

# ***GROUND CONTROL SURVEY REPORT***

**GPS SURVEY  
FOR LIDAR CONTROL**

**ADAMS COUNTY, WI WROC LIDAR SURVEY**

**ADAMS COUNTY, WISCONSIN**

*Services provided by:*

**AYRES**  

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**ASSOCIATES**

**Geospatial Services  
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## **ABSTRACT**

This report documents the GPS ground surveys conducted in support of FEMA accuracy testing of the lidar data collection for Adams County, Wisconsin, in 2010. Surveys were conducted at 5 sites utilizing the base stations established in the static network. These surveys established “ground truth” data at each site on different surface types, including bare earth, low grass, brush lands, low trees, forest, high grass, weeds, crops, and urban areas. Statistical comparisons were made between ground truth points collected from the ground survey and the elevation at the associated horizontal coordinates represented on the LiDAR-derived digital terrain model.

## **SAMPLE POINTS/TEST POINTS**

The ground survey test points were distributed and categorized into sites as shown in the Test Survey Locations map on the next page.

## **DATA ANALYSIS**

To qualify as an acceptable accuracy test, the lidar data must be compared with a dataset of higher accuracy – in this instance ground survey. To develop a comparable dataset of points from the lidar dataset, a utility from proprietary software was used.

The ground control survey results were imported into an ESRI Pointz shapefile with each point’s information as attributes. The utility then accessed the lidar and generated a triangulated irregular network (TIN), which is a continuous digital terrain surface, using the bare-earth lidar points and the compiled breaklines. The utility probed the TIN surface to determine its elevations at each of the survey point’s horizontal locations.

The elevation was then appended as a field to the Pointz shapefile; the attributes for each point were exported to a database; and then statistical analysis was performed. The results can be seen on the following pages.

## **OVERALL ACCURACY**

A comparison of ground survey versus lidar model values indicates a vertical root mean square error (RMSE<sub>z</sub>) of 0.245 feet. This is within the FEMA specified vertical accuracy tolerance of 0.6. This RMSE<sub>z</sub> equates to a tested 0.4798 feet vertical accuracy at 95% confidence level.

**GROUND TRUTH ANALYSIS**  
Comparison of Lidar Points to Ground-Truth Points  
Adams County Coordinate System WISCRS  
NAD 83 HARN / NAVD 88, survey feet

Field definitions

Name – The designation given to the ground survey point to identify it with its coordinates and land cover type

X, Y, and Z – The coordinates that describe the point's horizontal and vertical location within the Adams County WISCRS Coordinate System. The X and Y values are shared between the ground control points and lidar comparison points. The Z field shows the elevation of the survey number. The lidar comparison point's elevation is implicit in the analysis' delta Z

Delta Z – The error, the difference between the elevation at a horizontal location as determined by ground survey and as determined by the lidar dataset

Delta Z Squared – The value of squaring Delta Z

Land Cover – The predominant land cover category at the location of the survey point

Statistic definitions

Sum – The sum of the analysis' Delta Z Squared values

Average – The average of the analysis' Delta Z Squared values

RMSE – The root mean squared error, the square root of the average of the squared errors

Accuracyz – The product of multiplying the RMSE with 1.96, a conversion between the RMSE value and a value with a 95% confidence level

Wood

5079 5074  
 572744.145 572757.087  
 320004.75 320011.188  
 1048:24 1048  
 5078 5088  
 572746.27 572742.244  
 320002.501 320007.41  
 1048:38 1048.24

Portage

Waushara

Juneau

Adams

5044 5004  
 512835.228 512921.312  
 243538.1 242861.6  
 936.84 935.6  
 5031 5032  
 512826.71 512828.947  
 243532.01 243532.21  
 936.86 936.7  
 1140  
 532664.836  
 225961.1  
 953.13  
 5070  
 532498.467  
 225384.538  
 955.4

1303  
 576594.59 1311  
 167364.07 577389.233  
 955.25 163489.346  
 928

Marquette

5219 5240  
 541798.9 541757.947  
 148243.447 148178.69  
 986.85 985.7  
 5267  
 5266 541738.996  
 541739.38 148115.55  
 148118.972 985.04  
 985.33

Sauk

Columbia

Name	X	Y	Z	Delta_Z	Delta_Z_Squared	TYPE
1051	242913.940	512795.062	935.677	-0.069000	0.004761	TALL GRASS/WEEDS
1052	242914.488	512792.875	935.658	-0.073000	0.005329	TALL GRASS/WEEDS
1053	242914.771	512790.551	935.671	-0.028000	0.000784	TALL GRASS/WEEDS
1054	242915.174	512788.352	935.647	-0.029000	0.000841	TALL GRASS/WEEDS
1055	242915.595	512786.447	935.667	-0.041000	0.001681	TALL GRASS/WEEDS
1056	242913.218	512786.081	935.586	-0.114000	0.012996	TALL GRASS/WEEDS
1057	242912.501	512788.194	935.651	-0.052000	0.002704	TALL GRASS/WEEDS
1058	242912.054	512790.318	935.584	-0.132000	0.017424	TALL GRASS/WEEDS
1059	242911.880	512792.696	935.616	-0.090000	0.008100	TALL GRASS/WEEDS
1060	242911.409	512794.739	935.636	-0.055000	0.003025	TALL GRASS/WEEDS
1061	242909.016	512794.622	935.552	-0.056000	0.003136	TALL GRASS/WEEDS
1062	242908.962	512792.333	935.628	0.014000	0.000196	TALL GRASS/WEEDS
1063	242909.300	512790.348	935.549	-0.077000	0.005929	TALL GRASS/WEEDS
1064	242909.860	512788.271	935.604	-0.093000	0.008649	TALL GRASS/WEEDS
1065	242910.483	512786.336	935.560	-0.209000	0.043681	TALL GRASS/WEEDS
1066	242908.316	512785.296	935.642	-0.066000	0.004356	TALL GRASS/WEEDS
1067	242907.564	512787.418	935.515	-0.134000	0.017956	TALL GRASS/WEEDS
1068	242907.127	512789.691	935.422	-0.173000	0.029929	TALL GRASS/WEEDS
1069	242906.316	512792.153	935.512	-0.088000	0.007744	TALL GRASS/WEEDS
1070	242905.419	512794.202	935.372	-0.232000	0.053824	TALL GRASS/WEEDS
1071	242902.746	512794.492	935.430	-0.265000	0.070225	TALL GRASS/WEEDS
1072	242902.717	512792.053	935.300	-0.364000	0.132496	TALL GRASS/WEEDS
1073	242903.122	512789.880	935.310	-0.413000	0.170569	TALL GRASS/WEEDS
1074	242903.630	512787.727	935.427	-0.271000	0.073441	TALL GRASS/WEEDS
1075	242904.217	512785.526	935.419	-0.236000	0.055696	TALL GRASS/WEEDS
1076	242901.754	512784.817	935.270	-0.236000	0.055696	TALL GRASS/WEEDS
1077	242900.872	512787.603	935.283	-0.292000	0.085264	TALL GRASS/WEEDS
1002	240577.999	512590.195	938.490	-0.325000	0.105625	ASPH
1003	240575.875	512590.620	938.502	-0.296000	0.087616	ASPH
1004	240573.886	512591.039	938.502	-0.303000	0.091809	ASPH
1005	240571.677	512591.452	938.508	-0.329000	0.108241	ASPH
1006	240569.758	512591.743	938.495	-0.327000	0.106929	ASPH
1007	240570.297	512594.085	938.515	-0.236000	0.055696	ASPH
1008	240572.447	512593.596	938.514	-0.212000	0.044944	ASPH
1009	240574.549	512593.107	938.496	-0.226000	0.051076	ASPH
1010	240576.538	512592.932	938.510	-0.250000	0.062500	ASPH
1011	240578.568	512592.503	938.481	-0.331000	0.109561	ASPH
1012	240579.135	512594.905	938.478	-0.265000	0.070225	ASPH
1013	240576.935	512595.408	938.486	-0.226000	0.051076	ASPH
1014	240574.757	512595.765	938.501	-0.165000	0.027225	ASPH
1015	240572.711	512596.356	938.517	-0.107000	0.011449	ASPH
1016	240570.729	512596.712	938.528	-0.099000	0.009801	ASPH
1017	240571.149	512599.061	938.529	-0.260000	0.067600	ASPH
1018	240573.343	512598.747	938.534	-0.232000	0.053824	ASPH
1019	240575.345	512598.375	938.533	-0.216000	0.046656	ASPH
1020	240577.462	512598.049	938.517	-0.219000	0.047961	ASPH
1021	240579.401	512597.646	938.534	-0.178000	0.031684	ASPH
1022	240580.168	512599.889	938.573	-0.188000	0.035344	ASPH
1023	240578.107	512600.523	938.605	-0.184000	0.033856	ASPH
1024	240576.040	512601.207	938.618	-0.199000	0.039601	ASPH
1025	240573.963	512601.568	938.640	-0.179000	0.032041	ASPH

1026	240571.898	512602.155	938.665	-0.166000	0.027556 ASPH
1027	240452.497	512864.722	937.473	-0.304000	0.092416 MOWED GRASS
1028	240454.122	512863.213	937.286	-0.411000	0.168921 MOWED GRASS
1029	240455.704	512861.674	937.392	-0.196000	0.038416 MOWED GRASS
1030	240457.105	512860.193	937.364	-0.183000	0.033489 MOWED GRASS
1031	240458.464	512858.561	937.301	-0.231000	0.053361 MOWED GRASS
1032	240460.073	512860.156	937.325	-0.284000	0.080656 MOWED GRASS
1033	240458.513	512861.836	937.417	-0.194000	0.037636 MOWED GRASS
1034	240457.010	512863.479	937.436	-0.168000	0.028224 MOWED GRASS
1035	240455.593	512865.290	937.474	-0.250000	0.062500 MOWED GRASS
1036	240454.239	512867.155	937.475	-0.260000	0.067600 MOWED GRASS
1037	240455.926	512869.034	937.490	-0.336000	0.112896 MOWED GRASS
1038	240457.375	512867.493	937.472	-0.299000	0.089401 MOWED GRASS
1039	240459.080	512865.792	937.411	-0.253000	0.064009 MOWED GRASS
1040	240460.808	512864.165	937.390	-0.243000	0.059049 MOWED GRASS
1041	240462.375	512862.303	937.314	-0.299000	0.089401 MOWED GRASS
1042	240464.093	512863.888	937.366	-0.272000	0.073984 MOWED GRASS
1043	240462.738	512865.831	937.420	-0.261000	0.068121 MOWED GRASS
1044	240461.138	512867.418	937.415	-0.287000	0.082369 MOWED GRASS
1045	240459.555	512869.028	937.460	-0.313000	0.097969 MOWED GRASS
1046	240458.034	512870.864	937.496	-0.377000	0.142129 MOWED GRASS
1047	240459.734	512872.685	937.500	-0.250000	0.062500 MOWED GRASS
1048	240461.391	512871.154	937.401	-0.427000	0.182329 MOWED GRASS
1049	240463.009	512869.528	937.405	-0.361000	0.130321 MOWED GRASS
1050	240464.584	512867.848	937.397	-0.309000	0.095481 MOWED GRASS
1128	225966.281	532659.817	953.154	-0.092000	0.008464 TALL GRASS/WEEDS
1129	225964.029	532659.643	953.192	-0.110000	0.012100 TALL GRASS/WEEDS
1130	225961.732	532659.561	953.123	-0.125000	0.015625 TALL GRASS/WEEDS
1131	225959.333	532659.471	953.095	-0.040000	0.001600 TALL GRASS/WEEDS
1132	225957.153	532659.458	953.014	-0.042000	0.001764 TALL GRASS/WEEDS
1133	225956.898	532661.922	953.046	0.021000	0.000441 TALL GRASS/WEEDS
1134	225959.057	532662.181	953.105	-0.012000	0.000144 TALL GRASS/WEEDS
1135	225961.333	532662.250	953.181	-0.021000	0.000441 TALL GRASS/WEEDS
1136	225963.203	532662.342	953.130	-0.086000	0.007396 TALL GRASS/WEEDS
1137	225965.318	532662.509	953.220	-0.026000	0.000676 TALL GRASS/WEEDS
1138	225965.331	532664.975	953.185	-0.081000	0.006561 TALL GRASS/WEEDS
1139	225963.124	532664.846	953.145	-0.042000	0.001764 TALL GRASS/WEEDS
1140	225961.100	532664.836	953.130	-0.034000	0.001156 TALL GRASS/WEEDS
1141	225958.860	532664.536	953.134	0.012000	0.000144 TALL GRASS/WEEDS
1142	225956.812	532664.306	953.031	-0.016000	0.000256 TALL GRASS/WEEDS
1143	225956.546	532666.636	953.057	-0.025000	0.000625 TALL GRASS/WEEDS
1144	225958.923	532666.801	953.158	0.020000	0.000400 TALL GRASS/WEEDS
1145	225961.143	532666.848	953.194	0.025000	0.000625 TALL GRASS/WEEDS
1146	225963.179	532666.923	953.202	-0.009000	0.000081 TALL GRASS/WEEDS
1147	225965.307	532667.250	953.277	0.009000	0.000081 TALL GRASS/WEEDS
1148	225965.565	532669.433	953.211	-0.079000	0.006241 TALL GRASS/WEEDS
1149	225962.988	532669.313	953.237	-0.036000	0.001296 TALL GRASS/WEEDS
1150	225961.172	532669.193	953.208	-0.066000	0.004356 TALL GRASS/WEEDS
1151	225958.977	532669.011	953.126	-0.126000	0.015876 TALL GRASS/WEEDS
1152	225956.339	532669.265	953.006	-0.206000	0.042436 TALL GRASS/WEEDS
1153	225961.431	532671.384	953.148	-0.102000	0.010404 TALL GRASS/WEEDS
1154	225892.956	532635.888	952.962	0.169000	0.028561 BRUSH/LOW TREES

1155	225890.947	532636.240	952.889	-0.053000	0.002809 BRUSH/LOW TREES
1156	225888.240	532636.180	952.905	-0.138000	0.019044 BRUSH/LOW TREES
1157	225886.212	532635.949	953.001	0.009000	0.000081 BRUSH/LOW TREES
1158	225884.328	532635.845	953.174	0.136000	0.018496 BRUSH/LOW TREES
1159	225884.865	532633.040	953.058	-0.079000	0.006241 BRUSH/LOW TREES
1160	225887.374	532633.219	952.973	-0.014000	0.000196 BRUSH/LOW TREES
1161	225889.954	532633.016	952.905	0.003000	0.000009 BRUSH/LOW TREES
1162	225892.282	532633.798	952.974	0.134000	0.017956 BRUSH/LOW TREES
1163	225894.402	532633.151	952.986	0.179000	0.032041 BRUSH/LOW TREES
1164	225894.011	532630.831	952.914	-0.005000	0.000025 BRUSH/LOW TREES
1165	225890.994	532630.422	952.890	-0.281000	0.078961 BRUSH/LOW TREES
1166	225886.457	532630.970	953.051	-0.064000	0.004096 BRUSH/LOW TREES
1167	225883.277	532630.628	953.196	0.083000	0.006889 BRUSH/LOW TREES
1168	225882.669	532628.016	953.173	0.075000	0.005625 BRUSH/LOW TREES
1169	225885.231	532627.642	953.188	-0.059000	0.003481 BRUSH/LOW TREES
1170	225888.579	532628.118	953.095	-0.172000	0.029584 BRUSH/LOW TREES
1171	225891.539	532628.203	953.129	-0.196000	0.038416 BRUSH/LOW TREES
1172	225894.626	532628.426	953.088	0.017000	0.000289 BRUSH/LOW TREES
1173	225890.663	532625.886	953.250	-0.195000	0.038025 BRUSH/LOW TREES
1174	225887.999	532625.412	953.205	-0.064000	0.004096 BRUSH/LOW TREES
1175	225885.777	532624.888	953.217	-0.065000	0.004225 BRUSH/LOW TREES
1079	221327.613	531369.738	953.451	-0.319000	0.101761 MOWED GRASS
1080	221329.431	531368.467	953.521	-0.252000	0.063504 MOWED GRASS
1081	221331.377	531367.544	953.458	-0.381000	0.145161 MOWED GRASS
1082	221333.217	531366.725	953.593	-0.306000	0.093636 MOWED GRASS
1083	221335.187	531365.554	953.624	-0.296000	0.087616 MOWED GRASS
1084	221336.507	531367.959	953.636	-0.361000	0.130321 MOWED GRASS
1085	221333.961	531369.125	953.652	-0.144000	0.020736 MOWED GRASS
1086	221332.028	531370.030	953.602	-0.204000	0.041616 MOWED GRASS
1087	221329.991	531371.503	953.650	-0.241000	0.058081 MOWED GRASS
1088	221327.878	531372.767	953.543	-0.279000	0.077841 MOWED GRASS
1089	221328.645	531374.829	953.545	-0.339000	0.114921 MOWED GRASS
1090	221330.527	531373.754	953.580	-0.373000	0.139129 MOWED GRASS
1091	221332.486	531372.832	953.662	-0.265000	0.070225 MOWED GRASS
1092	221334.226	531371.399	953.712	-0.111000	0.012321 MOWED GRASS
1093	221336.352	531370.864	953.622	-0.238000	0.056644 MOWED GRASS
1094	221338.463	531369.891	953.691	-0.219000	0.047961 MOWED GRASS
1095	221339.692	531371.899	953.717	-0.245000	0.060025 MOWED GRASS
1096	221337.695	531373.002	953.651	-0.269000	0.072361 MOWED GRASS
1097	221335.907	531374.051	953.687	-0.210000	0.044100 MOWED GRASS
1098	221333.960	531375.745	953.665	-0.352000	0.123904 MOWED GRASS
1099	221332.177	531377.002	953.631	-0.304000	0.092416 MOWED GRASS
1100	221333.579	531379.091	953.605	-0.376000	0.141376 MOWED GRASS
1101	221335.437	531378.059	953.661	-0.321000	0.103041 MOWED GRASS
1102	221337.275	531376.998	953.730	-0.253000	0.064009 MOWED GRASS
1103	221339.328	531375.551	953.720	-0.265000	0.070225 MOWED GRASS
1104	221072.092	531234.723	949.063	-0.016000	0.000256 ASPH
1105	221069.854	531234.819	949.062	-0.002000	0.000004 ASPH
1106	221066.821	531234.767	949.166	-0.025000	0.000625 ASPH
1107	221064.232	531234.709	949.098	-0.142000	0.020164 ASPH
1108	221061.062	531234.956	949.176	-0.172000	0.029584 ASPH
1109	221060.977	531232.171	949.050	-0.153000	0.023409 ASPH

1110	221063.585	531232.284	949.066	-0.177000	0.031329 ASPH
1111	221065.898	531232.330	948.993	-0.232000	0.053824 ASPH
1112	221068.143	531232.494	949.011	-0.122000	0.014884 ASPH
1113	221070.263	531232.612	948.954	-0.110000	0.012100 ASPH
1114	221070.249	531230.335	948.976	-0.064000	0.004096 ASPH
1115	221067.911	531230.352	949.009	-0.053000	0.002809 ASPH
1116	221065.667	531230.427	949.025	-0.113000	0.012769 ASPH
1117	221063.331	531230.096	949.072	-0.074000	0.005476 ASPH
1118	221060.642	531229.748	949.026	-0.031000	0.000961 ASPH
1119	221060.580	531227.298	949.090	0.020000	0.000400 ASPH
1120	221063.004	531227.373	948.991	-0.112000	0.012544 ASPH
1121	221065.012	531227.513	948.954	-0.158000	0.024964 ASPH
1122	221067.121	531227.804	948.965	-0.082000	0.006724 ASPH
1123	221069.229	531227.942	948.955	-0.079000	0.006241 ASPH
1124	221069.132	531225.606	948.944	-0.135000	0.018225 ASPH
1125	221066.809	531225.426	948.918	-0.169000	0.028561 ASPH
1126	221064.108	531225.030	949.003	-0.098000	0.009604 ASPH
1127	221061.627	531224.858	948.986	-0.133000	0.017689 ASPH
1201	319916.624	572655.152	1048.921	0.168000	0.028224 MOWED GRASS
1202	319918.865	572654.975	1049.002	0.388000	0.150544 MOWED GRASS
1203	319920.920	572654.977	1048.964	0.412000	0.169744 MOWED GRASS
1204	319922.890	572654.757	1048.899	0.361000	0.130321 MOWED GRASS
1205	319924.900	572654.602	1048.965	0.391000	0.152881 MOWED GRASS
1206	319924.953	572652.308	1048.910	0.339000	0.114921 MOWED GRASS
1207	319922.763	572652.136	1048.831	0.286000	0.081796 MOWED GRASS
1208	319920.748	572652.323	1048.892	0.338000	0.114244 MOWED GRASS
1209	319918.391	572652.228	1049.006	0.412000	0.169744 MOWED GRASS
1210	319916.304	572652.412	1049.028	0.318000	0.101124 MOWED GRASS
1211	319915.920	572650.037	1048.922	0.295000	0.087025 MOWED GRASS
1212	319918.414	572649.872	1048.947	0.339000	0.114921 MOWED GRASS
1213	319920.715	572649.750	1048.877	0.306000	0.093636 MOWED GRASS
1214	319922.898	572649.529	1048.832	0.266000	0.070756 MOWED GRASS
1215	319925.119	572649.571	1048.796	0.209000	0.043681 MOWED GRASS
1216	319925.051	572647.290	1048.710	0.148000	0.021904 MOWED GRASS
1217	319922.980	572647.124	1048.805	0.235000	0.055225 MOWED GRASS
1218	319920.919	572647.393	1048.817	0.206000	0.042436 MOWED GRASS
1219	319918.898	572647.634	1048.819	0.162000	0.026244 MOWED GRASS
1220	319916.797	572647.724	1048.861	0.324000	0.104976 MOWED GRASS
1221	319916.390	572645.167	1048.729	0.216000	0.046656 MOWED GRASS
1222	319918.571	572644.674	1048.790	0.132000	0.017424 MOWED GRASS
1223	319920.772	572644.421	1048.732	0.133000	0.017689 MOWED GRASS
1224	319922.993	572644.411	1048.753	0.249000	0.062001 MOWED GRASS
1225	319924.927	572644.161	1048.687	0.210000	0.044100 MOWED GRASS
1226	319518.143	572552.241	1046.533	0.188000	0.035344 TALL GRASS/WEEDS
1227	319521.461	572552.153	1046.378	0.059000	0.003481 TALL GRASS/WEEDS
1228	319524.516	572551.899	1046.548	0.166000	0.027556 TALL GRASS/WEEDS
1229	319527.216	572551.293	1046.448	-0.016000	0.000256 TALL GRASS/WEEDS
1230	319530.507	572551.583	1046.704	0.120000	0.014400 TALL GRASS/WEEDS
1231	319530.894	572549.096	1046.654	0.057000	0.003249 TALL GRASS/WEEDS
1232	319527.698	572548.939	1046.583	0.122000	0.014884 TALL GRASS/WEEDS
1233	319524.779	572548.782	1046.524	0.094000	0.008836 TALL GRASS/WEEDS
1234	319520.671	572548.314	1046.463	0.199000	0.039601 TALL GRASS/WEEDS



1235	319516.774	572548.191	1046.427	0.190000	0.036100 TALL GRASS/WEEDS
1236	319517.004	572544.440	1046.249	0.016000	0.000256 TALL GRASS/WEEDS
1237	319520.153	572544.146	1046.354	0.205000	0.042025 TALL GRASS/WEEDS
1238	319523.023	572543.647	1046.424	0.063000	0.003969 TALL GRASS/WEEDS
1239	319527.260	572543.135	1046.556	0.106000	0.011236 TALL GRASS/WEEDS
1240	319531.163	572542.275	1046.742	0.025000	0.000625 TALL GRASS/WEEDS
1241	319531.091	572538.708	1046.697	0.011000	0.000121 TALL GRASS/WEEDS
1242	319527.671	572538.639	1046.451	-0.052000	0.002704 TALL GRASS/WEEDS
1243	319523.713	572538.145	1046.530	0.062000	0.003844 TALL GRASS/WEEDS
1244	319519.498	572538.155	1046.467	0.120000	0.014400 TALL GRASS/WEEDS
1245	319516.760	572538.045	1046.404	-0.009000	0.000081 TALL GRASS/WEEDS
1246	319516.574	572535.211	1046.608	0.007000	0.000049 TALL GRASS/WEEDS
1247	319519.947	572534.927	1046.623	0.094000	0.008836 TALL GRASS/WEEDS
1248	319522.869	572534.892	1046.618	0.087000	0.007569 TALL GRASS/WEEDS
1249	319525.528	572534.618	1046.624	0.085000	0.007225 TALL GRASS/WEEDS
1250	319529.085	572534.085	1046.622	0.151000	0.022801 TALL GRASS/WEEDS
1251	319358.385	572529.923	1046.399	-0.262000	0.068644 BRUSH/LOW TREES
1252	319359.334	572532.751	1046.534	-0.327000	0.106929 BRUSH/LOW TREES
1253	319359.807	572534.946	1046.491	-0.500000	0.250000 BRUSH/LOW TREES
1254	319360.245	572538.212	1046.451	-0.760000	0.577600 BRUSH/LOW TREES
1255	319359.955	572541.538	1046.624	-0.368000	0.135424 BRUSH/LOW TREES
1256	319357.115	572541.864	1046.644	-0.359000	0.128881 BRUSH/LOW TREES
1257	319355.974	572539.603	1046.520	-0.625000	0.390625 BRUSH/LOW TREES
1258	319355.336	572536.473	1046.570	-0.268000	0.071824 BRUSH/LOW TREES
1259	319355.093	572533.034	1046.622	-0.249000	0.062001 BRUSH/LOW TREES
1260	319354.597	572530.031	1046.502	-0.403000	0.162409 BRUSH/LOW TREES
1261	319352.279	572530.731	1046.670	-0.275000	0.075625 BRUSH/LOW TREES
1262	319352.862	572533.554	1046.760	-0.191000	0.036481 BRUSH/LOW TREES
1263	319352.951	572536.364	1046.741	-0.178000	0.031684 BRUSH/LOW TREES
1264	319353.275	572539.391	1046.689	-0.441000	0.194481 BRUSH/LOW TREES
1265	319353.472	572541.987	1046.725	-0.327000	0.106929 BRUSH/LOW TREES
1266	319350.627	572542.115	1046.972	-0.131000	0.017161 BRUSH/LOW TREES
1267	319350.032	572539.372	1046.978	0.057000	0.003249 BRUSH/LOW TREES
1268	319349.524	572536.672	1046.915	-0.064000	0.004096 BRUSH/LOW TREES
1269	319349.418	572532.878	1046.826	-0.152000	0.023104 BRUSH/LOW TREES
1270	319349.854	572529.896	1046.673	-0.258000	0.066564 BRUSH/LOW TREES
1271	319346.880	572530.419	1046.840	-0.085000	0.007225 BRUSH/LOW TREES
1272	319346.712	572533.468	1046.892	-0.103000	0.010609 BRUSH/LOW TREES
1273	319346.681	572537.010	1046.850	-0.233000	0.054289 BRUSH/LOW TREES
1274	319347.225	572540.242	1046.975	-0.064000	0.004096 BRUSH/LOW TREES
1275	319347.413	572542.974	1047.073	-0.100000	0.010000 BRUSH/LOW TREES
1280	167371.587	576603.057	955.134	-0.018000	0.000324 CONC
1281	167369.528	576602.965	955.157	0.112000	0.012544 CONC
1282	167367.631	576602.934	955.157	0.139000	0.019321 CONC
1283	167365.548	576602.904	955.129	0.068000	0.004624 CONC
1284	167363.557	576602.664	955.114	0.018000	0.000324 CONC
1285	167363.296	576600.296	955.131	-0.003000	0.000009 CONC
1286	167365.630	576600.033	955.124	0.004000	0.000016 CONC
1287	167368.226	576599.929	955.127	0.078000	0.006084 CONC
1288	167370.797	576599.827	955.100	0.069000	0.004761 CONC
1289	167372.703	576599.767	955.054	-0.046000	0.002116 CONC
1290	167372.131	576606.620	955.205	0.252000	0.063504 CONC

1291	167369.378	576606.634	955.126	0.182000	0.033124 CONC
1292	167367.188	576606.789	955.176	0.102000	0.010404 CONC
1293	167364.709	576606.534	955.123	-0.119000	0.014161 CONC
1294	167362.178	576606.412	955.215	0.088000	0.007744 CONC
1295	167362.320	576597.517	955.247	0.084000	0.007056 CONC
1296	167365.069	576597.543	955.256	0.090000	0.008100 CONC
1297	167368.102	576597.549	955.240	0.143000	0.020449 CONC
1298	167370.977	576597.374	955.222	0.242000	0.058564 CONC
1299	167373.161	576597.196	955.225	0.189000	0.035721 CONC
1300	167372.831	576594.512	955.164	-0.083000	0.006889 CONC
1301	167369.490	576594.570	955.228	0.189000	0.035721 CONC
1302	167366.886	576594.519	955.332	0.186000	0.034596 CONC
1303	167364.070	576594.590	955.250	0.005000	0.000025 CONC
1304	167361.786	576594.595	955.287	0.002000	0.000004 CONC
1305	163485.782	577401.002	927.713	-0.339000	0.114921 TALL GRASS/WEEDS
1306	163486.011	577397.907	927.753	-0.509000	0.259081 TALL GRASS/WEEDS
1307	163485.993	577394.489	927.938	-0.316000	0.099856 TALL GRASS/WEEDS
1308	163486.425	577391.142	927.999	-0.095000	0.009025 TALL GRASS/WEEDS
1309	163486.441	577387.195	927.963	0.017000	0.000289 TALL GRASS/WEEDS
1310	163489.199	577386.988	927.923	-0.292000	0.085264 TALL GRASS/WEEDS
1311	163489.346	577389.233	928.000	-0.163000	0.026569 TALL GRASS/WEEDS
1312	163489.536	577391.807	927.991	-0.283000	0.080089 TALL GRASS/WEEDS
1313	163489.178	577395.895	927.762	-0.365000	0.133225 TALL GRASS/WEEDS
1314	163489.415	577398.733	927.678	-0.418000	0.174724 TALL GRASS/WEEDS
1315	163492.968	577398.931	927.937	-0.091000	0.008281 TALL GRASS/WEEDS
1316	163492.914	577396.326	927.957	-0.286000	0.081796 TALL GRASS/WEEDS
1317	163492.068	577392.746	928.119	-0.356000	0.126736 TALL GRASS/WEEDS
1318	163492.101	577389.140	928.210	-0.323000	0.104329 TALL GRASS/WEEDS
1319	163495.404	577388.564	928.322	-0.231000	0.053361 TALL GRASS/WEEDS
1320	163496.232	577392.775	928.298	-0.203000	0.041209 TALL GRASS/WEEDS
1321	163497.930	577395.794	928.077	-0.443000	0.196249 TALL GRASS/WEEDS
1322	163498.343	577399.249	928.018	-0.351000	0.123201 TALL GRASS/WEEDS
1323	163498.820	577402.730	927.931	-0.451000	0.203401 TALL GRASS/WEEDS
1324	163498.178	577406.143	927.997	-0.160000	0.025600 TALL GRASS/WEEDS
1325	163493.891	577407.733	927.836	-0.112000	0.012544 TALL GRASS/WEEDS
1326	163486.838	577410.403	927.793	-0.118000	0.013924 TALL GRASS/WEEDS
1327	163482.685	577411.437	927.743	-0.217000	0.047089 TALL GRASS/WEEDS
1328	163479.505	577411.199	927.764	-0.143000	0.020449 TALL GRASS/WEEDS
1332	148700.333	542020.567	984.830	-0.342000	0.116964 MOWED GRASS
1333	148700.303	542023.871	984.770	-0.301000	0.090601 MOWED GRASS
1334	148700.568	542027.399	984.714	-0.275000	0.075625 MOWED GRASS
1335	148700.777	542030.210	984.719	-0.305000	0.093025 MOWED GRASS
1336	148700.894	542033.856	984.763	-0.279000	0.077841 MOWED GRASS
1337	148697.963	542034.244	984.742	-0.258000	0.066564 MOWED GRASS
1338	148696.981	542031.469	984.741	-0.302000	0.091204 MOWED GRASS
1339	148697.073	542028.153	984.744	-0.321000	0.103041 MOWED GRASS
1340	148697.004	542025.222	984.745	-0.221000	0.048841 MOWED GRASS
1341	148697.103	542021.279	984.756	-0.202000	0.040804 MOWED GRASS
1342	148694.030	542021.372	984.575	-0.318000	0.101124 MOWED GRASS
1343	148694.110	542024.493	984.591	-0.338000	0.114244 MOWED GRASS
1344	148694.102	542028.095	984.633	-0.365000	0.133225 MOWED GRASS
1345	148694.494	542031.459	984.723	-0.312000	0.097344 MOWED GRASS

1346	148694.891	542035.426	984.681	-0.280000	0.078400 MOWED GRASS
1347	148691.128	542035.719	984.629	-0.270000	0.072900 MOWED GRASS
1348	148690.810	542032.499	984.720	-0.233000	0.054289 MOWED GRASS
1349	148690.598	542029.459	984.687	-0.231000	0.053361 MOWED GRASS
1350	148690.401	542026.155	984.685	-0.271000	0.073441 MOWED GRASS
1351	148690.137	542022.962	984.603	-0.340000	0.115600 MOWED GRASS
1352	148687.023	542022.984	984.549	-0.505000	0.255025 MOWED GRASS
1353	148686.917	542025.741	984.607	-0.350000	0.122500 MOWED GRASS
1354	148686.676	542028.586	984.654	-0.189000	0.035721 MOWED GRASS
1355	148686.531	542031.217	984.584	-0.309000	0.095481 MOWED GRASS
1356	148686.482	542034.268	984.526	-0.416000	0.173056 MOWED GRASS
5000	242858.699	512930.243	935.660	-0.355000	0.126025 BRUSH/LOW TREES
5001	242859.268	512927.946	935.700	-0.284000	0.080656 BRUSH/LOW TREES
5002	242860.453	512926.219	935.490	-0.491000	0.241081 BRUSH/LOW TREES
5003	242861.074	512923.419	935.730	-0.102000	0.010404 BRUSH/LOW TREES
5004	242861.600	512921.312	935.600	-0.175000	0.030625 BRUSH/LOW TREES
5005	242859.090	512920.375	935.600	-0.242000	0.058564 BRUSH/LOW TREES
5006	242858.621	512922.275	935.670	-0.176000	0.030976 BRUSH/LOW TREES
5007	242857.910	512924.491	935.680	-0.254000	0.064516 BRUSH/LOW TREES
5008	242858.681	512925.851	935.640	-0.320000	0.102400 BRUSH/LOW TREES
5009	242856.692	512928.365	935.870	-0.111000	0.012321 BRUSH/LOW TREES
5010	242854.375	512928.500	935.660	-0.153000	0.023409 BRUSH/LOW TREES
5011	242854.993	512925.814	935.590	-0.243000	0.059049 BRUSH/LOW TREES
5012	242855.605	512923.901	935.540	-0.328000	0.107584 BRUSH/LOW TREES
5013	242856.098	512921.990	935.650	-0.233000	0.054289 BRUSH/LOW TREES
5014	242856.717	512919.815	935.560	-0.357000	0.127449 BRUSH/LOW TREES
5015	242854.607	512919.120	935.600	-0.319000	0.101761 BRUSH/LOW TREES
5016	242853.828	512921.286	935.570	-0.272000	0.073984 BRUSH/LOW TREES
5017	242852.838	512923.225	935.510	-0.257000	0.066049 BRUSH/LOW TREES
5018	242852.054	512925.392	935.630	-0.069000	0.004761 BRUSH/LOW TREES
5019	242850.835	512927.731	935.720	-0.098000	0.009604 BRUSH/LOW TREES
5020	242848.647	512926.933	935.610	-0.258000	0.066564 BRUSH/LOW TREES
5021	242849.105	512925.290	935.690	-0.076000	0.005776 BRUSH/LOW TREES
5022	242849.993	512923.169	935.580	-0.128000	0.016384 BRUSH/LOW TREES
5023	242850.512	512920.838	935.590	-0.244000	0.059536 BRUSH/LOW TREES
5024	242851.112	512918.668	935.520	-0.407000	0.165649 BRUSH/LOW TREES
5025	243527.872	512831.502	936.620	0.083000	0.006889 TREE COVER
5026	243528.070	512829.490	936.760	0.165000	0.027225 TREE COVER
5027	243528.298	512827.366	936.710	0.023000	0.000529 TREE COVER
5028	243528.614	512825.076	936.730	-0.055000	0.003025 TREE COVER
5029	243528.635	512823.184	936.720	-0.128000	0.016384 TREE COVER
5030	243531.941	512823.870	936.890	-0.150000	0.022500 TREE COVER
5031	243532.010	512826.710	936.860	-0.048000	0.002304 TREE COVER
5032	243532.210	512828.947	936.700	0.011000	0.000121 TREE COVER
5033	243532.381	512831.104	936.590	-0.036000	0.001296 TREE COVER
5034	243531.917	512832.909	936.540	-0.181000	0.032761 TREE COVER
5035	243533.698	512833.429	936.570	-0.254000	0.064516 TREE COVER
5036	243532.363	512831.576	936.500	-0.184000	0.033856 TREE COVER
5037	243535.186	512828.646	936.370	-0.228000	0.051984 TREE COVER
5038	243535.363	512826.518	936.740	-0.193000	0.037249 TREE COVER
5039	243536.090	512825.568	936.550	-0.365000	0.133225 TREE COVER
5040	243538.744	512825.971	936.570	0.163000	0.026569 TREE COVER

5041	243538.795	512828.127	936.700	0.150000	0.022500 TREE COVER
5042	243538.488	512830.412	936.600	-0.074000	0.005476 TREE COVER
5043	243538.117	512832.508	936.440	-0.179000	0.032041 TREE COVER
5044	243538.100	512835.228	936.840	0.129000	0.016641 TREE COVER
5045	243540.194	512834.725	936.710	0.086000	0.007396 TREE COVER
5046	243540.350	512833.057	936.460	-0.143000	0.020449 TREE COVER
5047	243541.271	512830.474	936.430	-0.386000	0.148996 TREE COVER
5048	225390.948	532488.489	955.610	-0.011000	0.000121 TREE COVER
5049	225392.855	532489.861	955.590	0.041000	0.001681 TREE COVER
5050	225394.110	532491.618	955.630	0.116000	0.013456 TREE COVER
5051	225395.246	532493.336	955.630	0.148000	0.021904 TREE COVER
5052	225396.411	532495.109	955.590	0.146000	0.021316 TREE COVER
5053	225394.868	532496.863	955.610	0.234000	0.054756 TREE COVER
5054	225392.613	532495.273	955.580	0.190000	0.036100 TREE COVER
5055	225391.510	532493.708	955.570	0.176000	0.030976 TREE COVER
5056	225390.098	532491.977	955.550	0.095000	0.009025 TREE COVER
5057	225388.909	532490.450	955.610	0.069000	0.004761 TREE COVER
5058	225387.048	532491.798	955.540	0.092000	0.008464 TREE COVER
5059	225388.169	532493.463	955.510	0.151000	0.022801 TREE COVER
5060	225389.281	532495.251	955.490	0.141000	0.019881 TREE COVER
5061	225390.328	532497.068	955.540	0.160000	0.025600 TREE COVER
5062	225391.461	532498.784	955.520	0.133000	0.017689 TREE COVER
5063	225389.917	532500.616	955.490	0.049000	0.002401 TREE COVER
5064	225388.279	532498.435	955.490	0.051000	0.002601 TREE COVER
5065	225387.038	532496.716	955.460	0.062000	0.003844 TREE COVER
5066	225385.919	532494.820	955.460	0.113000	0.012769 TREE COVER
5067	225384.336	532493.122	955.510	-0.108000	0.011664 TREE COVER
5068	225382.235	532494.649	955.440	-0.219000	0.047961 TREE COVER
5069	225383.424	532496.459	955.420	-0.195000	0.038025 TREE COVER
5070	225384.538	532498.467	955.400	-0.225000	0.050625 TREE COVER
5071	225385.692	532500.501	955.440	-0.339000	0.114921 TREE COVER
5072	225386.778	532502.087	955.460	-0.449000	0.201601 TREE COVER
5073	320013.001	572759.535	1047.870	0.099000	0.009801 TREE COVER
5074	320011.188	572757.087	1048.000	0.013000	0.000169 TREE COVER
5075	320011.270	572756.648	1048.680	0.671000	0.450241 TREE COVER
5076	320008.130	572752.777	1048.040	-0.383000	0.146689 TREE COVER
5077	320004.895	572749.044	1048.130	-0.301000	0.090601 TREE COVER
5078	320002.501	572746.270	1048.380	-0.075000	0.005625 TREE COVER
5079	320004.750	572744.145	1048.240	-0.289000	0.083521 TREE COVER
5080	320005.303	572744.845	1048.480	-0.040000	0.001600 TREE COVER
5081	320008.693	572749.107	1048.190	-0.071000	0.005041 TREE COVER
5082	320008.973	572749.648	1048.030	-0.232000	0.053824 TREE COVER
5083	320010.428	572751.177	1048.030	-0.139000	0.019321 TREE COVER
5084	320013.046	572754.424	1048.040	0.085000	0.007225 TREE COVER
5085	320014.356	572752.189	1048.130	0.065000	0.004225 TREE COVER
5086	320013.364	572749.209	1048.050	-0.063000	0.003969 TREE COVER
5087	320010.649	572745.964	1048.010	-0.164000	0.026896 TREE COVER
5088	320007.410	572742.244	1048.240	-0.228000	0.051984 TREE COVER
5089	320010.964	572761.875	1047.910	-0.038000	0.001444 TREE COVER
5090	320009.255	572760.011	1047.990	-0.081000	0.006561 TREE COVER
5091	320009.287	572760.203	1047.980	-0.073000	0.005329 TREE COVER
5092	320005.758	572755.423	1048.070	-0.385000	0.148225 TREE COVER

5093	320003.822	572753.115	1048.140	-0.244000	0.059536 TREE COVER
5094	320001.437	572750.332	1048.250	-0.148000	0.021904 TREE COVER
5095	164566.988	581233.727	937.770	0.144000	0.020736 MOWED GRASS
5096	164569.310	581233.838	937.740	0.029000	0.000841 MOWED GRASS
5097	164571.492	581234.085	937.770	0.130000	0.016900 MOWED GRASS
5098	164573.366	581234.364	937.710	0.127000	0.016129 MOWED GRASS
5099	164575.680	581234.554	937.720	0.116000	0.013456 MOWED GRASS
5100	164577.555	581234.914	937.700	0.077000	0.005929 MOWED GRASS
5101	164576.210	581237.913	937.690	0.080000	0.006400 MOWED GRASS
5102	164573.207	581237.582	937.780	0.097000	0.009409 MOWED GRASS
5103	164570.721	581237.584	937.780	-0.002000	0.000004 MOWED GRASS
5104	164566.736	581237.392	937.800	-0.102000	0.010404 MOWED GRASS
5105	164565.240	581240.421	937.840	0.048000	0.002304 MOWED GRASS
5106	164568.039	581240.428	937.750	-0.068000	0.004624 MOWED GRASS
5107	164571.702	581240.445	937.780	0.079000	0.006241 MOWED GRASS
5108	164575.447	581240.724	937.720	0.094000	0.008836 MOWED GRASS
5109	164579.385	581240.983	937.650	-0.036000	0.001296 MOWED GRASS
5110	164579.743	581244.376	937.700	0.007000	0.000049 MOWED GRASS
5111	164576.860	581244.105	937.730	0.072000	0.005184 MOWED GRASS
5112	164574.553	581243.614	937.720	0.093000	0.008649 MOWED GRASS
5113	164571.509	581243.452	937.780	0.130000	0.016900 MOWED GRASS
5114	164568.222	581243.540	937.820	0.087000	0.007569 MOWED GRASS
5115	164570.328	581247.939	937.870	0.015000	0.000225 MOWED GRASS
5116	164573.951	581248.195	937.700	0.048000	0.002304 MOWED GRASS
5117	164578.973	581248.130	937.680	0.038000	0.001444 MOWED GRASS
5118	164582.688	581248.463	937.770	0.073000	0.005329 MOWED GRASS
5119	164576.157	581239.997	937.700	0.070000	0.004900 MOWED GRASS
5120	164761.627	581265.370	940.550	-0.023000	0.000529 TREE COVER
5121	164763.427	581266.853	940.490	-0.045000	0.002025 TREE COVER
5122	164765.447	581268.591	940.500	-0.005000	0.000025 TREE COVER
5123	164768.628	581271.431	940.660	0.143000	0.020449 TREE COVER
5124	164770.442	581273.772	940.680	0.069000	0.004761 TREE COVER
5125	164770.013	581273.990	940.570	-0.031000	0.000961 TREE COVER
5126	164764.610	581270.964	940.670	0.180000	0.032400 TREE COVER
5127	164762.450	581268.469	940.360	-0.339000	0.114921 TREE COVER
5128	164759.427	581265.653	940.770	0.075000	0.005625 TREE COVER
5129	164756.413	581262.487	940.790	-0.053000	0.002809 TREE COVER
5130	164754.755	581263.936	940.610	-0.216000	0.046656 TREE COVER
5131	164756.745	581266.139	940.800	0.026000	0.000676 TREE COVER
5132	164758.800	581268.456	940.610	-0.085000	0.007225 TREE COVER
5133	164760.700	581270.314	940.490	-0.139000	0.019321 TREE COVER
5134	164764.568	581273.889	940.820	0.325000	0.105625 TREE COVER
5135	164763.014	581275.135	940.540	0.083000	0.006889 TREE COVER
5136	164760.507	581272.515	940.580	0.043000	0.001849 TREE COVER
5137	164758.636	581270.313	940.600	-0.052000	0.002704 TREE COVER
5138	164756.642	581268.051	940.760	0.046000	0.002116 TREE COVER
5139	164755.001	581266.181	940.640	-0.145000	0.021025 TREE COVER
5140	164754.503	581270.527	940.660	-0.084000	0.007056 TREE COVER
5141	164756.738	581273.127	940.700	-0.032000	0.001024 TREE COVER
5142	164758.799	581275.230	940.590	0.050000	0.002500 TREE COVER
5143	164760.263	581277.076	940.480	0.011000	0.000121 TREE COVER
5144	164762.441	581279.422	940.440	0.013000	0.000169 TREE COVER

5145	164759.441	581142.021	938.770	-0.172000	0.029584 BRUSH/LOW TREES
5146	164756.055	581142.220	938.670	-0.294000	0.086436 BRUSH/LOW TREES
5147	164752.995	581141.174	938.660	-0.191000	0.036481 BRUSH/LOW TREES
5148	164749.116	581140.788	938.670	0.010000	0.000100 BRUSH/LOW TREES
5149	164746.898	581138.583	938.650	-0.211000	0.044521 BRUSH/LOW TREES
5150	164749.663	581133.226	938.300	-0.295000	0.087025 BRUSH/LOW TREES
5151	164753.039	581133.477	938.520	-0.334000	0.111556 BRUSH/LOW TREES
5152	164755.211	581133.344	938.630	-0.295000	0.087025 BRUSH/LOW TREES
5153	164756.796	581134.249	938.740	-0.093000	0.008649 BRUSH/LOW TREES
5154	164759.975	581132.701	938.390	-0.388000	0.150544 BRUSH/LOW TREES
5155	164758.973	581129.995	938.390	-0.607000	0.368449 BRUSH/LOW TREES
5156	164757.501	581128.559	938.390	-0.402000	0.161604 BRUSH/LOW TREES
5157	164754.521	581128.992	938.340	-0.553000	0.305809 BRUSH/LOW TREES
5158	164752.984	581128.118	938.360	-0.319000	0.101761 BRUSH/LOW TREES
5159	164749.402	581127.412	938.300	-0.221000	0.048841 BRUSH/LOW TREES
5160	164750.196	581124.021	938.330	-0.243000	0.059049 BRUSH/LOW TREES
5161	164752.546	581124.703	938.360	-0.150000	0.022500 BRUSH/LOW TREES
5162	164756.079	581125.572	938.360	-0.018000	0.000324 BRUSH/LOW TREES
5163	164757.623	581126.201	938.410	-0.048000	0.002304 BRUSH/LOW TREES
5164	164759.170	581127.482	938.370	-0.277000	0.076729 BRUSH/LOW TREES
5165	164759.558	581122.905	938.370	-0.048000	0.002304 BRUSH/LOW TREES
5166	164757.948	581121.623	938.380	-0.128000	0.016384 BRUSH/LOW TREES
5167	164755.224	581121.797	938.570	-0.489000	0.239121 BRUSH/LOW TREES
5168	164752.213	581121.428	938.190	-1.067000	1.138489 BRUSH/LOW TREES
5169	164749.253	581119.945	938.450	-0.488000	0.238144 BRUSH/LOW TREES
5170	164748.202	581123.430	938.470	-0.176000	0.030976 BRUSH/LOW TREES
5171	148205.015	541865.512	984.860	-0.154000	0.023716 TREE COVER
5172	148204.088	541862.646	984.860	-0.207000	0.042849 TREE COVER
5173	148202.767	541859.102	984.790	-0.412000	0.169744 TREE COVER
5174	148202.170	541857.016	984.810	-0.517000	0.267289 TREE COVER
5175	148206.270	541869.155	984.890	-0.104000	0.010816 TREE COVER
5176	148203.258	541869.354	984.800	-0.224000	0.050176 TREE COVER
5177	148202.438	541866.343	984.860	-0.197000	0.038809 TREE COVER
5178	148202.019	541862.815	984.820	-0.209000	0.043681 TREE COVER
5179	148201.311	541859.648	984.790	-0.331000	0.109561 TREE COVER
5180	148203.234	541861.969	984.820	-0.229000	0.052441 TREE COVER
5181	148198.193	541858.530	984.770	-0.311000	0.096721 TREE COVER
5182	148198.906	541862.080	984.780	-0.260000	0.067600 TREE COVER
5183	148199.582	541865.393	984.870	-0.168000	0.028224 TREE COVER
5184	148200.393	541868.846	984.790	-0.263000	0.069169 TREE COVER
5185	148201.057	541871.952	984.790	-0.413000	0.170569 TREE COVER
5186	148197.554	541871.472	984.800	-0.251000	0.063001 TREE COVER
5187	148196.793	541868.005	984.860	-0.230000	0.052900 TREE COVER
5188	148196.130	541864.172	984.820	-0.287000	0.082369 TREE COVER
5189	148195.766	541862.625	984.920	-0.202000	0.040804 TREE COVER
5190	148194.927	541857.576	984.740	-0.444000	0.197136 TREE COVER
5191	148190.877	541861.016	984.850	-0.573000	0.328329 TREE COVER
5192	148191.329	541864.434	984.920	-0.478000	0.228484 TREE COVER
5193	148191.945	541868.035	985.010	-0.343000	0.117649 TREE COVER
5194	148192.364	541871.095	984.870	-0.387000	0.149769 TREE COVER
5195	148193.421	541873.725	984.850	-0.444000	0.197136 TREE COVER
5196	148249.270	541790.044	986.840	-0.250000	0.062500 ASPH

5197	148247.469	541790.110	986.710	-0.396000	0.156816 ASPH
5198	148243.238	541789.965	986.870	-0.235000	0.055225 ASPH
5199	148239.636	541790.052	986.880	-0.290000	0.084100 ASPH
5200	148235.506	541789.768	986.890	-0.276000	0.076176 ASPH
5201	148230.738	541788.968	986.810	-0.313000	0.097969 ASPH
5202	148226.334	541788.838	986.790	-0.266000	0.070756 ASPH
5203	148222.332	541788.714	986.830	-0.190000	0.036100 ASPH
5204	148226.572	541792.554	986.900	-0.408000	0.166464 ASPH
5205	148231.249	541792.124	986.910	-0.237000	0.056169 ASPH
5206	148235.876	541791.858	986.910	-0.353000	0.124609 ASPH
5207	148240.332	541791.582	986.900	-0.370000	0.136900 ASPH
5208	148244.744	541791.034	986.870	-0.303000	0.091809 ASPH
5209	148250.295	541791.434	986.830	-0.305000	0.093025 ASPH
5210	148250.898	541795.270	986.880	-0.298000	0.088804 ASPH
5211	148246.859	541795.570	986.890	-0.299000	0.089401 ASPH
5212	148244.631	541795.834	986.910	-0.296000	0.087616 ASPH
5213	148237.763	541795.488	986.940	-0.364000	0.132496 ASPH
5214	148233.233	541795.476	986.960	-0.400000	0.160000 ASPH
5215	148229.140	541795.796	986.950	-0.363000	0.131769 ASPH
5216	148232.341	541799.383	986.890	-0.266000	0.070756 ASPH
5217	148236.033	541799.187	986.890	-0.355000	0.126025 ASPH
5218	148239.705	541799.286	986.870	-0.302000	0.091204 ASPH
5219	148243.447	541798.900	986.850	-0.238000	0.056644 ASPH
5220	148247.373	541798.876	986.830	-0.272000	0.073984 ASPH
5221	148189.245	541756.278	985.610	-0.462000	0.213444 TALL GRASS/WEEDS
5222	148189.035	541760.003	985.730	-0.360000	0.129600 TALL GRASS/WEEDS
5223	148188.706	541763.940	985.860	-0.220000	0.048400 TALL GRASS/WEEDS
5224	148188.628	541767.886	985.980	-0.243000	0.059049 TALL GRASS/WEEDS
5225	148188.650	541771.161	986.010	-0.308000	0.094864 TALL GRASS/WEEDS
5226	148185.760	541771.011	985.970	-0.273000	0.074529 TALL GRASS/WEEDS
5227	148185.802	541767.320	985.950	-0.205000	0.042025 TALL GRASS/WEEDS
5228	148185.667	541763.859	985.840	-0.262000	0.068644 TALL GRASS/WEEDS
5229	148185.566	541760.170	985.740	-0.351000	0.123201 TALL GRASS/WEEDS
5230	148185.710	541756.511	985.670	-0.376000	0.141376 TALL GRASS/WEEDS
5231	148182.886	541755.402	985.710	-0.323000	0.104329 TALL GRASS/WEEDS
5232	148182.690	541759.594	985.770	-0.291000	0.084681 TALL GRASS/WEEDS
5233	148182.916	541764.138	985.870	-0.158000	0.024964 TALL GRASS/WEEDS
5234	148182.349	541767.456	985.780	-0.200000	0.040000 TALL GRASS/WEEDS
5235	148181.498	541770.617	985.730	-0.287000	0.082369 TALL GRASS/WEEDS
5236	148178.063	541770.096	985.590	-0.462000	0.213444 TALL GRASS/WEEDS
5237	148178.450	541767.051	985.670	-0.434000	0.188356 TALL GRASS/WEEDS
5238	148178.633	541764.135	985.800	-0.392000	0.153664 TALL GRASS/WEEDS
5239	148178.682	541760.934	985.720	-0.376000	0.141376 TALL GRASS/WEEDS
5240	148178.690	541757.947	985.700	-0.359000	0.128881 TALL GRASS/WEEDS
5241	148175.281	541758.349	985.730	-0.358000	0.128164 TALL GRASS/WEEDS
5242	148174.847	541761.795	985.750	-0.274000	0.075076 TALL GRASS/WEEDS
5243	148174.713	541764.566	985.780	-0.358000	0.128164 TALL GRASS/WEEDS
5244	148174.241	541767.572	985.790	-0.362000	0.131044 TALL GRASS/WEEDS
5245	148173.581	541769.858	985.760	-0.392000	0.153664 TALL GRASS/WEEDS
5246	148117.071	541751.974	985.270	-0.308000	0.094864 BRUSH/LOW TREES
5247	148114.364	541751.813	985.240	-0.328000	0.107584 BRUSH/LOW TREES
5248	148111.365	541752.178	985.200	-0.419000	0.175561 BRUSH/LOW TREES

5249	148109.104	541751.857	985.280	-0.298000	0.088804 BRUSH/LOW TREES
5250	148105.664	541751.794	985.140	-0.381000	0.145161 BRUSH/LOW TREES
5251	148105.589	541748.914	985.110	-0.251000	0.063001 BRUSH/LOW TREES
5252	148108.016	541748.649	985.150	-0.219000	0.047961 BRUSH/LOW TREES
5253	148110.717	541748.458	985.120	-0.371000	0.137641 BRUSH/LOW TREES
5254	148112.336	541747.596	985.140	-0.344000	0.118336 BRUSH/LOW TREES
5255	148116.474	541747.779	985.180	-0.172000	0.029584 BRUSH/LOW TREES
5256	148117.230	541745.628	985.090	-0.232000	0.053824 BRUSH/LOW TREES
5257	148114.729	541744.976	985.020	-0.319000	0.101761 BRUSH/LOW TREES
5258	148112.103	541745.340	985.060	-0.378000	0.142884 BRUSH/LOW TREES
5259	148109.461	541745.571	984.950	-0.370000	0.136900 BRUSH/LOW TREES
5260	148105.380	541745.371	985.150	-0.187000	0.034969 BRUSH/LOW TREES
5261	148105.395	541742.182	985.010	-0.371000	0.137641 BRUSH/LOW TREES
5262	148107.945	541742.303	985.060	-0.294000	0.086436 BRUSH/LOW TREES
5263	148111.220	541742.424	985.080	-0.241000	0.058081 BRUSH/LOW TREES
5264	148115.571	541742.556	985.120	-0.197000	0.038809 BRUSH/LOW TREES
5265	148118.878	541742.567	985.190	-0.108000	0.011664 BRUSH/LOW TREES
5266	148118.972	541739.380	985.330	0.083000	0.006889 BRUSH/LOW TREES
5267	148115.550	541738.996	985.040	-0.250000	0.062500 BRUSH/LOW TREES
5268	148114.144	541740.977	985.010	-0.322000	0.103684 BRUSH/LOW TREES
5269	148109.461	541739.424	985.120	-0.269000	0.072361 BRUSH/LOW TREES
5270	148103.497	541739.332	984.960	-0.474000	0.224676 BRUSH/LOW TREES

Sum	35.532388
Average	0.059920
RMSE	0.244785
Accuracyz	0.479779



**FIELD NOTES**

Project FEMA ground survey notes

Contains point number and descriptions

Includes Control and Check Points left out of statistical analysis

## Adams County Ground Touring

Jace  
Vogler

## Control Pt. Setup

Location #7: \*Checked into PID "DH5467" (Strong Rain W GRS)

~~\* Base Setup @ PID "DM1263" (Oxford GRS)~~~~\* Checked into PID "DH5467" (Strong Rain W GRS)~~

\* Base Setup @ PID "DH5482" (Strong Rain C GRS)

- Vertical within 0.05' ✓

Mowed Grass: Pts 1027-1050

Tall Grass/Weeds: Pts 1051-1077

Brush/Low trees: Pts 5000-5024

Tree Cover: Pts 5025-5047

Asphalt: Pts 1002-1026

## Location 8:

\* Base Setup @ PID "DH5482" (Strong Rain C GRS)

\* Checked into PID "DH5467" (Strong Rain W GRS)

- Vertical within 0.05' ✓

Mowed Grass: Pts 1079-1103

Tall Grass/Weeds: Pts 1100-1153

Brush/Low trees: Pts 1154-1175

Tree Cover: Pts 5048-5072

Asphalt: Pts 1104-1127

## Location #1:

\* Base setup @ PID "DH5459" (Leola C GRS)

\* Checked into PID "DH5650" (Rare E GRS)

- Vertical within 0.05' ✓

Mowed Grass: Pts 1201-1225

Tall Grass/Weeds: Pts 1226-1250

Brush/Low trees: Pts 1251-1275

Tree Cover: Pts 5073-5094

## Location #9:

\* Base setup @ PID "DM1263" (Oxford GRS)

\* Checked into PID "DH5493" (Savon W GRS)

- Vertical within 0.05' ✓

Concrete: Pts 1284-1304

Tall Grass/Weeds: Pts 1305-1328

Mowed Grass: Pts 5095-5118

Tree Cover: Pts 5120-5144

Brush/Low trees: Pts 5145-5170

Adams County Ground-Truthing

CP setups continued

Soce  
Vegeter

Location 10:

\*Base Setup @ "PID" DHS494" (Rainville GPS)

\*Checked into PID" DHS493" (Jacksonville GPS)

-Vertical within 0.05'

Mowed Grass: Pts 1332-1356

Tree Cover: Pts 5171-5195

Asphalt: Pts 5196-5220

Tall Grass/Weeds: Pts 5221-5245

Brush/Low Trees: Pts 5246-5270