,101.1	1,242.4	67.2	920.2	0.00	0.00	0.00
6,900.0	89.73	315.77	5,101.6	1,314.1	-2.6	1,019.8	0.00	0.00	0.00
7,000.0	89.73	315.77	5,102.0	1,385.8	-72.3	1,119.4	0.00	0.00	0.00
7,100.0	89.73	315.77	5,102.5	1,457.4	-142.1	1,219.0	0.00	0.00	0.00
7,200.0	89.73	315.77	5,103.0	1,529.1	-211.8	1,318.7	0.00	0.00	0.00
7,300.0	89.73	315.77	5,103.5	1,600.7	-281.6	1,418.3	0.00	0.00	0.00
7,400.0	89.73	315.77	5,103.9	1,672.4	-351.3	1,517.9	0.00	0.00	0.00
7,500.0	89.73	315.77	5,104.4	1,744.0	-421.1	1,617.5	0.00	0.00	0.00
7,600.0	89.73	315.77	5,104.9	1,815.7	-490.9	1,717.1	0.00	0.00	0.00
7,700.0	89.73	315.77	5,105.3	1,887.3	-560.6	1,816.7	0.00	0.00	0.00
7,800.0	89.73	315.77	5,105.8	1,959.0	-630.4	1,916.3	0.00	0.00	0.00
7,900.0	89.73	315.77	5,106.3	2,030.6	-700.1	2,016.0	0.00	0.00	0.00
8,000.0	89.73	315.77	5,106.7	2,102.3	-769.9	2,115.6	0.00	0.00	0.00
8,100.0	89.73	315.77	5,107.2	2,173.9	-839.6	2,215.2	0.00	0.00	0.00
8,200.0	89.73	315.77	5,107.7	2,245.6	-909.4	2,314.8	0.00	0.00	0.00
8,300.0	89.73	315.77	5,108.1	2,317.2	-979.2	2,414.4	0.00	0.00	0.00
8,400.0	89.73	315.77	5,108.6	2,388.9	-1,048.9	2,514.0	0.00	0.00	0.00
8,500.0	89.73	315.77	5,109.1	2,460.5	-1,118.7	2,613.6	0.00	0.00	0.00
8,600.0	89.73	315.77	5,109.6	2,532.2	-1,188.4	2,713.3	0.00	0.00	0.00
8,700.0	89.73	315.77	5,110.0	2,603.8	-1,258.2	2,812.9	0.00	0.00	0.00
8,800.0	89.73	315.77	5,110.5	2,675.5	-1,327.9	2,912.5	0.00	0.00	0.00
8,900.0	89.73	315.77	5,111.0	2,747.1	-1,397.7	3,012.1	0.00	0.00	0.00
9,000.0	89.73	315.77	5,111.4	2,818.8	-1,467.4	3,111.7	0.00	0.00	0.00
9,100.0	89.73	315.77	5,111.9	2,890.4	-1,537.2	3,211.3	0.00	0.00	0.00
9,200.0	89.73	315.77	5,112.4	2,962.1	-1,607.0	3,311.0	0.00	0.00	0.00
9,300.0	89.73	315.77	5,112.8	3,033.7	-1,676.7	3,410.6	0.00	0.00	0.00
9,400.0	89.73	315.77	5,113.3	3,105.4	-1,746.5	3,510.2	0.00	0.00	0.00
9,500.0	89.73	315.77	5,113.8	3,177.0	-1,816.2	3,609.8	0.00	0.00	0.00
9,600.0	89.73	315.77	5,114.2	3,248.7	-1,886.0	3,709.4	0.00	0.00	0.00
9,700.0	89.73	315.77	5,114.7	3,320.3	-1,955.7	3,809.0	0.00	0.00	0.00
9,800.0	89.73	315.77	5,115.2	3,392.0	-2,025.5	3,908.6	0.00	0.00	0.00
9,900.0	89.73	315.77	5,115.6	3,463.6	-2,095.2	4,008.3	0.00	0.00	0.00
10,000.0	89.73	315.77	5,116.1	3,535.3	-2,165.0	4,107.9	0.00	0.00	0.00
10,100.0	89.73	315.77	5,116.6	3,606.9	-2,234.8	4,207.5	0.00	0.00	0.00
10,200.0	89.73	315.77	5,117.1	3,678.6	-2,304.5	4,307.1	0.00	0.00	0.00
10,300.0	89.73	315.77	5,117.5	3,750.2	-2,374.3	4,406.7	0.00	0.00	0.00
10,400.0	89.73	315.77	5,118.0	3,821.9	-2,444.0	4,506.3	0.00	0.00	0.00
10,500.0	89.73	315.77	5,118.5	3,893.5	-2,513.8	4,606.0	0.00	0.00	0.00
10,600.0	89.73	315.77	5,118.9	3,965.2	-2,583.5	4,705.6	0.00	0.00	0.00
10,700.0	89.73	315.77	5,119.4	4,036.8	-2,653.3	4,805.2	0.00	0.00	0.00
10,800.0	89.73	315.77	5,119.9	4,108.5	-2,723.1	4,904.8	0.00	0.00	0.00
10,900.0	89.73	315.77	5,120.3	4,180.1	-2,792.8	5,004.4	0.00	0.00	0.00
11,000.0	89.73	315.77	5,120.8	4,251.8	-2,862.6	5,104.0	0.00	0.00	0.00
11,100.0	89.73	315.77	5,121.3	4,323.4	-2,932.3	5,203.6	0.00	0.00	0.00
11,200.0	89.73	315.77	5,121.7	4,395.1	-3,002.1	5,303.3	0.00	0.00	0.00
11,300.0	89.73	315.77	5,122.2	4,466.7	-3,071.8	5,402.9	0.00	0.00	0.00





# Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

## 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)
11,400.0	89.73	315.77	5,122.7	4,538.4	-3,141.6	5,502.5	0.00	0.00	0.00
11,500.0	89.73	315.77	5,123.2	4,610.0	-3,211.3	5,602.1	0.00	0.00	0.00
11,600.0	89.73	315.77	5,123.6	4,681.7	-3,281.1	5,701.7	0.00	0.00	0.00
11,700.0	89.73	315.77	5,124.1	4,753.3	-3,350.9	5,801.3	0.00	0.00	0.00
11,800.0	89.73	315.77	5,124.6	4,825.0	-3,420.6	5,901.0	0.00	0.00	0.00
11,900.0	89.73	315.77	5,125.0	4,896.7	-3,490.4	6,000.6	0.00	0.00	0.00
12,000.0	89.73	315.77	5,125.5	4,968.3	-3,560.1	6,100.2	0.00	0.00	0.00
12,100.0	89.73	315.77	5,126.0	5,040.0	-3,629.9	6,199.8	0.00	0.00	0.00
12,200.0	89.73	315.77	5,126.4	5,111.6	-3,699.6	6,299.4	0.00	0.00	0.00
12,300.0	89.73	315.77	5,126.9	5,183.3	-3,769.4	6,399.0	0.00	0.00	0.00
12,400.0	89.73	315.77	5,127.4	5,254.9	-3,839.2	6,498.6	0.00	0.00	0.00
12,500.0	89.73	315.77	5,127.8	5,326.6	-3,908.9	6,598.3	0.00	0.00	0.00
12,600.0	89.73	315.77	5,128.3	5,398.2	-3,978.7	6,697.9	0.00	0.00	0.00
12,700.0	89.73	315.77	5,128.8	5,469.9	-4,048.4	6,797.5	0.00	0.00	0.00
12,800.0	89.73	315.77	5,129.3	5,541.5	-4,118.2	6,897.1	0.00	0.00	0.00
12,900.0	89.73	315.77	5,129.7	5,613.2	-4,187.9	6,996.7	0.00	0.00	0.00
13,000.0	89.73	315.77	5,130.2	5,684.8	-4,257.7	7,096.3	0.00	0.00	0.00
13,100.0	89.73	315.77	5,130.7	5,756.5	-4,327.4	7,196.0	0.00	0.00	0.00
13,200.0	89.73	315.77	5,131.1	5,828.1	-4,397.2	7,295.6	0.00	0.00	0.00
13,300.0	89.73	315.77	5,131.6	5,899.8	-4,467.0	7,395.2	0.00	0.00	0.00
13,400.0	89.73	315.77	5,132.1	5,971.4	-4,536.7	7,494.8	0.00	0.00	0.00
13,500.0	89.73	315.77	5,132.5	6,043.1	-4,606.5	7,594.4	0.00	0.00	0.00
13,600.0	89.73	315.77	5,133.0	6,114.7	-4,676.2	7,694.0	0.00	0.00	0.00
13,700.0	89.73	315.77	5,133.5	6,186.4	-4,746.0	7,793.6	0.00	0.00	0.00
13,800.0	89.73	315.77	5,133.9	6,258.0	-4,815.7	7,893.3	0.00	0.00	0.00
13,900.0	89.73	315.77	5,134.4	6,329.7	-4,885.5	7,992.9	0.00	0.00	0.00
14,000.0	89.73	315.77	5,134.9	6,401.3	-4,955.2	8,092.5	0.00	0.00	0.00
14,100.0	89.73	315.77	5,135.3	6,473.0	-5,025.0	8,192.1	0.00	0.00	0.00
14,200.0	89.73	315.77	5,135.8	6,544.6	-5,094.8	8,291.7	0.00	0.00	0.00
14,300.0	89.73	315.77	5,136.3	6,616.3	-5,164.5	8,391.3	0.00	0.00	0.00
14,400.0	89.73	315.77	5,136.8	6,687.9	-5,234.3	8,490.9	0.00	0.00	0.00
14,500.0	89.73	315.77	5,137.2	6,759.6	-5,304.0	8,590.6	0.00	0.00	0.00
14,600.0	89.73	315.77	5,137.7	6,831.2	-5,373.8	8,690.2	0.00	0.00	0.00
14,700.0	89.73	315.77	5,138.2	6,902.9	-5,443.5	8,789.8	0.00	0.00	0.00
14,800.0	89.73	315.77	5,138.6	6,974.5	-5,513.3	8,889.4	0.00	0.00	0.00
14,900.0	89.73	315.77	5,139.1	7,046.2	-5,583.1	8,989.0	0.00	0.00	0.00
15,000.0	89.73	315.77	5,139.6	7,117.8	-5,652.8	9,088.6	0.00	0.00	0.00
15,100.0	89.73	315.77	5,140.0	7,189.5	-5,722.6	9,188.3	0.00	0.00	0.00
15,200.0	89.73	315.77	5,140.5	7,261.1	-5,792.3	9,287.9	0.00	0.00	0.00
15,300.0	89.73	315.77	5,141.0	7,332.8	-5,862.1	9,387.5	0.00	0.00	0.00
15,400.0	89.73	315.77	5,141.4	7,404.4	-5,931.8	9,487.1	0.00	0.00	0.00
15,500.0	89.73	315.77	5,141.9	7,476.1	-6,001.6	9,586.7	0.00	0.00	0.00
15,600.0	89.73	315.77	5,142.4	7,547.7	-6,071.3	9,686.3	0.00	0.00	0.00
15,700.0	89.73	315.77	5,142.9	7,619.4	-6,141.1	9,785.9	0.00	0.00	0.00
15,800.0	89.73	315.77	5,143.3	7,691.0	-6,210.9	9,885.6	0.00	0.00	0.00
15,900.0	89.73	315.77	5,143.8	7,762.7	-6,280.6	9,985.2	0.00	0.00	0.00
16,000.0	89.73	315.77	5,144.3	7,834.3	-6,350.4	10,084.8	0.00	0.00	0.00
16,100.0	89.73	315.77	5,144.7	7,906.0	-6,420.1	10,184.4	0.00	0.00	0.00
16,200.0	89.73	315.77	5,145.2	7,977.6	-6,489.9	10,284.0	0.00	0.00	0.00
16,300.0	89.73	315.77	5,145.7	8,049.3	-6,559.6	10,383.6	0.00	0.00	0.00
16,370.8	89.73	315.77	5,146.0	8,100.0	-6,609.0	10,454.1	0.00	0.00	0.00





## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 370H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit	<b>MD Reference:</b>	KB @ 7056.0usft (Original Well Elev)
<b>Site:</b>	368H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	370H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
370H KOP2 - hit/miss target - Shape - plan hits target center - Point	0.00	360.00	4,400.0	-200.0	1,000.0	1,863,709.75	1,274,137.60	36.115682°N	107.490124°W
370H POE2 - plan hits target center - Point	0.00	360.00	5,096.0	462.0	827.0	1,864,371.75	1,273,964.60	36.117494°N	107.490738°W
370H BHL2 - plan hits target center - Point	0.00	360.00	5,146.0	8,100.0	-6,609.0	1,872,009.75	1,266,528.60	36.138208°N	107.516246°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	
3,192.9	3,103.0	9 5/8"	9-5/8	12-1/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
956.0	956.0	Ojo Alamo		0.00		
1,046.0	1,046.0	Kirtland		0.00		
1,226.0	1,226.0	Fruitland		0.00		
1,507.3	1,506.0	Pictured Cliffs		0.00		
1,655.3	1,651.0	Lewis		0.00		
1,908.9	1,893.0	Chacra		0.00		
3,047.6	2,966.0	Cliff House		0.00		
3,086.8	3,003.0	Menefee		0.00		
4,013.3	3,876.0	Point Lookout		0.00		
4,167.1	4,021.0	Mancos		0.00		
4,538.6	4,371.0	Gallup (MNCS A)		0.00		
4,654.3	4,481.0	MNCS_B		0.00		
4,742.5	4,566.0	MNCS_C		0.00		
4,781.2	4,603.0	MNCS_Cms		0.00		
4,924.8	4,736.0	MNCS_D		0.00		
5,101.6	4,881.0	MNCS_E		0.00		
5,180.8	4,936.0	MNCS_F		0.00		
5,293.8	5,001.0	MNCS_G		0.00		
5,470.4	5,066.0	MNCS_H		0.00		



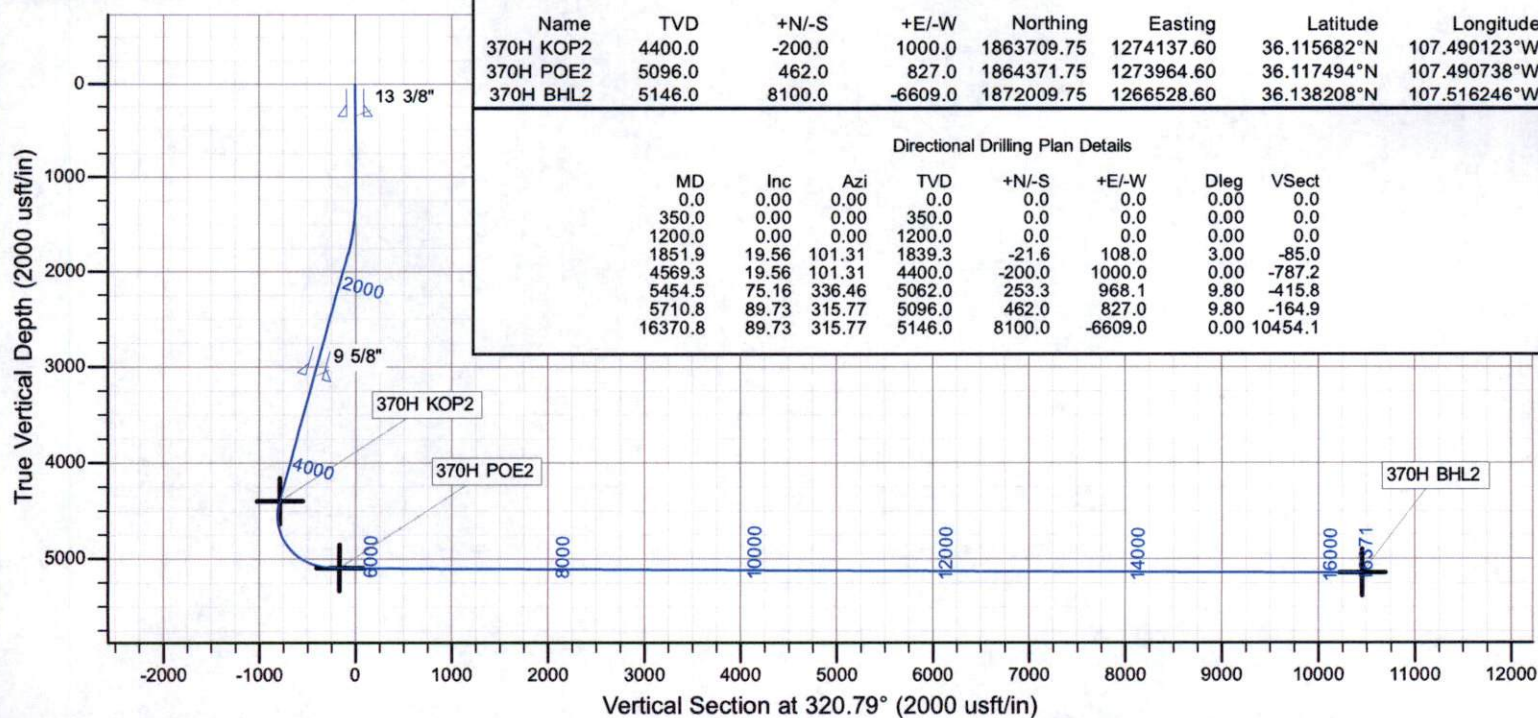
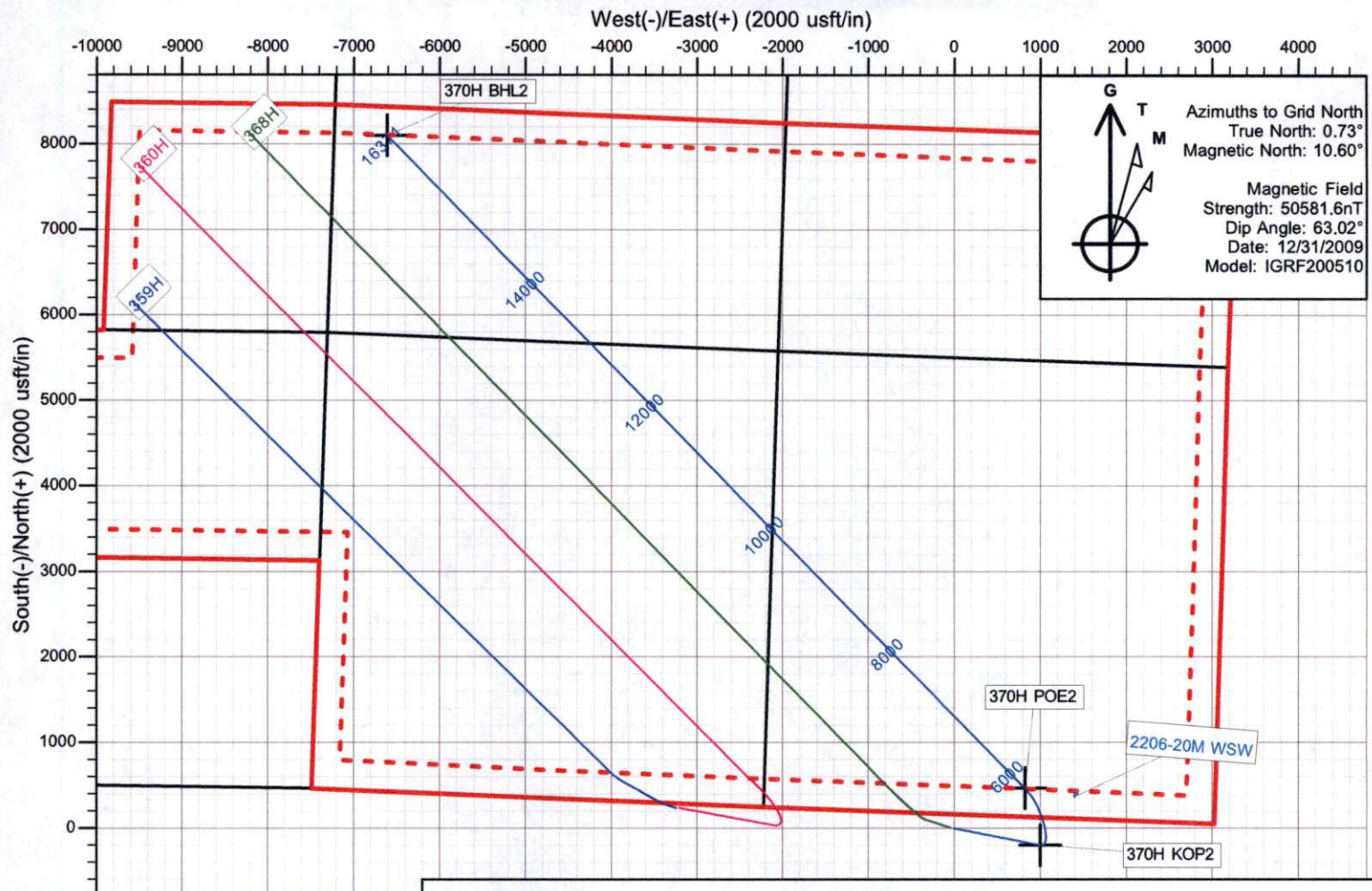


Enduring Resources LLC

Directional Drilling Plan  
Plan View & Section View

S Escavada Unit 370H

Sandoval County, New Mexico  
T22N-R06W-Sec.29-Lot C  
Surface Latitude: 36.116196°N  
Surface Longitude: 107.493517°W  
Ground Level: 7028.0  
Reference Elevation: KB @ 7056.0usft (Original Well Elev)







# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Farmington District Office  
6251 College Blvd. Suite A  
Farmington, New Mexico 87402  
[www.blm.gov/nm](http://www.blm.gov/nm)



In Reply Refer To:  
3162.3-1(NMF0110)

\* Enduring Resources LLC  
#370H S Escavada Unit  
Lease: NMNM119281 Unit: NMNM138012A  
SH: NE $\frac{1}{4}$ NW $\frac{1}{4}$  Section 29, T.22 N., R.6 W.  
BH: NW $\frac{1}{4}$ SW $\frac{1}{4}$  Section 18, T.22 N., R.69 W.  
Sandoval County, New Mexico

**\*Above Data Required on Well Sign**

## GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

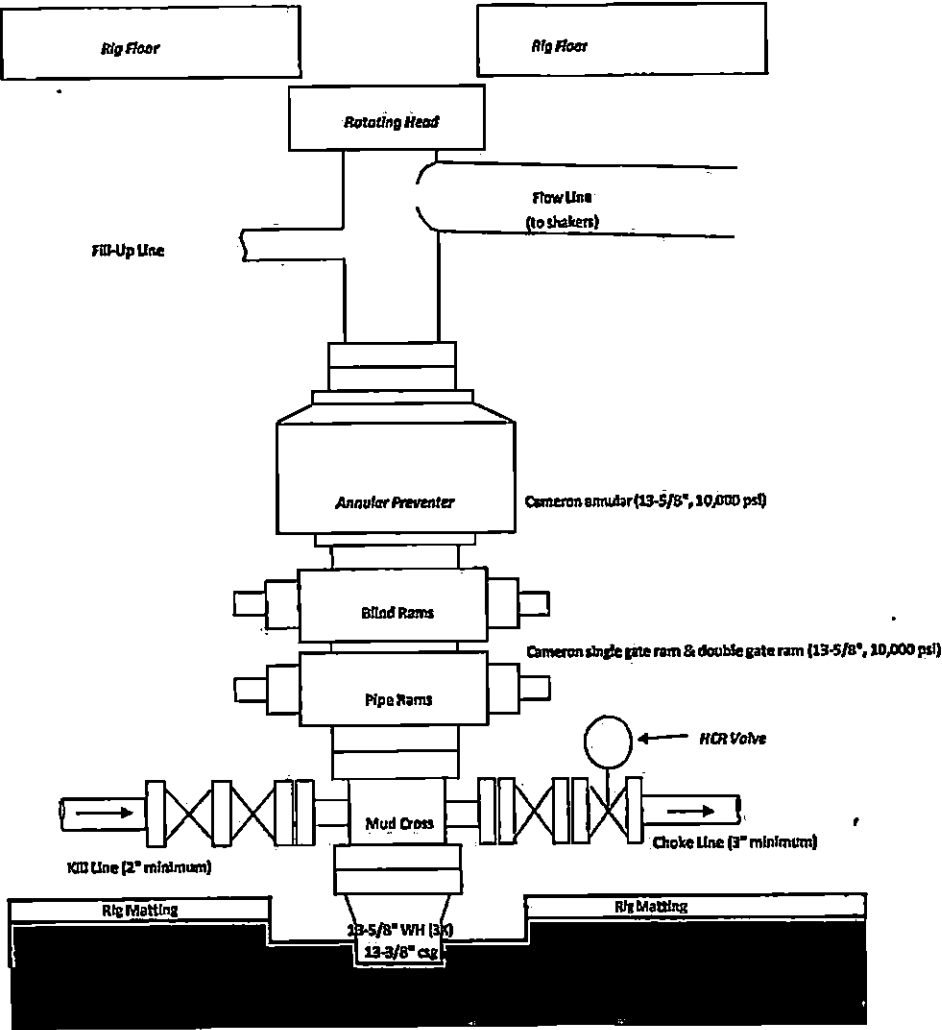
The following special requirements apply and are effective when **checked**:

- A. ☒ Note all surface/drilling conditions of approval attached.
- B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated
- C. ☐ Test the surface casing to a minimum of \_\_\_\_\_ psi for 30 minutes.
- D. ☐ Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.
- E. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, Farmington District Office, Branch of Reservoir Management, 6251 College Blvd. Suite A, Farmington, New Mexico 87402. The effective date of the agreement must be **prior** to any sales.
- F. ☒ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
  2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
  3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

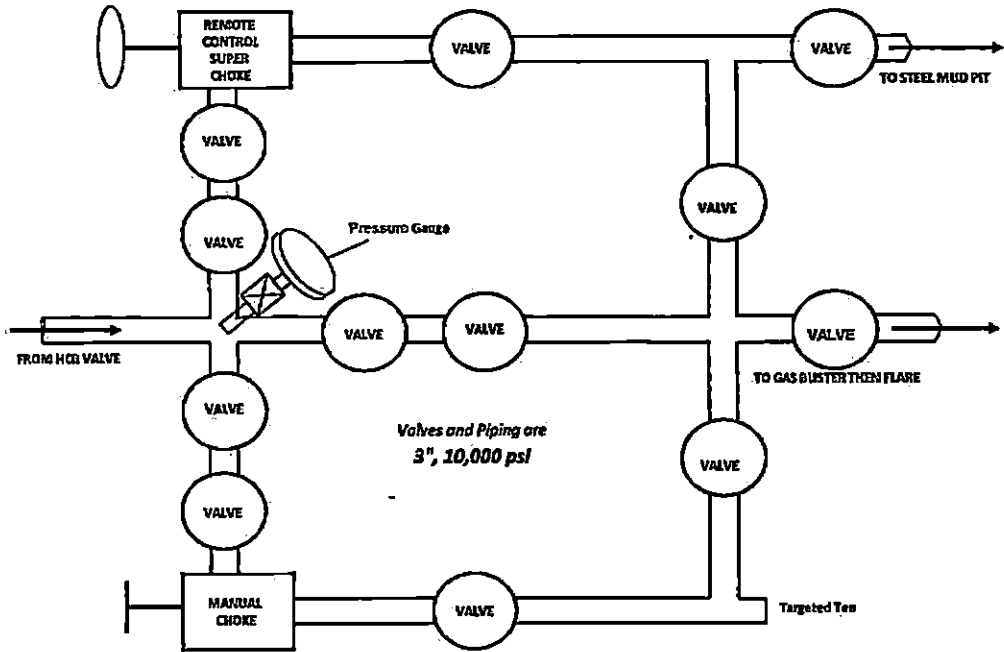
### I. GENERAL

**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 #370H**

**163' FNL & 2230' FWL, Section 29, T22N, R6W, N.M.P.M., Sandoval County, NM**

**Latitude: 36.116196°N Longitude: 107.493517°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 4.9 miles to fork in roadway;

Go Right (Westerly) exiting Indian Service Route #46 for 0.3 miles to begin proposed access on right-hand side of roadway which continues for an additional 135.1' to staked Enduring S Escavada Unit #370H location.

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original  
to Appropriate  
District Office

### GAS CAPTURE PLAN

Date: May 14, 2019

☒ Original Operator & OGRID No.: Enduring Resources IV LLC OGRID No. 372286  
☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

*Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

#### Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
S ESCAVADA UNIT #370H	Pending APD approval	Sec. 29, T22N, R6W	UL: C SHL: 163' FNL & 2230' FWL	500	Flared	
S ESCAVADA UNIT #368H	Pending APD approval	Sec. 29, T22N, R6W	UL: C SHL: 160' FNL & 2190' FWL	500	Flared	

#### Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to NA and will be connected to See Below low/high pressure gathering system located in Sandoval County, New Mexico. It will require 7674.6 of pipeline to connect the facility to low/high pressure gathering system. Enduring Resources provides (periodically) to See Below a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Enduring Resources and See Below have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at See Below Processing Plant located in Sec. See Below, Twn. \_\_\_\_\_, Rng. \_\_\_\_\_, \_\_\_\_\_ County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

#### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on See Below system at that time. Based on current information, it is Enduring Resources belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

#### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines



- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

#### **Enduring Resources IV LLC:**

##### **Gas Capture Plan: Gas Transporter Processing Plant Information**

Enduring Resources IV LLC has the ability to deliver to the below listed Gas Processing Plants at any time with the gathering infrastructure that is in place today.

##### **1. Harvest Midstream**

Section 22, T35N, R9W

La Plata County

Colorado