

NOBLE ENERGY, INC



Location: COLORADO Slot: SLOT#10 Scarecrow Federal LG04-755 (436FNL & 1837FWL,SEC.09)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: Scarecrow Federal LG04-755
 Facility: SEC.09-T08N-R59W Wellbore: Scarecrow Federal LG04-755 PWB

Plot reference wellpath is Scarecrow Federal LG04-755 (REV-C.0) PWP
 True vertical depths are referenced to 4880'GL+30KB @ 4890'RKB (RKB)
 Reference wellpath measured depths are referenced to 4880'GL+30KB @ 4890'RKB (RKB)
 (4880'GL+30KB @ 4890'RKB) (RKB) to Mean Sea Level: 4890 feet
 Mean Sea Level to Ground level (At Slot: SLOT#10 Scarecrow Federal LG04-755 (436FNL & 1837FWL,SEC.09)): 0 feet
 Other wellpath MDs are referenced to each path's default MD datum
 Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
 North Reference: Grid north
 Scale: True distance
 Coordinates are in feet referenced to Slot
 Depths are in feet
 Created by: marisam01 on 2024-03-02; Database: WA_Denver

Location Information

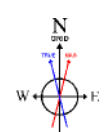
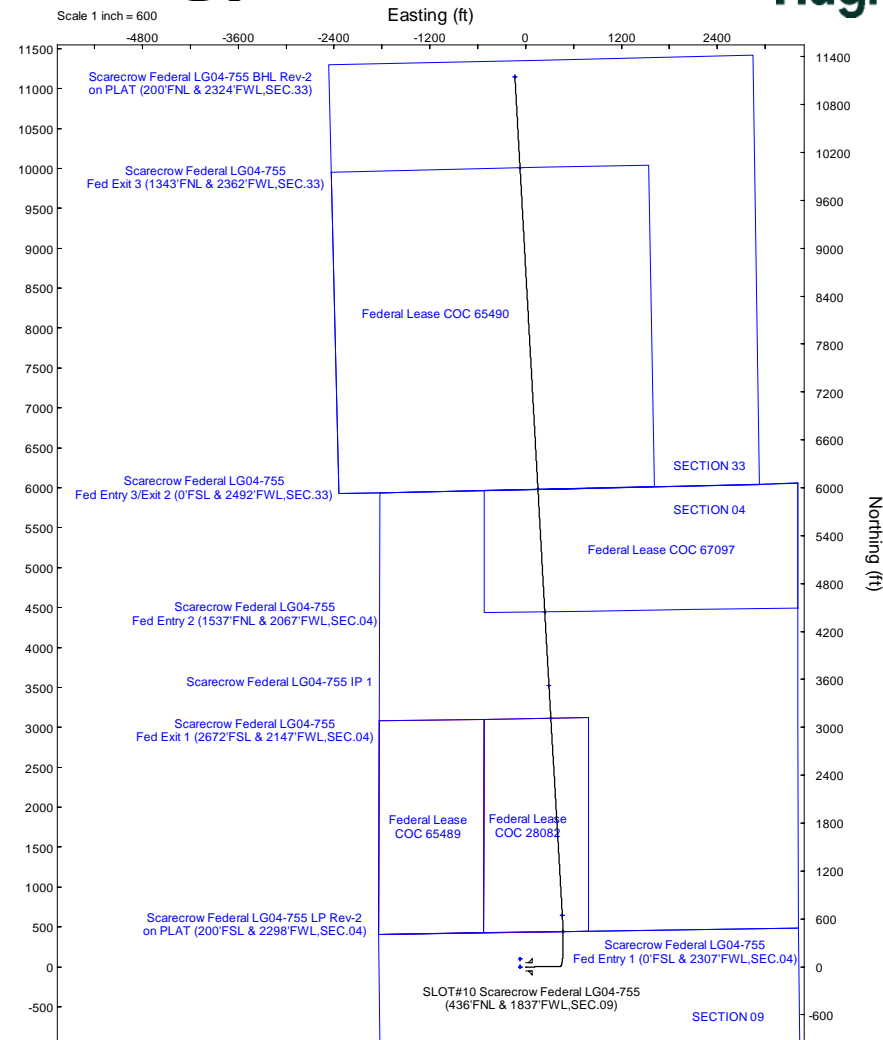
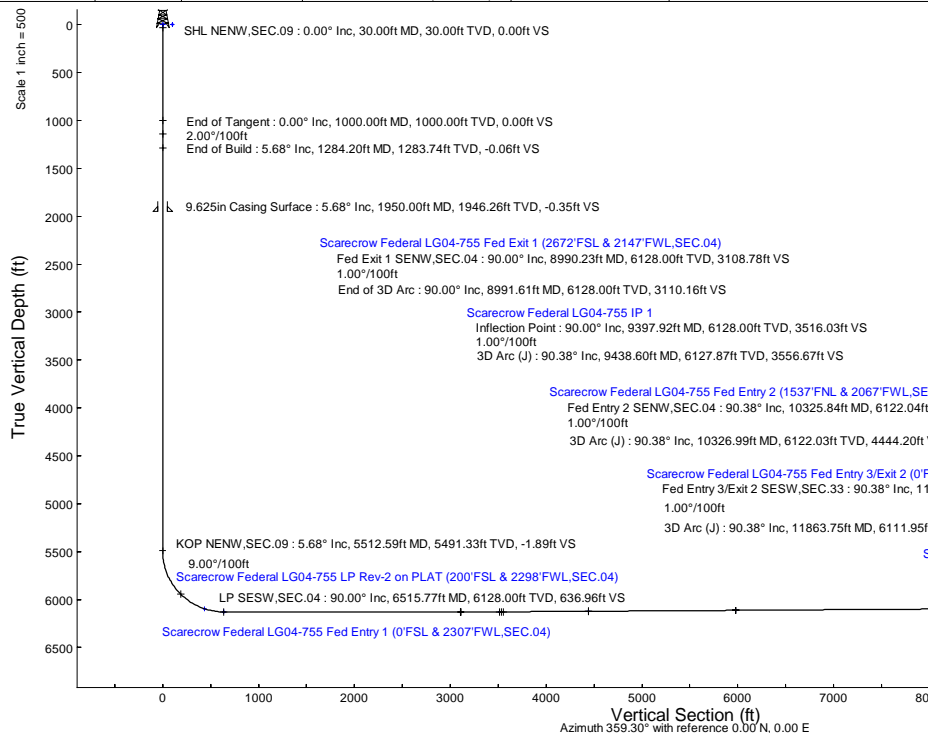
Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude		
SEC.09-T08N-R59W	3419979.828	1495319.089	40°42'59.5200"N	103°59'3.3400"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SLOT#10 Scarecrow Federal LG04-755 (436FNL & 1837FWL,SEC.09)	-94.75	404.39	3420384.194	1495224.338	40°42'58.5156"N	103°59'3.1128"W
(4880'GL+30KB @ 4890'RKB) (RKB) to Ground level (At Slot: SLOT#10 Scarecrow Federal LG04-755 (436FNL & 1837FWL,SEC.09))						4890ft
Mean Sea Level to Ground level (At Slot: SLOT#10 Scarecrow Federal LG04-755 (436FNL & 1837FWL,SEC.09))						0ft
(4880'GL+30KB @ 4890'RKB) (RKB) to Mean Sea Level						4890ft

Well Profile Data

Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
SHL NENW,SEC.09	30.00	0.000	89.552	30.00	0.00	0.00	0.00	0.00
End of Tangent	1000.00	0.000	89.552	1000.00	0.00	0.00	0.00	0.00
End of Build	1284.20	5.684	89.552	1283.74	0.11	14.09	2.00	-0.06
KOP NENW,SEC.09	5512.59	5.684	89.552	5491.33	3.39	432.86	0.00	-1.89
LP SESW,SEC.04	6515.77	90.000	356.656	6128.00	642.61	458.91	9.00	636.96
Fed Exit 1 SENW,SEC.04	8990.23	90.000	356.656	6128.00	3112.84	314.56	0.00	3108.78
End of 3D Arc	8991.61	90.000	356.642	6128.00	3114.23	314.48	1.00	3110.16
Inflection Point	9397.92	90.000	356.642	6128.00	3519.84	290.68	0.00	3516.03
3D Arc (J)	9438.60	90.376	356.797	6127.87	3560.45	288.35	1.00	3556.67
Fed Entry 2 SENW,SEC.04	10325.84	90.376	356.797	6122.04	4446.29	238.77	0.00	4443.05
3D Arc (J)	10326.99	90.376	356.808	6122.03	4447.44	238.71	1.00	4444.20
Fed Entry 3/Exit 2 SESW,SEC.33	11863.41	90.376	356.808	6111.95	5981.43	153.16	0.00	5979.12
3D Arc (J)	11863.75	90.376	356.805	6111.95	5981.77	153.14	1.00	5979.46
Fed Exit 3 NENW,SEC.33	15894.20	90.376	356.805	6085.50	10005.88	-71.51	0.00	10006.00
3D Arc (J)	15897.74	90.376	356.769	6085.48	10009.41	-71.71	1.00	10009.54
BHL NENW,SEC.33	17037.66	90.376	356.769	6078.00	11147.49	-135.95	0.00	11148.32

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	1950.00	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB
1950.00	17101.24	OWSG MWD rev2	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB



BGM (1900.0 to 2024.0) Dip: 66.80° Field: 51940.1 nT
 Magnetic North is 7.42 degrees East of True North (at 4/20/2023)
 Grid North is 0.98 degrees East of True North
 To correct azimuth from True to Grid subtract 0.98 degrees
 To correct azimuth from Magnetic to Grid add 6.44 degrees

Scale 1 inch = 600

Vertical Section (ft)
 Azimuth 359.30° with reference 0.00° N, 0.00° E

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Martsam01
Scale	0.999985	Report Generated	3/1/2024 at 1:08:37 PM
Convergence at slot	0.98° East	Database	WA_Denver

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-94.75	404.39	3420384.19	1495224.34	40°40'58.5156"N	103°59'3.1128"W
Facility Reference Pt			3419979.81	1495319.09	40°40'59.5200"N	103°59'8.3400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM

Calculation method	Minimum curvature	(4860'GL+30'KB@4890'RKB) (RKB) to Facility Vertical Datum	4890.00ft
Horizontal Reference Pt	Slot	(4860'GL+30'KB@4890'RKB) (RKB) to Mean Sea Level	4890.00ft
Vertical Reference Pt	(4860'GL+30'KB@4890'RKB) (RKB)	(4860'GL+30'KB@4890'RKB) (RKB) to Ground Level at Slot (SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09))	4890.00ft
MD Reference Pt	(4860'GL+30'KB@4890'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.30°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	89.552	0.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
30.00	0.000	89.552	30.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	SHL NENW,SEC.09
130.00†	0.000	89.552	130.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
230.00†	0.000	89.552	230.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
330.00†	0.000	89.552	330.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
427.00†	0.000	89.552	427.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	FOXHILLS-BASE PROD
430.00†	0.000	89.552	430.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
530.00†	0.000	89.552	530.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
630.00†	0.000	89.552	630.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
730.00†	0.000	89.552	730.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
830.00†	0.000	89.552	830.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
862.00†	0.000	89.552	862.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	PIERRE (UPPER)AQUIFER TOP
930.00†	0.000	89.552	930.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	
1000.00	0.000	89.552	1000.00	0.00	0.00	0.00	40°40'58.5156"N	103°59'3.1128"W	0.00	End of Tangent
1030.00†	0.600	89.552	1030.00	0.00	0.00	0.16	40°40'58.5156"N	103°59'3.1108"W	2.00	
1130.00†	2.600	89.552	1129.96	-0.01	0.02	2.95	40°40'58.5153"N	103°59'3.0745"W	2.00	
1230.00†	4.600	89.552	1229.75	-0.04	0.07	9.23	40°40'58.5148"N	103°59'2.9930"W	2.00	
1284.20	5.684	89.552	1283.74	-0.06	0.11	14.09	40°40'58.5143"N	103°59'2.9300"W	2.00	End of Build
1330.00†	5.684	89.552	1329.31	-0.08	0.15	18.62	40°40'58.5139"N	103°59'2.8711"W	0.00	
1430.00†	5.684	89.552	1428.82	-0.12	0.22	28.52	40°40'58.5130"N	103°59'2.7426"W	0.00	
1455.31†	5.684	89.552	1454.00	-0.14	0.24	31.03	40°40'58.5128"N	103°59'2.7100"W	0.00	PIERRE (UPPER) AQUIFER BASE
1530.00†	5.684	89.552	1528.33	-0.17	0.30	38.43	40°40'58.5121"N	103°59'2.6140"W	0.00	
1630.00†	5.684	89.552	1627.83	-0.21	0.38	48.33	40°40'58.5112"N	103°59'2.4855"W	0.00	
1730.00†	5.684	89.552	1727.34	-0.25	0.46	58.24	40°40'58.5103"N	103°59'2.3569"W	0.00	
1830.00†	5.684	89.552	1826.85	-0.30	0.53	68.14	40°40'58.5094"N	103°59'2.2284"W	0.00	
1930.00†	5.684	89.552	1926.36	-0.34	0.61	78.04	40°40'58.5084"N	103°59'2.0998"W	0.00	
2030.00†	5.684	89.552	2025.87	-0.38	0.69	87.95	40°40'58.5075"N	103°59'1.9713"W	0.00	
2130.00†	5.684	89.552	2125.38	-0.43	0.77	97.85	40°40'58.5066"N	103°59'1.8427"W	0.00	
2230.00†	5.684	89.552	2224.88	-0.47	0.84	107.76	40°40'58.5057"N	103°59'1.7142"W	0.00	
2330.00†	5.684	89.552	2324.39	-0.51	0.92	117.66	40°40'58.5048"N	103°59'1.5856"W	0.00	
2430.00†	5.684	89.552	2423.90	-0.56	1.00	127.56	40°40'58.5039"N	103°59'1.4571"W	0.00	
2446.18†	5.684	89.552	2440.00	-0.56	1.01	129.17	40°40'58.5038"N	103°59'1.4363"W	0.00	PIERRE_MBR_A_SD_TOP
2530.00†	5.684	89.552	2523.41	-0.60	1.08	137.47	40°40'58.5030"N	103°59'1.3285"W	0.00	
2630.00†	5.684	89.552	2622.92	-0.64	1.15	147.37	40°40'58.5021"N	103°59'1.2000"W	0.00	
2730.00†	5.684	89.552	2722.43	-0.69	1.23	157.28	40°40'58.5012"N	103°59'1.0714"W	0.00	
2830.00†	5.684	89.552	2821.93	-0.73	1.31	167.18	40°40'58.5003"N	103°59'0.9429"W	0.00	
2930.00†	5.684	89.552	2921.44	-0.77	1.39	177.08	40°40'58.4994"N	103°59'0.8143"W	0.00	
2988.85†	5.684	89.552	2980.00	-0.80	1.43	182.91	40°40'58.4988"N	103°59'0.7387"W	0.00	PIERRE_MBR_A_SD_BASE
3030.00†	5.684	89.552	3020.95	-0.82	1.46	186.99	40°40'58.4985"N	103°59'0.6857"W	0.00	
3130.00†	5.684	89.552	3120.46	-0.86	1.54	196.89	40°40'58.4976"N	103°59'0.5572"W	0.00	
3230.00†	5.684	89.552	3219.97	-0.90	1.62	206.80	40°40'58.4966"N	103°59'0.4286"W	0.00	
3330.00†	5.684	89.552	3319.48	-0.95	1.70	216.70	40°40'58.4957"N	103°59'0.3001"W	0.00	
3334.55†	5.684	89.552	3324.00	-0.95	1.70	217.15	40°40'58.4957"N	103°59'0.2943"W	0.00	PARKMAN
3430.00†	5.684	89.552	3418.98	-0.99	1.77	226.60	40°40'58.4948"N	103°59'0.1715"W	0.00	
3530.00†	5.684	89.552	3518.49	-1.03	1.85	236.51	40°40'58.4939"N	103°59'0.0430"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
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Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS ["/100ft]	Comments
3630.00†	5.684	89.552	3618.00	-1.08	1.93	246.41	40°40'58.4930"N	103°58'59.9144"W	0.00	
3730.00†	5.684	89.552	3717.51	-1.12	2.00	256.32	40°40'58.4921"N	103°58'59.7859"W	0.00	
3830.00†	5.684	89.552	3817.02	-1.16	2.08	266.22	40°40'58.4912"N	103°58'59.6573"W	0.00	
3930.00†	5.684	89.552	3916.53	-1.21	2.16	276.12	40°40'58.4903"N	103°58'59.5288"W	0.00	
4024.94†	5.684	89.552	4011.00	-1.25	2.23	285.53	40°40'58.4894"N	103°58'59.4067"W	0.00	SUSSEX
4030.00†	5.684	89.552	4016.03	-1.25	2.24	286.03	40°40'58.4894"N	103°58'59.4002"W	0.00	
4130.00†	5.684	89.552	4115.54	-1.29	2.31	295.93	40°40'58.4885"N	103°58'59.2717"W	0.00	
4230.00†	5.684	89.552	4215.05	-1.34	2.39	305.84	40°40'58.4876"N	103°58'59.1431"W	0.00	
4330.00†	5.684	89.552	4314.56	-1.38	2.47	315.74	40°40'58.4867"N	103°58'59.0146"W	0.00	
4430.00†	5.684	89.552	4414.07	-1.42	2.55	325.64	40°40'58.4857"N	103°58'58.8860"W	0.00	
4530.00†	5.684	89.552	4513.58	-1.47	2.62	335.55	40°40'58.4848"N	103°58'58.7575"W	0.00	
4553.54†	5.684	89.552	4537.00	-1.48	2.64	337.88	40°40'58.4846"N	103°58'58.7272"W	0.00	SHANNON
4630.00†	5.684	89.552	4613.08	-1.51	2.70	345.45	40°40'58.4839"N	103°58'58.6289"W	0.00	
4730.00†	5.684	89.552	4712.59	-1.55	2.78	355.36	40°40'58.4830"N	103°58'58.5004"W	0.00	
4830.00†	5.684	89.552	4812.10	-1.60	2.86	365.26	40°40'58.4821"N	103°58'58.3718"W	0.00	
4930.00†	5.684	89.552	4911.61	-1.64	2.93	375.16	40°40'58.4812"N	103°58'58.2433"W	0.00	
5030.00†	5.684	89.552	5011.12	-1.68	3.01	385.07	40°40'58.4803"N	103°58'58.1147"W	0.00	
5130.00†	5.684	89.552	5110.63	-1.73	3.09	394.97	40°40'58.4794"N	103°58'57.9862"W	0.00	
5230.00†	5.684	89.552	5210.13	-1.77	3.17	404.87	40°40'58.4785"N	103°58'57.8576"W	0.00	
5330.00†	5.684	89.552	5309.64	-1.81	3.24	414.78	40°40'58.4776"N	103°58'57.7291"W	0.00	
5369.55†	5.684	89.552	5349.00	-1.83	3.28	418.70	40°40'58.4772"N	103°58'57.6782"W	0.00	TEPEE BUTES
5430.00†	5.684	89.552	5409.15	-1.86	3.32	424.68	40°40'58.4767"N	103°58'57.6005"W	0.00	
5512.59	5.684	89.552	5491.33	-1.89	3.39	432.86	40°40'58.4759"N	103°58'57.4944"W	0.00	KOP NENW,SEC.09
5512.59†	5.684	89.550	5491.33	-1.89	3.39	432.86	40°40'58.4759"N	103°58'57.4944"W	9.00	KOP (439'FNL&2270'FWL,SEC.09)
5530.00†	5.819	73.924	5508.66	-1.66	3.64	434.57	40°40'58.4781"N	103°58'57.4721"W	9.00	
5630.00†	11.729	25.263	5607.56	8.84	14.25	443.80	40°40'58.5814"N	103°58'57.3500"W	9.00	
5730.00†	20.068	12.445	5703.68	34.74	40.25	451.85	40°40'58.8369"N	103°58'57.2397"W	9.00	
5830.00†	28.798	7.074	5794.64	75.40	80.99	458.53	40°40'59.2383"N	103°58'57.1440"W	9.00	
5930.00†	37.648	4.059	5878.22	129.81	135.47	463.67	40°40'59.7757"N	103°58'57.0652"W	9.00	
6003.87†	44.220	2.519	5934.00	178.06	183.77	466.40	40°41'0.2523"N	103°58'57.0191"W	9.00	INTRA_SHARON_SPGS_MK
6020.84†	45.731	2.216	5946.00	190.04	195.75	466.90	40°41'0.3706"N	103°58'57.0100"W	9.00	SHARON_SPRING_MKR
6030.00†	46.548	2.059	5952.35	196.64	202.35	467.14	40°41'0.4358"N	103°58'57.0053"W	9.00	
6059.29†	49.161	1.585	5972.00	218.33	224.05	467.83	40°41'0.6501"N	103°58'56.9915"W	9.00	NIO A CHALK
6102.27†	52.998	0.952	5999.00	251.74	257.48	468.57	40°41'0.9802"N	103°58'56.9746"W	9.00	NIO A MARL
6130.00†	55.475	0.577	6015.20	274.24	279.97	468.86	40°41'1.2024"N	103°58'56.9657"W	9.00	
6230.00†	64.416	359.384	6065.24	360.70	366.44	468.79	40°41'2.0567"N	103°58'56.9474"W	9.00	
6241.23†	65.421	359.262	6070.00	370.87	376.61	468.67	40°41'2.1572"N	103°58'56.9467"W	9.00	NIO B CHALK
6312.26†	71.777	358.531	6095.90	436.96	442.69	467.39	40°41'2.8103"N	103°58'56.9487"W	9.00	Fed Entry 1 (0'FSL & 2307'FWL,SEC.04) SESW
6330.00†	73.365	358.358	6101.22	453.89	459.61	466.93	40°41'2.9775"N	103°58'56.9509"W	9.00	
6339.98†	74.258	358.261	6104.00	463.47	469.19	466.65	40°41'3.0722"N	103°58'56.9524"W	9.00	NIO B MARL
6430.00†	82.318	357.424	6122.26	551.51	557.20	463.32	40°41'3.9423"N	103°58'56.9760"W	9.00	
6515.77	90.000	356.656	6128.00†	636.96	642.61	458.91	40°41'4.7868"N	103°58'57.0144"W	9.00	LP SESW,SEC.04
6530.00†	90.000	356.656	6128.00	651.17	656.81	458.08	40°41'4.9272"N	103°58'57.0220"W	0.00	
6630.00†	90.000	356.656	6128.00	751.07	756.64	452.24	40°41'5.9145"N	103°58'57.0755"W	0.00	
6730.00†	90.000	356.656	6128.00	850.96	856.47	446.41	40°41'6.9018"N	103°58'57.1291"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6830.00†	90.000	356.656	6128.00	950.85	956.30	440.58	40°41'7.8891"N	103°58'57.1826"W	0.00	
6930.00†	90.000	356.656	6128.00	1050.75	1056.13	434.74	40°41'8.8763"N	103°58'57.2362"W	0.00	
7030.00†	90.000	356.656	6128.00	1150.64	1155.96	428.91	40°41'9.8636"N	103°58'57.2897"W	0.00	
7130.00†	90.000	356.656	6128.00	1250.53	1255.79	423.08	40°41'10.8509"N	103°58'57.3432"W	0.00	
7230.00†	90.000	356.656	6128.00	1350.43	1355.62	417.24	40°41'11.8382"N	103°58'57.3968"W	0.00	
7330.00†	90.000	356.656	6128.00	1450.32	1455.44	411.41	40°41'12.8254"N	103°58'57.4503"W	0.00	
7430.00†	90.000	356.656	6128.00	1550.21	1555.27	405.58	40°41'13.8127"N	103°58'57.5038"W	0.00	
7530.00†	90.000	356.656	6128.00	1650.11	1655.10	399.74	40°41'14.8000"N	103°58'57.5574"W	0.00	
7630.00†	90.000	356.656	6128.00	1750.00	1754.93	393.91	40°41'15.7873"N	103°58'57.6109"W	0.00	
7730.00†	90.000	356.656	6128.00	1849.89	1854.76	388.08	40°41'16.7745"N	103°58'57.6645"W	0.00	
7830.00†	90.000	356.656	6128.00	1949.79	1954.59	382.24	40°41'17.7618"N	103°58'57.7180"W	0.00	
7930.00†	90.000	356.656	6128.00	2049.68	2054.42	376.41	40°41'18.7491"N	103°58'57.7715"W	0.00	
8030.00†	90.000	356.656	6128.00	2149.57	2154.25	370.58	40°41'19.7363"N	103°58'57.8251"W	0.00	
8130.00†	90.000	356.656	6128.00	2249.47	2254.08	364.74	40°41'20.7236"N	103°58'57.8786"W	0.00	
8230.00†	90.000	356.656	6128.00	2349.36	2353.91	358.91	40°41'21.7109"N	103°58'57.9322"W	0.00	
8330.00†	90.000	356.656	6128.00	2449.25	2453.74	353.07	40°41'22.6982"N	103°58'57.9857"W	0.00	
8430.00†	90.000	356.656	6128.00	2549.15	2553.57	347.24	40°41'23.6854"N	103°58'58.0392"W	0.00	
8530.00†	90.000	356.656	6128.00	2649.04	2653.40	341.41	40°41'24.6727"N	103°58'58.0928"W	0.00	
8630.00†	90.000	356.656	6128.00	2748.93	2753.23	335.57	40°41'25.6600"N	103°58'58.1463"W	0.00	
8730.00†	90.000	356.656	6128.00	2848.83	2853.06	329.74	40°41'26.6473"N	103°58'58.1999"W	0.00	
8830.00†	90.000	356.656	6128.00	2948.72	2952.89	323.91	40°41'27.6345"N	103°58'58.2534"W	0.00	
8930.00†	90.000	356.656	6128.00	3048.61	3052.72	318.07	40°41'28.6218"N	103°58'58.3070"W	0.00	
8990.23	90.000	356.656	6128.00 ²	3108.78	3112.84	314.56	40°41'29.2164"N	103°58'58.3392"W	0.00	Fed Exit 1 SENW,SEC.04
8991.61	90.000	356.642	6128.00	3110.16	3114.23	314.48	40°41'29.2301"N	103°58'58.3399"W	1.00	End of 3D Arc
9030.00†	90.000	356.642	6128.00	3148.51	3152.55	312.23	40°41'29.6091"N	103°58'58.3606"W	0.00	
9130.00†	90.000	356.642	6128.00	3248.40	3252.38	306.37	40°41'30.5963"N	103°58'58.4145"W	0.00	
9230.00†	90.000	356.642	6128.00	3348.29	3352.21	300.52	40°41'31.5836"N	103°58'58.4683"W	0.00	
9330.00†	90.000	356.642	6128.00	3448.18	3452.03	294.66	40°41'32.5708"N	103°58'58.5222"W	0.00	
9397.92	90.000	356.642	6128.00 ³	3516.03	3519.84	290.68	40°41'33.2414"N	103°58'58.5588"W	0.00	Inflection Point
9430.00†	90.297	356.764	6127.92	3548.08	3551.86	288.84	40°41'33.5581"N	103°58'58.5756"W	1.00	
9438.60	90.376	356.797	6127.87	3556.67	3560.45	288.35	40°41'33.6430"N	103°58'58.5800"W	1.00	3D Arc (J)
9530.00†	90.376	356.797	6127.27	3647.98	3651.71	283.24	40°41'34.5455"N	103°58'58.6260"W	0.00	
9630.00†	90.376	356.797	6126.61	3747.88	3751.55	277.66	40°41'35.5328"N	103°58'58.6764"W	0.00	
9730.00†	90.376	356.797	6125.95	3847.78	3851.39	272.07	40°41'36.5202"N	103°58'58.7267"W	0.00	
9830.00†	90.376	356.797	6125.30	3947.69	3951.23	266.48	40°41'37.5075"N	103°58'58.7771"W	0.00	
9930.00†	90.376	356.797	6124.64	4047.59	4051.07	260.89	40°41'38.4949"N	103°58'58.8274"W	0.00	
10030.00†	90.376	356.797	6123.98	4147.49	4150.91	255.30	40°41'39.4822"N	103°58'58.8778"W	0.00	
10130.00†	90.376	356.797	6123.33	4247.39	4250.76	249.72	40°41'40.4696"N	103°58'58.9282"W	0.00	
10230.00†	90.376	356.797	6122.67	4347.30	4350.60	244.13	40°41'41.4569"N	103°58'58.9785"W	0.00	
10325.84	90.376	356.797	6122.04 ⁴	4443.05	4446.29	238.77	40°41'42.4032"N	103°58'59.0268"W	0.00	Fed Entry 2 SENW,SEC.04
10326.99	90.376	356.808	6122.03	4444.20	4447.44	238.71	40°41'42.4146"N	103°58'59.0274"W	1.00	3D Arc (J)
10330.00†	90.376	356.808	6122.01	4447.20	4450.44	238.54	40°41'42.4442"N	103°58'59.0289"W	0.00	
10430.00†	90.376	356.808	6121.36	4547.10	4550.28	232.97	40°41'43.4316"N	103°58'59.0790"W	0.00	
10530.00†	90.376	356.808	6120.70	4647.01	4650.12	227.40	40°41'44.4190"N	103°58'59.1291"W	0.00	
10630.00†	90.376	356.808	6120.04	4746.91	4749.97	221.84	40°41'45.4063"N	103°58'59.1792"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10730.00†	90.376	356.808	6119.39	4846.81	4849.81	216.27	40°41'46.3937"N	103°58'59.2293"W	0.00	
10830.00†	90.376	356.808	6118.73	4946.71	4949.65	210.70	40°41'47.3810"N	103°58'59.2794"W	0.00	
10930.00†	90.376	356.808	6118.08	5046.62	5049.49	205.13	40°41'48.3684"N	103°58'59.3295"W	0.00	
11030.00†	90.376	356.808	6117.42	5146.52	5149.34	199.56	40°41'49.3557"N	103°58'59.3796"W	0.00	
11130.00†	90.376	356.808	6116.76	5246.42	5249.18	194.00	40°41'50.3431"N	103°58'59.4297"W	0.00	
11230.00†	90.376	356.808	6116.11	5346.33	5349.02	188.43	40°41'51.3304"N	103°58'59.4798"W	0.00	
11330.00†	90.376	356.808	6115.45	5446.23	5448.87	182.86	40°41'52.3178"N	103°58'59.5299"W	0.00	
11430.00†	90.376	356.808	6114.79	5546.13	5548.71	177.29	40°41'53.3051"N	103°58'59.5800"W	0.00	
11530.00†	90.376	356.808	6114.14	5646.04	5648.55	171.72	40°41'54.2925"N	103°58'59.6301"W	0.00	
11630.00†	90.376	356.808	6113.48	5745.94	5748.39	166.16	40°41'55.2798"N	103°58'59.6802"W	0.00	
11730.00†	90.376	356.808	6112.83	5845.84	5848.24	160.59	40°41'56.2672"N	103°58'59.7304"W	0.00	
11830.00†	90.376	356.808	6112.17	5945.75	5948.08	155.02	40°41'57.2545"N	103°58'59.7805"W	0.00	
11863.41	90.376	356.808	6111.95 [†]	5979.12	5981.43	153.16	40°41'57.5844"N	103°58'59.7972"W	0.00	Fed Entry 3/Exit 2 SESW,SEC.33
11863.75	90.376	356.805	6111.95	5979.46	5981.77	153.14	40°41'57.5878"N	103°58'59.7974"W	1.00	3D Arc (J)
11930.00†	90.376	356.805	6111.51	6045.65	6047.92	149.45	40°41'58.2419"N	103°58'59.8306"W	0.00	
12030.00†	90.376	356.805	6110.86	6145.55	6147.76	143.88	40°41'59.2292"N	103°58'59.8808"W	0.00	
12130.00†	90.376	356.805	6110.20	6245.46	6247.61	138.30	40°42'0.2166"N	103°58'59.9310"W	0.00	
12230.00†	90.376	356.805	6109.54	6345.36	6347.45	132.73	40°42'1.2039"N	103°58'59.9812"W	0.00	
12330.00†	90.376	356.805	6108.89	6445.26	6447.29	127.15	40°42'2.1913"N	103°59'0.0314"W	0.00	
12430.00†	90.376	356.805	6108.23	6545.16	6547.13	121.58	40°42'3.1786"N	103°59'0.0816"W	0.00	
12530.00†	90.376	356.805	6107.58	6645.07	6646.98	116.01	40°42'4.1660"N	103°59'0.1317"W	0.00	
12630.00†	90.376	356.805	6106.92	6744.97	6746.82	110.43	40°42'5.1533"N	103°59'0.1819"W	0.00	
12730.00†	90.376	356.805	6106.26	6844.87	6846.66	104.86	40°42'6.1407"N	103°59'0.2321"W	0.00	
12830.00†	90.376	356.805	6105.61	6944.78	6946.50	99.28	40°42'7.1280"N	103°59'0.2823"W	0.00	
12930.00†	90.376	356.805	6104.95	7044.68	7046.35	93.71	40°42'8.1154"N	103°59'0.3325"W	0.00	
13030.00†	90.376	356.805	6104.29	7144.58	7146.19	88.14	40°42'9.1027"N	103°59'0.3827"W	0.00	
13074.93†	90.376	356.805	6104.00	7189.47	7191.05	85.63	40°42'9.5464"N	103°59'0.4052"W	0.00	NIO B MARL
13130.00†	90.376	356.805	6103.64	7244.48	7246.03	82.56	40°42'10.0901"N	103°59'0.4329"W	0.00	
13230.00†	90.376	356.805	6102.98	7344.39	7345.87	76.99	40°42'11.0774"N	103°59'0.4831"W	0.00	
13330.00†	90.376	356.805	6102.33	7444.29	7445.72	71.41	40°42'12.0648"N	103°59'0.5333"W	0.00	
13430.00†	90.376	356.805	6101.67	7544.19	7545.56	65.84	40°42'13.0521"N	103°59'0.5834"W	0.00	
13530.00†	90.376	356.805	6101.01	7644.10	7645.40	60.27	40°42'14.0395"N	103°59'0.6336"W	0.00	
13630.00†	90.376	356.805	6100.36	7744.00	7745.24	54.69	40°42'15.0268"N	103°59'0.6838"W	0.00	
13730.00†	90.376	356.805	6099.70	7843.90	7845.08	49.12	40°42'16.0142"N	103°59'0.7340"W	0.00	
13830.00†	90.376	356.805	6099.05	7943.81	7944.93	43.54	40°42'17.0015"N	103°59'0.7842"W	0.00	
13930.00†	90.376	356.805	6098.39	8043.71	8044.77	37.97	40°42'17.9889"N	103°59'0.8344"W	0.00	
14030.00†	90.376	356.805	6097.73	8143.61	8144.61	32.40	40°42'18.9762"N	103°59'0.8846"W	0.00	
14130.00†	90.376	356.805	6097.08	8243.51	8244.45	26.82	40°42'19.9636"N	103°59'0.9348"W	0.00	
14230.00†	90.376	356.805	6096.42	8343.42	8344.30	21.25	40°42'20.9509"N	103°59'0.9850"W	0.00	
14330.00†	90.376	356.805	6095.76	8443.32	8444.14	15.67	40°42'21.9383"N	103°59'1.0352"W	0.00	
14430.00†	90.376	356.805	6095.11	8543.22	8543.98	10.10	40°42'22.9256"N	103°59'1.0854"W	0.00	
14530.00†	90.376	356.805	6094.45	8643.13	8643.82	4.53	40°42'23.9130"N	103°59'1.1356"W	0.00	
14630.00†	90.376	356.805	6093.80	8743.03	8743.67	-1.05	40°42'24.9003"N	103°59'1.1858"W	0.00	
14730.00†	90.376	356.805	6093.14	8842.93	8843.51	-6.62	40°42'25.8877"N	103°59'1.2360"W	0.00	
14830.00†	90.376	356.805	6092.48	8942.83	8943.35	-12.19	40°42'26.8750"N	103°59'1.2862"W	0.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH DATA (205 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14930.00†	90.376	356.805	6091.83	9042.74	9043.19	-17.77	40°42'27.8624"N	103°59'1.3364"W	0.00	
15030.00†	90.376	356.805	6091.17	9142.64	9143.04	-23.34	40°42'28.8497"N	103°59'1.3866"W	0.00	
15130.00†	90.376	356.805	6090.51	9242.54	9242.88	-28.92	40°42'29.8371"N	103°59'1.4368"W	0.00	
15230.00†	90.376	356.805	6089.86	9342.45	9342.72	-34.49	40°42'30.8244"N	103°59'1.4870"W	0.00	
15330.00†	90.376	356.805	6089.20	9442.35	9442.56	-40.06	40°42'31.8118"N	103°59'1.5372"W	0.00	
15430.00†	90.376	356.805	6088.55	9542.25	9542.41	-45.64	40°42'32.7991"N	103°59'1.5874"W	0.00	
15530.00†	90.376	356.805	6087.89	9642.15	9642.25	-51.21	40°42'33.7864"N	103°59'1.6376"W	0.00	
15630.00†	90.376	356.805	6087.23	9742.06	9742.09	-56.79	40°42'34.7738"N	103°59'1.6878"W	0.00	
15730.00†	90.376	356.805	6086.58	9841.96	9841.93	-62.36	40°42'35.7611"N	103°59'1.7380"W	0.00	
15830.00†	90.376	356.805	6085.92	9941.86	9941.77	-67.93	40°42'36.7485"N	103°59'1.7882"W	0.00	
15894.20	90.376	356.805	6085.50 ⁶	10006.00	10005.88	-71.51	40°42'37.3824"N	103°59'1.8204"W	0.00	Fed Exit 3 NENW,SEC.33
15897.74	90.376	356.769	6085.48	10009.54	10009.41	-71.71	40°42'37.4173"N	103°59'1.8222"W	1.00	3D Arc (J)
15930.00†	90.376	356.769	6085.27	10041.77	10041.62	-73.53	40°42'37.7358"N	103°59'1.8386"W	0.00	
16030.00†	90.376	356.769	6084.61	10141.67	10141.45	-79.16	40°42'38.7232"N	103°59'1.8896"W	0.00	
16130.00†	90.376	356.769	6083.95	10241.57	10241.29	-84.80	40°42'39.7105"N	103°59'1.9406"W	0.00	
16230.00†	90.376	356.769	6083.30	10341.47	10341.13	-90.44	40°42'40.6978"N	103°59'1.9917"W	0.00	
16330.00†	90.376	356.769	6082.64	10441.37	10440.97	-96.07	40°42'41.6851"N	103°59'2.0427"W	0.00	
16430.00†	90.376	356.769	6081.99	10541.27	10540.81	-101.71	40°42'42.6724"N	103°59'2.0937"W	0.00	
16530.00†	90.376	356.769	6081.33	10641.17	10640.65	-107.34	40°42'43.6598"N	103°59'2.1447"W	0.00	
16630.00†	90.376	356.769	6080.67	10741.07	10740.49	-112.98	40°42'44.6471"N	103°59'2.1957"W	0.00	
16730.00†	90.376	356.769	6080.02	10840.97	10840.33	-118.61	40°42'45.6344"N	103°59'2.2467"W	0.00	
16830.00†	90.376	356.769	6079.36	10940.87	10940.17	-124.25	40°42'46.6217"N	103°59'2.2977"W	0.00	
16930.00†	90.376	356.769	6078.71	11040.77	11040.01	-129.88	40°42'47.6091"N	103°59'2.3487"W	0.00	
17030.00†	90.376	356.769	6078.05	11140.67	11139.84	-135.52	40°42'48.5964"N	103°59'2.3997"W	0.00	
17037.66	90.376	356.769	6078.00 ⁷	11148.32	11147.49	-135.95	40°42'48.6720"N	103°59'2.4036"W	0.00	BHL NENW,SEC.33

HOLE & CASING SECTIONS - Ref Wellbore: Scarecrow Federal LG04-755 PWB Ref Wellpath: Scarecrow Federal LG04-755 (REV-C.0) PWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	30.00	1950.00	1920.00	30.00	1946.26	0.00	0.00	0.63	80.03
8.5in Open Hole	1950.00	17037.66	15087.66	1946.26	N/A	0.63	80.03	N/A	N/A

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 04 LG09-03-785	N/A	-1.00	98.32	-67.42	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon
	2D Polygon: dimensions not calculated								
SECTION 09 LG09-03-785	N/A	-1.00	98.32	-67.42	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon
	2D Polygon: dimensions not calculated								
SECTION 33 LG09-03-785	N/A	-1.00	98.32	-67.42	3420316.77	1495322.66	40°40'59.4984"N	103°59'3.9660"W	polygon
	2D Polygon: dimensions not calculated								
Federal Lease COC 28082	N/A	1.00	-0.79	-67.67	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
	2D Polygon: dimensions not calculated								
Federal Lease COC 65489	N/A	1.00	-0.79	-67.67	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
	2D Polygon: dimensions not calculated								
Federal Lease COC 65490	N/A	1.00	-0.79	-67.67	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
	2D Polygon: dimensions not calculated								
Federal Lease COC 67097	N/A	1.00	-0.79	-67.67	3420316.53	1495223.55	40°40'58.5192"N	103°59'3.9912"W	polygon
	2D Polygon: dimensions not calculated								
Scarecrow Federal LG04-755 BHL (200'FNL & 2324'FWL,SEC.33)	N/A	6078.00	11147.68	-135.34	3420248.86	1506371.83	40°42'48.6738"N	103°59'2.3956"W	point
7) Scarecrow Federal LG04-755 BHL Rev-2 on PLAT (200'FNL & 2324'FWL,SEC.33)	17037.66	6078.00	11147.49	-135.95	3420248.25	1506371.64	40°42'48.6720"N	103°59'2.4036"W	point
6) Scarecrow Federal LG04-755 Fed Exit 3 (1343'FNL & 2362'FWL,SEC.33)	15894.20	6085.50	10005.88	-71.51	3420312.68	1505230.05	40°42'37.3824"N	103°59'1.8204"W	point
Scarecrow Federal LG04-755 Fed Entry 1 (0'FSL & 2307'FWL,SEC.04)	N/A	6095.91	442.70	467.32	3420851.51	1495667.03	40°41'2.8104"N	103°58'56.9496"W	point
5) Scarecrow Federal LG04-755 Fed Entry 3/Exit 2 (0'FSL & 2492'FWL,SEC.33)	11863.41	6111.95	5981.43	153.16	3420537.35	1501205.67	40°41'57.5844"N	103°58'59.7972"W	point
4) Scarecrow Federal LG04-755 Fed Entry 2 (1537'FNL & 2067'FWL,SEC.04)	10325.84	6122.04	4446.29	238.77	3420622.96	1499670.55	40°41'42.4032"N	103°58'59.0268"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) Scarecrow Federal LG04-755 Fed Exit 1 (2672'FSL & 2147'FWL,SEC.04)	8990.23	6128.00	3112.84	314.56	3420698.75	1498337.13	40°41'29.2164"N	103°58'58.3392"W	point
3) Scarecrow Federal LG04-755 IP 1	9397.92	6128.00	3519.84	290.68	3420674.87	1498744.12	40°41'33.2414"N	103°58'58.5588"W	point
Scarecrow Federal LG04-755 LP (200'FSL & 2298'FWL,SEC.04)	N/A	6128.00	642.66	459.01	3420843.20	1495866.99	40°41'4.7873"N	103°58'57.0130"W	point
1) Scarecrow Federal LG04-755 LP Rev-2 on PLAT (200'FSL & 2298'FWL,SEC.04)	6515.77	6128.00	642.61	458.91	3420843.09	1495866.93	40°41'4.7868"N	103°58'57.0144"W	point

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-755 PWB Ref Wellpath: Scarecrow Federal LG04-755 (REV-C.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	1950.00	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB
1950.00	17101.24	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD [ft]	Comment
427.00	0.000	89.552	427.00	427.00	FOXHILLS-BASE PROD
862.00	0.000	89.552	862.00	862.00	PIERRE (UPPER)AQUIFER TOP
1455.31	5.684	89.552	1454.00	1454.00	PIERRE (UPPER) AQUIFER BASE
2446.18	5.684	89.552	2440.00	2440.00	PIERRE_MBR_A_SD_TOP
2988.85	5.684	89.552	2980.00	2980.00	PIERRE_MBR_A_SD_BASE
3334.55	5.684	89.552	3324.00	3324.00	PARKMAN
4024.94	5.684	89.552	4011.00	4011.00	SUSSEX
4553.54	5.684	89.552	4537.00	4537.00	SHANNON
5369.55	5.684	89.552	5349.00	5349.00	TEPEE BUTES
5512.59	5.684	89.550	5491.33	5491.33	KOP (439'FNL&2270'FWL,SEC.09)
6003.87	44.220	2.519	5934.00	5934.00	INTRA_SHARON_SPGS_MK
6020.84	45.731	2.216	5946.00	5946.00	SHARON_SPRING_MKR
6059.29	49.161	1.585	5972.00	5972.00	NIO A CHALK
6102.27	52.998	0.952	5999.00	5999.00	NIO A MARL
6241.23	65.421	359.262	6070.00	6070.00	NIO B CHALK
6312.26	71.777	358.531	6095.90	6095.90	Fed Entry 1 (0'FSL & 2307'FWL,SEC.04) SESW
6339.98	74.258	358.261	6104.00	6104.00	NIO B MARL
13074.93	90.376	356.805	6104.00	6104.00	NIO B MARL

DESIGN COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD [ft]	Comment
30.00	0.000	89.552	30.00	30.00	SHL NENW,SEC.09
1000.00	0.000	89.552	1000.00	1000.00	End of Tangent
1284.20	5.684	89.552	1283.74	1283.74	End of Build
5512.59	5.684	89.552	5491.33	5491.33	KOP NENW,SEC.09
6515.77	90.000	356.656	6128.00	6128.00	LP SESW,SEC.04
8990.23	90.000	356.656	6128.00	6128.00	Fed Exit 1 SENW,SEC.04
8991.61	90.000	356.642	6128.00	6128.00	End of 3D Arc
9397.92	90.000	356.642	6128.00	6128.00	Inflection Point
9438.60	90.376	356.797	6127.87	6127.87	3D Arc (J)
10325.84	90.376	356.797	6122.04	6122.04	Fed Entry 2 SENW,SEC.04
10326.99	90.376	356.808	6122.03	6122.03	3D Arc (J)
11863.41	90.376	356.808	6111.95	6111.95	Fed Entry 3/Exit 2 SESW,SEC.33
11863.75	90.376	356.805	6111.95	6111.95	3D Arc (J)
15894.20	90.376	356.805	6085.50	6085.50	Fed Exit 3 NENW,SEC.33
15897.74	90.376	356.769	6085.48	6085.48	3D Arc (J)
17037.66	90.376	356.769	6078.00	6078.00	BHL NENW,SEC.33



Closest Approach Clearance Summary Report

Scarecrow Federal LG04-755 (REV-C.0) PWP - SPE WPTS Stop Drilling HSE Risk (2017)
Page 1 of 4


REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Martsam01
Scale	0.999985	Report Generated	3/1/2024 at 12:53:08 PM
Convergence at slot	0.98° East	Database	WA_Denver

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-94.75	404.39	3420384.19	1495224.34	40°40'58.5156"N	103°59'3.1128"W
Facility Reference Pt			3419979.81	1495319.09	40°40'59.5200"N	103°59'8.3400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM

Calculation method	Minimum Curvature	(4860'GL+30'KB@4890'RKB) (RKB) to Facility Vertical Datum	4890.00ft
Horizontal Reference Pt	Slot	(4860'GL+30'KB@4890'RKB) (RKB) to Mean Sea Level	4890.00ft
Vertical Reference Pt	(4860'GL+30'KB@4890'RKB) (RKB)	(4860'GL+30'KB@4890'RKB) (RKB) to Ground Level at Slot (SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09))	4890.00ft
MD Reference Pt	(4860'GL+30'KB@4890'RKB) (RKB)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS

Ellipse Confidence Limit	3.50 Std Dev	Ellipse Start MD	30.00ft	Surface Position Uncertainty	included
Declination	7.42° East of TN	Dip Angle	66.80°	Mag Field Strength	51940 nT
Slot Surface Uncertainty @1SD		Horizontal	0.100ft	Vertical	1.000ft
Facility Surface Uncertainty @1SD		Horizontal	8.200ft	Vertical	3.000ft

Positional Uncertainty values in the WELLPATH DATA table are the projection of the ellipsoid of uncertainty onto the vertical and horizontal planes

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

PROXIMITY-SCAN RULE

Rule Name	SPE WPTS Stop Drilling HSE Risk (2017)	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.00
Include Casing & Hole Size	yes	Apply Cone of Safety	no

HOLE & CASING SECTIONS - Ref Wellbore: Scarecrow Federal LG04-755 PWB Ref Wellpath: Scarecrow Federal LG04-755 (REV-C.0) PWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	30.00	1950.00	1920.00	30.00	1946.26	0.00	0.00	0.63	80.03
8.5in Open Hole	1950.00	17037.66	15087.66	1946.26	N/A	0.63	80.03	N/A	N/A

SURVEY PROGRAM - Ref Wellbore: Scarecrow Federal LG04-755 PWB Ref Wellpath: Scarecrow Federal LG04-755 (REV-C.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	1950.00	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB
1950.00	17101.24	OWSG MWD rev2 (MS+IFR1)		Scarecrow Federal LG04-755 PWB

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17037.66ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (30 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	Wellbore Status	C-C Clearance Distance			Rule Separation Ratio			
						Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	Rule Status
SEC.33-T09N-R59W	SLOT#01 Ptasnik PC LC33-68HN	Ptasnik PC LC33-68HN (05-123-33945)	Ptasnik PC LC33-68HN	Ptasnik PC LC33-68HN AWP	Drilling	16586.84	35.62	16586.84	16586.88	0.22	16586.88	FAIL
SEC.04-T08N-R59W	SLOT#04 Ex.USA #1 (817'FNL&1970'FWL,SEC.04) (DA)	Ex.USA #1 (05-123-07092)	Ex.USA #1 AWB	Ex.USA #1 AWP	Drilling	11097.01	66.51	11097.01	11096.81	0.31	11096.81	FAIL
SEC.04-T08N-R59W	SLOT#07 BULLEIT FEDERAL PC LG04-62HN (430'FSL&300'FEL,SEC.04) (PR)	BULLEIT FEDERAL PC LG04-62HN (05-123-38758)	BULLEIT FEDERAL PC LG04-62HN AWB	BULLEIT FEDERAL PC LG04-62HN AWP	Drilling	6980.76	30.41	6980.76	6955.11	0.38	13630.00	FAIL
SEC.09-T08N-R59W	SLOT#11 Scarecrow Federal LG04-745 (436'FNL & 1859'FWL,SEC.09)	Scarecrow Federal LG04-745	Scarecrow Federal LG04-745 PWB	Scarecrow Federal LG04-745 (REV-C.0) PWP	Planned	1285.43	22.45	15894.20	1321.51	1.63	17037.66	PASS
SEC.09-T08N-R59W	SLOT#09 Scarecrow Federal LG04-765 (436'FNL & 1814'FWL,SEC.09)	Scarecrow Federal LG04-765	Scarecrow Federal LG04-765 PWB	Scarecrow Federal LG04-765 (REV-C.0) PWP	Planned	30.00	22.75	9430.00	921.18	2.14	17037.66	PASS
SEC.09-T08N-R59W	SLOT#12 Scarecrow Federal LG04-735 (436'FNL & 1881'FWL,SEC.09)	Scarecrow Federal LG04-735	Scarecrow Federal LG04-735 PWB	Scarecrow Federal LG04-735 (REV-C.0) PWP	Planned	30.00	44.93	15894.20	991.40	4.34	17037.66	PASS
SEC.09-T08N-R59W	SLOT#01 DOROTHY STATE LG16-757(335'FNL&1433'FWL,SEC.09)	DOROTHY STATE LG16-757 (05-123-47612)	DOROTHY STATE LG16-757 AWB	DOROTHY STATE LG16-757 AWP	Drilling	6143.01	181.19	6143.01	6137.71	4.40	6137.71	PASS
SEC.09-T08N-R59W	SLOT#08 Scarecrow Federal LG04-775 (436'FNL & 1792'FWL,SEC.09)	Scarecrow Federal LG04-775	Scarecrow Federal LG04-775 PWB	Scarecrow Federal LG04-775 (REV-C.0) PWP	Planned	30.00	45.21	11530.00	871.72	5.03	17037.66	PASS
SEC.09-T08N-R59W	SLOT#13 Scarecrow Federal LG04-725 (436'FNL & 1904'FWL,SEC.09)	Scarecrow Federal LG04-725	Scarecrow Federal LG04-725 PWB	Scarecrow Federal LG04-725 (REV-C.0) PWP	Planned	30.00	67.40	12430.00	830.00	7.50	17037.66	PASS
SEC.04-T08N-R59W	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)	DOROTHY STATE LG16-748 (05-123-47703)	DOROTHY STATE LG16-748 AWB	DOROTHY STATE LG16-748 AWP	Drilling	6157.71	443.24	6157.71	6161.89	7.54	6161.89	PASS
SEC.09-T08N-R59W	SLOT#07 Scarecrow Federal LG04-785 (436'FNL & 1769'FWL,SEC.09)	Scarecrow Federal LG04-785	Scarecrow Federal LG04-785 PWB	Scarecrow Federal LG04-785 (REV-C.0) PWP	Planned	30.00	67.68	17037.66	17037.66	8.48	17037.66	PASS
SEC.09-T08N-R59W	SLOT#14 Scarecrow Federal LG04-715 (436'FNL & 1926'FWL,SEC.09)	Scarecrow Federal LG04-715	Scarecrow Federal LG04-715 PWB	Scarecrow Federal LG04-715 (REV-B.0) PWP	Planned	30.00	89.86	12130.00	17037.66	11.27	17037.66	PASS
SEC.04-T08N-R59W	SLOT#06 Ex.GREY #1(660'FSL&660'FEL,SEC.04) (PA)	Ex.GREY #1 (05-123-38758)	Ex.GREY #1 AWB	Ex.GREY #1 AWP	Drilling	6820.00	2323.11	6820.00	6850.52	11.94	6850.52	PASS
SEC.04-T08N-R59W	SLOT#02 DOROTHY STATE LG16-739(350'FSL&1497'FEL,SEC.04)	DOROTHY STATE LG16-739 (05-123-33457)	DOROTHY STATE LG16-739 AWB	DOROTHY STATE LG16-739 AWP	Drilling	6265.02	1083.41	6265.02	6299.19	18.83	6299.19	PASS
SEC.09-T08N-R59W	SLOT#02 DOROTHY STATE LG16-766(335'FNL&1395'FWL,SEC.09)	DOROTHY STATE LG16-766 (05-123-47610)	DOROTHY STATE LG16-766 AWB	DOROTHY STATE LG16-766 AWP	Drilling	30.00	453.12	6230.00	6154.90	19.06	6154.90	PASS
SEC.09-T08N-R59W	SLOT#02 DOROTHY STATE LG16-766(335'FNL&1395'FWL,SEC.09)	DOROTHY STATE LG16-766 (05-123-47610)	DOROTHY STATE LG16-766 ST01 AWB	DOROTHY STATE LG16-766 ST01 AWP	Drilling	30.00	453.12	6230.00	6154.90	19.06	6154.90	PASS
SEC.04-T08N-R59W	SLOT#05 Ex.McCLELLAN PC LG04-15 (830'FSL&1810'FEL,SEC.04) (PA)	Ex.McCLELLAN PC LG04-15 (05-123-10256)	Ex.McCLELLAN PC LG04-15 AWB	Ex.McCLELLAN PC LG04-15 AWP	Drilling	7099.38	1211.74	7099.38	7224.85	21.34	7224.85	PASS
SEC.09-T08N-R59W	SLOT#06 Ex.KIRCHNER #1 (660'FSL&660'FEL,SEC.09) (PA)	Ex.KIRCHNER #1 (05-123-05575)	Ex.KIRCHNER #1 AWB	Ex.KIRCHNER #1 AWP	Drilling	5546.52	4813.86	5546.52	6134.29	28.57	6134.29	PASS
SEC.04-T08N-R59W	SLOT#01 DOROTHY STATE LG16-729(350'FSL&1460'FEL,SEC.04)	DOROTHY STATE LG16-729 (05-123-34243)	DOROTHY STATE LG16-729 AWB	DOROTHY STATE LG16-729 AWP	Drilling	6346.60	1687.36	6346.60	6410.00	29.46	6410.00	PASS
SEC.09-T08N-R59W	SLOT#03 DOROTHY STATE LG16-776(335'FNL&1358'FWL,SEC.09)	DOROTHY STATE LG16-776 (05-123-47609)	DOROTHY STATE LG16-776 AWB	DOROTHY STATE LG16-776 AWP	Drilling	30.00	488.32	6130.00	6160.96	33.68	6330.00	PASS
SEC.09-T08N-R59W	SLOT#04 DOROTHY STATE LG16-785(335'FNL&1320'FWL,SEC.09)	DOROTHY STATE LG16-785 (05-123-47611)	DOROTHY STATE LG16-785 AWB	DOROTHY STATE LG16-785 AWP	Drilling	912.00	524.01	6630.00	2000.72	40.20	6930.00	PASS
SEC.09-T08N-R59W	SLOT#15 Tinman Federal LG07-685 (2454'FNL & 1339'FWL,SEC.09)	Tinman Federal LG07-685	Tinman Federal LG07-685 PWB	Tinman Federal LG07-685 (REV-C.0) PWP	Planned	3591.81	1600.16	3591.81	6093.78	41.67	6093.78	PASS
SEC.09-T08N-R59W	SLOT#16 Tinman Federal LG07-675 (2470'FNL & 1354'FWL,SEC.09)	Tinman Federal LG07-675	Tinman Federal LG07-675 PWB	Tinman Federal LG07-675 (REV-C.0) PWP	Planned	3618.28	1802.59	3618.28	5846.15	47.05	5846.15	PASS
SEC.09-T08N-R59W	SLOT#05 McCLELLAN PC LG09-72HN(360'FNL&275'FEL,SEC.09)	Ex.McCLELLAN PC LG09-72HN (05-123-36972)	Ex.McCLELLAN PC LG09-72HN AWB	Ex.McCLELLAN PC LG09-72HN AWP	Drilling	6016.41	2309.64	6016.41	6171.77	55.77	6171.77	PASS
SEC.09-T08N-R59W	SLOT#17 Tinman Federal LG07-665 (2486'FNL & 1370'FWL,SEC.09)	Tinman Federal LG07-665	Tinman Federal LG07-665 PWB	Tinman Federal LG07-665 (REV-C.0) PWP	Planned	2791.75	2034.73	2791.75	5855.13	56.97	5855.13	PASS

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Well	Scarecrow Federal LG04-755
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.09-T08N-R59W	Wellbore	Scarecrow Federal LG04-755 PWB
Slot	SLOT#10 Scarecrow Federal LG04-755 (436'FNL & 1837'FWL,SEC.09)		

CALCULATION RANGE & CUTOFF

From: 30.00ft MD	To: 17037.66ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (30 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	Wellbore Status	C-C Clearance Distance			Rule Separation Ratio			
						Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	Rule Status
SEC.09-T08N-R59W	SLOT#18 Tinman Federal LG07-655 (2502'FNL & 1386'FWL,SEC.09)	Tinman Federal LG07-655	Tinman Federal LG07-655 PWB	Tinman Federal LG07-655 (REV-C.0) PWP	Planned	130.00	2117.80	1000.00	5830.00	69.67	5830.00	PASS
SEC.09-T08N-R59W	SLOT#19 Tinman Federal LG07-645 (2518'FNL & 1402'FWL,SEC.09)	Tinman Federal LG07-645	Tinman Federal LG07-645 PWB	Tinman Federal LG07-645 (REV-C.0) PWP	Planned	130.00	2130.42	1000.00	5797.82	83.41	5797.82	PASS
SEC.09-T08N-R59W	SLOT#20 Tinman Federal LG07-635 (2534'FNL & 1417'FWL,SEC.09)	Tinman Federal LG07-635	Tinman Federal LG07-635 PWB	Tinman Federal LG07-635 (REV-C.0) PWP	Planned	130.00	2142.80	930.00	5774.59	97.20	5774.59	PASS
SEC.09-T08N-R59W	SLOT#21 Tinman Federal LG07-625 (2551'FNL & 1433'FWL,SEC.09)	Tinman Federal LG07-625	Tinman Federal LG07-625 PWB	Tinman Federal LG07-625 (REV-C.0) PWP	Planned	130.00	2155.74	730.00	5759.91	111.74	5759.91	PASS
SEC.09-T08N-R59W	SLOT#22 Tinman Federal LG07-615 (2567'FNL & 1449'FWL,SEC.09)	Tinman Federal LG07-615	Tinman Federal LG07-615 PWB	Tinman Federal LG07-615 (REV-B.0) PWP	Planned	130.00	2168.49	530.00	5744.33	125.62	11630.00	PASS