

COMPANY: Kaiser-Francis Oil Company
FIELD: Eddy County, NM (NAD 27 NME
WELL NAME: Williams Fee 2524 LBC #1H
WELLBORE NAME: OWB
Survey Name: AWB
Extraction Date: 02/07/2018

30.015-43743

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 08 2018

Calculation Method: Minimum Curvature
Datum Name: KB
LAT Reference: Well

RECEIVED

Slot EW Map (us/ft): 590114.062
Slot NS Map (us/ft): 464720.716
Surface Latitude Map: 32° 16' 38.271 N
Surface Longitude Map: 104° 2' 30.327 W
Bottom Hole MD (us/ft): 13873.00
Bottom Hole TVD (us/ft): 6266.23
Bottom Hole EW Map (us/ft): 589476.104
Bottom Hole NS Map (us/ft): 472054.927

GL Elevation: 2996.20
KB Elevation: 3021.20

MAGNETIC CALCULATION DATE.....: 12-Dec-2017
Map-Zone: New Mexico East 3001
North Reference: Grid
Total Correction: 6.97
Magnetic dip: 60.03
Magnetic field strength: 47894.63
Geo Datum: NAD 1927 (NADCON CONUS)
VSDIR: 357.39

Measured Depth (ft)	Incl.	Azim.	TVD (ft)	NS (ft)	EW (ft)	Vertical Section (ft)	Dogleg Rate (dega/100ft)	Easting	Northing
0	0	0	0	0	0	0	0	590114.1	464720.7
407	1.9	154.4	406.93	-6.09	2.92	-6.21	0.47	590117	464714.6

500	1.9	154.9	499.87	-8.87	4.24	-9.06	0.02	590118.3	464711.8
627	1.2	109.4	626.83	-11.22	6.38	-11.5	1.07	590120.4	464709.5
690	1.2	92.7	689.82	-11.47	7.66	-11.81	0.55	590121.7	464709.2
784	1.1	88	783.8	-11.49	9.55	-11.91	0.15	590123.6	464709.2
878	1.2	96	877.78	-11.56	11.43	-12.06	0.2	590125.5	464709.2
972	1.1	91.2	971.76	-11.68	13.31	-12.27	0.15	590127.4	464709
1067	1.3	94.2	1066.74	-11.78	15.3	-12.46	0.22	590129.4	464708.9
1162	1.4	83.3	1161.71	-11.72	17.52	-12.51	0.29	590131.6	464709
1256	0.3	119	1255.7	-11.71	18.88	-12.55	1.24	590132.9	464709
1351	0.4	95.5	1350.7	-11.86	19.43	-12.73	0.18	590133.5	464708.9
1445	0.2	57.6	1444.7	-11.8	19.89	-12.69	0.29	590134	464708.9
1540	0.7	79.7	1539.7	-11.61	20.6	-12.53	0.55	590134.7	464709.1
1634	0.5	92.9	1633.69	-11.53	21.58	-12.5	0.26	590135.6	464709.2
1729	0.5	112.7	1728.69	-11.71	22.38	-12.71	0.18	590136.4	464709
1823	0.5	100.5	1822.68	-11.94	23.16	-12.98	0.11	590137.2	464708.8
1918	0.4	117.6	1917.68	-12.17	23.86	-13.24	0.18	590137.9	464708.5
2012	1.7	129.8	2011.66	-13.21	25.22	-14.35	1.4	590139.3	464707.5
2107	2.1	157.9	2106.61	-15.73	26.96	-16.94	1.05	590141	464705
2200	1.3	229.8	2199.58	-17.99	26.79	-19.19	2.26	590140.9	464702.7
2295	1.6	233.8	2294.55	-19.47	24.9	-20.58	0.33	590139	464701.2
2389	1.8	206.8	2388.51	-21.56	23.18	-22.59	0.87	590137.2	464699.2
2483	2.1	186.6	2482.46	-24.59	22.31	-25.58	0.79	590136.4	464696.1
2577	1.6	195.9	2576.41	-27.56	21.75	-28.52	0.62	590135.8	464693.2
2672	1.2	211.3	2671.38	-29.69	20.87	-30.61	0.57	590134.9	464691
2791	1.7	205.2	2790.34	-32.35	19.47	-33.2	0.44	590133.5	464688.4
2854	2.7	204.1	2853.29	-34.55	18.47	-35.35	1.59	590132.5	464686.2
2948	5.1	204.8	2947.07	-40.36	15.81	-41.04	2.55	590129.9	464680.4
3042	4.5	206.6	3040.74	-47.45	12.41	-47.97	0.66	590126.5	464673.3
3136	6.5	203.2	3134.3	-55.64	8.66	-55.98	2.15	590122.7	464665.1
3231	8.4	206.7	3228.5	-66.79	3.43	-66.87	2.06	590117.5	464653.9
3326	9.5	208.8	3322.34	-79.85	-3.47	-79.61	1.21	590110.6	464640.9
3419	11.3	209.6	3413.81	-94.5	-11.67	-93.88	1.94	590102.4	464626.2
3514	12.5	213	3506.76	-111.22	-21.86	-110.11	1.46	590092.2	464609.5
3608	11.7	212.4	3598.68	-127.8	-32.51	-126.19	0.86	590081.6	464592.9
3703	11.3	211.6	3691.77	-143.86	-42.55	-141.77	0.45	590071.5	464576.9
3797	13.1	215	3783.64	-160.43	-53.49	-157.83	2.06	590060.6	464560.3
3890	13.4	215.4	3874.17	-177.85	-65.77	-174.67	0.34	590048.3	464542.9
3984	12.8	215.5	3965.72	-195.2	-78.13	-191.45	0.64	590035.9	464525.5
4078	12	215.3	4057.53	-211.66	-89.82	-207.35	0.85	590024.2	464509.1

4173	13.2	210.6	4150.24	-229.05	-101.05	-224.22	1.66	590013	464491.7	
4267	12.7	209.6	4241.85	-247.28	-111.62	-241.94	0.58	590002.4	464473.4	
4361	12	209.3	4333.67	-264.78	-121.51	-258.98	0.75	589992.6	464455.9	
4456	11.4	209.7	4426.7	-281.55	-130.99	-275.3	0.64	589983.1	464439.2	
4550	12.8	206.6	4518.61	-298.93	-140.26	-292.24	1.64	589973.8	464421.8	
4644	12.7	207.1	4610.29	-317.44	-149.63	-310.3	0.16	589964.4	464403.3	
4739	12.1	207.7	4703.07	-335.55	-159.01	-327.97	0.65	589955.1	464385.2	
4833	11.7	203.4	4795.06	-353.02	-167.38	-345.04	1.03	589946.7	464367.7	
4927	11.1	203.6	4887.2	-370.06	-174.79	-361.72	0.64	589939.3	464350.7	
5022	10.2	204.6	4980.56	-386.09	-181.95	-377.41	0.97	589932.1	464334.6	
5117	10.8	203.8	5073.97	-401.88	-189.04	-392.86	0.65	589925	464318.8	
5211	9.3	204.5	5166.53	-416.85	-195.75	-407.51	1.6	589918.3	464303.9	
5306	7.9	204.7	5260.46	-429.77	-201.66	-420.15	1.47	589912.4	464290.9	
5400	6	209.7	5353.76	-439.91	-206.79	-430.04	2.12	589907.3	464280.8	
5495	4.1	215.1	5448.39	-447	-211.2	-436.92	2.06	589902.9	464273.7	
5589	2.1	224.4	5542.25	-450.98	-214.34	-440.76	2.19	589899.7	464269.7	
5640	1.4	221.1	5593.22	-452.12	-215.41	-441.85	1.39	589898.7	464268.6	
5686	0.6	216.2	5639.22	-452.73	-215.92	-442.44	1.75	589898.1	464268	
5733	0.4	293.2	5686.22	-452.87	-216.21	-442.56	1.37	589897.8	464267.8	
5780	4.4	346.4	5733.17	-451.05	-216.79	-440.72	8.88	589897.3	464269.7	
5827	9.8	346.1	5779.79	-445.41	-218.17	-435.02	11.49	589895.9	464275.3	
5874	14.2	349.6	5825.75	-435.85	-220.18	-425.38	9.48	589893.9	464284.9	
5875.7	14.379	349.812	5827.4	-435.44	-220.25	-424.97	10.96	589893.8	464285.3	CROSS QTR SEC LN @ 5875.7' MD, 2728' FNL, 1978' FWL
5922	19.3	354.1	5871.7	-422.16	-222.06	-411.62	10.96	589892	464298.6	
5969	24.3	354.3	5915.33	-404.8	-223.82	-394.2	10.64	589890.2	464315.9	
6016	28.4	357	5957.44	-384.01	-225.36	-373.35	9.09	589888.7	464336.7	
6064	32.9	358.8	5998.72	-359.56	-226.23	-348.89	9.57	589887.8	464361.2	
6111	37.5	358.4	6037.12	-332.49	-226.9	-321.82	9.8	589887.2	464388.2	
6159	41.4	356	6074.18	-302.04	-228.42	-291.33	8.72	589885.6	464418.7	
6206	46.1	355.5	6108.12	-269.63	-230.83	-258.85	10.03	589883.2	464451.1	
6253	50.1	355.6	6139.5	-234.76	-233.54	-223.89	8.51	589880.5	464486	
6300	53.8	355	6168.46	-197.88	-236.58	-186.91	7.94	589877.5	464522.8	
6347	58.5	353.3	6194.64	-159.07	-240.57	-147.96	10.44	589873.5	464561.6	
6395	62.2	354.1	6218.38	-117.61	-245.14	-106.33	7.84	589868.9	464603.1	
6408.6	63.386	354.308	6224.6	-105.58	-246.37	-94.26	8.83	589867.7	464615.1	CROSS 330 HRD LN @ 6408.6' MD, 2398' FNL, 1957' FWL
6442	66.3	354.8	6238.79	-75.49	-249.23	-64.07	8.83	589864.8	464645.2	
6489	71.3	356.2	6255.78	-31.82	-252.66	-20.29	10.99	589861.4	464688.9	
6522	75.5	355.8	6265.21	-0.28	-254.87	11.32	12.78	589859.2	464720.4	
6613	84.6	357.8	6280.92	89.12	-259.84	100.85	10.23	589854.2	464809.8	

6660	88.9	356.3	6283.58	135.97	-262.26	147.76	9.69	589851.8	464856.7	
6708	90.6	358.4	6283.79	183.91	-264.48	195.76	5.63	589849.6	464904.6	
6802	91.8	359.9	6281.82	277.87	-265.87	289.69	2.04	589848.2	464998.6	
6896	89.5	358.1	6280.76	371.84	-267.51	383.63	3.11	589846.5	465092.6	
6990	92.7	357.4	6278.95	465.74	-271.2	477.6	3.48	589842.9	465186.5	
7067.1	91.077	355.533	6276.41	542.65	-275.95	554.64	3.21	589838.1	465263.4	FTP BNDRY LN @ 7067.1' MD, 1750' FNL, 1937' FWL
7085	90.7	355.1	6276.13	560.49	-277.41	572.53	3.21	589836.7	465281.2	
7179	90	355	6275.56	654.13	-285.52	666.45	0.75	589828.5	465374.8	
7274	90.8	355	6274.9	748.77	-293.8	761.36	0.84	589820.3	465469.5	
7368	90.2	354.1	6274.08	842.34	-302.73	855.24	1.15	589811.3	465563.1	
7463	91.4	358.4	6272.75	937.1	-308.94	950.19	4.7	589805.1	465657.8	
7510	91	357.9	6271.77	984.07	-310.46	997.18	1.36	589803.6	465704.8	
7557	89.7	356.7	6271.48	1031.01	-312.67	1044.17	3.76	589801.4	465751.7	
7604	89.1	356.1	6271.97	1077.92	-315.62	1091.16	1.81	589798.4	465798.6	
7652	91	357.6	6271.93	1125.84	-318.26	1139.16	5.04	589795.8	465846.6	
7746	89.3	355.4	6271.68	1219.65	-324	1233.14	2.96	589790.1	465940.4	
7841	90.7	356.8	6271.68	1314.43	-330.46	1328.11	2.08	589783.6	466035.1	
7936	92.5	355.2	6269.03	1409.15	-337.08	1423.04	2.53	589777	466129.9	
7983	93.6	355.4	6266.53	1455.93	-340.93	1469.94	2.38	589773.1	466176.6	
8032	92.7	354.2	6263.84	1504.65	-345.36	1518.81	3.06	589768.7	466225.4	
8079	92.4	354.1	6261.75	1551.36	-350.15	1565.69	0.67	589763.9	466272.1	
8124	92.8	354.4	6259.7	1596.09	-354.65	1610.58	1.11	589759.4	466316.8	
8171	88.7	353.3	6259.09	1642.8	-359.69	1657.47	9.03	589754.4	466363.5	
8201.9	87.876	352.682	6260.01	1673.46	-363.46	1688.27	3.33	589750.6	466394.2	Way Point #1 (Williams Fee 2524 LBC #1H)
8216	87.5	352.4	6260.58	1687.43	-365.28	1702.3	3.33	589748.8	466408.1	
8263	89.8	355	6261.69	1734.12	-370.44	1749.19	7.38	589743.6	466454.8	
8307	92.1	359.1	6260.96	1778.05	-372.7	1793.17	10.68	589741.4	466498.8	
8401	91.8	358.4	6257.76	1871.97	-374.75	1887.09	0.81	589739.3	466592.7	
8495	92.6	359.2	6254.15	1965.88	-376.72	1980.99	1.2	589737.3	466686.6	
8588	88.6	356	6253.18	2058.76	-380.61	2073.95	5.51	589733.4	466779.5	
8680	89.1	356.7	6255.02	2150.55	-386.47	2165.92	0.93	589727.6	466871.3	
8773	88.9	356.8	6256.65	2243.39	-391.74	2258.9	0.24	589722.3	466964.1	
8823.6	89.065	356.745	6257.55	2293.9	-394.59	2309.48	0.34	589719.5	467014.6	CROSS N. LN SEC 25 @ 8823.6' MD, 1844' FWL
8865	89.2	356.7	6258.17	2335.23	-396.96	2350.88	0.34	589717.1	467055.9	
8958	92.9	359.9	6256.47	2428.15	-399.72	2443.82	5.26	589714.3	467148.9	
9052	92.5	359.2	6252.04	2522.04	-400.45	2537.65	0.86	589713.6	467242.8	
9146	90.9	359.6	6249.25	2615.99	-401.44	2631.55	1.75	589712.6	467336.7	
9240	88.6	356.6	6249.66	2709.92	-404.55	2725.52	4.02	589709.5	467430.6	
9259.7	88.704	356.849	6250.13	2729.58	-405.68	2745.22	1.37	589708.4	467450.3	Way Point #2 (Williams Fee 2524 LBC #1H)

9335	89.1	357.8	6251.57	2804.78	-409.19	2820.5	1.37	589704.9	467525.5	
9430	89.1	357.2	6253.06	2899.68	-413.34	2915.49	0.63	589700.7	467620.4	
9525	90.9	357.8	6253.06	2994.59	-417.48	3010.48	2	589696.6	467715.3	
9619	89.4	357.5	6252.81	3088.5	-421.33	3104.48	1.63	589692.7	467809.2	
9713	91.5	359.1	6252.08	3182.45	-424.12	3198.46	2.81	589689.9	467903.2	
9808	90.8	359.1	6250.17	3277.42	-425.61	3293.39	0.74	589688.4	467998.1	
9903	90.8	0.3	6248.84	3372.41	-426.11	3388.31	1.26	589688	468093.1	
9997	89.1	359	6248.93	3466.4	-426.69	3482.23	2.28	589687.4	468187.1	
10091	89.6	358.8	6249.99	3560.38	-428.49	3576.19	0.57	589685.6	468281.1	
10184	90.7	358.9	6249.75	3653.36	-430.36	3669.16	1.19	589683.7	468374.1	
10200.3	90.751	358.9	6249.54	3669.65	-430.67	3685.45	0.32	589683.4	468390.4	Way Point #3 (Williams Fee 2524 LBC #1H)
10279	91	358.9	6248.34	3748.33	-432.18	3764.11	0.32	589681.9	468469	
10373	89.4	356.7	6248.01	3842.25	-435.79	3858.1	2.89	589678.3	468563	
10467	85.9	356.6	6251.86	3936	-441.28	3952	3.72	589672.8	468656.7	
10562	86.9	356.9	6257.83	4030.65	-446.65	4046.81	1.1	589667.4	468751.4	
10656	88.7	358.1	6261.44	4124.49	-450.75	4140.73	2.3	589663.3	468845.2	
10751	86.7	356.1	6265.25	4219.28	-455.55	4235.64	2.98	589658.5	468940	
10845	86.6	355	6270.74	4312.84	-462.83	4329.43	1.17	589651.2	469033.6	
10940	86.9	354.7	6276.13	4407.3	-471.34	4424.19	0.45	589642.7	469128	
11034	91	357.5	6277.85	4501.04	-477.73	4518.12	5.28	589636.3	469221.8	
11128	89	356	6277.85	4594.88	-483.06	4612.1	2.66	589631	469315.6	
11222	90.2	357.4	6278.51	4688.72	-488.47	4706.09	1.96	589625.6	469409.4	
11317	92.5	359.6	6276.27	4783.65	-490.96	4801.03	3.35	589623.1	469504.4	
11402.3	90.957	358.42	6273.7	4868.89	-492.43	4886.26	2.28	589621.6	469589.6	Way Point #4 (Williams Fee 2524 LBC #1H)
11411	90.8	358.3	6273.56	4877.59	-492.68	4894.95	2.28	589621.4	469598.3	
11474.7	89.995	357.361	6273.12	4941.24	-495.09	4958.65	1.94	589619	469662	CROSS QTR SEC LN 24 @ 11474.7' MD, 2937' FNL, 1802' I
11506	89.6	356.9	6273.23	4972.5	-496.66	4989.95	1.94	589617.4	469693.2	
11600	88.7	355.7	6274.63	5066.29	-502.72	5083.92	1.6	589611.3	469787	
11695	88.6	356.1	6276.86	5161.02	-509.51	5178.86	0.43	589604.6	469881.7	
11789	91.2	358.4	6277.03	5254.9	-514.02	5272.85	3.69	589600	469975.6	
11884	91	358.4	6275.2	5349.84	-516.67	5367.81	0.21	589597.4	470070.6	
11978	91.3	358.7	6273.32	5443.79	-519.05	5461.78	0.45	589595	470164.5	
12072	89.2	357.4	6272.91	5537.73	-522.25	5555.76	2.63	589591.8	470258.4	
12166	90.9	358.3	6272.83	5631.66	-525.78	5649.75	2.05	589588.3	470352.4	
12261	90	357.2	6272.08	5726.58	-529.51	5744.75	1.5	589584.6	470447.3	
12355	92.7	359.2	6269.87	5820.5	-532.46	5838.7	3.57	589581.6	470541.2	
12450	90.2	356.4	6267.46	5915.38	-536.1	5933.65	3.95	589578	470636.1	
12544	91.6	355.5	6265.98	6009.13	-542.74	6027.6	1.77	589571.3	470729.8	
12639	90.2	354.6	6264.49	6103.76	-550.94	6122.51	1.75	589563.1	470824.5	

12733	87.7	355.4	6266.21	6197.38	-559.13	6216.4	2.79	589554.9	470918.1	
12827	88.5	356.1	6269.33	6291.07	-566.09	6310.31	1.13	589548	471011.8	
12904.5	89.316	356.263	6270.81	6368.38	-571.25	6387.78	1.07	589542.8	471089.1	Way Point #5 (Williams Fee 2524 LBC #1H)
12922	89.5	356.3	6270.99	6385.84	-572.39	6405.27	1.07	589541.7	471106.6	
13016	91.5	357.6	6270.17	6479.7	-577.39	6499.26	2.54	589536.7	471200.4	
13111	88	356.1	6270.58	6574.54	-582.61	6594.24	4.01	589531.5	471295.3	
13206	89	356.9	6273.07	6669.32	-588.4	6689.19	1.35	589525.7	471390	
13301	88.9	356.6	6274.81	6764.16	-593.79	6784.17	0.33	589520.3	471484.9	
13396	89.1	356.3	6276.47	6858.96	-599.67	6879.14	0.38	589514.4	471579.7	
13490	90.3	355.8	6276.96	6952.73	-606.15	6973.11	1.38	589507.9	471673.4	
13584	90.9	355.2	6275.98	7046.44	-613.52	7067.06	0.9	589500.5	471767.2	
13679	91.9	356.2	6273.66	7141.14	-620.64	7161.99	1.49	589493.4	471861.9	
13774	92.4	354.5	6270.09	7235.76	-628.34	7256.85	1.86	589485.7	471956.5	
13786.4	92.331	354.466	6269.58	7248.09	-629.53	7269.23	0.62	589484.5	471968.8	CROSS LTP/330' HRD LN @ 13786.4' MD, 330' FNL, 1681'
13810	92.2	354.4	6268.65	7271.56	-631.82	7292.78	0.62	589482.2	471992.3	LAST SVY
13873	92.2	354.4	6266.23	7334.21	-637.96	7355.65	0	589476.1	472054.9	PTB @ 13873' MD, 244' FNL, 1673' FWL