

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 276075

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 30-025-46628
4. Property Code 316706	5. Property Name BELL LAKE UNIT SOUTH	6. Well No. 434H

7. Surface Location

UL - Lot J	Section 5	Township 24S	Range 34E	Lot Idn J	Feet From 1820	N/S Line S	Feet From 2030	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot B	Section 32	Township 23S	Range 34E	Lot Idn B	Feet From 330	N/S Line N	Feet From 2290	E/W Line E	County Lea
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9. Pool Information

BELL LAKE;WOLFCAMP, SOUTH	98266
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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 3589
16. Multiple N	17. Proposed Depth 20260	18. Formation Wolfcamp	19. Contractor	20. Spud Date 1/2/2020
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	14.75	10.75	40.5	1250	1071	0
Int1	9.75	5.5	29.7	11202	1760	0
Prod	6.75	5.5	20	20260	780	10800

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.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Kristin L Gray	Approved By: Paul F Kautz	
Title:	Title: Geologist	
Email Address: kristing@kfoc.net	Approved Date: 12/20/2019	Expiration Date: 12/20/2021
Date: 12/18/2019	Phone: 918-491-4209	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		² Pool Code	³ Pool Name
		98266	Bell Lake; Wolfcamp, South
⁴ Property Code	⁵ Property Name		⁶ Well Number
316706	BELL LAKE UNIT SOUTH		434H
⁷ OGRID No.	⁸ Operator Name		⁹ Elevation
12361	KAISER-FRANCIS OIL CO.		3588.7

¹⁰ Surface Location

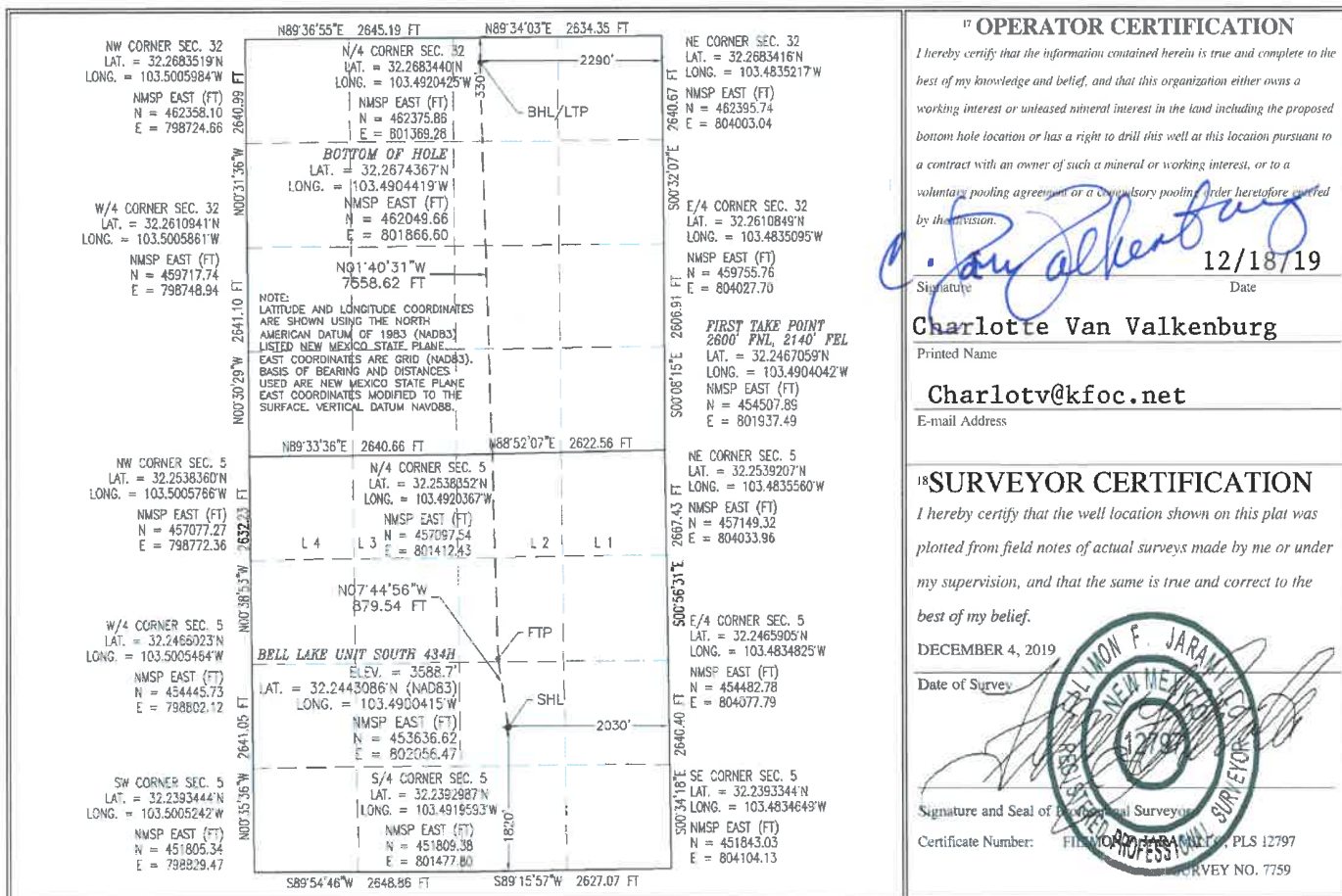
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	5	24 S	34 E	J	1820	SOUTH	2030	EAST	LEA

" 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	32	23 S	34 E	B	330	NORTH	2290	EAST	LEA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
480		-	-

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.



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

GAS CAPTURE PLAN

Date: 12/20/2019

☒ 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 #434H	30-025-46628	J-5-24S-34E	1820S 2030E	2000	None	Gas will go into Tornado Plant located in Sec. 12, Blk 55, T1, Charles F Carmine Survey, A-1273, Loving Co., TX

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 MARKWEST RESOURCES INC and will be connected to MARKWEST RESOURCES INC Low Pressure gathering system located in Lea County, New Mexico. It will require 0' of pipeline to connect the facility to Low Pressure gathering system. KAISER-FRANCIS OIL CO provides (periodically) to MARKWEST RESOURCES INC 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 MARKWEST RESOURCES INC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at MARKWEST RESOURCES INC Processing Plant located in Sec. 05, Twn. 24S, Rng. 34E, 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 MARKWEST RESOURCES INC 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.
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Form APD Comments

Permit 276075

PERMIT COMMENTS

Operator Name and Address: KAISER-FRANCIS OIL CO [12361] P.O. Box 21468 Tulsa, OK 74121	API Number: 30-025-46628
	Well: BELL LAKE UNIT SOUTH #434H

Created By	Comment	Comment Date
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Santa Fe, NM 87505

Form APD Conditions

Permit 276075

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: KAISER-FRANCIS OIL CO [12361] P.O. Box 21468 Tulsa, OK 74121	API Number: 30-025-46628
	Well: BELL LAKE UNIT SOUTH #434H

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 NMOC 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

Lea County, NM (NAD 83)

Sec 5-T24S-R34E

Bell Lake Unit South 434H

Wellbore #1

Plan: Plan #1

Standard Survey Report

11 December, 2019

KAISER-FRANCIS OIL COMPANY



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

Project	Lea County, NM (NAD 83)		
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 5-T24S-R34E		
Site Position:		Northing:	453,577.65 usft
From:	Map	Easting:	760,872.47 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.24496527
		Longitude:	-103.62324220
		Grid Convergence:	0.38 °

Well	Bell Lake Unit South 434H		
Well Position	+N/-S	0.00 usft	Northing: 453,577.65 usft
	+E/-W	0.00 usft	Easting: 760,872.47 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.24496527
		Longitude:	-103.62324220
		Ground Level:	3,588.70 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/11/19	6.71	60.04	47,688.45462409

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	11,875.00	0.00	0.00	359.46	

Survey Tool Program	Date	12/11/19			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,761.79	Plan #1 (Wellbore #1)	MWD	OWSG MWD - Standard	

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	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	



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD 83)
Site: Sec 5-T24S-R34E
Well: Bell Lake Unit South 434H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Bell Lake Unit South 434H
TVD Reference: 3588.7+23 @ 3611.70usft
MD Reference: 3588.7+23 @ 3611.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
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
1,350.00	0.00	0.00	1,350.00	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
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	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
Nudge 2°/100'									
1,700.00	2.00	339.20	1,699.98	1.63	-0.62	1.64	2.00	2.00	0.00
1,725.04	2.50	339.20	1,725.00	2.55	-0.97	2.56	2.00	2.00	0.00
Salado									
1,800.00	4.00	339.20	1,799.84	6.52	-2.48	6.55	2.00	2.00	0.00
1,900.00	6.00	339.20	1,899.45	14.67	-5.57	14.72	2.00	2.00	0.00
1,945.00	6.90	339.20	1,944.17	19.40	-7.37	19.46	2.00	2.00	0.00
EON HLD 6.9° Inc.									
2,000.00	6.90	339.20	1,998.77	25.57	-9.71	25.66	0.00	0.00	0.00
2,051.61	6.90	339.20	2,050.00	31.37	-11.92	31.48	0.00	0.00	0.00
Top of Salt									
2,100.00	6.90	339.20	2,098.04	36.80	-13.98	36.93	0.00	0.00	0.00
2,200.00	6.90	339.20	2,197.32	48.03	-18.25	48.20	0.00	0.00	0.00
2,300.00	6.90	339.20	2,296.60	59.27	-22.51	59.47	0.00	0.00	0.00
2,400.00	6.90	339.20	2,395.87	70.50	-26.78	70.75	0.00	0.00	0.00
2,500.00	6.90	339.20	2,495.15	81.73	-31.05	82.02	0.00	0.00	0.00
2,600.00	6.90	339.20	2,594.42	92.96	-35.31	93.29	0.00	0.00	0.00
2,700.00	6.90	339.20	2,693.70	104.19	-39.58	104.56	0.00	0.00	0.00
2,800.00	6.90	339.20	2,792.97	115.42	-43.84	115.83	0.00	0.00	0.00
2,900.00	6.90	339.20	2,892.25	126.65	-48.11	127.10	0.00	0.00	0.00
3,000.00	6.90	339.20	2,991.53	137.88	-52.38	138.37	0.00	0.00	0.00
3,100.00	6.90	339.20	3,090.80	149.11	-56.64	149.64	0.00	0.00	0.00
3,200.00	6.90	339.20	3,190.08	160.34	-60.91	160.91	0.00	0.00	0.00
3,300.00	6.90	339.20	3,289.35	171.57	-65.17	172.18	0.00	0.00	0.00
3,400.00	6.90	339.20	3,388.63	182.80	-69.44	183.45	0.00	0.00	0.00
3,500.00	6.90	339.20	3,487.90	194.03	-73.71	194.72	0.00	0.00	0.00
3,600.00	6.90	339.20	3,587.18	205.26	-77.97	205.99	0.00	0.00	0.00
3,700.00	6.90	339.20	3,686.46	216.50	-82.24	217.26	0.00	0.00	0.00
3,800.00	6.90	339.20	3,785.73	227.73	-86.50	228.53	0.00	0.00	0.00
3,900.00	6.90	339.20	3,885.01	238.96	-90.77	239.80	0.00	0.00	0.00
4,000.00	6.90	339.20	3,984.28	250.19	-95.04	251.07	0.00	0.00	0.00
4,100.00	6.90	339.20	4,083.56	261.42	-99.30	262.34	0.00	0.00	0.00
4,200.00	6.90	339.20	4,182.83	272.65	-103.57	273.61	0.00	0.00	0.00
4,255.90	6.90	339.20	4,238.33	278.93	-105.95	279.91	0.00	0.00	0.00
DROP 2°/100'									
4,300.00	6.02	339.20	4,282.15	283.56	-107.72	284.57	2.00	-2.00	0.00



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company: Kaiser-Francis Oil Company
Project: Lea County, NM (NAD 83)
Site: Sec 5-T24S-R34E
Well: Bell Lake Unit South 434H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Bell Lake Unit South 434H
TVD Reference: 3588.7+23 @ 3611.70usft
MD Reference: 3588.7+23 @ 3611.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
4,400.00	4.02	339.20	4,381.76	291.74	-110.82	292.77	2.00	-2.00	0.00
4,500.00	2.02	339.20	4,481.62	296.66	-112.69	297.71	2.00	-2.00	0.00
4,600.90	0.00	0.00	4,582.50	298.32	-113.32	299.38	2.00	-2.00	0.00
EOD HLD 0° Inc.									
4,700.00	0.00	0.00	4,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
4,800.00	0.00	0.00	4,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
4,900.00	0.00	0.00	4,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,000.00	0.00	0.00	4,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,043.40	0.00	0.00	5,025.00	298.32	-113.32	299.38	0.00	0.00	0.00
Base of Salt									
5,100.00	0.00	0.00	5,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,200.00	0.00	0.00	5,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,268.40	0.00	0.00	5,250.00	298.32	-113.32	299.38	0.00	0.00	0.00
Lamar									
5,300.00	0.00	0.00	5,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,343.40	0.00	0.00	5,325.00	298.32	-113.32	299.38	0.00	0.00	0.00
Bell Canyon									
5,400.00	0.00	0.00	5,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,500.00	0.00	0.00	5,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,600.00	0.00	0.00	5,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,000.00	0.00	0.00	5,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,100.00	0.00	0.00	6,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,193.40	0.00	0.00	6,175.00	298.32	-113.32	299.38	0.00	0.00	0.00
Cherry Canyon									
6,200.00	0.00	0.00	6,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,600.00	0.00	0.00	6,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,700.00	0.00	0.00	6,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,800.00	0.00	0.00	6,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
6,900.00	0.00	0.00	6,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,000.00	0.00	0.00	6,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,100.00	0.00	0.00	7,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,200.00	0.00	0.00	7,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,300.00	0.00	0.00	7,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,400.00	0.00	0.00	7,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,500.00	0.00	0.00	7,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,600.00	0.00	0.00	7,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,643.40	0.00	0.00	7,625.00	298.32	-113.32	299.38	0.00	0.00	0.00
Brushy Canyon									



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

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	0.00	0.00	7,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,800.00	0.00	0.00	7,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
7,900.00	0.00	0.00	7,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,000.00	0.00	0.00	7,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,100.00	0.00	0.00	8,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,200.00	0.00	0.00	8,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,300.00	0.00	0.00	8,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,400.00	0.00	0.00	8,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,500.00	0.00	0.00	8,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,600.00	0.00	0.00	8,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,700.00	0.00	0.00	8,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,768.40	0.00	0.00	8,750.00	298.32	-113.32	299.38	0.00	0.00	0.00
Bone Spring									
8,800.00	0.00	0.00	8,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,900.00	0.00	0.00	8,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
8,978.40	0.00	0.00	8,960.00	298.32	-113.32	299.38	0.00	0.00	0.00
Avalon									
9,000.00	0.00	0.00	8,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,100.00	0.00	0.00	9,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,200.00	0.00	0.00	9,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,300.00	0.00	0.00	9,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,400.00	0.00	0.00	9,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,500.00	0.00	0.00	9,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,600.00	0.00	0.00	9,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,700.00	0.00	0.00	9,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,800.00	0.00	0.00	9,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,900.00	0.00	0.00	9,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
9,968.40	0.00	0.00	9,950.00	298.32	-113.32	299.38	0.00	0.00	0.00
1st Bone Spring									
10,000.00	0.00	0.00	9,981.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,100.00	0.00	0.00	10,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,200.00	0.00	0.00	10,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,300.00	0.00	0.00	10,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,400.00	0.00	0.00	10,381.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,500.00	0.00	0.00	10,481.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,513.40	0.00	0.00	10,495.00	298.32	-113.32	299.38	0.00	0.00	0.00
2nd Bone Spring									
10,600.00	0.00	0.00	10,581.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,700.00	0.00	0.00	10,681.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,800.00	0.00	0.00	10,781.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,900.00	0.00	0.00	10,881.60	298.32	-113.32	299.38	0.00	0.00	0.00
10,968.40	0.00	0.00	10,950.00	298.32	-113.32	299.38	0.00	0.00	0.00
3rd Bone Spring Lime									
11,000.00	0.00	0.00	10,981.60	298.32	-113.32	299.38	0.00	0.00	0.00



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

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)
11,100.00	0.00	0.00	11,081.60	298.32	-113.32	299.38	0.00	0.00	0.00
11,200.00	0.00	0.00	11,181.60	298.32	-113.32	299.38	0.00	0.00	0.00
11,300.00	0.00	0.00	11,281.60	298.32	-113.32	299.38	0.00	0.00	0.00
11,320.45	0.00	0.00	11,302.05	298.32	-113.32	299.38	0.00	0.00	0.00
KOP BLD 10°/100'									
11,350.00	2.96	359.46	11,331.58	299.08	-113.33	300.14	10.00	10.00	0.00
11,400.00	7.96	359.46	11,381.34	303.84	-113.37	304.89	10.00	10.00	0.00
11,444.37	12.39	359.46	11,425.00	311.67	-113.45	312.73	10.00	10.00	0.00
3rd Bone Spring									
11,450.00	12.96	359.46	11,430.50	312.91	-113.46	313.96	10.00	10.00	0.00
11,500.00	17.96	359.46	11,478.67	326.23	-113.58	327.28	10.00	10.00	0.00
11,550.00	22.96	359.46	11,525.50	343.69	-113.75	344.75	10.00	10.00	0.00
11,600.00	27.96	359.46	11,570.64	365.18	-113.95	366.23	10.00	10.00	0.00
11,650.00	32.96	359.46	11,613.72	390.51	-114.19	391.57	10.00	10.00	0.00
11,700.00	37.96	359.46	11,654.44	419.50	-114.46	420.56	10.00	10.00	0.00
11,726.57	40.61	359.46	11,675.00	436.32	-114.62	437.38	10.00	10.00	0.00
Wolfcamp									
11,750.00	42.96	359.46	11,692.47	451.93	-114.77	453.00	10.00	10.00	0.00
11,800.00	47.96	359.46	11,727.54	487.56	-115.10	488.62	10.00	10.00	0.00
11,850.00	52.96	359.46	11,759.36	526.10	-115.46	527.16	10.00	10.00	0.00
11,900.00	57.96	359.46	11,787.70	567.27	-115.85	568.33	10.00	10.00	0.00
11,950.00	62.96	359.46	11,812.35	610.75	-116.26	611.82	10.00	10.00	0.00
12,000.00	67.96	359.46	11,833.11	656.22	-116.69	657.29	10.00	10.00	0.00
12,050.00	72.96	359.46	11,849.84	703.32	-117.13	704.39	10.00	10.00	0.00
12,100.00	77.96	359.46	11,862.39	751.70	-117.59	752.77	10.00	10.00	0.00
12,150.00	82.96	359.46	11,870.68	800.99	-118.05	802.06	10.00	10.00	0.00
12,200.00	87.96	359.46	11,874.64	850.81	-118.52	851.89	10.00	10.00	0.00
12,220.44	90.00	359.46	11,875.00	871.25	-118.71	872.33	10.00	10.00	0.00
EOB HLD 90° Inc. - FTP Bell Lake Unit South 434H									
12,300.00	90.00	359.46	11,875.00	950.80	-119.46	951.89	0.00	0.00	0.00
12,400.00	90.00	359.46	11,875.00	1,050.80	-120.40	1,051.89	0.00	0.00	0.00
12,500.00	90.00	359.46	11,875.00	1,150.80	-121.34	1,151.89	0.00	0.00	0.00
12,600.00	90.00	359.46	11,875.00	1,250.79	-122.28	1,251.89	0.00	0.00	0.00
12,700.00	90.00	359.46	11,875.00	1,350.79	-123.22	1,351.89	0.00	0.00	0.00
12,800.00	90.00	359.46	11,875.00	1,450.78	-124.16	1,451.89	0.00	0.00	0.00
12,900.00	90.00	359.46	11,875.00	1,550.78	-125.10	1,551.89	0.00	0.00	0.00
13,000.00	90.00	359.46	11,875.00	1,650.77	-126.04	1,651.89	0.00	0.00	0.00
13,100.00	90.00	359.46	11,875.00	1,750.77	-126.98	1,751.89	0.00	0.00	0.00
13,200.00	90.00	359.46	11,875.00	1,850.76	-127.92	1,851.89	0.00	0.00	0.00
13,300.00	90.00	359.46	11,875.00	1,950.76	-128.86	1,951.89	0.00	0.00	0.00
13,400.00	90.00	359.46	11,875.00	2,050.76	-129.80	2,051.89	0.00	0.00	0.00
13,500.00	90.00	359.46	11,875.00	2,150.75	-130.74	2,151.89	0.00	0.00	0.00
13,600.00	90.00	359.46	11,875.00	2,250.75	-131.68	2,251.89	0.00	0.00	0.00
13,700.00	90.00	359.46	11,875.00	2,350.74	-132.62	2,351.89	0.00	0.00	0.00



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

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)	
13,800.00	90.00	359.46	11,875.00	2,450.74	-133.56	2,451.89	0.00	0.00	0.00	
13,900.00	90.00	359.46	11,875.00	2,550.73	-134.50	2,551.89	0.00	0.00	0.00	
14,000.00	90.00	359.46	11,875.00	2,650.73	-135.44	2,651.89	0.00	0.00	0.00	
14,100.00	90.00	359.46	11,875.00	2,750.72	-136.38	2,751.89	0.00	0.00	0.00	
14,200.00	90.00	359.46	11,875.00	2,850.72	-137.32	2,851.89	0.00	0.00	0.00	
14,300.00	90.00	359.46	11,875.00	2,950.72	-138.27	2,951.89	0.00	0.00	0.00	
14,400.00	90.00	359.46	11,875.00	3,050.71	-139.21	3,051.89	0.00	0.00	0.00	
14,500.00	90.00	359.46	11,875.00	3,150.71	-140.15	3,151.89	0.00	0.00	0.00	
14,600.00	90.00	359.46	11,875.00	3,250.70	-141.09	3,251.89	0.00	0.00	0.00	
14,700.00	90.00	359.46	11,875.00	3,350.70	-142.03	3,351.89	0.00	0.00	0.00	
14,800.00	90.00	359.46	11,875.00	3,450.69	-142.97	3,451.89	0.00	0.00	0.00	
14,900.00	90.00	359.46	11,875.00	3,550.69	-143.91	3,551.89	0.00	0.00	0.00	
15,000.00	90.00	359.46	11,875.00	3,650.68	-144.85	3,651.89	0.00	0.00	0.00	
15,100.00	90.00	359.46	11,875.00	3,750.68	-145.79	3,751.89	0.00	0.00	0.00	
15,200.00	90.00	359.46	11,875.00	3,850.68	-146.73	3,851.89	0.00	0.00	0.00	
15,300.00	90.00	359.46	11,875.00	3,950.67	-147.67	3,951.89	0.00	0.00	0.00	
15,400.00	90.00	359.46	11,875.00	4,050.67	-148.61	4,051.89	0.00	0.00	0.00	
15,500.00	90.00	359.46	11,875.00	4,150.66	-149.55	4,151.89	0.00	0.00	0.00	
15,600.00	90.00	359.46	11,875.00	4,250.66	-150.49	4,251.89	0.00	0.00	0.00	
15,700.00	90.00	359.46	11,875.00	4,350.65	-151.43	4,351.89	0.00	0.00	0.00	
15,800.00	90.00	359.46	11,875.00	4,450.65	-152.37	4,451.89	0.00	0.00	0.00	
15,900.00	90.00	359.46	11,875.00	4,550.64	-153.31	4,551.89	0.00	0.00	0.00	
16,000.00	90.00	359.46	11,875.00	4,650.64	-154.25	4,651.89	0.00	0.00	0.00	
16,100.00	90.00	359.46	11,875.00	4,750.64	-155.19	4,751.89	0.00	0.00	0.00	
16,200.00	90.00	359.46	11,875.00	4,850.63	-156.13	4,851.89	0.00	0.00	0.00	
16,300.00	90.00	359.46	11,875.00	4,950.63	-157.07	4,951.89	0.00	0.00	0.00	
16,400.00	90.00	359.46	11,875.00	5,050.62	-158.01	5,051.89	0.00	0.00	0.00	
16,500.00	90.00	359.46	11,875.00	5,150.62	-158.95	5,151.89	0.00	0.00	0.00	
16,600.00	90.00	359.46	11,875.00	5,250.61	-159.89	5,251.89	0.00	0.00	0.00	
16,700.00	90.00	359.46	11,875.00	5,350.61	-160.83	5,351.89	0.00	0.00	0.00	
16,800.00	90.00	359.46	11,875.00	5,450.61	-161.77	5,451.89	0.00	0.00	0.00	
16,900.00	90.00	359.46	11,875.00	5,550.60	-162.71	5,551.89	0.00	0.00	0.00	
17,000.00	90.00	359.46	11,875.00	5,650.60	-163.65	5,651.89	0.00	0.00	0.00	
17,100.00	90.00	359.46	11,875.00	5,750.59	-164.59	5,751.89	0.00	0.00	0.00	
17,200.00	90.00	359.46	11,875.00	5,850.59	-165.54	5,851.89	0.00	0.00	0.00	
17,300.00	90.00	359.46	11,875.00	5,950.58	-166.48	5,951.89	0.00	0.00	0.00	
17,400.00	90.00	359.46	11,875.00	6,050.58	-167.42	6,051.89	0.00	0.00	0.00	
17,500.00	90.00	359.46	11,875.00	6,150.57	-168.36	6,151.89	0.00	0.00	0.00	
17,600.00	90.00	359.46	11,875.00	6,250.57	-169.30	6,251.89	0.00	0.00	0.00	
17,700.00	90.00	359.46	11,875.00	6,350.57	-170.24	6,351.89	0.00	0.00	0.00	
17,800.00	90.00	359.46	11,875.00	6,450.56	-171.18	6,451.89	0.00	0.00	0.00	
17,900.00	90.00	359.46	11,875.00	6,550.56	-172.12	6,551.89	0.00	0.00	0.00	
18,000.00	90.00	359.46	11,875.00	6,650.55	-173.06	6,651.89	0.00	0.00	0.00	
18,100.00	90.00	359.46	11,875.00	6,750.55	-174.00	6,751.89	0.00	0.00	0.00	



Microsoft Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

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)
18,200.00	90.00	359.46	11,875.00	6,850.54	-174.94	6,851.89	0.00	0.00	0.00
18,300.00	90.00	359.46	11,875.00	6,950.54	-175.88	6,951.89	0.00	0.00	0.00
18,400.00	90.00	359.46	11,875.00	7,050.53	-176.82	7,051.89	0.00	0.00	0.00
18,500.00	90.00	359.46	11,875.00	7,150.53	-177.76	7,151.89	0.00	0.00	0.00
18,600.00	90.00	359.46	11,875.00	7,250.53	-178.70	7,251.89	0.00	0.00	0.00
18,700.00	90.00	359.46	11,875.00	7,350.52	-179.64	7,351.89	0.00	0.00	0.00
18,800.00	90.00	359.46	11,875.00	7,450.52	-180.58	7,451.89	0.00	0.00	0.00
18,900.00	90.00	359.46	11,875.00	7,550.51	-181.52	7,551.89	0.00	0.00	0.00
19,000.00	90.00	359.46	11,875.00	7,650.51	-182.46	7,651.89	0.00	0.00	0.00
19,100.00	90.00	359.46	11,875.00	7,750.50	-183.40	7,751.89	0.00	0.00	0.00
19,200.00	90.00	359.46	11,875.00	7,850.50	-184.34	7,851.89	0.00	0.00	0.00
19,300.00	90.00	359.46	11,875.00	7,950.49	-185.28	7,951.89	0.00	0.00	0.00
19,400.00	90.00	359.46	11,875.00	8,050.49	-186.22	8,051.89	0.00	0.00	0.00
19,500.00	90.00	359.46	11,875.00	8,150.49	-187.16	8,151.89	0.00	0.00	0.00
19,600.00	90.00	359.46	11,875.00	8,250.48	-188.10	8,251.89	0.00	0.00	0.00
19,700.00	90.00	359.46	11,875.00	8,350.48	-189.04	8,351.89	0.00	0.00	0.00
19,762.32	90.00	359.46	11,875.00	8,412.79	-189.63	8,414.20	0.00	0.00	0.00
TD at 19762.32 - BHL Bell Lake Unit South 434H									

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
BHL Bell Lake Unit Sour - plan hits target center - Point	0.00	0.00	11,875.00	8,412.79	-189.63	461,990.44	760,682.84	32.26809280	-103.62367565
FTP Bell Lake Unit Sour - plan hits target center - Point	0.00	0.00	11,875.00	871.25	-118.71	454,448.90	760,753.76	32.24736222	-103.62360752



Microsoft
Survey Report

KAISER-FRANCIS OIL COMPANY

Company:	Kaiser-Francis Oil Company	Local Co-ordinate Reference:	Well Bell Lake Unit South 434H
Project:	Lea County, NM (NAD 83)	TVD Reference:	3588.7+23 @ 3611.70usft
Site:	Sec 5-T24S-R34E	MD Reference:	3588.7+23 @ 3611.70usft
Well:	Bell Lake Unit South 434H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.15 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,350.00	1,350.00	Rustler		0.00		
1,725.04	1,725.00	Salado		0.00		
2,051.61	2,050.00	Top of Salt		0.00		
5,043.40	5,025.00	Base of Salt		0.00		
5,268.40	5,250.00	Lamar		0.00		
5,343.40	5,325.00	Bell Canyon		0.00		
6,193.40	6,175.00	Cherry Canyon		0.00		
7,643.40	7,625.00	Brushy Canyon		0.00		
8,768.40	8,750.00	Bone Spring		0.00		
8,978.40	8,960.00	Avalon		0.00		
9,968.40	9,950.00	1st Bone Spring		0.00		
10,513.40	10,495.00	2nd Bone Spring		0.00		
10,968.40	10,950.00	3rd Bone Spring Lime		0.00		
11,444.37	11,425.00	3rd Bone Spring		0.00		
11,726.57	11,675.00	Wolfcamp		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1600	1600	0	0	Nudge 2°/100'	
1945	1944	19	-7	EON HLD 6.9° Inc.	
4256	4238	279	-106	DROP 2°/100'	
4601	4582	298	-113	EOD HLD 0° Inc.	
11,320	11,302	298	-113	KOP BLD 10°/100'	
12,220	11,875	871	-119	EOB HLD 90° Inc.	
19,762	11,875	8413	-190	TD at 19762.32	

Checked By: _____ Approved By: _____ Date: _____