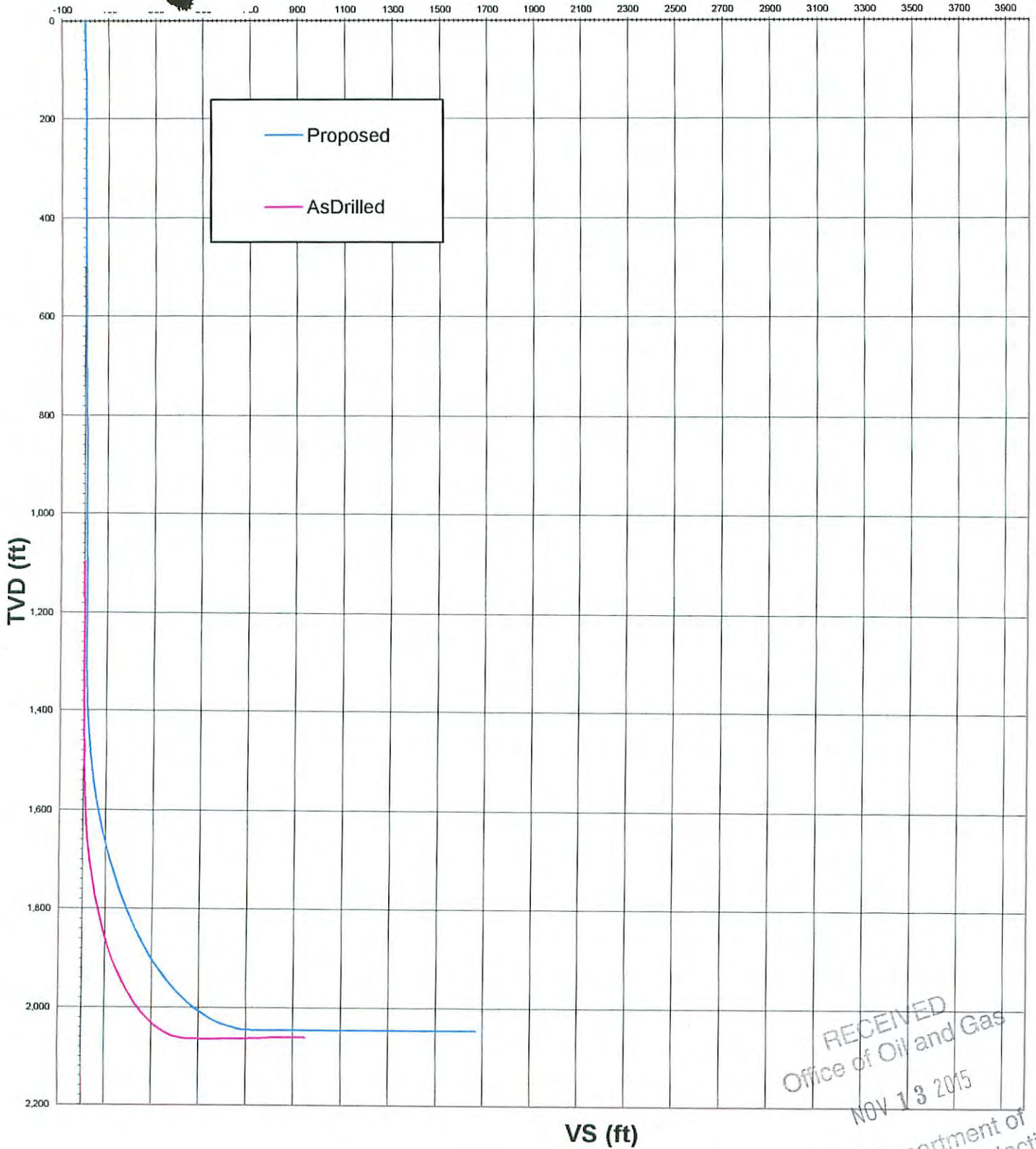




**L. SMITH W1654H**  
**VS View 179.57° Az, 90° INC**



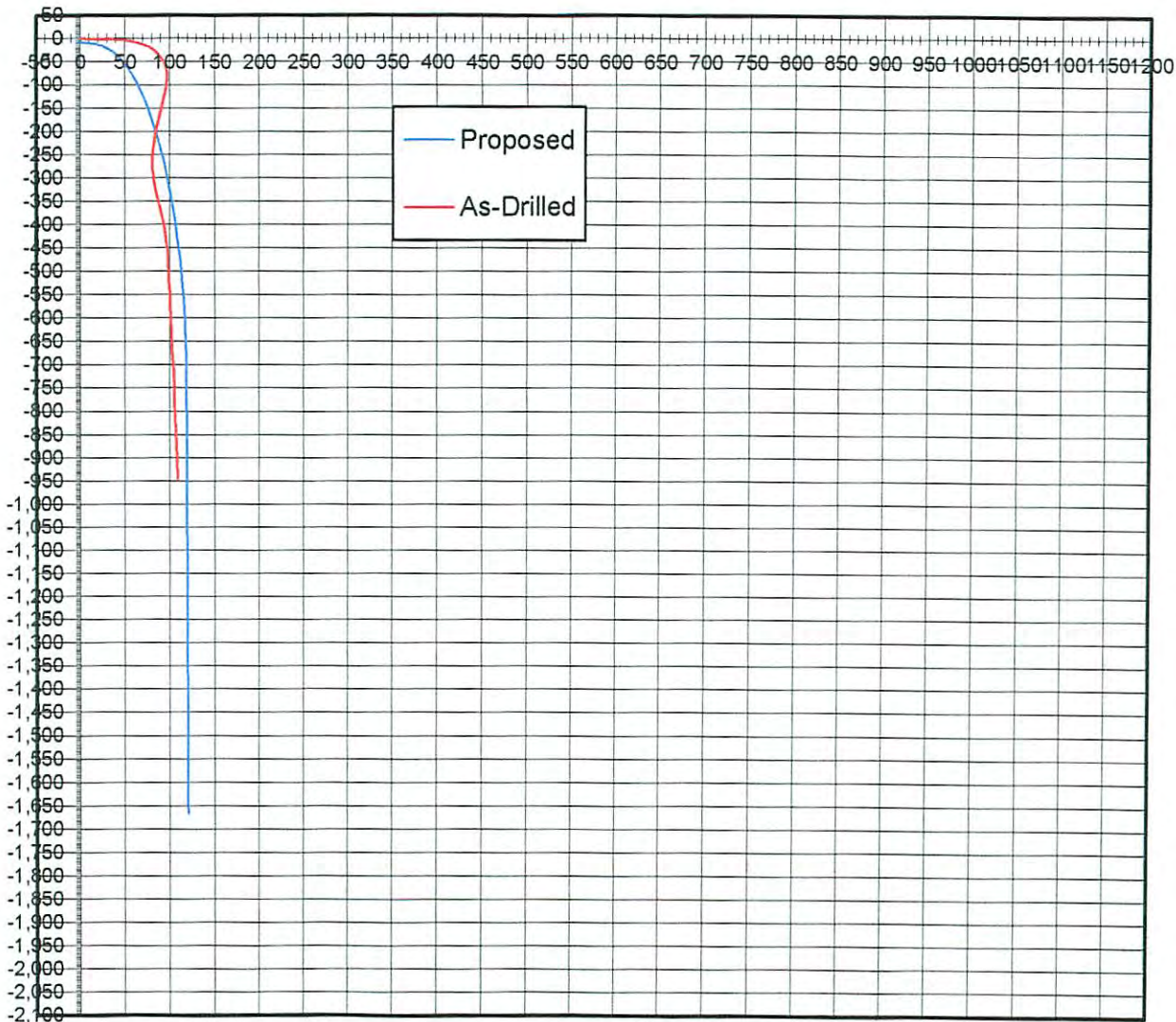
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L. SMITH W1654.H  
Plane View 179.57° Az, 90° Inc

Southings/Northings/ (ft)



Westings/Eastings (ft)

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SURVEY CALCULATION PROGRAM

TARGET DETAILS

Operator: Top Drilling, Well: Lenore Smith W1654H, Location: Ritchie, WV, Job Number: AM-141176, Supervisors: Jim Cool / Lupe Villegas, Stephen Hiser/Luca Pennisi

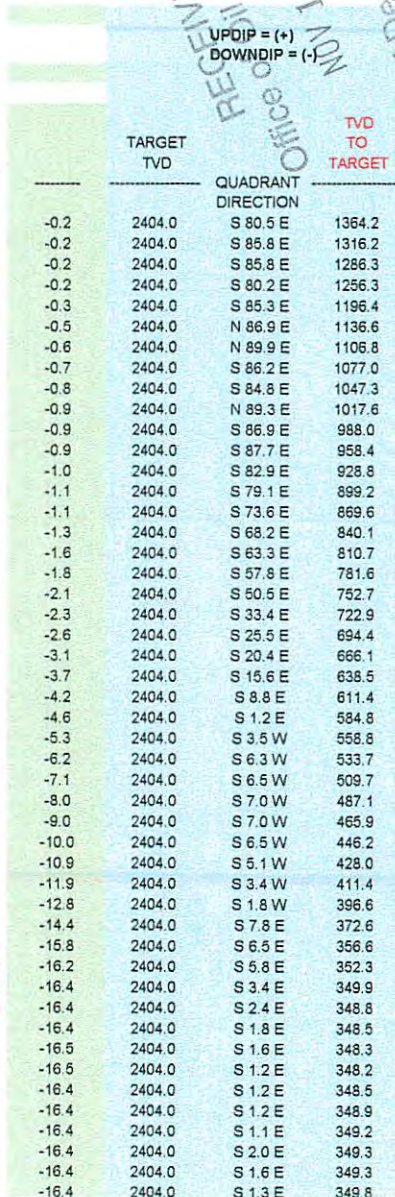
Target N-S Directional: -326.55, Target E-W: 283.55, Target Radius: 15.00, Target Displacement: 477.55, Target Closure: 139.00, Target TVD Horizontal: 2404.00

PBH N-S: -360.42, PBH E-W: 313.29, EOC N-S: -57.86, EOC E-W: 50.29, Planned Lateral AZ: 139.00

Date: 11/9/2015, Time: 12:35 PM, Grid, MAG DEC. (-/+): -7.44, GRID CORR. (-/+): 0.59, TOTAL CORR. (-/+): -6.85

Minimum Curvature Calculations (SPE-3362), Proposed Direction: 179.00, Target Tracking, Closure Reclosure, Build Rate, Walk Rate

Main data table with columns: SVY NUM, MD, INC, TRUE AZM, TVD, SECT, N-S, E-W, DLS/100.00, ABOVE(+)/BELOW(-), RIGHT(+)/LEFT(-), DIR, DISTANCE, RATE, BUILD RATE, WALK RATE, Δ N-S, Δ E-W, Δ Dist, Survey → PBH AZ, Δ AZ, TARGET TVD, QUADRANT DIRECTION, TVD TO TARGET



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**SURVEY CALCULATION PROGRAM**

**TARGET DETAILS**

**OPERATOR:** Top Drilling  
**WELL:** Lenore Smith W1654H  
**LOCATION:** Ritchie, WV  
**JOB NUMBER:** AM-141176  
**Supervisors:** Jim Cool / Lupe Villegas  
 Stephen Hiser/Luca Pennisi  
**DATE:** 11/9/2015 **TIME:** 12:35 PM  
**GRID**

**TARGET N-S Directional** -326.55  
**TARGET E-W** 283.55  
**TARGET RADIUS** 15.00  
**TARGET DISPLACEMENT** 477.55  
**TARGET CLOSURE** 139.00  
**TARGET TVD Horizontal** 2404.00  
**DIP AZ**  
**DIP DEG UP+DN**  
**TARGET INCLINATION**

**PBHL N-S** -360.42  
**PBHL E-W** 313.29  
**EOC N-S** -57.86  
**EOC E-W** 60.29  
**Planned Lateral AZ** 139.00

**MAG DEC.(-/+)** -7.44  
**GRID CORR.(-/+)** 0.59  
**TOTAL CORR.(-/+)** -6.85

SVY NUM	MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/100.00	TARGET TRACKING TO CENTER		CLOSURE DIR (DEG AZ)	CLOSURE DISTANCE (FEET)	BUILD RATE/100'	WALK RATE/100'	Δ N-S	Δ E-W	Δ Dist	Survey → PBHL AZ	Δ AZ	TARGET TVD	QUADRANT DIRECTION	TVD TO TARGET	
									ABOVE(+)/BELOW(-)	RIGHT(+)/LEFT(-)													
48	2625	91.40	179.40	2053.40	777.05	-775.19	113.14	2.36	350.60	-423.17	171.70	783.40	-0.33	4.18	-414.77	-200.15	460.54	205.76	-66.76	-16.3	2404.0	S 0.6 E	350.6
49	2655	91.20	179.10	2052.72	807.04	-805.18	113.53	1.20	351.28	-442.55	171.97	813.15	-0.67	-1.79	-444.76	-199.76	487.56	204.19	-65.19	-16.3	2404.0	S 0.9 E	351.3
50	2685	90.50	178.80	2052.27	837.04	-835.17	114.08	2.54	351.73	-461.81	172.22	842.93	-2.33	-1.79	-474.75	-199.21	514.85	202.76	-63.76	-16.3	2404.0	S 1.2 E	351.7
51	2715	89.80	178.80	2052.19	867.04	-865.17	114.71	2.33	351.81	-481.01	172.45	872.74	-2.33	0.00	-504.75	-198.58	542.40	201.48	-62.48	-16.3	2404.0	S 1.2 E	351.8
52	2745	89.90	178.70	2052.27	897.03	-895.16	115.36	0.47	351.73	-500.19	172.66	902.56	0.33	-0.60	-534.74	-197.93	570.19	200.31	-61.31	-16.3	2404.0	S 1.3 E	351.7
53	2775	89.60	178.70	2052.40	927.03	-925.15	116.05	1.00	351.60	-519.36	172.85	932.40	-1.00	0.00	-564.73	-197.24	598.18	199.25	-60.25	-16.3	2404.0	S 1.3 E	351.6
54	2805	89.00	178.30	2052.77	957.03	-955.14	116.83	2.40	351.23	-538.44	173.03	962.26	-2.00	-2.39	-594.72	-196.46	626.33	198.28	-59.28	-16.3	2404.0	S 1.7 E	351.2

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