

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 285929

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

1. Operator Name and Address KAISER-FRANCIS OIL CO P.O. Box 21468 Tulsa, OK 74121		2. OGRID Number 12361
		3. API Number 30-025-47621
4. Property Code 316706	5. Property Name BELL LAKE UNIT SOUTH	6. Well No. 221H

7. Surface Location

UL - Lot J	Section 1	Township 24S	Range 33E	Lot Idn J	Feet From 2020	N/S Line S	Feet From 2340	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot C	Section 36	Township 23S	Range 33E	Lot Idn C	Feet From 330	N/S Line N	Feet From 2110	E/W Line W	County Lea
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9. Pool Information

BELL LAKE;BONE SPRING, SOUTH	98264
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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 3627
16. Multiple N	17. Proposed Depth 18848	18. Formation Bone Spring	19. Contractor	20. Spud Date 9/7/2020
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	17.5	13.375	54.5	1400	260	0
Int1	12.25	9.625	40	5300	1450	0
Prod	8.5	5.5	20	18848	450	4000

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	10000	5000	Cameron

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.

Signature:

Printed Name: Electronically filed by Kristin L Gray

Title:

Email Address: kristing@kfoc.net

Date: 8/27/2020

Phone: 918-491-4209

OIL CONSERVATION DIVISION

Approved By: Paul F Kautz

Title: Geologist

Approved Date: 8/27/2020

Expiration Date: 8/27/2022

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 30-025-47621	² Pool Code 98264	³ Pool Name Bell Lake, Bone Spring, South
⁴ Property Code 316706	⁵ Property Name BELL LAKE UNIT SOUTH	⁶ Well Number 221H
⁷ OGRID No. 12361	⁸ Operator Name KAISER-FRANCIS OIL COMPANY	⁹ Elevation 3626.9

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
J	1	24 S	33 E	J	2020	SOUTH	2340	EAST	LEA

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
C	36	23 S	33 E	C	330	NORTH	2110	WEST	LEA

¹² Dedicated Acres 479.31	¹³ Joint or Infill	¹⁴ Consolidation Code -	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.

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE. EAST COORDINATES ARE GRID (NAD83). BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE. EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD83.	¹¹ 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: <i>Charlotte Van Valkenburg</i> Date: 8/25/2020 Printed Name: Charlotte Van Valkenburg E-mail Address: Charlotv@kfoc.net
	¹¹⁸ 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. OCTOBER-25, 2017. Date of Survey Signature and Seal of Professional Surveyor: <i>[Signature]</i> Certificate Number: FILMON F. JARAMILLO, PLS 12797 SURVEY NO. 5680

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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

GAS CAPTURE PLAN

Date: 8/27/2020

☒ Original

Operator & OGRID No.: [12361] KAISER-FRANCIS OIL CO

☐ 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
BELL LAKE UNIT SOUTH #221H	30-025-47621	J-1-24S-33E	2020S 2340E	2000	None	

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 TARGA MIDSTREAM SERVICES LLC and will be connected to TARGA MIDSTREAM SERVICES LLC High/Low Pressure gathering system located in Lea County, New Mexico. It will require 11000' of pipeline to connect the facility to High/Low Pressure gathering system. KAISER-FRANCIS OIL CO provides (periodically) to TARGA MIDSTREAM SERVICES LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, KAISER-FRANCIS OIL CO and TARGA MIDSTREAM SERVICES LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at TARGA MIDSTREAM SERVICES LLC Processing Plant located in Sec. 36, Twn. 19S, Rng. 36E, Lea 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 TARGA MIDSTREAM SERVICES LLC system at that time. Based on current information, it is KAISER-FRANCIS OIL CO'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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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 285929

PERMIT COMMENTS

Operator Name and Address: KAISER-FRANCIS OIL CO [12361] P.O. Box 21468 Tulsa, OK 74121		API Number: 30-025-47621
		Well: BELL LAKE UNIT SOUTH #221H

Created By	Comment	Comment Date
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Santa Fe, NM 87505

Form APD Conditions

Permit 285929

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: KAISER-FRANCIS OIL CO [12361] P.O. Box 21468 Tulsa, OK 74121	API Number: 30-025-47621
	Well: BELL LAKE UNIT SOUTH #221H

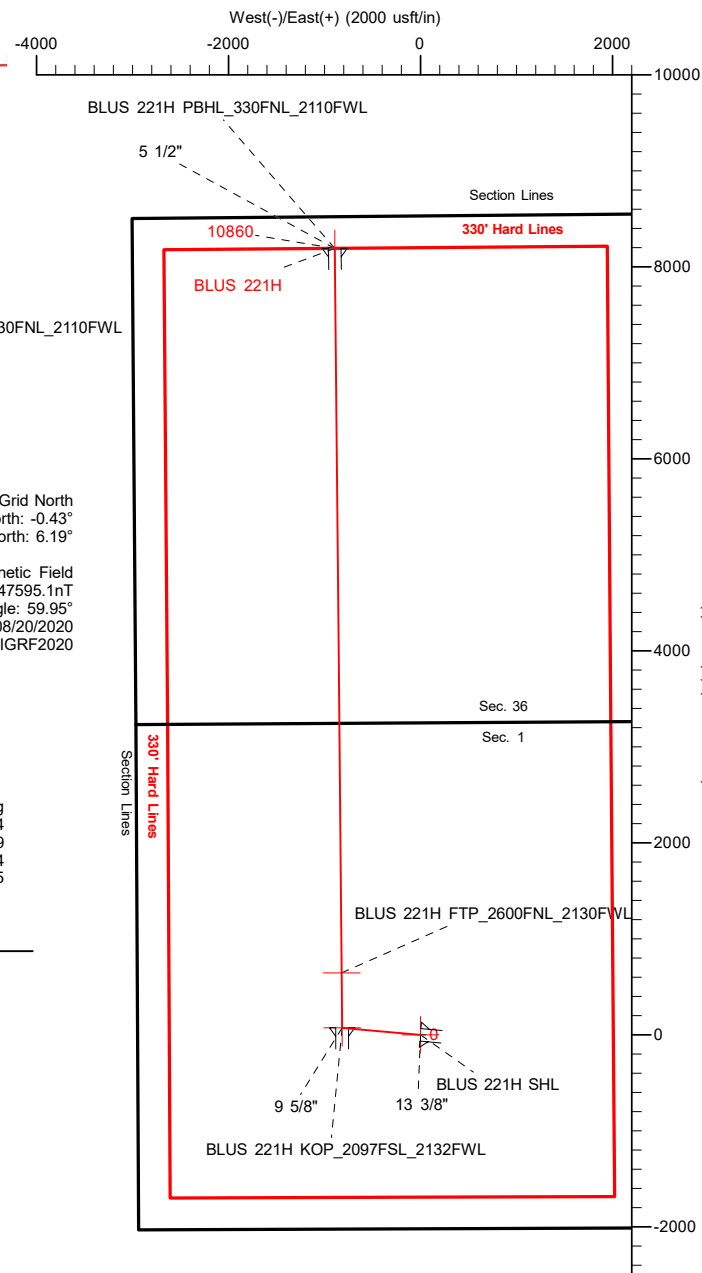
OCD Reviewer	Condition
pkautz	Will require a directional survey with the C-104
pkautz	1) SURFACE & INTERMEDIATE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must tie back into intermediate casing --
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool at 5753703186 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.

KAISER-FRANCIS OIL COMPANY

Project: Lea County, NM (NMEZ) NAD83 Grid
Site: Bell Lake Unit South
Well: BLUS 221H
Wellbore: Lateral
Design: Plan #1

3626.9 @ 3626.89usft (GLonly)
North American Datum 1983

Kaiser-Francis Oil Company



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00
2392.90	17.86	275.19	2378.52	12.49	-137.46	2.00	275.19	13.78
4160.81	17.86	275.19	4061.24	61.55	-677.39	0.00	0.00	67.93
5053.71	0.00	0.00	4939.76	74.03	-814.85	2.00	180.00	81.71
5313.95	0.00	0.00	5200.00	74.03	-814.85	0.00	0.00	81.71
10400.99	0.00	0.00	10287.04	74.03	-814.85	0.00	0.00	81.71
11300.99	90.00	359.46	10860.00	646.97	-820.20	10.00	359.46	654.67
18848.08	90.00	359.46	10860.00	8193.73	-890.69	0.00	0.00	8201.76

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
1353.00	1353.00	Rustler
1733.00	1733.25	Salado
2036.00	2039.17	Top of Salt
5022.00	5135.95	Base of Salt
5222.00	5335.95	Lamar
5319.00	5432.95	Bell Canyon
6169.00	6282.95	cherry Canyon
7617.00	7730.95	Brushy Canyon
8767.00	8880.95	Bone Spring
8939.00	9052.95	Avalon
9909.00	10022.95	1st Bone Spring
10477.00	10594.62	2nd Bone Spring
10860.00	11300.99	Target



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.19°

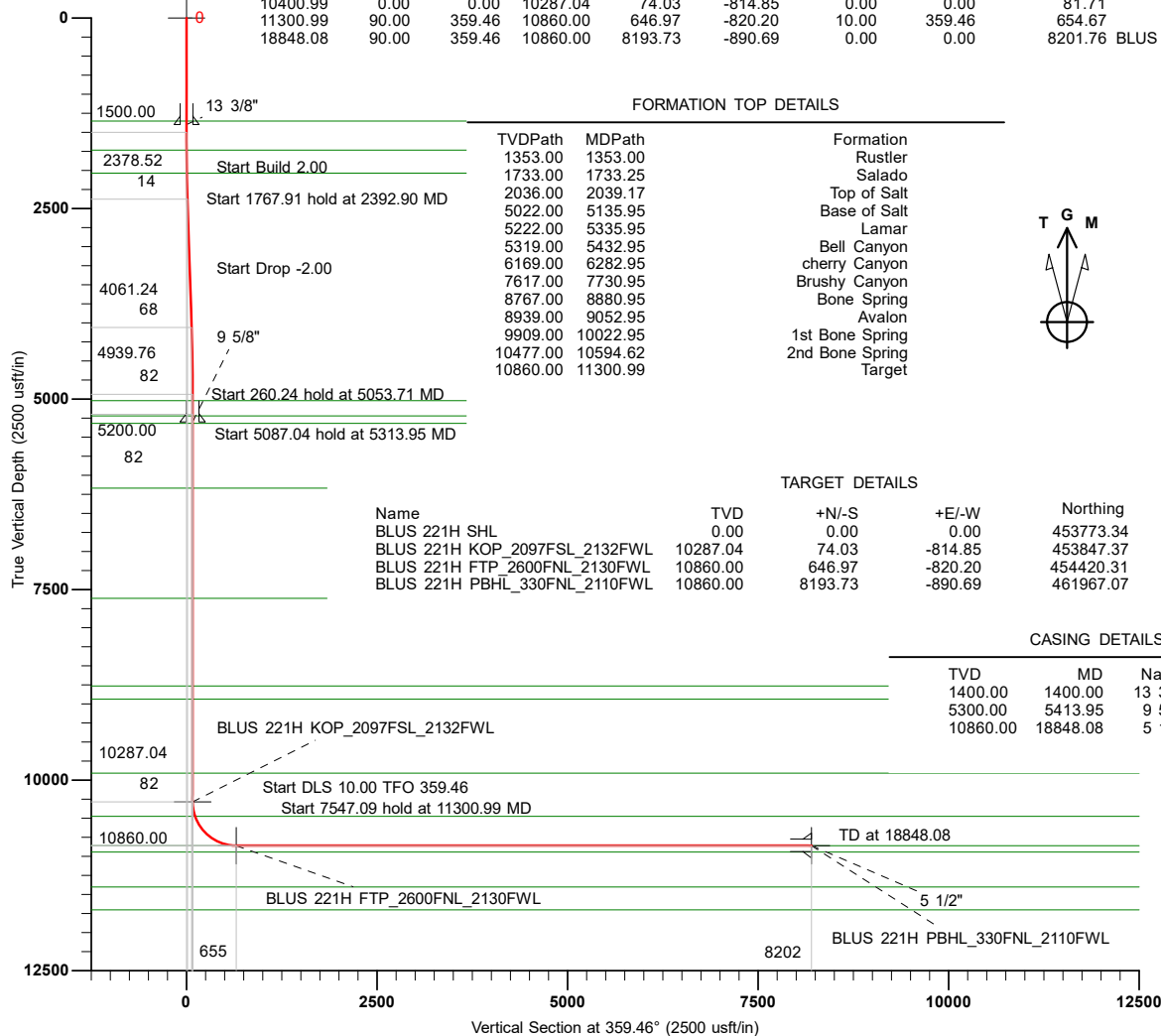
Magnetic Field
Strength: 47595.1nT
Dip Angle: 59.95°
Date: 08/20/2020
Model: IGRF2020

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
BLUS 221H SHL	0.00	0.00	0.00	453773.34	791218.74
BLUS 221H KOP_2097FSL_2132FWL	10287.04	74.03	-814.85	453847.37	790403.89
BLUS 221H FTP_2600FNL_2130FWL	10860.00	646.97	-820.20	454420.31	790398.54
BLUS 221H PBHL_330FNL_2110FWL	10860.00	8193.73	-890.69	461967.07	790328.05

CASING DETAILS

TVD	MD	Name	Size
1400.00	1400.00	13 3/8"	13.37
5300.00	5413.95	9 5/8"	9.62
10860.00	18848.08	5 1/2"	5.50



To convert a Magnetic Direction to a Grid Direction, Add 6.19°
To convert a Magnetic Direction to a True Direction, Add 6.62° East
Magnetic North is 6.19° East of Grid North (Magnetic Convergence)
Magnetic North is 6.62° East of True North (Magnetic Declination)

Kaiser-Francis Oil Company

KAISER-FRANCIS OIL COMPANY

Lea County, NM (NMEZ) NAD83 Grid

Bell Lake Unit South

BLUS 221H - Slot 221H

Lateral

Plan: Plan #1

Survey Report Landscape

21 August, 2020



Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY			Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid			TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South			MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H			North Reference:	Grid
Wellbore:	Lateral			Survey Calculation Method:	Minimum Curvature
Design:	Plan #1			Database:	SBDIR_EDM

Project	Lea County, NM (NMEZ) NAD83 Grid				
Map System:	US State Plane 1983		System Datum:	Mean Sea Level	
Geo Datum:	North American Datum 1983				
Map Zone:	New Mexico Eastern Zone				

Site	Bell Lake Unit South				
Site Position:		Northing:	453,753.30 usft	Latitude:	32.2448584°N
From:	Map	Easting:	791,218.94 usft	Longitude:	103.5250894°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.43 °

Well	BLUS 221H - Slot 221H					
Well Position	+N/-S	0.00 usft	Northing:	453,773.34 usft	Latitude:	32.2449135°N
	+E/-W	0.00 usft	Easting:	791,218.74 usft	Longitude:	103.5250896°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,626.89 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	08/20/20	6.62	59.95	47,595.09272116

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.46	

Survey Tool Program	Date	08/21/20			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	18,848.08	Plan #1 (Lateral)			

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
BLUS 221H SHL										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,353.00	0.00	0.00	1,353.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
Rustler										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
13 3/8"										
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74
1,600.00	2.00	275.19	1,599.98	0.16	-1.74	1.75	275.19	2.00	453,773.50	791,217.00
1,700.00	4.00	275.19	1,699.84	0.63	-6.95	6.98	275.19	2.00	453,773.97	791,211.79
1,733.25	4.67	275.19	1,733.00	0.86	-9.45	9.49	275.19	2.00	453,774.20	791,209.29
Salado										
1,800.00	6.00	275.19	1,799.45	1.42	-15.63	15.69	275.19	2.00	453,774.76	791,203.11
1,900.00	8.00	275.19	1,898.70	2.52	-27.77	27.88	275.19	2.00	453,775.86	791,190.97
2,000.00	10.00	275.19	1,997.47	3.94	-43.34	43.52	275.19	2.00	453,777.28	791,175.40

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
2,039.17	10.78	275.19	2,036.00	4.58	-50.38	50.59	275.19	2.00	453,777.92	791,168.36
Top of Salt										
2,100.00	12.00	275.19	2,095.62	5.66	-62.35	62.60	275.19	2.00	453,779.00	791,156.39
2,200.00	14.00	275.19	2,193.06	7.70	-84.75	85.10	275.19	2.00	453,781.04	791,133.99
2,300.00	16.00	275.19	2,289.64	10.04	-110.52	110.98	275.19	2.00	453,783.38	791,108.22
2,392.90	17.86	275.19	2,378.52	12.49	-137.46	138.03	275.19	2.00	453,785.83	791,081.28
2,400.00	17.86	275.19	2,385.27	12.69	-139.63	140.20	275.19	0.00	453,786.03	791,079.11
2,500.00	17.86	275.19	2,480.45	15.46	-170.17	170.87	275.19	0.00	453,788.80	791,048.57
2,600.00	17.86	275.19	2,575.63	18.24	-200.71	201.54	275.19	0.00	453,791.58	791,018.03
2,700.00	17.86	275.19	2,670.82	21.01	-231.25	232.20	275.19	0.00	453,794.35	790,987.49
2,800.00	17.86	275.19	2,766.00	23.79	-261.79	262.87	275.19	0.00	453,797.13	790,956.95
2,900.00	17.86	275.19	2,861.18	26.56	-292.33	293.54	275.19	0.00	453,799.90	790,926.41
3,000.00	17.86	275.19	2,956.36	29.34	-322.87	324.20	275.19	0.00	453,802.68	790,895.87
3,100.00	17.86	275.19	3,051.54	32.11	-353.41	354.87	275.19	0.00	453,805.45	790,865.33
3,200.00	17.86	275.19	3,146.73	34.88	-383.95	385.53	275.19	0.00	453,808.22	790,834.79
3,300.00	17.86	275.19	3,241.91	37.66	-414.49	416.20	275.19	0.00	453,811.00	790,804.25
3,400.00	17.86	275.19	3,337.09	40.43	-445.03	446.87	275.19	0.00	453,813.77	790,773.71
3,500.00	17.86	275.19	3,432.27	43.21	-475.57	477.53	275.19	0.00	453,816.55	790,743.17
3,600.00	17.86	275.19	3,527.45	45.98	-506.11	508.20	275.19	0.00	453,819.32	790,712.63
3,700.00	17.86	275.19	3,622.64	48.76	-536.65	538.86	275.19	0.00	453,822.10	790,682.09
3,800.00	17.86	275.19	3,717.82	51.53	-567.19	569.53	275.19	0.00	453,824.87	790,651.55
3,900.00	17.86	275.19	3,813.00	54.31	-597.73	600.20	275.19	0.00	453,827.65	790,621.01
4,000.00	17.86	275.19	3,908.18	57.08	-628.27	630.86	275.19	0.00	453,830.42	790,590.47
4,100.00	17.86	275.19	4,003.36	59.86	-658.81	661.53	275.19	0.00	453,833.20	790,559.93
4,160.81	17.86	275.19	4,061.24	61.55	-677.39	680.18	275.19	0.00	453,834.89	790,541.35
4,200.00	17.07	275.19	4,098.63	62.61	-689.10	691.94	275.19	2.00	453,835.95	790,529.64
4,300.00	15.07	275.19	4,194.71	65.12	-716.67	719.63	275.19	2.00	453,838.46	790,502.07

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
4,400.00	13.07	275.19	4,291.70	67.32	-740.89	743.94	275.19	2.00	453,840.66	790,477.85	
4,500.00	11.07	275.19	4,389.49	69.21	-761.72	764.86	275.19	2.00	453,842.55	790,457.02	
4,600.00	9.07	275.19	4,487.94	70.79	-779.14	782.35	275.19	2.00	453,844.13	790,439.60	
4,700.00	7.07	275.19	4,586.94	72.06	-793.13	796.40	275.19	2.00	453,845.40	790,425.61	
4,800.00	5.07	275.19	4,686.38	73.02	-803.67	806.98	275.19	2.00	453,846.36	790,415.07	
4,900.00	3.07	275.19	4,786.12	73.66	-810.74	814.08	275.19	2.00	453,847.00	790,408.00	
5,000.00	1.07	275.19	4,886.05	73.99	-814.35	817.70	275.19	2.00	453,847.33	790,404.39	
5,053.71	0.00	0.00	4,939.76	74.03	-814.85	818.20	275.19	2.00	453,847.37	790,403.89	
5,100.00	0.00	0.00	4,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,135.95	0.00	0.00	5,022.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
Base of Salt											
5,200.00	0.00	0.00	5,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,300.00	0.00	0.00	5,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,313.95	0.00	0.00	5,200.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,335.95	0.00	0.00	5,222.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
Lamar											
5,400.00	0.00	0.00	5,286.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,413.95	0.00	0.00	5,300.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
9 5/8"											
5,432.95	0.00	0.00	5,319.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
Bell Canyon											
5,500.00	0.00	0.00	5,386.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,600.00	0.00	0.00	5,486.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,700.00	0.00	0.00	5,586.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,800.00	0.00	0.00	5,686.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
5,900.00	0.00	0.00	5,786.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,000.00	0.00	0.00	5,886.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
6,100.00	0.00	0.00	5,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,200.00	0.00	0.00	6,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,282.95	0.00	0.00	6,169.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
cherry Canyon											
6,300.00	0.00	0.00	6,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,400.00	0.00	0.00	6,286.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,500.00	0.00	0.00	6,386.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,600.00	0.00	0.00	6,486.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,700.00	0.00	0.00	6,586.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,800.00	0.00	0.00	6,686.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
6,900.00	0.00	0.00	6,786.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,000.00	0.00	0.00	6,886.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,100.00	0.00	0.00	6,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,200.00	0.00	0.00	7,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,300.00	0.00	0.00	7,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,400.00	0.00	0.00	7,286.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,500.00	0.00	0.00	7,386.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,600.00	0.00	0.00	7,486.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,700.00	0.00	0.00	7,586.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,730.95	0.00	0.00	7,617.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
Brushy Canyon											
7,800.00	0.00	0.00	7,686.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
7,900.00	0.00	0.00	7,786.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
8,000.00	0.00	0.00	7,886.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
8,100.00	0.00	0.00	7,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
8,200.00	0.00	0.00	8,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
8,300.00	0.00	0.00	8,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
8,400.00	0.00	0.00	8,286.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
8,500.00	0.00	0.00	8,386.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
8,600.00	0.00	0.00	8,486.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
8,700.00	0.00	0.00	8,586.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
8,800.00	0.00	0.00	8,686.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
8,880.95	0.00	0.00	8,767.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
Bone Spring										
8,900.00	0.00	0.00	8,786.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,000.00	0.00	0.00	8,886.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,052.95	0.00	0.00	8,939.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
Avalon										
9,100.00	0.00	0.00	8,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,200.00	0.00	0.00	9,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,300.00	0.00	0.00	9,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,400.00	0.00	0.00	9,286.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,500.00	0.00	0.00	9,386.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,600.00	0.00	0.00	9,486.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,700.00	0.00	0.00	9,586.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,800.00	0.00	0.00	9,686.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
9,900.00	0.00	0.00	9,786.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
10,000.00	0.00	0.00	9,886.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
10,022.95	0.00	0.00	9,909.00	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
1st Bone Spring										
10,100.00	0.00	0.00	9,986.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
10,200.00	0.00	0.00	10,086.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89
10,300.00	0.00	0.00	10,186.05	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
10,400.99	0.00	0.00	10,287.04	74.03	-814.85	818.20	275.19	0.00	453,847.37	790,403.89	
BLUS 221H KOP_2097FSL_2132FWL											
10,450.00	4.90	359.46	10,335.99	76.13	-814.87	818.42	275.34	10.00	453,849.47	790,403.87	
10,500.00	9.90	359.46	10,385.55	82.57	-814.93	819.10	275.79	10.00	453,855.91	790,403.81	
10,550.00	14.90	359.46	10,434.37	93.30	-815.03	820.35	276.53	10.00	453,866.64	790,403.71	
10,594.62	19.36	359.46	10,477.00	106.44	-815.15	822.07	277.44	10.00	453,879.78	790,403.59	
2nd Bone Spring											
10,600.00	19.90	359.46	10,482.07	108.25	-815.17	822.32	277.56	10.00	453,881.59	790,403.57	
10,650.00	24.90	359.46	10,528.28	127.30	-815.35	825.22	278.87	10.00	453,900.64	790,403.39	
10,700.00	29.90	359.46	10,572.66	150.30	-815.56	829.29	280.44	10.00	453,923.64	790,403.18	
10,750.00	34.90	359.46	10,614.86	177.08	-815.81	834.81	282.25	10.00	453,950.42	790,402.93	
10,800.00	39.90	359.46	10,654.57	207.44	-816.09	842.05	284.26	10.00	453,980.78	790,402.65	
10,850.00	44.90	359.46	10,691.48	241.14	-816.41	851.28	286.46	10.00	454,014.48	790,402.33	
10,900.00	49.90	359.46	10,725.31	277.93	-816.75	862.75	288.79	10.00	454,051.27	790,401.99	
10,950.00	54.90	359.46	10,755.81	317.53	-817.12	876.65	291.24	10.00	454,090.87	790,401.62	
11,000.00	59.90	359.46	10,782.74	359.64	-817.52	893.13	293.75	10.00	454,132.98	790,401.22	
11,050.00	64.90	359.46	10,805.89	403.94	-817.93	912.24	296.28	10.00	454,177.28	790,400.81	
11,100.00	69.90	359.46	10,825.10	450.08	-818.36	933.96	298.81	10.00	454,223.42	790,400.38	
11,150.00	74.90	359.46	10,840.22	497.72	-818.81	958.21	301.29	10.00	454,271.06	790,399.93	
11,200.00	79.90	359.46	10,851.12	546.50	-819.26	984.81	303.71	10.00	454,319.84	790,399.48	
11,250.00	84.90	359.46	10,857.73	596.04	-819.72	1,013.52	306.02	10.00	454,369.38	790,399.02	
11,301.00	90.00	359.46	10,860.00	646.97	-820.20	1,044.65	308.27	10.00	454,420.31	790,398.54	
Target - BLUS 221H FTP_2600FNL_2130FWL											
11,400.00	90.00	359.46	10,860.00	745.97	-821.12	1,109.38	312.25	0.00	454,519.31	790,397.62	
11,500.00	90.00	359.46	10,860.00	845.97	-822.06	1,179.59	315.82	0.00	454,619.31	790,396.68	
11,600.00	90.00	359.46	10,860.00	945.96	-822.99	1,253.86	318.98	0.00	454,719.30	790,395.75	
11,700.00	90.00	359.46	10,860.00	1,045.96	-823.93	1,331.50	321.77	0.00	454,819.30	790,394.81	
11,800.00	90.00	359.46	10,860.00	1,145.95	-824.86	1,411.95	324.25	0.00	454,919.29	790,393.88	

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
11,900.00	90.00	359.46	10,860.00	1,245.95	-825.79	1,494.77	326.46	0.00	455,019.29	790,392.95
12,000.00	90.00	359.46	10,860.00	1,345.94	-826.73	1,579.57	328.44	0.00	455,119.28	790,392.01
12,100.00	90.00	359.46	10,860.00	1,445.94	-827.66	1,666.06	330.21	0.00	455,219.28	790,391.08
12,200.00	90.00	359.46	10,860.00	1,545.94	-828.60	1,753.99	331.81	0.00	455,319.28	790,390.14
12,300.00	90.00	359.46	10,860.00	1,645.93	-829.53	1,843.15	333.25	0.00	455,419.27	790,389.21
12,400.00	90.00	359.46	10,860.00	1,745.93	-830.46	1,933.37	334.56	0.00	455,519.27	790,388.28
12,500.00	90.00	359.46	10,860.00	1,845.92	-831.40	2,024.51	335.75	0.00	455,619.26	790,387.34
12,600.00	90.00	359.46	10,860.00	1,945.92	-832.33	2,116.45	336.84	0.00	455,719.26	790,386.41
12,700.00	90.00	359.46	10,860.00	2,045.91	-833.27	2,209.09	337.84	0.00	455,819.25	790,385.47
12,800.00	90.00	359.46	10,860.00	2,145.91	-834.20	2,302.35	338.76	0.00	455,919.25	790,384.54
12,900.00	90.00	359.46	10,860.00	2,245.90	-835.13	2,396.15	339.60	0.00	456,019.24	790,383.61
13,000.00	90.00	359.46	10,860.00	2,345.90	-836.07	2,490.43	340.38	0.00	456,119.24	790,382.67
13,100.00	90.00	359.46	10,860.00	2,445.90	-837.00	2,585.15	341.11	0.00	456,219.24	790,381.74
13,200.00	90.00	359.46	10,860.00	2,545.89	-837.94	2,680.24	341.78	0.00	456,319.23	790,380.80
13,300.00	90.00	359.46	10,860.00	2,645.89	-838.87	2,775.68	342.41	0.00	456,419.23	790,379.87
13,400.00	90.00	359.46	10,860.00	2,745.88	-839.80	2,871.44	342.99	0.00	456,519.22	790,378.94
13,500.00	90.00	359.46	10,860.00	2,845.88	-840.74	2,967.47	343.54	0.00	456,619.22	790,378.00
13,600.00	90.00	359.46	10,860.00	2,945.87	-841.67	3,063.75	344.05	0.00	456,719.21	790,377.07
13,700.00	90.00	359.46	10,860.00	3,045.87	-842.61	3,160.27	344.54	0.00	456,819.21	790,376.13
13,800.00	90.00	359.46	10,860.00	3,145.87	-843.54	3,257.00	344.99	0.00	456,919.21	790,375.20
13,900.00	90.00	359.46	10,860.00	3,245.86	-844.47	3,353.92	345.42	0.00	457,019.20	790,374.27
14,000.00	90.00	359.46	10,860.00	3,345.86	-845.41	3,451.01	345.82	0.00	457,119.20	790,373.33
14,100.00	90.00	359.46	10,860.00	3,445.85	-846.34	3,548.27	346.20	0.00	457,219.19	790,372.40
14,200.00	90.00	359.46	10,860.00	3,545.85	-847.28	3,645.67	346.56	0.00	457,319.19	790,371.46
14,300.00	90.00	359.46	10,860.00	3,645.84	-848.21	3,743.21	346.90	0.00	457,419.18	790,370.53
14,400.00	90.00	359.46	10,860.00	3,745.84	-849.14	3,840.88	347.23	0.00	457,519.18	790,369.60
14,500.00	90.00	359.46	10,860.00	3,845.84	-850.08	3,938.67	347.54	0.00	457,619.18	790,368.66

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
14,600.00	90.00	359.46	10,860.00	3,945.83	-851.01	4,036.56	347.83	0.00	457,719.17	790,367.73	
14,700.00	90.00	359.46	10,860.00	4,045.83	-851.95	4,134.55	348.11	0.00	457,819.17	790,366.79	
14,800.00	90.00	359.46	10,860.00	4,145.82	-852.88	4,232.64	348.38	0.00	457,919.16	790,365.86	
14,900.00	90.00	359.46	10,860.00	4,245.82	-853.81	4,330.82	348.63	0.00	458,019.16	790,364.93	
15,000.00	90.00	359.46	10,860.00	4,345.81	-854.75	4,429.07	348.87	0.00	458,119.15	790,363.99	
15,100.00	90.00	359.46	10,860.00	4,445.81	-855.68	4,527.41	349.11	0.00	458,219.15	790,363.06	
15,200.00	90.00	359.46	10,860.00	4,545.80	-856.62	4,625.81	349.33	0.00	458,319.14	790,362.12	
15,300.00	90.00	359.46	10,860.00	4,645.80	-857.55	4,724.28	349.54	0.00	458,419.14	790,361.19	
15,400.00	90.00	359.46	10,860.00	4,745.80	-858.48	4,822.82	349.75	0.00	458,519.14	790,360.26	
15,500.00	90.00	359.46	10,860.00	4,845.79	-859.42	4,921.41	349.94	0.00	458,619.13	790,359.32	
15,600.00	90.00	359.46	10,860.00	4,945.79	-860.35	5,020.06	350.13	0.00	458,719.13	790,358.39	
15,700.00	90.00	359.46	10,860.00	5,045.78	-861.29	5,118.76	350.31	0.00	458,819.12	790,357.45	
15,800.00	90.00	359.46	10,860.00	5,145.78	-862.22	5,217.51	350.49	0.00	458,919.12	790,356.52	
15,900.00	90.00	359.46	10,860.00	5,245.77	-863.15	5,316.31	350.66	0.00	459,019.11	790,355.59	
16,000.00	90.00	359.46	10,860.00	5,345.77	-864.09	5,415.15	350.82	0.00	459,119.11	790,354.65	
16,100.00	90.00	359.46	10,860.00	5,445.77	-865.02	5,514.04	350.97	0.00	459,219.11	790,353.72	
16,200.00	90.00	359.46	10,860.00	5,545.76	-865.96	5,612.96	351.13	0.00	459,319.10	790,352.78	
16,300.00	90.00	359.46	10,860.00	5,645.76	-866.89	5,711.92	351.27	0.00	459,419.10	790,351.85	
16,400.00	90.00	359.46	10,860.00	5,745.75	-867.82	5,810.92	351.41	0.00	459,519.09	790,350.92	
16,500.00	90.00	359.46	10,860.00	5,845.75	-868.76	5,909.95	351.55	0.00	459,619.09	790,349.98	
16,600.00	90.00	359.46	10,860.00	5,945.74	-869.69	6,009.01	351.68	0.00	459,719.08	790,349.05	
16,700.00	90.00	359.46	10,860.00	6,045.74	-870.63	6,108.11	351.81	0.00	459,819.08	790,348.11	
16,800.00	90.00	359.46	10,860.00	6,145.73	-871.56	6,207.23	351.93	0.00	459,919.07	790,347.18	
16,900.00	90.00	359.46	10,860.00	6,245.73	-872.49	6,306.38	352.05	0.00	460,019.07	790,346.25	
17,000.00	90.00	359.46	10,860.00	6,345.73	-873.43	6,405.55	352.16	0.00	460,119.07	790,345.31	
17,100.00	90.00	359.46	10,860.00	6,445.72	-874.36	6,504.76	352.27	0.00	460,219.06	790,344.38	
17,200.00	90.00	359.46	10,860.00	6,545.72	-875.30	6,603.98	352.38	0.00	460,319.06	790,343.44	

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
17,300.00	90.00	359.46	10,860.00	6,645.71	-876.23	6,703.23	352.49	0.00	460,419.05	790,342.51	
17,400.00	90.00	359.46	10,860.00	6,745.71	-877.16	6,802.50	352.59	0.00	460,519.05	790,341.58	
17,500.00	90.00	359.46	10,860.00	6,845.70	-878.10	6,901.79	352.69	0.00	460,619.04	790,340.64	
17,600.00	90.00	359.46	10,860.00	6,945.70	-879.03	7,001.10	352.79	0.00	460,719.04	790,339.71	
17,700.00	90.00	359.46	10,860.00	7,045.70	-879.97	7,100.43	352.88	0.00	460,819.04	790,338.77	
17,800.00	90.00	359.46	10,860.00	7,145.69	-880.90	7,199.78	352.97	0.00	460,919.03	790,337.84	
17,900.00	90.00	359.46	10,860.00	7,245.69	-881.83	7,299.15	353.06	0.00	461,019.03	790,336.91	
18,000.00	90.00	359.46	10,860.00	7,345.68	-882.77	7,398.54	353.15	0.00	461,119.02	790,335.97	
18,100.00	90.00	359.46	10,860.00	7,445.68	-883.70	7,497.94	353.23	0.00	461,219.02	790,335.04	
18,200.00	90.00	359.46	10,860.00	7,545.67	-884.64	7,597.35	353.31	0.00	461,319.01	790,334.10	
18,300.00	90.00	359.46	10,860.00	7,645.67	-885.57	7,696.78	353.39	0.00	461,419.01	790,333.17	
18,400.00	90.00	359.46	10,860.00	7,745.67	-886.50	7,796.23	353.47	0.00	461,519.01	790,332.24	
18,500.00	90.00	359.46	10,860.00	7,845.66	-887.44	7,895.69	353.55	0.00	461,619.00	790,331.30	
18,600.00	90.00	359.46	10,860.00	7,945.66	-888.37	7,995.16	353.62	0.00	461,719.00	790,330.37	
18,700.00	90.00	359.46	10,860.00	8,045.65	-889.31	8,094.65	353.69	0.00	461,818.99	790,329.43	
18,800.00	90.00	359.46	10,860.00	8,145.65	-890.24	8,194.15	353.76	0.00	461,918.99	790,328.50	
18,848.08	90.00	359.46	10,860.00	8,193.73	-890.69	8,241.99	353.80	0.00	461,967.07	790,328.05	
5 1/2" - BLUS 221H PBHL_330FNL_2110FWL											

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,400.00	1,400.00	13 3/8"	13.37	17.50	
5,413.95	5,300.00	9 5/8"	9.62	12.25	
18,848.08	10,860.00	5 1/2"	5.50	6.00	

Survey Report Landscape

Company:	KAISER-FRANCIS OIL COMPANY	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Project:	Lea County, NM (NMEZ) NAD83 Grid	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Well:	BLUS 221H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	SBDIR_EDM

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,432.95	5,319.00	Bell Canyon		0.00		
9,052.95	8,939.00	Avalon		0.00		
5,135.95	5,022.00	Base of Salt		0.00		
10,022.95	9,909.00	1st Bone Spring		0.00		
11,300.99	10,860.00	Target		0.00		
8,880.95	8,767.00	Bone Spring		0.00		
6,282.95	6,169.00	cherry Canyon		0.00		
1,733.25	1,733.00	Salado		0.00		
7,730.95	7,617.00	Brushy Canyon		0.00		
10,594.62	10,477.00	2nd Bone Spring		0.00		
1,353.00	1,353.00	Rustler		0.00		
2,039.17	2,036.00	Top of Salt		0.00		
5,335.95	5,222.00	Lamar		0.00		

Checked By: _____	Approved By: _____	Date: _____
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Kaiser-Francis Oil Company

KAISER-FRANCIS OIL COMPANY

Lea County, NM (NMEZ) NAD83 Grid

Bell Lake Unit South

BLUS 221H - Slot 221H

Lateral

Plan: Plan #1

Standard Planning Report

21 August, 2020



Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Lea County, NM (NMEZ) NAD83 Grid		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Bell Lake Unit South			
Site Position:		Northing:	453,753.30 usft	Latitude: 32.2448584°N
From: Map		Easting:	791,218.94 usft	Longitude: 103.5250894°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.43 °

Well	BLUS 221H - Slot 221H			
Well Position	+N/-S	20.04 usft	Northing:	453,773.34 usft
	+E/-W	-0.20 usft	Easting:	791,218.74 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Ground Level:	3,626.89 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	08/20/20	6.62	59.95	47,595.09272116

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.46

Plan Survey Tool Program	Date	08/21/20		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,848.08	Plan #1 (Lateral)	

Plan Sections										
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	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,392.90	17.86	275.19	2,378.52	12.49	-137.46	2.00	2.00	0.00	275.19	
4,160.81	17.86	275.19	4,061.24	61.55	-677.39	0.00	0.00	0.00	0.00	
5,053.71	0.00	0.00	4,939.76	74.04	-814.85	2.00	-2.00	0.00	180.00	
5,313.95	0.00	0.00	5,200.00	74.04	-814.85	0.00	0.00	0.00	0.00	
10,400.99	0.00	0.00	10,287.04	74.04	-814.85	0.00	0.00	0.00	0.00	
11,300.99	90.00	359.46	10,860.00	646.97	-820.20	10.00	10.00	-0.06	359.46	
18,848.08	90.00	359.46	10,860.00	8,193.73	-890.69	0.00	0.00	0.00	0.00	BLUS 221H PBHL_3

Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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
BLUS 221H SHL									
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	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,353.00	0.00	0.00	1,353.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	275.19	1,599.98	0.16	-1.74	0.17	2.00	2.00	0.00
1,700.00	4.00	275.19	1,699.84	0.63	-6.95	0.70	2.00	2.00	0.00
1,733.25	4.67	275.19	1,733.00	0.86	-9.45	0.95	2.00	2.00	0.00
Salado									
1,800.00	6.00	275.19	1,799.45	1.42	-15.63	1.57	2.00	2.00	0.00
1,900.00	8.00	275.19	1,898.70	2.52	-27.77	2.78	2.00	2.00	0.00
2,000.00	10.00	275.19	1,997.47	3.94	-43.34	4.35	2.00	2.00	0.00
2,039.17	10.78	275.19	2,036.00	4.58	-50.38	5.05	2.00	2.00	0.00
Top of Salt									
2,100.00	12.00	275.19	2,095.62	5.66	-62.35	6.25	2.00	2.00	0.00
2,200.00	14.00	275.19	2,193.06	7.70	-84.75	8.50	2.00	2.00	0.00
2,300.00	16.00	275.19	2,289.64	10.04	-110.52	11.08	2.00	2.00	0.00
2,392.90	17.86	275.19	2,378.52	12.49	-137.46	13.78	2.00	2.00	0.00
2,400.00	17.86	275.19	2,385.27	12.69	-139.63	14.00	0.00	0.00	0.00
2,500.00	17.86	275.19	2,480.45	15.46	-170.17	17.06	0.00	0.00	0.00
2,600.00	17.86	275.19	2,575.63	18.24	-200.71	20.13	0.00	0.00	0.00
2,700.00	17.86	275.19	2,670.82	21.01	-231.25	23.19	0.00	0.00	0.00
2,800.00	17.86	275.19	2,766.00	23.79	-261.79	26.25	0.00	0.00	0.00
2,900.00	17.86	275.19	2,861.18	26.56	-292.33	29.31	0.00	0.00	0.00
3,000.00	17.86	275.19	2,956.36	29.34	-322.87	32.38	0.00	0.00	0.00
3,100.00	17.86	275.19	3,051.54	32.11	-353.41	35.44	0.00	0.00	0.00
3,200.00	17.86	275.19	3,146.73	34.88	-383.95	38.50	0.00	0.00	0.00
3,300.00	17.86	275.19	3,241.91	37.66	-414.49	41.56	0.00	0.00	0.00
3,400.00	17.86	275.19	3,337.09	40.43	-445.03	44.63	0.00	0.00	0.00
3,500.00	17.86	275.19	3,432.27	43.21	-475.57	47.69	0.00	0.00	0.00
3,600.00	17.86	275.19	3,527.45	45.98	-506.11	50.75	0.00	0.00	0.00
3,700.00	17.86	275.19	3,622.64	48.76	-536.65	53.81	0.00	0.00	0.00
3,800.00	17.86	275.19	3,717.82	51.53	-567.19	56.88	0.00	0.00	0.00
3,900.00	17.86	275.19	3,813.00	54.31	-597.73	59.94	0.00	0.00	0.00
4,000.00	17.86	275.19	3,908.18	57.08	-628.27	63.00	0.00	0.00	0.00
4,100.00	17.86	275.19	4,003.36	59.86	-658.81	66.06	0.00	0.00	0.00
4,160.81	17.86	275.19	4,061.24	61.55	-677.39	67.93	0.00	0.00	0.00
4,200.00	17.07	275.19	4,098.63	62.61	-689.10	69.10	2.00	-2.00	0.00

Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)	
4,300.00	15.07	275.19	4,194.71	65.12	-716.67	71.87	2.00	-2.00	0.00	
4,400.00	13.07	275.19	4,291.70	67.32	-740.89	74.30	2.00	-2.00	0.00	
4,500.00	11.07	275.19	4,389.49	69.21	-761.72	76.38	2.00	-2.00	0.00	
4,600.00	9.07	275.19	4,487.94	70.79	-779.14	78.13	2.00	-2.00	0.00	
4,700.00	7.07	275.19	4,586.94	72.06	-793.13	79.53	2.00	-2.00	0.00	
4,800.00	5.07	275.19	4,686.38	73.02	-803.67	80.59	2.00	-2.00	0.00	
4,900.00	3.07	275.19	4,786.12	73.66	-810.74	81.30	2.00	-2.00	0.00	
5,000.00	1.07	275.19	4,886.05	73.99	-814.35	81.66	2.00	-2.00	0.00	
5,053.71	0.00	0.00	4,939.76	74.04	-814.85	81.71	2.00	-2.00	0.00	
5,100.00	0.00	0.00	4,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,135.95	0.00	0.00	5,022.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Base of Salt										
5,200.00	0.00	0.00	5,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,313.95	0.00	0.00	5,200.00	74.04	-814.85	81.71	0.00	0.00	0.00	
5,335.95	0.00	0.00	5,222.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Lamar										
5,400.00	0.00	0.00	5,286.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,413.95	0.00	0.00	5,300.00	74.04	-814.85	81.71	0.00	0.00	0.00	
9 5/8"										
5,432.95	0.00	0.00	5,319.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Bell Canyon										
5,500.00	0.00	0.00	5,386.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,486.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,586.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,686.05	74.04	-814.85	81.71	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,786.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,886.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,282.95	0.00	0.00	6,169.00	74.04	-814.85	81.71	0.00	0.00	0.00	
cherry Canyon										
6,300.00	0.00	0.00	6,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,286.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,386.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,486.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,586.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,686.05	74.04	-814.85	81.71	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,786.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,886.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,286.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,386.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,486.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,586.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,730.95	0.00	0.00	7,617.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Brushy Canyon										
7,800.00	0.00	0.00	7,686.05	74.04	-814.85	81.71	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,786.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,886.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	

Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)	
8,200.00	0.00	0.00	8,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,286.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,386.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,486.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,586.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,686.05	74.04	-814.85	81.71	0.00	0.00	0.00	
8,880.95	0.00	0.00	8,767.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Bone Spring										
8,900.00	0.00	0.00	8,786.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,886.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,052.95	0.00	0.00	8,939.00	74.04	-814.85	81.71	0.00	0.00	0.00	
Avalon										
9,100.00	0.00	0.00	8,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,286.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,386.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,486.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,586.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,686.05	74.04	-814.85	81.71	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,786.05	74.04	-814.85	81.71	0.00	0.00	0.00	
10,000.00	0.00	0.00	9,886.05	74.04	-814.85	81.71	0.00	0.00	0.00	
10,022.95	0.00	0.00	9,909.00	74.04	-814.85	81.71	0.00	0.00	0.00	
1st Bone Spring										
10,100.00	0.00	0.00	9,986.05	74.04	-814.85	81.71	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,086.05	74.04	-814.85	81.71	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,186.05	74.04	-814.85	81.71	0.00	0.00	0.00	
10,400.99	0.00	0.00	10,287.04	74.04	-814.85	81.71	0.00	0.00	0.00	
BLUS 221H KOP_2097FSL_2132FWL										
10,450.00	4.90	359.46	10,335.99	76.13	-814.87	83.81	10.00	10.00	0.00	
10,500.00	9.90	359.46	10,385.55	82.57	-814.93	90.24	10.00	10.00	0.00	
10,550.00	14.90	359.46	10,434.37	93.30	-815.03	100.98	10.00	10.00	0.00	
10,594.62	19.36	359.46	10,477.00	106.44	-815.15	114.12	10.00	10.00	0.00	
2nd Bone Spring										
10,600.00	19.90	359.46	10,482.07	108.25	-815.17	115.93	10.00	10.00	0.00	
10,650.00	24.90	359.46	10,528.28	127.30	-815.35	134.97	10.00	10.00	0.00	
10,700.00	29.90	359.46	10,572.66	150.30	-815.56	157.98	10.00	10.00	0.00	
10,750.00	34.90	359.46	10,614.86	177.08	-815.81	184.76	10.00	10.00	0.00	
10,800.00	39.90	359.46	10,654.57	207.44	-816.09	215.12	10.00	10.00	0.00	
10,850.00	44.90	359.46	10,691.48	241.14	-816.41	248.83	10.00	10.00	0.00	
10,900.00	49.90	359.46	10,725.31	277.93	-816.75	285.62	10.00	10.00	0.00	
10,950.00	54.90	359.46	10,755.81	317.53	-817.12	325.22	10.00	10.00	0.00	
11,000.00	59.90	359.46	10,782.74	359.64	-817.52	367.33	10.00	10.00	0.00	
11,050.00	64.90	359.46	10,805.90	403.94	-817.93	411.63	10.00	10.00	0.00	
11,100.00	69.90	359.46	10,825.10	450.08	-818.36	457.77	10.00	10.00	0.00	
11,150.00	74.90	359.46	10,840.22	497.72	-818.81	505.42	10.00	10.00	0.00	
11,200.00	79.90	359.46	10,851.12	546.50	-819.26	554.20	10.00	10.00	0.00	
11,250.00	84.90	359.46	10,857.73	596.04	-819.72	603.74	10.00	10.00	0.00	
11,301.00	90.00	359.46	10,860.00	646.97	-820.20	654.67	10.00	10.00	0.00	
Target - BLUS 221H FTP_2600FNL_2130FWL										
11,400.00	90.00	359.46	10,860.00	745.97	-821.12	753.68	0.00	0.00	0.00	
11,500.00	90.00	359.46	10,860.00	845.97	-822.06	853.68	0.00	0.00	0.00	

Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)	
11,600.00	90.00	359.46	10,860.00	945.96	-822.99	953.68	0.00	0.00	0.00	
11,700.00	90.00	359.46	10,860.00	1,045.96	-823.93	1,053.68	0.00	0.00	0.00	
11,800.00	90.00	359.46	10,860.00	1,145.95	-824.86	1,153.68	0.00	0.00	0.00	
11,900.00	90.00	359.46	10,860.00	1,245.95	-825.79	1,253.68	0.00	0.00	0.00	
12,000.00	90.00	359.46	10,860.00	1,345.94	-826.73	1,353.68	0.00	0.00	0.00	
12,100.00	90.00	359.46	10,860.00	1,445.94	-827.66	1,453.68	0.00	0.00	0.00	
12,200.00	90.00	359.46	10,860.00	1,545.94	-828.60	1,553.68	0.00	0.00	0.00	
12,300.00	90.00	359.46	10,860.00	1,645.93	-829.53	1,653.68	0.00	0.00	0.00	
12,400.00	90.00	359.46	10,860.00	1,745.93	-830.46	1,753.68	0.00	0.00	0.00	
12,500.00	90.00	359.46	10,860.00	1,845.92	-831.40	1,853.68	0.00	0.00	0.00	
12,600.00	90.00	359.46	10,860.00	1,945.92	-832.33	1,953.68	0.00	0.00	0.00	
12,700.00	90.00	359.46	10,860.00	2,045.91	-833.27	2,053.68	0.00	0.00	0.00	
12,800.00	90.00	359.46	10,860.00	2,145.91	-834.20	2,153.68	0.00	0.00	0.00	
12,900.00	90.00	359.46	10,860.00	2,245.91	-835.13	2,253.68	0.00	0.00	0.00	
13,000.00	90.00	359.46	10,860.00	2,345.90	-836.07	2,353.68	0.00	0.00	0.00	
13,100.00	90.00	359.46	10,860.00	2,445.90	-837.00	2,453.68	0.00	0.00	0.00	
13,200.00	90.00	359.46	10,860.00	2,545.89	-837.94	2,553.68	0.00	0.00	0.00	
13,300.00	90.00	359.46	10,860.00	2,645.89	-838.87	2,653.68	0.00	0.00	0.00	
13,400.00	90.00	359.46	10,860.00	2,745.88	-839.80	2,753.68	0.00	0.00	0.00	
13,500.00	90.00	359.46	10,860.00	2,845.88	-840.74	2,853.68	0.00	0.00	0.00	
13,600.00	90.00	359.46	10,860.00	2,945.87	-841.67	2,953.68	0.00	0.00	0.00	
13,700.00	90.00	359.46	10,860.00	3,045.87	-842.61	3,053.68	0.00	0.00	0.00	
13,800.00	90.00	359.46	10,860.00	3,145.87	-843.54	3,153.68	0.00	0.00	0.00	
13,900.00	90.00	359.46	10,860.00	3,245.86	-844.47	3,253.68	0.00	0.00	0.00	
14,000.00	90.00	359.46	10,860.00	3,345.86	-845.41	3,353.68	0.00	0.00	0.00	
14,100.00	90.00	359.46	10,860.00	3,445.85	-846.34	3,453.68	0.00	0.00	0.00	
14,200.00	90.00	359.46	10,860.00	3,545.85	-847.28	3,553.68	0.00	0.00	0.00	
14,300.00	90.00	359.46	10,860.00	3,645.84	-848.21	3,653.68	0.00	0.00	0.00	
14,400.00	90.00	359.46	10,860.00	3,745.84	-849.14	3,753.68	0.00	0.00	0.00	
14,500.00	90.00	359.46	10,860.00	3,845.84	-850.08	3,853.68	0.00	0.00	0.00	
14,600.00	90.00	359.46	10,860.00	3,945.83	-851.01	3,953.68	0.00	0.00	0.00	
14,700.00	90.00	359.46	10,860.00	4,045.83	-851.95	4,053.68	0.00	0.00	0.00	
14,800.00	90.00	359.46	10,860.00	4,145.82	-852.88	4,153.68	0.00	0.00	0.00	
14,900.00	90.00	359.46	10,860.00	4,245.82	-853.81	4,253.68	0.00	0.00	0.00	
15,000.00	90.00	359.46	10,860.00	4,345.81	-854.75	4,353.68	0.00	0.00	0.00	
15,100.00	90.00	359.46	10,860.00	4,445.81	-855.68	4,453.68	0.00	0.00	0.00	
15,200.00	90.00	359.46	10,860.00	4,545.80	-856.62	4,553.68	0.00	0.00	0.00	
15,300.00	90.00	359.46	10,860.00	4,645.80	-857.55	4,653.68	0.00	0.00	0.00	
15,400.00	90.00	359.46	10,860.00	4,745.80	-858.48	4,753.68	0.00	0.00	0.00	
15,500.00	90.00	359.46	10,860.00	4,845.79	-859.42	4,853.68	0.00	0.00	0.00	
15,600.00	90.00	359.46	10,860.00	4,945.79	-860.35	4,953.68	0.00	0.00	0.00	
15,700.00	90.00	359.46	10,860.00	5,045.78	-861.29	5,053.68	0.00	0.00	0.00	
15,800.00	90.00	359.46	10,860.00	5,145.78	-862.22	5,153.68	0.00	0.00	0.00	
15,900.00	90.00	359.46	10,860.00	5,245.77	-863.15	5,253.68	0.00	0.00	0.00	
16,000.00	90.00	359.46	10,860.00	5,345.77	-864.09	5,353.68	0.00	0.00	0.00	
16,100.00	90.00	359.46	10,860.00	5,445.77	-865.02	5,453.68	0.00	0.00	0.00	
16,200.00	90.00	359.46	10,860.00	5,545.76	-865.96	5,553.68	0.00	0.00	0.00	
16,300.00	90.00	359.46	10,860.00	5,645.76	-866.89	5,653.68	0.00	0.00	0.00	
16,400.00	90.00	359.46	10,860.00	5,745.75	-867.82	5,753.68	0.00	0.00	0.00	
16,500.00	90.00	359.46	10,860.00	5,845.75	-868.76	5,853.68	0.00	0.00	0.00	
16,600.00	90.00	359.46	10,860.00	5,945.74	-869.69	5,953.68	0.00	0.00	0.00	
16,700.00	90.00	359.46	10,860.00	6,045.74	-870.63	6,053.68	0.00	0.00	0.00	
16,800.00	90.00	359.46	10,860.00	6,145.73	-871.56	6,153.68	0.00	0.00	0.00	
16,900.00	90.00	359.46	10,860.00	6,245.73	-872.49	6,253.68	0.00	0.00	0.00	

Planning Report

Database:	SBDIR_EDM	Local Co-ordinate Reference:	Well BLUS 221H - Slot 221H
Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

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)	
17,000.00	90.00	359.46	10,860.00	6,345.73	-873.43	6,353.68	0.00	0.00	0.00	
17,100.00	90.00	359.46	10,860.00	6,445.72	-874.36	6,453.68	0.00	0.00	0.00	
17,200.00	90.00	359.46	10,860.00	6,545.72	-875.30	6,553.68	0.00	0.00	0.00	
17,300.00	90.00	359.46	10,860.00	6,645.71	-876.23	6,653.68	0.00	0.00	0.00	
17,400.00	90.00	359.46	10,860.00	6,745.71	-877.16	6,753.68	0.00	0.00	0.00	
17,500.00	90.00	359.46	10,860.00	6,845.70	-878.10	6,853.68	0.00	0.00	0.00	
17,600.00	90.00	359.46	10,860.00	6,945.70	-879.03	6,953.68	0.00	0.00	0.00	
17,700.00	90.00	359.46	10,860.00	7,045.70	-879.97	7,053.68	0.00	0.00	0.00	
17,800.00	90.00	359.46	10,860.00	7,145.69	-880.90	7,153.68	0.00	0.00	0.00	
17,900.00	90.00	359.46	10,860.00	7,245.69	-881.83	7,253.68	0.00	0.00	0.00	
18,000.00	90.00	359.46	10,860.00	7,345.68	-882.77	7,353.68	0.00	0.00	0.00	
18,100.00	90.00	359.46	10,860.00	7,445.68	-883.70	7,453.68	0.00	0.00	0.00	
18,200.00	90.00	359.46	10,860.00	7,545.67	-884.64	7,553.68	0.00	0.00	0.00	
18,300.00	90.00	359.46	10,860.00	7,645.67	-885.57	7,653.68	0.00	0.00	0.00	
18,400.00	90.00	359.46	10,860.00	7,745.67	-886.50	7,753.68	0.00	0.00	0.00	
18,500.00	90.00	359.46	10,860.00	7,845.66	-887.44	7,853.68	0.00	0.00	0.00	
18,600.00	90.00	359.46	10,860.00	7,945.66	-888.37	7,953.68	0.00	0.00	0.00	
18,700.00	90.00	359.46	10,860.00	8,045.65	-889.31	8,053.68	0.00	0.00	0.00	
18,800.00	90.00	359.46	10,860.00	8,145.65	-890.24	8,153.68	0.00	0.00	0.00	
18,848.08	90.00	359.46	10,860.00	8,193.73	-890.69	8,201.76	0.00	0.00	0.00	
5 1/2" - BLUS 221H PBHL_330FNL_2110FWL										

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
BLUS 221H SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	453,773.34	791,218.74	32.2449135°N	103.5250896°W
BLUS 221H KOP_2097F - plan hits target center - Point	0.00	0.00	10,287.04	74.04	-814.85	453,847.38	790,403.89	32.2451338°N	103.5277232°W
BLUS 221H PBHL_330F - plan hits target center - Point	0.00	0.00	10,860.00	8,193.73	-890.69	461,967.07	790,328.05	32.2674533°N	103.5277714°W
BLUS 221H FTP_2600F - plan hits target center - Point	0.00	0.00	10,860.00	646.97	-820.20	454,420.31	790,398.54	32.2467087°N	103.5277266°W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,400.00	1,400.00	13 3/8"	13.37	17.50	
5,413.95	5,300.00	9 5/8"	9.62	12.25	
18,848.08	10,860.00	5 1/2"	5.50	6.00	

Planning Report

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Company:	KAISER-FRANCIS OIL COMPANY	TVD Reference:	3626.9 @ 3626.89usft (GLonly)
Project:	Lea County, NM (NMEZ) NAD83 Grid	MD Reference:	3626.9 @ 3626.89usft (GLonly)
Site:	Bell Lake Unit South	North Reference:	Grid
Well:	BLUS 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,353.00	1,353.00	Rustler		0.00	
	1,733.25	1,733.00	Salado		0.00	
	2,039.17	2,036.00	Top of Salt		0.00	
	5,135.95	5,022.00	Base of Salt		0.00	
	5,335.95	5,222.00	Lamar		0.00	
	5,432.95	5,319.00	Bell Canyon		0.00	
	6,282.95	6,169.00	cherry Canyon		0.00	
	7,730.95	7,617.00	Brushy Canyon		0.00	
	8,880.95	8,767.00	Bone Spring		0.00	
	9,052.95	8,939.00	Avalon		0.00	
	10,022.95	9,909.00	1st Bone Spring		0.00	
	10,594.62	10,477.00	2nd Bone Spring		0.00	
	11,300.99	10,860.00	Target		0.00	