

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

Form C-101

August 1, 2011

Permit 277865

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

1. Operator Name and Address LONGFELLOW ENERGY, LP 16803 North Dallas Parkway Addison, TX 75001		2. OGRID Number 372210
		3. API Number 30-015-46694
4. Property Code 327117	5. Property Name HENDRIX STATE 13C	6. Well No. 001H

7. Surface Location

UL - Lot O	Section 13	Township 17S	Range 28E	Lot Idn	Feet From 105	N/S Line S	Feet From 1585	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot B	Section 13	Township 17S	Range 28E	Lot Idn B	Feet From 20	N/S Line N	Feet From 2285	E/W Line E	County Eddy
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9. Pool Information

EMPIRE; GLORIETA-YESO	96210
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3706
16. Multiple N	17. Proposed Depth 9391	18. Formation Yeso	19. Contractor	20. Spud Date 2/14/2020
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

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	510	0
Prod	8.75	7	32	3400	2285	1050
Prod	8.75	5.5	20	9391	2285	1050

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	3000	TBD

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 CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Ryan Culpepper	Approved By: Raymond Podany	
Title:	Title: Geologist	
Email Address: ryan.culpepper@longfellowenergy.com	Approved Date: 2/7/2020	Expiration Date: 2/7/2022
Date: 2/4/2020	Phone: 972-590-9933	Conditions of Approval Attached

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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 Number 30-015-	² Pool Code 96210	³ Pool Name EMPIRE; GLORIETA-YESO
⁴ Property Code	⁵ Property Name HENDRIX STATE 13C	⁶ Well Number 001H
⁷ OGRID No. 372210	⁸ Operator Name LONGFELLOW ENERGY, LP	⁹ Elevation 3706.2

¹⁰ Surface Location

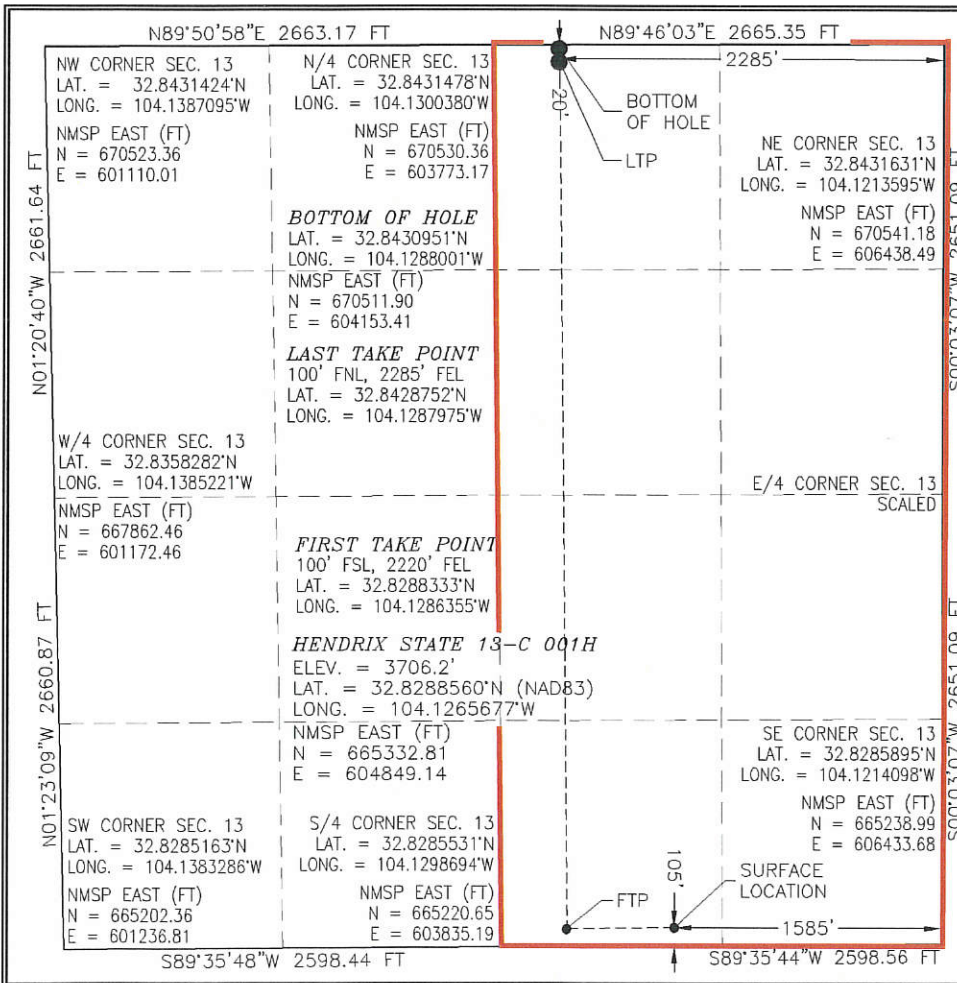
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	13	17 S	28 E		105	SOUTH	1585	EAST	EDDY

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
B	13	17 S	28 E		20	NORTH	2285	EAST	EDDY

¹² Dedicated Acres 320.00	¹³ Joint or Infill	¹⁴ Consolidation Code C	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION

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

Signature: *Brian Wood* Date: **2-1-20**

Signature
BRIAN WOOD

Printed Name
brian@permitswest.com

E-mail Address
505 466-8120

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JANUARY 22, 2020

Date of Survey

Signature and Seal of Professional Surveyor
Certificate Number: **FILMONT, E. JARAMILLO, PLS 12797**

SURVEY NO. 7848A

Intent ☐ YES ☒ As Drilled ☐

API #

Operator Name: LONGFELLOW ENERGY, LP	Property Name: HENDRIX STATE 13-C	Well Number 001H
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Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	13	17S	28E		100	SOUTH	2220	EAST	EDDY
Latitude 32.8288333					Longitude 104.1286355			NAD 83	

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	13	17S	28E		100	NORTH	2285	EAST	EDDY
Latitude 32.8428752					Longitude 104.1287975			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit?

☐ YES ☒

Is this well an infill well?

☐ NO ☒

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
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KZ 06/29/2018

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1220 S. St Francis Dr.
Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 2/7/2020

☒ Original

Operator & OGRID No.: [372210] LONGFELLOW ENERGY, LP

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
HENDRIX STATE 13C #001H	30-015-46694	O-13-17S-28E	0105S 1585E	82	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP Low Pressure gathering system located in Eddy County, New Mexico. It will require 300' of pipeline to connect the facility to Low Pressure gathering system. LONGFELLOW ENERGY, LP provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, LONGFELLOW ENERGY, LP and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 13, Twn. 17S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is LONGFELLOW ENERGY, LP's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 277865

PERMIT COMMENTS

Operator Name and Address: LONGFELLOW ENERGY, LP [372210] 16803 North Dallas Parkway Addison, TX 75001		API Number: 30-015-46694
		Well: HENDRIX STATE 13C #001H
Created By	Comment	Comment Date
rpodany	Two different BHL listed for well. Bad data entry.	2/4/2020
dcairn	Completions coordinate and legal description updated to match BHL.	2/4/2020

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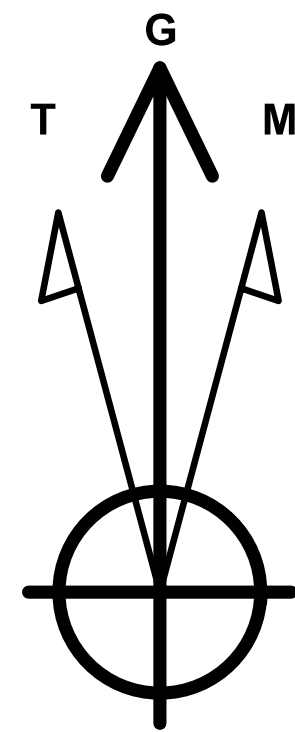
Form APD Conditions
Permit 277865

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:		API Number:
LONGFELLOW ENERGY, LP [372210]		30-015-46694
16803 North Dallas Parkway		Well:
Addison, TX 75001		HENDRIX STATE 13C #001H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	



Longfellow Energy
Hendrix State 13-C 001H
Eddy Co NM
Northing: 665332.81
Easting: 604849.14
Plan 3 Turnizontal



Azimuths to Grid North
True North: -0.11°
Magnetic North: 7.10°

Magnetic Field
Strength: 47933.1nT
Dip Angle: 60.50°
Date: 1/8/2020
Model: HDGM_FILE

WELL DETAILS Hendrix State 13-C 001H						
3706.20						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	665332.81	604849.14	32.82886	-104.12657	

PROJECT DETAILS: Eddy Co NM	
Geodetic System: US State Plane 1983	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: New Mexico Eastern Zone	
System Datum: Mean Sea Level	

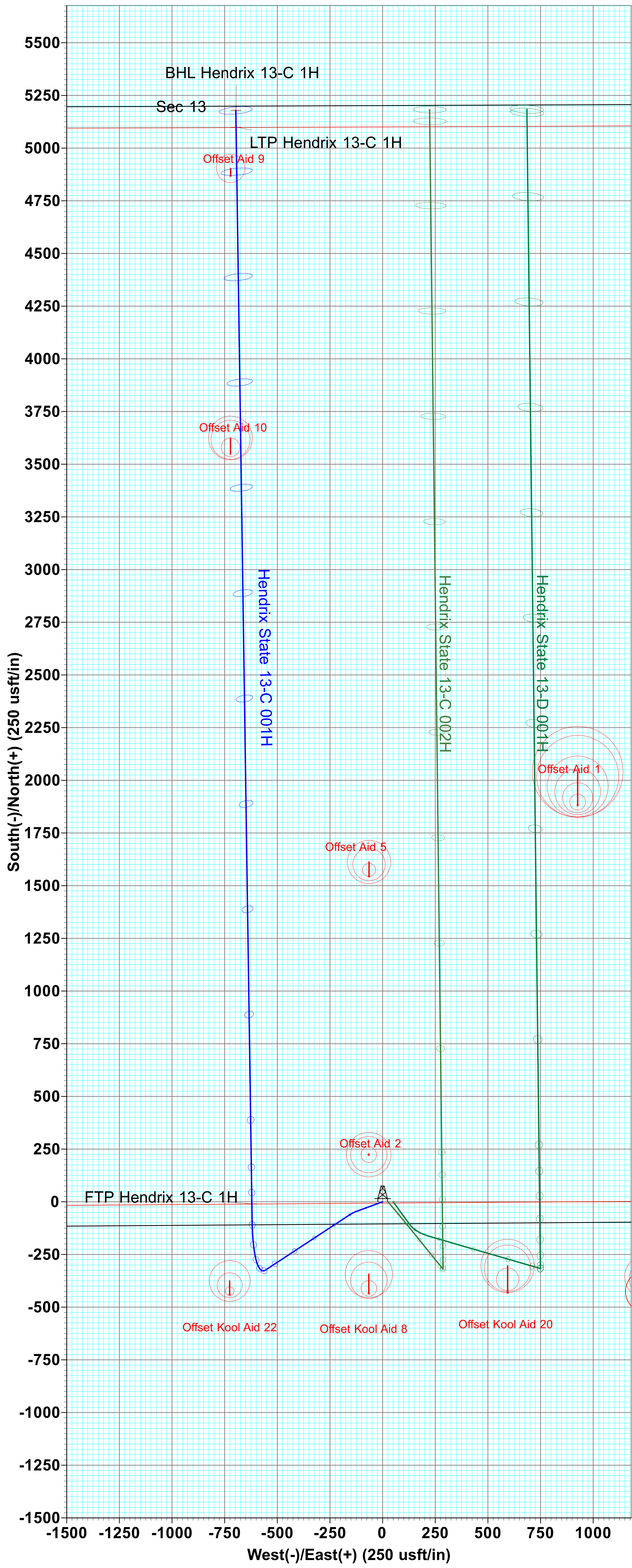
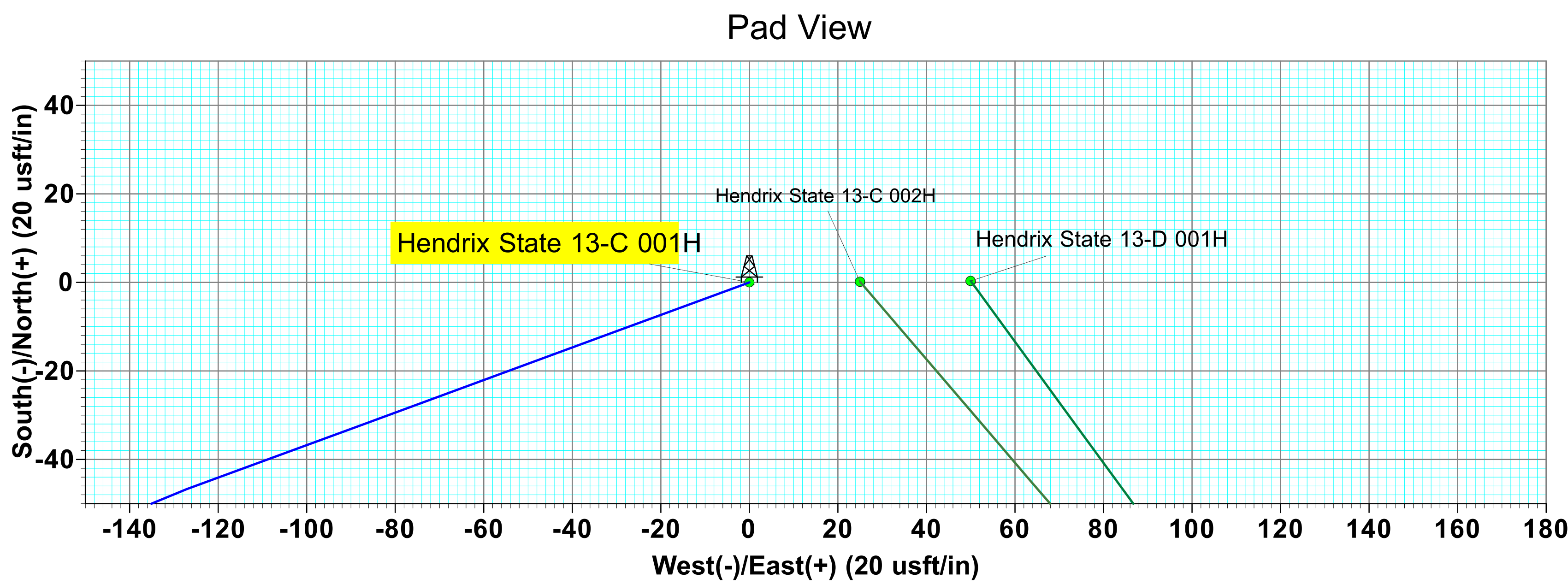
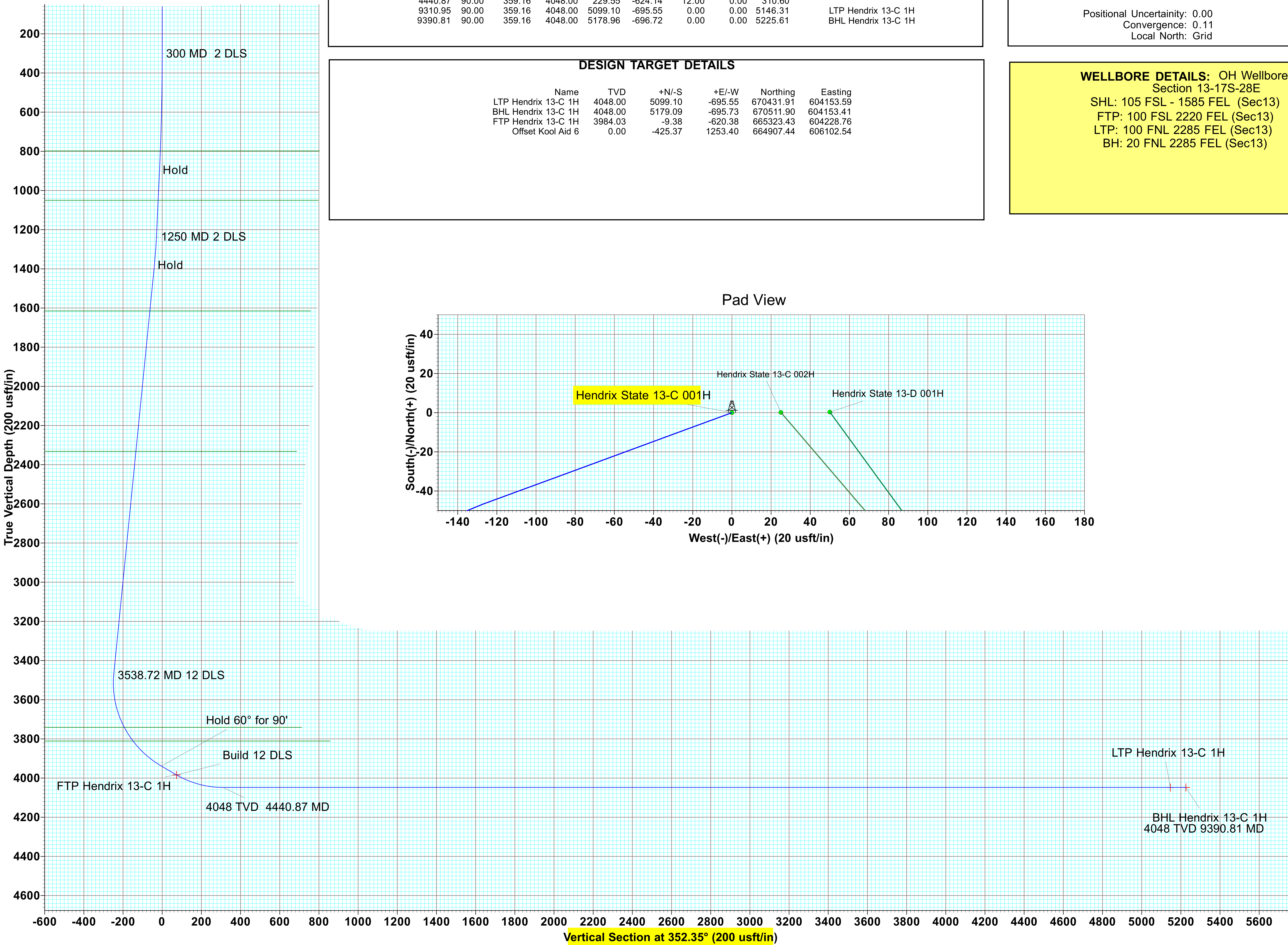
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
900.00	12.00	249.82	895.62	-21.60	-58.76	2.00	249.82	-13.58	
1250.00	12.00	249.82	1237.97	-46.70	-127.06	0.00	0.00	-29.37	
1398.53	12.93	236.72	1383.03	-61.15	-155.45	2.00	-78.25	-39.91	
3538.72	12.93	236.72	3468.94	-323.99	-555.82	0.00	0.00	-247.10	
4100.87	60.00	359.16	3939.03	-87.09	-619.50	12.00	127.69	-3.84	
4190.87	60.00	359.16	3984.03	-9.16	-620.64	0.00	0.00	73.56	
4440.87	90.00	359.16	4048.00	229.55	-624.14	12.00	0.00	310.60	
9310.95	90.00	359.16	4048.00	5099.10	-695.55	0.00	0.00	5146.31	LTP Hendrix 13-C 1H
9390.81	90.00	359.16	4048.00	5178.96	-696.72	0.00	0.00	5225.61	BHL Hendrix 13-C 1H

SITE DETAILS: Sec 13-17S-28E	
SH of Hendrix State 13-C 001H	
Site Center: 105 FSL 1585 FEL Sec 13	
Site Centre Northing: 665332.81	
Easting: 604849.14	
Positional Uncertainty: 0.00	
Convergence: 0.11	
Local North: Grid	

DESIGN TARGET DETAILS						
	Name	TVD	+N/-S	+E/-W	Northing	Easting
	LTP Hendrix 13-C 1H	4048.00	5099.10	-695.55	670431.91	604153.59
	BHL Hendrix 13-C 1H	4048.00	5179.09	-695.73	670511.90	604153.41
	FTP Hendrix 13-C 1H	3984.03	-9.38	-620.38	665323.43	604228.76
	Offset Kool Aid 6	0.00	-425.37	1253.40	664907.44	606102.54

WELLBORE DETAILS: OH Wellbore	
Section 13-17S-28E	
SHL: 105 FSL - 1585 FEL (Sec13)	
FTP: 100 FSL 2220 FEL (Sec13)	
LTP: 100 FNL 2285 FEL (Sec13)	
BH: 20 FNL 2285 FEL (Sec13)	

3706.2 GL Est KB 24 @ 3730.20usft
Gr: 3706.20



- LEGEND
- Offset Aid 2, OH, As Drilled VO
 - Offset Aid 8, OH, As Drilled VO
 - Offset Aid 1, OH, As Drilled VO
 - Offset Aid 10, OH, As Drilled VO
 - Offset Aid 5, OH, As Drilled VO
 - Offset Kool Aid 5, OH, As Drilled VO
 - Hendrix State 13-C 002H, OH Wellbore, Plan 3 S-Curve VO
 - Hendrix State 13-C 002H, OH Wellbore, Plan 3 S-Curve VO
 - Offset Kool Aid 8, OH, As Drilled VO
 - Offset Kool Aid 20, OH, As Drilled VO
 - Offset Kool Aid 22, OH, As Drilled VO
 - Plan 3 Turnizontal



Scientific Drilling, Intl

Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Hendrix State 13-C 001H
Company:	Longfellow Energy	TVD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Project:	Eddy Co NM	MD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Site:	Sec 13-17S-28E	North Reference:	Grid
Well:	Hendrix State 13-C 001H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 3 Turnizortal		

Project	Eddy Co NM, Eddy County, New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 13-17S-28E, SH of Hendrix State 13-C 001H		
Site Position:		Northing:	665,332.81 usft
From:	Map	Easting:	604,849.14 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.82886
		Longitude:	-104.12657
		Grid Convergence:	0.11 °

Well	Hendrix State 13-C 001H, Yeso/Md Paddock		
Well Position	+N/-S	0.00 usft	Northing: 665,332.81 usft
	+E/-W	0.00 usft	Easting: 604,849.14 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,730.20 usft
		Latitude:	32.82886
		Longitude:	-104.12657
		Ground Level:	3,706.20 usft

Wellbore	OH Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	1/8/2020	7.22	60.50	47,933.10000000

Design	Plan 3 Turnizortal			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	352.35

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
900.00	12.00	249.82	895.62	-21.60	-58.76	2.00	2.00	0.00	249.82	
1,250.00	12.00	249.82	1,237.97	-46.70	-127.06	0.00	0.00	0.00	0.00	
1,398.53	12.93	236.72	1,383.03	-61.15	-155.45	2.00	0.63	-8.82	-78.25	
3,538.72	12.93	236.72	3,468.94	-323.99	-555.82	0.00	0.00	0.00	0.00	
4,100.87	60.00	359.16	3,939.03	-87.09	-619.50	12.00	8.37	21.78	127.69	
4,190.87	60.00	359.16	3,984.03	-9.16	-620.64	0.00	0.00	0.00	0.00	
4,440.87	90.00	359.16	4,048.00	229.55	-624.14	12.00	12.00	0.00	0.00	
9,310.95	90.00	359.16	4,048.00	5,099.10	-695.55	0.00	0.00	0.00	0.00	LTP Hendrix 13-C 1
9,390.81	90.00	359.16	4,048.00	5,178.96	-696.72	0.00	0.00	0.00	0.00	BHL Hendrix 13-C 1



Scientific Drilling, Intl

Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Hendrix State 13-C 001H
Company:	Longfellow Energy	TVD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Project:	Eddy Co NM	MD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Site:	Sec 13-17S-28E	North Reference:	Grid
Well:	Hendrix State 13-C 001H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 3 Turnizental		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offset Aid 5 - Offset Aid 1 - Offset Kool Aid 22 - Offset Kool Aid 8 - Offset Aid 2 - Offset Aid 10 - Offset Kool Aid 6 - Offse									
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	249.82	399.98	-0.60	-1.64	-0.38	2.00	2.00	0.00
500.00	4.00	249.82	499.84	-2.41	-6.55	-1.51	2.00	2.00	0.00
600.00	6.00	249.82	599.45	-5.41	-14.73	-3.40	2.00	2.00	0.00
700.00	8.00	249.82	698.70	-9.62	-26.17	-6.05	2.00	2.00	0.00
800.00	10.00	249.82	797.47	-15.01	-40.85	-9.44	2.00	2.00	0.00
800.54	10.01	249.82	798.00	-15.05	-40.94	-9.46	2.00	2.00	0.00
Yates									
900.00	12.00	249.82	895.62	-21.60	-58.76	-13.58	2.00	2.00	0.00
1,000.00	12.00	249.82	993.44	-28.77	-78.27	-18.09	0.00	0.00	0.00
1,057.83	12.00	249.82	1,050.00	-32.92	-89.56	-20.70	0.00	0.00	0.00
Seven Rivers									
1,100.00	12.00	249.82	1,091.25	-35.94	-97.79	-22.60	0.00	0.00	0.00
1,200.00	12.00	249.82	1,189.07	-43.11	-117.30	-27.11	0.00	0.00	0.00
1,250.00	12.00	249.82	1,237.97	-46.70	-127.06	-29.37	0.00	0.00	0.00
1,300.00	12.24	245.20	1,286.86	-50.72	-136.75	-32.06	2.00	0.48	-9.24
1,398.53	12.93	236.72	1,383.03	-61.15	-155.45	-39.91	2.00	0.70	-8.61
1,400.00	12.93	236.72	1,384.46	-61.33	-155.73	-40.05	0.00	0.00	0.00
1,500.00	12.93	236.72	1,481.93	-73.61	-174.44	-49.73	0.00	0.00	0.00
1,600.00	12.93	236.72	1,579.39	-85.89	-193.14	-59.41	0.00	0.00	0.00
1,636.53	12.93	236.72	1,615.00	-90.38	-199.98	-62.95	0.00	0.00	0.00
Queen									
1,700.00	12.93	236.72	1,676.86	-98.17	-211.85	-69.09	0.00	0.00	0.00
1,800.00	12.93	236.72	1,774.32	-110.45	-230.56	-78.77	0.00	0.00	0.00
1,900.00	12.93	236.72	1,871.78	-122.74	-249.26	-88.46	0.00	0.00	0.00
2,000.00	12.93	236.72	1,969.25	-135.02	-267.97	-98.14	0.00	0.00	0.00
2,100.00	12.93	236.72	2,066.71	-147.30	-286.68	-107.82	0.00	0.00	0.00
2,200.00	12.93	236.72	2,164.18	-159.58	-305.38	-117.50	0.00	0.00	0.00
2,300.00	12.93	236.72	2,261.64	-171.86	-324.09	-127.18	0.00	0.00	0.00
2,372.19	12.93	236.72	2,332.00	-180.72	-337.60	-134.17	0.00	0.00	0.00
San Andres									
2,400.00	12.93	236.72	2,359.10	-184.14	-342.80	-136.86	0.00	0.00	0.00
2,500.00	12.93	236.72	2,456.57	-196.42	-361.51	-146.54	0.00	0.00	0.00
2,600.00	12.93	236.72	2,554.03	-208.70	-380.21	-156.22	0.00	0.00	0.00
2,700.00	12.93	236.72	2,651.50	-220.98	-398.92	-165.90	0.00	0.00	0.00
2,800.00	12.93	236.72	2,748.96	-233.26	-417.63	-175.59	0.00	0.00	0.00
2,900.00	12.93	236.72	2,846.42	-245.55	-436.33	-185.27	0.00	0.00	0.00
3,000.00	12.93	236.72	2,943.89	-257.83	-455.04	-194.95	0.00	0.00	0.00
3,100.00	12.93	236.72	3,041.35	-270.11	-473.75	-204.63	0.00	0.00	0.00
3,200.00	12.93	236.72	3,138.82	-282.39	-492.45	-214.31	0.00	0.00	0.00
3,300.00	12.93	236.72	3,236.28	-294.67	-511.16	-223.99	0.00	0.00	0.00
3,400.00	12.93	236.72	3,333.74	-306.95	-529.87	-233.67	0.00	0.00	0.00
3,500.00	12.93	236.72	3,431.21	-319.23	-548.57	-243.35	0.00	0.00	0.00
3,538.72	12.93	236.72	3,468.94	-323.99	-555.82	-247.10	0.00	0.00	0.00
3,600.00	10.22	271.53	3,529.04	-327.61	-567.00	-249.20	12.00	-4.43	56.81
3,700.00	15.22	323.74	3,626.85	-316.75	-583.69	-236.21	12.00	5.00	52.21
3,800.00	25.38	342.83	3,720.62	-285.57	-597.84	-203.43	12.00	10.15	19.10
3,822.80	27.89	345.25	3,741.00	-275.74	-600.64	-193.32	12.00	11.02	10.60
Glorieta									



Scientific Drilling, Intl

Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Hendrix State 13-C 001H
Company:	Longfellow Energy	TVD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Project:	Eddy Co NM	MD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Site:	Sec 13-17S-28E	North Reference:	Grid
Well:	Hendrix State 13-C 001H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 3 Turnizental		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,900.00	36.62	351.11	3,806.24	-235.45	-608.81	-152.30	12.00	11.31	7.60
3,905.96	37.30	351.46	3,811.00	-231.91	-609.35	-148.71	12.00	11.47	5.88
Paddock (Top Yeso)									
4,000.00	48.19	355.86	3,879.97	-168.57	-616.13	-85.03	12.00	11.58	4.68
4,100.00	59.90	359.14	3,938.60	-87.85	-619.49	-4.59	12.00	11.71	3.27
4,100.87	60.00	359.16	3,939.03	-87.09	-619.50	-3.84	12.00	11.75	2.84
4,190.68	60.00	359.16	3,983.94	-9.33	-620.64	73.39	0.00	0.00	0.00
FTP Hendrix 13-C 1H									
4,190.87	60.00	359.16	3,984.03	-9.16	-620.64	73.56	0.00	0.00	0.00
4,200.00	61.10	359.16	3,988.52	-1.21	-620.76	81.45	12.00	12.00	0.00
4,300.00	73.10	359.16	4,027.37	90.72	-622.11	172.74	12.00	12.00	0.00
4,400.00	85.10	359.16	4,046.25	188.73	-623.54	270.07	12.00	12.00	0.00
4,440.87	90.00	359.16	4,048.00	229.55	-624.14	310.60	12.00	12.00	0.00
4,500.00	90.00	359.16	4,048.00	288.67	-625.01	369.31	0.00	0.00	0.00
4,600.00	90.00	359.16	4,048.00	388.66	-626.48	468.61	0.00	0.00	0.00
4,700.00	90.00	359.16	4,048.00	488.65	-627.94	567.90	0.00	0.00	0.00
4,800.00	90.00	359.16	4,048.00	588.64	-629.41	667.19	0.00	0.00	0.00
4,900.00	90.00	359.16	4,048.00	688.63	-630.88	766.49	0.00	0.00	0.00
5,000.00	90.00	359.16	4,048.00	788.61	-632.34	865.78	0.00	0.00	0.00
5,100.00	90.00	359.16	4,048.00	888.60	-633.81	965.08	0.00	0.00	0.00
5,200.00	90.00	359.16	4,048.00	988.59	-635.27	1,064.37	0.00	0.00	0.00
5,300.00	90.00	359.16	4,048.00	1,088.58	-636.74	1,163.67	0.00	0.00	0.00
5,400.00	90.00	359.16	4,048.00	1,188.57	-638.21	1,262.96	0.00	0.00	0.00
5,500.00	90.00	359.16	4,048.00	1,288.56	-639.67	1,362.25	0.00	0.00	0.00
5,600.00	90.00	359.16	4,048.00	1,388.55	-641.14	1,461.55	0.00	0.00	0.00
5,700.00	90.00	359.16	4,048.00	1,488.54	-642.61	1,560.84	0.00	0.00	0.00
5,800.00	90.00	359.16	4,048.00	1,588.53	-644.07	1,660.14	0.00	0.00	0.00
5,900.00	90.00	359.16	4,048.00	1,688.52	-645.54	1,759.43	0.00	0.00	0.00
6,000.00	90.00	359.16	4,048.00	1,788.51	-647.00	1,858.73	0.00	0.00	0.00
6,100.00	90.00	359.16	4,048.00	1,888.50	-648.47	1,958.02	0.00	0.00	0.00
6,200.00	90.00	359.16	4,048.00	1,988.49	-649.94	2,057.31	0.00	0.00	0.00
6,300.00	90.00	359.16	4,048.00	2,088.47	-651.40	2,156.61	0.00	0.00	0.00
6,400.00	90.00	359.16	4,048.00	2,188.46	-652.87	2,255.90	0.00	0.00	0.00
6,500.00	90.00	359.16	4,048.00	2,288.45	-654.34	2,355.20	0.00	0.00	0.00
6,600.00	90.00	359.16	4,048.00	2,388.44	-655.80	2,454.49	0.00	0.00	0.00
6,700.00	90.00	359.16	4,048.00	2,488.43	-657.27	2,553.79	0.00	0.00	0.00
6,800.00	90.00	359.16	4,048.00	2,588.42	-658.73	2,653.08	0.00	0.00	0.00
6,900.00	90.00	359.16	4,048.00	2,688.41	-660.20	2,752.37	0.00	0.00	0.00
7,000.00	90.00	359.16	4,048.00	2,788.40	-661.67	2,851.67	0.00	0.00	0.00
7,100.00	90.00	359.16	4,048.00	2,888.39	-663.13	2,950.96	0.00	0.00	0.00
7,200.00	90.00	359.16	4,048.00	2,988.38	-664.60	3,050.26	0.00	0.00	0.00
7,300.00	90.00	359.16	4,048.00	3,088.37	-666.07	3,149.55	0.00	0.00	0.00
7,400.00	90.00	359.16	4,048.00	3,188.36	-667.53	3,248.85	0.00	0.00	0.00
7,500.00	90.00	359.16	4,048.00	3,288.35	-669.00	3,348.14	0.00	0.00	0.00
7,600.00	90.00	359.16	4,048.00	3,388.33	-670.47	3,447.43	0.00	0.00	0.00
7,700.00	90.00	359.16	4,048.00	3,488.32	-671.93	3,546.73	0.00	0.00	0.00
7,800.00	90.00	359.16	4,048.00	3,588.31	-673.40	3,646.02	0.00	0.00	0.00
7,900.00	90.00	359.16	4,048.00	3,688.30	-674.86	3,745.32	0.00	0.00	0.00
8,000.00	90.00	359.16	4,048.00	3,788.29	-676.33	3,844.61	0.00	0.00	0.00
8,100.00	90.00	359.16	4,048.00	3,888.28	-677.80	3,943.91	0.00	0.00	0.00
8,200.00	90.00	359.16	4,048.00	3,988.27	-679.26	4,043.20	0.00	0.00	0.00
8,300.00	90.00	359.16	4,048.00	4,088.26	-680.73	4,142.50	0.00	0.00	0.00
8,400.00	90.00	359.16	4,048.00	4,188.25	-682.20	4,241.79	0.00	0.00	0.00
8,500.00	90.00	359.16	4,048.00	4,288.24	-683.66	4,341.08	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report

Database:	Midland	Local Co-ordinate Reference:	Well Hendrix State 13-C 001H
Company:	Longfellow Energy	TVD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Project:	Eddy Co NM	MD Reference:	3706.2 GL Est KB 24 @ 3730.20usft
Site:	Sec 13-17S-28E	North Reference:	Grid
Well:	Hendrix State 13-C 001H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH Wellbore		
Design:	Plan 3 Turnizontal		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.00	90.00	359.16	4,048.00	4,388.23	-685.13	4,440.38	0.00	0.00	0.00
8,700.00	90.00	359.16	4,048.00	4,488.22	-686.59	4,539.67	0.00	0.00	0.00
8,800.00	90.00	359.16	4,048.00	4,588.21	-688.06	4,638.97	0.00	0.00	0.00
8,900.00	90.00	359.16	4,048.00	4,688.20	-689.53	4,738.26	0.00	0.00	0.00
9,000.00	90.00	359.16	4,048.00	4,788.18	-690.99	4,837.56	0.00	0.00	0.00
9,080.23	90.00	359.16	4,048.00	4,868.40	-692.17	4,917.21	0.00	0.00	0.00
Offset Aid 9									
9,100.00	90.00	359.16	4,048.00	4,888.17	-692.46	4,936.85	0.00	0.00	0.00
9,200.00	90.00	359.16	4,048.00	4,988.16	-693.93	5,036.14	0.00	0.00	0.00
9,300.00	90.00	359.16	4,048.00	5,088.15	-695.39	5,135.44	0.00	0.00	0.00
9,310.95	90.00	359.16	4,048.00	5,099.10	-695.55	5,146.31	0.00	0.00	0.00
LTP Hendrix 13-C 1H									
9,390.81	90.00	359.16	4,048.00	5,178.96	-696.72	5,225.61	0.00	0.00	0.00
BHL Hendrix 13-C 1H									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Offset Kool Aid 6	0.00	0.00	0.00	-425.37	1,253.40	664,907.45	606,102.55	32.82768	-104.12249
- plan misses target center by 1323.61usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 100.00)									
FTP Hendrix 13-C 1H	0.00	0.00	3,984.03	-9.38	-620.38	665,323.44	604,228.76	32.82883	-104.12859
- plan misses target center by 0.28usft at 4190.68usft MD (3983.94 TVD, -9.33 N, -620.64 E)									
- Point									
BHL Hendrix 13-C 1H	0.00	0.00	4,048.00	5,179.09	-695.73	670,511.90	604,153.41	32.84310	-104.12880
- plan misses target center by 1.00usft at 9390.81usft MD (4048.00 TVD, 5178.96 N, -696.72 E)									
- Point									
LTP Hendrix 13-C 1H	0.00	0.00	4,048.00	5,099.10	-695.55	670,431.92	604,153.59	32.84288	-104.12880
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
800.54	798.00	Yates		0.00		
1,057.83	1,050.00	Seven Rivers		0.00		
1,636.53	1,615.00	Queen		0.00		
2,372.19	2,332.00	San Andres		0.00		
3,822.80	3,741.00	Glorieta		0.00		
3,905.96	3,811.00	Paddock (Top Yeso)		0.00		