

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, 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 3160-5 form.

Operator Signature Date: Original APD 6/6/2017 **Sundry Date 11/20/2018**
Enduring Resources, LLC
30-043-21309 W ESCAVADA UNIT #305H

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

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

December 3, 2018

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- ✓ 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.
- ✓ Comply with current regulations at time of spud
Prior to production operator needs to be in compliance with RULE 19.15.5.9



NMOCD Approved by Signature

12/3/18

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

NOV 20 2018

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

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.

N00C14205382

6. If Indian, Allottee or Tribe Name

Farmington Field Office
Bureau of Land Management

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Enduring Resources IV, LLC

3a. Address

200 Energy Court Farmington NM 87401

3b. Phone No. (include area code)

505-636-9743

7. If Unit of CA/Agreement, Name and/or No.

NMNM135218X

8. Well Name and No.

W ESCAVADA UNIT #305H

9. API Well No.

30-043-21309

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 497' FSL & 220' FWL Sec 17 T22N R7W

SHL: 2301' FSL & 570' FEL Sec 12 T22N R8W

10. Field and Pool or Exploratory Area

ESCAVADA W; MANCOS

11. Country or Parish, State

Sandoval, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water ShutOff
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>Change in Plans</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Enduring Resources IV, LLC requests a change in plans to the drilling program.

Please see attached updated:

C102

Operations Plan

Directional Plan

NMOC

DEC 03 2018

DISTRICT III

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

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Lacey Granillo

Title: Permit Specialist

Signature

Date: 11/20/18

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

PE

Date

11/30/18

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

FFO

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.

NMOC

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

Certificate Number 15269



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

NMOCD

DEC 03 2018

DISTRICT III

14

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

WELL INFORMATION:

Name: W Escavada Unit 305H

API Number: 30-043-21309

State: New Mexico

County: San Juan

Surface Elevation: 6,805 ft ASL (GL) 6,830 ft ASL (KB)

Surface Location: 17-22N-07W Sec-Twn-Rng 497 ft FSL 220 ft FWL
 36.133728 ° N latitude 107.606147 ° W longitude (NAD 83)

BH Location: 12-22N-08W Sec-Twn-Rng 2,301 ft FSL 570 ft FEL
 36.153249 ° N latitude 107.626579 ° W longitude (NAD 83)

Driving Directions: From Bloomfield, NM: South on US Hwy 550 for 48.9 miles to MM 103.1, turn right (south) on Atkins Road for 5.9 miles to 4-way intersection, right (west) exiting Atkins Road onto existing roadway for 1.9 miles to fork, left (southwest) following existing access for 317H and 300H pads for 0.5 miles to fork, left (south) following existing access to 302H pad for 0.8 miles, right (west) for 0.9 miles to 305H pad.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,318	512	512	W	normal
	Kirtland	6,225	605	605	W	normal
	Fruitland	6,018	812	813	G, W	sub
	Pictured Cliffs	5,705	1,125	1,130	G, W	sub
	Lewis	5,500	1,330	1,342	G, W	normal
	Chacra	5,355	1,475	1,495	G, W	normal
	Cliff House	4,280	2,550	2,726	G, W	sub
	Menefee	4,241	2,589	2,772	G, W	normal
	Point Lookout	3,320	3,510	3,857	G, W	normal
	Mancos	3,145	3,685	4,063	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,875	3,955	4,374	O,G	sub (~0.38)
	MNCS_H (TARGET)	2,151	4,679	5,440	O,G	sub (~0.38)
	PROJECTED WELL TD	2,097	4,733	15,712	O,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup

Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations

Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,040 psi

Maximum anticipated surface pressure, assuming partially evacuated hole: 1,020 psi

Temperature: Maximum anticipated BHT is 135 ° F or less

H₂S INFORMATION:

H₂S Zones: Encountering hydrogen-sulfide bearing zones is NOT anticipated.

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

LOGGING, CORING, AND TESTING:

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

MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

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

DRILLING RIG INFORMATION:

Contractor: Aztec

Rig No.: 1000

Draw Works: E80 AC 1,500 hp

Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)

Top Drive: NOV IDS-350PE (350 ton)

Prime Movers: 4 - GE Jenbacher Natural Gas Generator

Pumps: 2 - RS F-1600 (7,500 psi)

BOPE 1: Cameron double gate ram (13-5/8", 3,000 psi)

BOPE 2: Cameron annular (13-5/8", 2,500 psi)

Choke Cameron (4", 10,000 psi)

KB-GL (ft): 25

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

- 1) Rig will be equipped with upper and lower kelly cocks with handles available.
- 2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
- 2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
- 3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
- 4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
- 5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device. The valve will be maintained in the open position and shall only be closed when there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

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

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

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

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

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

DETAILED DRILLING PLAN:

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

0 ft (MD)	to	240 ft (MD)	Hole Section Length:	240 ft
0 ft (TVD)	to	240 ft (TVD)	Casing Required:	240 ft

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

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

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, run deviation survey after drilling

Logging: None

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					105	578	111,406	111,406
Min. S.F.					10.78	4.72	7.66	8.16

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

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

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

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

Make-up as per API Buttress Connection running procedure.

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

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

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

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

Halliburton HALCEM surface cementing blend

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

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

240 ft (MD)	to	2,667 ft (MD)	Hole Section Length:	2,427 ft
240 ft (TVD)	to	2,689 ft (TVD)	Casing Required:	2,667 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 with GR, inclination, and azimuth survey (every 100' at a minimum)

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	453,000
Loading					1,175	1,174	183,727	183,727
Min. S.F.					1.72	3.00	3.07	2.47

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

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

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

MU Torque (ft lbs): Minimum: 3,400 Optimum: 4,530 Maximum: 5,660

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

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	0.3132	40%	0	478
Tail	Class G	15.8	1.148	4.98	0.3132	10%	2,167	150

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

Halliburton ECONOCER & HALCEM cementing blend

Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

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

2,667 ft (MD)	to	15,712 ft (MD)	Hole Section Length:	13,045 ft
2,689 ft (TVD)	to	4,733 ft (TVD)	Casing Required:	15,712 ft

Estimated KOP:	4,198 ft (MD)	3,800 ft (TVD)
Estimated Landing Point (P.O.E.):	5,440 ft (MD)	4,679 ft (TVD)
Estimated Lateral Length:	10,272 ft (MD)	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	OBM as contingency

Hole Size: 8-1/2"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

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

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

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,338	8,943	330,487	330,487

Min. S.F.

3.19

1.19

1.65

1.35

Assumptions: Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): Minimum: 3,470 Optimum: 4,620 Maximum: 5,780

Casing Details: Float shoe, float collar, 2 jts casing, float collar, 1 jt casing, toe-initiation sleeve, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000'. Place Floatation Sub at KOP (+/-). Continue running casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

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

Lateral: estimated 1 centralizer per joints

Curve: estimated 1 centralizer per joint from landing point to KOP

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

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ blend	12.3	1.987	10.16	0.2691	40%	0	689
Tail	G:POZ blend	13.3	1.354	5.94	0.2291	10%	3,800	2,217

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 past applicable setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled past the setback, the toe initiation sleeve and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2). W Escavada Unit Order Number is R-14100.

FINISH WELL: ND BOP, NU WH, RDMO.

COMPLETION AND PRODUCTION PLAN:

Frac: Lateral will be fracture-stimulated in approximately 55 plug-and-perf stages with approximately 225,000 bbls slickwater fluid and 19,000,000 lbs of proppant.

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

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

ESTIMATED START DATES:

Drilling: 12/7/2018

Completion: 1/21/2019

Production: 2/20/2019

Prepared by: Alec Bridge 11/19/2018



NMOCB

DEC 03 2018

DISTRICT III

Enduring Resources LLC

San Juan Basin - West Escavada Unit

305H Pad

305H

Wellbore #1

Plan: Design #1

Standard Planning Report

20 November, 2018



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - West Escavada Unit
Site: 305H Pad
Well: 305H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 305H
TVD Reference: WELL @ 6830.0usft (Original Well Elev)
MD Reference: WELL @ 6830.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	San Juan Basin - West 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	305H Pad, Sandoval County, New Mexico		
Site Position:		Northing:	1,870,737.04 usft
From:	Lat/Long	Easting:	1,239,959.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	36.133728°N
		Longitude:	107.606147°W
		Grid Convergence:	-0.80 °

Well	305H		
Well Position	+N/-S	0.0 usft	Northing: 1,870,737.04 usft
	+E/-W	0.0 usft	Easting: 1,239,959.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 36.133728°N
			Longitude: 107.606147°W
			Ground Level: 6,805.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	12/31/2009	(°)
			9.92
			Dip Angle
			(°)
			63.02
			Field Strength
			(nT)
			50,578.26500842

Design	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			319.68

Plan Survey Tool Program	Date	11/20/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(usft)	(usft)			
1	0.0	15,712.1 Design #1 (Wellbore #1)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Degleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,094.0	31.88	114.90	2,013.0	-182.0	391.9	2.00	2.00	0.00	114.90	
4,198.4	31.88	114.90	3,800.0	-650.0	1,400.0	0.00	0.00	0.00	0.00	305H KOP
4,222.5	33.92	117.27	3,820.2	-655.8	1,411.7	10.00	8.46	9.81	33.20	
5,439.9	89.70	315.26	4,679.0	-188.2	1,197.9	10.00	4.58	-13.31	-158.70	305H POE
15,712.1	89.70	315.26	4,733.0	7,107.8	-6,032.8	0.00	0.00	0.00	0.00	305H BHL



Planning Report

Database: EDM
 Company: Enduring Resources LLC
 Project: San Juan Basin - West Escavada Unit
 Site: 305H Pad
 Well: 305H
 Wellbore #: Wellbore #1
 Design: Design #1

Local Co-ordinate Reference: Well 305H
 TVD Reference: WELL @ 6830.0usft (Original Well Elev)
 MD Reference: WELL @ 6830.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Logleg 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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.00	114.90	600.0	-0.7	1.6	-1.6	2.00	2.00	0.00
700.0	4.00	114.90	699.8	-2.9	6.3	-6.3	2.00	2.00	0.00
800.0	6.00	114.90	799.5	-6.6	14.2	-14.2	2.00	2.00	0.00
900.0	8.00	114.90	898.7	-11.7	25.3	-25.3	2.00	2.00	0.00
1,000.0	10.00	114.90	997.5	-18.3	39.5	-39.5	2.00	2.00	0.00
1,100.0	12.00	114.90	1,095.6	-26.4	56.8	-56.8	2.00	2.00	0.00
1,200.0	14.00	114.90	1,193.1	-35.8	77.2	-77.3	2.00	2.00	0.00
1,300.0	16.00	114.90	1,289.6	-46.7	100.7	-100.8	2.00	2.00	0.00
1,400.0	18.00	114.90	1,385.3	-59.0	127.2	-127.3	2.00	2.00	0.00
1,500.0	20.00	114.90	1,479.8	-72.8	156.7	-156.9	2.00	2.00	0.00
1,600.0	22.00	114.90	1,573.2	-87.8	189.2	-189.4	2.00	2.00	0.00
1,700.0	24.00	114.90	1,665.2	-104.3	224.6	-224.9	2.00	2.00	0.00
1,800.0	26.00	114.90	1,755.8	-122.1	263.0	-263.3	2.00	2.00	0.00
1,900.0	28.00	114.90	1,844.9	-141.2	304.1	-304.5	2.00	2.00	0.00
2,000.0	30.00	114.90	1,932.4	-161.6	348.1	-348.5	2.00	2.00	0.00
2,094.0	31.88	114.90	2,013.0	-182.0	391.9	-392.4	2.00	2.00	0.00
2,100.0	31.88	114.90	2,018.1	-183.3	394.8	-395.2	0.00	0.00	0.00
2,200.0	31.88	114.90	2,103.0	-205.6	442.7	-443.2	0.00	0.00	0.00
2,300.0	31.88	114.90	2,187.9	-227.8	490.6	-491.2	0.00	0.00	0.00
2,400.0	31.88	114.90	2,272.9	-250.0	538.5	-539.1	0.00	0.00	0.00
2,500.0	31.88	114.90	2,357.8	-272.3	586.4	-587.1	0.00	0.00	0.00
2,600.0	31.88	114.90	2,442.7	-294.5	634.3	-635.0	0.00	0.00	0.00
2,700.0	31.88	114.90	2,527.6	-316.8	682.2	-683.0	0.00	0.00	0.00
2,800.0	31.88	114.90	2,612.5	-339.0	730.1	-730.9	0.00	0.00	0.00
2,900.0	31.88	114.90	2,697.4	-361.2	778.0	-778.9	0.00	0.00	0.00
3,000.0	31.88	114.90	2,782.4	-383.5	825.9	-826.8	0.00	0.00	0.00
3,100.0	31.88	114.90	2,867.3	-405.7	873.8	-874.8	0.00	0.00	0.00
3,200.0	31.88	114.90	2,952.2	-428.0	921.7	-922.7	0.00	0.00	0.00
3,300.0	31.88	114.90	3,037.1	-450.2	969.6	-970.7	0.00	0.00	0.00
3,400.0	31.88	114.90	3,122.0	-472.4	1,017.5	-1,018.6	0.00	0.00	0.00
3,500.0	31.88	114.90	3,206.9	-494.7	1,065.5	-1,066.6	0.00	0.00	0.00
3,600.0	31.88	114.90	3,291.9	-516.9	1,113.4	-1,114.5	0.00	0.00	0.00
3,700.0	31.88	114.90	3,376.8	-539.2	1,161.3	-1,162.5	0.00	0.00	0.00
3,800.0	31.88	114.90	3,461.7	-561.4	1,209.2	-1,210.5	0.00	0.00	0.00
3,900.0	31.88	114.90	3,546.6	-583.6	1,257.1	-1,258.4	0.00	0.00	0.00
4,000.0	31.88	114.90	3,631.5	-605.9	1,305.0	-1,306.4	0.00	0.00	0.00
4,100.0	31.88	114.90	3,716.4	-628.1	1,352.9	-1,354.3	0.00	0.00	0.00
4,198.4	31.88	114.90	3,800.0	-650.0	1,400.0	-1,401.5	0.00	0.00	0.00
4,200.0	32.01	115.07	3,801.4	-650.4	1,400.8	-1,402.3	10.00	8.38	10.33
4,222.5	33.92	117.27	3,820.2	-655.8	1,411.7	-1,413.5	10.00	8.47	9.78
4,300.0	26.82	111.03	3,887.1	-672.0	1,447.3	-1,448.9	10.00	-9.15	-8.04
4,400.0	18.40	96.72	3,979.4	-681.9	1,484.2	-1,480.3	10.00	-8.42	-14.31
4,500.0	12.45	65.58	4,075.9	-679.3	1,509.7	-1,494.9	10.00	-5.95	-31.14
4,600.0	12.99	19.00	4,173.7	-664.2	1,523.2	-1,492.1	10.00	0.54	-46.58
4,700.0	19.48	351.00	4,269.8	-637.0	1,524.3	-1,472.0	10.00	6.50	-28.00
4,800.0	28.07	338.04	4,361.3	-598.6	1,512.8	-1,435.4	10.00	8.58	-12.96
4,900.0	37.32	330.95	4,445.4	-550.2	1,489.3	-1,383.2	10.00	9.25	-7.09



Planning Report

Database: EDM
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Project: San Juan Basin - West Escavada Unit
Site: 305H Pad
Well: 305H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 305H
TVD Reference: WELL @ 6830.0usft (Original Well Elev)
MD Reference: WELL @ 6830.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	46.85	326.38	4,519.5	-493.2	1,454.3	-1,317.0	10.00	9.53	-4.56
5,100.0	56.51	323.07	4,581.5	-429.3	1,408.9	-1,239.0	10.00	9.66	-3.32
5,200.0	66.24	320.42	4,629.3	-360.5	1,354.5	-1,151.4	10.00	9.73	-2.64
5,300.0	76.01	318.15	4,661.6	-288.9	1,292.9	-1,056.9	10.00	9.77	-2.27
5,400.0	85.79	316.07	4,677.4	-216.7	1,225.7	-958.4	10.00	9.79	-2.08
5,439.9	89.70	315.26	4,679.0	-188.2	1,197.9	-918.6	10.00	9.79	-2.03
5,500.0	89.70	315.26	4,679.3	-145.5	1,155.6	-858.7	0.00	0.00	0.00
5,600.0	89.70	315.26	4,679.8	-74.5	1,085.2	-759.0	0.00	0.00	0.00
5,700.0	89.70	315.26	4,680.4	-3.4	1,014.8	-659.3	0.00	0.00	0.00
5,800.0	89.70	315.26	4,680.9	67.6	944.4	-559.6	0.00	0.00	0.00
5,900.0	89.70	315.26	4,681.4	138.6	874.0	-459.9	0.00	0.00	0.00
6,000.0	89.70	315.26	4,681.9	209.6	803.6	-360.2	0.00	0.00	0.00
6,100.0	89.70	315.26	4,682.5	280.7	733.2	-260.5	0.00	0.00	0.00
6,200.0	89.70	315.26	4,683.0	351.7	662.8	-160.8	0.00	0.00	0.00
6,300.0	89.70	315.26	4,683.5	422.7	592.4	-61.1	0.00	0.00	0.00
6,400.0	89.70	315.26	4,684.0	493.7	522.0	38.6	0.00	0.00	0.00
6,500.0	89.70	315.26	4,684.6	564.8	451.7	138.3	0.00	0.00	0.00
6,600.0	89.70	315.26	4,685.1	635.8	381.3	238.0	0.00	0.00	0.00
6,700.0	89.70	315.26	4,685.6	706.8	310.9	337.7	0.00	0.00	0.00
6,800.0	89.70	315.26	4,686.1	777.9	240.5	437.4	0.00	0.00	0.00
6,900.0	89.70	315.26	4,686.7	848.9	170.1	537.1	0.00	0.00	0.00
7,000.0	89.70	315.26	4,687.2	919.9	99.7	636.8	0.00	0.00	0.00
7,100.0	89.70	315.26	4,687.7	990.9	29.3	736.5	0.00	0.00	0.00
7,200.0	89.70	315.26	4,688.3	1,062.0	-41.1	836.2	0.00	0.00	0.00
7,300.0	89.70	315.26	4,688.8	1,133.0	-111.5	935.9	0.00	0.00	0.00
7,400.0	89.70	315.26	4,689.3	1,204.0	-181.9	1,035.6	0.00	0.00	0.00
7,500.0	89.70	315.26	4,689.8	1,275.0	-252.3	1,135.3	0.00	0.00	0.00
7,600.0	89.70	315.26	4,690.4	1,346.1	-322.6	1,235.0	0.00	0.00	0.00
7,700.0	89.70	315.26	4,690.9	1,417.1	-393.0	1,334.7	0.00	0.00	0.00
7,800.0	89.70	315.26	4,691.4	1,488.1	-463.4	1,434.4	0.00	0.00	0.00
7,900.0	89.70	315.26	4,691.9	1,559.1	-533.8	1,534.1	0.00	0.00	0.00
8,000.0	89.70	315.26	4,692.5	1,630.2	-604.2	1,633.8	0.00	0.00	0.00
8,100.0	89.70	315.26	4,693.0	1,701.2	-674.6	1,733.5	0.00	0.00	0.00
8,200.0	89.70	315.26	4,693.5	1,772.2	-745.0	1,833.2	0.00	0.00	0.00
8,300.0	89.70	315.26	4,694.0	1,843.3	-815.4	1,932.9	0.00	0.00	0.00
8,400.0	89.70	315.26	4,694.6	1,914.3	-885.8	2,032.6	0.00	0.00	0.00
8,500.0	89.70	315.26	4,695.1	1,985.3	-956.2	2,132.3	0.00	0.00	0.00
8,600.0	89.70	315.26	4,695.6	2,056.3	-1,026.6	2,232.0	0.00	0.00	0.00
8,700.0	89.70	315.26	4,696.1	2,127.4	-1,096.9	2,331.7	0.00	0.00	0.00
8,800.0	89.70	315.26	4,696.7	2,198.4	-1,167.3	2,431.4	0.00	0.00	0.00
8,900.0	89.70	315.26	4,697.2	2,269.4	-1,237.7	2,531.1	0.00	0.00	0.00
9,000.0	89.70	315.26	4,697.7	2,340.4	-1,308.1	2,630.9	0.00	0.00	0.00
9,100.0	89.70	315.26	4,698.2	2,411.5	-1,378.5	2,730.6	0.00	0.00	0.00
9,200.0	89.70	315.26	4,698.8	2,482.5	-1,448.9	2,830.3	0.00	0.00	0.00
9,300.0	89.70	315.26	4,699.3	2,553.5	-1,519.3	2,930.0	0.00	0.00	0.00
9,400.0	89.70	315.26	4,699.8	2,624.6	-1,589.7	3,029.7	0.00	0.00	0.00
9,500.0	89.70	315.26	4,700.3	2,695.6	-1,660.1	3,129.4	0.00	0.00	0.00
9,600.0	89.70	315.26	4,700.9	2,766.6	-1,730.5	3,229.1	0.00	0.00	0.00
9,700.0	89.70	315.26	4,701.4	2,837.6	-1,800.9	3,328.8	0.00	0.00	0.00
9,800.0	89.70	315.26	4,701.9	2,908.7	-1,871.2	3,428.5	0.00	0.00	0.00
9,900.0	89.70	315.26	4,702.4	2,979.7	-1,941.6	3,528.2	0.00	0.00	0.00
10,000.0	89.70	315.26	4,703.0	3,050.7	-2,012.0	3,627.9	0.00	0.00	0.00
10,100.0	89.70	315.26	4,703.5	3,121.7	-2,082.4	3,727.6	0.00	0.00	0.00
10,200.0	89.70	315.26	4,704.0	3,192.8	-2,152.8	3,827.3	0.00	0.00	0.00



Planning Report

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Well: 305H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 305H
TVD Reference: WELL @ 6630.0usft (Original Well Elev)
MD Reference: WELL @ 6630.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.0	89.70	315.26	4,704.5	3,263.8	-2,223.2	3,927.0	0.00	0.00	0.00
10,400.0	89.70	315.26	4,705.1	3,334.8	-2,293.6	4,026.7	0.00	0.00	0.00
10,500.0	89.70	315.26	4,705.6	3,405.8	-2,364.0	4,126.4	0.00	0.00	0.00
10,600.0	89.70	315.26	4,706.1	3,476.9	-2,434.4	4,226.1	0.00	0.00	0.00
10,700.0	89.70	315.26	4,706.7	3,547.9	-2,504.8	4,325.8	0.00	0.00	0.00
10,800.0	89.70	315.26	4,707.2	3,618.9	-2,575.2	4,425.5	0.00	0.00	0.00
10,900.0	89.70	315.26	4,707.7	3,690.0	-2,645.5	4,525.2	0.00	0.00	0.00
11,000.0	89.70	315.26	4,708.2	3,761.0	-2,715.9	4,624.9	0.00	0.00	0.00
11,100.0	89.70	315.26	4,708.8	3,832.0	-2,786.3	4,724.6	0.00	0.00	0.00
11,200.0	89.70	315.26	4,709.3	3,903.0	-2,856.7	4,824.3	0.00	0.00	0.00
11,300.0	89.70	315.26	4,709.8	3,974.1	-2,927.1	4,924.0	0.00	0.00	0.00
11,400.0	89.70	315.26	4,710.3	4,045.1	-2,997.5	5,023.7	0.00	0.00	0.00
11,500.0	89.70	315.26	4,710.9	4,116.1	-3,067.9	5,123.4	0.00	0.00	0.00
11,600.0	89.70	315.26	4,711.4	4,187.1	-3,138.3	5,223.1	0.00	0.00	0.00
11,700.0	89.70	315.26	4,711.9	4,258.2	-3,208.7	5,322.8	0.00	0.00	0.00
11,800.0	89.70	315.26	4,712.4	4,329.2	-3,279.1	5,422.5	0.00	0.00	0.00
11,900.0	89.70	315.26	4,713.0	4,400.2	-3,349.5	5,522.2	0.00	0.00	0.00
12,000.0	89.70	315.26	4,713.5	4,471.2	-3,419.9	5,621.9	0.00	0.00	0.00
12,100.0	89.70	315.26	4,714.0	4,542.3	-3,490.2	5,721.6	0.00	0.00	0.00
12,200.0	89.70	315.26	4,714.5	4,613.3	-3,560.6	5,821.3	0.00	0.00	0.00
12,300.0	89.70	315.26	4,715.1	4,684.3	-3,631.0	5,921.0	0.00	0.00	0.00
12,400.0	89.70	315.26	4,715.6	4,755.4	-3,701.4	6,020.7	0.00	0.00	0.00
12,500.0	89.70	315.26	4,716.1	4,826.4	-3,771.8	6,120.4	0.00	0.00	0.00
12,600.0	89.70	315.26	4,716.6	4,897.4	-3,842.2	6,220.1	0.00	0.00	0.00
12,700.0	89.70	315.26	4,717.2	4,968.4	-3,912.6	6,319.8	0.00	0.00	0.00
12,800.0	89.70	315.26	4,717.7	5,039.5	-3,983.0	6,419.5	0.00	0.00	0.00
12,900.0	89.70	315.26	4,718.2	5,110.5	-4,053.4	6,519.2	0.00	0.00	0.00
13,000.0	89.70	315.26	4,718.7	5,181.5	-4,123.8	6,618.9	0.00	0.00	0.00
13,100.0	89.70	315.26	4,719.3	5,252.5	-4,194.2	6,718.6	0.00	0.00	0.00
13,200.0	89.70	315.26	4,719.8	5,323.6	-4,264.5	6,818.3	0.00	0.00	0.00
13,300.0	89.70	315.26	4,720.3	5,394.6	-4,334.9	6,918.0	0.00	0.00	0.00
13,400.0	89.70	315.26	4,720.8	5,465.6	-4,405.3	7,017.7	0.00	0.00	0.00
13,500.0	89.70	315.26	4,721.4	5,536.7	-4,475.7	7,117.4	0.00	0.00	0.00
13,600.0	89.70	315.26	4,721.9	5,607.7	-4,546.1	7,217.1	0.00	0.00	0.00
13,700.0	89.70	315.26	4,722.4	5,678.7	-4,616.5	7,316.8	0.00	0.00	0.00
13,800.0	89.70	315.26	4,722.9	5,749.7	-4,686.9	7,416.5	0.00	0.00	0.00
13,900.0	89.70	315.26	4,723.5	5,820.8	-4,757.3	7,516.2	0.00	0.00	0.00
14,000.0	89.70	315.26	4,724.0	5,891.8	-4,827.7	7,615.9	0.00	0.00	0.00
14,100.0	89.70	315.26	4,724.5	5,962.8	-4,898.1	7,715.6	0.00	0.00	0.00
14,200.0	89.70	315.26	4,725.1	6,033.8	-4,968.5	7,815.3	0.00	0.00	0.00
14,300.0	89.70	315.26	4,725.6	6,104.9	-5,038.8	7,915.0	0.00	0.00	0.00
14,400.0	89.70	315.26	4,726.1	6,175.9	-5,109.2	8,014.7	0.00	0.00	0.00
14,500.0	89.70	315.26	4,726.6	6,246.9	-5,179.6	8,114.4	0.00	0.00	0.00
14,600.0	89.70	315.26	4,727.2	6,317.9	-5,250.0	8,214.1	0.00	0.00	0.00
14,700.0	89.70	315.26	4,727.7	6,389.0	-5,320.4	8,313.8	0.00	0.00	0.00
14,800.0	89.70	315.26	4,728.2	6,460.0	-5,390.8	8,413.5	0.00	0.00	0.00
14,900.0	89.70	315.26	4,728.7	6,531.0	-5,461.2	8,513.2	0.00	0.00	0.00
15,000.0	89.70	315.26	4,729.3	6,602.1	-5,531.6	8,612.9	0.00	0.00	0.00
15,100.0	89.70	315.26	4,729.8	6,673.1	-5,602.0	8,712.6	0.00	0.00	0.00
15,200.0	89.70	315.26	4,730.3	6,744.1	-5,672.4	8,812.3	0.00	0.00	0.00
15,300.0	89.70	315.26	4,730.8	6,815.1	-5,742.8	8,912.0	0.00	0.00	0.00
15,400.0	89.70	315.26	4,731.4	6,886.2	-5,813.1	9,011.7	0.00	0.00	0.00
15,500.0	89.70	315.26	4,731.9	6,957.2	-5,883.5	9,111.4	0.00	0.00	0.00
15,600.0	89.70	315.26	4,732.4	7,028.2	-5,953.9	9,211.1	0.00	0.00	0.00



Planning Report

Database: EDM
Company: Enduring Resources LLC
Project: San Juan Basin - West Escavada Unit
Site: 305H Pad
Well: 305H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well 305H
TVD Reference: WELL @ 6830.0usft (Original Well Elev)
MD Reference: WELL @ 6830.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,700.0	89.70	315.26	4,732.9	7,099.2	-8,024.3	9,310.8	0.00	0.00	0.00
15,712.1	89.70	315.26	4,733.0	7,107.8	-8,032.8	9,322.9	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
305H KOP	0.00	0.00	3,800.0	-650.0	1,400.0	1,870,067.56	1,241,349.79	36.131943°N	107.601407°W
- plan hits target center									
- Point									
305H POE	0.00	0.00	4,679.0	-188.2	1,197.9	1,870,532.13	1,241,154.15	36.133211°N	107.602091°W
- plan hits target center									
- Point									
305H BHL	0.00	0.00	4,733.0	7,107.8	-8,032.8	1,877,928.38	1,234,025.99	36.153249°N	107.626579°W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
240.0	240.0	13 3/8"	13-3/8	17-1/2
2,890.1	2,689.0	9 5/8"	9-5/8	12-1/4



Planning Report

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Site: 305H Pad
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Local Co-ordinate Reference: Well 305H
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MD Reference: WELL @ 6830.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
512.0	512.0	Ojo Alamo		0.00	
605.0	605.0	Kirtland		0.00	
812.6	812.0	Fruitland		0.00	
1,130.1	1,125.0	Pictured Cliffs		0.00	
1,342.1	1,330.0	Lewis		0.00	
1,494.9	1,475.0	Chacra		0.00	
2,726.4	2,550.0	Cliff House		0.00	
2,772.3	2,589.0	Menefee		0.00	
3,856.9	3,510.0	Point Lookout		0.00	
4,063.0	3,685.0	Mancos		0.00	
4,374.2	3,955.0	Gallup (Mncs. A)		0.00	
4,488.8	4,065.0	MNCS B		0.00	
4,580.9	4,155.0	MNCS C		0.00	
4,616.8	4,190.0	MNCS Cms		0.00	
4,748.6	4,315.0	MNCS D		0.00	
4,931.6	4,470.0	MNCS E		0.00	
5,000.7	4,520.0	MNCS F		0.00	
5,119.6	4,592.0	MNCS G		0.00	
5,242.5	4,645.0	MNCS H		0.00	
5,439.9	4,679.0	MNCS H (TARGET)		0.00	



Enduring Resources LLC

Directional Drilling Plan
Plan View & Section View

W Escavada Unit 305H

Sandoval County, New Mexico

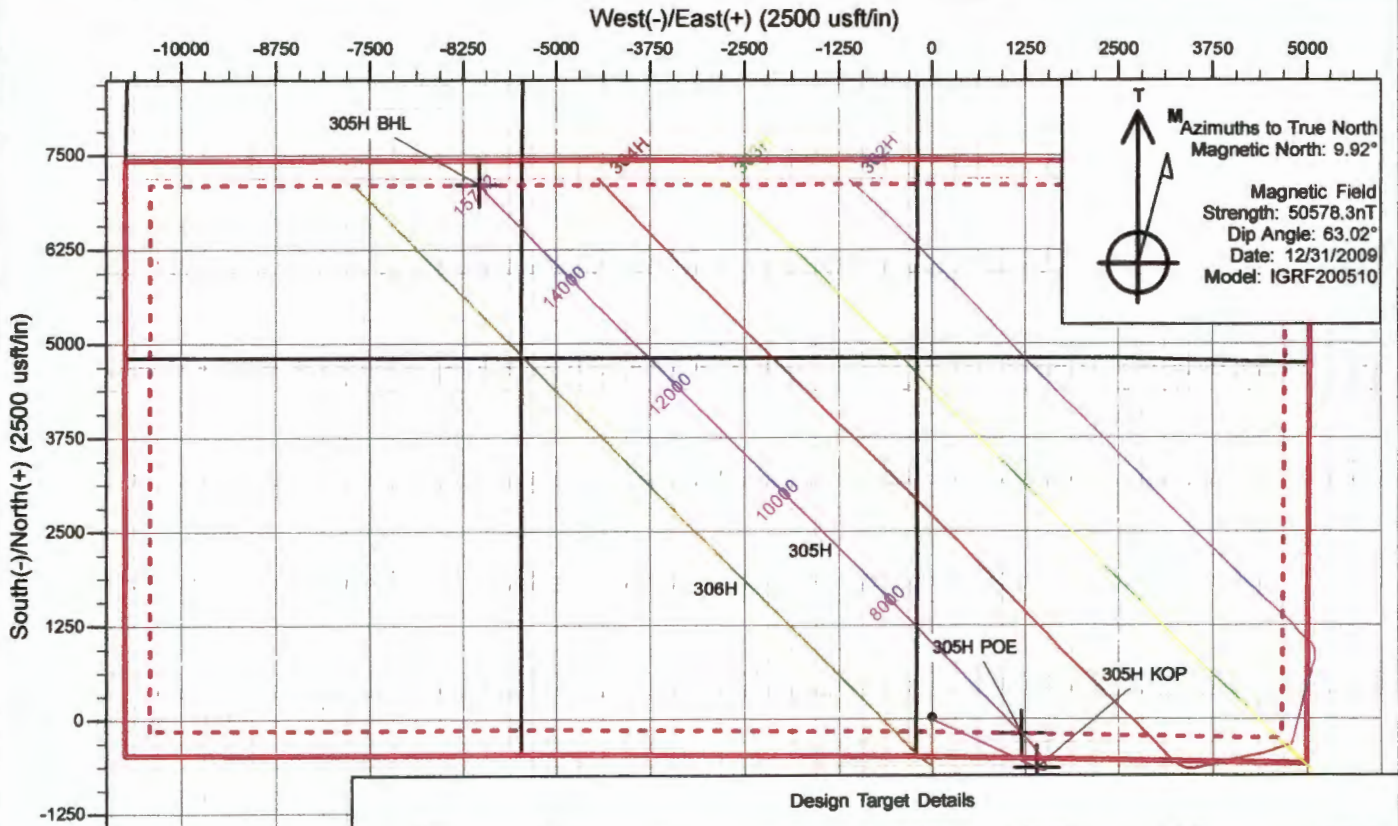
T22N-R07W-Sec.17-Lot M

Surface Latitude: 36.133728°N

Surface Longitude: 107.606147°W

Ground Level: 6805.0

Reference Elevation: WELL @ 6830.0usft (Original Well Elev)



Design Target Details

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
305H KOP	3800.0	-650.0	1400.0	1870067.55	1241349.79	36.131943°N	107.601407°W
305H POE	4679.0	-188.2	1197.9	1870532.13	1241154.15	36.133211°N	107.602091°W
305H BHL	4733.0	7107.8	-6032.8	1877928.37	1234025.99	36.153249°N	107.626579°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
240.0	0.00	0.00	240.0	0.0	0.0	0.00	0.0
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.0
2094.0	31.88	114.90	2013.0	-182.0	391.9	2.00	-392.4
4198.4	31.88	114.90	3800.0	-650.0	1400.0	0.00	-1401.5
4222.5	33.92	117.27	3820.2	-655.8	1411.7	10.00	-1413.5
5439.9	89.70	315.26	4679.0	-188.2	1197.9	10.00	-918.6
15712.1	89.70	315.26	4733.0	7107.8	-6032.8	0.00	9322.9

