

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OGD
MAR 02 2020
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM0001244A
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No. NMNM 068292X
2. Name of Operator KAISER FRANCIS OIL COMPANY (12361)		8. Lease Name and Well No. BELL LAKE UNIT NORTH (316707)
3a. Address 6733 S. Yale Ave., Tulsa, OK 74121	3b. Phone No. (include area code) (918) 491-0000	9. API Well No. 433H
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESW / 1942 FSL / 2348 FWL / LAT 32.3317228 / LONG -103.4931114 At proposed prod. zone NENW / 330 FNL / 2110 FWL / LAT 32.3545135 / LONG -103.4939533		10. Field and Pool, or Exploratory OJO CHISO/WOLF CAMP, SOUTHWEST
11. Sec. T. R. M. or Blk. and Survey or Area SEC 5/T23S/R34E/NMP		12. County or Parish LEA
13. State NM		14. Distance in miles and direction from nearest town or post office* 20 miles
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	292 feet	16. No of acres in lease 634.35
17. Spacing Unit dedicated to this well	480.0	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet
19. Proposed Depth 11487 feet / 19538 feet	20. BLM/BIA Bond No. in file FED: WYB000055	21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3432 feet
22. Approximate date work will start* 05/01/2020	23. Estimated duration 40 days	24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Melanie Wilson / Ph: (918) 491-0000	Date 10/09/2019
Title Regulatory Analyst		
Approved by (Signature)	Name (Printed/Typed) Cody R. Layton	Date 02/25/2020
Title AFM - Sand & M. Harris	Office CFO	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 03/02/2020

APPROVED WITH CONDITIONS
Approval Date: 02/25/2020

KE
03/09/2020

exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

1. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

1. All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.
2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

02/25/2020

APD ID: 10400048787

Submission Date: 10/09/2019

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - General

APD ID: 10400048787

Tie to previous NOS? N

Submission Date: 10/09/2019

BLM Office: CARLSBAD

User: Melanie Wilson

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM0001244A

Lease Acres: 634.35

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? YES

Federal or Indian agreement: FEDERAL

Agreement number: NMNM068292X

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: KAISER FRANCIS OIL COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: KAISER FRANCIS OIL COMPANY

Operator Address: 6733 S. Yale Ave.

Zip: 74121

Operator PO Box: PO Box 21468

Operator City: Tulsa

State: OK

Operator Phone: (918)491-0000

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: OJO CHISO

Pool Name: WOLFCAMP,
SOUTHWEST

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

02/25/2020

APD ID: 10400048787

Submission Date: 10/09/2019

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Well Type: OIL WELL

Well Work Type: Drill

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
555719	---	3432	0	0	OTHER : Surface	NONE	N
555720	RUSTLER	2210	1222	1222	SANDSTONE	NONE	N
555721	SALADO	1810	1622	1622	SALT	NONE	N
555722	TOP SALT	1610	1822	1822	SALT	NONE	N
555723	BASE OF SALT	-1290	4722	4722	SALT	NONE	N
555724	LAMAR	-1540	4972	4972	LIMESTONE	NATURAL GAS, OIL	N
555725	BELL CANYON	-1740	5172	5172	SANDSTONE	NATURAL GAS, OIL	N
555726	CHERRY CANYON	-2765	6197	6197	SANDSTONE	NATURAL GAS, OIL	N
555727	BRUSHY CANYON	-4090	7522	7522	SANDSTONE	NATURAL GAS, OIL	N
555728	BONE SPRING	-5190	8622	8622	SANDSTONE	NATURAL GAS, OIL	N
555729	AVALON SAND	-5263	8695	8695	SANDSTONE	NATURAL GAS, OIL	N
555730	BONE SPRING 1ST	-6115	9547	9547	SANDSTONE	NATURAL GAS, OIL	N
555737	BONE SPRING 2ND	-6595	10027	10027	SANDSTONE	NATURAL GAS, OIL	N
555738	BONE SPRING LIME	-7115	10547	10547	LIMESTONE	NATURAL GAS, OIL	N
555739	BONE SPRING 3RD	-7515	10947	10947	SANDSTONE	NATURAL GAS, OIL	Y
555740	WOLFCAMP	-7833	11265	11265	SANDSTONE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N

Use Existing Well Pad? N

New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 15

Well Class: HORIZONTAL

NORTH BELL LAKE UNIT

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 20 Miles

Distance to nearest well: 30 FT

Distance to lease line: 292 FT

Reservoir well spacing assigned acres Measurement: 480 Acres

Well plat: BLUN_433H_C102_20191008143538.pdf

BLUN_433H_Pymt_20191008144325.pdf

Well work start Date: 05/01/2020

Duration: 40 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6961

Reference Datum: GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	1942	FSL	2348	FWL	23S	34E	5	Aliquot NESW	32.3317228	-103.4931114	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0000587	3432	0	0	N
KOP Leg #1	1942	FSL	2250	FWL	23S	34E	5	Aliquot NESW	32.331724	-103.493429	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0000587	-7482	10918	10914	N

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1	264 0	FSL	225 0	FW L	23S	34E	5	Aliquot SESW	32.33364 4	- 103.4934 39	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 000124 4A	- 805 5	119 50	114 87	Y
PPP Leg #1-2	260 0	FNL	225 0	FW L	23S	34E	5	Aliquot SESW	32.33376 04	- 103.4934 286	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 000124 4A	- 805 5	119 88	114 87	Y
PPP Leg #1-3	0	FSL	211 0	FW L	22S	34E	32	Aliquot SESW	32.34094 2	- 103.4935 86	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 805 5	145 88	114 87	Y
EXIT Leg #1	330	FNL	211 0	FW L	22S	34E	32	Aliquot NENW	32.35451 35	- 103.4939 533	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 805 5	195 38	114 87	Y
BHL Leg #1	330	FNL	211 0	FW L	22S	34E	32	Aliquot NENW	32.35451 35	- 103.4939 533	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 805 5	195 38	114 87	Y

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Pressure Rating (PSI): 5M

Rating Depth: 13000

Equipment: A 5M system will be installed according to Onshore Order #2 consisting of an Annular Preventer, BOP with two rams, a blind ram and safety valves and appropriate handles located on the rig floor. BOP will be equipped with 2 side outlets (choke side shall be a minimum 3 line, and kill side will be a minimum 2 line). Kill line will be installed with (2) valves and a check valve (2 min) of proper pressure rating for the system. Remote kill line (2 min) will be installed and ran to the outer edge of the substructure and be unobstructed. A manual and hydraulic valve (3 min) will be installed on the choke line, 3 chokes will be used with one being remotely controlled. Fill up line will be installed above the uppermost preventer. Pressure gauge of proper pressure rating will be installed on choke manifold. Upper and lower kelly cocks will be utilized with handles readily available in plain sight. A float sub will be available at all times. All connections subject to well pressure will be flanged, welded, or clamped.

Requesting Variance? YES

Variance request: Flex Hose Variance

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional and tested.

Choke Diagram Attachment:

BLUN_433H_Choke_Manifold_20191007160850.pdf

BOP Diagram Attachment:

BLUN_433H_BOP_Rev1_20200109170306.pdf

BLUN_433H_Wellhead_20200109170307.pdf

BLUN_433H_Flex_Hose_Rev1_20200109170318.pdf

Annular_BOP_Variance_Request_20200109170346.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1272	0	1272	3432	2160	1272	J-55	40.5	ST&C	2.7	5.3	DRY	8.2	DRY	12.2
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	10922	0	10918		-7486	10922	HCP-110	29.7	LT&C	1.3	1.8	DRY	2.4	DRY	2.9
3	PRODUCTION	6.75	5.5	NEW	API	N	0	19538	0	11487		-8055	19538	P-110	20	OTHER - Eagle SF	1.8	2	DRY	2.7	DRY	3.2

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUN_433H_Casing_Assumptions_20191007161422.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUN_433H_Casing_Assumptions_20191007161311.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLUN_433H_Prod_Csg_Specs_20191007161356.pdf

Section 4 - Cement

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1272	613	1.7	13.5	1060	50	ExtendaCem	Poly E Flake

INTERMEDIATE	Lead		0	1092 2	826	2.7	11	2257	25	NeoCem	Extender
INTERMEDIATE	Tail		0	1092 2	564	1.2	15.6	675	25	Halcem	none
PRODUCTION	Lead		9000	1953 8	827	1.2	14.5	1011	15	Versacem	Halad

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1092 2	1148 7	OIL-BASED MUD	10	12							
1272	1092 2	OTHER : Diesel- Brine Emulsion	8.8	9.2							
0	1272	OTHER : Fresh Water	8.4	9							

Operator Name: KAISER FRANCIS OIL COMPANY

Well Name: BELL LAKE UNIT NORTH

Well Number: 433H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Top of cement on production casing will be determined by calculation.

List of open and cased hole logs run in the well:

DIRECTIONAL SURVEY, GAMMA RAY LOG, MUD LOG/GEOLOGIC LITHOLOGY LOG,

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7168

Anticipated Surface Pressure: 4640

Anticipated Bottom Hole Temperature(F): 199

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BLUN_Pad_15_H2S_Plan_20191007125628.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

BLUN_433H_Directional_Plan_20191007161746.pdf

Other proposed operations facets description:

Gas Capture Plan attached

Other proposed operations facets attachment:

BLUN_Pad_15_GCP_20191007125653.pdf

Other Variance attachment:

BLUN_433H_Flex_Hose_Data_20191007161806.pdf

Kaiser-Francis Oil Company
Bell Lake Unit North #433H
Casing Assumptions

Interval	Length	Casing Size	Weight (#/ft)	Grade	Thread	Condition	Hole Size	TVD (ft)	Mud Type	Mud Weight Hole Control	Depth	Viscosity	Fluid Loss	Anticipated Mud Weight (ppg)	Max Pore Pressure (psi)	Collapse (psi)	Burst (psi)	Body Tensile Strength	Joint Tensile Strength	Collapse Safety Factor (Min 1.1)	Burst Safety Factor (Min 1.0)	Body Tensile Safety Factor (Min 1.8)	Joint Tensile Safety Factor (Min 1.8)
Conductor	120	20"				New		120															
Surface	1272	10-3/4"	40.5	J-55	STC	New	14-3/4"	1272	FW	8.4 - 9.0	1350'	32 - 34	NC	9	595	1580	3130	629000	420000	2.7	5.3	12.2	8.2
Intermediate	10922	7-5/8"	29.7	HCP110	LTC	New	9-7/8"	10918	Brine	8.7 - 9.0	11426'	28-29	NC	9	5110	6700	9460	940000	769000	1.3	1.9	2.9	2.4
Production	19538	5-1/2"	20	P110 HP	USS Eagle SFH	New	6-3/4"	11487	OBM	10.0-12.0	19882'	55-70		12	7168	13150	14360	729000	629000	1.8	2.0	3.2	2.7

Kaiser Permanente

Kaiser Francis

Bell Lake Unit North 433H

Bell Lake Unit North 433H

Bell Lake Unit North 433H

Bell Lake Unit North 433H

Plan: 190410 Bell Lake Unit North 433H

Morcor Standard Plan

11 April, 2019

Morcor Engineering

Morcor Standard Plan

Company: Kaiser Francis
Project: Bell Lake Unit North 433H
Site: Bell Lake Unit North 433H
Well: Bell Lake Unit North 433H
Wellbore: Bell Lake Unit North 433H
Design: 190410 Bell Lake Unit North 433H

Local Co-ordinate Reference: Well Bell Lake Unit North 433H
TVD Reference: WELL @ 3453.9usft (Original Well Elev)
MD Reference: WELL @ 3453.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Bell Lake Unit North 433H		
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 North 433H		
Site Position:		Northing:	485,430.61 usft
From:	Lat/Long	Easting:	800,858.18 usft
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "
		Latitude:	32° 19' 54.202 N
		Longitude:	103° 29' 35.201 W
		Grid Convergence:	0.45 °

Well	Bell Lake Unit North 433H		
Well Position	+N/-S	0.0 usft	Northing: 485,430.61 usft
	+E/-W	0.0 usft	Easting: 800,858.18 usft
Position Uncertainty	1.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 19' 54.202 N
		Longitude:	103° 29' 35.201 W
		Ground Level:	3,431.9 usft

Wellbore	Bell Lake Unit North 433H		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	4/10/2019	6.59
			Dip Angle (°)
			60.10
			Field Strength (nT)
			47,906

Design	190410 Bell Lake Unit North 433H		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			357.97

Survey Tool Program	Date	4/11/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,538.0	190410 Bell Lake Unit North 433H (Bell La	MWD	MWD - Standard

Morcor Engineering

Morcor Standard Plan

Company: Kaiser Francis
Project: Bell Lake Unit North 433H
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Well: Bell Lake Unit North 433H
Wellbore: Bell Lake Unit North 433H
Design: 190410 Bell Lake Unit North 433H

Local Co-ordinate Reference: Well Bell Lake Unit North 433H
TVD Reference: WELL @ 3453.9usft (Original Well Elev)
MD Reference: WELL @ 3453.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	-3,453.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
50.0	0.00	0.00	50.0	-3,403.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
100.0	0.00	0.00	100.0	-3,353.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
120.0	0.00	0.00	120.0	-3,333.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
20" Conductor										
150.0	0.00	0.00	150.0	-3,303.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
200.0	0.00	0.00	200.0	-3,253.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
250.0	0.00	0.00	250.0	-3,203.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
300.0	0.00	0.00	300.0	-3,153.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
350.0	0.00	0.00	350.0	-3,103.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
400.0	0.00	0.00	400.0	-3,053.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
450.0	0.00	0.00	450.0	-3,003.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
500.0	0.00	0.00	500.0	-2,953.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
550.0	0.00	0.00	550.0	-2,903.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
600.0	0.00	0.00	600.0	-2,853.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
650.0	0.00	0.00	650.0	-2,803.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
700.0	0.00	0.00	700.0	-2,753.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
750.0	0.00	0.00	750.0	-2,703.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
800.0	0.00	0.00	800.0	-2,653.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
850.0	0.00	0.00	850.0	-2,603.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
900.0	0.00	0.00	900.0	-2,553.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
950.0	0.00	0.00	950.0	-2,503.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,000.0	0.00	0.00	1,000.0	-2,453.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,050.0	0.00	0.00	1,050.0	-2,403.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,100.0	0.00	0.00	1,100.0	-2,353.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,150.0	0.00	0.00	1,150.0	-2,303.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,200.0	0.00	0.00	1,200.0	-2,253.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00

Morcor Engineering

Morcor Standard Plan

Company: Kaiser Francis
Project: Bell Lake Unit North 433H
Site: Bell Lake Unit North 433H
Well: Bell Lake Unit North 433H
Wellbore: Bell Lake Unit North 433H
Design: 190410 Bell Lake Unit North 433H

Local Co-ordinate Reference: Well Bell Lake Unit North 433H
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MD Reference: WELL @ 3453.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
1,222.0	0.00	0.00	1,222.0	-2,231.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Rustler										
1,250.0	0.00	0.00	1,250.0	-2,203.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,272.0	0.00	0.00	1,272.0	-2,181.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
10 3/4" Surface Casing										
1,300.0	0.00	0.00	1,300.0	-2,153.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,350.0	0.00	0.00	1,350.0	-2,103.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,400.0	0.00	0.00	1,400.0	-2,053.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,450.0	0.00	0.00	1,450.0	-2,003.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,500.0	0.00	0.00	1,500.0	-1,953.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,550.0	0.00	0.00	1,550.0	-1,903.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,600.0	0.00	0.00	1,600.0	-1,853.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,622.0	0.00	0.00	1,622.0	-1,831.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Salado										
1,650.0	0.00	0.00	1,650.0	-1,803.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,700.0	0.00	0.00	1,700.0	-1,753.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,750.0	0.00	0.00	1,750.0	-1,703.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,800.0	0.00	0.00	1,800.0	-1,653.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,822.0	0.00	0.00	1,822.0	-1,631.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Top of salt										
1,850.0	0.00	0.00	1,850.0	-1,603.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,900.0	0.00	0.00	1,900.0	-1,553.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1,950.0	0.00	0.00	1,950.0	-1,503.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,000.0	0.00	0.00	2,000.0	-1,453.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,050.0	0.00	0.00	2,050.0	-1,403.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,100.0	0.00	0.00	2,100.0	-1,353.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,150.0	0.00	0.00	2,150.0	-1,303.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,200.0	0.00	0.00	2,200.0	-1,253.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00

Morcor Engineering

Morcor Standard Plan

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Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
2,250.0	0.00	0.00	2,250.0	-1,203.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,300.0	0.00	0.00	2,300.0	-1,153.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,350.0	0.00	0.00	2,350.0	-1,103.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,400.0	0.00	0.00	2,400.0	-1,053.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,450.0	0.00	0.00	2,450.0	-1,003.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,500.0	0.00	0.00	2,500.0	-953.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,550.0	0.00	0.00	2,550.0	-903.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,600.0	0.00	0.00	2,600.0	-853.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,650.0	0.00	0.00	2,650.0	-803.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,700.0	0.00	0.00	2,700.0	-753.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,750.0	0.00	0.00	2,750.0	-703.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,800.0	0.00	0.00	2,800.0	-653.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,850.0	0.00	0.00	2,850.0	-603.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,900.0	0.00	0.00	2,900.0	-553.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
2,950.0	0.00	0.00	2,950.0	-503.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,000.0	0.00	0.00	3,000.0	-453.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,050.0	0.00	0.00	3,050.0	-403.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,100.0	0.00	0.00	3,100.0	-353.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,150.0	0.00	0.00	3,150.0	-303.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,200.0	0.00	0.00	3,200.0	-253.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,250.0	0.00	0.00	3,250.0	-203.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,300.0	0.00	0.00	3,300.0	-153.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,350.0	0.00	0.00	3,350.0	-103.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,400.0	0.00	0.00	3,400.0	-53.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,450.0	0.00	0.00	3,450.0	-3.9	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,500.0	0.00	0.00	3,500.0	46.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,550.0	0.00	0.00	3,550.0	96.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

Morcor Engineering

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
3,600.0	0.00	0.00	3,600.0	146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,650.0	0.00	0.00	3,650.0	196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,700.0	0.00	0.00	3,700.0	246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,750.0	0.00	0.00	3,750.0	296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,800.0	0.00	0.00	3,800.0	346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,850.0	0.00	0.00	3,850.0	396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,900.0	0.00	0.00	3,900.0	446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
3,950.0	0.00	0.00	3,950.0	496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,000.0	0.00	0.00	4,000.0	546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,050.0	0.00	0.00	4,050.0	596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,100.0	0.00	0.00	4,100.0	646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,150.0	0.00	0.00	4,150.0	696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,200.0	0.00	0.00	4,200.0	746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,250.0	0.00	0.00	4,250.0	796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,300.0	0.00	0.00	4,300.0	846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,350.0	0.00	0.00	4,350.0	896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,400.0	0.00	0.00	4,400.0	946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,450.0	0.00	0.00	4,450.0	996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,500.0	0.00	0.00	4,500.0	1,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,550.0	0.00	0.00	4,550.0	1,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,600.0	0.00	0.00	4,600.0	1,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,650.0	0.00	0.00	4,650.0	1,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,700.0	0.00	0.00	4,700.0	1,246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,722.0	0.00	0.00	4,722.0	1,268.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Base of Salt										
4,750.0	0.00	0.00	4,750.0	1,296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,800.0	0.00	0.00	4,800.0	1,346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
4,850.0	0.00	0.00	4,850.0	1,396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,900.0	0.00	0.00	4,900.0	1,446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,950.0	0.00	0.00	4,950.0	1,496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
4,972.0	0.00	0.00	4,972.0	1,518.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Lamar										
5,000.0	0.00	0.00	5,000.0	1,546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,050.0	0.00	0.00	5,050.0	1,596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,100.0	0.00	0.00	5,100.0	1,646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,150.0	0.00	0.00	5,150.0	1,696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,172.0	0.00	0.00	5,172.0	1,718.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Bell Canyon										
5,200.0	0.00	0.00	5,200.0	1,746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,250.0	0.00	0.00	5,250.0	1,796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,300.0	0.00	0.00	5,300.0	1,846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,350.0	0.00	0.00	5,350.0	1,896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,400.0	0.00	0.00	5,400.0	1,946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,450.0	0.00	0.00	5,450.0	1,996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,500.0	0.00	0.00	5,500.0	2,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,550.0	0.00	0.00	5,550.0	2,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,600.0	0.00	0.00	5,600.0	2,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,650.0	0.00	0.00	5,650.0	2,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,700.0	0.00	0.00	5,700.0	2,246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,750.0	0.00	0.00	5,750.0	2,296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,800.0	0.00	0.00	5,800.0	2,346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,850.0	0.00	0.00	5,850.0	2,396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,900.0	0.00	0.00	5,900.0	2,446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
5,950.0	0.00	0.00	5,950.0	2,496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
6,000.0	0.00	0.00	6,000.0	2,546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,050.0	0.00	0.00	6,050.0	2,596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,100.0	0.00	0.00	6,100.0	2,646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,150.0	0.00	0.00	6,150.0	2,696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,197.0	0.00	0.00	6,197.0	2,743.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Cherry Canyon										
6,200.0	0.00	0.00	6,200.0	2,746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,250.0	0.00	0.00	6,250.0	2,796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,300.0	0.00	0.00	6,300.0	2,846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,350.0	0.00	0.00	6,350.0	2,896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,400.0	0.00	0.00	6,400.0	2,946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,450.0	0.00	0.00	6,450.0	2,996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,500.0	0.00	0.00	6,500.0	3,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,550.0	0.00	0.00	6,550.0	3,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,600.0	0.00	0.00	6,600.0	3,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,650.0	0.00	0.00	6,650.0	3,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,700.0	0.00	0.00	6,700.0	3,246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,750.0	0.00	0.00	6,750.0	3,296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,800.0	0.00	0.00	6,800.0	3,346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,850.0	0.00	0.00	6,850.0	3,396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,900.0	0.00	0.00	6,900.0	3,446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
6,950.0	0.00	0.00	6,950.0	3,496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,000.0	0.00	0.00	7,000.0	3,546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,050.0	0.00	0.00	7,050.0	3,596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,100.0	0.00	0.00	7,100.0	3,646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,150.0	0.00	0.00	7,150.0	3,696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,200.0	0.00	0.00	7,200.0	3,746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

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Morcor Standard Plan

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Database: EDM 5000.1 Single User Db

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
7,250.0	0.00	0.00	7,250.0	3,796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,300.0	0.00	0.00	7,300.0	3,846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,350.0	0.00	0.00	7,350.0	3,896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,400.0	0.00	0.00	7,400.0	3,946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,450.0	0.00	0.00	7,450.0	3,996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,500.0	0.00	0.00	7,500.0	4,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,522.0	0.00	0.00	7,522.0	4,068.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Brushy Canyon										
7,550.0	0.00	0.00	7,550.0	4,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,600.0	0.00	0.00	7,600.0	4,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,650.0	0.00	0.00	7,650.0	4,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,700.0	0.00	0.00	7,700.0	4,246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,750.0	0.00	0.00	7,750.0	4,296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,800.0	0.00	0.00	7,800.0	4,346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,850.0	0.00	0.00	7,850.0	4,396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,900.0	0.00	0.00	7,900.0	4,446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
7,950.0	0.00	0.00	7,950.0	4,496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,000.0	0.00	0.00	8,000.0	4,546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,050.0	0.00	0.00	8,050.0	4,596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,100.0	0.00	0.00	8,100.0	4,646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,150.0	0.00	0.00	8,150.0	4,696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,200.0	0.00	0.00	8,200.0	4,746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,250.0	0.00	0.00	8,250.0	4,796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,300.0	0.00	0.00	8,300.0	4,846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,350.0	0.00	0.00	8,350.0	4,896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,400.0	0.00	0.00	8,400.0	4,946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,450.0	0.00	0.00	8,450.0	4,996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

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8,500.0	0.00	0.00	8,500.0	5,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,550.0	0.00	0.00	8,550.0	5,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,600.0	0.00	0.00	8,600.0	5,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,622.0	0.00	0.00	8,622.0	5,168.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Bone Spring										
8,650.0	0.00	0.00	8,650.0	5,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,695.0	0.00	0.00	8,695.0	5,241.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Avalon										
8,700.0	0.00	0.00	8,700.0	5,246.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,750.0	0.00	0.00	8,750.0	5,296.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,800.0	0.00	0.00	8,800.0	5,346.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,850.0	0.00	0.00	8,850.0	5,396.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,900.0	0.00	0.00	8,900.0	5,446.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
8,950.0	0.00	0.00	8,950.0	5,496.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,000.0	0.00	0.00	9,000.0	5,546.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,050.0	0.00	0.00	9,050.0	5,596.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,100.0	0.00	0.00	9,100.0	5,646.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,150.0	0.00	0.00	9,150.0	5,696.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,200.0	0.00	0.00	9,200.0	5,746.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,250.0	0.00	0.00	9,250.0	5,796.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,300.0	0.00	0.00	9,300.0	5,846.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,350.0	0.00	0.00	9,350.0	5,896.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,400.0	0.00	0.00	9,400.0	5,946.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,450.0	0.00	0.00	9,450.0	5,996.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,500.0	0.00	0.00	9,500.0	6,046.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,547.0	0.00	0.00	9,547.0	6,093.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
1st Bone Spring Sand										
9,550.0	0.00	0.00	9,550.0	6,096.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00

Morcor Engineering

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLog (°/100usft)
9,600.0	0.00	0.00	9,600.0	6,146.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,650.0	0.00	0.00	9,650.0	6,196.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
9,690.0	0.00	0.00	9,690.0	6,236.1	0.0	0.0	800,858.18	485,430.61	0.00	0.00
Start Build 3.00										
9,700.0	0.30	270.00	9,700.0	6,246.1	0.0	0.0	800,858.16	485,430.61	0.00	3.00
9,750.0	1.80	270.00	9,750.0	6,296.1	0.0	-0.9	800,857.24	485,430.61	0.03	3.00
9,800.0	3.30	270.00	9,799.9	6,346.0	0.0	-3.2	800,855.02	485,430.61	0.11	3.00
9,850.0	4.80	270.00	9,849.8	6,395.9	0.0	-6.7	800,851.49	485,430.61	0.24	3.00
9,890.0	6.00	270.00	9,889.6	6,435.7	0.0	-10.5	800,847.72	485,430.61	0.37	3.00
Start 740.0 hold at 9890.0 MD										
9,900.0	6.00	270.00	9,899.6	6,445.7	0.0	-11.5	800,846.68	485,430.61	0.41	0.00
9,950.0	6.00	270.00	9,949.3	6,495.4	0.0	-16.7	800,841.45	485,430.61	0.59	0.00
10,000.0	6.00	270.00	9,999.0	6,545.1	0.0	-22.0	800,836.22	485,430.61	0.78	0.00
10,028.1	6.00	270.00	10,027.0	6,573.1	0.0	-24.9	800,833.28	485,430.61	0.88	0.00
2nd Bone Spring Sand										
10,050.0	6.00	270.00	10,048.8	6,594.9	0.0	-27.2	800,831.00	485,430.61	0.96	0.00
10,100.0	6.00	270.00	10,098.5	6,644.6	0.0	-32.4	800,825.77	485,430.61	1.15	0.00
10,150.0	6.00	270.00	10,148.2	6,694.3	0.0	-37.6	800,820.54	485,430.61	1.33	0.00
10,200.0	6.00	270.00	10,197.9	6,744.0	0.0	-42.9	800,815.32	485,430.61	1.52	0.00
10,250.0	6.00	270.00	10,247.7	6,793.8	0.0	-48.1	800,810.09	485,430.61	1.70	0.00
10,300.0	6.00	270.00	10,297.4	6,843.5	0.0	-53.3	800,804.86	485,430.61	1.89	0.00
10,350.0	6.00	270.00	10,347.1	6,893.2	0.0	-58.5	800,799.64	485,430.61	2.07	0.00
10,400.0	6.00	270.00	10,396.8	6,942.9	0.0	-63.8	800,794.41	485,430.61	2.26	0.00
10,450.0	6.00	270.00	10,446.6	6,992.7	0.0	-69.0	800,789.19	485,430.61	2.45	0.00
10,500.0	6.00	270.00	10,496.3	7,042.4	0.0	-74.2	800,783.96	485,430.61	2.63	0.00
10,550.0	6.00	270.00	10,546.0	7,092.1	0.0	-79.5	800,778.73	485,430.61	2.82	0.00
10,551.0	6.00	270.00	10,547.0	7,093.1	0.0	-79.6	800,778.63	485,430.61	2.82	0.00
3rd Bone Spring Lime										

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
10,600.0	6.00	270.00	10,595.7	7,141.8	0.0	-84.7	800,773.51	485,430.61	3.00	0.00
10,630.0	6.00	270.00	10,625.6	7,171.7	0.0	-87.8	800,770.37	485,430.61	3.11	0.00
Start Drop -3.00										
10,650.0	5.40	270.00	10,645.5	7,191.6	0.0	-89.8	800,768.38	485,430.61	3.18	3.00
10,700.0	3.90	270.00	10,695.3	7,241.4	0.0	-93.9	800,764.33	485,430.61	3.33	3.00
10,750.0	2.40	270.00	10,745.2	7,291.3	0.0	-96.6	800,761.58	485,430.61	3.42	3.00
10,800.0	0.90	270.00	10,795.2	7,341.3	0.0	-98.0	800,760.14	485,430.61	3.47	3.00
10,830.0	0.00	0.00	10,825.2	7,371.3	0.0	-98.3	800,759.91	485,430.61	3.48	3.00
Start 88.8 hold at 10830.0 MD										
10,850.0	0.00	0.00	10,845.2	7,391.3	0.0	-98.3	800,759.91	485,430.61	3.48	0.00
10,900.0	0.00	0.00	10,895.2	7,441.3	0.0	-98.3	800,759.91	485,430.61	3.48	0.00
10,918.8	0.00	359.55	10,914.0	7,460.1	0.0	-98.3	800,759.91	485,430.61	3.48	0.00
Start Build 10.00										
10,922.8	0.40	359.55	10,918.0	7,464.1	0.0	-98.3	800,759.91	485,430.62	3.50	10.00
7 5/8" Intermediate Casing										
10,950.0	3.12	359.55	10,945.2	7,491.3	0.8	-98.3	800,759.90	485,431.46	4.33	10.00
10,951.8	3.30	359.55	10,947.0	7,493.1	1.0	-98.3	800,759.90	485,431.56	4.43	10.00
3rd Bone Spring Sand										
11,000.0	8.12	359.55	10,994.9	7,541.0	5.7	-98.3	800,759.86	485,436.35	9.22	10.00
11,050.0	13.12	359.55	11,044.1	7,590.2	15.0	-98.4	800,759.79	485,445.56	18.43	10.00
11,100.0	18.12	359.55	11,092.2	7,638.3	28.4	-98.5	800,759.68	485,459.02	31.89	10.00
11,150.0	23.12	359.55	11,139.0	7,685.1	46.0	-98.6	800,759.55	485,476.62	49.48	10.00
11,200.0	28.12	359.55	11,184.1	7,730.2	67.6	-98.8	800,759.38	485,498.23	71.09	10.00
11,250.0	33.12	359.55	11,227.1	7,773.2	93.1	-99.0	800,759.18	485,523.69	96.54	10.00
11,296.6	37.78	359.55	11,265.0	7,811.1	120.1	-99.2	800,758.96	485,550.69	123.53	10.00
Wolfcamp										
11,300.0	38.12	359.55	11,267.7	7,813.8	122.2	-99.2	800,758.95	485,552.80	125.64	10.00

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11,325.0	40.62	359.55	11,287.0	7,833.1	138.0	-99.4	800,758.82	485,568.63	141.46	10.00
First PP										
11,350.0	43.12	359.55	11,305.6	7,851.7	154.7	-99.5	800,758.69	485,585.34	158.17	10.00
11,400.0	48.12	359.55	11,340.6	7,886.7	190.5	-99.8	800,758.41	485,621.07	193.88	10.00
11,450.0	53.12	359.55	11,372.3	7,918.4	229.1	-100.1	800,758.11	485,659.70	232.50	10.00
11,500.0	58.12	359.55	11,400.5	7,946.6	270.3	-100.4	800,757.78	485,700.95	273.73	10.00
11,550.0	63.12	359.55	11,425.1	7,971.2	313.9	-100.7	800,757.44	485,744.51	317.27	10.00
11,600.0	68.12	359.55	11,445.7	7,991.8	359.4	-101.1	800,757.09	485,790.03	362.78	10.00
11,650.0	73.12	359.55	11,462.3	8,008.4	406.6	-101.5	800,756.71	485,837.18	409.92	10.00
11,700.0	78.12	359.55	11,474.7	8,020.8	455.0	-101.8	800,756.33	485,885.60	458.32	10.00
11,750.0	83.12	359.55	11,482.8	8,028.9	504.3	-102.2	800,755.95	485,934.91	507.61	10.00
11,800.0	88.12	359.55	11,486.7	8,032.8	554.1	-102.6	800,755.56	485,984.75	557.43	10.00
11,818.8	90.00	359.55	11,487.0	8,033.1	572.9	-102.8	800,755.41	486,003.55	576.22	10.00
Start Turn -0.58										
11,850.0	90.00	359.37	11,487.0	8,033.1	604.1	-103.1	800,755.11	486,034.74	607.41	0.58
11,900.0	90.00	359.08	11,487.0	8,033.1	654.1	-103.7	800,754.44	486,084.74	657.40	0.58
11,950.0	90.00	358.79	11,487.0	8,033.1	704.1	-104.7	800,753.51	486,134.73	707.39	0.58
11,987.0	90.00	358.58	11,487.0	8,033.1	741.1	-105.5	800,752.66	486,171.72	744.39	0.58
First Take Point										
11,988.0	90.00	358.57	11,487.0	8,033.1	742.1	-105.6	800,752.63	486,172.72	745.39	0.58
Start 7550.0 hold at 11988.0 MD										
12,000.0	90.00	358.57	11,487.0	8,033.1	754.1	-105.9	800,752.33	486,184.72	757.39	0.00
12,050.0	90.00	358.57	11,487.0	8,033.1	804.1	-107.1	800,751.09	486,234.70	807.39	0.00
12,100.0	90.00	358.57	11,487.0	8,033.1	854.1	-108.3	800,749.84	486,284.69	857.38	0.00
12,150.0	90.00	358.57	11,487.0	8,033.1	904.1	-109.6	800,748.59	486,334.67	907.38	0.00
12,200.0	90.00	358.57	11,487.0	8,033.1	954.0	-110.8	800,747.34	486,384.66	957.38	0.00
12,250.0	90.00	358.57	11,487.0	8,033.1	1,004.0	-112.1	800,746.09	486,434.64	1,007.38	0.00
12,300.0	90.00	358.57	11,487.0	8,033.1	1,054.0	-113.3	800,744.85	486,484.62	1,057.37	0.00

Morcor Engineering
Morcor Standard Plan

Company: Kaiser Francis
Project: Bell Lake Unit North 433H
Site: Bell Lake Unit North 433H
Well: Bell Lake Unit North 433H
Wellbore: Bell Lake Unit North 433H
Design: 190410 Bell Lake Unit North 433H

Local Co-ordinate Reference: Well Bell Lake Unit North 433H
TVD Reference: WELL @ 3453.9usft (Original Well Elev)
MD Reference: WELL @ 3453.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
12,350.0	90.00	358.57	11,487.0	8,033.1	1,104.0	-114.6	800,743.60	486,534.61	1,107.37	0.00
12,400.0	90.00	358.57	11,487.0	8,033.1	1,154.0	-115.8	800,742.35	486,584.59	1,157.37	0.00
12,450.0	90.00	358.57	11,487.0	8,033.1	1,204.0	-117.1	800,741.10	486,634.58	1,207.36	0.00
12,500.0	90.00	358.57	11,487.0	8,033.1	1,254.0	-118.3	800,739.86	486,684.56	1,257.36	0.00
12,550.0	90.00	358.57	11,487.0	8,033.1	1,303.9	-119.6	800,738.61	486,734.55	1,307.36	0.00
12,600.0	90.00	358.57	11,487.0	8,033.1	1,353.9	-120.8	800,737.36	486,784.53	1,357.36	0.00
12,650.0	90.00	358.57	11,487.0	8,033.1	1,403.9	-122.1	800,736.11	486,834.52	1,407.35	0.00
12,700.0	90.00	358.57	11,487.0	8,033.1	1,453.9	-123.3	800,734.86	486,884.50	1,457.35	0.00
12,750.0	90.00	358.57	11,487.0	8,033.1	1,503.9	-124.6	800,733.62	486,934.48	1,507.35	0.00
12,800.0	90.00	358.57	11,487.0	8,033.1	1,553.9	-125.8	800,732.37	486,984.47	1,557.35	0.00
12,850.0	90.00	358.57	11,487.0	8,033.1	1,603.8	-127.1	800,731.12	487,034.45	1,607.34	0.00
12,900.0	90.00	358.57	11,487.0	8,033.1	1,653.8	-128.3	800,729.87	487,084.44	1,657.34	0.00
12,950.0	90.00	358.57	11,487.0	8,033.1	1,703.8	-129.6	800,728.63	487,134.42	1,707.34	0.00
13,000.0	90.00	358.57	11,487.0	8,033.1	1,753.8	-130.8	800,727.38	487,184.41	1,757.33	0.00
13,050.0	90.00	358.57	11,487.0	8,033.1	1,803.8	-132.1	800,726.13	487,234.39	1,807.33	0.00
13,100.0	90.00	358.57	11,487.0	8,033.1	1,853.8	-133.3	800,724.88	487,284.38	1,857.33	0.00
13,150.0	90.00	358.57	11,487.0	8,033.1	1,903.8	-134.6	800,723.63	487,334.36	1,907.33	0.00
13,200.0	90.00	358.57	11,487.0	8,033.1	1,953.7	-135.8	800,722.39	487,384.34	1,957.32	0.00
13,250.0	90.00	358.57	11,487.0	8,033.1	2,003.7	-137.0	800,721.14	487,434.33	2,007.32	0.00
13,300.0	90.00	358.57	11,487.0	8,033.1	2,053.7	-138.3	800,719.89	487,484.31	2,057.32	0.00
13,350.0	90.00	358.57	11,487.0	8,033.1	2,103.7	-139.5	800,718.64	487,534.30	2,107.31	0.00
13,400.0	90.00	358.57	11,487.0	8,033.1	2,153.7	-140.8	800,717.40	487,584.28	2,157.31	0.00
13,450.0	90.00	358.57	11,487.0	8,033.1	2,203.7	-142.0	800,716.15	487,634.27	2,207.31	0.00
13,500.0	90.00	358.57	11,487.0	8,033.1	2,253.6	-143.3	800,714.90	487,684.25	2,257.31	0.00
13,550.0	90.00	358.57	11,487.0	8,033.1	2,303.6	-144.5	800,713.65	487,734.23	2,307.30	0.00
13,600.0	90.00	358.57	11,487.0	8,033.1	2,353.6	-145.8	800,712.40	487,784.22	2,357.30	0.00
13,650.0	90.00	358.57	11,487.0	8,033.1	2,403.6	-147.0	800,711.16	487,834.20	2,407.30	0.00

Morcor Engineering
Morcor Standard Plan

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Local Co-ordinate Reference: Well Bell Lake Unit North 433H
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Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
13,700.0	90.00	358.57	11,487.0	8,033.1	2,453.6	-148.3	800,709.91	487,884.19	2,457.30	0.00
13,750.0	90.00	358.57	11,487.0	8,033.1	2,503.6	-149.5	800,708.66	487,934.17	2,507.29	0.00
13,800.0	90.00	358.57	11,487.0	8,033.1	2,553.6	-150.8	800,707.41	487,984.16	2,557.29	0.00
13,850.0	90.00	358.57	11,487.0	8,033.1	2,603.5	-152.0	800,706.17	488,034.14	2,607.29	0.00
13,900.0	90.00	358.57	11,487.0	8,033.1	2,653.5	-153.3	800,704.92	488,084.13	2,657.28	0.00
13,950.0	90.00	358.57	11,487.0	8,033.1	2,703.5	-154.5	800,703.67	488,134.11	2,707.28	0.00
14,000.0	90.00	358.57	11,487.0	8,033.1	2,753.5	-155.8	800,702.42	488,184.09	2,757.28	0.00
14,050.0	90.00	358.57	11,487.0	8,033.1	2,803.5	-157.0	800,701.17	488,234.08	2,807.28	0.00
14,100.0	90.00	358.57	11,487.0	8,033.1	2,853.5	-158.3	800,699.93	488,284.06	2,857.27	0.00
14,150.0	90.00	358.57	11,487.0	8,033.1	2,903.4	-159.5	800,698.68	488,334.05	2,907.27	0.00
14,200.0	90.00	358.57	11,487.0	8,033.1	2,953.4	-160.8	800,697.43	488,384.03	2,957.27	0.00
14,250.0	90.00	358.57	11,487.0	8,033.1	3,003.4	-162.0	800,696.18	488,434.02	3,007.27	0.00
14,300.0	90.00	358.57	11,487.0	8,033.1	3,053.4	-163.2	800,694.94	488,484.00	3,057.26	0.00
14,350.0	90.00	358.57	11,487.0	8,033.1	3,103.4	-164.5	800,693.69	488,533.99	3,107.26	0.00
14,400.0	90.00	358.57	11,487.0	8,033.1	3,153.4	-165.7	800,692.44	488,583.97	3,157.26	0.00
14,450.0	90.00	358.57	11,487.0	8,033.1	3,203.3	-167.0	800,691.19	488,633.95	3,207.25	0.00
14,500.0	90.00	358.57	11,487.0	8,033.1	3,253.3	-168.2	800,689.94	488,683.94	3,257.25	0.00
14,550.0	90.00	358.57	11,487.0	8,033.1	3,303.3	-169.5	800,688.70	488,733.92	3,307.25	0.00
14,600.0	90.00	358.57	11,487.0	8,033.1	3,353.3	-170.7	800,687.45	488,783.91	3,357.25	0.00
14,650.0	90.00	358.57	11,487.0	8,033.1	3,403.3	-172.0	800,686.20	488,833.89	3,407.24	0.00
14,700.0	90.00	358.57	11,487.0	8,033.1	3,453.3	-173.2	800,684.95	488,883.88	3,457.24	0.00
14,750.0	90.00	358.57	11,487.0	8,033.1	3,503.3	-174.5	800,683.70	488,933.86	3,507.24	0.00
14,800.0	90.00	358.57	11,487.0	8,033.1	3,553.2	-175.7	800,682.46	488,983.85	3,557.24	0.00
14,850.0	90.00	358.57	11,487.0	8,033.1	3,603.2	-177.0	800,681.21	489,033.83	3,607.23	0.00
14,900.0	90.00	358.57	11,487.0	8,033.1	3,653.2	-178.2	800,679.96	489,083.81	3,657.23	0.00
14,950.0	90.00	358.57	11,487.0	8,033.1	3,703.2	-179.5	800,678.71	489,133.80	3,707.23	0.00
15,000.0	90.00	358.57	11,487.0	8,033.1	3,753.2	-180.7	800,677.47	489,183.78	3,757.22	0.00

Morcor Engineering
Morcor Standard Plan

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
15,050.0	90.00	358.57	11,487.0	8,033.1	3,803.2	-182.0	800,676.22	489,233.77	3,807.22	0.00
15,100.0	90.00	358.57	11,487.0	8,033.1	3,853.1	-183.2	800,674.97	489,283.75	3,857.22	0.00
15,150.0	90.00	358.57	11,487.0	8,033.1	3,903.1	-184.5	800,673.72	489,333.74	3,907.22	0.00
15,200.0	90.00	358.57	11,487.0	8,033.1	3,953.1	-185.7	800,672.47	489,383.72	3,957.21	0.00
15,250.0	90.00	358.57	11,487.0	8,033.1	4,003.1	-187.0	800,671.23	489,433.71	4,007.21	0.00
15,300.0	90.00	358.57	11,487.0	8,033.1	4,053.1	-188.2	800,669.98	489,483.69	4,057.21	0.00
15,350.0	90.00	358.57	11,487.0	8,033.1	4,103.1	-189.5	800,668.73	489,533.67	4,107.20	0.00
15,400.0	90.00	358.57	11,487.0	8,033.1	4,153.1	-190.7	800,667.48	489,583.66	4,157.20	0.00
15,450.0	90.00	358.57	11,487.0	8,033.1	4,203.0	-191.9	800,666.24	489,633.64	4,207.20	0.00
15,500.0	90.00	358.57	11,487.0	8,033.1	4,253.0	-193.2	800,664.99	489,683.63	4,257.20	0.00
15,550.0	90.00	358.57	11,487.0	8,033.1	4,303.0	-194.4	800,663.74	489,733.61	4,307.19	0.00
15,600.0	90.00	358.57	11,487.0	8,033.1	4,353.0	-195.7	800,662.49	489,783.60	4,357.19	0.00
15,650.0	90.00	358.57	11,487.0	8,033.1	4,403.0	-196.9	800,661.24	489,833.58	4,407.19	0.00
15,700.0	90.00	358.57	11,487.0	8,033.1	4,453.0	-198.2	800,660.00	489,883.57	4,457.19	0.00
15,750.0	90.00	358.57	11,487.0	8,033.1	4,502.9	-199.4	800,658.75	489,933.55	4,507.18	0.00
15,800.0	90.00	358.57	11,487.0	8,033.1	4,552.9	-200.7	800,657.50	489,983.53	4,557.18	0.00
15,850.0	90.00	358.57	11,487.0	8,033.1	4,602.9	-201.9	800,656.25	490,033.52	4,607.18	0.00
15,900.0	90.00	358.57	11,487.0	8,033.1	4,652.9	-203.2	800,655.01	490,083.50	4,657.17	0.00
15,950.0	90.00	358.57	11,487.0	8,033.1	4,702.9	-204.4	800,653.76	490,133.49	4,707.17	0.00
16,000.0	90.00	358.57	11,487.0	8,033.1	4,752.9	-205.7	800,652.51	490,183.47	4,757.17	0.00
16,050.0	90.00	358.57	11,487.0	8,033.1	4,802.9	-206.9	800,651.26	490,233.46	4,807.17	0.00
16,100.0	90.00	358.57	11,487.0	8,033.1	4,852.8	-208.2	800,650.01	490,283.44	4,857.16	0.00
16,150.0	90.00	358.57	11,487.0	8,033.1	4,902.8	-209.4	800,648.77	490,333.43	4,907.16	0.00
16,200.0	90.00	358.57	11,487.0	8,033.1	4,952.8	-210.7	800,647.52	490,383.41	4,957.16	0.00
16,250.0	90.00	358.57	11,487.0	8,033.1	5,002.8	-211.9	800,646.27	490,433.39	5,007.16	0.00
16,300.0	90.00	358.57	11,487.0	8,033.1	5,052.8	-213.2	800,645.02	490,483.38	5,057.15	0.00
16,350.0	90.00	358.57	11,487.0	8,033.1	5,102.8	-214.4	800,643.78	490,533.36	5,107.15	0.00

Morcor Engineering
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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (*100usft)
16,400.0	90.00	358.57	11,487.0	8,033.1	5,152.7	-215.7	800,642.53	490,583.35	5,157.15	0.00
16,450.0	90.00	358.57	11,487.0	8,033.1	5,202.7	-216.9	800,641.28	490,633.33	5,207.14	0.00
16,500.0	90.00	358.57	11,487.0	8,033.1	5,252.7	-218.2	800,640.03	490,683.32	5,257.14	0.00
16,550.0	90.00	358.57	11,487.0	8,033.1	5,302.7	-219.4	800,638.78	490,733.30	5,307.14	0.00
16,600.0	90.00	358.57	11,487.0	8,033.1	5,352.7	-220.6	800,637.54	490,783.29	5,357.14	0.00
16,650.0	90.00	358.57	11,487.0	8,033.1	5,402.7	-221.9	800,636.29	490,833.27	5,407.13	0.00
16,700.0	90.00	358.57	11,487.0	8,033.1	5,452.6	-223.1	800,635.04	490,883.25	5,457.13	0.00
16,750.0	90.00	358.57	11,487.0	8,033.1	5,502.6	-224.4	800,633.79	490,933.24	5,507.13	0.00
16,800.0	90.00	358.57	11,487.0	8,033.1	5,552.6	-225.6	800,632.55	490,983.22	5,557.13	0.00
16,850.0	90.00	358.57	11,487.0	8,033.1	5,602.6	-226.9	800,631.30	491,033.21	5,607.12	0.00
16,900.0	90.00	358.57	11,487.0	8,033.1	5,652.6	-228.1	800,630.05	491,083.19	5,657.12	0.00
16,950.0	90.00	358.57	11,487.0	8,033.1	5,702.6	-229.4	800,628.80	491,133.18	5,707.12	0.00
17,000.0	90.00	358.57	11,487.0	8,033.1	5,752.6	-230.6	800,627.55	491,183.16	5,757.11	0.00
17,050.0	90.00	358.57	11,487.0	8,033.1	5,802.5	-231.9	800,626.31	491,233.14	5,807.11	0.00
17,100.0	90.00	358.57	11,487.0	8,033.1	5,852.5	-233.1	800,625.06	491,283.13	5,857.11	0.00
17,150.0	90.00	358.57	11,487.0	8,033.1	5,902.5	-234.4	800,623.81	491,333.11	5,907.11	0.00
17,200.0	90.00	358.57	11,487.0	8,033.1	5,952.5	-235.6	800,622.56	491,383.10	5,957.10	0.00
17,250.0	90.00	358.57	11,487.0	8,033.1	6,002.5	-236.9	800,621.32	491,433.08	6,007.10	0.00
17,300.0	90.00	358.57	11,487.0	8,033.1	6,052.5	-238.1	800,620.07	491,483.07	6,057.10	0.00
17,350.0	90.00	358.57	11,487.0	8,033.1	6,102.4	-239.4	800,618.82	491,533.05	6,107.09	0.00
17,400.0	90.00	358.57	11,487.0	8,033.1	6,152.4	-240.6	800,617.57	491,583.04	6,157.09	0.00
17,450.0	90.00	358.57	11,487.0	8,033.1	6,202.4	-241.9	800,616.32	491,633.02	6,207.09	0.00
17,500.0	90.00	358.57	11,487.0	8,033.1	6,252.4	-243.1	800,615.08	491,683.00	6,257.09	0.00
17,550.0	90.00	358.57	11,487.0	8,033.1	6,302.4	-244.4	800,613.83	491,732.99	6,307.08	0.00
17,600.0	90.00	358.57	11,487.0	8,033.1	6,352.4	-245.6	800,612.58	491,782.97	6,357.08	0.00
17,650.0	90.00	358.57	11,487.0	8,033.1	6,402.4	-246.9	800,611.33	491,832.96	6,407.08	0.00
17,700.0	90.00	358.57	11,487.0	8,033.1	6,452.3	-248.1	800,610.09	491,882.94	6,457.08	0.00

Morcor Engineering

Morcor Standard Plan

Company: Kaiser Francis
Project: Bell Lake Unit North 433H
Site: Bell Lake Unit North 433H
Well: Bell Lake Unit North 433H
Wellbore: Bell Lake Unit North 433H
Design: 190410 Bell Lake Unit North 433H

Local Co-ordinate Reference: Well Bell Lake Unit North 433H
TVD Reference: WELL @ 3453.9usft (Original Well Elev)
MD Reference: WELL @ 3453.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
17,750.0	90.00	358.57	11,487.0	8,033.1	6,502.3	-249.3	800,608.84	491,932.93	6,507.07	0.00
17,800.0	90.00	358.57	11,487.0	8,033.1	6,552.3	-250.6	800,607.59	491,982.91	6,557.07	0.00
17,850.0	90.00	358.57	11,487.0	8,033.1	6,602.3	-251.8	800,606.34	492,032.90	6,607.07	0.00
17,900.0	90.00	358.57	11,487.0	8,033.1	6,652.3	-253.1	800,605.09	492,082.88	6,657.06	0.00
17,950.0	90.00	358.57	11,487.0	8,033.1	6,702.3	-254.3	800,603.85	492,132.86	6,707.06	0.00
18,000.0	90.00	358.57	11,487.0	8,033.1	6,752.2	-255.6	800,602.60	492,182.85	6,757.06	0.00
18,050.0	90.00	358.57	11,487.0	8,033.1	6,802.2	-256.8	800,601.35	492,232.83	6,807.06	0.00
18,100.0	90.00	358.57	11,487.0	8,033.1	6,852.2	-258.1	800,600.10	492,282.82	6,857.05	0.00
18,150.0	90.00	358.57	11,487.0	8,033.1	6,902.2	-259.3	800,598.86	492,332.80	6,907.05	0.00
18,200.0	90.00	358.57	11,487.0	8,033.1	6,952.2	-260.6	800,597.61	492,382.79	6,957.05	0.00
18,250.0	90.00	358.57	11,487.0	8,033.1	7,002.2	-261.8	800,596.36	492,432.77	7,007.05	0.00
18,300.0	90.00	358.57	11,487.0	8,033.1	7,052.1	-263.1	800,595.11	492,482.76	7,057.04	0.00
18,350.0	90.00	358.57	11,487.0	8,033.1	7,102.1	-264.3	800,593.86	492,532.74	7,107.04	0.00
18,400.0	90.00	358.57	11,487.0	8,033.1	7,152.1	-265.6	800,592.62	492,582.72	7,157.04	0.00
18,450.0	90.00	358.57	11,487.0	8,033.1	7,202.1	-266.8	800,591.37	492,632.71	7,207.03	0.00
18,500.0	90.00	358.57	11,487.0	8,033.1	7,252.1	-268.1	800,590.12	492,682.69	7,257.03	0.00
18,550.0	90.00	358.57	11,487.0	8,033.1	7,302.1	-269.3	800,588.87	492,732.68	7,307.03	0.00
18,600.0	90.00	358.57	11,487.0	8,033.1	7,352.1	-270.6	800,587.63	492,782.66	7,357.03	0.00
18,650.0	90.00	358.57	11,487.0	8,033.1	7,402.0	-271.8	800,586.38	492,832.65	7,407.02	0.00
18,700.0	90.00	358.57	11,487.0	8,033.1	7,452.0	-273.1	800,585.13	492,882.63	7,457.02	0.00
18,750.0	90.00	358.57	11,487.0	8,033.1	7,502.0	-274.3	800,583.88	492,932.62	7,507.02	0.00
18,800.0	90.00	358.57	11,487.0	8,033.1	7,552.0	-275.5	800,582.63	492,982.60	7,557.02	0.00
18,850.0	90.00	358.57	11,487.0	8,033.1	7,602.0	-276.8	800,581.39	493,032.58	7,607.01	0.00
18,900.0	90.00	358.57	11,487.0	8,033.1	7,652.0	-278.0	800,580.14	493,082.57	7,657.01	0.00
18,950.0	90.00	358.57	11,487.0	8,033.1	7,701.9	-279.3	800,578.89	493,132.55	7,707.01	0.00
19,000.0	90.00	358.57	11,487.0	8,033.1	7,751.9	-280.5	800,577.64	493,182.54	7,757.00	0.00
19,050.0	90.00	358.57	11,487.0	8,033.1	7,801.9	-281.8	800,576.40	493,232.52	7,807.00	0.00

Morcor Engineering

Morcor Standard Plan

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
19,100.0	90.00	358.57	11,487.0	8,033.1	7,851.9	-283.0	800,575.15	493,282.51	7,857.00	0.00
19,150.0	90.00	358.57	11,487.0	8,033.1	7,901.9	-284.3	800,573.90	493,332.49	7,907.00	0.00
19,200.0	90.00	358.57	11,487.0	8,033.1	7,951.9	-285.5	800,572.65	493,382.48	7,956.99	0.00
19,250.0	90.00	358.57	11,487.0	8,033.1	8,001.9	-286.8	800,571.40	493,432.46	8,006.99	0.00
19,300.0	90.00	358.57	11,487.0	8,033.1	8,051.8	-288.0	800,570.16	493,482.44	8,056.99	0.00
19,350.0	90.00	358.57	11,487.0	8,033.1	8,101.8	-289.3	800,568.91	493,532.43	8,106.98	0.00
19,400.0	90.00	358.57	11,487.0	8,033.1	8,151.8	-290.5	800,567.66	493,582.41	8,156.98	0.00
19,450.0	90.00	358.57	11,487.0	8,033.1	8,201.8	-291.8	800,566.41	493,632.40	8,206.98	0.00
19,500.0	90.00	358.57	11,487.0	8,033.1	8,251.8	-293.0	800,565.17	493,682.38	8,256.98	0.00
19,538.0	90.00	358.57	11,487.0	8,033.1	8,289.8	-294.0	800,564.22	493,720.37	8,294.97	0.00

TD at 19538.0 - 5 1/2" Production Casing

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
120.0	120.0	20" Conductor	20	26
10,922.8	10,918.0	7 5/8" Intermediate Casing	7-5/8	9-7/8
19,538.0	11,487.0	5 1/2" Production Casing	5-1/2	6-3/4
1,272.0	1,272.0	10 3/4" Surface Casing	10-3/4	12-1/4

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Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,695.0	8,695.0	Avalon		0.00	
5,172.0	5,172.0	Bell Canyon		0.00	
7,522.0	7,522.0	Brushy Canyon		0.00	
1,222.0	1,222.0	Rustler		0.00	
10,028.1	10,027.0	2nd Bone Spring Sand		0.00	
10,951.8	10,947.0	3rd Bone Spring Sand		0.00	
1,622.0	1,622.0	Salado		0.00	
1,822.0	1,822.0	Top of salt		0.00	
4,972.0	4,972.0	Lamar		0.00	
11,296.6	11,265.0	Wolfcamp		0.00	
9,547.0	9,547.0	1st Bone Spring Sand		0.00	
8,622.0	8,622.0	Bone Spring		0.00	
4,722.0	4,722.0	Base of Salt		0.00	
10,551.0	10,547.0	3rd Bone Spring Lime		0.00	
6,197.0	6,197.0	Cherry Canyon		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,690.0	9,690.0	0.0	0.0	Start Build 3.00
9,890.0	9,889.6	0.0	-10.5	Start 740.0 hold at 9890.0 MD
10,630.0	10,625.6	0.0	-87.8	Start Drop -3.00
10,830.0	10,825.2	0.0	-98.3	Start 88.8 hold at 10830.0 MD
10,918.8	10,914.0	0.0	-98.3	Start Build 10.00
11,325.0	11,287.0	138.0	-99.4	First PP
11,818.8	11,487.0	572.9	-102.8	Start Turn -0.58
11,987.0	11,487.0	741.1	-105.5	First Take Point
11,988.0	11,487.0	742.1	-105.6	Start 7550.0 hold at 11988.0 MD
19,538.0	11,487.0	8,289.8	-294.0	TD at 19538.0

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Checked By: _____	Approved By: _____	Date: _____
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