

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: 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

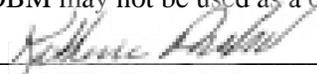
Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the freshwater zone or zones and shall immediately set in cement the water protection string

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

5. Lease Serial No.
NMNM119281

6. If Indian, Allottee or Tribe Name

1a. Type of work: DRILL REENTER
1b. Type of Well: Oil Well Gas Well Other
1c. Type of Completion: Hydraulic Fracturing Single Zone Multiple Zone

7. If Unit or CA Agreement, Name and No.
NMNM130812A

8. Lease Name and Well No.
S ESCAVADA UNIT
370H

2. Name of Operator
ENDURING RESOURCES LLC

9. API Well No.
30.043.21332

3a. Address
1050 17TH ST STE 2500 DENVER CO 80265

3b. Phone No. (include area code)
(505)386-8205

10. Field and Pool, or Exploratory
MANCOS / RUSTY GALLUP OIL POOL

4. Location of Well (Report location clearly and in accordance with any State requirements. *)
At surface NENW / 163 FNL / 2230 FWL / LAT 36.116196 / LONG -107.493517
At proposed prod. zone NWSW / 2334 FSL / 619 FWL / LAT 36.138208 / LONG -107.516246

11. Sec., T, R, M. or Blk. and Survey or Area
SEC 29 / T22N / R6W / NMP

14. Distance in miles and direction from nearest town or post office*
53.9 miles

12. County or Parish
SANDOVAL

13. State
NM

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
640

17. Spacing Unit dedicated to this well
480.68

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
163 feet

19. Proposed Depth
5146 feet / 16371 feet

20. BLM/BIA Bond No. in file
FED: NMB001492

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7028 feet

22. Approximate date work will start*
07/01/2019

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)947-1704

Date
05/15/2019

Title
Permitting Specialist

Approved by (Signature)
(Electronic Submission)

Name (Printed/Typed)
Richard Fields / Ph: (505)564-7612

Date
03/18/2020

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.



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

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

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21332		*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'

¹⁰ Surface Location

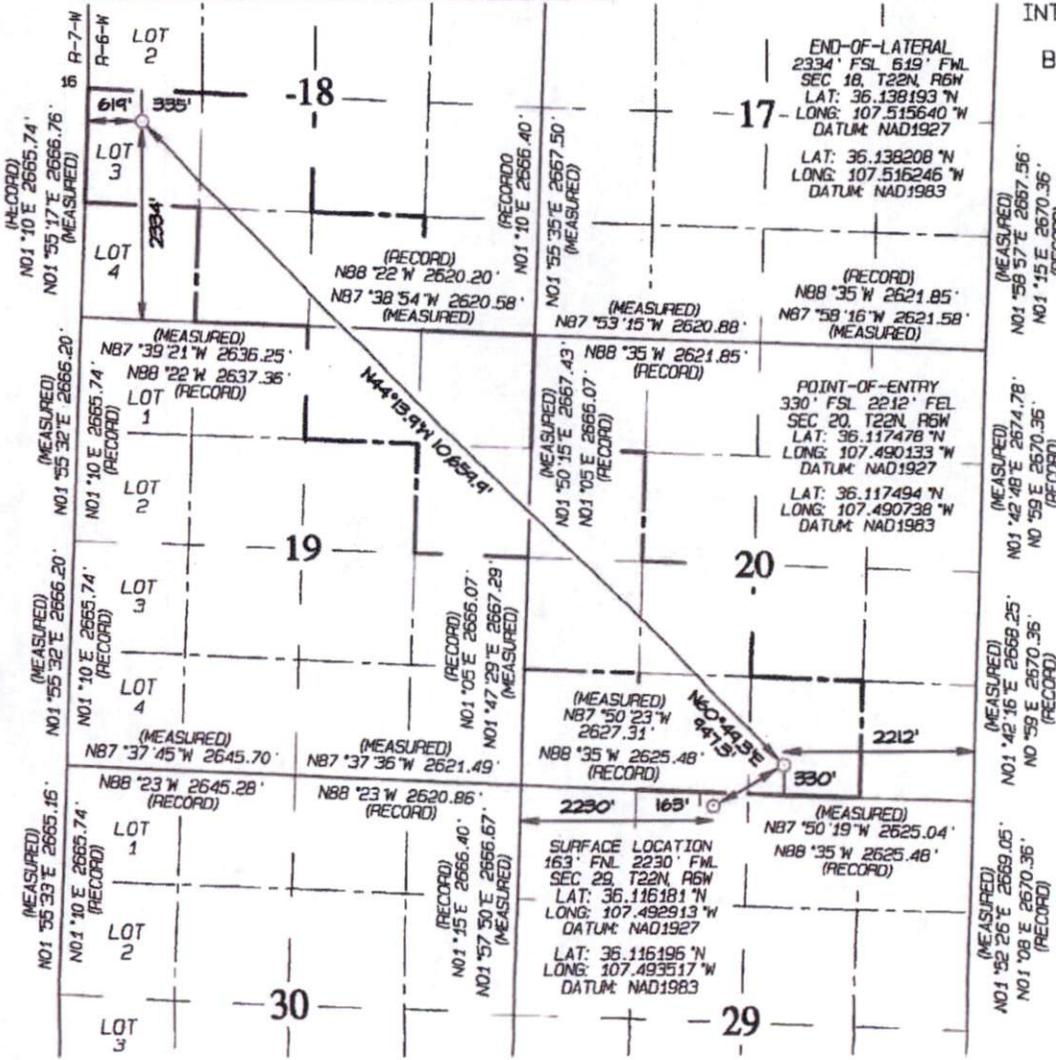
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	29	22N	6W		163	NORTH	2230	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	18	22N	6W	3	2334	SOUTH	619	WEST	SANDOVAL

¹² 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 NW/4 SW/4 - Section 18 480.68	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14347
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NO ALLOWABLE WILL BE ASSIGNED
TO THIS COMPLETION UNTIL ALL
INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS
BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION

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

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

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	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

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; 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:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimize the amount of fluids and solids that require disposal.

Fluid Disposal: Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal: Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for specifics.

DETAILED DRILLING PLAN:

SURFACE: Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.

0 ft (MD)	to	350 ft (MD)	Hole Section Length:	350 ft
0 ft (TVD)	to	350 ft (TVD)	Casing Required:	350 ft

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, deviation survey

Logging: None

Casing Specs:	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	J-55	BTC	1,130	2,730	853,000	909,000
Loading				153	672	116,634	116,634
Mln. S.F.				7.39	4.06	7.31	7.79

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

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

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

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

Make-up as per API Buttress Connection running procedure.

Casing 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	1.180	5.24	0.6946	100%	0	412

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

Halliburton HALCEM surface cementing blend

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out (estimated minimum WOC time is 6 hours).

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:	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				1,355	1,267	200,240	200,240
Min. S.F.				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.

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					2,542	8,982	340,154	340,154
Min. S.F.					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

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	10.11	50%	0	894
Tail	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 ECONOCEM & EXTENDACEM 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

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

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	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

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

Design	Design #2			
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	320.79

Plan Survey Tool Program	Date	5/8/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	16,370.8 Design #2 (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	
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

Database:	EDM	Local Co-ordinate Reference:	Well 370H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 7056.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 7056.0usft (Original Well Elev)
Site:	368H Pad	North Reference:	Grid
Well:	370H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	
13 3/8"										
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	
Ojo Alamo										
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	
Kirtland										
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	
Fruitland										
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	
Pictured Cliffs										
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	
Lewis										
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	
Chacra										
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	
Cliff House										
3,086.8	19.56	101.31	3,003.0	-102.7	513.4	-404.1	0.00	0.00	0.00	
Menefee										
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	
9 5/8"										



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well 370H
Company:	Enduring Resources LLC	TVD Reference:	KB @ 7056.0usft (Original Well Elev)
Project:	San Juan Basin - S Escavada Unit	MD Reference:	KB @ 7056.0usft (Original Well Elev)
Site:	368H Pad	North Reference:	Grid
Well:	370H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	
Point Lookout										
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	
Mancos										
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	
Gallup (MNCS A)										
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	
MNCS_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	
MNCS_C										
4,781.2	17.61	32.67	4,603.0	-179.8	1,052.6	-804.7	9.80	3.80	-31.22	
MNCS_Cms										
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	
MNCS_D										
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	
MNCS_E										
5,180.8	49.61	345.85	4,936.0	26.8	1,047.9	-641.7	9.80	9.10	-5.06	
MNCS_F										
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	
MNCS_G										
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	
MNCS_H										
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

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

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

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

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target - Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
370H KOP2 - 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	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
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	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
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		

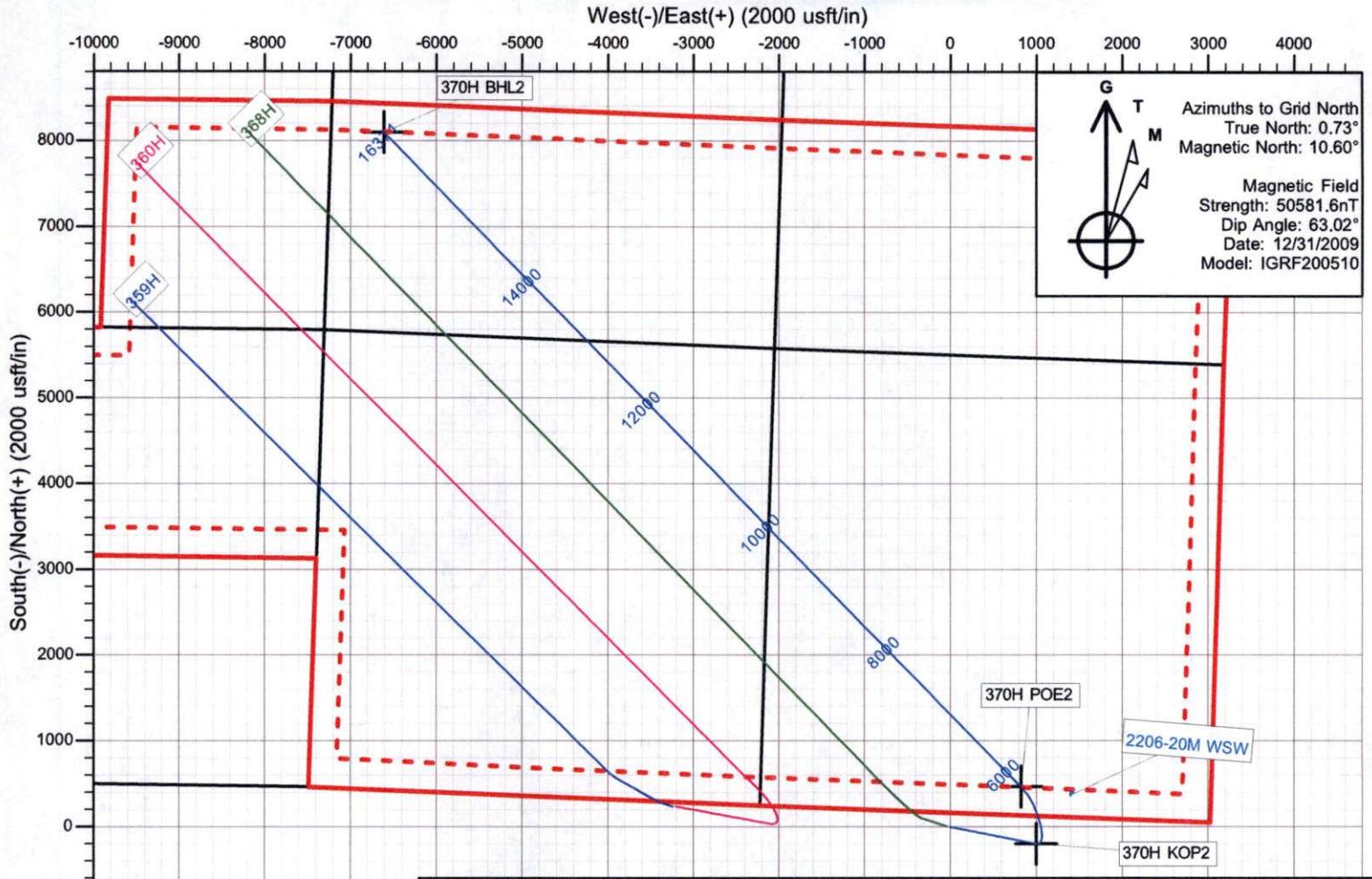


Enduring Resources LLC

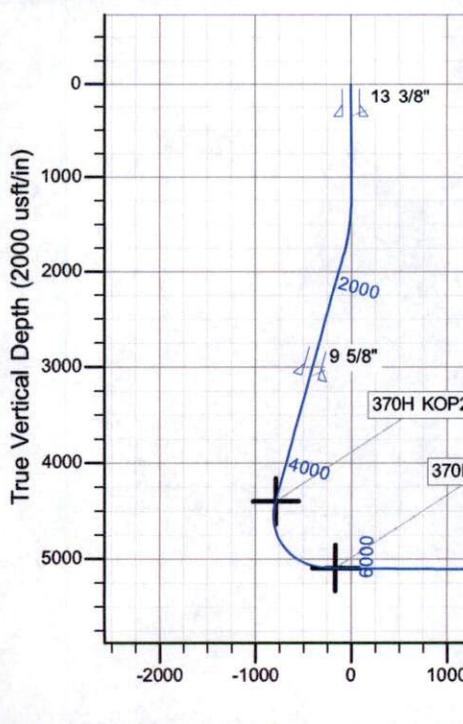
Directional Drilling Plan
Plan View & Section View

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)



G ↑ **T**
 ↑ **M**
 Azimuths to Grid North
 True North: 0.73°
 Magnetic North: 10.60°
 Magnetic Field
 Strength: 50581.6nT
 Dip Angle: 63.02°
 Date: 12/31/2009
 Model: IGRF200510

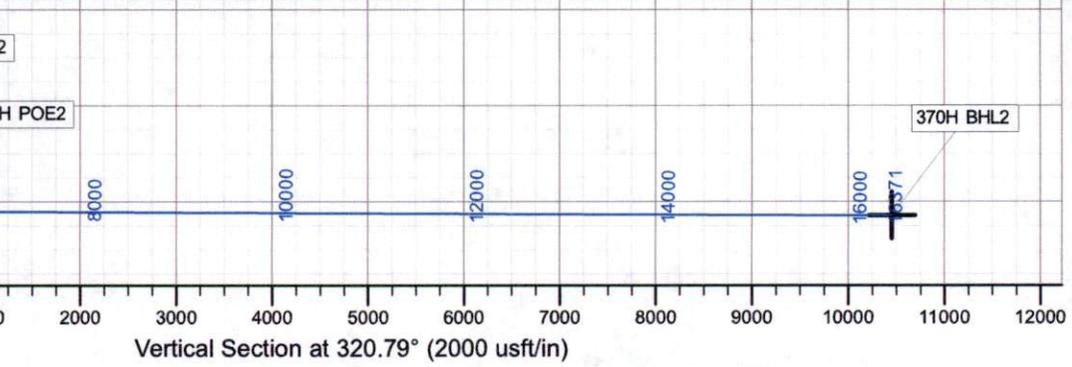


Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
370H KOP2	4400.0	-200.0	1000.0	1863709.75	1274137.60	36.115682°N	107.490123°W
370H POE2	5096.0	462.0	827.0	1864371.75	1273964.60	36.117494°N	107.490738°W
370H BHL2	5146.0	8100.0	-6609.0	1872009.75	1266528.60	36.138208°N	107.516246°W

Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.0
1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.0
1851.9	19.56	101.31	1839.3	-21.6	108.0	3.00	-85.0
4569.3	19.56	101.31	4400.0	-200.0	1000.0	0.00	-787.2
5454.5	75.16	336.46	5062.0	253.3	968.1	9.80	-415.8
5710.8	89.73	315.77	5096.0	462.0	827.0	9.80	-164.9
16370.8	89.73	315.77	5146.0	8100.0	-6609.0	0.00	10454.1





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

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

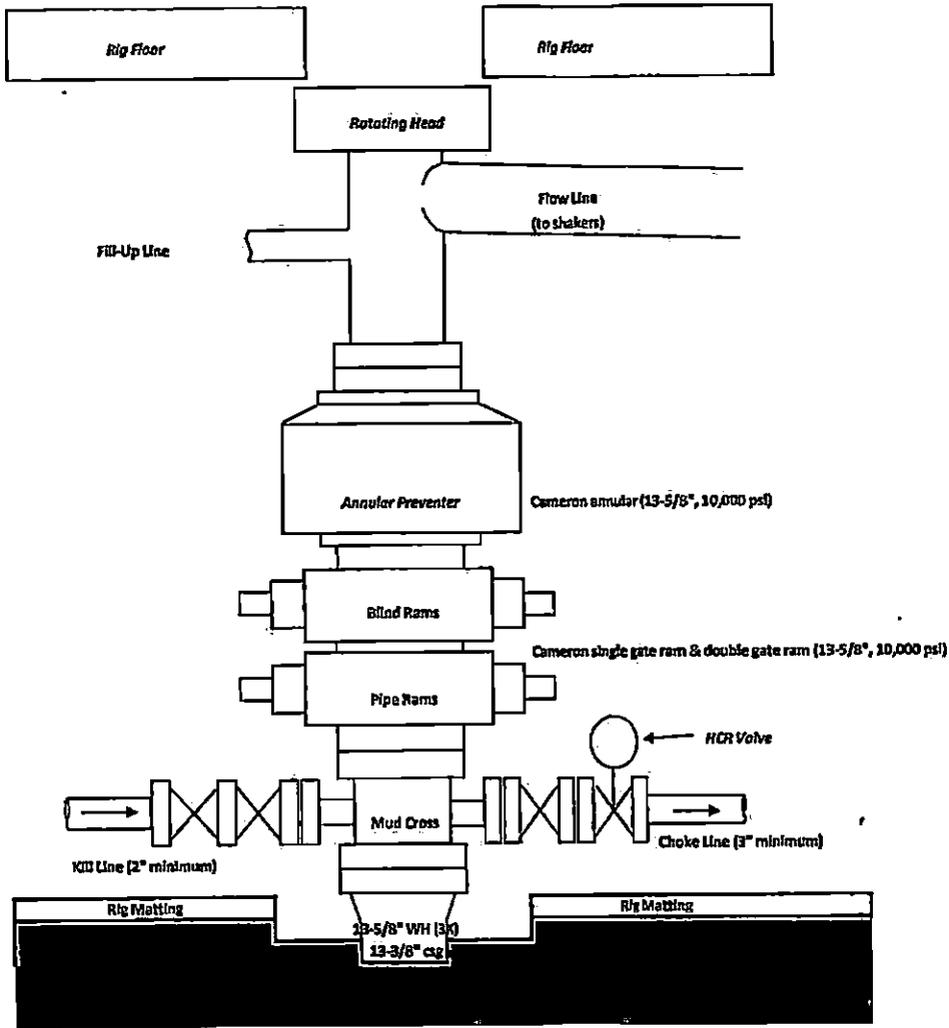
The following special requirements apply and are effective when **checked**:

- 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.

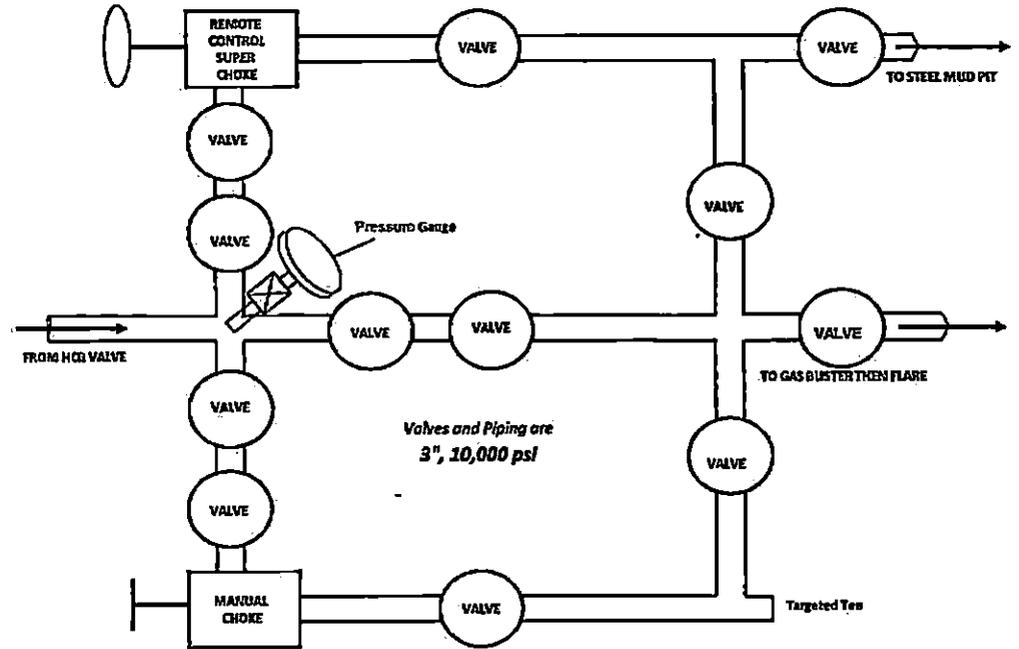
I. GENERAL

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, recomple 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