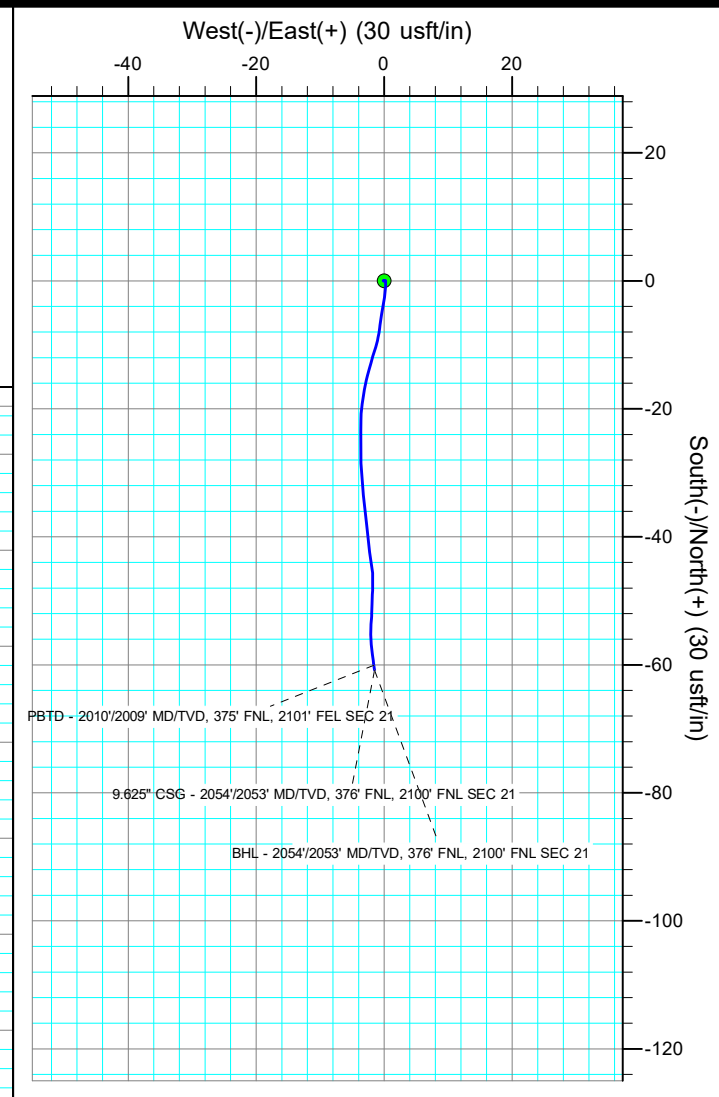


Project: ADAMS COUNTY
Site: SEC 21-T1S-R67W
Well: KORTUM LD 09-379HN
Wellbore: OWB
Design: SURFACE SURVEY

PROJECT DETAILS: ADAMS COUNTY
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.86°
Magnetic Field
Strength: 51686.8nT
Dip Angle: 66.27°
Date: 8/17/2021
Model: IGRF2020



Actual Wellpath - KORTUM LD 09-379HN/OWB/SURFACE SURVEY

	MD (usft)	Inc (°)	Azi (°)	TVD (usft)	N/S (usft)	E/W (usft)	V.Sec. (usft)	Dogleg (°/100ft)	T.Face (°)	Tool
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	UNDEFINED
2	83.00	0.18	253.62	83.00	-0.04	-0.13	0.04	0.22	253.62	MWD (1)
3	170.00	0.18	45.50	170.00	0.02	-0.16	-0.02	0.40	165.94	MWD (1)
4	259.00	0.26	104.03	259.00	0.07	0.14	-0.07	0.25	101.29	MWD (1)
5	350.00	1.01	186.83	349.99	-0.78	0.24	0.77	1.11	97.58	MWD (1)
6	440.00	0.97	185.59	439.98	-2.32	0.07	2.32	0.05	-152.44	MWD (1)
7	530.00	1.58	190.69	529.96	-4.30	-0.23	4.30	0.69	13.09	MWD (1)
8	620.00	2.37	187.44	619.90	-7.36	-0.70	7.38	0.89	-9.70	MWD (1)
9	710.00	2.37	197.90	709.83	-10.98	-1.52	11.01	0.48	95.23	MWD (1)
10	800.00	2.64	194.38	799.74	-14.76	-2.60	14.82	0.35	-31.44	MWD (1)
11	889.00	2.86	187.53	888.64	-18.95	-3.40	19.02	0.44	-59.65	MWD (1)
12	979.00	2.99	178.65	978.52	-23.52	-3.64	23.60	0.52	-78.46	MWD (1)
13	1069.00	3.38	180.85	1068.38	-28.52	-3.62	28.60	0.45	18.50	MWD (1)
14	1159.00	2.99	170.04	1158.24	-33.48	-3.26	33.55	0.79	-128.32	MWD (1)
15	1249.00	3.08	177.07	1248.12	-38.21	-2.73	38.26	0.43	79.93	MWD (1)
16	1339.00	2.29	169.07	1338.02	-42.39	-2.26	42.43	0.97	-158.58	MWD (1)
17	1429.00	1.89	175.05	1427.96	-45.63	-1.80	45.66	0.51	154.37	MWD (1)
18	1519.00	1.63	185.68	1517.92	-48.39	-1.79	48.42	0.46	133.77	MWD (1)
19	1609.00	1.93	180.32	1607.87	-51.18	-1.93	51.21	0.38	-31.73	MWD (1)
20	1699.00	1.32	186.83	1697.84	-53.72	-2.06	53.75	0.71	166.40	MWD (1)
21	1789.00	1.32	174.43	1787.81	-55.78	-2.08	55.82	0.32	-96.20	MWD (1)
22	1879.00	1.19	175.31	1877.79	-57.74	-1.91	57.77	0.15	172.01	MWD (1)
23	1969.00	0.88	170.30	1967.78	-59.36	-1.71	59.38	0.36	-166.22	MWD (1)
24	1999.00	1.05	171.53	1997.77	-59.86	-1.63	59.88	0.57	7.56	MWD (1)
25	2054.00	1.05	171.53	2052.76	-60.85	-1.49	60.87	0.00	0.00	MWD (1)