

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RECEIVED
NOV 12 2019
DISTRICT IV-ARTESIA O.C.D.
Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
"AMENDED REPORT"
"AS DRILLED"

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-005-64332	Pool Code	Pool Name Twin Lake; SAN ANDRES
Property Code	Property Name SPITFIRE	Well Number 5H
OGRID No. 328666	Operator Name TAMAROA OPERATING, LLC	Elevation 4025'

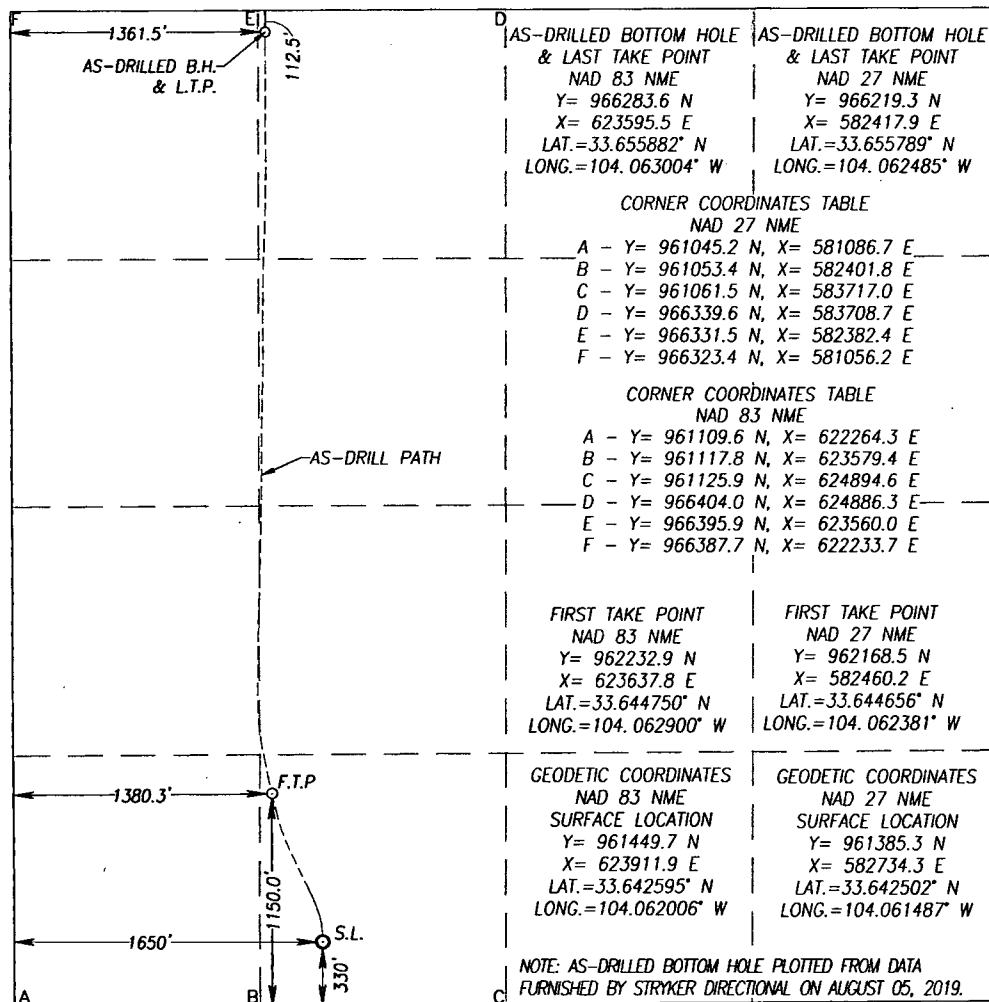
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	2	8-S	28-E		330	SOUTH	1650	WEST	CHAVES

As-Drilled Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	2	8-S	28-E		112.5	NORTH	1361.5	WEST	CHAVES
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

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



OPERATOR CERTIFICATION

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

Signature

Date

11/12/2019

Printed Name

Phelps White

E-mail Address

pwiv@zianet.com

SURVEYOR CERTIFICATION

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

Date of Survey

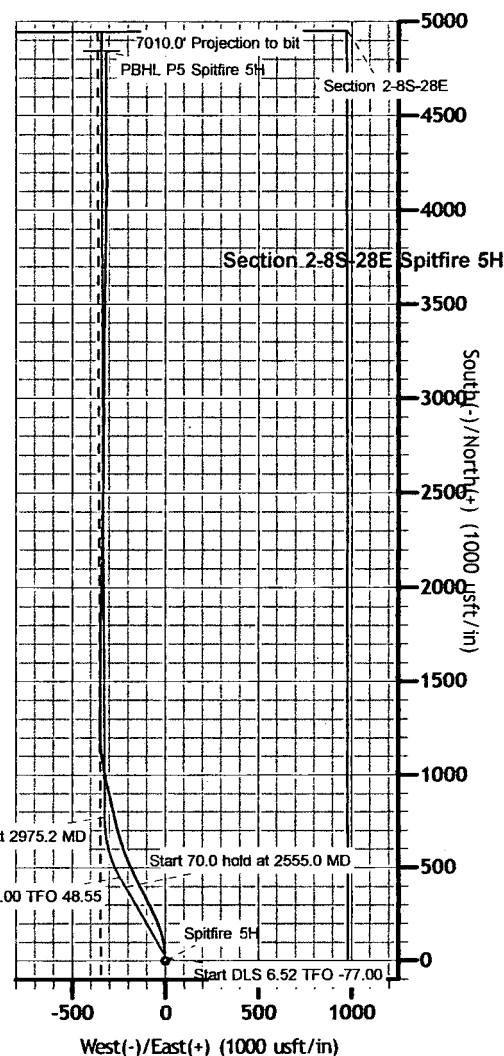
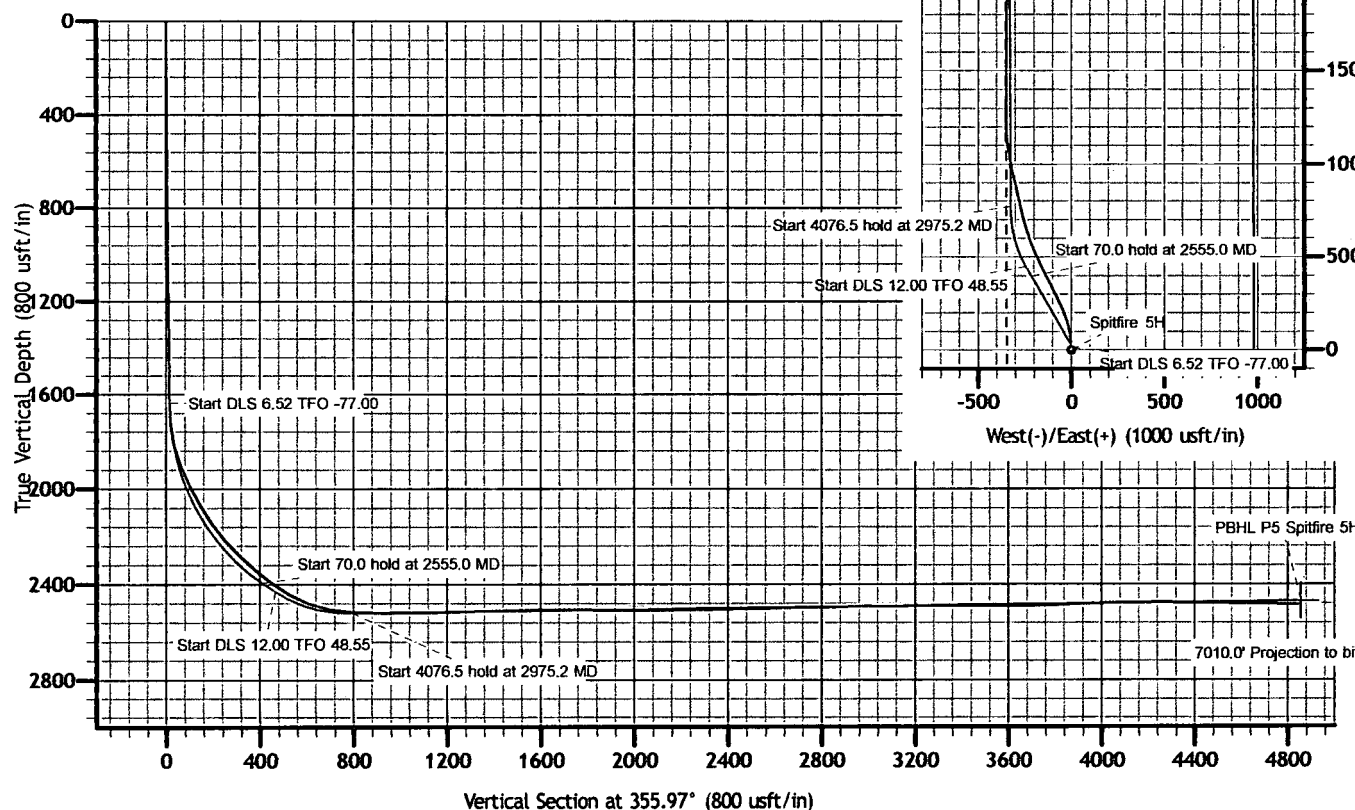
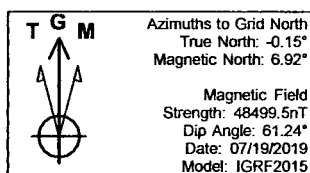
Signature & Seal of Professional Surveyor

Ronald J. Eidson 11/11/2019
Certificate Number Gary G. Eidson 12641
Ronald J. Eidson 3239
ACK REL. W.O.: 19110690 JWSC W.O.: 19.13.1233

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 6.92°

GEODETIC ZONE: New Mexico East 3001										
4025+15 @ 4040.0usft										
GROUND ELEVATION: 4025.0										
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot				
0.0	0.0	961385.30	582734.30	33° 38'	33.006 N	104° 3'	41.354 W			
PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	1637.0	0.75	46.22	1636.9	14.9	4.0	0.00	0.00	14.5	
2	2555.0	60.00	329.64	2395.6	397.4	-212.6	6.52	-77.00	411.4	
3	2625.0	60.00	329.64	2430.6	449.8	-243.3	0.00	0.00	465.7	
4	2975.2	90.70	359.76	2520.0	770.1	-324.3	12.00	48.55	791.0	
5	7051.7	90.70	359.76	2470.0	4846.3	-341.5	0.00	0.00	4858.3	PBHL P5 Spitfire 5H

SHL: 330 FSL; 1650' FWL
Section 2-8S-28E PBHL:
112.5' FNL; 1361.5' FWL
Section 2-8S-28E





TAMAROA
OPERATING LLC

P.O. BOX 866937 PLANO, TX 75086

RECEIVED

NOV 12 2019

DISTRICT//ARTESIAO.C.D.

Tamaroa Operating, LLC.

Chaves County, N.M. (NAD 27)

Section 2-8S-28E Spitfire 5H

Spitfire 5H

Original Hole

Design: Original Hole

Standard Survey Report

05 August, 2019

STRYKER
DIRECTIONAL

Company:	Tamaroa Operating, LLC.	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Project	Chaves County, N.M. (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Section 2-8S-28E Spitfire 5H				
Site Position:		Northing:	961,385.30 usft	Latitude:	33° 38' 33.006 N
From:	Map	Easting:	582,734.30 usft	Longitude:	104° 3' 41.354 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Spitfire 5H				
Well Position	+N/-S	0.0 usft	Northing:	961,385.30 usft	Latitude: 33° 38' 33.006 N
	+E/-W	0.0 usft	Easting:	582,734.30 usft	Longitude: 104° 3' 41.354 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	15.0 usft	Ground Level: 4,025.0 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	07/19/19	7.07	61.24	48,499.50463748

Design	Original Hole				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	356.25	

Survey Program	Date 08/05/19			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
88.3	1,593.0	Gyro Surveys (Original Hole)	Gyrodata	Gyrodata multishot
1,615.0	7,010.0	Stryker MWD (Original Hole)	MWD+IGRF	OWSG MWD + IGRF or WMM

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
88.3	0.25	338.93	88.3	0.2	-0.1	0.2	0.28	0.28	0.00	
179.8	0.37	0.16	179.8	0.7	-0.1	0.7	0.18	0.13	23.19	
273.4	0.48	351.60	273.4	1.4	-0.2	1.4	0.14	0.12	-9.15	
366.8	0.56	333.26	366.8	2.1	-0.5	2.2	0.20	0.09	-19.63	
461.4	0.55	324.59	461.4	2.9	-0.9	3.0	0.09	-0.01	-9.16	
555.8	0.66	321.54	555.8	3.7	-1.5	3.8	0.12	0.12	-3.23	
650.0	0.77	329.98	649.9	4.7	-2.2	4.8	0.16	0.12	8.96	
743.9	0.62	351.40	743.9	5.7	-2.6	5.9	0.32	-0.16	22.80	
838.4	0.50	7.59	838.4	6.7	-2.6	6.8	0.21	-0.13	17.12	

Company:	Tamaroa Operating, LLC	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
932.6	0.56	7.18	932.6	7.5	-2.5	7.7	0.06	0.06	-0.44	
1,025.7	0.52	21.09	1,025.7	8.4	-2.3	8.5	0.15	-0.04	14.94	
1,120.0	0.70	38.02	1,120.0	9.2	-1.8	9.3	0.27	0.19	17.95	
1,214.4	0.89	43.39	1,214.4	10.2	-0.9	10.2	0.22	0.20	5.69	
1,309.1	0.96	46.22	1,309.0	11.3	0.2	11.3	0.09	0.07	2.99	
1,403.8	1.01	43.12	1,403.7	12.5	1.3	12.3	0.08	0.05	-3.27	
1,498.4	0.91	50.56	1,498.3	13.5	2.5	13.3	0.17	-0.11	7.87	
1,593.0	0.81	49.15	1,592.9	14.5	3.5	14.2	0.11	-0.11	-1.50	
1,615.0	0.80	59.90	1,614.9	14.6	3.8	14.4	0.69	-0.05	48.88	
1,728.0	5.40	329.10	1,727.7	19.6	1.7	19.4	4.84	4.07	-80.35	
1,820.0	14.20	354.50	1,818.3	34.6	-1.6	34.6	10.43	9.57	27.61	
1,912.0	22.20	357.90	1,905.6	63.2	-3.3	63.3	8.77	8.70	3.70	
2,005.0	27.30	350.20	1,990.1	101.8	-7.6	102.1	6.48	5.48	-8.28	
2,097.0	31.30	342.80	2,070.3	145.5	-18.2	146.4	5.86	4.35	-8.04	
2,189.0	36.90	338.60	2,146.5	194.1	-35.4	196.0	6.60	6.09	-4.57	
2,281.0	43.10	334.80	2,217.0	248.3	-58.9	251.6	7.24	6.74	-4.13	
2,373.0	48.40	333.50	2,281.1	307.6	-87.6	312.6	5.85	5.76	-1.41	
2,465.0	52.20	333.30	2,339.9	370.8	-119.3	377.8	4.13	4.13	-0.22	
2,560.0	58.20	333.50	2,394.1	440.6	-154.2	449.7	6.32	6.32	0.21	
2,655.0	60.50	335.50	2,442.5	514.3	-189.4	525.6	3.02	2.42	2.11	
2,750.0	70.50	340.70	2,481.9	594.4	-221.4	607.6	11.64	10.53	5.47	
2,844.0	80.40	344.40	2,505.5	681.1	-248.6	695.9	11.20	10.53	3.94	
2,939.0	87.30	347.20	2,515.6	772.6	-271.8	788.8	7.83	7.26	2.95	
3,034.0	89.90	347.30	2,518.0	865.3	-292.7	882.5	2.74	2.74	0.11	
3,128.0	90.50	347.30	2,517.6	957.0	-313.4	975.4	0.64	0.64	0.00	
3,223.0	90.10	350.70	2,517.1	1,050.2	-331.5	1,069.6	3.60	-0.42	3.58	
3,317.0	90.00	354.20	2,517.1	1,143.4	-343.9	1,163.4	3.72	-0.11	3.72	
3,411.0	92.10	0.20	2,515.3	1,237.2	-348.4	1,257.3	6.76	2.23	6.38	
3,505.0	92.00	0.40	2,512.0	1,331.1	-348.0	1,351.0	0.24	-0.11	0.21	
3,599.0	91.40	0.40	2,509.2	1,425.1	-347.3	1,444.7	0.64	-0.64	0.00	
3,694.0	90.80	0.20	2,507.4	1,520.1	-346.8	1,539.5	0.67	-0.63	-0.21	
3,789.0	90.30	0.50	2,506.4	1,615.1	-346.2	1,634.2	0.61	-0.53	0.32	
3,884.0	89.80	1.00	2,506.4	1,710.1	-345.0	1,728.9	0.74	-0.53	0.53	
3,978.0	89.10	1.40	2,507.3	1,804.0	-343.0	1,822.6	0.86	-0.74	0.43	
4,079.0	88.80	1.20	2,509.1	1,905.0	-340.7	1,923.2	0.36	-0.30	-0.20	
4,173.0	90.90	1.20	2,509.4	1,999.0	-338.7	2,016.8	2.23	2.23	0.00	
4,268.0	90.70	1.30	2,508.0	2,093.9	-336.7	2,111.5	0.24	-0.21	0.11	
4,362.0	91.40	0.30	2,506.3	2,187.9	-335.4	2,205.1	1.30	0.74	-1.06	
4,457.0	90.90	1.10	2,504.4	2,282.9	-334.2	2,299.8	0.99	-0.53	0.84	
4,552.0	90.20	1.00	2,503.5	2,377.9	-332.5	2,394.5	0.74	-0.74	-0.11	
4,647.0	91.50	0.70	2,502.1	2,472.8	-331.1	2,489.2	1.40	1.37	-0.32	
4,741.0	91.00	0.40	2,500.0	2,566.8	-330.2	2,582.9	0.62	-0.53	-0.32	
4,836.0	90.80	359.90	2,498.5	2,661.8	-329.9	2,677.7	0.57	-0.21	-0.53	

Company:	Tamaroa Operating, LLC	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,930.0	91.30	0.30	2,496.8	2,755.8	-329.7	2,771.4	0.68	0.53	0.43	
5,025.0	91.30	0.40	2,494.7	2,850.8	-329.2	2,866.2	0.11	0.00	0.11	
5,120.0	91.40	1.10	2,492.4	2,945.7	-327.9	2,960.8	0.74	0.11	0.74	
5,214.0	91.50	1.30	2,490.1	3,039.7	-325.9	3,054.5	0.24	0.11	0.21	
5,309.0	89.20	359.60	2,489.5	3,134.7	-325.2	3,149.2	3.01	-2.42	-1.79	
5,403.0	89.20	359.60	2,490.8	3,228.6	-325.9	3,243.0	0.00	0.00	0.00	
5,498.0	90.60	0.00	2,490.9	3,323.6	-326.2	3,337.8	1.53	1.47	0.42	
5,593.0	90.10	0.20	2,490.4	3,418.6	-326.0	3,432.6	0.57	-0.53	0.21	
5,688.0	89.90	0.80	2,490.4	3,513.6	-325.2	3,527.4	0.67	-0.21	0.63	
5,781.0	89.50	1.10	2,490.9	3,606.6	-323.7	3,620.1	0.54	-0.43	0.32	
5,876.0	92.10	2.30	2,489.5	3,701.6	-320.8	3,714.6	3.01	2.74	1.26	
5,971.0	91.60	2.20	2,486.5	3,796.4	-317.1	3,809.0	0.54	-0.53	-0.11	
6,066.0	91.90	0.90	2,483.6	3,891.4	-314.5	3,903.6	1.40	0.32	-1.37	
6,161.0	91.70	0.30	2,480.6	3,986.3	-313.5	3,998.3	0.67	-0.21	-0.63	
6,256.0	90.80	1.00	2,478.5	4,081.3	-312.5	4,093.0	1.20	-0.95	0.74	
6,351.0	90.30	358.90	2,477.6	4,176.3	-312.5	4,187.8	2.27	-0.53	-2.21	
6,445.0	90.30	359.10	2,477.1	4,270.2	-314.2	4,281.6	0.21	0.00	0.21	
6,539.0	89.50	359.80	2,477.3	4,364.2	-315.1	4,375.5	1.13	-0.85	0.74	
6,634.0	88.80	0.20	2,478.7	4,459.2	-315.1	4,470.3	0.85	-0.74	0.42	
6,728.0	89.30	359.30	2,480.2	4,553.2	-315.5	4,564.1	1.10	0.53	-0.96	
6,823.0	89.50	0.10	2,481.2	4,648.2	-316.0	4,658.9	0.87	0.21	0.84	
6,918.0	88.70	359.80	2,482.7	4,743.2	-316.1	4,753.7	0.90	-0.84	-0.32	
6,952.0	88.50	359.70	2,483.5	4,777.2	-316.2	4,787.6	0.66	-0.59	-0.29	
7,010.0	88.50	359.70	2,485.1	4,835.2	-316.5	4,845.5	0.00	0.00	0.00	
PBHL P5 Spitfire 5H										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,010.0	2,485.1	4,835.2	-316.5	7010.0' Projection to bit	

Checked By: _____ Approved By: _____ Date: _____



TAMAROA
OPERATING LLC

P.O. BOX 866937 PLANO, TX 75086

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NOV 12 2019

DISTRICT 7 - ARTESIA O.C.D.

Tamaroa Operating, LLC.

Chaves County, N.M. (NAD 27)

Section 2-8S-28E Spitfire 5H

Spitfire 5H

Original Hole

Design: Original Hole

Survey Report - Geographic

05 August, 2019



Company:	Tamaroa Operating, LLC	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Project	Chaves County, N.M. (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Section 2-8S-28E Spitfire 5H		
Site Position:		Northing:	961,385.30 usft
From:	Map	Easting:	582,734.30 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	33° 38' 33.006 N
		Longitude:	104° 3' 41.354 W
		Grid Convergence:	0.15 °

Well	Spitfire 5H		
Well Position	+N/-S	0.0 usft	Northing: 961,385.30 usft
	+E/-W	0.0 usft	Easting: 582,734.30 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	15.0 usft
		Latitude:	33° 38' 33.006 N
		Longitude:	104° 3' 41.354 W
		Ground Level:	4,025.0 usft

Wellbore	Original Hole		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	07/19/19	7.07	61.24	48,499.50463748

Design	Original Hole		
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Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	356.25

Survey Program		Date 08/05/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
88.3	1,593.0	Gyro Surveys (Original Hole)	Gyrodata	Gyrodata multishot
1,615.0	7,010.0	Stryker MWD (Original Hole)	MWD+IGRF	OWSG MWD + IGRF or WMM

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	961,385.30	582,734.30	33° 38' 33.006 N	104° 3' 41.354 W
88.3	0.25	338.93	88.3	0.2	-0.1	961,385.48	582,734.23	33° 38' 33.007 N	104° 3' 41.355 W
179.8	0.37	0.16	179.8	0.7	-0.1	961,385.96	582,734.16	33° 38' 33.012 N	104° 3' 41.356 W
273.4	0.48	351.60	273.4	1.4	-0.2	961,386.65	582,734.11	33° 38' 33.019 N	104° 3' 41.357 W
366.8	0.56	333.26	366.8	2.1	-0.5	961,387.45	582,733.84	33° 38' 33.027 N	104° 3' 41.360 W
461.4	0.55	324.59	461.4	2.9	-0.9	961,388.23	582,733.37	33° 38' 33.035 N	104° 3' 41.365 W
555.8	0.66	321.54	555.8	3.7	-1.5	961,389.03	582,732.77	33° 38' 33.043 N	104° 3' 41.372 W
650.0	0.77	329.98	649.9	4.7	-2.2	961,390.00	582,732.12	33° 38' 33.052 N	104° 3' 41.380 W
743.9	0.62	351.40	743.9	5.7	-2.6	961,391.05	582,731.73	33° 38' 33.063 N	104° 3' 41.385 W
838.4	0.50	7.59	838.4	6.7	-2.6	961,391.96	582,731.70	33° 38' 33.072 N	104° 3' 41.385 W
932.6	0.56	7.18	932.6	7.5	-2.5	961,392.83	582,731.82	33° 38' 33.080 N	104° 3' 41.383 W

Company:	Tamaroa Operating, LLC	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County,N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,025.7	0.52	21.09	1,025.7	8.4	-2.3	961,393.67	582,732.03	33° 38' 33.089 N	104° 3' 41.381 W	
1,120.0	0.70	38.02	1,120.0	9.2	-1.8	961,394.52	582,732.53	33° 38' 33.097 N	104° 3' 41.375 W	
1,214.4	0.89	43.39	1,214.4	10.2	-0.9	961,395.51	582,733.39	33° 38' 33.107 N	104° 3' 41.365 W	
1,309.1	0.96	46.22	1,309.0	11.3	0.2	961,396.59	582,734.47	33° 38' 33.117 N	104° 3' 41.352 W	
1,403.8	1.01	43.12	1,403.7	12.5	1.3	961,397.75	582,735.61	33° 38' 33.129 N	104° 3' 41.338 W	
1,498.4	0.91	50.56	1,498.3	13.5	2.5	961,398.84	582,736.76	33° 38' 33.140 N	104° 3' 41.325 W	
1,593.0	0.81	49.15	1,592.9	14.5	3.5	961,399.75	582,737.85	33° 38' 33.149 N	104° 3' 41.312 W	
1,615.0	0.80	59.90	1,614.9	14.6	3.8	961,399.93	582,738.10	33° 38' 33.150 N	104° 3' 41.309 W	
1,728.0	5.40	329.10	1,727.7	19.6	1.7	961,404.89	582,736.05	33° 38' 33.199 N	104° 3' 41.333 W	
1,820.0	14.20	354.50	1,818.3	34.6	-1.6	961,419.88	582,732.74	33° 38' 33.348 N	104° 3' 41.372 W	
1,912.0	22.20	357.90	1,905.6	63.2	-3.3	961,448.52	582,731.02	33° 38' 33.631 N	104° 3' 41.391 W	
2,005.0	27.30	350.20	1,990.1	101.8	-7.6	961,487.13	582,726.74	33° 38' 34.013 N	104° 3' 41.441 W	
2,097.0	31.30	342.80	2,070.3	145.5	-18.2	961,530.78	582,716.07	33° 38' 34.446 N	104° 3' 41.565 W	
2,189.0	36.90	338.60	2,146.5	194.1	-35.4	961,579.37	582,698.91	33° 38' 34.927 N	104° 3' 41.767 W	
2,281.0	43.10	334.80	2,217.0	248.3	-58.9	961,633.59	582,675.43	33° 38' 35.464 N	104° 3' 42.043 W	
2,373.0	48.40	333.50	2,281.1	307.6	-87.6	961,692.86	582,646.67	33° 38' 36.051 N	104° 3' 42.381 W	
2,465.0	52.20	333.30	2,339.9	370.8	-119.3	961,756.14	582,614.98	33° 38' 36.678 N	104° 3' 42.754 W	
2,560.0	58.20	333.50	2,394.1	440.6	-154.2	961,825.86	582,580.07	33° 38' 37.369 N	104° 3' 43.165 W	
2,655.0	60.50	335.50	2,442.5	514.3	-189.4	961,899.62	582,544.91	33° 38' 38.099 N	104° 3' 43.579 W	
2,750.0	70.50	340.70	2,481.9	594.4	-221.4	961,979.75	582,512.87	33° 38' 38.893 N	104° 3' 43.955 W	
2,844.0	80.40	344.40	2,505.5	681.1	-248.6	962,066.44	582,485.68	33° 38' 39.751 N	104° 3' 44.274 W	
2,939.0	87.30	347.20	2,515.6	772.6	-271.8	962,157.95	582,462.55	33° 38' 40.657 N	104° 3' 44.545 W	
3,034.0	89.90	347.30	2,518.0	865.3	-292.7	962,250.57	582,441.59	33° 38' 41.574 N	104° 3' 44.790 W	
3,128.0	90.50	347.30	2,517.6	957.0	-313.4	962,342.27	582,420.92	33° 38' 42.482 N	104° 3' 45.031 W	
3,223.0	90.10	350.70	2,517.1	1,050.2	-331.5	962,435.51	582,402.80	33° 38' 43.405 N	104° 3' 45.243 W	
3,317.0	90.00	354.20	2,517.1	1,143.4	-343.9	962,528.68	582,390.45	33° 38' 44.327 N	104° 3' 45.386 W	
3,411.0	92.10	0.20	2,515.3	1,237.2	-348.4	962,622.50	582,385.86	33° 38' 45.256 N	104° 3' 45.438 W	
3,505.0	92.00	0.40	2,512.0	1,331.1	-348.0	962,716.44	582,386.35	33° 38' 46.185 N	104° 3' 45.429 W	
3,599.0	91.40	0.40	2,509.2	1,425.1	-347.3	962,810.40	582,387.01	33° 38' 47.115 N	104° 3' 45.418 W	
3,694.0	90.80	0.20	2,507.4	1,520.1	-346.8	962,905.38	582,387.50	33° 38' 48.054 N	104° 3' 45.409 W	
3,789.0	90.30	0.50	2,506.4	1,615.1	-346.2	963,000.37	582,388.08	33° 38' 48.994 N	104° 3' 45.400 W	
3,884.0	89.80	1.00	2,506.4	1,710.1	-345.0	963,095.36	582,389.33	33° 38' 49.934 N	104° 3' 45.382 W	
3,978.0	89.10	1.40	2,507.3	1,804.0	-343.0	963,189.34	582,391.30	33° 38' 50.864 N	104° 3' 45.356 W	
4,079.0	88.80	1.20	2,509.1	1,905.0	-340.7	963,290.30	582,393.59	33° 38' 51.862 N	104° 3' 45.325 W	
4,173.0	90.90	1.20	2,509.4	1,999.0	-338.7	963,384.27	582,395.56	33° 38' 52.792 N	104° 3' 45.299 W	
4,268.0	90.70	1.30	2,508.0	2,093.9	-336.7	963,479.24	582,397.63	33° 38' 53.732 N	104° 3' 45.272 W	
4,362.0	91.40	0.30	2,506.3	2,187.9	-335.4	963,573.21	582,398.94	33° 38' 54.662 N	104° 3' 45.253 W	
4,457.0	90.90	1.10	2,504.4	2,282.9	-334.2	963,668.18	582,400.10	33° 38' 55.601 N	104° 3' 45.237 W	
4,552.0	90.20	1.00	2,503.5	2,377.9	-332.5	963,763.16	582,401.84	33° 38' 56.541 N	104° 3' 45.213 W	
4,647.0	91.50	0.70	2,502.1	2,472.8	-331.1	963,858.14	582,403.25	33° 38' 57.480 N	104° 3' 45.194 W	
4,741.0	91.00	0.40	2,500.0	2,566.8	-330.2	963,952.11	582,404.15	33° 38' 58.410 N	104° 3' 45.180 W	
4,836.0	90.80	359.90	2,498.5	2,661.8	-329.9	964,047.10	582,404.40	33° 38' 59.350 N	104° 3' 45.174 W	
4,930.0	91.30	0.30	2,496.8	2,755.8	-329.7	964,141.08	582,404.57	33° 39' 0.280 N	104° 3' 45.169 W	
5,025.0	91.30	0.40	2,494.7	2,850.8	-329.2	964,236.06	582,405.15	33° 39' 1.220 N	104° 3' 45.159 W	
5,120.0	91.40	1.10	2,492.4	2,945.7	-327.9	964,331.02	582,406.39	33° 39' 2.159 N	104° 3' 45.142 W	
5,214.0	91.50	1.30	2,490.1	3,039.7	-325.9	964,424.97	582,408.36	33° 39' 3.089 N	104° 3' 45.116 W	
5,309.0	89.20	359.60	2,489.5	3,134.7	-325.2	964,519.96	582,409.10	33° 39' 4.028 N	104° 3' 45.104 W	
5,403.0	89.20	359.60	2,490.8	3,228.6	-325.9	964,613.95	582,408.45	33° 39' 4.958 N	104° 3' 45.109 W	
5,498.0	90.60	0.00	2,490.9	3,323.6	-326.2	964,708.94	582,408.11	33° 39' 5.898 N	104° 3' 45.110 W	
5,593.0	90.10	0.20	2,490.4	3,418.6	-326.0	964,803.94	582,408.28	33° 39' 6.838 N	104° 3' 45.105 W	
5,688.0	89.90	0.80	2,490.4	3,513.6	-325.2	964,898.94	582,409.11	33° 39' 7.778 N	104° 3' 45.092 W	
5,781.0	89.50	1.10	2,490.9	3,606.6	-323.7	964,991.92	582,410.65	33° 39' 8.698 N	104° 3' 45.071 W	
5,876.0	92.10	2.30	2,489.5	3,701.6	-320.8	965,086.86	582,413.47	33° 39' 9.637 N	104° 3' 45.035 W	
5,971.0	91.60	2.20	2,486.5	3,796.4	-317.1	965,181.74	582,417.20	33° 39' 10.576 N	104° 3' 44.988 W	
6,066.0	91.90	0.90	2,483.6	3,891.4	-314.5	965,276.66	582,419.77	33° 39' 11.515 N	104° 3' 44.954 W	



TAMAROA
OPERATING LLC

P.O. BOX 866937 PLANO, TX 75086

Stryker Energy Directional Services

Survey Report - Geographic



Company:	Tamaroa Operating, LLC	Local Co-ordinate Reference:	Well Spitfire 5H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	4025+15 @ 4040.0usft
Site:	Section 2-8S-28E Spitfire 5H	MD Reference:	4025+15 @ 4040.0usft
Well:	Spitfire 5H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,161.0	91.70	0.30	2,480.6	3,986.3	-313.5	965,371.60	582,420.76	33° 39' 12.454 N	104° 3' 44.940 W
6,256.0	90.80	1.00	2,478.5	4,081.3	-312.5	965,466.57	582,421.84	33° 39' 13.394 N	104° 3' 44.924 W
6,351.0	90.30	358.90	2,477.6	4,176.3	-312.5	965,561.56	582,421.75	33° 39' 14.334 N	104° 3' 44.922 W
6,445.0	90.30	359.10	2,477.1	4,270.2	-314.2	965,655.55	582,420.11	33° 39' 15.264 N	104° 3' 44.938 W
6,539.0	89.50	359.80	2,477.3	4,364.2	-315.1	965,749.54	582,419.21	33° 39' 16.194 N	104° 3' 44.946 W
6,634.0	88.80	0.20	2,478.7	4,459.2	-315.1	965,844.53	582,419.21	33° 39' 17.133 N	104° 3' 44.943 W
6,728.0	89.30	359.30	2,480.2	4,553.2	-315.5	965,938.52	582,418.80	33° 39' 18.063 N	104° 3' 44.945 W
6,823.0	89.50	0.10	2,481.2	4,648.2	-316.0	966,033.51	582,418.30	33° 39' 19.003 N	104° 3' 44.948 W
6,918.0	88.70	359.80	2,482.7	4,743.2	-316.1	966,128.50	582,418.22	33° 39' 19.943 N	104° 3' 44.946 W
6,952.0	88.50	359.70	2,483.5	4,777.2	-316.2	966,162.49	582,418.07	33° 39' 20.279 N	104° 3' 44.947 W
7,010.0	88.50	359.70	2,485.1	4,835.2	-316.5	966,220.46	582,417.77	33° 39' 20.853 N	104° 3' 44.949 W
PBHL P5 Spitfire 5H									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,010.0	2,485.1	4,835.2	-316.5	7010.0' Projection to bit

Checked By: _____ Approved By: _____ Date: _____