	Sundry Print Report
	1975 - 1970 - 2070
Well Location: T23N / R7W / SEC 19 / NENE / 36.21727 / -107.610473	County or Parish/State: SANDOVAL / NM
Type of Well: OIL WELL	Allottee or Tribe Name:
Unit or CA Name: /1/NORTH ALAMITO UNIT	Unit or CA Number: NMNM135229A
Operator: DJR OPERATING LLC	
	NENE / 36.21727 / -107.610473 Type of Well: OIL WELL Unit or CA Name: /1/NORTH ALAMITO UNIT

Notice of Intent

Sundry ID: 2791520

Type of Submission: Notice of Intent

Date Sundry Submitted: 05/20/2024

Date proposed operation will begin: 05/20/2024

Type of Action: APD Change Time Sundry Submitted: 03:00

Procedure Description: DJR respectfully requests approval to change the casing and cement design for the subject well. Attached please find a revised Drilling and Directional Plan; reflecting changes to the lateral length, intermediate/production liner casing size, set depth and cement slurry assumptions. Please note, effective December 21, 2023, Enduring Resources, LLC & DJR Operating, LLC are wholly owned subsidiaries of Enduring Resources, LLC. Leases, rights of way, wells, and other property interests will continue to be held in their current entity names.

NOI Attachments

Procedure Description

102H_Change_to_Slim_Hole_20240520150019.pdf

Received by OCD: 5/21/2024 2:01:57 PM Well Name: NORTH ALAMITO UNIT	Well Location: T23N / R7W / SEC 19 / NENE / 36.21727 / -107.610473	County or Parish/State: SANDOVAL / NM	Page 2 of
Well Number: 102H	Type of Well: OIL WELL	Allottee or Tribe Name:	
Lease Number: NMNM81638	Unit or CA Name: /1/NORTH ALAMITO UNIT	Unit or CA Number: NMNM135229A	
US Well Number: 3004321510	Operator: DJR OPERATING LLC		

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SHAW-MARIE FORD

Name: DJR OPERATING LLC

Title: Regulatory Specialist

Street Address: 1 ROAD 3263

City: AZTEC

State: NM

Phone: (505) 632-3476

Email address: SFORD@ENDURINGRESOURCES.COM

Field

Representative Name: Street Address: City: State: Phone: Email address:

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK BLM POC Phone: 5055647742 Disposition: Approved Signature: Kenneth Rennick BLM POC Title: Petroleum Engineer BLM POC Email Address: krennick@blm.gov

Zip:

Signed on: MAY 20, 2024 03:00 PM

Disposition Date: 05/21/2024

Released to Imaging: 5/21/2024 3:27:40 PM



ENDURING RESOURCES IV, LLC 6300 S SYRACUSE WAY, SUITE 525 **CENTENNIAL, COLORADO 80211**

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

WELL INFORMATION	N:				
Name:	NORTH ALAMITO UNIT 102	2H			
API Number:	30-043-21510				
AFE Number:	DV03211				
ER Well Number:	Not yet assigned				
State:	New Mexico				
County:	Sandoval				
Surface Elevation:	6,962 ft ASL (GL)	6,986 f	ft ASL (KB)		
Surface Location:	19-23N-07W Sec-Twn-Rng	917 f	ft FNL	1,154	ft FEL
	36.21727 ° N latitude	107.610473 ^c	° W longitude		(NAD 83)
BH Location:	29-23N-07W Sec-Twn-Rng	855 f	ft FNL	82	ft FEL
	36.202864 ° N latitude	107.589175 [°]	° W longitude		(NAD 83)
Driving Directions:	FROM THE INTERSECTION OF	US HWY 550 &	US HWY 64 IN BLOO	MFIELI	D, NM:
	South on US Hwy 550 for 39.0) miles to MM 1	12.7, Right (South) on	CR #7	900 / IR #7061 for 5.1 miles to Y (just
	passed 4-way), Left (East) leav	ing CR #7900 fc	or 4.0 miles to lease ro	oad; Let	ft (NorthEast) for 1.8 miles to new acce

access: Right (North) for 1.5 miles to NAU A19-2307 pad entrance on left (from South to North): N Alamito 102H, 106H

wolls) GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	0/G/W	Pressure
	Ojo Alamo	5,915	1,071	1,071	W	normal
	Kirtland	5,800	1,186	1,186	W	normal
	Fruitland	5,630	1,356	1,358	G, W	sub
	Pictured Cliffs	5,295	1,691	1,707	G, W	sub
	Lewis	5,140	1,846	1,877	G, W	normal
	Chacra	4,889	2,097	2,152	G, W	normal
	Cliff House	3,802	3,184	3,346	G, W	sub
	Menefee	3,757	3,229	3,395	G, W	normal
	Point Lookout	2,925	4,061	4,309	G, W	normal
	Mancos	2,709	4,277	4,546	0,G	sub (~0.38)
	Gallup (MNCS_A)	2,374	4,612	4,909	0,G	sub (~0.38)
	MNCS_B	2,274	4,712	5,009	0,G	sub (~0.38)
	MNCS_C	2,187	4,799	5,097	0,G	sub (~0.38)
	MNCS_Cms	2,142	4,844	5,142	0,G	sub (~0.38)
	MNCS_D	2,016	4,970	5,275	0,G	sub (~0.38)
	MNCS_E	1,904	5,082	5,405	0,G	sub (~0.38)
	MNCS_F	1,854	5,132	5,469	0,G	sub (~0.38)
	MNCS_G	1,780	5,206	5,579	0,G	sub (~0.38)
	MNCS_H	1,718	5,268	5,697	0,G	sub (~0.38)
	MNCS_I	1,681	5,305	5,807	0,G	sub (~0.38)
	FTP TARGET	1,697	5,289	5,752	0,G	sub (~0.38)
	PROJECTED TD	1,703	5,283	14,997	0,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones:	Several gas bearing zones will b	e encount	ered; target	formation is the Gallup	
Pressure:	Normal (0.43 psi/ft) or sub-norr	mal pressu	re gradients	anticipated in all formations	
	Max. pressure gradient:	0.43	psi/ft	Evacuated hole gradient:	0.22
	Maximum anticipated BH press	sure. assu	ming maxim	um pressure gradient:	2.280

Maximum anticipated surface pressure, assuming partially evacuated hole:	1,120
<i>Temperature:</i> Maximum anticipated BHT is 125° 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.

TD

LOGGING, CORING, AND TESTING:

Mud Logs: None planned; remote geo-steering from drill out of 7" casing to TD; gas detection from drillout of 9-5/8" casing to TD.

ID.
Gamma Ray from drillout of 9-5/8" casing to
None planned
None planned
None planned

Cased Hole Logs: CBL on 7" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Ensign Rig No.: 140

psi/ft

psi psi Draw Works: Pacific Rim 1500AC (1,500 hp)

Mast: Process MFG Corp Swing Up Triple (136 ft, 750,000 lbs)

Top Drive: Tesco 400-EXI-600 (400 ton)

Prime Movers: 3 - CAT 3512C (1,350 hp)

- Pumps: 2 Gardner Denver PZ-11 (7,500 psi)
- BOPE 1: T3 Annular & Shaffer double gate ram (11", 5,000 psi)
- BOPE 2: T3 annular(11", 5,000 psi)

Choke 3", 5,000 psi

KB-GL (ft): 23.5

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

NOTIFICATIONS	BLM	State
BLM is to be notified minimum of 48 hours prior to start of construction or reclamation.		
Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
BLM and state are to be notified minimum of 24 hours prior to running casing and		
cementing.	(505) 564-7750	(505) 334-6178
BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
All notifications are to be recorded in the WellView report with time, date, name or		
number that notifications were made to.		
Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for s	pud, BOP tests	, casing &
cementing and any plugging be given to her in both phone message and email: (505) 32	0-0243,	
monica.keuhling@emnrd.nm.gov		
'S:		
See attached diagram for details regarding BOPE specifications and configuration.		
	Grazing permittee is to be notified 10 days in advance. BLM and state are to be notified minimum of 24 hours prior to spud. BLM is to be notified minimum of 24 hours prior to BOPE testing. BLM and state are to be notified minimum of 24 hours prior to running casing and cementing. BLM and state are to be notified minimum of 24 hours prior to plugging ops. All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to. Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for s	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation. Grazing permittee is to be notified 10 days in advance. (505) 564-7600 BLM and state are to be notified minimum of 24 hours prior to spud. (505) 564-7750 BLM is to be notified minimum of 24 hours prior to BOPE testing. (505) 564-7750 BLM and state are to be notified minimum of 24 hours prior to running casing and cementing. (505) 564-7750 BLM and state are to be notified minimum of 24 hours prior to plugging ops. (505) 564-7750 BLM and state are to be notified minimum of 24 hours prior to plugging ops. (505) 564-7750 All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to. Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov S:

- 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 the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement:

nana measarement.		
Closed-Loop System:	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). 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 minimimize 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	
Solids Disposal :	disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.). 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 and attached Newpark mud program for additional details.

DETAILED DRILLING PLAN:

SURFACE:	Drill vertically to casing setting	g depth (plus	necessary rathole), run casing	g, 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 dri	lled, cased, ai	nd cemented with a smaller right	g in advance of the drilling rig.	

Fluid:	Туре	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	рH	Com	ments
Fiulu.	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0		l mud
Hole Size:								
Bit / Motor: MWD / Survey:	Mill Tooth or P No MWD, devi							
Logging: Procedure:	Drill to TD. Aft				ons from TD to s iled below. Mor			
			stall cellar and					-
Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	K-55	STC	2.020	3,520	564,000	423.000
Loading					153	1,136	110,988	110,988
Min. S.F.					13.21	3.10	5.08	3.81
	Assumptions:				g equivalent ext			
					re with 9.5 ppg ;		ing while drillin	ig
					ternal pressure 100,000 lbs ov	-		
U Torque (ft lbs):	Minumum:	3,400	Optimum:	4,530	Maximum:	5,660		
		-,		.,		-,		
Casing Summary:	Float shoe, 1 jt	casing, float c	ollar, casing to	surface				
Centralizers:	2 centralizers	per jt stop-ban	ded 10' from ea	ach collar on b	ottom 3 jts, 1 ce	entralizer per 2	jts to surface	
		Yield	Water	Hole Cap.		Planned TOC	Total Cmt	Total Cmt (co
ment: Type	Weight (ppg)	(cuft/sk)	(gal/sk)	(cuft/ft)	% Excess	(ft MD)	(sx)	ft)
II-Mix TYPE I-II	14.5	1.61	7.41	0.3132	50%	0	114	184
				ole and the ex	cess noted in tal		Csg ID	8.92
	Mesa Ready M	,				Shoe Track L	44	
			ient is not circu	llated to surfa	ce. Cement mu	st achieve 500	psi compressi	ive strength
	before drilling	out.						
INTERMEDIATE:	Drill as ner dir	ectional nlan t	o casina settin	a denth run c	nsina coment c	asina to surfac	0	
NILKINLDIATL.		ft (MD)	to		ft (MD)		ection Length:	5,502 f
		ft (TVD)	to		ft (TVD)		sing Required:	
							0 1	- /
			FL		YP			
Fluid:	Туре	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	рН	Comi	ments
	LSND (KCI)	8.8 - 9.2	(mL/30 min) 15	8 - 14	(lb/100 sqft) 6 - 12	10.8 - 11.2	No	ОВМ
	LSND (KCI) Mud system is	8.8 - 9.2 to have a 7% P	(mL/30 min) 15 (Cl base and 3%	8 - 14 blown asphal	(lb/100 sqft) 6 - 12 t type product a	10.8 - 11.2 added for addit	No (ional hole stat	OBM pility. Bulk KCl
	LSND (KCI) Mud system is is to be used. V moderate and	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra	(mL/30 min) 15 (Cl base and 3% nud, all safety e ange. Control G	8 - 14 6 blown asphal quipment is to PM (350 to 40	(lb/100 sqft) 6 - 12	10.8 - 11.2 added for addit ing face shields	No (ional hole stat . Fluid loss con	OBM pility. Bulk KCl htrol should be
Procedure:	LSND (KCI) Mud system is is to be used. V moderate and washout in the	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra	(mL/30 min) 15 (CI base and 3% rud, all safety e	8 - 14 6 blown asphal quipment is to PM (350 to 40	(lb/100 sqft) 6 - 12 t type product a be used includ	10.8 - 11.2 added for addit ing face shields	No (ional hole stat . Fluid loss con	OBM pility. Bulk KCl ntrol should be
Procedure: Hole Size:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75	8.8 - 9.2 to have a 7% H When mixing m in the 15 ml ra eless consolida	(mL/30 min) 15 (Cl base and 3% hud, all safety e ange. Control Gi tted surface for	8 - 14 6 blown asphal quipment is to PM (350 to 40	(lb/100 sqft) 6 - 12 t type product a be used includ	10.8 - 11.2 added for addit ing face shields	No (ional hole stat . Fluid loss con	OBM pility. Bulk KC ntrol should be
Procedure: Hole Size: Bit / Motor:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit	8.8 - 9.2 to have a 7% b When mixing m in the 15 ml ra e less consolida w/mud motor	(mL/30 min) 15 (Cl base and 3% nud, all safety e ange. Control Gi tted surface for	8 - 14 blown asphal quipment is to PM (350 to 400 mations.	(Ib/100 sqft) 6 - 12 t type product a be used includ D if possible) fro	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00	No (ional hole stat . Fluid loss con	OBM pility. Bulk KC ntrol should be
Procedure: Hole Size: Bit / Motor:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV	8.8 - 9.2 to have a 7% b When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8,	(mL/30 min) 15 CCI base and 3% hud, all safety e ange. Control Gi tted surface for 4.0, stage, 0.16	8 - 14 6 blown asphal quipment is to PM (350 to 400 mations. rev/gal, 1.83 l	(Ib/100 sqft) 6 - 12 t type product a be used includ D if possible) fro	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG	No (ional hole stat 5. Fluid loss con 00' MD in orde	OBM pility. Bulk KC ntrol should be
Procedure: Hole Size: Bit / Motor: Bit / Motor:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P	8.8 - 9.2 to have a 7% H When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm of	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 bor 19 mm cutte	8 - 14 5 blown asphal quipment is to PM (350 to 400 mations. rev/gal, 1.83 l rs, TFA = 1.2 so	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je	No (ional hole stab . Fluid loss con 00' MD in orde t with 5 - 18's	OBM pility. Bulk KC ntrol should be
Procedure: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey V	8.8 - 9.2 to have a 7% H When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm of	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 bor 19 mm cutte	8 - 14 5 blown asphal quipment is to PM (350 to 400 mations. rev/gal, 1.83 l rs, TFA = 1.2 so	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je	No (ional hole stab . Fluid loss con 00' MD in orde t with 5 - 18's	OBM pility. Bulk KC ntrol should be
Procedure: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey v None	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra eless consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination	(mL/30 min) 15 (Cl base and 3% nud, all safety e ange. Control Gi ited surface for 4.0, stage, 0.16 or 19 mm cutte and azimuth si	8 - 14 5 blown asphal quipment is to PM (350 to 400 mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1)	(Ib/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 00' at a minimu	10.8 - 11.2 added for addit ing face shields m BSC to ±2,0(950 DIFF PSIG - 1.50 max), je m), GR optiona	No (ional hole stat 5. Fluid loss con 00' MD in orde 10' MD in orde t with 5 - 18's	OBM bility. Bulk KCl htrol should be r to minimize
Hole Size: Bit / Motor: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	LSND (KCl) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey w None NU BOPE and f	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm o vith inclination test (as noted a	(mL/30 min) 15 CCI base and 3% nud, all safety e inge. Control G ited surface for 4.0, stage, 0.166 or 19 mm cutte and azimuth s above); pressur	8 - 14 6 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 I rs, TFA = 1.2 so urvey (every 1) e test 13-3/8"	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500	No I ional hole stat . Fluid loss con 00' MD in orde t with 5 - 18's I psi for 30 min	OBM pility. Bulk KCl trol should be r to minimize
Hole Size: Bit / Motor: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey V None NU BOPE and 1 Drill to TD follo	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm o vith inclination test (as noted a pwing direction	(mL/30 min) 15 CCI base and 3% nud, all safety e inge. Control G ited surface for 4.0, stage, 0.166 or 19 mm cutter and azimuth si above); pressur nal plan (20' rat	8 - 14 6 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, a-in (range 1.00 D0' at a minimu casing to ing setting dept	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne	No (ional hole stat . Fluid loss con 00' MD in orde t with 5 - 18's I psi for 30 min eded to keep v	OBM pility. Bulk KCl trol should be r to minimize utes. well on plan.
Hole Size: Bit / Motor: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey v None NU BOPE and 1 Drill to TD follo Keep DLS < 3 d	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination test (as noted a pwing direction eg/100' and ke	(mL/30 min) 15 CCI base and 3% nud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 or 19 mm cutte a and azimuth si above); pressur hal plan (20' rat bep Slide length	8 - 14 6 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas < 10', when p	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f	No (ional hole stat . Fluid loss con 00' MD in orde t with 5 - 18's Il psi for 30 min eded to keep v rold section. Bu	OBM bility. Bulk KCl trol should be r to minimize utes. well on plan. uild is plannec
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Hole Size: Bit / Motor: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey v None NU BOPE and 1 Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm o vith inclination test (as noted a owing direction eg/100' and ke d landing is to ter 2,000' MD.	(mL/30 min) 15 CCI base and 3% nud, all safety e inge. Control Gi ited surface for 4.0, stage, 0.16 or 19 mm cutte and azimuth si above); pressur ial plan (20' rat aep slide length be at ±80° inclin Minimum desi	8 - 14 5 blown asphal quipment is to PM (350 to 400 mations. rev/gal, 1.83 (rs, TFA = 1.2 sc urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take sc red flow-rate i	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every sta	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 (h). Steer as ne ack build and f ind, at a minim D, condition ho	No (ional hole stat , Fluid loss cor 00' MD in orde t with 5 - 18's 1 psi for 30 min eded to keep v nold section. B um. Target flo ole and fluid fo	OBM bility. Bulk KCl trol should be r to minimize utes. well on plan. uild is plannec w-rates of 400 or casing
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Procedure: Hole Size: Bit / Motor: Bit / Motor: Uogging: Pressure Test: Procedure: Casing Specs:	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey v None NU BOPE and 1 Drill to TD folk Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination test (as noted a wing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimi and KOP with rvey every joir casing. ND BO r. Monitor retu	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 or 19 mm cutte and azimuth si above); pressur- hal plan (20' rat be slide length be at ±80° inclin Minimum desi um due to upho Geology and Er ht during curve. IPE. Walk rig to rns during com Grade	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 rs, TFA = 1.2 sc urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take sc red flow-rate i ple instability p ngineering. Dri Land curve. To next well. Perf ent job and no Conn.	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every stat a 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition he re possible. Cor g directional p g using a CRT a ment job if pos me to surface. Burst (psi)	No i ional hole stat . Fluid loss cor 00' MD in orde t with 5 - 18's il psi for 30 min eded to keep v old section. Bi um. Target flo ole and fluid fo firm landing ta lan and update nd washing / c sible. Pump ce Tens. Body (lbs)	DBM Dility. Bulk KCl htrol should be r to minimize utes. well on plan. uild is planned w-rates of 400 or casing arget, planned casing irculating as ment as Tens. Conn (lbs)
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure:	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M NONE NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm o vith inclination test (as noted a owing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimi and KOP with rvey every join casing. ND BO	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 or 19 mm cutte and azimuth si above); pressur hal plan (20' rat cep slide length be at ±80° inclin Minimum desi um due to uphc Geology and Er ht during curve. IPE. Walk rig to rns during ceme.	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 sc urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take so red flow-rate i ple instability p ngineering. Dri Land curve. The next well. Pert ent job and no	(ib/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to ing setting depi ossible during b urveys every sta s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320	10.8 - 11.2 added for addit ing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition he e possible. Cor g directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980	No i ional hole stat . Fluid loss cor 00' MD in orde t with 5 - 18's il psi for 30 min eded to keep v old section. Bi um. Target flo ole and fluid for firm landing ta lan and update nd washing / c sible. Pump ce Tens. Body (lbs) 415,000	DBM Dility. Bulk KCl htrol should be r to minimize uites. well on plan. uild is planned w-rates of 400 or casing arget, planned cl landing irculating as ment as Tens. Conn (lbs) 367,000
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure: Casing Specs: Specs Loading	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey v None NU BOPE and 1 Drill to TD folk Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination test (as noted a wing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimi and KOP with rvey every joir casing. ND BO r. Monitor retu	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.16 or 19 mm cutte and azimuth si above); pressur- hal plan (20' rat be slide length be at ±80° inclin Minimum desi um due to upho Geology and Er ht during curve. IPE. Walk rig to rns during com Grade	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 rs, TFA = 1.2 sc urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take sc red flow-rate i ple instability p ngineering. Dri Land curve. To next well. Perf ent job and no Conn.	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b arveys every sat s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f nd, at a minim D, condition hr e possible. Cor g directional p g directional p g directional p g directional p g using a CRT a nent job if pos me to surface. Burst (psi) 4,980 1,424	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bi um. Target floi ole and fluid foo firm landing tr lan and update nd washing / c sible. Pump ce Tens. Body (lbs) 415,000 232,684	OBM pility. Bulk KCl trol should be r to minimize utes. well on plan. uild is planned w-rates of 400 r casing arget, planned d landing irculating as ment as Tens. Conn (lbs) 367,000 232,684
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure:	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M MWD Survey M MWD Survey M MOR NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% f When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination test (as noted a owing direction eg/100' and ke d landing is to l ter 2,000' MD. ep to a minimi and KOP with rrvey every joir casing. ND BO r. Monitor retu Wt (lb/ft) 26.0	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control G ited surface for 4.0, stage, 0.166 or 19 mm cutte and azimuth si above); pressur hal plan (20' rat be at ±80° inclii Minimum desi um due to upho Geology and Er t during curve. IPE. Walk rig to rns during cem Grade K-55	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas < 10', when p nation. Take si red flow-rate i ple instability p next well. Peri- ent job and no Conn. LTC	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every sta s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cen- te cement volu Collapse (psi) 4,320 2,321 1.86	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition h re possible. Cor g directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980 1,424 3.50	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bi um. Target floi ole and fluid for firm landing ta lan and update an dwashing / c sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78	DBM Dility. Bulk KCl htrol should be r to minimize uites. well on plan. uild is planned w-rates of 400 or casing arget, planned cl landing irculating as ment as Tens. Conn (lbs) 367,000
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure: Casing Specs: Specs Loading	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M MWD Survey M MWD Survey M MOR NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% f When mixing m in the 15 ml ra e less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination test (as noted a pwing direction eg/100' and ke d landing is to l ter 2,000' MD. ep to a minim rvey every joir casing. ND BO r. Monitor retu Wt (lb/ft) 26.0 Collapse: fully	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control G ted surface for 4.0, stage, 0.166 for 19 mm cutter and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- sur- sur- above); pressur- sur- above); pressur- above); pressur- abov	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas < 10', when p nation. Take si red flow-rate i ble instability p rediflow-rate i ble instability p rediflow-rate i ble instability p ent job and no Conn. LTC ng with 8.4 pp	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b arveys every sat s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition hi re possible. Cor g directional p g directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980 1,424 3.50 ternal pressure	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bu um. Target flo le and fluid fo nfirm landing ti sible. Pump ce Sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78 gradient	OBM pility. Bulk KCl trol should be r to minimize well on plan. uild is planned w-rates of 400 or casing arget, planned arget, planned arget, planned arget, planned arget, planned arget, planned arget, planned arget, conn (lbs) 367,000 232,684 1.58
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure: Casing Specs: Specs Loading	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M MWD Survey M MWD Survey M MOR NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% f When mixing m in the 15 ml ra eless consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination cost (as noted a owing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimu and KOP with nrvey every joir casing. ND BO v. Monitor retu Wt (lb/ft) 26.0 Collapse: fully Burst: maximu	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control G ted surface for 4.0, stage, 0.166 for 19 mm cutter and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- hal plan (20' ration control and azimuth si above); pressur- sur- sur- above); pressur- sur- above); pressur- above); pressur- abov	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take si red flow-rate i ble instability p ingineering. Dri next well. Peri- ent job and no Conn. LTC ng with 8.4 pp surface pressul	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every stas s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321 1.86 g equivalent ext re with 9.5 ppg j	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition hi re possible. Cor g directional p g directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980 1,424 3.50 ternal pressure	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bu um. Target flo le and fluid fo nfirm landing ti sible. Pump ce Sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78 gradient	OBM pility. Bulk KC trol should be r to minimize vell on plan. uild is planned w-rates of 400 or casing arget, planned ed landing irculating as ment as Tens. Conn (lbs) 367,000 232,684 1.58
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure: Casing Specs: Specs Loading	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M MWD Survey M MWD Survey M MOR NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination cest (as noted a bwing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimu and KOP with rvey every joir casing. ND BO . Monitor retu Wt (lb/ft) 26.0 Collapse: fully Burst: maximu hole and 8.4 p	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.166 or 19 mm cutter a and azimuth si above); pressur hal plan (20' rat be at ±80° inclin Minimum desi um due to upho Geology and Er PE. Walk rig to rns during curve. PE. Walk rig to Grade K-55 evacuated casis im anticipated si pg equivalent e	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 11 e test 13-3/8" -hole past cas < 10', when p hation. Take so red flow-rate i ble instability p next well. Pert ent job and no Conn. LTC ng with 8.4 pp surface pressu xternal pressu	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every stas s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321 1.86 g equivalent ext re with 9.5 ppg j	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition hi e possible. Cor ing directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980 1,424 3.50 ernal pressure fluid inside casi	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bu um. Target flo le and fluid fo nfirm landing ti sible. Pump ce Sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78 gradient	OBM pility. Bulk KCI trol should be r to minimize well on plan. uild is planned w-rates of 400 or casing arget, planned arget, planned arget, planned arget, planned troulating as ment as Tens. Conn (lbs) 367,000 232,684 1.58
Procedure: Hole Size: Bit / Motor: Bit / Motor: Logging: Pressure Test: Procedure: Casing Specs: Specs Loading	LSND (KCI) Mud system is is to be used. M moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE MWD Survey M MWD Survey M MWD Survey M MOR NU BOPE and f Drill to TD follo Keep DLS < 3 d at 10°/100' and to 600 GPM af running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra less consolida w/mud motor 087840 - 7/8, DC w/16 mm of vith inclination cest (as noted a bwing direction leg/100' and ke d landing is to ter 2,000' MD. ep to a minimu and KOP with rvey every joir casing. ND BO . Monitor retu Wt (lb/ft) 26.0 Collapse: fully Burst: maximu hole and 8.4 p	(mL/30 min) 15 CCI base and 3% hud, all safety e inge. Control Gi ted surface for 4.0, stage, 0.166 or 19 mm cutter a and azimuth si above); pressur hal plan (20' rat be at ±80° inclin Minimum desi um due to upho Geology and Er PE. Walk rig to rns during curve. PE. Walk rig to Grade K-55 evacuated casis im anticipated si pg equivalent e	8 - 14 5 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 l rs, TFA = 1.2 so urvey (every 11 e test 13-3/8" -hole past cas < 10', when p hation. Take so red flow-rate i ble instability p next well. Pert ent job and no Conn. LTC ng with 8.4 pp surface pressu xternal pressu	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, q-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every stat s 450 GPM. At T iroblems that ar II curve following DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321 1.86 g equivalent ext re with 9.5 pp j re gradient	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f ind, at a minim D, condition hi e possible. Cor ing directional p g using a CRT a ment job if pos me to surface. Burst (psi) 4,980 1,424 3.50 ernal pressure fluid inside casi	No li ional hole stat . Fluid loss con 20' MD in orde t with 5 - 18's il psi for 30 min eded to keep v nold section. Bu um. Target flo le and fluid fo nfirm landing ti sible. Pump ce Sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78 gradient	OBM pility. Bulk KCI trol should be r to minimize well on plan. uild is planned w-rates of 400 or casing arget, planned arget, planned arget, planned arget, planned troulating as ment as Tens. Conn (lbs) 367,000 232,684 1.58
Procedure: Hole Size: Bit / Motor: Bit / Motor: Uogging: Pressure Test: Procedure: Procedure: Casing Specs: Specs Loading Min. S.F.	LSND (KCI) Mud system is is to be used. V moderate and washout in the 8.75 8-3/4" PDC bit MOTOR: NOV BIT: 5-BLADE P MWD Survey V None NU BOPE and f Drill to TD follo Keep DLS < 3 dd at 10°/100' and to 600 GPM aff running but ke BUR for curve, target. Take su required. Land detailed below	8.8 - 9.2 to have a 7% F When mixing m in the 15 ml ra eless consolida w/mud motor 087840 - 7/8, DC w/16 mm of with inclination test (as noted a owing direction reg/100' and ke d landing is to and KOP with revey every join casing. ND BO . Monitor retu Wt (lb/ft) 26.0 Collapse: fully Burst: maximu hole and 8.4 p Tension: buoy 3,400	(mL/30 min) 15 CCI base and 3% nud, all safety e inge. Control G 4.0, stage, 0.166 or 19 mm cutte and azimuth s above); pressur al plan (20' rat above); pressur al plan (20' rat sep slide length be at ±80° inclin Minimum desi um due to uphd Geology and Er ht during curve. IPE. Walk rig to rns during cem Grade K-55 evacuated casi um anticipated : pg equivalent e ed weight in 8.4 Optimum:	8 - 14 6 blown asphal quipment is to PM (350 to 40) mations. rev/gal, 1.83 I rs, TFA = 1.2 so urvey (every 1) e test 13-3/8" -hole past cas < 10', when p hation. Take si < 10', when p hation. Take si < 10', when p is a stability p red flow-rate i ple instability p red flow-rate i ple instability p red flow-rate i ple instability p conn. LTC Conn. LTC mg with 8.4 pp surface pressur xternal pressur tang fluid witt 4,530	(lb/100 sqft) 6 - 12 t type product a be used includ D if possible) fro DEG, 600 GPM, 1-in (range 1.00 D0' at a minimu casing to ing setting dept ossible during b urveys every sta s 450 GPM. At T roblems that ar Il curve followin DOH. Run casing form off-line cer te cement volu Collapse (psi) 4,320 2,321 1.86 g equivalent ext re with 9.5 ppg j re gradient 100,000 lbs ov Maximum:	10.8 - 11.2 added for additing face shields m BSC to ±2,00 950 DIFF PSIG - 1.50 max), je m), GR optiona 1,500 th). Steer as ne ack build and f and, at a minim D, condition hr e possible. Cor g directional p g directional p	No li ional hole stat . Fluid loss con 0' MD in orde t with 5 - 18's 1 psi for 30 min eded to keep v old section. B um. Target flo ole and fluid fo firm landing tr lan and update nd washing / c sible. Pump ce Tens. Body (lbs) 415,000 232,684 1.78 gradient ing while drillin	OBM Dility. Bulk KCI trol should be r to minimize well on plan. uild is planned w-rates of 400 or casing arget, planned ed landing irculating as ment as Tens. Conn (lbs) 367,000 232,684 1.58

Centralizers:		it stop bunded	to nom nout s					
centrunzers.) to KOP ; 1 cen	tralizer per 3 jt	ts to surface (C	entralizers fro	m Scepter Supp	DIY - SLIP'IN'SLI	
	12" SOLID BO	DY POLYMER)						
	_		Yield	Water		Planned TOC	Total Cmt	Total Cmt (cu
Cement:	Type	Weight (ppg)	(cuft/sk) 2.140	(gal/sk)	% Excess	(ft MD)	(sx)	ft)
Lead Tail	III:POZ Blend Type III	12.5 14.6	1.380	12.05 6.64	70% 20%	0 4,446	516 191	1,105 263
Annular Capacity	0.16681	cuft/ft		i/8" casing ann		4,440	Shoe Track L	203
	0.1503	cuft/ft	-	x 12-1/4" hole			Casing ID	6.276
	0.2148	cuft/ft	7" casing casir	ng volume			-	
		nent volumes a		ole and the exc	ess noted in to	ble		
		diate Cementin						
	before drilling	D & BLM if cem	ient is not circu	liated to surra	ce. Cement m	ist achieve 500	psi compressi	ve strengtn
		, out.						
PRODUCTION:	Drill to TD foll	owing direction	nal plan, run co	asing, cement o	casing to surfa	ce.		
	5,852	ft (MD)	to	14,997	ft (MD)	Hole Se	ection Length:	9,145 ft
	5,314	ft (TVD)	to	-	ft (TVD)		ing Required:	9,295 ft
			timated KOP:	-	ft (MD)		ft (TVD)	
	Fe	Estimated Landin	ted Liner Top:		ft (MD) ft (MD)		ft (TVD) ft (TVD)	
	ESI		ateral Length:		ft (MD)	5,205	11 (170)	1
		Lotimated Lt	terur zengen.	5,245	10 (1012)			
					YP			
Fluid:	Туре	MW (ppg)	FL (mL/30')	PV (cp)	(lb/100 sqft)	рН	Comments	Comments
	WBM	87.00	NC	+20	+2	0-0 5	prod water	OBM as
ids / Solids Notes:		8.7 - 9.0 vill be producti	NC on water and I	+20 Newpark lubri	±2	9-9.5	prod water etort). Corros	contingency
	to be used.	in be producti		in a second s		(1.5 to 2/6 by 1	etory . corros	As a
	contingency o	<u>nly</u> : Newpark O	ptiDrill OBM sy	/stem. Ensure 1	hat drying sha	kers are rigged	up after the rig	
	shakers. Solids	control will bu	rn retorts on c	uttings sample	s one per tour	to check % ROC	. Add diesel ar	nd products as
		aintain mud in I			wpark's mud p		itional details.	No asphalt
	products are t	o he added to t						
				n. Any change	s to the mud s	ystems are to I	pe discussed w	
Hole Size:		rior to applicat		n. Any change	s to the mud s	ystems are to I	oe discussed w	
Hole Size: Bit / Motor:	6.125	rior to applicat	ion.	n. Any change	s to the mud s	ystems are to I	oe discussed w	
Bit / Motor:	6.125 6-1/8" PDC bit	<mark>rior to applicat</mark> w/mud motor	ion.					/ith
Bit / Motor:	6.125 6-1/8" PDC bit MOTOR: NOV	<mark>rior to applicat</mark> w/mud motor	ion. 6/7, 6.4, stage,	, 0.79 rev/gal, 1	l.83 DEG, 250-4	400 GPM, 1,710) DIFF PSIG (or	vith
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Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading	6.125 6-1/8" PDC bit MOTOR: NOV demand frictio BIT: 5-BLADE I MWD with GR minimum befG GR MWD for e NU BOPE and Target flow-ra as needed to k stand, at a min needed and TO Verify make u maintaining ±: cement as det	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC i, inclination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 (aceep well on pla imum. After en 200H (ROOH, if p torque when 150' of liner lap ailed below. Not Wt (lb/ft) 11.6 <i>Collapse: fully</i>	ion. 6/7, 6.4, stage, ice(s) as requir C w/13 mm - 16 (d azimuth (sur er Landing Poir o mud-log or c bove); pressur 3PM. Target di n. Keep DLS - eaching TD, per required; shoul running casing. Follow liner sub te cement volu Grade P-110 evacuated casi	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint it) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' anc fform clean-up d NOT be requ Space out line etting procedu ume circulated <u>Conn.</u> BTC	2.83 DEG, 250 ol spaced ~3,00 matrix body, ta from KOP to L asing to essure is 700 - keep slide len cycle to condi ired with OBM r getting the tu re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2.90 g fluid in the or	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when ion hole for ca: system). Run li be sleeve as cloi s required. Perfi Burst (psi) 10,690 8,802 1.21 mulus (floating	D DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min et ROP 300 - 6 feasible. Take sing running. S ingr as describ se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during I	vith similar); on (100' utes. 00 ft/hr. Steer surveys every oot lube as ad below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning)
Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading	6.125 6-1/8" PDC bit MOTOR: NOV demand frictio BIT: 5-BLADE I MWD with GR minimum befG GR MWD for e NU BOPE and Target flow-ra as needed to k stand, at a min needed and TO Verify make u maintaining ±: cement as det	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC i, inclination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 (aceep well on pla imum. After en 200H (ROOH, if p torque when 150' of liner lap ailed below. Not Wt (lb/ft) 11.6 <i>Collapse: fully</i>	ion. 6/7, 6.4, stage, ice(s) as requir C w/13 mm - 16 d azimuth (sur er Landing Poir o mud-log or c ibove); pressur GPM. Target di n. Keep DLS < eaching TD, per equired; shoul running casing. Follow liner su ote cement volu Grade P-110 evacuated casis if maximum sur	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and rform clean-up and NOT be requ 0 NOT be requ 5 Space out line etting procedu ume circulated <u>Conn.</u> BTC	2.83 DEG, 250- ol spaced ~3,00 matrix body, ta from KOP to L asing to essure is 700 - keep slide len cycle to condi ired with OBW r getting the to cycle to condi ired with OBW r getting the to re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2,90 g fluid in the ar pressure with 1	100 GPM, 1,710 10' behind the b 10' transformed for the b 10,690 10,690 10,690 1,21	D DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min et ROP 300 - 6 feasible. Take sing running. S ingr as describ se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during I	vith similar); on (100' utes. 00 ft/hr. Steer surveys every oot lube as ad below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning)
Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading	6.125 6-1/8" PDC bit MOTOR: NOV demand frictio BIT: 5-BLADE I MWD with GR minimum befG GR MWD for e NU BOPE and Target flow-ra as needed to k stand, at a min needed and TO Verify make u maintaining ±: cement as det	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC .i, inclination, ar ore KOP and aft intire section, n test (as noted a te is 250 - 400 (seep well on pla nimum. After rr DOH (ROOH, if o torque when 150' of liner lap ailed below. Not wt (lb/ft) 11.6 <i>Collapse: fully</i> <i>Burst: 8,500 ps</i> <i>fluid with 8.4 p</i>	ion. 6/7, 6.4, stage, ice(s) as requir Cw/13 mm - 16 id azimuth (sur o mud-log or c ibove); pressur GPM. Target di in. Keep DLS < eaching TD, per required; shoul . Follow liner su ite cement volu Grade P-110 evacuated casis is maximum sur pg equivalent of	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and rform clean-up Id NOT be requ Id NOT be requ Id NOT be requ Id NOT be requ is Space out line etting procedu ume circulated <u>Conn.</u> BTC ng with 9.5 ppg face treating p external pressu		400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when ion hole for ca: system). Run li be sleeve as cloi s required. Perfi Burst (psi) 10,690 8,802 1.21 mulus (floating	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min tet ROP 300 - 6 feasible. Take sing running. S iner as describ- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during i ent mud weigh	rith similar); on (100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden
Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand fricti BIT: 5-BLADE I MWD with GR GR MWD for e NU BOPE and Target flow-ra as needed to 4 stand, at a min needed and TU Verify make up maintaining ±: cement as det Size (in) 4.500	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC .i inclination, ar test (as noted a te is 250 - 400 o keep well on pla nimum. After r DOH (ROOH, if p torque when p torque sector Sol of liner lap ailed below. Not Wt (lb/ft) 11.6	ion. 6/7, 6.4, stage, ice(s) as requir Cw/13 mm - 16 id azimuth (sur er Landing Poir o mud-log or c ibove); pressur SPM. Target di in. Keep DLS < eaching TD, per required; shoud running casing. . Follow liner su te cement volu Grade P-110 evacuated casi i maximum sur pg equivalent t o approximate of	0.79 rev/gal, 3 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplii e test 9-5/8" cr fferential is pre- 1 deg/100' and fform clean-up Id NOT be requ . Space out line etting procedu ume circulated <u>Conn.</u> BTC ng with 9.5 ppg frace treating pr external press. D ppg fluid with drag in lateral.	2.83 DEG, 250- ol spaced ~3,00 natrix body, ta from KOP to L asing to ussure is 700 - keep slide len cycle to condi ired with OBW r getting the to re. Circulate as to surface. Collapse (psi) 7,560 2,610 2,90 g fluid in the ar pressure with 1 re gradient. 100,000 lbs ou	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: to rystem). Run li be sleeve as clo s required. Perfer Burst (psi) 10,690 8,802 1.21 nulus (floating 0.2 ppg equival ver-pull. Tensior	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min tet ROP 300 - 6 feasible. Take sing running. S iner as describ- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during i ent mud weigh	rith similar); on (100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden
Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand frictie BIT: S-BLADE I MWD with GR GR MWD for e NU BOPE and Target flow-ra as needed to I stand, at a min needed and Ti Verify make u maintaining ±: cement as det Size (in) 4.500 Assumptions:	rior to applicat w/mud motor 500ERT6764 - on breaking dev ong Guage PDC , inclination, ar test (as noted a te is 250 - 400 0 keep well on pla inmum. After r DOH (ROOH, if f p torque when p torque to	ion. 6/7, 6.4, stage, ice(s) as requir Cw/13 mm - 16 id azimuth (sur er Landing Poir o mud-log or c ibove); pressur SPM. Target di in. Keep DLS < eaching TD, per required; shoul running casing. . Follow liner so the cement volu Grade P-110 evacuated casi is imaximum sur typg equivalent of a approximate of Optimum:	0.79 rev/gal, 3 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplii e test 9-5/8" cr 1 deg/100' and fferential is pre 1 deg/100' and fform clean-up d NOT be requ . Space out line etting procedu ume circulated Conn. BTC ng with 9.5 ppg face treating p rface treating p rface treating p sexternal press. D ppg fluid with drag in lateral. BTC		400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li be sleeve as clo: s required. Perfer Burst (psi) 10,690 8,802 1.21 nulus (floating 0.2 ppg equival ver-pull. Tensior BTC) DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min get ROP 300 - 6 feasible. Take sing running. S iner as describi- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during r ent mud weigh o calculations of	rith similar); on 100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 running) t sand laden sssume
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Bit / Motor: it / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F. MU Torque (ft lbs):	6.125 6-1/8" PDC bit MOTOR: NOV demand frictic BIT: S-BLADE I MWD with GR minimum beff GR MWD for e NU BOPE and Target flow-ra as needed to I stand, at a min needed and TO Verify make u maintaining ±: cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j initiation slee	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC in clination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 (ecep well on pla- nimum. After n 200H (ROOH, if i p torque when 150' of liner lap ailed below. No Wt (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole to BTC t casing, double	ion. 6/7, 6.4, stage, ice(s) as requir C w/13 mm - 16 d azimuth (sur er Landing Poir o mud-log or c bove); pressur 3PM. Target di n. Keep DLS - eaching TD, per required; shoul running casing. Follow liner su te cement volu Grade P-110 evacuated casi i maximum sur pg equivalent t ed weight in 9.0 o approximate c Optimum: float -float col ord (WFT) RD 8	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint tt) uttings samplin e test 9-5/8" ca fferential is pre- 1 deg/100' anc rform clean-up con la be requ- d NOT be requ- ume circulated Conn. BTC ng with 9.5 ppg- fface treating procedu ume circulated Conn. BTC ng with 9.5 ppg- fface treating procesus 0 ppg fluid with arg in lateral. BTC lar (Weatherfor ,500 psi), casin	2.83 DEG, 250 ol spaced ~3,00 matrix body, ta from KOP to L asing to ssure is 700 - keep slide len cycle to condi ired with OBM r getting the tu re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2,90 g fluid in the ar pressure with 1 re gradient. 100,000 lbs ou Maximum: rd float equipr g to shoe of 7"	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,500 psig. Targ gth < 10', when tion hole for ca: system). Run li be sleeve as cloi s required. Perfi Burst (psi) 10,690 8,802 1.21 mulus (floating 0.2 ppg equival ver-pull. Tensior BTC nent), landing co and overlap to	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min et ROP 300 - 6 feasible. Take sing running. 5 feasible. Take sing running. 5 to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during i ent mud weigh a calculations of liner top at 65	vith similar); on (100' utes. 00 ft/hr. Steer surveys every oot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 'unning) t sand laden sssume ig, toe- i° inclination
Bit / Motor: it / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand frictic BIT: 5-BLADE I MWD with GR NU BOPE and Target flow-ra as needed to I stand, at a min needed and To Verify make up maintaining ± cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j initiation slee or 150' MD fr	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC i, inclination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 tese well on pla- nimum. After m OOH (ROOH, if p torque when 150' of limer lap ailed below. Not Wt (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole tc BTC t casing, double ve (Weatherfc om base of inte	ion. 6/7, 6.4, stage, ice(s) as requir C w/13 mm - 16 d azimuth (sur er Landing Poir o mud-log or c ibove); pressur Grade DLS < eaching TD, per required; shoul running casing, Follow liner sub te cement volu Grade P-110 evacuated casis is maximum sur pg equivalent of a approximate C Optimum: float -float col red (WFT) RD 8 irmediate casin	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint tt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and rform clean-up cform clean-up space out line etting procedu ume circulated Conn. BTC ng with 9.5 ppg rface treating p external pressu D pg fluid with drag in lateral. BTC lar (Weatherfo ,500 psi), casin g to top of line	2.83 DEG, 250- ol spaced ~3,00 matrix body, ta from KOP to L asing to essure is 700 - keep slide len cycle to condi ired with OBW r getting the to cycle to condi ired with OBW r getting the to rescure the operation cycle to condi ired with OBW r getting the to rescure the operation 7,560 2,610 2,90 g fluid in the ar pressure with 1 re gradient. 100,000 lbs ov Maximum: rd float equipr g to shoe of 7' er hanger / pace	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li be sleeve as clo s required. Perfi 10,690 8,802 1,21 nulus (floating 0.2 ppg equival ver-pull. Tensior BTC nent), landing c and overlap to ker / liner tie b	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min tet ROP 300 - 6 feasible. Take sing running. 5 te catter as poor freasible. Take sing running. 5 te to LTP as poor frease to LTP as poor fr	vith similar); on (100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden ssume g, toe- " inclination plan with 20'
Bit / Motor: it / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F. MU Torque (ft lbs):	6.125 6-1/8" PDC bit MOTOR: NOV demand frictic BIT: 5-BLADE I MWD with GR NU BOPE and Target flow-ra as needed to I stand, at a mir needed and TC Verify make u maintaining ±: cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j inititation slee or 150' MD fr marker joints	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC in clination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 (ecep well on pla- nimum. After n 200H (ROOH, if i p torque when 150' of liner lap ailed below. No Wt (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole to BTC t casing, double	ion. 6/7, 6.4, stage, ice(s) as requir C w/13 mm - 16 id azimuth (sur er Landing Poir o mud-log or c ibove); pressur GPM. Target di in. Keep DLS < eaching TD, per required; shoul required; shoul follow for the should follow for the should required; should required; should required; should required; should required; should required; should follow for the should follow foll	0.79 rev/gal, 1 ed, bottom too 5 mm cutters, r vey every joint tt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and rform clean-up d NOT be requ Space out line etting procedu ume circulated Conn. BTC ng with 9.5 ppg rface treating p external presso D ppg fluid with drag in lateral. BTC lar (Weatherfo ,500 psi), casir go to top of line ~2,000'. Run lin	2.83 DEG, 250- ol spaced ~3,00 matrix body, ta from KOP to L asing to ssure is 700 - keep slide len cycle to condi ired with OBW re getting the to re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2,90 g fluid in the ar pressure with 1 re gradient. 100,000 lbs or Maximum: rd float equipr g to shoe of 7 er hanger / pac her dry, do not	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li pe sleeve as clos required. Perfi Burst (psi) 10,690 8,802 1.21 mulus (filoating 0.2 ppg equival rer-pull. Tensior BTC nent), landing c and overlap to ker / liner tie b use a floatation	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min get ROP 300 - 6 feasible. Take sing running. S iner as describ- se to LTP as po orm cement jo Tens. Body (Ibs) 367,000 250,116 1.47 casing during i ent mud weigh o calculations co ollar, 1 joint cs liner to p at 65 ack sleeve per n sub but have	vith similar); on (100' utes. (00 ft/hr. Steer surveys every pot lube as ad below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden ssume g, toe- ° inclination plan with 20' one on
Bit / Motor: it / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand frictie BIT: 5-BLADE I MWD with GR GR MWD for e NU BOPE and Target flow-ra as needed to H stand, at a min needed and TC Verify make up maintaining ±: cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j initiation slee or 150' MD fr marker joints location as a b	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC , inclination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 keep well on pla imum. After m p torque when 150' of liner lap ailed below. Not Wt (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole tc BTC t casing, double ve (Weatherfc om base of inter spaced evenly i	ion. 6/7, 6.4, stage, ice(s) as requir Cw/13 mm - 16 id azimuth (sur o mud-log or c ibove); pressur GPM. Target di in. Keep DLS < aching TD, per required; shoul in. Keep DLS < aching TD, per in. Keep DLS in. Keep DLS <b< td=""><td>0.79 rev/gal, 3 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and fform clean-up Id NOT be requ Id NOT be requ Id NOT be requ to Space out line etting procedu ume circulated <u>Conn.</u> BTC ng with 9.5 ppg face treating p external pressu 0 ppg fluid with drag in lateral. BTC lar (Weatherfor 500 psi), casir g to top of lin ~2,000'. Run lii i from WFT), d</td><td>2.83 DEG, 250- ol spaced ~3,00 matrix body, ta from KOP to L asing to essure is 700 - keep slide len cycle to condi irred with OBW re getting the to re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2,90 3 fluid in the ar pressure with 1 re gradient. 100,000 lbs or Maximum: rd float equipri g to shoe of 7th er hanger / pac</td><td>400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li system). Run li system)</td><td>DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min get ROP 300 - 6 feasible. Take sing running. 5 iner as describ- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during <i>i</i> ent mud weigh a calculations a liner top at 65 ack sleeve per n sub but have tiation sleeve s</td><td>rith similar); on (100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden ssume ig, toe- i inclination plan with 20' one on ihall be placed</td></b<>	0.79 rev/gal, 3 ed, bottom too 5 mm cutters, r vey every joint nt) uttings samplin e test 9-5/8" ca fferential is pre 1 deg/100' and fform clean-up Id NOT be requ Id NOT be requ Id NOT be requ to Space out line etting procedu ume circulated <u>Conn.</u> BTC ng with 9.5 ppg face treating p external pressu 0 ppg fluid with drag in lateral. BTC lar (Weatherfor 500 psi), casir g to top of lin ~2,000'. Run lii i from WFT), d	2.83 DEG, 250- ol spaced ~3,00 matrix body, ta from KOP to L asing to essure is 700 - keep slide len cycle to condi irred with OBW re getting the to re. Circulate a: to surface. Collapse (psi) 7,560 2,610 2,90 3 fluid in the ar pressure with 1 re gradient. 100,000 lbs or Maximum: rd float equipri g to shoe of 7 th er hanger / pac	400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li system). Run li system)	DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min get ROP 300 - 6 feasible. Take sing running. 5 iner as describ- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during <i>i</i> ent mud weigh a calculations a liner top at 65 ack sleeve per n sub but have tiation sleeve s	rith similar); on (100' utes. 00 ft/hr. Steer surveys every pot lube as ed below. ssible while b. Pump Tens. Conn (lbs) 385,000 250,116 1.54 unning) t sand laden ssume ig, toe- i inclination plan with 20' one on ihall be placed
Bit / Motor: it / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand frictie BIT: S-BLADE I MWD with GR GR MWD for e NU BOPE and Target flow-ra as needed to I stand, at a min needed and TU Verify make up maintaining ±: cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j initiation slee or 150' MD fm marker joints: location as a b no closer to th azimuth driller	rior to applicat w/mud motor 500ERT6764 - on breaking dev ong Guage PDC , inclination, an rore KOP and aft entire section, n test (as noted a te is 250 - 400 0 seep well on pla inmum. After r DOH (ROOH, if p torque when 150' of liner lap ailed below. No Wt (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole to BTC t casing, double te spaced evenly i ack up(NCS Air te unit boundar d wellbore. 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Bit / Motor: t / Motor (Detail): MWD / Survey: Logging: Pressure Test: Procedure: iner/Casing Specs: Specs Loading Min. S.F.	6.125 6-1/8" PDC bit MOTOR: NOV demand frictie BIT: S-BLADE I MWD with GR GR MWD for e NU BOPE and Target flow-ra as needed to I stand, at a min needed and TU Verify make u maintaining ±: cement as det Size (in) 4.500 Assumptions: Float shoe, 1 j initiation slee or 150' MD fr marker joints a location as a b no closer to th azimuth drillet the maximum	rior to applicat w/mud motor 500ERT6764 - on breaking dev .ong Guage PDC , inclination, an ore KOP and aft entire section, n test (as noted a te is 250 - 400 G exep well on pla imm. After r DOH (ROOH, if DOH (ROOH, if) 11.6 Vot (lb/ft) 11.6 Collapse: fully Burst: 8,500 ps fluid with 8.4 p Tension: buoye vertical hole to BTC t casing, double tv e (Weatherfor om base of inte spaced evenly i ack up(NCS Air e unit boundar	ion. 6/7, 6.4, stage, ice(s) as requir Cw/13 mm - 16 id azimuth (sur er Landing Poir o mud-log or c ibove); pressur GPM. Target di in, Keep DLS < eaching TD, per required; shoul running casing, Follow liner sa te cement volt Grade P-110 evacuated casi is imaximum sur pg equivalent t d weight in 9.0 o approximate c Optimum: float -float col rrmediate casin n lateral every -lock 2,500 psi y than 330' me libore path mut- pe sleeve and i	0.79 rev/gal, 3 ed, bottom too 5 mm cutters, r vey every joint ti) uttings samplii e test 9-5/8" cr fferential is pre- 1 deg/100' and fform clean-up Id NOT be requ . Space out line etting procedu ume circulated <u>Conn.</u> BTC mg with 9.5 ppg fluid with drag in lateral. BTC lar (Weatherfo ,500 psi), casin g to top of lim ~2,000'. Run lii fform WFT), d assured perpen st be no closer s noted on the		400 GPM, 1,710 10' behind the b rget TFA = 1.0 - anding Point ar ogs 1,500 1,000 psig. Targ gth < 10', when tion hole for ca: system). Run li be sleeve as clo: s required. Perfer Burst (psi) 10,690 8,802 1.21 mulus (floating 0.2 ppg equival ver-pull. Tensior BTC nent), landing c and overlap to ker / liner tie b use a floatation ce. The toe-ini East or West le the parallel les Il past the LTP of) DIFF PSIG (or it. 1.5 sq-in id survey every psi for 30 min get ROP 300 - 6 feasible. Take sing running. S iner as describi- se to LTP as po orm cement jo Tens. Body (lbs) 367,000 250,116 1.47 casing during r ent mud weigh o calculations of sake sleeve per a sub but have tiation sleeve sa sae lines. Note as lines. Note sa required for	rith similar); on (100' utes. 00 ft/hr. Steer surveys every surveys every (b) 385,000 250,116 1.54 (unning) t sand laden ssume sume sume surveys t inclination plan with 20' one on hall be placed cast-West t the LTP is necessary rat

Liner ProcedurePrior to TD, record pump rate and pressure, torque and RPM, PU, SO and static weights with and w/o pumps. Plan TD
and liner tally to ensure liner hanger is not placed across any 7" casing connection. Rabbit drill pipe on last trip and
ensure recovery of drift. Run liner as above, PU last joint and record PU/SO weights. PU hanger assembly and install
liner wiper plug system. MU joint of DP and circulate liner volume. TIH to set depth. Break circ slowly, C&C. On depth
drop setting ball, pump <2 bpm. With ball on seat, increase pressure to 20% higher than pinned press, hold 3
minutes. Slack off to check liner hanger has been set. If not set, increase pressure 200 psi and repeat process. Once
set, slack off liner weight plus 5 k#'s. Rotate 20 rounds to right to release from hanger. PU no more than 3' to ensure
liner release. Slack off 20 k#'s. Increase pump pressure to ±2,500 psi to shear ball and regain circulation. Record
pressures. Increase SO weight to 40 k#'s for cement job. Pump cement, launch DP wiper plug, engage with liner
wiper plug and record shear pressure. Bump plug, RD cement head. PU DP to expose liner packing element and slips. Pull
PBR packoff out of PBR while slowly engaging pumps to ensure cement does not fall into PBR. Clear PBR, pump ±10
bbls to clear cement, pressure test hanger seals to 2,000 psi. Release, check for flow and circulate BU and record
cement volume to surface.

Centralizers: Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys. Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply) 90° inclination to liner hanger: 1 centralizer per joint

Cement: Type Weight (pg) Vield Water % Excess Planned TOG Total Cmt Total Cmt Total Cmt Space integrational State 11			-	-		-	-			
Space Improvements Improvements Improvements Totl CO 60 bbls 1.187 Displacement 201 est bbls 1.187 1.187 Annular Copacity 0.1044 cutf(t 4.1/2" cosing x 7" cosing annulus 0.09417 cutf(t 4.1/2" cosing x 7" cosing annulus 0.09417 cutf(t 4.1/2" cosing v 7" cosing annulus 0.0917 cutf(t 4.1/2" cosing v 7" cosing annulus 0.0102 bbls/ft 4" OP capacity Calculated cement volumes assume gauge hole and the excess noted in table American Cementary line a Production Blend Spacer is Sint not were the annulus Sint not were the annulus Sint not were the annulus Spacer is Sint not were the annulus Sint not were the annulu the annulus Sint not were the annulu the annulu the annulus CLM will be added to spacer CLM may be added lead sury and all sury depending on drilling observations and observations during cements Sint the annulu the the annulu the annulu the annulu the annulu				Yield	Water		Planned TOC	Total Cmt	Total Cmt (cu	
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Displacement 201 est bb/s Annular Capacity 0.1044 cuTvTt 4-1/2" cosing x 7" casing annulus 0.0873 cuTvTt 4-1/2" cosing x 6-1/8" hole annulus 0.0873 cuTvTt 4-1/2" cosing x 0" est shoe jt ft 100 0.0873 cuTvTt 4-1/2" cosing x 0" est shoe jt ft 100 0.0102 bb/s/ft 4" DP capacity Calculated cement volume assume gauge hole and the excess noted in table American Cementing Liner & Production Blend Integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and the excess noted in table Satist Fibre integrationatian satist and table ft F124 hole and table Satist Fibre integrationatian satist and table ft F124 hole and table Satist Fibre and table added to spacer. LCM may be added lead s	Spacer	IntegraGuard Star	11		31.6		0	60 bbls		
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Tail Processor	Lead	ASTM Type I/II	Agent 5.0 lb/sx	BWOB	BWOB	.1% BWOB	BWOB	Static .01 lb/sx	5024.0.6	
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Procedure: After off-line cement job, cap and cover well. Continue drilling operations on subsequent wells on pad. COMPLETION AND PRODUCTION PLAN: Est Lateral Length: 9,145 Est Frac Inform: 38 Frac Stages 147,000 bbls slick water 11,890,000 lbs proppant Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated) Flowback: Flow back through production tubing as pressures allow Production: Production: Production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024		azimuth of th	e well or 330' r	neasured perp	endicular to th	e azimuth of t	he well.		-	
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Est Lateral Length: 9,145 Est Frac Inform: 38 Frac Stages 147,000 bbls slick water 11,890,000 lbs proppant Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated) Flowback: Flow back through production tubing as pressures allow Production: Produce through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024 Drilling:	Procedure:	After off-line off-line	ement job, cap	and cover we	ll. Continue dril	ling operations	on subsequen	t wells on pad.		
Est Lateral Length: 9,145 Est Frac Inform: 38 Frac Stages 147,000 bbls slick water 11,890,000 lbs proppant Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated) Flowback: Flow back through production tubing as pressures allow Production: Produce through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024 Drilling:										
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Est Frac Inform: 38 Frac Stages 147,000 bbls slick water 11,890,000 lbs proppant Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated) Flowback: Flow back through production tubing as pressures allow Production: Product through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024	Est Lateral Lenath:	9 145								
Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated) Flowback: Flow back through production tubing as pressures allow Production: Produce through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024 2/16/2024		-, -	Frac Stages	147 000	hhls slick wate	or	11 890 000	lhs proppant		
Flowback: Flow back through production tubing as pressures allow Production: Produce through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024			-							
Production: Produce through production tubing via gas-lift into permanent production and storage facilities ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024										
ESTIMATED START DATES: Drilling: 2/16/2024 Completion: 4/16/2024						ont production	a and storage f	acilities		
Drilling: 2/16/2024 Completion: 4/16/2024	Production.	Produce throu	ign production	tubilig via gas-	int into permai	ient production	i anu storage i	aciiities		
Drilling: 2/16/2024 Completion: 4/16/2024		ATC.								
Completion: 4/16/2024										
• • • • • • • • • • • • • • • • • • • •	5									
Production: 5/31/2024	•									
	Production:	5/31/2024								

Prepared by: Greg Olson 1/25/2024 Updated:

WELL NAME: NORTH ALAMITO UNIT 102H

OBJECTIVE:	Drill, comple	te, and equip s	ingle later	al in the Manco	os-Gallup fo	rmation				
API Number:	30-043-21510									
AFE Number:	DV03211									
ER Well Number:	R Well Number: Not yet assigned State: New Mexico									
State:										
County:	Sandoval									
Surface Elev.:	6,962	ft ASL (GL)	6,986	ft ASL (KB)						
Surface Location:	19-23N-07W	Sec-Twn- Rng	917	ft FNL	1,154	ft FEL				
BH Location:	29-23N-07W	Sec-Twn- Rng	855	ft FNL	82	ft FEL				
Driving Directions:	FROM THE INT	ERSECTION OF U	S HWY 550 8	US HWY 64 IN B	LOOMFIELD,	NM:				

QUI	QUICK REFERENCE									
Sur TD (MD)	350	ft								
Int TD (MD)	5,852	ft								
KOP (MD)	4,841	ft								
KOP (TVD)	4,450	ft								
Target (TVD)	5,289									
Curve BUR	10	°/100 ft								
POE (MD)	5,752	ft								
TD (MD)	14,997	ft								
Lat Len (ft)	9,245	ft								

South on US Hwy 550 for 39.0 miles to MM 112.7, Right (South) on CR #7900 / IR #7061 for 5.1 miles to Y (just passed 4-way), Left (East) leaving CR #7900 for 4.0 miles to lease road; Left (NorthEast) for 1.8 miles to new access; Right (North) for 1.5 miles to NAU A19-2307 pad entrance on left (from South to North): N Alamito 102H, 106H wells).

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	12.250	350	9.625	36	K-55	STC	0	350
Intermediate	8.750	5,852	7	26.0	K-55	LTC	0	5,852
Production	6.125	14,997	4.500	11.6	P-110	BTC	5,702	14,997

CEMENT PROPERTIES SUMMARY:

					Hole Cap.		тос	
_	Туре	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	(cuft/ft)	% Excess	(ft MD)	Total (sx)
Surface	TYPE I-II	14.5	1.61	7.41	0.3132	50%	0	114
Inter. (Lead)	III:POZ Blend	12.5	2.14	12.05	0.1668	70%	0	516
Inter. (Tail)	Type III	14.6	1.38	6.64	0.1503	20%	4,446	191
Prod. (Lead)	0	0	0.000	0	0.1044	0%	0	0
Prod. (Tail)	G:POZ blend	13.3	1.560	7.7	0.0873	30%	5,702	761

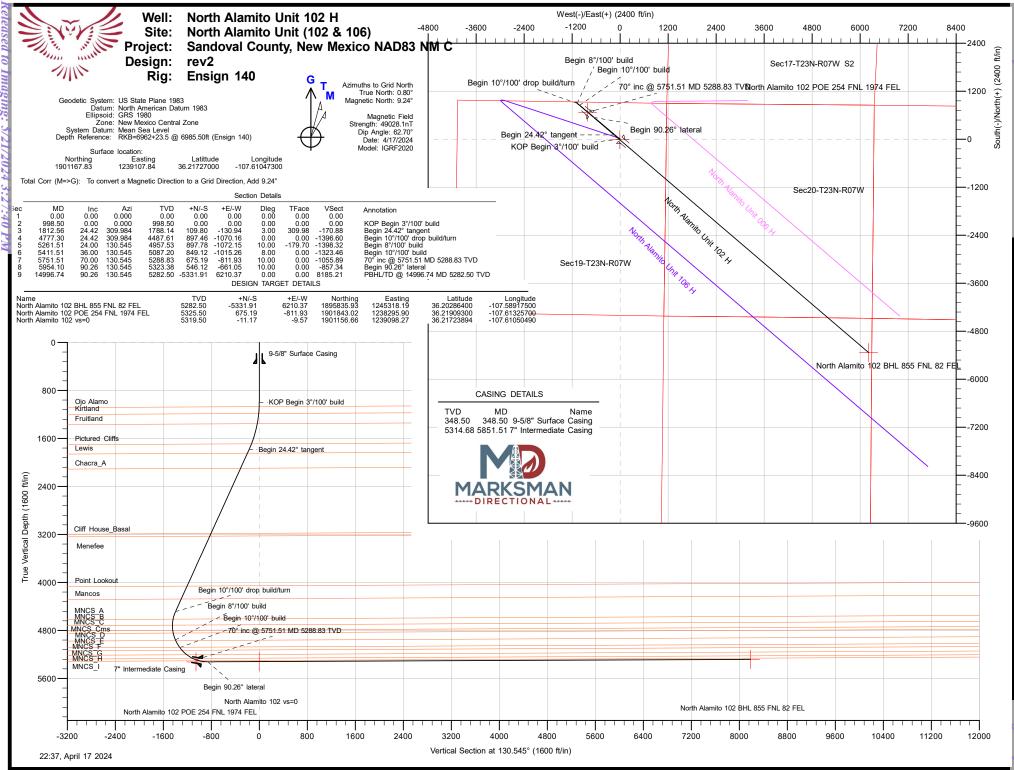
COMPLETION / PRODUCTION SUMMARY:

Frac: 39 plug-and-perf stages with 150,000 bbls slickwater fluid and 12,100,000 lbs of proppant (estimated)

Flowback: Flow back through production tubing as pressures allow

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

Торз	TVD (ft KB)	MD (ft KB)
Ojo Alamo	1,071	1,071
Kirtland	1,186	1,186
Fruitland	1,356	1,358
Pictured Cliffs	1,691	1,707
Lewis	1,846	1,877
Chacra	2,097	2,152
Cliff House	3,184	3,346
Menefee	3,229	3,395
Point Lookout	4,061	4,309
Mancos	4,277	4,546
Gallup (MNCS_A)	4,612	4,909
MNCS_B	4,712	5,009
MNCS_C	4,799	5,097
MNCS_Cms	4,844	5,142
MNCS_D	4,970	5,275
MNCS_E	5,082	5,405
MNCS_F	5,132	5,469
MNCS_G	5,206	5,579
MNCS_H	5,268	5,697
MNCS I	5,305	5,807
FTP TARGET		5,752
PROJECTED TD	5,283	14,997
	Ojo Alamo Kirtland Fruitland Pictured Cliffs Lewis Chacra Cliff House Menefee Point Lookout Mancos Gallup (MNCS_A) MNCS_B MNCS_C MNCS_C MNCS_C MNCS_C MNCS_E MNCS_F MNCS_F MNCS_H MNCS_I FTP TARGET	Kirtland 1,186 Fruitland 1,356 Pictured Cliffs 1,691 Lewis 1,846 Chacra 2,097 Cliff House 3,184 Menefee 3,229 Point Lookout 4,061 Mancos 4,277 Gallup (MNCS_A) 4,612 MNCS_E 4,712 MNCS_CC 4,799 MNCS_CC 4,844 MNCS_E 5,082 MNCS_E 5,132 MNCS_F 5,132 MNCS_G 5,268 MNCS_I 5,268 MNCS_I 5,305 FTP TARGET 5,289



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Database:	DT_Mar1724	v17			ate Reference:	Well North Alam	nito Unit 102 H
Database: Company:	Enduring Res			TVD Reference			5 @ 6985.50ft (Ensign 140)
Project:	Ũ		xico NAD83 NM C	MD Reference			5 @ 6985.50ft (Ensign 140)
Site:	North Alamito	o Unit (102 & 1	106)	North Referen		Grid	<u> </u>
Well:	North Alamito	o Unit 102 H		Survey Calcula	tion Method:	Minimum Curva	ture
Wellbore:	Original Hole						
Design:	rev2						
Project	Sandoval Cou	inty, New Mex	tico NAD83 NM C				
Map System:	US State Plane			System Datum:		Mean Sea Level	
Geo Datum:	North American						
Map Zone:	New Mexico Ce	entral Zone					
Site	North Alamito	Unit (102 & 10	06)				
Site Position:			Northing:	1,901,167.8	Editida		36.21727000
From:	Lat/Long	0.00 6	Easting:	1,239,107.8	•	ude:	-107.61047300
Position Uncertainty:		0.00 ft	Slot Radius:	13-3/1	6 "		
Well	North Alamito	Unit 102 H, Sı	urf loc: 917 FNL 1154	FE: Section 19-T23N	-R07W		
Well Position	+N/-S	0.00 ft	Northing:	1,90	1,167.83 usft	Latitude:	36.21727000
	+E/-W	0.00 ft	Easting:	1,23	9,107.83 usft	Longitude:	-107.61047300
Position Uncertainty		0.00 ft	Wellhead Elev	vation:	ft	Ground Level:	6,962.00 ft
Grid Convergence:		-0.80 °					
Wellbore	Original Hole						
Magnetics	Model Na	me	Sample Date	Declination (°)		Dip Angle (°)	Field Strength (nT)
	IGF	RF2020	4/17/2024		8.44	62.70	49,028.12253633
Design	rev2						
Audit Notes:							
Version:			Phase:	PLAN	Tie On Dep	oth:	0.00
Vertical Section:		Depth	From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Dir	rection (°)
			0.00	0.00	0.00	13	30.545
Dian Cumura Taal D		Data 4/47	//2024				
Plan Survey Tool Pro Depth From	gram Depth To	Date 4/17	12024				
(ft)	•	Survey (Well	bore)	Tool Name	Rema	arks	
1 0.00	14,996.62	rev2 (Original	l Hole)	MWD			
				OWSG MWD - Sta	ndard		

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Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
998.50	0.00	0.000	998.50	0.00	0.00	0.00	0.00	0.00	0.00	
1,812.56	24.42	309.984	1,788.14	109.80	-130.94	3.00	3.00	0.00	309.98	
4,777.30	24.42	309.984	4,487.61	897.46	-1,070.16	0.00	0.00	0.00	0.00	
5,261.52	24.00	130.545	4,957.53	897.78	-1,072.15	10.00	-0.09	-37.06	-179.70	
5,411.52	36.00	130.545	5,087.20	849.12	-1,015.26	8.00	8.00	0.00	0.00	
5,751.52	70.00	130.545	5,288.83	675.19	-811.93	10.00	10.00	0.00	0.00	
5,954.11	90.26	130.545	5,323.38	546.12	-661.05	10.00	10.00	0.00	0.00	
14,996.75	90.26	130.545	5,282.50	-5,331.91	6,210.37	0.00	0.00	0.00	0.00	North Alamito 102



Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
348.50	0.00	0.000	348.50	0.00	0.00	0.00	0.00	0.00	0.00
9-5/8" Surfa	ce Casing								
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
998.50	0.00	0.000	998.50	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3		0.000	000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.05	309.984	1,000.00	0.00	0.00	0.00	3.00	3.00	0.00
1,070.52	2.16	309.984	1,070.51	0.87	-1.04	-1.36	3.00	3.00	0.00
Ojo Alamo		000 00 i	1 000 00	. ==					
1,100.00	3.05	309.984	1,099.95	1.73	-2.07	-2.70	3.00	3.00	0.00
1,185.84	5.62	309.984	1,185.54	5.90	-7.03	-9.18	3.00	3.00	0.00
Kirtland	0.05	200.004	4 400 00	0.00	0.44	40.00	0.00	0.00	0.00
1,200.00	6.05	309.984	1,199.63	6.82	-8.14	-10.62	3.00	3.00	0.00
1,300.00	9.05	309.984	1,298.75	15.26	-18.20	-23.75	3.00	3.00	0.00
1,357.77	10.78	309.984	1,355.66	21.65	-25.82	-33.69	3.00	3.00	0.00
Fruitland	10.05	000 004	4 007 05	07.00	00.00	40.05	0.00	0.00	0.00
1,400.00	12.05	309.984	1,397.05	27.02	-32.22	-42.05	3.00	3.00	0.00
1,500.00	15.05	309.984	1,494.26	42.07	-50.16	-65.46	3.00	3.00	0.00
1,600.00	18.05	309.984	1,590.11	60.36	-71.98	-93.93	3.00	3.00	0.00
1,700.00	21.05	309.984	1,684.33	81.86	-97.61	-127.38	3.00	3.00	0.00
1,707.27	21.26	309.984	1,691.11	83.54	-99.62	-130.01	3.00	3.00	0.00
Pictured Clif		200.004	4 770 00	400.40	400.00	405 70	2.00	2.00	0.00
1,800.00	24.05	309.984	1,776.68	106.49	-126.98	-165.72	3.00	3.00	0.00
1,812.56	24.42	309.984	1,788.14	109.80	-130.94	-170.88	3.00	3.00	0.00
Begin 24.42	-	000.004	4 9 4 9 4 9	100.01	454.00	407.04	0.00	0.00	0.00
1,876.59 Lewis	24.42	309.984	1,846.43	126.81	-151.22	-197.34	0.00	0.00	0.00
1,900.00	24.42	309.984	1,867.75	133.03	-158.64	-207.02	0.00	0.00	0.00
2.000.00	24.42	309.984	1.958.80	159.60	-190.31	-248.37	0.00	0.00	0.00
2,100.00	24.42	309.984	2,049.85	186.17	-221.99	-289.71	0.00	0.00	0.00
2,151.74	24.42	309.984	2,096.97	199.91	-238.39	-311.10	0.00	0.00	0.00
Chacra_A	27.72	-009.90 1	2,030.31	100.01	-200.00	-011.10	0.00	0.00	0.00
2,200.00	24.42	309.984	2,140.91	212.74	-253.67	-331.05	0.00	0.00	0.00
2,300.00	24.42	309.984	2,231.96	239.30	-285.35	-372.40	0.00	0.00	0.00
2,400.00	24.42	309.984	2,323.01	265.87	-317.03	-413.74	0.00	0.00	0.00
2,500.00	24.42	309.984	2,414.06	292.44	-348.71	-455.08	0.00	0.00	0.00
2,600.00	24.42	309.984	2,505.12	319.01	-380.39	-496.43	0.00	0.00	0.00
2,700.00	24.42	309.984	2,596.17	345.57	-412.07	-537.77	0.00	0.00	0.00
2,800.00	24.42	309.984	2,687.22	372.14	-443.75	-579.11	0.00	0.00	0.00
2,900.00	24.42	309.984	2,778.28	398.71	-475.43	-620.46	0.00	0.00	0.00
3,000.00	24.42	309.984	2,869.33	425.27	-507.11	-661.80	0.00	0.00	0.00
3,100.00	24.42	309.984	2,960.38	451.84	-538.79	-703.14	0.00	0.00	0.00
3,200.00	24.42	309.984	3,051.43	478.41	-570.47	-744.49	0.00	0.00	0.00
3,300.00	24.42	309.984	3,142.49	504.98	-602.15	-785.83	0.00	0.00	0.00
3,345.92	24.42	309.984	3,184.29	517.17	-616.70	-804.81	0.00	0.00	0.00

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DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
North Alamito Unit (102 & 106)	North Reference:	Grid
North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Original Hole		
rev2		
	Enduring Resources LLC Sandoval County, New Mexico NAD83 NM C North Alamito Unit (102 & 106) North Alamito Unit 102 H Original Hole	Enduring Resources LLC TVD Reference: Sandoval County, New Mexico NAD83 NM C MD Reference: North Alamito Unit (102 & 106) North Reference: North Alamito Unit 102 H Survey Calculation Method: Original Hole Original Hole

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Cliff House_I									
3,395.44	24.42	309.984	3,229.39	530.33	-632.39	-825.29	0.00	0.00	0.00
Menefee									
3,400.00	24.42	309.984	3,233.54	531.54	-633.83	-827.17	0.00	0.00	0.00
3,500.00	24.42	309.984	3,324.59	558.11	-665.51	-868.52	0.00	0.00	0.00
3,600.00	24.42	309.984	3,415.64	584.68	-697.19	-909.86	0.00	0.00	0.00
3,700.00	24.42	309.984	3,506.70	611.25	-728.87	-951.20	0.00	0.00	0.00
3,800.00	24.42	309.984	3,597.75	637.81	-760.55	-992.55	0.00	0.00	0.00
3,900.00	24.42	309.984	3,688.80	664.38	-792.23	-1,033.89	0.00	0.00	0.00
4,000.00	24.42	309.984	3,779.85	690.95	-823.91	-1,075.23	0.00	0.00	0.00
4,100.00	24.42	309.984	3,870.91	717.51	-855.59	-1,116.58	0.00	0.00	0.00
4,200.00	24.42	309.984	3,961.96	744.08	-887.27	-1,157.92	0.00	0.00	0.00
4,300.00	24.42	309.984	4,053.01	770.65	-918.95	-1,199.26	0.00	0.00	0.00
4,308.96	24.42	309.984	4,061.17	773.03	-921.79	-1,202.97	0.00	0.00	0.00
Point Looko		000.007	.,		521110	.,_52.07	0.00	0.00	0.00
4,400.00	24.42	309.984	4,144.06	797.22	-950.63	-1,240.61	0.00	0.00	0.00
4,500.00	24.42	309.984	4,235.12	823.78	-982.31	-1,281.95	0.00	0.00	0.00
4,545.59	24.42	309.984	4,276.63	835.90	-996.75	-1,300.80	0.00	0.00	0.00
Mancos									
4,600.00	24.42	309.984	4,326.17	850.35	-1,013.99	-1,323.29	0.00	0.00	0.00
4,700.00	24.42	309.984	4,417.22	876.92	-1,045.67	-1,364.64	0.00	0.00	0.00
4,777.30	24.42	309.984	4,487.61	897.46	-1,070.16	-1,396.60	0.00	0.00	0.00
	0' drop build/tur								
4,800.00	22.15	309.952	4,508.45	903.22	-1,077.04	-1,405.57	10.00	-10.00	-0.14
4,850.00	17.15	309.853	4,555.53	914.00	-1,089.93	-1,422.38	10.00	-10.00	-0.20
4,900.00	12.15	309.676	4,603.89	922.09	-1,099.65	-1,435.02	10.00	-10.00	-0.35
4,908.56	11.30	309.630	4,612.27	923.20	-1,100.99	-1,436.76	10.00	-10.00	-0.53
MNCS_A			.,		.,	.,			
4,950.00	7.15	309.257	4,653.16	927.43	-1,106.11	-1,443.40	10.00	-10.00	-0.90
5,000.00	2.16	306.909	4,702.98	929.96	-1,109.28	-1,447.45	10.00	-9.99	-4.69
5,009.35	1.22	304.348	4,712.32	930.12	-1,109.50	-1,447.73	10.00	-9.97	-27.41
MNCS_B									
5,050.00	2.85	132.795	4,752.96	929.68	-1,109.12	-1,447.15	10.00	4.00	-421.98
5,096.54	7.50	131.219	4,799.30	926.89	-1,105.98	-1,442.95	10.00	10.00	-3.39
MNCS_C			.,	120.00	.,	.,			0.00
5,100.00	7.85	131.176	4,802.73	926.59	-1,105.63	-1,442.49	10.00	10.00	-1.23
5,142.18	12.07	130.851	4,844.26	921.81	-1,100.13	-1,435.20	10.00	10.00	-0.77
MNCS_Cms									
5,150.00	12.85	130.814	4,851.90	920.70	-1,098.85	-1,433.51	10.00	10.00	-0.47
5,200.00	17.85	130.653	4,900.10	912.07	-1,088.82	-1,420.28	10.00	10.00	-0.32
5,250.00	22.85	130.561	4,946.97	900.76	-1,075.63	-1,402.90	10.00	10.00	-0.18
5,261.52	24.00	130.545	4,957.53	897.78	-1,072.15	-1,398.32	10.00	10.00	-0.14
Begin 8°/100									
5,275.29	25.10	130.545	4,970.06	894.06	-1,067.80	-1,392.60	8.00	8.00	0.00
MNCS_D									
5,300.00	27.08	130.545	4,992.25	887.00	-1,059.54	-1,381.73	8.00	8.00	0.00
5,350.00	31.08	130.545	5,035.94	871.21	-1,041.08	-1,357.44	8.00	8.00	0.00
5,400.00	35.08	130.545	5,077.83	853.47	-1,020.35	-1,330.15	8.00	8.00	0.00
5,404.81	35.46	130.545	5,081.76	851.67	-1,020.33	-1,327.38	8.00	8.00	0.00
MNCS_E	00.10		-,		.,	.,	0.00	0.00	0.00
5,411.52	36.00	130.545	5,087.20	849.12	-1,015.26	-1,323.46	8.00	8.00	0.00
-,	00.00		-,		.,	.,	0.00	0.00	0.00

4/17/2024 10:40:28PM



	Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
	Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
	Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
	Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
	Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
1	Wellbore:	Original Hole		
	Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,450.00 5,468.51	39.85 41.70	130.545 130.545	5,117.55 5,131.57	833.75 825.89	-997.29 -988.10	-1,299.81 -1,287.72	10.00 10.00	10.00 10.00	0.00 0.00
MNCS_F									
5,500.00 5,550.00 5,578.50	44.85 49.85 52.70	130.545 130.545 130.545	5,154.49 5,188.36 5,206.19	811.86 787.96 773.51	-971.70 -943.77 -926.87	-1,266.14 -1,229.37 -1,207.14	10.00 10.00 10.00	10.00 10.00 10.00	0.00 0.00 0.00
MNCS_G									
5,600.00 5,650.00	54.85 59.85	130.545 130.545	5,218.89 5,245.86	762.24 734.88	-913.69 -881.71	-1,189.80 -1,147.72	10.00 10.00	10.00 10.00	0.00 0.00
5,696.85	64.53	130.545	5,267.71	707.95	-850.23	-1,106.28	10.00	10.00	0.00
MNCS_H									
5,700.00 5,751.52	64.85 70.00	130.545 130.545	5,269.06 5,288.83	706.10 675.19	-848.07 -811.93	-1,103.44 -1,055.89	10.00 10.00	10.00 10.00	0.00 0.00
70° inc @ 57	51.51 MD 5288.8	3 TVD							
5,800.00 5,806.90	74.85 75.54	130.545 130.545	5,303.46 5,305.23	645.15 640.82	-776.82 -771.76	-1,009.68 -1,003.01	10.00 10.00	10.00 10.00	0.00 0.00
MNCS_I									
5,850.00 5,851.51	79.85 80.00	130.545 130.545	5,314.41 5,314.68	613.45 612.48	-739.76 -738.63	-960.91 -959.42	10.00 10.00	10.00 10.00	0.00 0.00
7" Intermedi 5,900.00	ate Casing 84.85	130.545	5,321.07	581.25	-702.12	-911.37	10.00	10.00	0.00
5,954.11	90.26	130.545	5,323.38	546.12	-661.05	-857.34	10.00	10.00	0.00
Begin 90.26°		1001010	0,020.00	010112	001100	001101	10100		0.00
6,000.00	90.26	130.545	5,323.17	516.29	-626.18	-811.44	0.00	0.00	0.00
6,100.00	90.26	130.545	5,322.72	451.28	-550.19	-711.44	0.00	0.00	0.00
6,200.00	90.20	130.545	5,322.26	386.28	-474.20	-611.44	0.00	0.00	0.00
6,300.00	90.26	130.545	5,321.81	321.28	-398.21	-511.44	0.00	0.00	0.00
6,400.00	90.26	130.545	5,321.36	256.27	-322.22	-411.44	0.00	0.00	0.00
6,500.00	90.26	130.545	5,320.91	191.27	-246.23	-311.45	0.00	0.00	0.00
6,600.00 6,700.00	90.26 90.26	130.545 130.545	5,320.46 5,320.00	126.27 61.26	-170.24 -94.26	-211.45 -111.45	0.00 0.00	0.00 0.00	0.00 0.00
6,800.00	90.20	130.545	5,319.55	-3.74	-94.20	-11.45	0.00	0.00	0.00
6,900.00	90.26	130.545	5,319.10	-68.74	57.72	88.55	0.00	0.00	0.00
7,000.00	90.26	130.545	5,318.65	-133.75	133.71	188.55	0.00	0.00	0.00
7,100.00	90.26	130.545	5,318.20 5,317.74	-198.75	209.70 285.69	288.55 388.55	0.00 0.00	0.00 0.00	0.00 0.00
7,200.00 7,300.00	90.26 90.26	130.545 130.545	5,317.74	-263.75 -328.76	361.68	300.55 488.55	0.00	0.00	0.00
7,400.00	90.26	130.545	5,316.84	-393.76	437.67	588.54	0.00	0.00	0.00
7,500.00	90.26	130.545	5,316.39	-458.76	513.66	688.54	0.00	0.00	0.00
7,600.00	90.26	130.545	5,315.94	-523.77	589.65	788.54	0.00	0.00	0.00
7,700.00	90.26	130.545	5,315.48	-588.77	665.64	888.54	0.00	0.00	0.00
7,800.00 7,900.00	90.26 90.26	130.545 130.545	5,315.03 5,314.58	-653.78 -718.78	741.63 817.61	988.54 1,088.54	0.00 0.00	0.00 0.00	0.00 0.00
8,000.00	90.26	130.545	5,314.13	-783.78	893.60	1,188.54	0.00	0.00	0.00
8,100.00	90.26	130.545	5,313.68	-848.79	969.59	1,288.54	0.00	0.00	0.00
8,200.00	90.26	130.545	5,313.22	-913.79	1,045.58	1,388.54	0.00	0.00	0.00
8,300.00 8,400.00	90.26 90.26	130.545 130.545	5,312.77 5,312.32	-978.79 -1,043.80	1,121.57 1,197.56	1,488.54 1,588.53	0.00 0.00	0.00 0.00	0.00 0.00
8,400.00	90.26	130.545	5,312.32	-1,1043.80	1,273.55	1,688.53	0.00	0.00	0.00
8,600.00	90.26	130.545	5,311.42	-1,173.80	1,349.54	1,788.53	0.00	0.00	0.00
8,700.00	90.26	130.545	5,310.96	-1,238.81	1,425.53	1,888.53	0.00	0.00	0.00
8,800.00	90.26	130.545	5,310.51	-1,303.81	1,501.52	1,988.53	0.00	0.00	0.00
8,900.00	90.26	130.545	5,310.06	-1,368.81	1,577.51	2,088.53	0.00	0.00	0.00

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Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,000.00	90.26	130.545	5,309.61	-1,433.82	1,653.49	2,188.53	0.00	0.00	0.00
9,100.00	90.26	130.545	5,309.16	-1,498.82	1,729.48	2,288.53	0.00	0.00	0.00
9,200.00	90.26	130.545	5,308.70	-1,563.82	1,805.47	2,388.53	0.00	0.00	0.00
9,300.00	90.26	130.545	5,308.25	-1,628.83	1,881.46	2,488.53	0.00	0.00	0.00
9,400.00	90.26	130.545	5,307.80	-1,693.83	1,957.45	2,588.52	0.00	0.00	0.00
9,500.00	90.26	130.545	5,307.35	-1,758.83	2,033.44	2,688.52	0.00	0.00	0.00
9,600.00	90.26	130.545	5,306.90	-1,823.84	2,109.43	2,788.52	0.00	0.00	0.00
9,700.00	90.26	130.545	5,306.44	-1,888.84	2,185.42	2,888.52	0.00	0.00	0.00
9,800.00	90.26	130.545	5,305.99	-1,953.84	2,261.41	2,988.52	0.00	0.00	0.00
				,			0.00		
9,900.00	90.26	130.545	5,305.54	-2,018.85	2,337.40	3,088.52		0.00	0.00
10,000.00	90.26	130.545	5,305.09	-2,083.85	2,413.39	3,188.52	0.00	0.00	0.00
10,100.00	90.26	130.545	5,304.64	-2,148.86	2,489.37	3,288.52	0.00	0.00	0.00
10,200.00	90.26	130.545	5,304.18	-2,213.86	2,565.36	3,388.52	0.00	0.00	0.00
10,300.00	90.26	130.545	5,303.73	-2,278.86	2,641.35	3,488.52	0.00	0.00	0.00
10,400.00	90.26	130.545	5,303.28	-2,343.87	2,717.34	3,588.51	0.00	0.00	0.00
10,500.00	90.26	130.545	5,302.83	-2,408.87	2,793.33	3,688.51	0.00	0.00	0.00
10,600.00	90.26	130.545	5,302.37	-2,473.87	2,869.32	3,788.51	0.00	0.00	0.00
10,700.00	90.26	130.545	5,301.92	-2,538.88	2,945.31	3,888.51	0.00	0.00	0.00
10,800.00	90.26	130.545	5,301.47	-2,603.88	3,021.30	3,988.51	0.00	0.00	0.00
10,900.00	90.26	130.545	5,301.02	-2,668.88	3,097.29	4,088.51	0.00	0.00	0.00
11,000.00	90.26	130.545	5,300.57	-2,733.89	3,173.28	4,188.51	0.00	0.00	0.00
11,100.00	90.26	130.545	5,300.11	-2,798.89	3,249.27	4,288.51	0.00	0.00	0.00
11,200.00	90.26	130.545	5,299.66	-2,863.89	3,325.25	4,388.51	0.00	0.00	0.00
11,300.00	90.26	130.545	5,299.21	-2,928.90	3,401.24	4,488.51	0.00	0.00	0.00
	90.26	130.545	5,298.76	-2,993.90	3,477.23	4,588.50	0.00	0.00	0.00
11,400.00							0.00		
11,500.00	90.26	130.545	5,298.31	-3,058.90	3,553.22	4,688.50		0.00	0.00
11,600.00	90.26	130.545	5,297.85	-3,123.91	3,629.21	4,788.50	0.00	0.00	0.00
11,700.00	90.26	130.545	5,297.40	-3,188.91	3,705.20	4,888.50	0.00	0.00	0.00
11,800.00	90.26	130.545	5,296.95	-3,253.91	3,781.19	4,988.50	0.00	0.00	0.00
11,900.00	90.26	130.545	5,296.50	-3,318.92	3,857.18	5,088.50	0.00	0.00	0.00
12,000.00	90.26	130.545	5,296.05	-3,383.92	3,933.17	5,188.50	0.00	0.00	0.00
12,100.00	90.26	130.545	5,295.59	-3,448.92	4,009.16	5,288.50	0.00	0.00	0.00
12,100.00	90.26	130.545	5,295.19	-3,513.93	4,009.10	5,388.50	0.00	0.00	0.00
							0.00		
12,300.00	90.26	130.545	5,294.69	-3,578.93	4,161.13	5,488.49		0.00	0.00
12,400.00	90.26	130.545	5,294.24	-3,643.93	4,237.12	5,588.49	0.00	0.00	0.00
12,500.00	90.26	130.545	5,293.79	-3,708.94	4,313.11	5,688.49	0.00	0.00	0.00
12,600.00	90.26	130.545	5,293.33	-3,773.94	4,389.10	5,788.49	0.00	0.00	0.00
12,700.00	90.26	130.545	5,292.88	-3,838.95	4,465.09	5,888.49	0.00	0.00	0.00
12,800.00	90.26	130.545	5,292.43	-3,903.95	4,541.08	5,988.49	0.00	0.00	0.00
12,900.00	90.26	130.545	5,291.98	-3,968.95	4,617.07	6,088.49	0.00	0.00	0.00
13,000.00	90.26	130.545	5,291.53	-4,033.96	4,693.06	6,188.49	0.00	0.00	0.00
13,100.00	90.26	130.545	5,291.07	-4,098.96	4,769.05	6,288.49	0.00	0.00	0.00
13,200.00	90.26	130.545	5,290.62	-4,163.96	4,845.04	6,388.49	0.00	0.00	0.00
13,300.00	90.26	130.545	5,290.17	-4,228.97	4,921.03	6,488.48	0.00	0.00	0.00
13,400.00	90.26	130.545	5,289.72	-4,293.97	4,997.01	6,588.48	0.00	0.00	0.00
13,500.00	90.26	130.545	5,289.27	-4,358.97	5,073.00	6,688.48	0.00	0.00	0.00
13,600.00	90.26	130.545	5,288.81	-4,423.98	5,148.99	6,788.48	0.00	0.00	0.00
13,700.00	90.26	130.545	5,288.36	-4,488.98	5,224.98	6,888.48	0.00	0.00	0.00
13,800.00	90.26	130.545	5,287.91	-4,553.98	5,300.97	6,988.48	0.00	0.00	0.00
13,900.00	90.26	130.545	5,287.46	-4,618.99	5,376.96	7,088.48	0.00	0.00	0.00
14,000.00	90.26	130.545	5,287.01	-4,683.99	5,452.95	7,188.48	0.00	0.00	0.00
14,100.00			5,286.55				0.00		
,	90.26	130.545		-4,748.99	5,528.94	7,288.48		0.00	0.00
14,200.00 14,300.00	90.26	130.545	5,286.10	-4,814.00	5,604.93	7,388.48 7,488.47	0.00	0.00	0.00
	90.26	130.545	5,285.65	-4,879.00	5,680.92	1 488 47	0.00	0.00	0.00

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Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,400.00	90.26	130.545	5,285.20	-4,944.00	5,756.91	7,588.47	0.00	0.00	0.00
14,500.00	90.26	130.545	5,284.75	-5,009.01	5,832.90	7,688.47	0.00	0.00	0.00
14,600.00	90.26	130.545	5,284.29	-5,074.01	5,908.88	7,788.47	0.00	0.00	0.00
14,700.00	90.26	130.545	5,283.84	-5,139.01	5,984.87	7,888.47	0.00	0.00	0.00
14,800.00	90.26	130.545	5,283.39	-5,204.02	6,060.86	7,988.47	0.00	0.00	0.00
14,900.00	90.26	130.545	5,282.94	-5,269.02	6,136.85	8,088.47	0.00	0.00	0.00
14.996.75	90.26	130.545	5,282.50	-5,331.91	6,210.37	8,185.21	0.00	0.00	0.00

PBHL/ID @ 14996.74 MD 528

Casing Points						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
	348.50 5,851.51		9-5/8" Surface Casing 7" Intermediate Casing	9-5/8 7	12-1/4 8-3/4	

ons					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,070.52	1,070.51	Ojo Alamo		-0.27	130.545
1,185.84	1,185.54	Kirtland		-0.27	130.545
1,357.77	1,355.66	Fruitland		-0.27	130.545
1,707.27	1,691.11	Pictured Cliffs		-0.27	130.545
1,876.59	1,846.43	Lewis		-0.27	130.545
2,151.74	2,096.97	Chacra_A		-0.27	130.545
3,345.92	3,184.29	Cliff House_Basal		-0.27	130.545
3,395.44	3,229.39	Menefee		-0.27	130.545
4,308.96	4,061.17	Point Lookout		-0.27	130.545
4,545.59	4,276.63	Mancos		-0.27	130.545
4,908.56	4,612.27	MNCS_A		-0.27	130.545
5,009.35	4,712.32	MNCS_B		-0.27	130.545
5,096.54	4,799.30	MNCS_C		-0.27	130.545
5,142.18	4,844.26	MNCS_Cms		-0.27	130.545
5,275.29	4,970.06	MNCS_D		-0.27	130.545
5,404.81	5,081.76	MNCS_E		-0.27	130.545
5,468.51	5,131.57	MNCS_F		-0.27	130.545
5,578.50	5,206.19	MNCS_G		-0.27	130.545
5,696.85	5,267.71	MNCS_H		-0.27	130.545
5,806.90	5,305.23	MNCS_I		-0.27	130.545



Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Annotations

Measured	Vertical	Local Coor	dinates		
Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
998.50	998.50	0.00	0.00	KOP Begin 3°/100' build	
1,812.56	1,788.14	109.80	-130.94	Begin 24.42° tangent	
4,777.30	4,487.61	897.46	-1,070.16	Begin 10°/100' drop build/turn	
5,261.52	4,957.53	897.78	-1,072.15	Begin 8°/100' build	
5,411.52	5,087.20	849.12	-1,015.26	Begin 10°/100' build	
5,751.52	5,288.83	675.19	-811.93	70° inc @ 5751.51 MD 5288.83 TVD	
5,954.11	5,323.38	546.12	-661.05	Begin 90.26° lateral	
14,996.75	5,282.50	-5,331.91	6,210.37	PBHL/TD @ 14996.74 MD 5282.50 TVD	



Planning Report - Geographic

Database: Company: Project: Site: Well: Wellbore: Design:	DT_Mar1724_v17 Enduring Resources LLC Sandoval County, New Mexico NAD83 NM C North Alamito Unit (102 & 106) North Alamito Unit 102 H Original Hole rev2			TVD Reference MD Reference North Referen	Local Co-ordinate Reference: Well North Ala TVD Reference: RKB=6962+2 MD Reference: RKB=6962+2 North Reference: Grid Survey Calculation Method: Minimum Cur			- ,
Project	Sandoval Cou	unty, New Mex	ico NAD83 NM C					
Geo Datum:	US State Plane North Americar New Mexico Ce	n Datum 1983		System Datum:		Mean Sea Level		
Site	North Alamito	Unit (102 & 10)6)					
Site Position: From: Position Uncertainty:	Lat/Long	0.00 ft	Northing: Easting: Slot Radius:	1,901,167. 1,239,107. 13-3/	83 usft Longit			36.2172700 -107.6104730
Well	North Alamito	Unit 102 H, Su	Irf loc: 917 FNL 115	4 FE: Section 19-T23N	I-R07W			
Well Position	+N/-S +E/-W	0.00 ft 0.00 ft	Northing: Easting:		01,167.83 usft 39,107.83 usft	Latitude: Longitude:		36.2172700 -107.6104730
Position Uncertainty Grid Convergence:		0.00 ft -0.80 °	Wellhead Ele	vation:	ft	Ground Level:		6,962.00 ft
Wellbore	Original Hole	•						
Magnetics	Model Na	ame	Sample Date	Declination (°)		Dip Angle (°)	Field Stre (nT)	-
	IG	RF2020	4/17/2024		8.44	62.70	49,028	.12253633
Design	rev2							
Audit Notes:								
Version:			Phase:	PLAN	Tie On Dep	oth:	0.00	
Vertical Section:			From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)		rection (°)	
			0.00	0.00	0.00	1:	30.545	
Plan Survey Tool Pro Depth From (ft)	gram Depth To (ft)	Date 4/17 Survey (Welli		Tool Name	Rema	arks		
1 0.00	14,996.62	rev2 (Original	Hole)	MWD OWSG MWD - St				



Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
998.50	0.00	0.000	998.50	0.00	0.00	0.00	0.00	0.00	0.00	
1,812.56	24.42	309.984	1,788.14	109.80	-130.94	3.00	3.00	0.00	309.98	
4,777.30	24.42	309.984	4,487.61	897.46	-1,070.16	0.00	0.00	0.00	0.00	
5,261.52	24.00	130.545	4,957.53	897.78	-1,072.15	10.00	-0.09	-37.06	-179.70	
5,411.52	36.00	130.545	5,087.20	849.12	-1,015.26	8.00	8.00	0.00	0.00	
5,751.52	70.00	130.545	5,288.83	675.19	-811.93	10.00	10.00	0.00	0.00	
5,954.11	90.26	130.545	5,323.38	546.12	-661.05	10.00	10.00	0.00	0.00	
14,996.75	90.26	130.545	5,282.50	-5,331.91	6,210.37	0.00	0.00	0.00	0.00	North Alamito 102

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Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
100.00	0.00	0.000	100.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
200.00	0.00	0.000	200.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
300.00	0.00	0.000	300.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
348.50	0.00	0.000	348.50	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
	urface Casing	0.000	400.00	0.00	0.00	4 004 407 00	4 000 407 00	00.04707000	407 04047000
400.00	0.00	0.000	400.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
500.00 600.00	0.00 0.00	0.000 0.000	500.00 600.00	0.00 0.00	0.00 0.00	1,901,167.83 1,901,167.83	1,239,107.83	36.21727000 36.21727000	-107.61047300 -107.61047300
700.00	0.00	0.000	700.00	0.00	0.00	1,901,167.83	1,239,107.83 1,239,107.83	36.21727000	-107.61047300
800.00	0.00	0.000	800.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
900.00	0.00	0.000	900.00	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
998.50	0.00	0.000	998.50	0.00	0.00	1,901,167.83	1,239,107.83	36.21727000	-107.61047300
	gin 3°/100' bui						, ,		
1,000.00	0.05	309.984	1,000.00	0.00	0.00	1,901,167.84	1,239,107.83	36.21727000	-107.61047301
1,070.52	2.16	309.984	1,070.51	0.87	-1.04	1,901,168.71	1,239,106.79	36.21727236	-107.61047657
Ojo Alan	no								
1,100.00	3.05	309.984	1,099.95	1.73	-2.07	1,901,169.57	1,239,105.77	36.21727468	-107.61048009
1,185.84	5.62	309.984	1,185.54	5.90	-7.03	1,901,173.73	1,239,100.80	36.21728593	-107.61049713
Kirtland									
1,200.00	6.05	309.984	1,199.63	6.82	-8.14	1,901,174.66	1,239,099.70	36.21728843	-107.61050091
1,300.00	9.05	309.984	1,298.75	15.26	-18.20	1,901,183.10	1,239,089.64	36.21731121	-107.61053540
1,357.77	10.78	309.984	1,355.66	21.65	-25.82	1,901,189.48	1,239,082.02	36.21732846	-107.61056153
Fruitland		000.004	4 007 05	07.00	00.00	4 004 404 05	4 000 075 00	00.0170.0000	107 010500 10
1,400.00		309.984	1,397.05	27.02 42.07	-32.22 -50.16	1,901,194.85	1,239,075.62	36.21734296	-107.61058348
1,500.00 1,600.00	15.05 18.05	309.984 309.984	1,494.26 1,590.11	42.07 60.36	-50.16	1,901,209.90 1,901,228.20	1,239,057.67 1,239,035.86	36.21738360 36.21743300	-107.61064501 -107.61071983
1,700.00	21.05	309.984	1,684.33	81.86	-97.61	1,901,249.69	1,239,035.00	36.21749105	-107.61080772
1,707.27	21.26	309.984	1,691.11	83.54	-99.62	1,901,251.38	1,239,008.21	36.21749560	-107.61081461
Pictured			.,			.,,	.,		
1,800.00	24.05	309.984	1,776.68	106.49	-126.98	1,901,274.33	1,238,980.85	36.21755757	-107.61090845
1,812.56	24.42	309.984	1,788.14	109.80	-130.94	1,901,277.64	1,238,976.90	36.21756652	-107.61092200
Begin 24	.42° tangent								
1,876.59	24.42	309.984	1,846.43	126.81	-151.22	1,901,294.65	1,238,956.62	36.21761245	-107.61099155
Lewis									
1,900.00	24.42	309.984	1,867.75	133.03	-158.64	1,901,300.87	1,238,949.20	36.21762925	-107.61101698
2,000.00	24.42	309.984	1,958.80	159.60	-190.31	1,901,327.44	1,238,917.52	36.21770099	-107.61112562
2,100.00	24.42	309.984	2,049.85	186.17	-221.99	1,901,354.00	1,238,885.84	36.21777273	-107.61123425
2,151.74	24.42	309.984	2,096.97	199.91	-238.39	1,901,367.75	1,238,869.45	36.21780985	-107.61129046
Chacra_									
2,200.00	24.42	309.984	2,140.91	212.74	-253.67	1,901,380.57	1,238,854.16	36.21784447	-107.61134289
2,300.00	24.42	309.984	2,231.96	239.30	-285.35	1,901,407.14	1,238,822.48	36.21791621	-107.61145152
2,400.00	24.42 24.42	309.984 309.984	2,323.01	265.87 292.44	-317.03 -348.71	1,901,433.70 1,901,460,27	1,238,790.80	36.21798795 36.21805969	-107.61156016 -107.61166879
2,500.00 2,600.00		309.984 309.984	2,414.06 2,505.12	292.44 319.01	-348.71 -380.39	1,901,460.27 1,901,486.84	1,238,759.12 1,238,727.44	36.21805969	-107.61166879
2,000.00		309.984	2,505.12	345.57	-380.39	1,901,513.41	1,238,695.76	36.21820318	-107.61188606
2,800.00	24.42	309.984	2,687.22	372.14	-443.75	1,901,539.97	1,238,664.08	36.21827492	-107.61199470
2,900.00		309.984	2,778.28	398.71	-475.43	1,901,566.54	1,238,632.40	36.21834666	-107.61210334
3,000.00	24.42	309.984	2,869.33	425.27	-507.11	1,901,593.11	1,238,600.72	36.21841840	-107.61221197
3,100.00	24.42	309.984	2,960.38	451.84	-538.79	1,901,619.68	1,238,569.04	36.21849014	-107.61232061
3,200.00	24.42	309.984	3,051.43	478.41	-570.47	1,901,646.24	1,238,537.36	36.21856188	-107.61242925
3,300.00	24.42	309.984	3,142.49	504.98	-602.15	1,901,672.81	1,238,505.68	36.21863362	-107.61253788

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Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,345.92	24.42	309.984	3,184.29	517.17	-616.70	1,901,685.01	1,238,491.14	36.21866656	-107.61258777
	se Basal	509.904	5,104.29	517.17	-010.70	1,901,005.01	1,230,491.14	30.21000030	-107.01230777
3,395.44	24.42	309.984	3,229.39	530.33	-632.39	1,901,698.17	1,238,475.45	36.21870209	-107.61264157
Menefee									
3,400.00	24.42	309.984	3,233.54	531.54	-633.83	1,901,699.38	1,238,474.00	36.21870536	-107.61264652
3,500.00	24.42	309.984	3,324.59	558.11	-665.51	1,901,725.94	1,238,442.32	36.21877710	-107.61275516
3,600.00	24.42	309.984	3,415.64	584.68	-697.19	1,901,752.51	1,238,410.64	36.21884884	-107.61286380
3,700.00 3,800.00	24.42 24.42	309.984 309.984	3,506.70 3,597.75	611.25 637.81	-728.87 -760.55	1,901,779.08 1,901,805.65	1,238,378.96 1,238,347.28	36.21892058 36.21899232	-107.61297243 -107.61308107
3,900.00	24.42	309.984	3,688.80	664.38	-792.23	1,901,832.21	1,238,315.60	36.21906406	-107.61318971
4,000.00	24.42	309.984	3,779.85	690.95	-823.91	1,901,858.78	1,238,283.92	36.21913580	-107.61329835
4,100.00	24.42	309.984	3,870.91	717.51	-855.59	1,901,885.35	1,238,252.24	36.21920754	-107.61340699
4,200.00	24.42	309.984	3,961.96	744.08	-887.27	1,901,911.91	1,238,220.56	36.21927928	-107.61351563
4,300.00	24.42	309.984	4,053.01	770.65	-918.95	1,901,938.48	1,238,188.88	36.21935102	-107.61362427
4,308.96	24.42	309.984	4,061.17	773.03	-921.79	1,901,940.86	1,238,186.05	36.21935745	-107.61363400
Point Lo 4,400.00	okout 24.42	309.984	4,144.06	797.22	-950.63	1,901,965.05	1,238,157.20	36.21942276	-107.61373291
4,500.00	24.42	309.984	4,144.00	823.78	-982.31	1,901,991.62	1,238,125.53	36.21949450	-107.61384155
4,545.59	24.42	309.984	4,276.63	835.90	-996.75	1,902,003.73	1,238,111.08	36.21952721	-107.61389108
Mancos									
4,600.00	24.42	309.984	4,326.17	850.35	-1,013.99	1,902,018.18	1,238,093.85	36.21956624	-107.61395019
4,700.00	24.42	309.984	4,417.22	876.92	-1,045.67	1,902,044.75	1,238,062.17	36.21963798	-107.61405882
4,777.30	24.42	309.984	4,487.61	897.46	-1,070.16	1,902,065.29	1,238,037.68	36.21969343	-107.61414281
-	°/100' drop bu		4 500 45	000.00	4 077 04	1 000 071 05	1 000 000 00	00.04070000	407.04440000
4,800.00 4,850.00	22.15 17.15	309.952 309.853	4,508.45 4,555.53	903.22 914.00	-1,077.04 -1,089.93	1,902,071.05 1,902,081.84	1,238,030.80 1,238,017.91	36.21970900 36.21973812	-107.61416639 -107.61421061
4,900.00	12.15	309.676	4,603.89	914.00 922.09	-1,099.65	1,902,089.93	1,238,008.19	36.21975996	-107.61424393
4,908.56	11.30	309.630	4,612.27	923.20	-1,100.99	1,902,091.04	1,238,006.85	36.21976296	-107.61424852
MNCS_A	L Contraction of the second								
4,950.00	7.15	309.257	4,653.16	927.43	-1,106.11	1,902,095.26	1,238,001.72	36.21977436	-107.61426609
5,000.00	2.16	306.909	4,702.98	929.96	-1,109.28	1,902,097.80	1,237,998.56	36.21978120	-107.61427694
5,009.35	1.22	304.348	4,712.32	930.12	-1,109.50	1,902,097.96	1,237,998.34	36.21978164	-107.61427770
5,050.00	2.85	132.795	4,752.96	929.68	-1,109.12	1,902,097.52	1,237,998.72	36.21978044	-107.61427638
5,096.54	2.65 7.50	132.795	4,792.96	929.66 926.89	-1,109.12	1,902,097.52	1,238,001.86	36.21978044	-107.61427638
MNCS_C		101.210	1,100.00	020.00	1,100.00	1,002,001.10	1,200,001.00	00.21011200	101.01120002
5,100.00	7.85	131.176	4,802.73	926.59	-1,105.63	1,902,094.42	1,238,002.20	36.21977207	-107.61426442
5,142.18	12.07	130.851	4,844.26	921.81	-1,100.13	1,902,089.64	1,238,007.71	36.21975915	-107.61424554
MNCS_C	ms								
5,150.00	12.85	130.814	4,851.90	920.70	-1,098.85	1,902,088.54	1,238,008.99	36.21975617	-107.61424116
5,200.00	17.85	130.653	4,900.10	912.07	-1,088.82	1,902,079.90	1,238,019.01	36.21973285	-107.61420676
5,250.00 5,261.52	22.85 24.00	130.561 130.545	4,946.97 4,957.53	900.76 897.78	-1,075.63 -1,072.15	1,902,068.59	1,238,032.21	36.21970230 36.21969426	-107.61416149 -107.61414956
	/100' build	130.343	4,957.55	091.10	-1,072.15	1,902,065.62	1,238,035.69	50.21909420	-107.01414930
5,275.29	25.10	130.545	4,970.06	894.06	-1,067.80	1,902,061.90	1,238,040.04	36.21968421	-107.61413464
MNCS_D			.,		.,	.,,	.,		
5,300.00	27.08	130.545	4,992.25	887.00	-1,059.54	1,902,054.83	1,238,048.29	36.21966513	-107.61410632
5,350.00	31.08	130.545	5,035.94	871.21	-1,041.08	1,902,039.04	1,238,066.76	36.21962247	-107.61404299
5,400.00	35.08	130.545	5,077.83	853.47	-1,020.35	1,902,021.30	1,238,087.49	36.21957456	-107.61397187
5,404.81	35.46	130.545	5,081.76	851.67	-1,018.24	1,902,019.50	1,238,089.60	36.21956969	-107.61396464
MNCS_E		120 545	E 007 00	040 40	1.015.00	1 002 040 05	1 000 000 50	26.04050004	107 04005 440
5,411.52	36.00	130.545	5,087.20	849.12	-1,015.26	1,902,016.95	1,238,092.58	36.21956281	-107.61395443
Begin 10	°/100' build								

4/17/2024 10:39:57PM

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Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,450.00	39.85	130.545	5,117.55	833.75	-997.29	1,902,001.58	1,238,110.55	36.21952128	-107.61389279
5,450.00 5,468.51	39.85 41.70	130.545	5,117.55	825.89	-997.29 -988.10	1,902,001.58	1,238,119.73	36.21952128	-107.61386128
MNCS F		100.010	0,101.01	020.00	000.10	1,001,000.72	1,200,110.10	00.21000000	101.01000120
5,500.00		130.545	5,154.49	811.86	-971.70	1,901,979.69	1,238,136.13	36.21946216	-107.61380502
5,550.00		130.545	5,188.36	787.96	-943.77	1,901,955.80	1,238,164.07	36.21939761	-107.61370920
5,578.50	52.70	130.545	5,206.19	773.51	-926.87	1,901,941.34	1,238,180.96	36.21935857	-107.61365125
MNCS_C	3								
5,600.00	54.85	130.545	5,218.89	762.24	-913.69	1,901,930.07	1,238,194.14	36.21932812	-107.61360605
5,650.00	59.85	130.545	5,245.86	734.88	-881.71	1,901,902.71	1,238,226.12	36.21925422	-107.61349635
5,696.85	64.53	130.545	5,267.71	707.95	-850.23	1,901,875.78	1,238,257.61	36.21918147	-107.61338836
MNCS_H									
5,700.00		130.545	5,269.06	706.10	-848.07	1,901,873.93	1,238,259.77	36.21917648	-107.61338095
5,751.52		130.545	5,288.83	675.19	-811.93	1,901,843.02	1,238,295.90	36.21909299	-107.61325700
70° inc (5,800.00	2 5751.51 MD 74.85	130.545	5,303.46	645.15	-776.82	1,901,812.99	1,238,331.01	36.21901185	-107.61313656
5,800.00		130.545	5,305.23	640.82	-771.76	1,901,808.65	1,238,336.08	36.2190015	-107.61313030
MNCS_I	75.54	100.040	3,303.23	040.02	-771.70	1,301,000.00	1,230,330.00	30.21300013	-107.01311313
5,850.00	79.85	130.545	5,314.41	613.45	-739.76	1,901,781.28	1,238,368.08	36.21892621	-107.61300944
5,851.51	80.00	130.545	5,314.68	612.48	-738.63	1,901,780.32	1,238,369.20	36.21892360	-107.61300557
7" Interr	nediate Casing	q							
5,900.00	84.85	130.545	5,321.07	581.25	-702.12	1,901,749.08	1,238,405.72	36.21883923	-107.61288032
5,954.11	90.26	130.545	5,323.38	546.12	-661.05	1,901,713.95	1,238,446.78	36.21874435	-107.61273948
Begin 90	0.26° lateral								
6,000.00	90.26	130.545	5,323.17	516.29	-626.18	1,901,684.12	1,238,481.66	36.21866376	-107.61261985
6,100.00	90.26	130.545	5,322.72	451.28	-550.19	1,901,619.12	1,238,557.65	36.21848817	-107.61235921
6,200.00	90.26	130.545	5,322.26	386.28	-474.20	1,901,554.11	1,238,633.63	36.21831258	-107.61209857
6,300.00	90.26	130.545	5,321.81	321.28	-398.21	1,901,489.11	1,238,709.62	36.21813699	-107.61183793
6,400.00		130.545	5,321.36	256.27	-322.22	1,901,424.11	1,238,785.61	36.21796140	-107.61157728
6,500.00 6,600.00	90.26 90.26	130.545 130.545	5,320.91 5,320.46	191.27 126.27	-246.23 -170.24	1,901,359.10 1,901,294.10	1,238,861.60 1,238,937.59	36.21778580 36.21761021	-107.61131665 -107.61105601
6,700.00	90.20	130.545	5,320.40	61.26	-170.24 -94.26	1,901,229.10	1,239,013.58	36.21743462	-107.61079537
6,800.00	90.26	130.545	5,319.55	-3.74	-18.27	1,901,164.09	1,239,089.57	36.21725902	-107.61053473
6,900.00	90.26	130.545	5,319.10	-68.74	57.72	1,901,099.09	1,239,165.56	36.21708343	-107.61027410
7,000.00	90.26	130.545	5,318.65	-133.75	133.71	1,901,034.09	1,239,241.55	36.21690783	-107.61001347
7,100.00	90.26	130.545	5,318.20	-198.75	209.70	1,900,969.08	1,239,317.53	36.21673224	-107.60975283
7,200.00	90.26	130.545	5,317.74	-263.75	285.69	1,900,904.08	1,239,393.52	36.21655664	-107.60949220
7,300.00	90.26	130.545	5,317.29	-328.76	361.68	1,900,839.08	1,239,469.51	36.21638105	-107.60923157
7,400.00	90.26	130.545	5,316.84	-393.76	437.67	1,900,774.07	1,239,545.50	36.21620545	-107.60897094
7,500.00	90.26	130.545	5,316.39	-458.76	513.66	1,900,709.07	1,239,621.49	36.21602985	-107.60871031
7,600.00	90.26	130.545	5,315.94	-523.77	589.65	1,900,644.07	1,239,697.48	36.21585425	-107.60844969
7,700.00 7,800.00	90.26	130.545 130.545	5,315.48 5 315 03	-588.77	665.64 741.63	1,900,579.06	1,239,773.47	36.21567865	-107.60818906 -107.60792844
7,900.00	90.26 90.26	130.545	5,315.03 5,314.58	-653.78 -718.78	817.61	1,900,514.06 1,900,449.06	1,239,849.46 1,239,925.45	36.21550305 36.21532745	-107.60766781
8,000.00		130.545	5,314.13	-783.78	893.60	1,900,384.05	1,240,001.44	36.21515185	-107.60740719
8,100.00	90.26	130.545	5,313.68	-848.79	969.59	1,900,319.05	1,240,077.42	36.21497625	-107.60714657
8,200.00	90.26	130.545	5,313.22	-913.79	1,045.58	1,900,254.05	1,240,153.41	36.21480065	-107.60688595
8,300.00	90.26	130.545	5,312.77	-978.79	1,121.57	1,900,189.04	1,240,229.40	36.21462504	-107.60662533
8,400.00	90.26	130.545	5,312.32	-1,043.80	1,197.56	1,900,124.04	1,240,305.39	36.21444944	-107.60636471
8,500.00	90.26	130.545	5,311.87	-1,108.80	1,273.55	1,900,059.04	1,240,381.38	36.21427383	-107.60610410
8,600.00		130.545	5,311.42	-1,173.80	1,349.54	1,899,994.03	1,240,457.37	36.21409823	-107.60584348
8,700.00	90.26	130.545	5,310.96	-1,238.81	1,425.53	1,899,929.03	1,240,533.36	36.21392262	-107.60558287
8,800.00 8,900.00	90.26 90.26	130.545 130.545	5,310.51 5,310.06	-1,303.81 -1,368.81	1,501.52 1,577.51	1,899,864.03 1,899,799.02	1,240,609.35 1,240,685.34	36.21374702 36.21357141	-107.60532226 -107.60506164
9,000.00	90.20	130.545	5,309.61	-1,433.82	1,653.49	1,899,734.02	1,240,761.32	36.21339580	-107.60480103
3,000.00	00.20		-,- > > > > > > > > > > > > > > > > > >	.,	.,	.,	.,,		

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COMPASS 5000.17 Build 02



Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
9,100.00	90.26	130.545	5,309.16	-1,498.82	1,729.48	1,899,669.02	1,240,837.31	36.21322020	-107.60454042
9,200.00	90.26	130.545	5,308.70	-1,563.82	1,805.47	1,899,604.01	1,240,913.30	36.21304459	-107.60427982
9,300.00	90.26	130.545	5,308.25	-1,628.83	1,881.46	1,899,539.01	1,240,989.29	36.21286898	-107.60401921
9,400.00	90.26	130.545	5,307.80	-1,693.83	1,957.45	1,899,474.01	1,241,065.28	36.21269337	-107.60375860
9,500.00	90.26	130.545	5,307.35	-1,758.83	2,033.44	1,899,409.00	1,241,141.27	36.21251776	-107.60349800
9,600.00	90.26	130.545	5,306.90	-1,823.84	2,109.43	1,899,344.00	1,241,217.26	36.21234215	-107.60323740
9,700.00	90.26	130.545	5,306.44	-1,888.84	2,185.42	1,899,279.00	1,241,293.25	36.21216654	-107.60297679
9,800.00	90.26	130.545	5,305.99	-1,953.84	2,261.41	1,899,213.99	1,241,369.24	36.21199093	-107.60271619
9,900.00	90.26	130.545	5,305.54	-2,018.85	2,337.40	1,899,148.99	1,241,445.23	36.21181531	-107.60245559
10,000.00	90.26	130.545	5,305.09	-2,083.85	2,413.39	1,899,083.99	1,241,521.21	36.21163970	-107.60219499
10,100.00	90.26	130.545	5,304.64	-2,148.86	2,489.37	1,899,018.98	1,241,597.20	36.21146409	-107.60193439
10,200.00	90.26	130.545	5,304.18	-2,213.86	2,565.36	1,898,953.98	1,241,673.19	36.21128847	-107.60167380
10,300.00		130.545	5,303.73	-2,278.86	2,641.35	1,898,888.98	1,241,749.18	36.21111286	-107.60141320
10,400.00	90.26	130.545	5,303.28	-2,343.87	2,717.34	1,898,823.97	1,241,825.17	36.21093724	-107.60115261
10,500.00	90.26	130.545	5,302.83	-2,408.87	2,793.33	1,898,758.97	1,241,901.16	36.21076163	-107.60089201
10,600.00	90.26	130.545	5,302.37	-2,473.87	2,869.32	1,898,693.97	1,241,977.15	36.21058601	-107.60063142
10,700.00		130.545	5,301.92	-2,538.88	2,945.31	1,898,628.96	1,242,053.14	36.21041039	-107.60037083
10,800.00	90.26	130.545	5,301.47	-2,603.88	3,021.30	1,898,563.96	1,242,129.13	36.21023477	-107.60011024
10,900.00	90.26	130.545	5,301.02	-2,668.88	3,097.29	1,898,498.96	1,242,205.11	36.21005916	-107.59984965
11,000.00	90.26	130.545	5,300.57	-2,733.89	3,173.28	1,898,433.95	1,242,281.10	36.20988354	-107.59958907
11,100.00	90.26	130.545	5,300.11	-2,798.89	3,249.27	1,898,368.95	1,242,357.09	36.20970792	-107.59932848
11,200.00	90.26	130.545	5,299.66	-2,863.89	3,325.25	1,898,303.95	1,242,433.08	36.20953230	-107.59906790
11,300.00		130.545	5,299.21	-2,928.90	3,401.24	1,898,238.94	1,242,509.07	36.20935668	-107.59880731
11,400.00	90.26	130.545	5,298.76	-2,993.90	3,477.23	1,898,173.94	1,242,585.06	36.20918105	-107.59854673
11,500.00		130.545	5,298.31	-3,058.90	3,553.22	1,898,108.94	1,242,661.05	36.20900543	-107.59828615
11,600.00		130.545	5,297.85	-3,123.91	3,629.21	1,898,043.93	1,242,737.04	36.20882981	-107.59802557
11,700.00		130.545	5,297.40	-3,188.91	3,705.20	1,897,978.93	1,242,813.03	36.20865419	-107.59776499
11,800.00		130.545	5,296.95	-3,253.91	3,781.19	1,897,913.93	1,242,889.02	36.20847856	-107.59750441
11,900.00		130.545	5,296.50	-3,318.92	3,857.18	1,897,848.92	1,242,965.00	36.20830294	-107.59724383
12,000.00		130.545	5,296.05	-3,383.92	3,933.17	1,897,783.92	1,243,040.99	36.20812731	-107.59698326
12,100.00		130.545	5,295.59	-3,448.92	4,009.16	1,897,718.92	1,243,116.98	36.20795169	-107.59672268
12,200.00		130.545	5,295.14	-3,513.93	4,085.15	1,897,653.91	1,243,192.97	36.20777606	-107.59646211
12,300.00		130.545	5,294.69	-3,578.93	4,161.13	1,897,588.91	1,243,268.96	36.20760043	-107.59620154
12,400.00		130.545	5,294.24	-3,643.93	4,237.12	1,897,523.91	1,243,344.95	36.20742481	-107.59594097
12,500.00		130.545	5,293.79	-3,708.94	4,313.11	1,897,458.90	1,243,420.94	36.20724918	-107.59568040
12,600.00		130.545	5,293.33	-3,773.94	4,389.10	1,897,393.90	1,243,496.93	36.20707355	-107.59541983
12,700.00		130.545	5,292.88	-3,838.95	4,465.09	1,897,328.90	1,243,572.92	36.20689792	-107.59515926
12,800.00		130.545	5,292.43	-3,903.95	4,541.08	1,897,263.89	1,243,648.91	36.20672229	-107.59489869
12,900.00		130.545	5,291.98	-3,968.95	4,617.07	1,897,198.89	1,243,724.89	36.20654666	-107.59463813
13,000.00		130.545	5,291.53	-4,033.96	4,693.06	1,897,133.89	1,243,800.88	36.20637103	-107.59437756
13,100.00	90.26 90.26	130.545	5,291.07	-4,098.96	4,769.05	1,897,068.88	1,243,876.87	36.20619540	-107.59411700
13,200.00 13,300.00		130.545	5,290.62	-4,163.96	4,845.04	1,897,003.88	1,243,952.86	36.20601976	-107.59385644
		130.545	5,290.17 5,289.72	-4,228.97 -4,293.97	4,921.03 4,997.01	1,896,938.88 1,896,873.87	1,244,028.85	36.20584413	-107.59359588 -107.59333532
13,400.00		130.545		-4,293.97 -4,358.97			1,244,104.84	36.20566850	
13,500.00		130.545	5,289.27		5,073.00	1,896,808.87 1,896,743.87	1,244,180.83	36.20549286	-107.59307476
13,600.00		130.545	5,288.81	-4,423.98	5,148.99		1,244,256.82	36.20531723	-107.59281420
13,700.00 13,800.00		130.545 130.545	5,288.36 5,287.91	-4,488.98 -4,553.98	5,224.98 5,300.97	1,896,678.86 1,896,613.86	1,244,332.81 1,244,408.79	36.20514159 36.20496596	-107.59255365 -107.59229309
13,900.00		130.545	5,287.91	-4,618.99	5,376.96	1,896,548.86	1,244,484.78	36.20490390	-107.59229309
14,000.00		130.545	5,287.40	-4,683.99	5,452.95	1,896,483.85	1,244,560.77	36.20461469	-107.59203234
14,000.00		130.545	5,287.01	-4,083.99 -4,748.99	5,528.94	1,896,418.85	1,244,636.76	36.20443905	-107.59151143
14,100.00		130.545	5,286.10	-4,814.00	5,604.93	1,896,353.85	1,244,712.75	36.20443903	-107.59125088
14,200.00		130.545	5,285.65	-4,814.00	5,680.92	1,896,288.84	1,244,788.74	36.20420341	-107.59099033
14,300.00		130.545	5,285.20	-4,944.00	5,756.91	1,896,223.84	1,244,864.73	36.20391213	-107.59072979
14,500.00		130.545	5,284.75	-5,009.01	5,832.90	1,896,158.84	1,244,940.72	36.20373649	-107.59046924
14,000.00	50.20	100.040	0,207.70	0,000.01	0,002.00	1,000,100.04	1,211,070.12	00.20070040	101.00040024

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Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

leasured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,600.00	90.26	130.545	5,284.29	-5,074.01	5,908.88	1,896,093.83	1,245,016.71	36.20356085	-107.59020869
14,700.00	90.26	130.545	5,283.84	-5,139.01	5,984.87	1,896,028.83	1,245,092.70	36.20338521	-107.58994815
14,800.00	90.26	130.545	5,283.39	-5,204.02	6,060.86	1,895,963.83	1,245,168.68	36.20320957	-107.58968761
14,900.00	90.26	130.545	5,282.94	-5,269.02	6,136.85	1,895,898.82	1,245,244.67	36.20303393	-107.58942706
14.996.75	90.26	130.545	5.282.50	-5.331.91	6.210.37	1.895.835.94	1.245.318.19	36.20286400	-107.58917500

Design Targets Target Name - hit/miss target **Dip Angle** Dip Dir. TVD +N/-S +E/-W Northing Easting - Shape (usft) (°) (°) (ft) (ft) (ft) (usft) Longitude Latitude North Alamito 102 BHL 8 0.00 360.000 5,282.50 -5,331.91 6,210.37 1,895,835.94 1,245,318.19 -107.58917500 36.20286400 - plan hits target center - Point North Alamito 102 vs=0 0.00 360.000 5,319.50 -11.17 -9.57 1,901,156.66 1,239,098.26 36.21723894 -107.61050491 plan hits target center
 Point North Alamito 102 POE : - plan misses target center by 34.60ft at 5762.59ft MD (5292.51 TVD, 668.40 N, -804.00 E) - Point 0.00 360.000 5,325.50 675.19 -811.93 1,901,843.03 1,238,295.90 36.21909300 -107.61325700

Casing Points Measured Vertical Casing Hole Depth Diameter Depth Diameter (ft) (ft) (") (") Name 348.50 348.50 9-5/8" Surface Casing 9-5/8 12-1/4 7" Intermediate Casing 5,851.51 5,314.68 7 8-3/4



Planning Report - Geographic

Database:	DT_Mar1724_v17	Local Co-ordinate Reference:	Well North Alamito Unit 102 H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Project:	Sandoval County, New Mexico NAD83 NM C	MD Reference:	RKB=6962+23.5 @ 6985.50ft (Ensign 140)
Site:	North Alamito Unit (102 & 106)	North Reference:	Grid
Well:	North Alamito Unit 102 H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,070.52	1,070.51	Ojo Alamo		-0.27	130.545	
1,185.84	1,185.54	Kirtland		-0.27	130.545	
1,357.77	1,355.66	Fruitland		-0.27	130.545	
1,707.27	1,691.11	Pictured Cliffs		-0.27	130.545	
1,876.59	1,846.43	Lewis		-0.27	130.545	
2,151.74	2,096.97	Chacra_A		-0.27	130.545	
3,345.92	3,184.29			-0.27	130.545	
3,395.44	3,229.39	Menefee		-0.27	130.545	
4,308.96	4,061.17	Point Lookout		-0.27	130.545	
4,545.59	4,276.63	Mancos		-0.27	130.545	
4,908.56	4,612.27	MNCS_A		-0.27	130.545	
5,009.35	4,712.32	MNCS_B		-0.27	130.545	
5,096.54	4,799.30	MNCS_C		-0.27	130.545	
5,142.18	4,844.26	MNCS_Cms		-0.27	130.545	
5,275.29	4,970.06	MNCS_D		-0.27	130.545	
5,404.81	5,081.76	MNCS_E		-0.27	130.545	
5,468.51	5,131.57			-0.27	130.545	
5,578.50	5,206.19	 MNCS_G		-0.27	130.545	
5,696.85	5,267.71	MNCS_H		-0.27	130.545	
5,806.90	5,305.23	—		-0.27	130.545	

Plan Annotations

Measured	Vertical Local Co		dinates	
Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
998.50	998.50	0.00	0.00	KOP Begin 3°/100' build
1,812.56	1,788.14	109.80	-130.94	Begin 24.42° tangent
4,777.30	4,487.61	897.46	-1,070.16	Begin 10°/100' drop build/turn
5,261.52	4,957.53	897.78	-1,072.15	Begin 8°/100' build
5,411.52	5,087.20	849.12	-1,015.26	Begin 10°/100' build
5,751.52	5,288.83	675.19	-811.93	70° inc @ 5751.51 MD 5288.83 TVD
5,954.11	5,323.38	546.12	-661.05	Begin 90.26° lateral
14,996.75	5,282.50	-5,331.91	6,210.37	PBHL/TD @ 14996.74 MD 5282.50 TVD

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

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

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

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

CONDITIONS

Operator:	OGRID:
DJR OPERATING, LLC	371838
200 Energy Court	Action Number:
Farmington, NM 87401	346438
	Action Type:
	[C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	5/21/2024

CONDITIONS

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Action 346438