UL - Lot

<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

District IV

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

Section

20

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 315224

	APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE											
1. Operator Name	and Address								2. OGR	ID Number		
LONG	FELLOW ENERG	Y, LP								372210		
8115	Preston Road								3. API I	Number		
Dallas	Dallas, TX 75225							30-015-49527				
4. Property Code 5. Property Name							6. Well No.					
33286	51			Santana State Co	om 20 CD					003H		
					7. Sur	face Location						
UL - Lot	Section	Township		Range	Lot Idn	Feet From	N/S Line	Feet From		E/W Line	County	
M	21	1	7S	28E		1220	S	20	00	W		Eddy
	8. Proposed Bottom Hole Location											

Feet From

1561

N/S Line

Feet From

20

E/W Line

W

County

Eddy

9. Pool Information	
ARTESIA: GLORIETA-YESO (O)	96830

Lot Idn

Additional Well Information								
11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation				
New Well	OIL		State	3613				
16. Multiple	17. Proposed Depth	18. Formation	19. Contractor	20. Spud Date				
N	9355	Yeso		5/15/2022				
Depth to Ground water		Distance from nearest fresh water	well	Distance to nearest surface water				

We will be using a closed-loop system in lieu of lined pits

Township

17S

Range

28E

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC				
Surf	12.25	9.625	36	1250	575	0				
Prod	8.75	7	32	4080	710	0				
Prod	8.75	5.5	20	9355	710	1050				

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program									
Туре	Working Pressure	Test Pressure	Manufacturer						
Double Ram	3000	3000	Shaffer						
Blind	3000	3000	Shaffer						

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☑ and/or 19.15.14.9 (B) NMAC ☑, if applicable.				OIL CONSERVATIO	N DIVISION
Signature:					
Printed Name:	Electronically filed by Ryan Culp	epper	Approved By:	Katherine Pickford	
Title:			Title:	Geoscientist	
Email Address: ryan.culpepper@longfellowenergy.com		Approved Date:	5/12/2022	Expiration Date: 5/12/2024	
Date: 5/2/2022 Phone: 972-590-9933			Conditions of Appr	oval Attached	

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 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

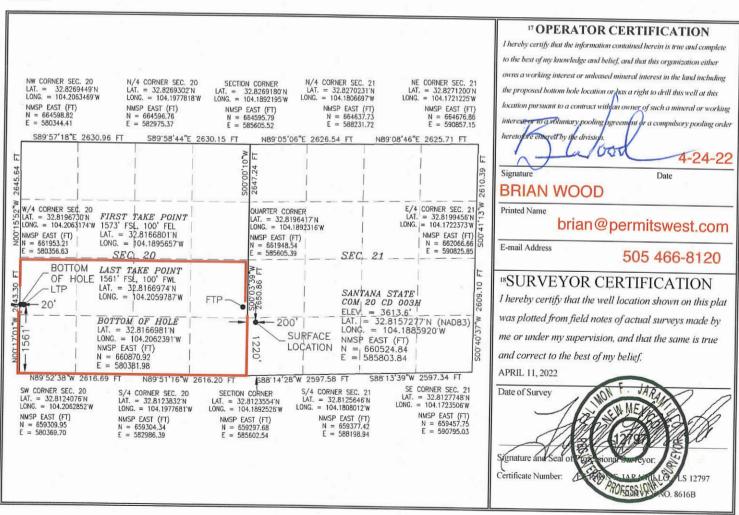
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-015- 49527	² Pool Code 96830	ARTESIA; GLORIETA-YESO (O)		
332861 SANTANA STA		TE COM 20 CD	⁶ Well Number 003 H	
⁷ OGRID No. 372210	100 to	or Name 9 Eleva	⁹ Elevation 3613.6	

¹⁰ Surface Location UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County M 21 17 S 28 E 1220 SOUTH 200 WEST **EDDY** Bottom Hole Location If Different From Surface UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County L 20 17 S 28 E 1561 SOUTH 20 WEST **EDDY** 12 Dedicated Acres 13 Joint or Infill 14 Consolidation Code 15 Order No. 320.00 C

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.



Inter	nt	As Dr	illed											
API	#													
Operator Name: LONGFELLOW ENERGY, LP						1	perty NTAN			E CO	M 2	0 CD		Well Numb
Kick (Off Point	(KOP)	50.0					1						
UL	Section	Township	Range	Lot	Feet		From	N/S	Fee	t	Froi	m E/W	County	
Latit	<u>l</u> ude		1		Longitu	ıde							NAD	
First	Take Poir	nt (FTP)												
UL 	Section 20	Township 17S	Range 28E	Lot	Feet 1573		From I		Feet		From	n E/W	County	
Latitu 32.8	ide 316680	1			Longitu 104.1								NAD 83	
Last T	ake Poin	t (LTP)												-
UL L	Section 20	Township 17S	Range 28E	Lot	Feet 1561		n N/S UTH	Feet 100		From I		Count EDD'		
32.8	^{ide} 316697	4			Longitud		787					NAD 83		
s this	well the	defining w	vell for the	e Horiz	zontal Sp	acing	: Unit?		NO	1				
s this	well an i	nfill well?	5	YES]									
f infill Spacin	is yes plo	ease provid	de API if a	ıvailab	le, Opera	ator N	lame a	and w	ell nu	ımber	for D	efinin	g well fo	r Horizontal
API#														
Oper	ator Nam	ne:				Prope	erty Na	ame:						Well Numbe
LO	NGFEL	LOW EN	ERGY,	LP		SA	NTAI	NA S	TAT	ECC)M 2	20 CD		004H

KZ 06/29/2018

<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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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 APD Comments

Permit 315224

PERMIT COMMENTS

Operator Name and Address:	API Number:
LONGFELLOW ENERGY, LP [372210]	30-015-49527
8115 Preston Road	Well:
Dallas, TX 75225	Santana State Com 20 CD #003H

Created By	Comment	Comment Date
kpickford	Defining well	5/12/2022

Form APD Conditions

Permit 315224

<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

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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**

PERMIT CONDITIONS OF APPROVAL

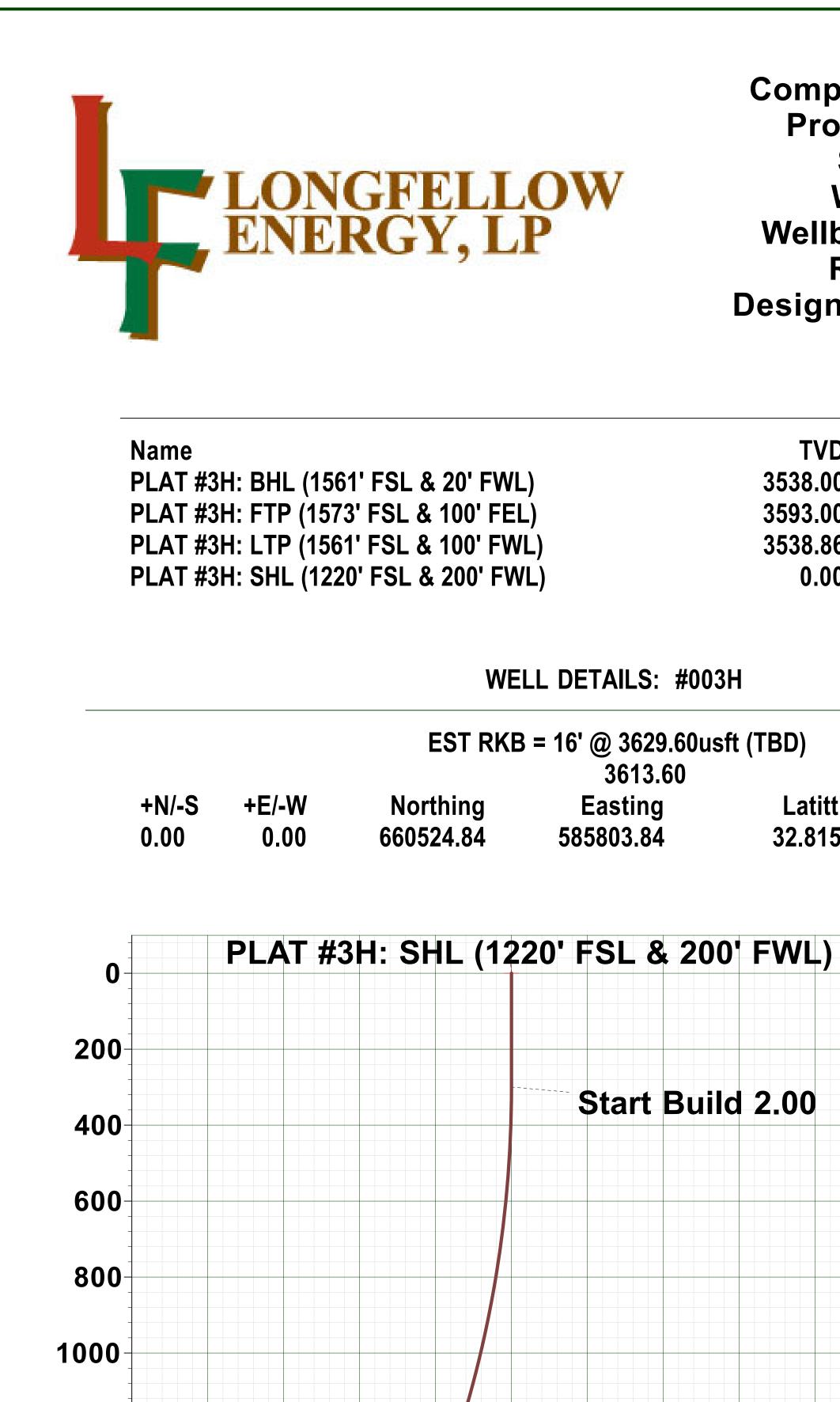
Operator N	ame and Address:	API Number:
	LONGFELLOW ENERGY, LP [372210]	30-015-49527
	8115 Preston Road	Well:
	Dallas, TX 75225	Santana State Com 20 CD #003H
OCD	Condition	
Reviewer		
kpickford	Notify OCD 24 hours prior to casing & cement	
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	
kpickford	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



1200 QUEEN

S 2000 SAN ANDRES

GLORIETA 3400 PADDOCK

BLINEBERRY

5 2200

8 2400

≥ 2600-

3000

3600

4200

Company: Longfellow Energy Project: Eddy Co., NM (Nad-83) Site: SANTANA STATE COM 20 CD Well: #003H Wellbore: Wellbore #1 Rig: TBD Design: PLAN #3 9:10, April 20 2022



DESIGN TARGET DETAILS

DESIGN TARGET DETAILS								
lame	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
LAT #3H: BHL (1561' FSL & 20' FWL)	3538.00	346.08	-5421.86	660870.92	580381.98	32.816698	-104.206239	
LAT #3H: FTP (1573' FSL & 100' FEL)	3593.00	346.10	-299.61	660870.94	585504.23	32.816680	-104.189566	
LAT #3H: LTP (1561' FSL & 100' FWL)	3538.86	345.93	-5341.85	660870.77	580461.99	32.816697	-104.205979	
LAT #3H: SHL (1220' FSL & 200' FWL)	0.00	0.00	0.00	660524.84	585803.84	32.815728	-104.188592	

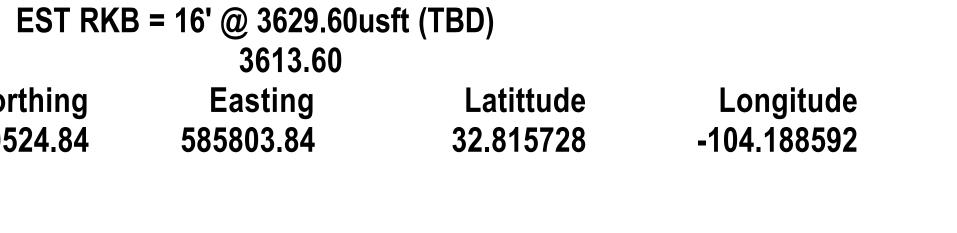
Start DLS 6.00 TFO -162.078

Start 200.00 hold at 3726.02 M

Start Build 10.00

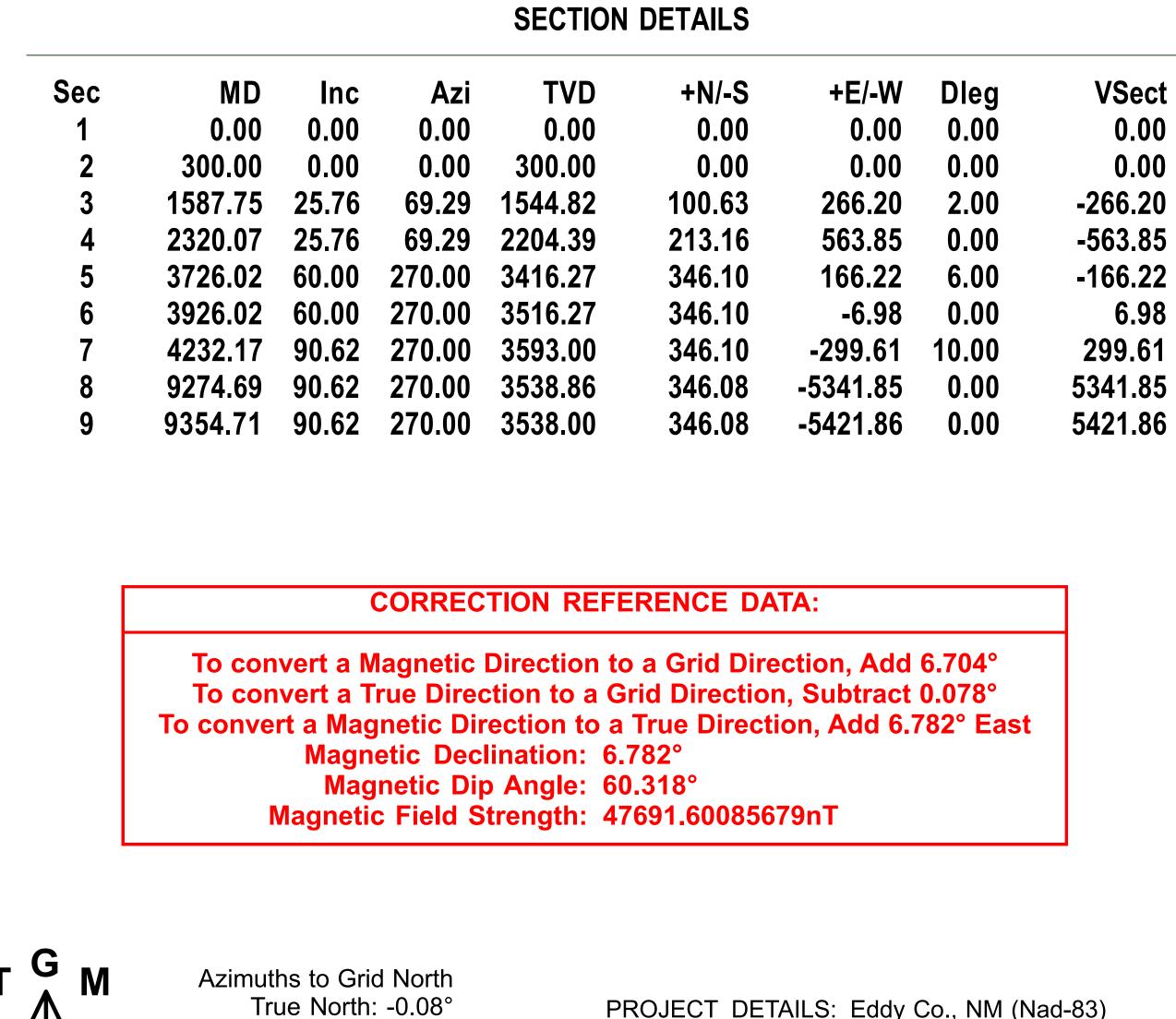
Start 5042.53 hold at 4232.17 MD

PLAT #3H: FTP (1573' FSL & 100' FEL)





Disclaimer:



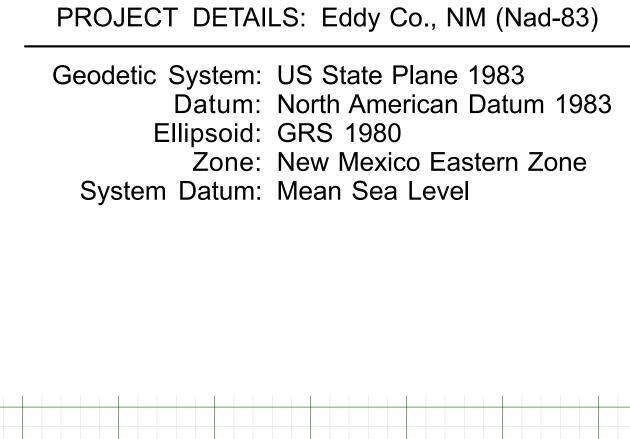
Magnetic North: 6.70°

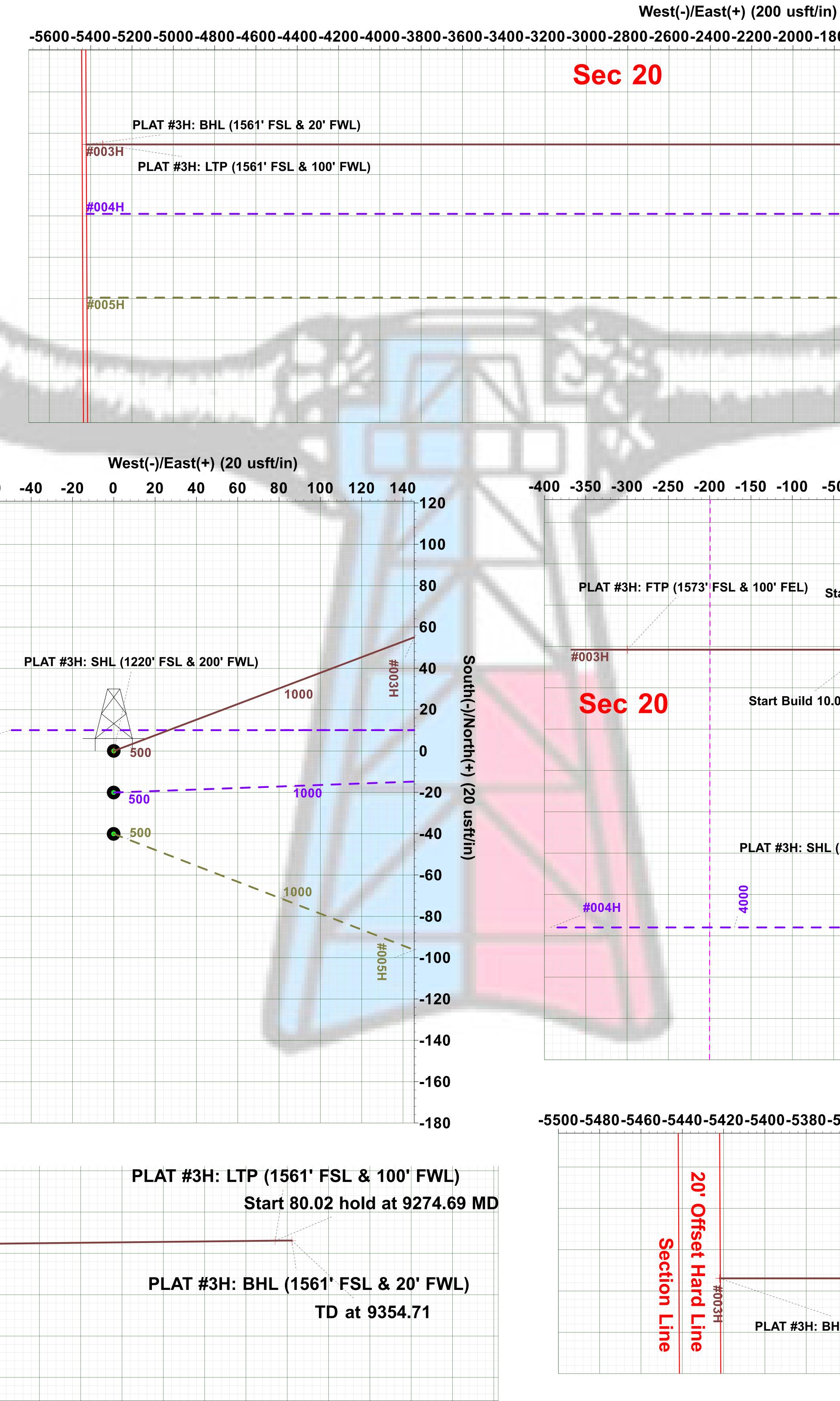
Strength: 47691.6snT

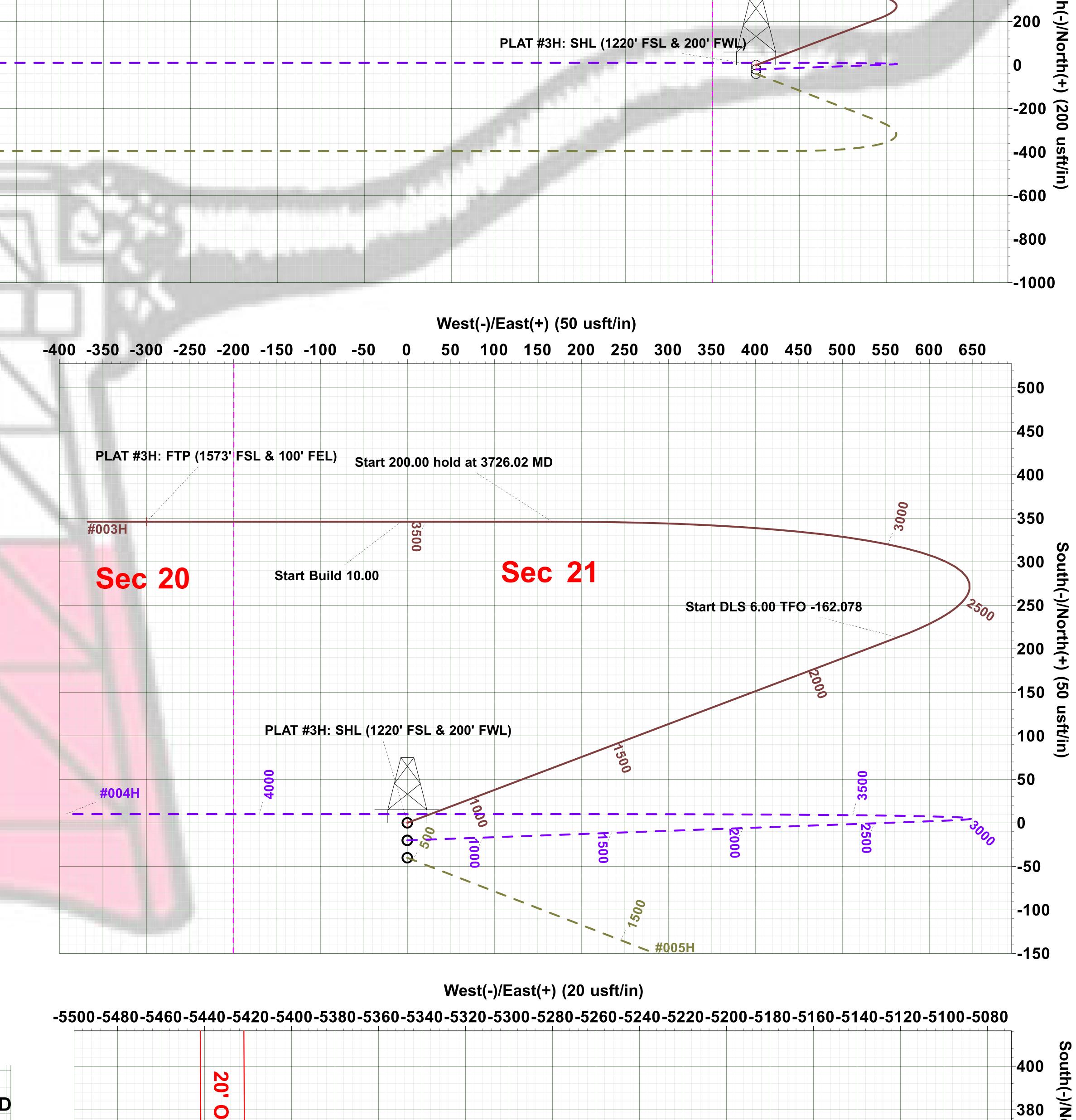
Dip Angle: 60.32° Date: 4/13/2022

Model: IGRF2020

Magnetic Field

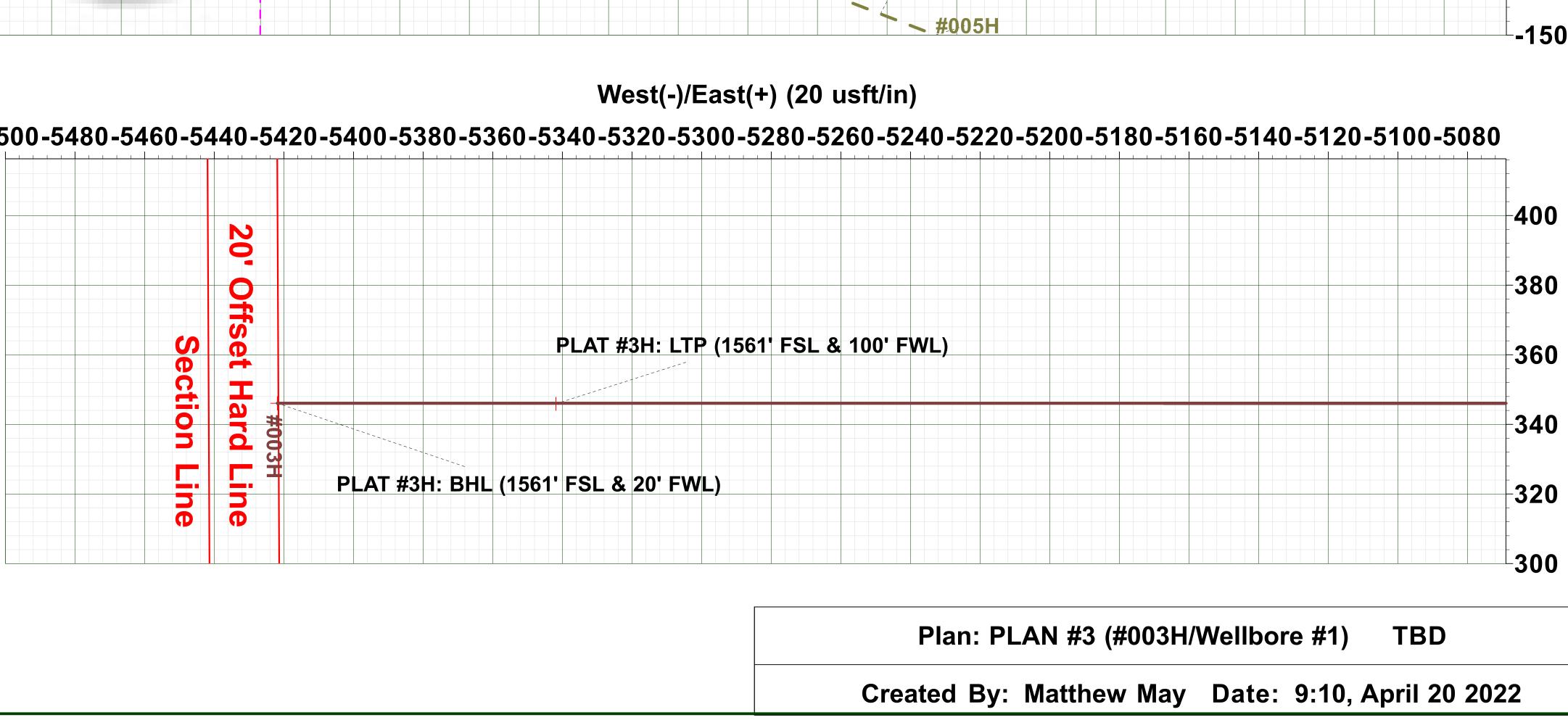






PLAT #3H: FTP (1573' FSL & 100' FEL)

Sec 21



Vertical Section at 270.00° (200 usft/in)

200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 3800 3000 3800 4000 4200 4400 4600 4800 5000 5200 5400 5600 5800 6000 6200 6400





WBDS SQL 2 Database: Company: Longfellow Energy Project: Eddy Co., NM (Nad-83) Site: SANTANA STATE COM 20 CD

Well: #003H Wellbore: Wellbore #1 Design: PLAN #3

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well #003H

EST RKB = 16' @ 3629.60usft (TBD) EST RKB = 16' @ 3629.60usft (TBD)

Minimum Curvature

Project Eddy Co., NM (Nad-83)

Map System: Geo Datum:

Map Zone:

US State Plane 1983 North American Datum 1983 New Mexico Eastern Zone

System Datum:

Mean Sea Level

Site SANTANA STATE COM 20 CD

+N/-S

+E/-W

Site Position: From:

Lat/Long

Northing: Easting:

660,599.54 usft 585,804.04 usft

Latitude: Longitude:

32.815933 -104.188591

Position Uncertainty:

0.00 usft Slot Radius: 13.200 in **Grid Convergence:** 0.078°

Well #003H

Well Position

-74.70 usft -0.20 usft

Northing: Easting:

660,524.84 usft 585,803.84 usft

Latitude: Longitude:

32.815728 -104.188592

Position Uncertainty

0.00 usft

Wellhead Elevation:

Ground Level:

3,613.60 usft

Wellbore Wellbore #1

Declination **Magnetics Model Name** Sample Date **Dip Angle** Field Strength (°) (°) (nT) 60.318 47.691.60085679 IGRF2020 4/13/2022 6.782

PLAN #3 Design

Audit Notes:

Version:

PLAN

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD) (usft)

0.00

Phase:

+N/-S (usft)

0.00

+E/-W (usft) 0.00

Direction (°)

270.00

Plan Survey Tool Program

Depth From

(usft)

Date 4/20/2022

Depth To

Survey (Wellbore)

Tool Name

Remarks

0.00

9,354.71

(usft) PLAN #3 (Wellbore #1)

MWD+IGRF

OWSG MWD + IGRF or WN

Plan Section	s									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,587.75	25.76	69.29	1,544.82	100.63	266.20	2.00	2.00	0.00	69.292	
2,320.07	25.76	69.29	2,204.39	213.16	563.85	0.00	0.00	0.00	0.000	
3,726.02	60.00	270.00	3,416.27	346.10	166.22	6.00	2.44	-11.33	-162.078	
3,926.02	60.00	270.00	3,516.27	346.10	-6.98	0.00	0.00	0.00	0.000	
4,232.17	90.62	270.00	3,593.00	346.10	-299.61	10.00	10.00	0.00	0.000	PLAT #3H: FTP (15
9,274.69	90.62	270.00	3,538.86	346.08	-5,341.85	0.00	0.00	0.00	0.000	PLAT #3H: LTP (15
9,354.71	90.62	270.00	3,538.00	346.08	-5,421.86	0.00	0.00	0.00	0.000	PLAT #3H: BHL (15





Database: WBDS_SQL_2
Company: Longfellow Energy
Project: Eddy Co., NM (Nad-83)
Site: SANTANA STATE COM 20 CD

Well: #003H Wellbore: Wellbore #1 Design: PLAN #3 Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference: Survey Calculation Method: Well #003H

EST RKB = 16' @ 3629.60usft (TBD) EST RKB = 16' @ 3629.60usft (TBD)

Grid

Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	69.29	399.98	0.62	1.63	-1.63	2.00	2.00	0.00
500.00	4.00	69.29	499.84	2.47	6.53	-6.53	2.00	2.00	0.00
600.00	6.00	69.29	599.45	5.55	14.68	-14.68	2.00	2.00	0.00
700.00	8.00	69.29	698.70	9.86	26.08	-26.08	2.00	2.00	0.00
800.00	10.00	69.29	797.47	15.39	40.71	-40.71	2.00	2.00	0.00
900.00	12.00	69.29	895.62	22.14	58.56	-58.56	2.00	2.00	0.00
1,000.00	14.00	69.29	993.06	30.09	79.60	-79.60	2.00	2.00	0.00
1,100.00	16.00	69.29	1,089.64	39.24	103.81	-103.81	2.00	2.00	0.00
1,200.00	18.00	69.29	1,185.27	49.58	131.15	-131.15	2.00	2.00	0.00
1,217.61	18.35	69.29	1,202.00	51.52	136.29	-136.29	2.00	2.00	0.00
QUEEN 1,300.00	20.00	69.29	1,279.82	61.09	161.61	-161.61	2.00	2.00	0.00
1,400.00	22.00	69.29	1,373.17	73.76	195.13	-195.13	2.00	2.00	0.00
1,500.00	24.00	69.29	1,465.21	87.58	231.67	-231.67	2.00	2.00	0.00
1,587.75	25.76	69.29	1,544.82	100.63	266.20	-266.20	2.00	2.00	0.00
1,600.00	25.76	69.29	1,555.85	102.52	271.18	-271.18	0.00	0.00	0.00
1,700.00	25.76	69.29	1,645.92	117.88	311.83	-311.83	0.00	0.00	0.00
1,800.00	25.76	69.29	1,735.98	133.25	352.47	-352.47	0.00	0.00	0.00
1,900.00	25.76	69.29	1,826.05	148.61	393.12	-393.12	0.00	0.00	0.00
2,000.00	25.76	69.29	1,916.12	163.98	433.76	-433.76	0.00	0.00	0.00
2,042.06	25.76	69.29	1,954.00	170.44	450.86	-450.86	0.00	0.00	0.00
SAN ANDR		00.00	0.000.40	179.34	474 44	474 44	0.00	0.00	0.00
2,100.00 2,200.00 2,300.00 2,320.07 2,350.00 2,400.00	25.76 25.76 25.76 25.76 24.05 21.24	69.29 69.29 69.29 69.29 67.94 65.22	2,006.18 2,096.25 2,186.31 2,204.39 2,231.54 2,277.68	179.34 194.71 210.07 213.16 217.75 225.37	474.41 515.05 555.70 563.85 575.59 593.26	-474.41 -515.05 -555.70 -563.85 -575.59 -593.26	0.00 0.00 0.00 0.00 6.00 6.00	0.00 0.00 0.00 0.00 -5.69 -5.62	0.00 0.00 0.00 -4.53 -5.43
2,450.00	18.48	61.73	2,324.70	232.93	608.47	-608.47	6.00	-5.51	-6.99
2,500.00	15.81	57.08	2,372.48	240.38	621.17	-621.17	6.00	-5.34	-9.29
2,550.00	13.28	50.66	2,420.87	247.73	631.33	-631.33	6.00	-5.07	-12.84
2,600.00	10.98	41.45	2,469.76	254.94	638.92	-638.92	6.00	-4.60	-18.42
2,650.00	9.09	27.99	2,519.00	261.99	643.93	-643.93	6.00	-3.78	-26.92
2,700.00	7.91	9.19	2,568.46	268.87	646.33	-646.33	6.00	-2.36	-37.60
2,750.00	7.77	347.08	2,618.00	275.56	646.12	-646.12	6.00	-0.28	-44.23
2,800.00	8.72	327.11	2,667.50	282.04	643.31	-643.31	6.00	1.91	-39.93
2,850.00	10.47	312.41	2,716.80	288.29	637.89	-637.89	6.00	3.50	-29.41
2,900.00	12.70	302.32	2,765.78	294.30	629.89	-629.89	6.00	4.45	-20.17
2,950.00	15.19	295.34	2,814.31	300.04	619.33	-619.33	6.00	4.98	-13.96
3,000.00	17.83	290.33	2,862.25	305.50	606.23	-606.23	6.00	5.29	-10.01
3,050.00	20.57	286.60	2,909.46	310.67	590.63	-590.63	6.00	5.48	-7.46
3,100.00	23.37	283.73	2,955.83	315.54	572.57	-572.57	6.00	5.60	-5.76
3,150.00	26.21	281.44	3,001.22	320.08	552.11	-552.11	6.00	5.69	-4.58
3,200.00	29.09	279.57	3,045.50	324.29	529.30	-529.30	6.00	5.74	-3.74
3,250.00	31.98	278.01	3,088.57	328.16	504.20	-504.20	6.00	5.79	-3.12
3,300.00	34.89	276.69	3,130.29	331.67	476.88	-476.88	6.00	5.82	-2.65
3,350.00	37.81	275.54	3,170.55	334.82	447.41	-447.41	6.00	5.85	-2.29
3,400.00	40.75	274.54	3,209.25	337.59	415.88	-415.88	6.00	5.86	-2.00
3,450.00	43.69	273.65	3,246.28	339.98	382.38	-382.38	6.00	5.88	-1.78





Database: WBDS_SQL_2
Company: Longfellow Energy
Project: Eddy Co., NM (Nad-83)
Site: SANTANA STATE COM 20 CD

Well: #003H Wellbore: Wellbore #1 Design: PLAN #3 Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well #003H

EST RKB = 16' @ 3629.60usft (TBD)

EST RKB = 16' @ 3629.60usft (TBD)

Grid

Minimum Curvature

Plann	ed Survey									
	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
	3,500.00 3,550.00 3,583.19 GLORIETA	46.63 49.58 51.54	272.85 272.13 271.68	3,281.54 3,314.92 3,336.00	341.99 343.60 344.45	346.98 309.80 284.19	-346.98 -309.80 -284.19	6.00 6.00 6.00	5.89 5.90 5.91	-1.60 -1.45 -1.35
	3,600.00	52.54	271.47	3,346.34	344.82	270.94	-270.94	6.00	5.91	-1.29
	3,634.79	54.60	271.04	3,367.00	345.43	242.96	-242.96	6.00	5.92	-1.24
	PADDOCK									
	3,650.00	55.50	270.85	3,375.72	345.63	230.49	-230.49	6.00	5.92	-1.19
	3,700.00	58.46	270.28	3,402.96	346.04	188.58	-188.58	6.00	5.92	-1.14
	3,726.02	60.00	270.00	3,416.27	346.10	166.22	-166.22	6.00	5.93	-1.09
	3,800.00	60.00	270.00	3,453.26	346.10	102.15	-102.15	0.00	0.00	0.00
	3,900.00	60.00	270.00	3,503.26	346.10	15.55	-15.55	0.00	0.00	0.00
	3,926.02	60.00	270.00	3,516.27	346.10	-6.98	6.98	0.00	0.00	0.00
	3,950.00	62.40	270.00	3,527.82	346.10	-28.00	28.00	10.00	10.00	0.00
	4,000.00	67.40	270.00	3,549.03	346.10	-73.26	73.26	10.00	10.00	0.00
	4,050.00	72.40	270.00	3,566.21	346.10	-120.20	120.20	10.00	10.00	0.00
	4,100.00	77.40	270.00	3,579.23	346.10	-168.46	168.46	10.00	10.00	0.00
	4,150.00	82.40	270.00	3,588.00	346.10	-217.67	217.67	10.00	10.00	0.00
	4,200.00	87.40	270.00	3,592.44	346.10	-267.45	267.45	10.00	10.00	0.00
	4,232.17	90.62	270.00	3,593.00	346.10	-299.61	299.61	10.00	10.00	0.00
	4,300.00	90.62	270.00	3,592.27	346.10	-367.44	367.44	0.00	0.00	0.00
	4,400.00	90.62	270.00	3,591.20	346.10	-467.44	467.44	0.00	0.00	0.00
	4,500.00	90.62	270.00	3,590.12	346.10	-567.43	567.43	0.00	0.00	0.00
	4,600.00	90.62	270.00	3,589.05	346.10	-667.42	667.42	0.00	0.00	0.00
	4,700.00	90.62	270.00	3,587.98	346.10	-767.42	767.42	0.00	0.00	0.00
	4,800.00	90.62	270.00	3,586.90	346.10	-867.41	867.41	0.00	0.00	0.00
	4,900.00	90.62	270.00	3,585.83	346.10	-967.41	967.41	0.00	0.00	0.00
	5,000.00	90.62	270.00	3,584.76	346.10	-1,067.40	1,067.40	0.00	0.00	0.00
	5,100.00	90.62	270.00	3,583.68	346.09	-1,167.39	1,167.39	0.00	0.00	0.00
	5,200.00	90.62	270.00	3,582.61	346.09	-1,267.39	1,267.39	0.00	0.00	0.00
	5,300.00	90.62	270.00	3,581.53	346.09	-1,367.38	1,367.38	0.00	0.00	0.00
	5,400.00	90.62	270.00	3,580.46	346.09	-1,467.38	1,467.38	0.00	0.00	0.00
	5,500.00	90.62	270.00	3,579.39	346.09	-1,567.37	1,567.37	0.00	0.00	0.00
	5,600.00	90.62	270.00	3,578.31	346.09	-1,667.37	1,667.37	0.00	0.00	0.00
	5,700.00	90.62	270.00	3,577.24	346.09	-1,767.36	1,767.36	0.00	0.00	0.00
	5,800.00	90.62	270.00	3,576.17	346.09	-1,867.35	1,867.35	0.00	0.00	0.00
	5,900.00	90.62	270.00	3,575.09	346.09	-1,967.35	1,967.35	0.00	0.00	0.00
	6,000.00	90.62	270.00	3,574.02	346.09	-2,067.34	2,067.34	0.00	0.00	0.00
	6,100.00	90.62	270.00	3,572.95	346.09	-2,167.34	2,167.34	0.00	0.00	0.00
	6,200.00	90.62	270.00	3,571.87	346.09	-2,267.33	2,267.33	0.00	0.00	0.00
	6,300.00	90.62	270.00	3,570.80	346.09	-2,367.33	2,367.33	0.00	0.00	0.00
	6,400.00 6,500.00 6,600.00 6,700.00 6,800.00	90.62 90.62 90.62 90.62 90.62	270.00 270.00 270.00 270.00 270.00	3,569.72 3,568.65 3,567.58 3,566.50 3,565.43	346.09 346.09 346.09 346.09	-2,467.32 -2,567.31 -2,667.31 -2,767.30 -2,867.30	2,467.32 2,567.31 2,667.31 2,767.30 2,867.30	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
	6,900.00 7,000.00 7,100.00 7,200.00 7,300.00	90.62 90.62 90.62 90.62 90.62	270.00 270.00 270.00 270.00 270.00	3,564.36 3,563.28 3,562.21 3,561.13 3,560.06	346.09 346.09 346.09 346.09	-2,967.29 -3,067.29 -3,167.28 -3,267.27 -3,367.27	2,967.29 3,067.29 3,167.28 3,267.27 3,367.27	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
	7,400.00	90.62	270.00	3,558.99	346.09	-3,467.26	3,467.26	0.00	0.00	0.00
	7,500.00	90.62	270.00	3,557.91	346.09	-3,567.26	3,567.26	0.00	0.00	0.00
	7,600.00	90.62	270.00	3,556.84	346.09	-3,667.25	3,667.25	0.00	0.00	0.00





Database: WBDS_SQL_2
Company: Longfellow Energy
Project: Eddy Co., NM (Nad-83)
Site: SANTANA STATE COM 20 CD

Well: #003H Wellbore: Wellbore #1 Design: PLAN #3 Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well #003H

EST RKB = 16' @ 3629.60usft (TBD) EST RKB = 16' @ 3629.60usft (TBD)

Crid

Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,700.00	90.62	270.00	3,555.77	346.09	-3,767.25	3,767.25	0.00	0.00	0.00
7,800.00	90.62	270.00	3,554.69	346.09	-3,867.24	3,867.24	0.00	0.00	0.00
7,900.00	90.62	270.00	3,553.62	346.09	-3,967.23	3,967.23	0.00	0.00	0.00
8,000.00	90.62	270.00	3,552.55	346.08	-4,067.23	4,067.23	0.00	0.00	0.00
8,100.00	90.62	270.00	3,551.47	346.08	-4,167.22	4,167.22	0.00	0.00	0.00
8,200.00	90.62	270.00	3,550.40	346.08	-4,267.22	4,267.22	0.00	0.00	0.00
8,300.00	90.62	270.00	3,549.32	346.08	-4,367.21	4,367.21	0.00	0.00	0.00
8,400.00	90.62	270.00	3,548.25	346.08	-4,467.20	4,467.20	0.00	0.00	0.00
8,500.00	90.62	270.00	3,547.18	346.08	-4,567.20	4,567.20	0.00	0.00	0.00
8,600.00	90.62	270.00	3,546.10	346.08	-4,667.19	4,667.19	0.00	0.00	0.00
8,700.00	90.62	270.00	3,545.03	346.08	-4,767.19	4,767.19	0.00	0.00	0.00
8,800.00	90.62	270.00	3,543.96	346.08	-4,867.18	4,867.18	0.00	0.00	0.00
8,900.00	90.62	270.00	3,542.88	346.08	-4,967.18	4,967.18	0.00	0.00	0.00
9,000.00	90.62	270.00	3,541.81	346.08	-5,067.17	5,067.17	0.00	0.00	0.00
9,100.00	90.62	270.00	3,540.73	346.08	-5,167.16	5,167.16	0.00	0.00	0.00
9,200.00	90.62	270.00	3,539.66	346.08	-5,267.16	5,267.16	0.00	0.00	0.00
9,274.69	90.62	270.00	3,538.86	346.08	-5,341.85	5,341.85	0.00	0.00	0.00
9,300.00	90.62	270.00	3,538.59	346.08	-5,367.15	5,367.15	0.00	0.00	0.00
9,354.71	90.62	270.00	3,538.00	346.08	-5,421.86	5,421.86	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PLAT #3H: SHL (1220 - plan hits target ce - Point	0.00 nter	0.00	0.00	0.00	0.00	660,524.84	585,803.84	32.815728	-104.188592
PLAT #3H: BHL (1561 - plan hits target ce - Point	0.00 nter	0.00	3,538.00	346.08	-5,421.86	660,870.92	580,381.98	32.816698	-104.206239
PLAT #3H: LTP (1561 - plan misses targe - Point	0.00 t center by		3,538.86 9274.69usf	345.93 t MD (3538.	-5,341.85 86 TVD, 346	660,870.77 .08 N, -5341.85 E	580,462.00	32.816697	-104.205979
PLAT #3H: FTP (1573 - plan hits target ce - Point	0.00 nter	0.00	3,593.00	346.10	-299.61	660,870.94	585,504.23	32.816680	-104.189566

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,217.61	1,202.00	QUEEN		0.000	
	2,042.06	1,954.00	SAN ANDRES		0.000	
	3,583.19	3,336.00	GLORIETA		0.000	
	3,634.79	3,367.00	PADDOCK		0.000	

State of New Mexico Energy, Minerals and Natural Resources Department

Submit Electronically Via E-permitting

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

I. Operator: Longfellow Energy, LLC	OGRID: <u>372210</u>	Date: <u>04-24-22</u>
II. Type: ⊠ Original □ Amendment due to	o □ 19.15.27.9.D(6)(a) NM	AAC □ 19.15.27.9.D(6)(b) NMAC □ Other.
If Other, please describe:		

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Santana State Com 20 CD 003H	30-015-	M-21-17S- 28E	1220 FSL & 200 FWL	500	500	5000
Santana State Com 20 CD 004H	30-015-	M-21-17S- 28E	1200 FSL & 200 FWL	500	500	5000
Santana State Com 20 CD 005H	30-015-	M-21-17S- 28E	1180 FSL & 200 FWL	500	500	5000

- IV. Central Delivery Point Name: DCP Midstream, LP (248749) @ Elvis tie in A-29-17s-28e) [See 19.15.27.9(D)(1) NMAC]
- V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Santana State Com 20 CD 003H	30-015-	5-15-22	5-25-22	7-5-22	8-5-22	8-20-22
Santana State Com 20 CD 004H	30-015-	5-30-22	6-10-22	8-15-22	9-15-22	9-30-22
Santana State Com 20 CD 005H	30-015-	6-15-22	6-25-22	9-5-22	10-5-22	10-20-22

- VI. Separation Equipment:

 Attach a complete description of how Operator will size separation equipment to optimize gas capture.
- VII. Operational Practices: ⊠ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.
- VIII. Best Management Practices:

 Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022								
Beginning April 1 reporting area mus	, 2022, an operator that complete this section	nat is not in compliand	ce with its statewide natural	gas cap	pture requirement for the applicable			
	ies that it is not requint for the applicable re		ection because Operator is in	comp	liance with its statewide natural gas			
IX. Anticipated N	latural Gas Productio	on:						
	Well	API	Anticipated Average Natural Gas Rate MCF/D		Anticipated Volume of Natural Gas for the First Year MCF			
X. Natural Gas G	athering System (NG	GGS):						
Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in				
production operation of the segment or particular than the Salar t	ons to the existing or portion of the natural gas gat from the well prior to re. Operator \(\square\$ does	planned interconnect of as gathering system(s) thering system will the date of first produted the does not anticipate	of the natural gas gathering so to which the well(s) will be will not have capacity to action.	ystem(connections) gather	ated pipeline route(s) connecting the s), and the maximum daily capacity sted. 100% of the anticipated natural gas to the same segment, or portion, of in line pressure caused by the new			
☐ Attach Operator	r's plan to manage pro	duction in response to	the increased line pressure.					
XIV. Confidentia Section 2 as prov	lity: ☐ Operator assedided in Paragraph (2)	erts confidentiality pur of Subsection D or	rsuant to Section 71-2-8 NM f 19.15.27.9 NMAC, and a	ISA 19 ttaches	78 for the information provided in a full description of the specific			

information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications Effective May 25, 2021

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:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

- 1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:
- (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: Blood
Printed Name: Brian Wood
Title: Consultant
E-mail Address: brian@permitswest.com
Date: 4-24-22
Phone: 505 466-8120
OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:



Attachment VI. Separation Equipment:

Longfellow Energy (LFE) 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 completion project. LFE 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. LFE operates facilities that are typically multiwell facilities. Production separation equipment is upgraded or installed before new wells are completed. This equipment is on-site and tied into sales gas lines prior to flowback.



Attachment VII. Operational Practices:

19.15.27.8 Subsection A: Venting and Flaring of Natural Gas

Longfellow Energy (LFE) understands the requirements of NMAC 19.15.27.8 which states 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.

19.15.27.8 Subsection B: Venting and flaring during drilling operations

- 1. LFE shall capture or combust natural gas if technically feasible using best industry practices
- 2. A properly-sized flare stack shall be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
- 3. In an emergency or malfunction, LFE may vent natural gas to avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment. LFE will report natural gas vented or flared during an emergency or malfunction to the NMOCD.

19.15.27.8 Subsection C: Venting and flaring during completion or recompletion operations

- 1. During initial flowback, LFE shall route flowback fluids into a completion or storage tank and, if technically feasible under the applicable well conditions, flare rather than vent and commence operation of a separator as soon as it is technically feasible for a separator to function
- 2. During separation flowback, LFE shall capture and route natural gas from the separation equipment:
 - a. to a gas flowline or collection system, reinject into the well, or use on-site as a fuel source or other purpose that a purchased fuel or raw material would serve; or
 - b. to a flare if routing the natural gas to a gas flowline or collection system, reinjecting it into the well, or using it on-site as a fuel source or other purpose that a purchased fuel or raw material would serve would pose a risk to safe operation or personnel safety.
- 3. If natural gas does not meet gathering pipeline quality specifications, LFE may flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner, provided that:

19.15.27.8 Subsection D: Venting and flaring during production operations

LFE shall not vent or flare natural gas except:

- 1. during an emergency or malfunction;
- 2. to unload or clean-up liquid holdup in a well to atmospheric pressure, provided
 - a. LFE does not vent after the well achieves a stabilized rate and pressure;
 - b. for liquids unloading by manual purging, LFE remains present on-site until the end of unloading or posts at the well site the contact information of the personnel conducting the liquids unloading operation and ensures that personnel remains within 30 minutes' drive time of the well being unloaded until the end of unloading, takes all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time and takes reasonable actions to minimize venting to the maximum extent practicable;
 - c. during downhole well maintenance, only when LFE uses a workover rig, swabbing rig, coiled tubing unit or similar specialty equipment and minimizes the venting of natural gas to the extent that it does not pose a risk to safe operations and personnel safety

- 3. during the following activities unless prohibited by applicable state or federal law, rule, or regulation for the emission of hydrocarbons and volatile organic compounds:
 - a. gauging or sampling a storage tank or other low-pressure production vessel;
 - b. loading out liquids from a storage tank or other low-pressure production vessel to a transport vehicle:
 - c. repair and maintenance, including blowing down and depressurizing production equipment to perform repair and maintenance;
 - d. normal operation of a gas-activated pneumatic controller or pump;
 - e. normal operation of a storage tank or other low-pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained
 - f. normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance;
 - g. a packer leakage test;
 - h. a production test lasting less than 24 hours unless the division requires or approves a longer test period;
 - i. when natural gas does not meet the gathering pipeline specifications, provided LFE analyzes natural gas samples twice per week to determine whether the specifications have been achieved, routes the natural gas into a gathering pipeline as soon as the pipeline specifications are met and provides the pipeline specifications and natural gas analyses to the division upon request; or
 - j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities from the pipeline or equipment.

19.15.27.8 Subsection E: Performance Standards

- 1. LFE designed completion and production separation equipment and storage tanks for maximum anticipated throughput and pressure to minimize waste.
- 2. LFE permanent storage tanks associated with production operations that is routed to a flare or control device are equipped with automatic gauging system that reduces the venting of natural gas.
- 3. LFE shall combust natural gas in a flare stack that is properly sized and designed to ensure proper combustion efficiency.
 - a. The flare stack shall be equipped with an automatic ignitor or continuous pilot.
- 4. The flare stack shall be securely anchored and located at least 100 feet from the well and storage tanks unless otherwise approved by the division.
- 5. LFE shall conduct an AVO inspection weekly to confirm that all production equipment is operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC.
 - a. During an AVO inspection the LFE shall inspect all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated piping to identify defects, leaks, and releases by:
 - i. a comprehensive external visual inspection;
 - ii. listening for pressure and liquid leaks; and
 - iii. smelling for unusual and strong odors.
 - b. LFE shall make and keep a record of an AVO inspection for not less than five years and make such record available for inspection by the division upon request.
- 6. facilities shall be designed to minimize waste;
- 7. LFE has an obligation to minimize waste and shall resolve emergencies as quickly and safely as is feasible.

19.15.27.8 Subsection F: Measurement or estimation of vented and flared natural gas

- 1. LFE shall measure or estimate the volume of natural gas that it vents, flares, or beneficially uses during drilling, completion, and production operations regardless of the reason or authorization for such venting or flaring.
- 2. LFE shall install equipment to measure the volume of natural gas flared from existing process piping or a flowline piped from equipment such as high pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by the APD



Attachment VIII. Best Management Practices:

Longfellow Energy (LFE) utilizes the following best management practices to minimize venting during active and planned maintenance

- 1. LFE has a closed vent capture system to route emissions from the heater treater, tanks and vapor to the VRU with a flare for backup. The system is designed such that if the VRU is taken out of service for any reason, the vapors will be routed to the flare for combustion.
- 2. LFE will isolate and attempt to route all vapors to the VRU or flare prior to opening any lines for maintenance to minimize venting from the equipment when technically feasible
- 3. LFE will shut in wells in the event of a takeaway disruption, emergency situations, or other operations where venting or flaring may occur due to equipment failures.
- 4. Lease operators will be visiting the location daily to check and maintain all equipment ensuring all scrubbers, flame arrestors, and the flare ignitor is functioning properly.