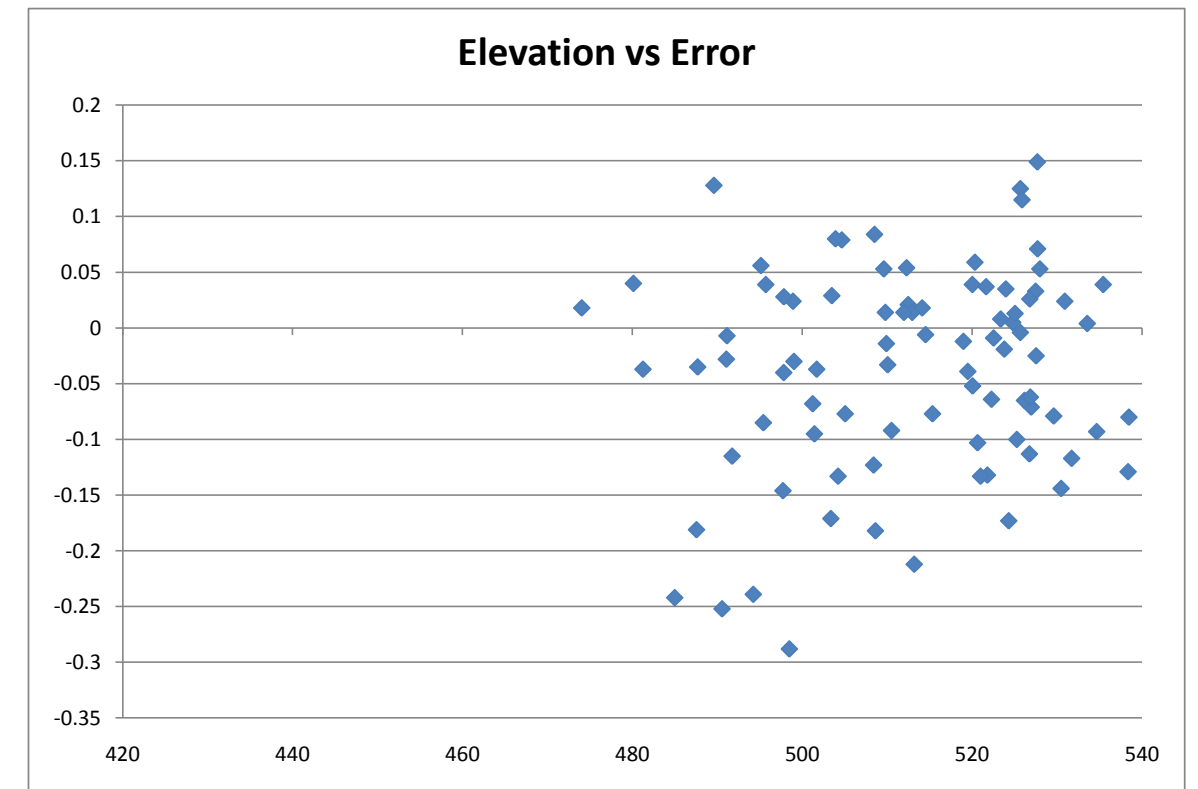
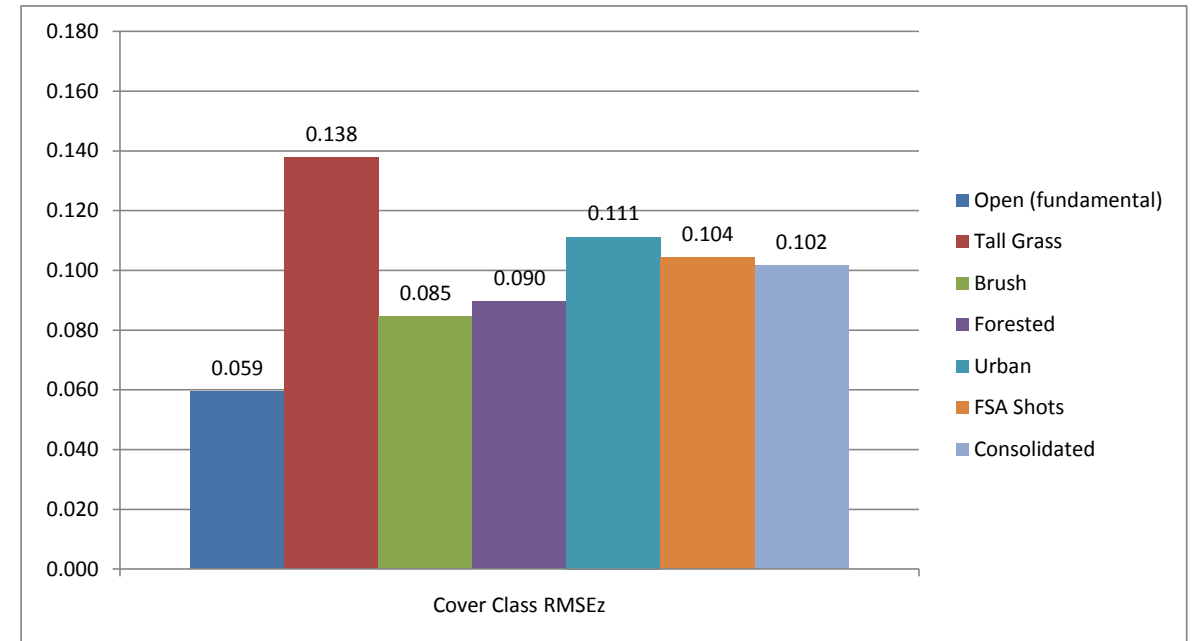


Pipestone County, MN Vertical Validation Report

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
FSA Target 1 Pipestone-2100	230663.018	4894524.127	504.651	504.572	0.079	0.006241	0.079
FSA Target 2 Ruthton-2101	253366.069	4893524.075	525.677	525.552	0.125	0.015625	0.125
FSA Target 3 Edgerton-2102	249699.104	4861398.359	487.544	487.725	-0.181	0.032761	0.181
FSA Target 601 Pipestone-2103	233468.841	4877537.602	520.636	520.739	-0.103	0.010609	0.103
L10-2060	251009.378	4880717.109	545.418	545.453	-0.035	0.001225	0.035
L10-2061	252611.676	4893553.477	527.703	527.632	0.071	0.005041	0.071
L10-2062	249775.627	4887227.044	572.878	572.937	-0.059	0.003481	0.059
L10-2063	239584.781	4881177.459	530.907	530.883	0.024	0.000576	0.024
L10-2064	225215.235	4873761.417	499.02	499.05	-0.03	0.0009	0.03
L10-2065	225776.559	4885041.552	509.6	509.547	0.053	0.002809	0.053
L10-2066	231764.114	4881736.078	508.395	508.518	-0.123	0.015129	0.123
L10-2067	231946.214	4876675.152	512.471	512.45	0.021	0.000441	0.021
L10-2068	230430.895	4894533.02	503.916	503.836	0.08	0.0064	0.08
L10-2069	236520.85	4887764.844	523.787	523.806	-0.019	0.000361	0.019
L10-2070	241415.238	4894037.204	547.5	547.411	0.089	0.007921	0.089
L10-2071	234458.83	4867962.082	520.326	520.267	0.059	0.003481	0.059
L10-2072	224060.557	4867330.018	495.129	495.073	0.056	0.003136	0.056
L10-2073	232578.228	4860535.491	514.513	514.519	-0.006	0.000036	0.006
L10-2074	237632.875	4862425.914	509.902	509.916	-0.014	0.000196	0.014
L10-2075	244169.757	4863721.272	503.48	503.451	0.029	0.000841	0.029
L10-2076	244416.376	4869985.128	501.431	501.526	-0.095	0.009025	0.095
L10-2077	252223.394	4870964.397	521.641	521.604	0.037	0.001369	0.037
L10-2078	251080.47	4866187.591	508.505	508.421	0.084	0.007056	0.084
L10-2079	249699.081	4861398.295	487.687	487.722	-0.035	0.001225	0.035
L2T-2020	246332.758	4880053.342	530.478	530.622	-0.144	0.020736	0.144
L2T-2021	254343.474	4893457.415	520.051	520.103	-0.052	0.002704	0.052
L2T-2022	246027.332	4887330.526	526.955	527.026	-0.071	0.005041	0.071
L2T-2023	239057.198	4880802.272	529.604	529.683	-0.079	0.006241	0.079
L2T-2024	231773.742	4883924.48	510.053	510.086	-0.033	0.001089	0.033
L2T-2025	231695.631	4879377.264	498.479	498.767	-0.288	0.082944	0.288
L2T-2026	229977.802	4876724.376	501.228	501.296	-0.068	0.004624	0.068
L2T-2027	224646.948	4889892.847	509.783	509.769	0.014	0.000196	0.014
L2T-2028	237005.792	4887184.548	521.8	521.932	-0.132	0.017424	0.132
L2T-2029	245377.832	4893333.354	579.261	579.31	-0.049	0.002401	0.049
L2T-2030	238753.909	4894184.95	545.661	545.682	-0.021	0.000441	0.021
L2T-2031	233763.318	4897187.906	513.182	513.394	-0.212	0.044944	0.212
L2T-2032	230555.433	4893170.312	522.277	522.341	-0.064	0.004096	0.064
L2T-2033	234507.744	4866806.802	534.661	534.754	-0.093	0.008649	0.093
L2T-2034	223674.464	4870641.201	484.983	485.225	-0.242	0.058564	0.242
L2T-2035	224581.085	4862438.863	490.555	490.807	-0.252	0.063504	0.252
L2T-2036	230944.679	4860837.387	503.365	503.536	-0.171	0.029241	0.171
L2T-2037	241988.45	4863360.674	497.728	497.874	-0.146	0.021316	0.146
L2T-2038	242881.009	4874534.801	524.777	524.772	0.005	0.000025	0.005
L2T-2039	251913.1	4867830.344	505.053	505.13	-0.077	0.005929	0.077
L3B-2040	244852.47	4881133.247	526.163	526.228	-0.065	0.004225	0.065
L3B-2041	251492.313	4888269.241	584.305	584.346	-0.041	0.001681	0.041
L3B-2042	254939.768	4893238.841	518.971	518.983	-0.012	0.000144	0.012
L3B-2043	247704.5	4887280.403	552.71	552.704	0.006	0.000036	0.006
L3B-2044	234260.689	4879185.58	525.048	525.035	0.013	0.000169	0.013
L3B-2045	231380.044	4873447.248	525.677	525.681	-0.004	0.000016	0.004



L3B-2047	230490.187	4889789.752	523.362	523.354	0.008	0.000064	0.008
L3B-2048	237050.852	4888056.699	526.746	526.859	-0.113	0.012769	0.113
L3B-2049	235500.748	4894165.37	535.433	535.394	0.039	0.001521	0.039
L3B-2050	235762.913	4897897.123	538.455	538.535	-0.08	0.0064	0.08
L3B-2051	233483.61	4897162.86	510.508	510.6	-0.092	0.008464	0.092
L3B-2052	230379.667	4867038.842	512.279	512.225	0.054	0.002916	0.054
L3B-2053	224528.153	4862638.672	494.233	494.472	-0.239	0.057121	0.239
L3B-2054	241188.67	4861623.946	497.817	497.857	-0.04	0.0016	0.04
L3B-2055	242290.468	4863309.98	498.906	498.882	0.024	0.000576	0.024
L3B-2056	243398.954	4872182.525	512.943	512.929	0.014	0.000196	0.014
L3B-2057	252594.928	4870912.727	520.988	521.121	-0.133	0.017689	0.133
L3B-2058	249623.457	4860162.173	491.746	491.861	-0.115	0.013225	0.115
L3B-2059	248211.861	4863987.008	495.417	495.502	-0.085	0.007225	0.085
L4F-2000	246586.168	4880914.872	531.715	531.832	-0.117	0.013689	0.117
L4F-2001	251350.701	4884744.174	554.65	554.668	-0.018	0.000324	0.018
L4F-2002	234965.625	4878769.272	525.87	525.755	0.115	0.013225	0.115
L4F-2003	235165.61	4884296.59	527.474	527.441	0.033	0.001089	0.033
L4F-2004	225962.402	4873703.042	501.699	501.736	-0.037	0.001369	0.037
L4F-2005	225321.389	4882772.799	504.215	504.348	-0.133	0.017689	0.133
L4F-2006	224465.594	4894721.854	527.969	527.916	0.053	0.002809	0.053
L4F-2007	230384.501	4889337.937	526.853	526.915	-0.062	0.003844	0.062
L4F-2008	245281.547	4890871.469	575.155	575.138	0.017	0.000289	0.017
L4F-2010	233838.529	4894757.351	527.528	527.553	-0.025	0.000625	0.025
L4F-2011	238346.425	4863414.563	511.969	511.955	0.014	0.000196	0.014
L4F-2012	233362.554	4866845.104	523.966	523.931	0.035	0.001225	0.035
L4F-2013	226168.542	4863194.781	491.061	491.089	-0.028	0.000784	0.028
L4F-2014	242840.621	4872322.017	514.117	514.099	0.018	0.000324	0.018
L4F-2015	247513.083	4867625.544	489.594	489.466	0.128	0.016384	0.128
L4F-2016	252759.335	4870928.211	520.024	519.985	0.039	0.001521	0.039
L4F-2017	250672.988	4862150.419	497.835	497.807	0.028	0.000784	0.028
L4F-2018	245375.109	4896385.028	582.706	582.881	-0.175	0.030625	0.175
L4F-2019	247117.283	4897016.59	556.695	556.909	-0.214	0.045796	0.214
L5U-2080	251608.544	4877688.554	556.492	556.595	-0.103	0.010609	0.103
L5U-2081	251471.906	4887202.36	563.183	563.281	-0.098	0.009604	0.098
L5U-2082	252071.166	4896324.501	525.26	525.36	-0.1	0.01	0.1
L5U-2083	249196.433	4892055.408	578.675	578.853	-0.178	0.031684	0.178
L5U-2084	244852.507	4886944.843	541.741	541.727	0.014	0.000196	0.014
L5U-2085	233963.466	4877785.059	524.308	524.481	-0.173	0.029929	0.173
L5U-2086	233274.073	4876194.807	522.527	522.536	-0.009	0.000081	0.009
L5U-2087	236389.266	4875585.22	527.679	527.53	0.149	0.022201	0.149
L5U-2088	225094.458	4875416.635	495.701	495.662	0.039	0.001521	0.039
L5U-2089	224538.974	4880379.083	508.612	508.794	-0.182	0.033124	0.182
L5U-2090	237017.061	4889351.8	533.551	533.547	0.004	0.000016	0.004
L5U-2091	235706.109	4897841.531	538.361	538.49	-0.129	0.016641	0.129
L5U-2092	226873.478	4860702.516	474.035	474.017	0.018	0.000324	0.018
L5U-2093	238254.813	4864752.82	519.492	519.531	-0.039	0.001521	0.039
L5U-2094	243664.363	4872215.994	515.332	515.409	-0.077	0.005929	0.077
L5U-2095	242719.22	4874718.389	526.787	526.761	0.026	0.000676	0.026
L5U-2096	248331.687	4862142.173	480.116	480.076	0.04	0.0016	0.04
L5U-2097	248337.32	4862930.21	481.244	481.281	-0.037	0.001369	0.037
L5U-2098	248083.605	4863432.162	491.131	491.138	-0.007	0.000049	0.007
L5U-2099	245584.615	4896918.766	578.728	578.993	-0.265	0.070225	0.265

Mean Squared Error 0.010
Z-RMSE 0.102

NSSDA	0.199
Min Z-Error	0.004
Max Z-Error	0.288

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
L10-2060	251009.4	4880717	545.418	545.453	-0.035	0.001225	0.035
L10-2061	252611.7	4893553	527.703	527.632	0.071	0.005041	0.071
L10-2062	249775.6	4887227	572.878	572.937	-0.059	0.003481	0.059
L10-2063	239584.8	4881177	530.907	530.883	0.024	0.000576	0.024
L10-2064	225215.2	4873761	499.02	499.05	-0.03	0.0009	0.03
L10-2065	225776.6	4885042	509.6	509.547	0.053	0.002809	0.053
L10-2066	231764.1	4881736	508.395	508.518	-0.123	0.015129	0.123
L10-2067	231946.2	4876675	512.471	512.45	0.021	0.000441	0.021
L10-2068	230430.9	4894533	503.916	503.836	0.08	0.0064	0.08
L10-2069	236520.9	4887765	523.787	523.806	-0.019	0.000361	0.019
L10-2070	241415.2	4894037	547.5	547.411	0.089	0.007921	0.089
L10-2071	234458.8	4867962	520.326	520.267	0.059	0.003481	0.059
L10-2072	224060.6	4867330	495.129	495.073	0.056	0.003136	0.056
L10-2073	232578.2	4860535	514.513	514.519	-0.006	0.000036	0.006
L10-2074	237632.9	4862426	509.902	509.916	-0.014	0.000196	0.014
L10-2075	244169.8	4863721	503.48	503.451	0.029	0.000841	0.029
L10-2076	244416.4	4869985	501.431	501.526	-0.095	0.009025	0.095
L10-2077	252223.4	4870964	521.641	521.604	0.037	0.001369	0.037
L10-2078	251080.5	4866188	508.505	508.421	0.084	0.007056	0.084
L10-2079	249699.1	4861398	487.687	487.722	-0.035	0.001225	0.035
					Mean Squared Error	0.004	
					Z-RMSE	0.059	
					NSSDA	0.116	
					Min Z-Error	0.006	
					Max Z-Error	0.123	

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
L2T-2020	246332.8	4880053	530.478	530.622	-0.144	0.020736	0.144
L2T-2021	254343.5	4893457	520.051	520.103	-0.052	0.002704	0.052
L2T-2022	246027.3	4887331	526.955	527.026	-0.071	0.005041	0.071
L2T-2023	239057.2	4880802	529.604	529.683	-0.079	0.006241	0.079
L2T-2024	231773.7	4883924	510.053	510.086	-0.033	0.001089	0.033
L2T-2025	231695.6	4879377	498.479	498.767	-0.288	0.082944	0.288
L2T-2026	229977.8	4876724	501.228	501.296	-0.068	0.004624	0.068
L2T-2027	224646.9	4889893	509.783	509.769	0.014	0.000196	0.014
L2T-2028	237005.8	4887185	521.8	521.932	-0.132	0.017424	0.132
L2T-2029	245377.8	4893333	579.261	579.31	-0.049	0.002401	0.049
L2T-2030	238753.9	4894185	545.661	545.682	-0.021	0.000441	0.021
L2T-2031	233763.3	4897188	513.182	513.394	-0.212	0.044944	0.212
L2T-2032	230555.4	4893170	522.277	522.341	-0.064	0.004096	0.064
L2T-2033	234507.7	4866807	534.661	534.754	-0.093	0.008649	0.093
L2T-2034	223674.5	4870641	484.983	485.225	-0.242	0.058564	0.242
L2T-2035	224581.1	4862439	490.555	490.807	-0.252	0.063504	0.252
L2T-2036	230944.7	4860837	503.365	503.536	-0.171	0.029241	0.171
L2T-2037	241988.5	4863361	497.728	497.874	-0.146	0.021316	0.146
L2T-2038	242881	4874535	524.777	524.772	0.005	0.000025	0.005
L2T-2039	251913.1	4867830	505.053	505.13	-0.077	0.005929	0.077
					Mean Squared Error	0.019	
					Z-RMSE	0.138	
					NSSDA	0.270	
					Min Z-Error	0.005	
					Max Z-Error	0.288	

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
L3B-2040	244852.47	4881133.247	526.163	526.228	-0.065	0.004225	0.065
L3B-2041	251492.313	4888269.241	584.305	584.346	-0.041	0.001681	0.041
L3B-2042	254939.768	4893238.841	518.971	518.983	-0.012	0.000144	0.012
L3B-2043	247704.5	4887280.403	552.71	552.704	0.006	0.000036	0.006
L3B-2044	234260.689	4879185.58	525.048	525.035	0.013	0.000169	0.013
L3B-2045	231380.044	4873447.248	525.677	525.681	-0.004	0.000016	0.004
L3B-2047	230490.187	4889789.752	523.362	523.354	0.008	0.000064	0.008
L3B-2048	237050.852	4888056.699	526.746	526.859	-0.113	0.012769	0.113
L3B-2049	235500.748	4894165.37	535.433	535.394	0.039	0.001521	0.039
L3B-2050	235762.913	4897897.123	538.455	538.535	-0.08	0.0064	0.08
L3B-2051	233483.61	4897162.86	510.508	510.6	-0.092	0.008464	0.092
L3B-2052	230379.667	4867038.842	512.279	512.225	0.054	0.002916	0.054
L3B-2053	224528.153	4862638.672	494.233	494.472	-0.239	0.057121	0.239
L3B-2054	241188.67	4861623.946	497.817	497.857	-0.04	0.0016	0.04
L3B-2055	242290.468	4863309.98	498.906	498.882	0.024	0.000576	0.024
L3B-2056	243398.954	4872182.525	512.943	512.929	0.014	0.000196	0.014
L3B-2057	252594.928	4870912.727	520.988	521.121	-0.133	0.017689	0.133
L3B-2058	249623.457	4860162.173	491.746	491.861	-0.115	0.013225	0.115
L3B-2059	248211.861	4863987.008	495.417	495.502	-0.085	0.007225	0.085
					Mean Squared Error	0.007	
					Z-RMSE	0.085	
					NSSDA	0.166	
					Min Z-Error	0.004	
					Max Z-Error	0.239	

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
L4F-2000	246586.2	4880915	531.715	531.832	-0.117	0.013689	0.117
L4F-2001	251350.7	4884744	554.65	554.668	-0.018	0.000324	0.018
L4F-2002	234965.6	4878769	525.87	525.755	0.115	0.013225	0.115
L4F-2003	235165.6	4884297	527.474	527.441	0.033	0.001089	0.033
L4F-2004	225962.4	4873703	501.699	501.736	-0.037	0.001369	0.037
L4F-2005	225321.4	4882773	504.215	504.348	-0.133	0.017689	0.133
L4F-2006	224465.6	4894722	527.969	527.916	0.053	0.002809	0.053
L4F-2007	230384.5	4889338	526.853	526.915	-0.062	0.003844	0.062
L4F-2008	245281.5	4890871	575.155	575.138	0.017	0.000289	0.017
L4F-2010	233838.5	4894757	527.528	527.553	-0.025	0.000625	0.025
L4F-2011	238346.4	4863415	511.969	511.955	0.014	0.000196	0.014
L4F-2012	233362.6	4866845	523.966	523.931	0.035	0.001225	0.035
L4F-2013	226168.5	4863195	491.061	491.089	-0.028	0.000784	0.028
L4F-2014	242840.6	4872322	514.117	514.099	0.018	0.000324	0.018
L4F-2015	247513.1	4867626	489.594	489.466	0.128	0.016384	0.128
L4F-2016	252759.3	4870928	520.024	519.985	0.039	0.001521	0.039
L4F-2017	250673	4862150	497.835	497.807	0.028	0.000784	0.028
L4F-2018	245375.1	4896385	582.706	582.881	-0.175	0.030625	0.175
L4F-2019	247117.3	4897017	556.695	556.909	-0.214	0.045796	0.214
					Mean Squared Error	0.008	
					Z-RMSE	0.090	
					NSSDA	0.176	
					Min Z-Error	0.014	
					Max Z-Error	0.214	

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
L5U-2080	251608.5	4877689	556.492	556.595	-0.103	0.010609	0.103
L5U-2081	251471.9	4887202	563.183	563.281	-0.098	0.009604	0.098
L5U-2082	252071.2	4896325	525.26	525.36	-0.1	0.01	0.1
L5U-2083	249196.4	4892055	578.675	578.853	-0.178	0.031684	0.178
L5U-2084	244852.5	4886945	541.741	541.727	0.014	0.000196	0.014
L5U-2085	233963.5	4877785	524.308	524.481	-0.173	0.029929	0.173
L5U-2086	233274.1	4876195	522.527	522.536	-0.009	0.000081	0.009
L5U-2087	236389.3	4875585	527.679	527.53	0.149	0.022201	0.149
L5U-2088	225094.5	4875417	495.701	495.662	0.039	0.001521	0.039
L5U-2089	224539	4880379	508.612	508.794	-0.182	0.033124	0.182
L5U-2090	237017.1	4889352	533.551	533.547	0.004	0.000016	0.004
L5U-2091	235706.1	4897842	538.361	538.49	-0.129	0.016641	0.129
L5U-2092	226873.5	4860703	474.035	474.017	0.018	0.000324	0.018
L5U-2093	238254.8	4864753	519.492	519.531	-0.039	0.001521	0.039
L5U-2094	243664.4	4872216	515.332	515.409	-0.077	0.005929	0.077
L5U-2095	242719.2	4874718	526.787	526.761	0.026	0.000676	0.026
L5U-2096	248331.7	4862142	480.116	480.076	0.04	0.0016	0.04
L5U-2097	248337.3	4862930	481.244	481.281	-0.037	0.001369	0.037
L5U-2098	248083.6	4863432	491.131	491.138	-0.007	0.000049	0.007
L5U-2099	245584.6	4896919	578.728	578.993	-0.265	0.070225	0.265
					Mean Squa	0.012	
					Z-RMSE	0.111	
					NSSDA	0.218	
					Min Z-Error	0.004	
					Max Z-Erro	0.265	

Point Code	X	Y	Z	Surface Z	Z-Error	Z-Error Squared	Absolute Z-Error
FSA Target 1 Pipestone-2100	230663	4894524	504.651	504.572	0.079	0.006241	0.079
FSA Target 2 Ruthton-2101	253366.1	4893524	525.677	525.552	0.125	0.015625	0.125
FSA Target 3 Edgerton-2102	249699.1	4861398	487.544	487.725	-0.181	0.032761	0.181
FSA Target 601 Pipestone-2103	233468.8	4877538	520.636	520.739	-0.103	0.010609	0.103
						0	0
						0	0
					Mean Squared Error	0.011	
					Z-RMSE	0.104	
					NSSDA	0.204	
					Min Z-Error	0	
					Max Z-Error	0.181	