<u>District I</u> 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

Title:

Date:

Email Address:

Regulatory Supervisor

jerrys@mec.com

2/15/2022

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**

Form C-101 August 1, 2011

Permit 307908

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZO
--

		APPLICATI	ON FOR PERIVI	I TO DRILL, RE-E	NIEK, DEEPI	EN, PLUGBA	JN, UK ADD	AZUNE		
	me and Address							2. OGRID Numb		
	dwood Operating L	.LC						3302	11	
	Box 1370							3. API Number		
	esia, NM 88211137								15-4927	79
4. Property Cod	de 2353	5. 1	Property Name					6. Well No.		
332	353		Hickory Fee					001F	1	
				7. Surfac	e Location					
UL - Lot	Section	Township	Range	Lot Idn Fe	eet From	N/S Line	Feet From	E/W Lir		County
A	11	18S	26E		620	N	112	20	E	Eddy
				8. Proposed Bot	tom Hole Locat	ion				
UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	n E/W Lin	е	County
Α	12	18S	26E	A	330	1	I	1	E	Eddy
				9. Pool I	nformation					
RED LAKE;G	LORIETA-YESO							5112	0	
				A dditional 18	/all lufaatia			l .		
11. Work Type		12. Well Type		13. Cable/Rotary	/ell Information 14. Leas	se Tyne	15 Gro	und Level Elevati	on	
	v Well	OIL		10. Gubie/Rotary	14. 2000	Private	10. 010	3306	011	
16. Multiple		17. Proposed	Depth	18. Formation	19. Con	tractor	20. Spt	d Date		
N		87	72	Yeso				6/1/2022		
Depth to Groun	nd water			Distance from nearest fr	esh water well		Distanc	e to nearest surfac	e water	
We will he i	using a closed-log	n system in lieu (of lined nits							
	g	, p 0, 0, 0, 0, 1, 1, 1, 0, 1	or miles pile	04 B						
Type	Hole Size	Casing Siz	70 0	21. Proposed Casing asing Weight/ft	g and Cement P Setting		Sacks of C	Comont		Estimated TOC
Surf	12.25	9.625		36	123		450			0
Prod	8.75	7		26	270		170			0
Prod	8.75	5.5		17	877		300			0
		•			4 -1-11411 0					
Padwaad On	arating LLC propa	and to drill 10 1/4"		asing/Cement Progra 5/8 csg/cmt. Drill 8 3/			ooglomt nutuu	ll on production		
Reawood Op	erating LLC propo	sed to drill 12 1/4	noie to 1230, full s	5 5/6 CSG/CITIL. DITIL 6 3/	14 Hole to 6772	, Iuii / & 5 i/2	csg/cmi, put we	ii on production	l	
				22. Proposed Blowo	ut Prevention P			•		
	Type		Wo	orking Pressure		Test Pres			Man	nufacturer
	Double Ram			3000		300)			
					ı					
		mation given abov	e is true and comple	ete to the best of my			OIL CONSERV	ATION DIVISION		
knowledge a		d with 19 15 14 9	(A) NMAC Mand/o	r 19.15.14.9 (B) NMAC	.					
, if applicat		u with 15.15.14.5	(A) NIVIAC M allu/0	1 13.13.14.3 (D) NIVIAC	<u>'</u>					
, uppnou	····									
Signature:										
Printed Name:	Flectronica	lly filed by Jerry SI	herrell	•	Approved By:	Katherine	Pickford			

Title:

Phone: 575-748-1288

Approved Date:

Geoscientist

Expiration Date: 2/18/2024

2/18/2022

Conditions of Approval Attached

District I

District III

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

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

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

State of New Mexico

Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

☐ AMENDED REPORT

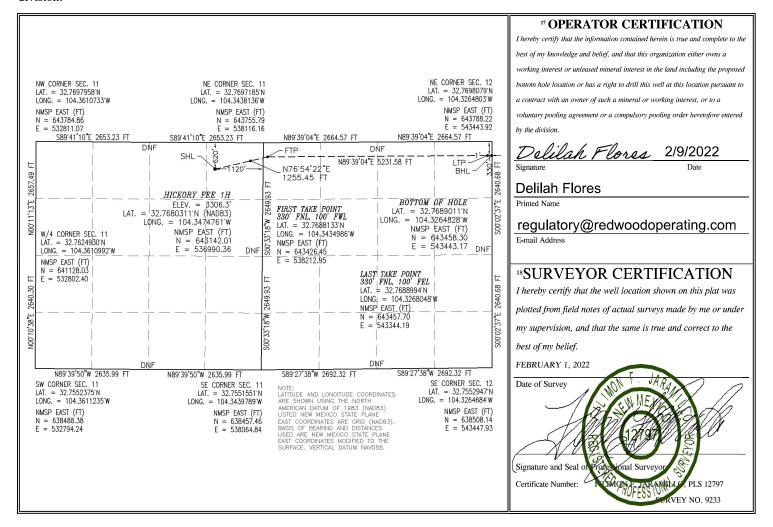
WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Numbe	er	² Pool Code	³ Pool Name				
30-015-49279		51120	Red Lake; Glorieta-Yeso				
⁴ Property Code		5 P	roperty Name	⁶ Well Number			
332353		HIC	KORY FEE	1H			
⁷ OGRID No.		* O	perator Name	⁹ Elevation			
330211		REDWOOD	OPERATING LLC	3306.3			

Surface Location

	" Surface Location											
UL or lot no.	Section	Township Range		Lot Idn	Feet from the	North/South line Feet from the		East/West line	County			
A	11	18 S	26 E	6 E 620		NORTH	1120	EAST	EDDY			
¹¹ Bottom Hole Location If Different From Surface												
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line Feet from the		East/West line	County			
A	12	18 S	26 E		330	NORTH	1	EAST	EDDY			
12 Dedicated Acre	s ¹³ Joint	or Infill	¹ Consolidation	n Code	¹⁵ Order No.							
160												

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



Inten	t	As Drill	ed											
API#]											
Ope	rator Nan	ne:				Prope	rty Nar	ne:						Well Number
REC	OWOOD	OPERATIN	IG LLC				ніск	DR۱	/ FEE					1H
Kick C	Off Point (KOP)												
UL A	Section 11	Township 18S	Range 26E	Lot	Feet 620	F	rom N/S		Feet 112	0	From EAS	E/W	County EDDY	
Latitu		80311		ı	Longitu		.3474	7 6	1				NAD 83	
	Γake Poin			1.		T								
UL D	Section 12	Township 18S	Range 26E	Lot	Feet 330		rom N/S NORTH		Feet 100		From WE:	st/W	County EDDY	
Latitu	ude 32.768	8133			Longitu		34349	86	•				NAD 83	
Last T UL A	Section 12	Township 18S	Range 26E	Lot	Feet 330	From I	N/S	- eet 100		From E EAST		Count EDD	у Ү	
Latitu		688994		•	Longitu		.3268	04	8			NAD 83		
Is this If infi	s well an i II is yes p ng Unit.							and	well	numbe	er fo	r Defii	ning well	for Horizontal
Ope	rator Nan	ne:				Prope	rty Nar	ne:						Well Number

KZ 06/29/2018

ACCESS ROAD PLAT

ACCESS ROAD TO HICKORY FEE 1H, 2H, 3H, 4H, 5H

REDWOOD OPERATING LLC
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
FEBRUARY 1, 2022

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M. BEARS N36'16'26"E, A DISTANCE OF 1633.91 FEET;

THENCE NO0'00'00"W A DISTANCE OF 448.26 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M. BEARS N48'02'48"E, A DISTANCE OF 1299.86 FEET;

SAID STRIP OF LAND BEING 448.26 FEET OR 27.17 RODS IN LENGTH, CONTAINING 0.309 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4 448.26 L.F. 27.17 RODS 0.309 ACRES

SURVEYOR CERTIFICATE

INC. 301 SOUTH (575) 234

GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING,

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, HS 14 JBAY OF FEBRUARY 2022

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 9233

), NEW MEXICO

Form APD Conditions

Permit 307908

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240

Phone:(575) 393-6161 Fax:(575) 393-0720 District II

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

PERMIT CONDITIONS OF APPROVAL

Operator N	ame and Address:	API Number:
	Redwood Operating LLC [330211]	30-015-49279
	PO Box 1370	Well:
,	Artesia, NM 882111370	Hickory Fee #001H
OCD	Condition	
Reviewer		
kpickford	Notify OCD 24 hours prior to casing & cement	
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	
knickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud	_

kpickford Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh

kpickford Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud,

water zone or zones and shall immediately set in cement the water protection string kpickford Cement is required to circulate on both surface and intermediate1 strings of casing

drilling fluids and solids must be contained in a steel closed loop system

I. Operator: Redwood Operating LLC

State of New Mexico Energy, Minerals and Natural Resources Department

Submit Electronically Via E-permitting

Date: 02 / 09 / 2022

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description Effective May 25, 2021

OGRID:

330211

If Other, please describes III. Well(s): Provide the be recompleted from a si	:	formation for each r	new or recomplet	ted well or set of				led or proposed to
Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D		cipated MCF/D		Anticipated oduced Water BBL/D
Hickory Fee 1H		Sec. 11 T18S R26E	620 FNL 1120 FEL	100	100		1,00	00
V. Anticipated Schedule proposed to be recomple Well Name					First Production Date			
Hickory Fee 1H		06/01/2022	07/01/2022	07/15/2022		07/15/2022		07/15/2022
VI. Separation Equipm VII. Operational Pract Subsection A through For the second secon	ices: ⋈ Atta of 19.15.27.8 t Practices:	ch a complete descr NMAC.	iption of the act	ions Operator wil	l take to	o comply v	with th	ne requirements of

Section 2 – Enhanced Plan EFFECTIVE APRIL 1, 2022

EFFECTIVE APRIL 1, 2022											
Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.											
☐ Operator certifies capture requirement f			tion because Operator is in o	compliance with its statewide natural gas							
IX. Anticipated Nati	ural Gas Productio	on:									
We	11	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF							
X. Natural Gas Gatl	hering System (NC	GGS):									
Operator System ULSTR of Tie-in Anticipated Gathering Start Date Available Maximum Daily Capacity of System Segment Tie-in											
production operations the segment or portion XII. Line Capacity. production volume from XIII. Line Pressure. natural gas gathering Attach Operator's XIV. Confidentiality Section 2 as provided	s to the existing or p n of the natural gas The natural gas gas om the well prior to Operator Operator does system(s) described plan to manage pro y: Operator asso in Paragraph (2) of	planned interconnect of the gathering system(s) to we thering system will the product of the date of first product does not anticipate the dabove will continue to reduction in response to the date confidentiality pursue.	he natural gas gathering systewhich the well(s) will be combined will not have capacity to go tion. It its existing well(s) connect meet anticipated increases in the increased line pressure. Usuant to Section 71-2-8 NMS 27.9 NMAC, and attaches a few which the well (s) will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which the well(s) will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which the well(s) will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which the well(s) will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which the well(s) will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC, and attaches a few which we will be combined to section 71-2-8 NMS 27.9 NMAC.	ticipated pipeline route(s) connecting the em(s), and the maximum daily capacity of nected. ather 100% of the anticipated natural gas ed to the same segment, or portion, of the line pressure caused by the new well(s). GA 1978 for the information provided in full description of the specific information							

(i)

Section 3 - Certifications <u>Effective May 25, 2021</u>

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal: 🛮 Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system: or ☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. If Operator checks this box, Operator will select one of the following: Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or Venting and Flaring Plan.

Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including: power generation on lease; (a) **(b)** power generation for grid; compression on lease; (c) (d) liquids removal on lease; reinjection for underground storage; (e) **(f)** reinjection for temporary storage; **(g)** reinjection for enhanced oil recovery; fuel cell production; and (h)

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

other alternative beneficial uses approved by the division.

- (a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or
- (b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.
- 2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: Delilah Flores
Printed Name: Delilah Flores
Title: Regulatory Technician I
E-mail Address: regulatory@redwoodoperating.com
Date: 02/09/2022
Phone:
575-748-1288
OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

VI. Separation Equipment:

Redwood Operating LLC production facilities include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the targeted pool of our completion project. Redwood Operating LLC will utilize flowback separation equipment and production separation equipment designed and built to industry specifications after the completion to optimize gas capture and send gas to sales or flare based on analytical composition. Redwood Operating LLC operates facilities that are typically multi-well facilities. Production separation equipment is upgraded prior to new wells being completed, if determined to be undersized or inadequate. This equipment is already on-site and tied into our sales gas lines prior to the new drill operations.

VII. Operational Practices:

- 1. Subsection (A) Venting and Flaring of Natural Gas. Redwood Operating LLC understands the requirements of NMAC 19.15.27.8 which outlines that the venting and flaring of natural gas during drilling, completion or production operations that constitutes waste as defined in 19.15.2 are prohibited.
- 2. Subsection (B) Venting and Flaring during drilling operations. This gas capture plan isn't for a well being drilled.
- 3. Subsection (C) Venting and flaring during completion or recompletion. Flowlines will be routed for flowback fluids into a completion or storage tank and if feasible under well conditions, flare rather than vent and commence operation of a separator as soon as it is technically feasible for a separator to function.
 - At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.
- 4. Subsection (D) Venting and flaring during production operations o At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.
 - Monitor manual liquid unloading for wells on-site or in close proximity (<30 minutes' drive time), take reasonable actions to achieve a stabilized rate and pressure at the earliest practical time, and take reasonable actions to minimize venting to the maximum extent practicable.
 - Redwood Operating LLC will not vent or flare except during the approved activities listed in NMAC 19.15.27.8 (D) 14.
- 5. Subsection (E) Performance standards \circ All tanks and separation equipment are designed for maximum throughput and pressure to minimize waste.
 - If a flare is utilized during production operations it will have a continuous pilot and is located more than 100 feet from any known well or storage tanks.
 - At any point in the well life (completion, production, inactive) an audio, visual and olfactory inspection be performed at prescribed intervals (weekly or monthly) pursuant to Subsection D of 19.15.27.8 NMAC, to confirm that all production equipment is operating properly and there are no leaks or releases.

- 6. Subsection (F) Measurement or estimation of vented and flared natural gas o Measurement equipment is installed to measure the volume of natural gas flared from process piping.
 - When measurement isn't practicable, estimation of vented and flared natural gas will be completed as noted in 19.15.27.8 (F) 5-6.

VIII. Best Management Practices:

- 1. Redwood Operating LLC has adequate storage and takeaway capacity for wells it chooses to complete as the flowlines at the sites are already in place and tied into a gathering system.
- 2. Redwood Operating LLC will flare rather than vent vessel blowdown gas when technically feasible during active and/or planned maintenance to equipment on-site.
- 3. Redwood Operating LLC combusts natural gas that would otherwise be vented or flared, when technically feasible.
- 4. Redwood Operating LLC will shut in wells in the event of a takeaway disruption, emergency situation, or other operations where venting or flaring may occur due to equipment failures.

Operator Redwood Operating LLC Units feet, °/100ft 15:13 Monday, February 07, 2022 Page 1 of 5 Field Red Lake County Eddy Vertical Section Azimuth 89.65 Well Name Hickory Fee 1H State New Mexico **Survey Calculation Method** Minimum Curvature

Plan 1 **Country** USA **Database** Access

Location SL: 620 FNL & 1120 FEL Section 11-T18S-R26E BHL:

Map Zone UTM Lat Long Ref 330 FNL & 1 FEL Section 12-T18S-R26E

Site **Surface X** 1841015.8 **Surface Long** UWI **Surface Y** 11894782.6 **Slot Name Surface Lat**

Well Number 1H API **Surface Z** 3324.3 Global Z Ref KB **Ground Level** 3306.3 **Project** MD/TVD Ref KB Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN* S	SysTVD*
*** TIE (at MD) = 1597.00)	doa	ft	ft	ft	°/100ff	ft	ft	ft	ft
1597.00	0.00	0.0	1597.00	0.00	0.00		0.00	1841015.80	11894782.60	1727.30
1600.00	0.00	0.0	1600.00	0.00	0.00	0.00	0.00	1841015.80	11894782.60	1724.30
1650.00	0.00	0.0	1650.00	0.00	0.00	0.00	0.00	1841015.80	11894782.60	1674.30
*** KOP 8 DEC			7.00)							
1697.00	0.00	0.0	1697.00	0.00	0.00	0.00	0.00	1841015.80	11894782.60	1627.30
1700.00	0.24	65.1	1700.00	0.00	0.01	8.00	0.01	1841015.81	11894782.60	1624.30
1750.00	4.24	65.1	1749.95	0.83	1.78	8.00	1.78	1841017.58	11894783.43	1574.35
1800.00	8.24	65.1	1799.65	3.11	6.71	8.00	6.73	1841022.51	11894785.71	1524.65
1850.00	12.24	65.1	1848.84	6.85	14.77	8.00	14.81	1841030.57	11894789.45	1475.46
1900.00	16.24	65.1	1897.29	12.03	25.92	8.00	25.99	1841041.72	11894794.63	1427.01
1950.00	20.24	65.1	1944.77	18.62	40.11	8.00	40.23	1841055.91	11894801.22	1379.53
2000.00	24.24	65.1	1991.04	26.59	57.27	8.00	57.44	1841073.07	11894809.19	1333.26
2050.00	28.24	65.1	2035.88	35.89	77.32	8.00	77.54	1841093.12	11894818.49	1288.42
2100.00	32.24	65.1	2079.07	46.49	100.16	8.00	100.44	1841115.96	11894829.09	1245.23
2150.00	36.24	65.1	2120.39	58.33	125.67	8.00	126.02	1841141.47	11894840.93	1203.91
2200.00	40.24	65.1	2159.66	71.36	153.74	8.00	154.17	1841169.54	11894853.96	1164.64
2250.00	44.24	65.1	2196.67	85.51	184.22	8.00	184.74	1841200.02	11894868.11	1127.63
2300.00	48.24	65.1	2231.24	100.71	216.97	8.00	217.58	1841232.77	11894883.31	1093.06
2350.00	52.24	65.1	2263.21	116.89	251.82	8.00	252.53	1841267.62	11894899.49	1061.09
*** 55 DEGRE	E TANGEN	T (at MD =	= 2384.50)							
2384.50	55.00	65.1	2283.67	128.59	277.01	8.00	277.79	1841292.81	11894911.19	1040.63
2400.00	55.00	65.1	2292.56	133.93	288.53	0.00	289.34	1841304.33	11894916.53	1031.74
2450.00	55.00	65.1	2321.24	151.18	325.68	0.00	326.60	1841341.48	11894933.78	1003.06
2500.00	55.00	65.1	2349.92	168.42	362.83	0.00	363.85	1841378.63	11894951.02	974.38
2550.00	55.00	65.1	2378.60	185.67	399.98	0.00	401.11	1841415.78	11894968.27	945.70
2600.00	55.00	65.1	2407.28	202.91	437.13	0.00	438.36	1841452.93	11894985.51	917.02
*** 10 DEGRE										
2634.50	55.00	65.1	2427.07	214.81	462.77	0.00	464.07	1841478.57	11894997.41	897.23
2650.00	56.21	66.3	2435.82	220.07	474.42	10.00	475.76	1841490.22	11895002.67	888.48
2700.00	60.17	69.9	2462.18	235.90	513.83	10.00	515.26	1841529.63	11895018.50	862.12
2750.00	64.22	73.2	2485.51	249.88	555.77	10.00	557.28	1841571.57	11895032.48	838.79
2800.00	68.34	76.3	2505.63	261.91	599.92	10.00	601.51	1841615.72	11895044.51	818.67
2850.00	72.51	79.2	2522.38	271.89	645.94	10.00	647.59	1841661.74	11895054.49	801.92
2900.00	76.72	82.0	2535.65	279.74	693.49	10.00	695.18	1841709.29	11895062.34	788.65
2950.00	80.97	84.7	2545.32	285.41	742.20	10.00	743.93	1841758.00	11895068.01	778.98
3000.00	85.23	87.3	2551.32	288.86	791.70	10.00	793.45	1841807.50	11895071.46	772.98
*** LANDING F										
3044.68	89.05	89.7	2553.55	290.04	836.30	10.00	838.05	1841852.10	11895072.64	770.75

Operator Redwood Operating LLC Units feet, °/100ft Field Red Lake County Eddy Well Name Hickory Fee 1H State New Mexico Plan 1 **Country** USA

15:13 Monday, February 07, 2022 Page 2 of 5 Vertical Section Azimuth 89.65 **Survey Calculation Method** Minimum Curvature

Lat Long Ref

Database Access

Location SL: 620 FNL & 1120 FEL Section 11-T18S-R26E BHL:

330 FNL & 1 FEL Section 12-T18S-R26E

Site

Slot Name Well Number 1H **Project**

UWI API MD/TVD Ref KB **Surface X** 1841015.8 **Surface Y** 11894782.6 **Surface Z** 3324.3

Map Zone UTM

Ground Level 3306.3

Surface Long Surface Lat Global Z Ref KB Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN* S	sysTVD*
3050.00	89.05	89.7	2553.64	290.07	841.62	0.00	843.37	1841857.42	11895072.67	770.66
3100.00	89.05	89.7	2554.47	290.37	891.61	0.00	893.37	1841907.41	11895072.97	769.83
3150.00	89.05	89.7	2555.30	290.68	941.60	0.00	943.36	1841957.40	11895073.28	769.00
3200.00	89.05	89.7	2556.13	290.98	991.59	0.00	993.35	1842007.39	11895073.58	768.17
3250.00	89.05	89.7	2556.96	291.29	1041.59	0.00	1043.35	1842057.39	11895073.89	767.34
3300.00	89.05	89.7	2557.78	291.59	1091.58	0.00	1093.34	1842107.38	11895074.19	766.52
3350.00	89.05	89.7	2558.61	291.90	1141.57	0.00	1143.33	1842157.37	11895074.50	765.69
3400.00	89.05	89.7	2559.44	292.21	1191.56	0.00	1193.33	1842207.36	11895074.81	764.86
3450.00	89.05	89.7	2560.27	292.51	1241.56	0.00	1243.32	1842257.36	11895075.11	764.03
3500.00	89.05	89.7	2561.10	292.82	1291.55	0.00	1293.31	1842307.35	11895075.42	763.20
3550.00	89.05	89.7	2561.93	293.12	1341.54	0.00	1343.31	1842357.34	11895075.72	762.37
3600.00	89.05	89.7	2562.76	293.43	1391.53	0.00	1393.30	1842407.33	11895076.03	761.54
3650.00	89.05	89.7	2563.59	293.73	1441.52	0.00	1443.29	1842457.32	11895076.33	760.71
3700.00	89.05	89.7	2564.42	294.04	1491.52	0.00	1493.28	1842507.32	11895076.64	759.88
3750.00	89.05	89.7	2565.25	294.34	1541.51	0.00	1543.28	1842557.31	11895076.94	759.05
3800.00	89.05	89.7	2566.07	294.65	1591.50	0.00	1593.27	1842607.30	11895077.25	758.23
3850.00	89.05	89.7	2566.90	294.95	1641.49	0.00	1643.26	1842657.29	11895077.55	757.40
3900.00	89.05	89.7	2567.73	295.26	1691.49	0.00	1693.26	1842707.29	11895077.86	756.57
3950.00	89.05	89.7	2568.56	295.57	1741.48	0.00	1743.25	1842757.28	11895078.17	755.74
4000.00	89.05	89.7	2569.39	295.87	1791.47	0.00	1793.24	1842807.27	11895078.47	754.91
4050.00	89.05	89.7	2570.22	296.18	1841.46	0.00	1843.24	1842857.26	11895078.78	754.08
4100.00	89.05	89.7	2571.05	296.48	1891.45	0.00	1893.23	1842907.25	11895079.08	753.25
4150.00	89.05	89.7	2571.88	296.79	1941.45	0.00	1943.22	1842957.25	11895079.39	752.42
4200.00	89.05	89.7	2572.71	297.09	1991.44	0.00	1993.22	1843007.24	11895079.69	751.59
4250.00	89.05	89.7	2573.54	297.40	2041.43	0.00	2043.21	1843057.23	11895080.00	750.76
4300.00	89.05	89.7	2574.36	297.70	2091.42	0.00	2093.20	1843107.22	11895080.30	749.94
4350.00	89.05	89.7	2575.19	298.01	2141.41	0.00	2143.20	1843157.21	11895080.61	749.11
4400.00	89.05	89.7	2576.02	298.31	2191.41	0.00	2193.19	1843207.21	11895080.91	748.28
4450.00	89.05	89.7	2576.85	298.62	2241.40	0.00	2243.18	1843257.20	11895081.22	747.45
4500.00	89.05	89.7	2577.68	298.92	2291.39	0.00	2293.17	1843307.19	11895081.52	746.62
4550.00	89.05	89.7	2578.51	299.23	2341.38	0.00	2343.17	1843357.18	11895081.83	745.79
4600.00	89.05	89.7	2579.34	299.54	2391.38	0.00	2393.16	1843407.18	11895082.14	744.96
4650.00	89.05	89.7	2580.17	299.84	2441.37	0.00	2443.15	1843457.17	11895082.44	744.13
4700.00	89.05	89.7	2581.00	300.15	2491.36	0.00	2493.15	1843507.16	11895082.75	743.30
4750.00	89.05	89.7	2581.83	300.45	2541.35	0.00	2543.14	1843557.15	11895083.05	742.47
4800.00	89.05	89.7	2582.65	300.76	2591.34	0.00	2593.13	1843607.14	11895083.36	741.65
4850.00	89.05	89.7	2583.48	301.06	2641.34	0.00	2643.13	1843657.14	11895083.66	740.82

OperatorRedwood Operating LLCUnitsfeet, °/100ft15:13 Monday, February 07, 2022 Page 3 of 5FieldRed LakeCountyEddyVertical Section Azimuth89.65Well NameHickory Fee 1HStateNew MexicoSurvey Calculation MethodMinimum CurvaturePlan1CountryUSADatabaseAccess

Location SL: 620 FNL & 1120 FEL Section 11-T18S-R26E BHL:

Map Zone UTM

Ground Level 3306.3

Lat Long Ref

330 FNL & 1 FEL Section 12-T18S-R26E Site

Surface X 1841015.8

Surface Long
Surface Lat

Slot Name Well Number 1H Project UWI API

MD/TVD Ref KB

Surface Y 11894782.6 Surface Z 3324.3

Global Z Ref KB
Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
4900.00	89.05	89.7	2584.31	301.37	2691.33	0.00	2693.12	1843707.13	11895083.97	739.99
4950.00	89.05	89.7	2585.14	301.67	2741.32	0.00	2743.11	1843757.12	11895084.27	739.16
5000.00	89.05	89.7	2585.97	301.98	2791.31	0.00	2793.11	1843807.11	11895084.58	738.33
5050.00	89.05	89.7	2586.80	302.28	2841.31	0.00	2843.10	1843857.11	11895084.88	737.50
5100.00	89.05	89.7	2587.63	302.59	2891.30	0.00	2893.09	1843907.10	11895085.19	736.67
5150.00	89.05	89.7	2588.46	302.89	2941.29	0.00	2943.09	1843957.09	11895085.49	735.84
5200.00	89.05	89.7	2589.29	303.20	2991.28	0.00	2993.08	1844007.08	11895085.80	735.01
5250.00	89.05	89.7	2590.12	303.51	3041.27	0.00	3043.07	1844057.07	11895086.11	734.18
5300.00	89.05	89.7	2590.94	303.81	3091.27	0.00	3093.06	1844107.07	11895086.41	733.36
5350.00	89.05	89.7	2591.77	304.12	3141.26	0.00	3143.06	1844157.06	11895086.72	732.53
5400.00	89.05	89.7	2592.60	304.42	3191.25	0.00	3193.05	1844207.05	11895087.02	731.70
5450.00	89.05	89.7	2593.43	304.73	3241.24	0.00	3243.04	1844257.04	11895087.33	730.87
5500.00	89.05	89.7	2594.26	305.03	3291.24	0.00	3293.04	1844307.04	11895087.63	730.04
5550.00	89.05	89.7	2595.09	305.34	3341.23	0.00	3343.03	1844357.03	11895087.94	729.21
5600.00	89.05	89.7	2595.92	305.64	3391.22	0.00	3393.02	1844407.02	11895088.24	728.38
5650.00	89.05	89.7	2596.75	305.95	3441.21	0.00	3443.02	1844457.01	11895088.55	727.55
5700.00	89.05	89.7	2597.58	306.25	3491.20	0.00	3493.01	1844507.00	11895088.85	726.72
5750.00	89.05	89.7	2598.41	306.56	3541.20	0.00	3543.00	1844557.00	11895089.16	725.89
5800.00	89.05	89.7	2599.23	306.86	3591.19	0.00	3593.00	1844606.99	11895089.46	725.07
5850.00	89.05	89.7	2600.06	307.17	3641.18	0.00	3642.99	1844656.98	11895089.77	724.24
5900.00	89.05	89.7	2600.89	307.48	3691.17	0.00	3692.98	1844706.97	11895090.08	723.41
5950.00	89.05	89.7	2601.72	307.78	3741.17	0.00	3742.98	1844756.97	11895090.38	722.58
6000.00	89.05	89.7	2602.55	308.09	3791.16	0.00	3792.97	1844806.96	11895090.69	721.75
6050.00	89.05	89.7	2603.38	308.39	3841.15	0.00	3842.96	1844856.95	11895090.99	720.92
6100.00	89.05	89.7	2604.21	308.70	3891.14	0.00	3892.95	1844906.94	11895091.30	720.09
6150.00	89.05	89.7	2605.04	309.00	3941.13	0.00	3942.95	1844956.93	11895091.60	719.26
6200.00	89.05	89.7	2605.87	309.31	3991.13	0.00	3992.94	1845006.93	11895091.91	718.43
6250.00	89.05	89.7	2606.70	309.61	4041.12	0.00	4042.93	1845056.92	11895092.21	717.60
6300.00	89.05	89.7	2607.52	309.92	4091.11	0.00	4092.93	1845106.91	11895092.52	716.78
6350.00	89.05	89.7	2608.35	310.22	4141.10	0.00	4142.92	1845156.90	11895092.82	715.95
6400.00	89.05	89.7	2609.18	310.53	4191.09	0.00	4192.91	1845206.89	11895093.13	715.12
6450.00	89.05	89.7	2610.01	310.83	4241.09	0.00	4242.91	1845256.89	11895093.43	714.29
6500.00	89.05	89.7	2610.84	311.14	4291.08	0.00	4292.90	1845306.88	11895093.74	713.46
6550.00	89.05	89.7	2611.67	311.45	4341.07	0.00	4342.89	1845356.87	11895094.05	712.63
6600.00	89.05	89.7	2612.50	311.75	4391.06	0.00	4392.89	1845406.86	11895094.35	711.80
6650.00	89.05	89.7	2613.33	312.06	4441.06	0.00	4442.88	1845456.86	11895094.66	710.97
6700.00	89.05	89.7	2614.16	312.36	4491.05	0.00	4492.87	1845506.85	11895094.96	710.14

Page 3 of 5 SES v5.79 www.makinhole.co

OperatorRedwood Operating LLCUnitsfeet, °/100ft15:13 Monday, February 07, 2022 Page 4 of 5FieldRed LakeCountyEddyVertical Section Azimuth89.65Well NameHickory Fee 1HStateNew MexicoSurvey Calculation MethodMinimum CurvaturePlan1CountryUSADatabaseAccess

Location SL: 620 FNL & 1120 FEL Section 11-T18S-R26E BHL:

330 FNL & 1 FEL Section 12-T18S-R26E

Site

Slot Name UWI Well Number 1H API

Project MD/TVD Ref KB

Map Zone UTM

Surface X 1841015.8 **Surface Y** 11894782.6

Surface Z 3324.3 Ground Level 3306.3 Surface Long

Lat Long Ref

Surface Lat
Global Z Ref KB
Local North Ref Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
6750.00	89.05	89.7	2614.99	312.67	4541.04	0.00	4542.87	1845556.84	11895095.27	709.31
6800.00	89.05	89.7	2615.81	312.97	4591.03	0.00	4592.86	1845606.83	11895095.57	708.49
6850.00	89.05	89.7	2616.64	313.28	4641.02	0.00	4642.85	1845656.82	11895095.88	707.66
6900.00	89.05	89.7	2617.47	313.58	4691.02	0.00	4692.84	1845706.82	11895096.18	706.83
6950.00	89.05	89.7	2618.30	313.89	4741.01	0.00	4742.84	1845756.81	11895096.49	706.00
7000.00	89.05	89.7	2619.13	314.19	4791.00	0.00	4792.83	1845806.80	11895096.79	705.17
7050.00	89.05	89.7	2619.96	314.50	4840.99	0.00	4842.82	1845856.79	11895097.10	704.34
7100.00	89.05	89.7	2620.79	314.80	4890.99	0.00	4892.82	1845906.79	11895097.40	703.51
7150.00	89.05	89.7	2621.62	315.11	4940.98	0.00	4942.81	1845956.78	11895097.71	702.68
7200.00	89.05	89.7	2622.45	315.42	4990.97	0.00	4992.80	1846006.77	11895098.02	701.85
7250.00	89.05	89.7	2623.28	315.72	5040.96	0.00	5042.80	1846056.76	11895098.32	701.03
7300.00	89.05	89.7	2624.10	316.03	5090.95	0.00	5092.79	1846106.75	11895098.63	700.20
7350.00	89.05	89.7	2624.93	316.33	5140.95	0.00	5142.78	1846156.75	11895098.93	699.37
7400.00	89.05	89.7	2625.76	316.64	5190.94	0.00	5192.78	1846206.74	11895099.24	698.54
7450.00	89.05	89.7	2626.59	316.94	5240.93	0.00	5242.77	1846256.73	11895099.54	697.71
7500.00	89.05	89.7	2627.42	317.25	5290.92	0.00	5292.76	1846306.72	11895099.85	696.88
7550.00	89.05	89.7	2628.25	317.55	5340.92	0.00	5342.76	1846356.72	11895100.15	696.05
7600.00	89.05	89.7	2629.08	317.86	5390.91	0.00	5392.75	1846406.71	11895100.46	695.22
7650.00	89.05	89.7	2629.91	318.16	5440.90	0.00	5442.74	1846456.70	11895100.76	694.39
7700.00	89.05	89.7	2630.74	318.47	5490.89	0.00	5492.73	1846506.69	11895101.07	
7750.00	89.05	89.7	2631.57	318.77	5540.88	0.00	5542.73	1846556.68	11895101.37	
7800.00	89.05	89.7	2632.39	319.08	5590.88	0.00	5592.72	1846606.68	11895101.68	691.91
7850.00	89.05	89.7	2633.22	319.39	5640.87	0.00	5642.71	1846656.67	11895101.99	691.08
7900.00	89.05	89.7	2634.05	319.69	5690.86	0.00	5692.71	1846706.66	11895102.29	690.25
7950.00	89.05	89.7	2634.88	320.00	5740.85	0.00	5742.70	1846756.65	11895102.60	689.42
8000.00	89.05	89.7	2635.71	320.30	5790.85	0.00	5792.69	1846806.65	11895102.90	688.59
8050.00	89.05	89.7	2636.54	320.61	5840.84	0.00	5842.69	1846856.64	11895103.21	687.76
8100.00	89.05	89.7	2637.37	320.91	5890.83	0.00	5892.68	1846906.63	11895103.51	686.93
8150.00	89.05	89.7	2638.20	321.22	5940.82	0.00	5942.67	1846956.62	11895103.82	686.10
8200.00	89.05	89.7	2639.03	321.52	5990.81	0.00	5992.67	1847006.61	11895104.12	685.27
8250.00	89.05	89.7	2639.85	321.83	6040.81	0.00	6042.66	1847056.61	11895104.43	684.45
8300.00	89.05	89.7	2640.68	322.13	6090.80	0.00	6092.65	1847106.60	11895104.73	683.62
8350.00	89.05	89.7	2641.51	322.44	6140.79	0.00	6142.65	1847156.59	11895105.04	682.79
8400.00	89.05	89.7	2642.34	322.74	6190.78	0.00	6192.64	1847206.58	11895105.34	681.96
8450.00	89.05	89.7	2643.17	323.05	6240.77	0.00	6242.63	1847256.57	11895105.65	681.13
8500.00	89.05	89.7	2644.00	323.36	6290.77	0.00	6292.62	1847306.57	11895105.96	680.30
8550.00	89.05	89.7	2644.83	323.66	6340.76	0.00	6342.62	1847356.56	11895106.26	679.47

Page 4 of 5 SES v5.79 www.makinhole.co

Lat Long Ref

Hickory Fee 1H, Plan 1

OperatorRedwood Operating LLCUnitsfeet, °/100ft15:13 Monday, February 07, 2022 Page 5 of 5FieldRed LakeCountyEddyVertical Section Azimuth89.65Well NameHickory Fee 1HStateNew MexicoSurvey Calculation MethodMinimum Curvature

Plan 1 Country USA Database Access

Location SL: 620 FNL & 1120 FEL Section 11-T18S-R26E BHL: Map Zone UTM

330 FNL & 1 FEL Section 12-T18S-R26E

 Site
 Surface X
 1841015.8
 Surface Long

 Slot Name
 UWI
 Surface Y
 11894782.6
 Surface Lat

 Well Number 1H
 API
 Surface Z
 3324.3
 Global Z Ref KB

Project MD/TVD Ref KB Ground Level 3306.3 Local North Ref Grid

DIRECTIONAL WELL PLAN

	MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN* SysTVD*	
	ft	doa	dog	ft	ft	ft	°/100ff	ft	ft	fŧ	ft
	8600.00	89.05	89.7	2645.66	323.97	6390.75	0.00	6392.61	1847406.55	11895106.57	678.64
	8650.00	89.05	89.7	2646.49	324.27	6440.74	0.00	6442.60	1847456.54	11895106.87	677.81
	8700.00	89.05	89.7	2647.32	324.58	6490.74	0.00	6492.60	1847506.54	11895107.18	676.98
	8750.00	89.05	89.7	2648.14	324.88	6540.73	0.00	6542.59	1847556.53	11895107.48	676.16
*** TD (at MD = 8771.68)											
	8771.68	89.05	89.7	2648.50	325.01	6562.40	0.00	6564.26	1847578.20	11895107.61	675.80

Page 5 of 5 SES v5.79 www.makinhole.com