



HOBBS OCD
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CENTENNIAL RESOURCE DEVELOPMENT, LLC

**LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)
SW SE SEC. 13 T22S R34E
AIRSTREAM 24 STATE COM 504H**

JOB # 2019-509-650

Design: SURVEYS

Standard Survey Report

13 September, 2019





Project: LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)
 Site: SW SE SEC. 13 T22S R34E
 Well: AIRSTREAM 24 STATE COM 504H
 Wellbore: JOB # 2019-509-650
 Design: SURVEYS

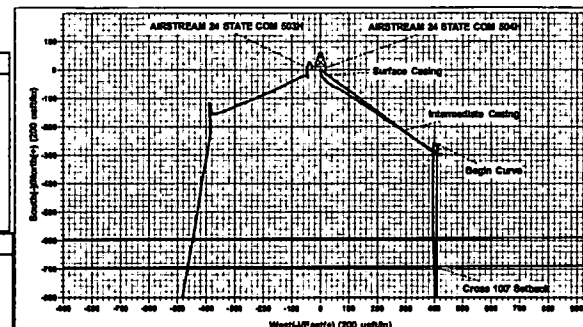


ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	V-Sect	Departure	Annotation
1892.00	1.71	180.78	1891.71	-17.61	1.33	17.64	28.63	Surface Casing
5505.00	7.59	125.35	5485.26	-213.80	287.91	223.62	378.66	Intermediate Casing
9792.00	1.36	317.38	9783.66	-356.16	398.28	269.76	577.00	Begin Curve
10548.94	65.03	178.07	10323.27	-591.44	399.41	704.82	1014.42	Cross 100' Setback
10874.00	64.52	178.12	10394.47	-1006.99	401.53	1019.94	1329.64	HZ LP: 415.11' FNL 2153.29' FEL Sec 24
20912.00	89.05	180.56	10584.97	-11039.34	378.23	11049.72	11384.40	Last Survey
20928.40	89.05	180.56	10588.25	-11032.74	375.04	11062.10	11380.80	Cross 100' Setback
20945.00	89.05	180.56	10583.52	-11072.34	374.85	11076.69	11397.40	PTB TD: 63.30' FSL 2198.48' FEL Sec 25

WELLBORE TARGET DETAILS (LAT/LONG)

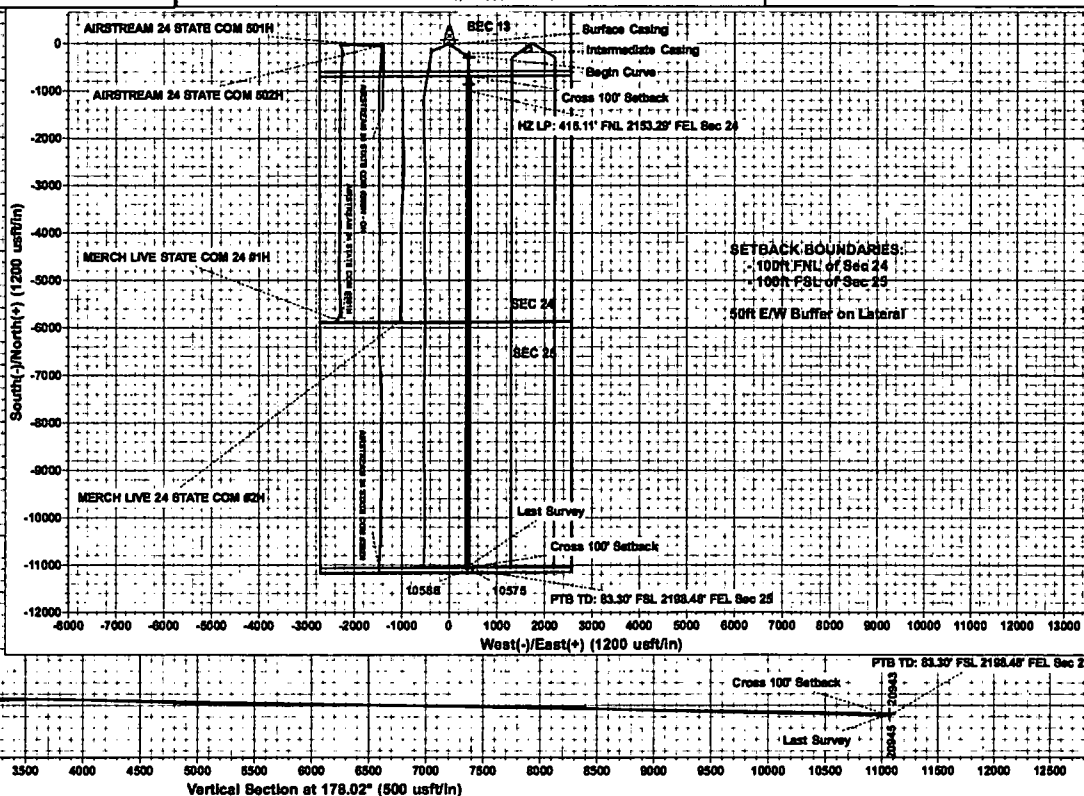
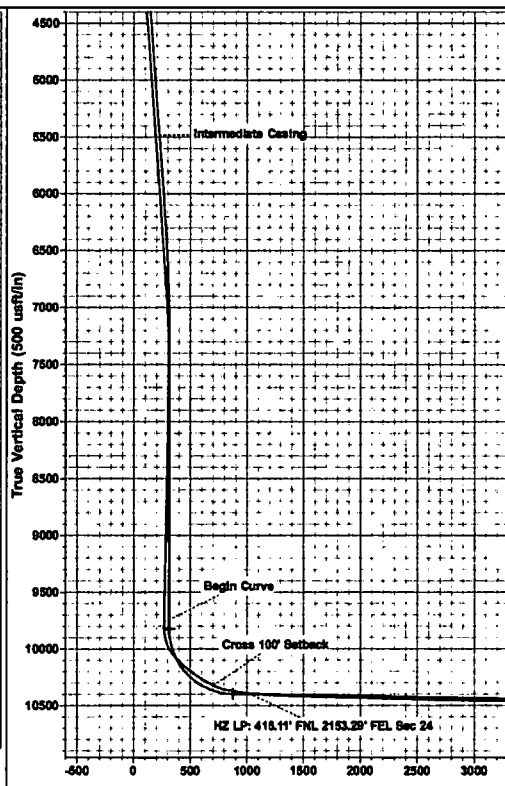
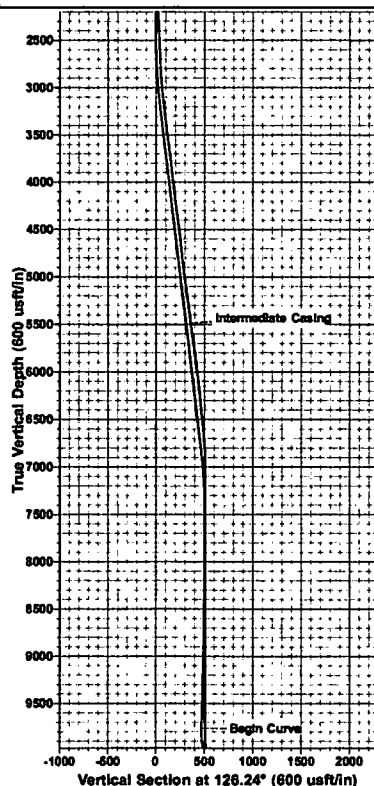
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP - AIRSTREAM 24 STATE COM 504H (P2)	9824.43	-259.37	408.47	11769282.97	2127386.23	32° 23' 6.982776 N	103° 25' 19.320070 W
HZ LP - AIRSTREAM 24 STATE COM 504H (P2)	10397.30	-682.33	407.09	11758720.13	2127383.53	32° 23' 1.415837 N	103° 25' 19.336232 W
LTP/BHL - AIRSTREAM 24 STATE COM 504H (P2)	10575.00	-11061.61	382.44	11748522.80	2127519.53	32° 21' 20.494624 N	103° 25' 19.624196 W



Azimuth to True North
 Magnetic North: 6.67°
 Magnetic Field
 Strength: 47532.1nT
 Dip Angle: 60.21°
 Date: 7/25/2019
 Model: IGR2015

ACTUAL LOCAL COORDINATES

BHL: 899R FSL & 2553R FEL of Sec 13
 HZ LP: 415.11R FNL & 2153.29R FEL of Sec 24
 BML: 63.30R FSL & 2198.48R FEL of Sec 25



SETBACK BOUNDARIES:
 100R FNL of Sec 24
 100R FSL of Sec 25
 50R E/W Buffer on Lateral

Company:	CENTENNIAL RESOURCE DEVELOPMENT, LLC	Local Co-ordinate Reference:	Well AIRSTREAM 24 STATE COM 504H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)	TVD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Site:	SW SE SEC. 13 T22S R34E	MD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Well:	AIRSTREAM 24 STATE COM 504H	North Reference:	True
Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

Project	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		Using geodetic scale factor

Site		SW SE SEC. 13 T22S R34E			
Site Position:		Northing:	11,759,575.83 usft	Latitude:	32° 23' 9.948753 N
From:	Map	Easting:	2,126,944.14 usft	Longitude:	103° 25' 24.433178 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.84 °

Well	AIRSTREAM 24 STATE COM 504H					
Well Position	+N/-S	0.00 usft	Northing:	11,759,576.25 usft	Latitude:	32° 23' 9.948534 N
	+E/-W	0.00 usft	Easting:	2,126,974.13 usft	Longitude:	103° 25' 24.083373 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,510.50 usft

Wellbore	JOB # 2019-509-650				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/25/2019	6.67	60.21	47,832.13854804

Design	SURVEYS				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	178.02	

Survey Program	Date 9/13/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
228.50	20,945.00	SURVEYS (JOB # 2019-509-650)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
228.50	0.80	35.19	228.49	1.30	0.92	-1.27	0.35	0.35	0.00	
268.50	0.60	351.69	268.49	1.74	1.05	-1.70	1.38	-0.50	-108.75	
355.50	0.50	126.19	355.49	1.97	1.29	-1.92	1.17	-0.11	154.60	
441.50	0.50	156.69	441.48	1.40	1.74	-1.34	0.31	0.00	35.47	
515.50	0.20	115.49	515.48	1.05	1.99	-0.98	0.50	-0.41	-55.68	
605.50	0.30	171.39	605.48	0.75	2.16	-0.67	0.28	0.11	62.11	
695.50	0.70	347.39	695.48	1.05	2.08	-0.98	1.11	0.44	195.56	
785.50	0.70	244.99	785.48	1.35	1.46	-1.30	1.21	0.00	-113.78	

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Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
875.50	0.60	292.69	875.47	1.30	0.53	-1.28	0.59	-0.11	53.00
965.50	1.10	219.39	965.46	0.82	-0.46	-0.83	1.21	0.56	-81.44
1,054.50	0.90	152.49	1,054.45	-0.46	-0.68	0.44	1.25	-0.22	-75.17
1,145.50	0.20	236.59	1,145.45	-1.18	-0.48	1.17	0.99	-0.77	92.42
1,234.50	0.40	127.99	1,234.45	-1.46	-0.36	1.45	0.56	0.22	-122.02
1,324.50	1.20	150.79	1,324.44	-2.48	0.35	2.49	0.94	0.89	25.33
1,414.50	1.40	170.09	1,414.42	-4.38	0.99	4.41	0.53	0.22	21.44
1,504.50	2.10	206.69	1,504.38	-6.94	0.44	6.95	1.43	0.78	40.67
1,594.50	1.30	171.09	1,594.34	-9.42	-0.14	9.41	1.43	-0.89	-39.56
1,684.50	1.30	162.09	1,684.32	-11.40	0.33	11.41	0.23	0.00	-10.00
1,774.50	1.90	155.49	1,774.28	-13.73	1.27	13.76	0.70	0.67	-7.33
1,842.50	2.10	190.49	1,842.24	-15.98	1.51	16.02	1.79	0.29	51.47
1,892.00	1.71	180.78	1,891.71	-17.61	1.33	17.64	1.03	-0.80	-19.62
Surface Casing									
1,927.00	1.47	170.97	1,926.70	-18.57	1.39	18.61	1.03	-0.67	-28.03
2,021.00	1.76	146.29	2,020.66	-20.96	2.38	21.03	0.79	0.31	-26.26
2,115.00	2.05	136.03	2,114.61	-23.38	4.35	23.51	0.48	0.31	-10.91
2,209.00	2.18	134.81	2,208.55	-25.85	6.79	26.06	0.15	0.14	-1.30
2,303.00	2.29	137.41	2,302.48	-28.49	9.33	28.79	0.16	0.12	2.77
2,397.00	2.55	139.76	2,396.39	-31.47	11.95	31.86	0.30	0.28	2.50
2,491.00	2.57	133.89	2,490.30	-34.52	14.82	35.02	0.28	0.02	-6.24
2,586.00	2.69	134.49	2,585.20	-37.56	17.94	38.16	0.13	0.13	0.63
2,680.00	2.60	139.29	2,679.10	-40.73	20.91	41.42	0.25	-0.10	5.11
2,755.00	2.19	137.43	2,754.03	-43.07	22.99	43.84	0.56	-0.55	-2.48
2,850.00	2.82	130.49	2,848.94	-45.92	25.99	46.79	0.73	0.66	-7.31
2,944.00	4.63	123.49	2,942.74	-49.52	30.92	50.56	1.98	1.93	-7.45
3,039.00	6.02	119.66	3,037.33	-54.10	38.44	55.40	1.51	1.46	-4.03
3,133.00	6.09	118.84	3,130.80	-58.94	47.09	60.54	0.12	0.07	-0.87
3,228.00	6.33	115.87	3,225.25	-63.66	56.22	65.57	0.42	0.25	-3.13
3,322.00	6.77	113.43	3,318.63	-68.12	65.97	70.36	0.55	0.47	-2.60
3,416.00	7.12	117.65	3,411.94	-73.03	76.21	75.62	0.66	0.37	4.49
3,511.00	7.36	126.68	3,506.19	-79.40	86.31	82.33	1.22	0.25	9.51
3,605.00	7.40	123.57	3,599.41	-86.34	96.18	89.61	0.43	0.04	-3.31
3,699.00	7.30	121.99	3,692.64	-92.85	106.29	96.47	0.24	-0.11	-1.68
3,794.00	6.86	123.38	3,786.91	-99.17	116.14	103.13	0.50	-0.46	1.46
3,888.00	6.32	126.26	3,880.29	-105.32	125.00	109.58	0.67	-0.57	3.06
3,982.00	5.73	125.13	3,973.77	-111.08	133.01	115.61	0.64	-0.63	-1.20
4,077.00	5.81	121.69	4,068.29	-116.34	140.98	121.14	0.37	0.08	-3.62
4,170.00	7.21	120.61	4,160.69	-121.78	150.01	126.89	1.51	1.51	-1.16
4,266.00	8.18	121.64	4,255.82	-128.43	161.01	133.92	1.02	1.01	1.07
4,360.00	7.84	122.74	4,348.91	-135.41	172.10	141.27	0.40	-0.36	1.17
4,454.00	7.25	124.14	4,442.09	-142.20	182.40	148.42	0.66	-0.63	1.49

Total Directional Services
Survey Report



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Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)	
4,548.00	6.58	125.21	4,535.41	-148.64	191.71	155.17	0.73	-0.71	1.14	
4,642.00	6.14	125.01	4,628.83	-154.63	200.23	161.45	0.47	-0.47	-0.21	
4,830.00	5.92	126.80	4,815.79	-166.20	216.23	173.57	0.15	-0.12	0.95	
5,019.00	7.68	122.01	5,003.45	-178.74	234.74	186.74	0.98	0.93	-2.53	
5,114.00	7.61	122.13	5,097.61	-185.45	245.45	193.82	0.08	-0.07	0.13	
5,208.00	7.51	122.24	5,190.79	-192.03	255.92	200.76	0.11	-0.11	0.12	
5,302.00	7.47	123.58	5,283.99	-198.69	266.20	207.77	0.19	-0.04	1.43	
5,396.00	7.51	124.71	5,377.19	-205.57	276.34	214.99	0.16	0.04	1.20	
5,443.00	7.42	125.81	5,423.79	-209.09	281.33	218.69	0.36	-0.19	2.34	
5,505.00	7.59	125.35	5,485.26	-213.80	287.91	223.62	0.28	0.27	-0.74	
Intermediate Casing										
5,559.00	7.73	124.97	5,538.78	-217.95	293.80	227.97	0.28	0.27	-0.71	
5,657.00	7.80	124.90	5,635.88	-225.53	304.65	235.92	0.07	0.07	-0.07	
5,747.00	7.50	126.27	5,725.08	-232.50	314.40	243.22	0.39	-0.33	1.52	
5,841.00	7.48	126.11	5,818.28	-239.73	324.29	250.79	0.03	-0.02	-0.17	
5,936.00	6.62	124.49	5,912.56	-246.48	333.79	257.86	0.93	-0.91	-1.71	
6,030.00	6.50	123.48	6,005.94	-252.48	342.70	264.17	0.18	-0.13	-1.07	
6,124.00	6.12	122.63	6,099.37	-258.12	351.36	270.10	0.42	-0.40	-0.90	
6,218.00	5.67	121.30	6,192.88	-263.23	359.54	275.50	0.50	-0.48	-1.41	
6,312.00	5.90	121.51	6,286.40	-268.17	367.63	280.71	0.25	0.24	0.22	
6,406.00	6.02	121.09	6,379.89	-273.24	375.97	286.07	0.14	0.13	-0.45	
6,500.00	6.16	120.41	6,473.36	-278.34	384.54	291.46	0.17	0.15	-0.72	
6,594.00	5.44	122.29	6,566.88	-283.27	392.66	296.67	0.79	-0.77	2.00	
6,688.00	4.13	122.12	6,660.55	-287.45	399.29	301.08	1.39	-1.39	-0.18	
6,782.00	3.24	133.28	6,754.35	-291.07	404.09	304.86	1.21	-0.95	11.87	
6,876.00	2.34	143.44	6,848.24	-294.44	407.17	308.33	1.09	-0.96	10.81	
6,969.00	1.48	178.14	6,941.19	-297.16	408.34	311.09	1.51	-0.92	37.31	
7,063.00	0.56	226.59	7,035.18	-298.69	408.04	312.61	1.26	-0.98	51.54	
7,158.00	0.26	308.70	7,130.17	-298.87	407.54	312.78	0.61	-0.32	86.43	
7,252.00	0.35	339.21	7,224.17	-298.47	407.27	312.37	0.19	0.10	32.46	
7,346.00	0.42	2.53	7,318.17	-297.86	407.18	311.75	0.18	0.07	24.81	
7,440.00	0.53	12.22	7,412.17	-297.09	407.29	310.99	0.14	0.12	10.31	
7,535.00	0.51	28.53	7,507.16	-296.29	407.59	310.20	0.16	-0.02	17.17	
7,629.00	0.72	41.31	7,601.16	-295.48	408.18	309.41	0.27	0.22	13.60	
7,723.00	0.87	34.78	7,695.15	-294.45	408.97	308.40	0.19	0.16	-6.95	
7,817.00	0.79	24.05	7,789.14	-293.27	409.64	307.25	0.19	-0.09	-11.41	
7,911.00	0.80	17.15	7,883.13	-292.05	410.10	306.05	0.10	0.01	-7.34	
8,005.00	0.82	10.76	7,977.12	-290.76	410.42	304.77	0.10	0.02	-6.80	
8,099.00	0.77	11.07	8,071.11	-289.48	410.67	303.50	0.05	-0.05	0.33	
8,193.00	0.97	13.69	8,165.10	-288.09	410.98	302.12	0.22	0.21	2.79	
8,287.00	1.10	9.09	8,259.09	-286.43	411.31	300.47	0.16	0.14	-4.89	
8,381.00	1.20	6.90	8,353.07	-284.56	411.57	298.61	0.12	0.11	-2.33	
8,475.00	1.19	7.38	8,447.05	-282.61	411.81	296.67	0.02	-0.01	0.51	

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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)	
8,569.00	1.29	7.15	8,541.02	-280.60	412.07	294.67	0.11	0.11	-0.24	
8,663.00	1.40	2.14	8,635.00	-278.40	412.24	292.48	0.17	0.12	-5.33	
8,758.00	1.37	359.27	8,729.97	-276.10	412.27	290.18	0.08	-0.03	-3.02	
8,852.00	0.54	320.32	8,823.96	-274.64	411.98	288.71	1.07	-0.88	-41.44	
8,946.00	1.24	310.33	8,917.95	-273.64	410.92	287.67	0.76	0.74	-10.63	
9,040.00	1.88	321.74	9,011.91	-271.77	409.19	285.75	0.75	0.68	12.14	
9,134.00	1.03	335.36	9,105.88	-269.79	407.88	283.72	0.97	-0.90	14.49	
9,229.00	1.19	334.01	9,200.86	-268.13	407.09	282.04	0.17	0.17	-1.42	
9,322.00	1.52	339.49	9,293.84	-266.11	406.24	279.98	0.38	0.35	5.89	
9,416.00	1.73	325.63	9,387.80	-263.77	405.00	277.60	0.47	0.22	-14.74	
9,510.00	1.65	316.49	9,481.76	-261.61	403.27	275.39	0.30	-0.09	-9.72	
9,604.00	1.51	314.91	9,575.72	-259.76	401.46	273.47	0.16	-0.15	-1.68	
9,698.00	1.50	321.06	9,669.69	-257.93	399.81	271.59	0.17	-0.01	6.54	
9,792.00	1.35	317.38	9,763.66	-256.16	398.28	269.76	0.19	-0.16	-3.91	
Begin Curve										
9,887.00	4.96	186.00	9,858.55	-259.42	397.10	272.98	6.25	3.80	-138.29	
9,981.00	19.65	181.35	9,950.15	-279.37	396.29	292.90	15.65	15.63	-4.95	
10,028.00	27.52	182.62	9,993.19	-298.15	395.61	311.64	16.78	16.74	2.70	
10,075.00	34.24	181.01	10,033.50	-322.24	394.88	335.69	14.40	14.30	-3.43	
10,122.00	39.85	180.00	10,071.00	-350.54	394.65	363.97	12.01	11.94	-2.15	
10,169.00	44.57	180.26	10,105.80	-382.11	394.57	395.52	10.05	10.04	0.55	
10,216.00	48.36	180.30	10,138.17	-416.18	394.41	429.56	8.06	8.06	0.09	
10,263.00	50.46	180.15	10,168.75	-451.87	394.27	465.22	4.47	4.47	-0.32	
10,310.00	52.65	179.69	10,197.97	-488.68	394.32	502.01	4.72	4.66	-0.98	
10,357.00	54.65	179.31	10,225.83	-526.53	394.65	539.85	4.30	4.26	-0.81	
10,404.00	55.63	178.86	10,252.69	-565.09	395.27	578.41	2.23	2.09	-0.96	
10,450.00	59.54	177.83	10,277.34	-603.89	396.40	617.23	8.71	8.50	-2.24	
10,497.00	62.27	178.14	10,300.20	-644.93	397.84	658.30	5.84	5.81	0.66	
10,544.00	64.71	178.01	10,321.17	-686.97	399.25	700.35	5.20	5.19	-0.28	
10,548.94	65.03	178.07	10,323.27	-691.44	399.41	704.82	6.65	6.57	1.13	
Cross 100' Setback										
10,591.00	67.80	178.53	10,340.10	-729.96	400.55	743.37	6.65	6.57	1.10	
10,639.00	73.31	179.76	10,356.07	-775.20	401.22	788.60	11.73	11.48	2.56	
10,686.00	77.72	180.43	10,367.82	-820.70	401.14	834.07	9.48	9.38	1.43	
10,733.00	80.46	180.88	10,376.72	-866.84	400.61	880.16	5.91	5.83	0.96	
10,780.00	81.97	180.11	10,383.90	-913.28	400.21	926.57	3.60	3.21	-1.64	
10,827.00	83.63	179.14	10,389.79	-959.91	400.51	973.18	4.08	3.53	-2.06	
10,874.00	84.92	178.12	10,394.47	-1,006.66	401.63	1,019.94	3.49	2.74	-2.17	
HZ LP: 415.11' FNL 2153.29' FEL Sec 24										
10,921.00	86.51	177.45	10,397.99	-1,053.49	403.45	1,066.80	3.67	3.38	-1.43	
10,974.00	86.10	176.70	10,401.40	-1,106.31	406.14	1,119.69	1.61	-0.77	-1.42	
11,077.00	86.80	177.97	10,407.78	-1,209.00	410.92	1,222.48	1.41	0.68	1.23	

Total Directional Services
Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPMENT, LLC	Local Co-ordinate Reference:	Well AIRSTREAM 24 STATE COM 504H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)	TVD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Site:	SW SE SEC. 13 T22S R34E	MD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Well:	AIRSTREAM 24 STATE COM 504H	North Reference:	True
Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
11,171.00	88.00	176.97	10,412.04	-1,302.81	415.07	1,316.37	1.66	1.28	-1.06
11,261.00	87.96	178.43	10,415.22	-1,392.68	418.68	1,406.31	1.62	-0.04	1.62
11,351.00	88.53	178.30	10,417.97	-1,482.60	421.24	1,496.27	0.65	0.63	-0.14
11,442.00	87.94	180.55	10,420.78	-1,573.55	422.16	1,587.19	2.55	-0.65	2.47
11,534.00	88.51	180.40	10,423.63	-1,665.50	421.40	1,679.06	0.64	0.62	-0.16
11,625.00	88.66	181.11	10,425.87	-1,756.46	420.20	1,769.93	0.80	0.16	0.78
11,717.00	88.26	181.56	10,428.35	-1,848.40	418.05	1,861.74	0.65	-0.43	0.49
11,808.00	88.89	180.43	10,430.61	-1,939.36	416.47	1,952.59	1.42	0.69	-1.24
11,900.00	88.99	180.35	10,432.31	-2,031.34	415.85	2,044.50	0.14	0.11	-0.09
11,992.00	88.43	181.24	10,434.38	-2,123.31	414.57	2,136.36	1.14	-0.61	0.97
12,083.00	88.60	179.85	10,436.74	-2,214.27	413.71	2,227.24	1.54	0.19	-1.53
12,175.00	88.54	181.02	10,439.04	-2,306.24	413.01	2,319.13	1.27	-0.07	1.27
12,267.00	88.08	180.18	10,441.75	-2,398.19	412.05	2,411.00	1.04	-0.50	-0.91
12,358.00	88.96	180.56	10,444.10	-2,489.16	411.46	2,501.89	1.05	0.97	0.42
12,450.00	88.13	179.89	10,446.44	-2,581.13	411.10	2,593.79	1.16	-0.90	-0.73
12,541.00	88.53	181.74	10,449.09	-2,672.08	409.80	2,684.64	2.08	0.44	2.03
12,635.00	88.75	181.61	10,451.32	-2,766.01	407.06	2,778.42	0.27	0.23	-0.14
12,729.00	88.53	181.51	10,453.55	-2,859.95	404.50	2,872.22	0.26	-0.23	-0.11
12,823.00	88.98	181.47	10,455.59	-2,953.89	402.05	2,966.02	0.48	0.48	-0.04
12,917.00	89.97	181.66	10,456.45	-3,047.85	399.49	3,059.84	1.07	1.05	0.20
13,011.00	90.36	181.62	10,456.18	-3,141.81	396.80	3,153.65	0.42	0.41	-0.04
13,105.00	90.84	181.62	10,455.20	-3,235.77	394.14	3,247.46	0.51	0.51	0.00
13,168.00	91.07	181.32	10,454.15	-3,298.74	392.52	3,310.33	0.60	0.37	-0.48
13,199.00	91.26	181.31	10,453.52	-3,329.73	391.81	3,341.28	0.61	0.61	-0.03
13,262.00	91.75	181.25	10,451.86	-3,392.69	390.41	3,404.15	0.78	0.78	-0.10
13,293.00	92.00	181.22	10,450.85	-3,423.66	389.74	3,435.09	0.81	0.81	-0.10
13,387.00	92.68	180.89	10,447.01	-3,517.57	388.01	3,528.88	0.80	0.72	-0.35
13,418.00	92.47	180.88	10,445.62	-3,548.53	387.53	3,559.81	0.68	-0.68	-0.03
13,450.00	90.83	180.67	10,444.70	-3,580.52	387.10	3,591.75	5.17	-5.13	-0.66
13,481.00	90.18	180.69	10,444.42	-3,611.51	386.73	3,622.72	2.10	-2.10	0.06
13,575.00	89.40	180.90	10,444.77	-3,705.50	385.43	3,716.61	0.86	-0.83	0.22
13,669.00	88.85	180.82	10,446.20	-3,799.48	384.01	3,810.48	0.59	-0.59	-0.09
13,763.00	88.47	181.26	10,448.40	-3,893.44	382.31	3,904.33	0.62	-0.40	0.47
13,858.00	88.31	180.16	10,451.07	-3,988.39	381.13	3,999.18	1.17	-0.17	-1.16
13,955.00	88.01	179.17	10,454.19	-4,085.34	381.70	4,096.09	1.07	-0.31	-1.02
14,046.00	88.22	178.56	10,457.18	-4,176.27	383.50	4,187.03	0.71	0.23	-0.67
14,144.00	88.07	179.09	10,460.35	-4,274.20	385.51	4,284.97	0.56	-0.15	0.54
14,234.00	88.11	179.08	10,463.35	-4,364.14	386.95	4,374.90	0.05	0.04	-0.01
14,328.00	88.09	179.69	10,466.47	-4,458.08	387.95	4,468.82	0.65	-0.02	0.65
14,422.00	88.09	178.81	10,469.60	-4,552.02	389.18	4,562.75	0.94	0.00	-0.94
14,516.00	87.96	179.46	10,472.84	-4,645.95	390.60	4,656.68	0.70	-0.14	0.69
14,610.00	88.04	178.78	10,476.12	-4,739.88	392.05	4,750.60	0.73	0.09	-0.72
14,704.00	88.04	179.73	10,479.34	-4,833.82	393.27	4,844.52	1.01	0.00	1.01

Total Directional Services Survey Report

Company:	CENTENNIAL RESOURCE DEVELOPMENT, LLC	Local Co-ordinate Reference:	Well AIRSTREAM 24 STATE COM 504H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)	TVD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Site:	SW SE SEC. 13 T22S R34E	MD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Well:	AIRSTREAM 24 STATE COM 504H	North Reference:	True
Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
14,798.00	87.96	179.14	10,482.62	-4,927.76	394.19	4,938.44	0.63	-0.09	-0.63
14,892.00	88.32	179.51	10,485.67	-5,021.70	395.30	5,032.36	0.55	0.38	0.39
14,986.00	88.57	179.83	10,488.22	-5,115.67	395.84	5,126.29	0.43	0.27	0.34
15,080.00	88.77	179.23	10,490.40	-5,209.64	396.61	5,220.23	0.67	0.21	-0.64
15,174.00	88.21	178.05	10,492.88	-5,303.58	398.84	5,314.19	1.39	-0.60	-1.26
15,268.00	88.86	178.95	10,495.28	-5,397.51	401.30	5,408.15	1.18	0.69	0.96
15,362.00	89.44	179.42	10,496.68	-5,491.49	402.64	5,502.12	0.79	0.62	0.50
15,456.00	89.39	179.13	10,497.64	-5,585.48	403.83	5,596.10	0.31	-0.05	-0.31
15,550.00	89.33	178.00	10,498.69	-5,679.44	406.18	5,690.08	1.20	-0.06	-1.20
15,645.00	90.53	179.24	10,498.80	-5,774.41	408.47	5,785.08	1.82	1.26	1.31
15,739.00	90.39	180.02	10,498.05	-5,868.40	409.08	5,879.04	0.84	-0.15	0.83
15,832.00	89.50	181.73	10,498.14	-5,961.39	407.66	5,971.92	2.07	-0.96	1.84
15,927.00	89.97	181.03	10,498.58	-6,056.36	405.37	6,066.75	0.89	0.49	-0.74
16,021.00	89.93	181.44	10,498.66	-6,150.34	403.34	6,160.60	0.44	-0.04	0.44
16,115.00	89.89	181.26	10,498.80	-6,244.31	401.13	6,254.44	0.20	-0.04	-0.19
16,209.00	90.03	180.79	10,498.87	-6,338.30	399.45	6,348.31	0.52	0.15	-0.50
16,304.00	90.04	180.91	10,498.81	-6,433.29	398.04	6,443.20	0.13	0.01	0.13
16,398.00	89.58	180.62	10,499.12	-6,527.28	396.78	6,537.09	0.58	-0.49	-0.31
16,492.00	89.61	181.21	10,499.79	-6,621.26	395.28	6,630.97	0.63	0.03	0.63
16,586.00	89.56	181.05	10,500.47	-6,715.24	393.43	6,724.82	0.18	-0.05	-0.17
16,680.00	89.44	181.13	10,501.29	-6,809.22	391.64	6,818.69	0.15	-0.13	0.09
16,774.00	89.54	180.85	10,502.13	-6,903.20	390.01	6,912.56	0.32	0.11	-0.30
16,868.00	89.33	181.73	10,503.05	-6,997.17	387.90	7,006.40	0.96	-0.22	0.94
16,962.00	89.62	181.14	10,503.91	-7,091.14	385.54	7,100.23	0.70	0.31	-0.63
17,056.00	89.52	180.03	10,504.62	-7,185.13	384.59	7,194.13	1.19	-0.11	-1.18
17,153.00	89.58	180.72	10,505.38	-7,282.12	383.95	7,291.04	0.71	0.06	0.71
17,244.00	89.09	180.64	10,506.44	-7,373.11	382.87	7,381.94	0.55	-0.54	-0.09
17,338.00	89.36	180.88	10,507.71	-7,467.09	381.62	7,475.82	0.38	0.29	0.26
17,432.00	89.31	180.58	10,508.80	-7,561.08	380.43	7,569.71	0.32	-0.05	-0.32
17,526.00	90.48	181.56	10,508.97	-7,655.06	378.67	7,663.57	1.62	1.24	1.04
17,620.00	88.86	181.08	10,509.51	-7,749.03	376.51	7,757.41	1.80	-1.72	-0.51
17,714.00	90.57	182.15	10,509.98	-7,842.99	373.86	7,851.22	2.15	1.82	1.14
17,808.00	89.37	179.92	10,510.03	-7,936.96	372.16	7,945.08	2.69	-1.28	-2.37
17,902.00	89.50	179.26	10,510.96	-8,030.96	372.83	8,039.04	0.72	0.14	-0.70
17,996.00	88.33	178.41	10,512.74	-8,124.92	374.74	8,133.02	1.54	-1.24	-0.90
18,090.00	87.49	179.07	10,516.17	-8,218.83	376.81	8,226.94	1.14	-0.89	0.70
18,184.00	87.72	179.89	10,520.09	-8,312.75	377.66	8,320.83	0.91	0.24	0.87
18,278.00	87.59	178.48	10,523.94	-8,406.65	379.00	8,414.73	1.51	-0.14	-1.50
18,372.00	87.55	178.27	10,527.93	-8,500.53	381.66	8,508.64	0.23	-0.04	-0.22
18,466.00	87.72	177.95	10,531.81	-8,594.40	384.76	8,602.56	0.39	0.18	-0.34
18,560.00	87.88	178.87	10,535.41	-8,688.29	387.36	8,696.49	0.99	0.17	0.98
18,654.00	88.01	178.92	10,538.78	-8,782.22	389.17	8,790.42	0.15	0.14	0.05

Company:	CENTENNIAL RESOURCE DEVELOPMENT, LLC	Local Co-ordinate Reference:	Well AIRSTREAM 24 STATE COM 504H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)	TVD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Site:	SW SE SEC. 13 T22S R34E	MD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Well:	AIRSTREAM 24 STATE COM 504H	North Reference:	True
Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
18,749.00	88.26	178.48	10,541.88	-8,877.14	391.33	8,885.36	0.53	0.26	-0.46
18,843.00	88.69	178.51	10,544.38	-8,971.08	393.80	8,979.33	0.46	0.46	0.03
18,937.00	88.60	178.51	10,546.60	-9,065.02	396.24	9,073.30	0.10	-0.10	0.00
19,031.00	88.63	178.79	10,548.87	-9,158.96	398.45	9,167.26	0.30	0.03	0.30
19,125.00	88.63	179.04	10,551.12	-9,252.92	400.23	9,261.22	0.27	0.00	0.27
19,219.00	88.60	179.67	10,553.39	-9,346.89	401.29	9,355.17	0.67	-0.03	0.67
19,313.00	88.69	180.60	10,555.61	-9,440.86	401.07	9,449.08	0.99	0.10	0.99
19,407.00	88.95	180.90	10,557.55	-9,534.83	399.84	9,542.95	0.42	0.28	0.32
19,501.00	88.63	180.76	10,559.54	-9,628.80	398.48	9,636.82	0.37	-0.34	-0.15
19,596.00	88.23	180.83	10,562.14	-9,723.75	397.16	9,731.67	0.43	-0.42	0.07
19,690.00	88.61	180.83	10,564.73	-9,817.71	395.80	9,825.52	0.40	0.40	0.00
19,784.00	88.51	180.97	10,567.09	-9,911.67	394.32	9,919.37	0.18	-0.11	0.15
19,878.00	88.77	181.59	10,569.32	-10,005.62	392.22	10,013.19	0.72	0.28	0.66
19,972.00	88.93	181.02	10,571.21	-10,099.57	390.08	10,107.02	0.63	0.17	-0.61
20,066.00	89.14	180.64	10,572.79	-10,193.55	388.72	10,200.89	0.46	0.22	-0.40
20,160.00	89.21	181.09	10,574.15	-10,287.53	387.30	10,294.77	0.48	0.07	0.48
20,254.00	89.24	181.65	10,575.42	-10,381.49	385.06	10,388.60	0.60	0.03	0.60
20,348.00	89.06	181.15	10,576.81	-10,475.45	382.76	10,482.42	0.57	-0.19	-0.53
20,442.00	89.20	180.60	10,578.24	-10,569.43	381.32	10,576.30	0.60	0.15	-0.59
20,537.00	89.15	180.60	10,579.61	-10,664.42	380.33	10,671.19	0.05	-0.05	0.00
20,631.00	89.19	180.81	10,580.97	-10,758.40	379.17	10,765.08	0.23	0.04	0.22
20,724.00	89.24	180.75	10,582.24	-10,851.38	377.91	10,857.96	0.08	0.05	-0.06
20,818.00	89.19	180.93	10,583.53	-10,945.36	376.53	10,951.84	0.20	-0.05	0.19
20,912.00	89.05	180.66	10,584.98	-11,039.34	375.23	11,045.72	0.32	-0.15	-0.29
Last Survey									
20,928.40	89.05	180.66	10,585.25	-11,055.74	375.04	11,062.10	0.00	0.00	0.00
Cross 100' Setback									
20,945.00	89.05	180.66	10,585.52	-11,072.34	374.85	11,078.68	0.00	0.00	0.00
PTB TD: 83.30° FSL 2198.48° FEL Sec 25									

Company:	CENTENNIAL RESOURCE DEVELOPMENT, LLC	Local Co-ordinate Reference:	Well AIRSTREAM 24 STATE COM 504H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)	TVD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Site:	SW SE SEC. 13 T22S R34E	MD Reference:	KB 26.5' @ 3537.00usft (Original Well Elev)
Well:	AIRSTREAM 24 STATE COM 504H	North Reference:	True
Wellbore:	JOB # 2019-509-650	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
KOP - AIRSTREAM 24	0.00	0.00	9,824.43	-299.37	408.47	11,759,282.97	2,127,386.91	32° 23' 6.986275 N	103° 25' 19.320070 W
- actual wellpath misses target center by 43.63usft at 9854.11usft MD (9825.75 TVD, -257.18 N, 397.43 E)									
- Point									
HZ LP - AIRSTREAM 24	0.00	0.00	10,397.30	-862.33	407.09	11,758,720.13	2,127,393.83	32° 23' 1.415837 N	103° 25' 19.336232 W
- actual wellpath misses target center by 22.02usft at 10732.40usft MD (10376.62 TVD, -866.24 N, 400.62 E)									
- Point									
LTP/BHL - AIRSTREAM	0.00	0.00	10,575.00	-11,061.61	382.44	11,748,522.90	2,127,519.53	32° 21' 20.494624 N	103° 25' 19.624156 W
- actual wellpath misses target center by 13.94usft at 20928.40usft MD (10585.25 TVD, -11055.74 N, 375.04 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
1,892.00	1,891.71	-17.61	1.33	Surface Casing
5,505.00	5,485.26	-213.80	287.91	Intermediate Casing
9,792.00	9,763.66	-256.16	398.28	Begin Curve
10,548.94	10,323.27	-691.44	399.41	Cross 100' Setback
10,874.00	10,394.47	-1,006.66	401.63	HZ LP: 415.11' FNL 2153.29' FEL Sec 24
20,912.00	10,584.98	-11,039.34	375.23	Last Survey
20,928.40	10,585.25	-11,055.74	375.04	Cross 100' Setback
20,945.00	10,585.52	-11,072.34	374.85	PTB TD: 83.30' FSL 2198.48' FEL Sec 25

Checked By: _____ Approved By: _____ Date: _____



Total Directional
Services, LLC

USA Operations

Final MWD Survey Certification

Lea County, New Mexico

Client: Centennial Resource Development

Well Name: Airstream 24 State Com 504H

Total Job No: 2019-509-650

API No: 30-025-45780

Start Date: 08/25/2019

End Date: 09/07/2019

Measured Start Depth: 1892 feet

Measured End Depth: 20,945 feet

Vertical Section from well center at TD: 11,078.68 feet

I, Cayden Ferguson certify that; I am employed by Total Directional Services, LLC and we conducted or supervised the taking of these open hole MWD surveys at the request of this client. This data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report and have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Date: 09/07/2019

Signed: *Cayden Ferguson*