



Fugro EarthData's Accuracy Assessment Form (QC Master)

Project Name/Number: E10-0041-00_CACoastalMapping_10MContour_Ortho

Date: Nov 1 2010-Feb 16 2011

Coordinate System:	Horizontal Datum:	UTM Zone or SPC State name	QC Points Source:	For Elevation purposes use ONLY:	
UTM	NAD83/NSRS2007	UTM zone 11	Field GCP	RMSE	Enter Value in G5
Units:	Product type:	GSD:	Vertical Datum:	Vertical Accuracy Value	Supported Height RMSE According to Map Scale=
(Meter)	Ortho	0.3 m	Ellipsoidal Height (WGS84)	Use Map Scale	0.50

Block ID:		Ortho/stereo/DEM measured by EarthData			QA/QC Points as surveyed In the Field		
		UTM zone 11	NAD83/NSRS2007	Ellipsoidal Height (WGS84)	UTM zone 11	NAD83/NSRS2007	Ellipsoidal Height (WGS84)
Point ID	Block/Model/ Sheet ID	Easting (E) (Meter)	Northing (N) (Meter)	Elevation (H) (Meter)	Easting (E) (Meter)	Northing (N) (Meter)	Elevation (H) (Meter)
CA 246	South	492960.451	3611364.435		492960.872	3611364.856	0.000
CA 245	South	483936.823	3624774.925		483937.040	3624774.956	0.000
CA 244	South	475708.363	3650644.351		475708.596	3650644.387	0.000
CA 243	South	465344.246	3683031.991		465343.965	3683031.991	0.000
CA 242	South	421081.639	3725984.246		421081.427	3725984.264	0.000
CA 241	South	402363.708	3743375.218		402363.435	3743375.641	0.000
CA 240	South	378109.296	3748943.912		378108.987	3748943.890	0.000
CA 248	South	309104.557	3783625.973		309104.302	3783626.221	0.000
CA 247	South	308027.369	3776502.639		308027.081	3776502.669	0.000
CA 237	South				175948.919	3842935.958	0.000
CA 236	South				172384.788	3884185.254	0.000
P126	South	224201.470	3817373.704		224201.360	3817373.870	0.000
P129	South	253812.979	3812780.630		253812.910	3812780.859	0.000
P133	South	252619.353	3811320.173		252619.176	3811320.535	0.000
P137	South	295519.703	3781449.725		295519.324	3781449.794	0.000
P139	South	357313.720	3767613.357		357313.326	3767613.515	0.000
P140	South	360735.769	3766840.299		360735.634	3766840.366	0.000
P142	South	333913.633	3765398.932		333913.434	3765398.932	0.000
P143	South	364138.107	3762157.376		364138.055	3762157.202	0.000
P147	South	393751.748	3741045.778		393751.383	3741045.778	0.000
P148	South	369420.150	3739123.366		369420.150	3739123.366	0.000
P149	South	368575.533	3738783.988		368575.466	3738784.088	0.000
P150	South	395585.768	3735558.162		395585.500	3735558.108	0.000
P153	South	380490.776	3731113.095		380490.716	3731113.095	0.000
P155	South	414691.703	3718919.312		414691.460	3718919.529	0.000
P161	South	446366.218	3693654.436		446366.096	3693654.395	0.000
P163	South	457505.744	3684761.222		457505.744	3684761.542	0.000
P165	South	469972.289	3663727.862		469972.395	3663727.578	0.000
P168	South	475440.459	3630486.265		475440.173	3630486.229	0.000
P171	South	477318.492	3615229.056		477318.025	3615228.761	0.000
P173	South	486396.313	3611899.645		486396.267	3611899.738	0.000
P174	South	487403.155	3609471.788		487402.980	3609471.940	0.000
P175	South	489353.814	3600691.256		489353.709	3600691.151	0.000
126	Central	224201.507	3817374.030		224201.360	3817373.870	0.000
128	South	227349.708	3816046.627		227349.438	3816046.722	0.000

Block ID:		Residual error = Measured coordinates -- surveyed coordinates			Normalized error = Residuals - bias			Comments
Point ID	Block/Model/ Sheet ID	ΔE (Easting) (Meter)	ΔN (Northing) (Meter)	ΔH (Elevation) (Meter)	ΔE (Easting) (Meter)	ΔN (Northing) (Meter)	ΔH (Elevation) (Meter)	
CA_246	South	-0.421	-0.421	No Data	-0.565	-0.358	No Data	
CA_245	South	-0.217	-0.031	No Data	-0.362	0.032	No Data	
CA_244	South	-0.233	-0.036	No Data	-0.378	0.027	No Data	
CA_243	South	0.281	0.000	No Data	0.136	0.063	No Data	
CA_242	South	0.212	-0.018	No Data	0.067	0.045	No Data	
CA_241	South	0.273	-0.423	No Data	0.128	-0.361	No Data	
CA_240	South	0.309	0.022	No Data	0.165	0.085	No Data	
CA_248	South	0.255	-0.248	No Data	0.111	-0.185	No Data	
CA_247	South	0.288	-0.030	No Data	0.144	0.033	No Data	
CA_237	South	No Data	No Data	No Data	No Data	No Data	No Data	not measured
CA_236	South	No Data	No Data	No Data	No Data	No Data	No Data	not measured
P126	South	0.110	-0.166	No Data	-0.034	-0.103	No Data	
P129	South	0.069	-0.229	No Data	-0.076	-0.167	No Data	
P133	South	0.177	-0.362	No Data	0.032	-0.299	No Data	
P137	South	0.379	-0.069	No Data	0.234	-0.006	No Data	
P139	South	0.394	-0.158	No Data	0.249	-0.095	No Data	
P140	South	0.135	-0.067	No Data	-0.010	-0.005	No Data	
P142	South	0.199	0.000	No Data	0.054	0.063	No Data	
P143	South	0.052	0.174	No Data	-0.093	0.236	No Data	
P147	South	0.365	0.000	No Data	0.220	0.063	No Data	
P148	South	0.000	0.000	No Data	-0.145	0.063	No Data	
P149	South	0.067	-0.100	No Data	-0.078	-0.038	No Data	
P150	South	0.268	0.053	No Data	0.123	0.116	No Data	
P153	South	0.060	0.000	No Data	-0.084	0.063	No Data	
P155	South	0.243	-0.217	No Data	0.098	-0.154	No Data	
P161	South	0.122	0.041	No Data	-0.023	0.103	No Data	
P163	South	0.000	-0.320	No Data	-0.145	-0.258	No Data	
P165	South	-0.106	0.284	No Data	-0.251	0.346	No Data	
P168	South	0.286	0.036	No Data	0.141	0.098	No Data	
P171	South	0.467	0.295	No Data	0.322	0.357	No Data	
P173	South	0.046	-0.093	No Data	-0.099	-0.030	No Data	
P174	South	0.175	-0.152	No Data	0.030	-0.089	No Data	
P175	South	0.105	0.105	No Data	-0.040	0.167	No Data	
126	Central	0.147	0.160	No Data	0.002	0.222	No Data	
128	South	0.270	-0.095	No Data	0.125	-0.033	No Data	

Number of check points:	33	33	0	33	33	0
Mean (Bias)	0.14	-0.06	No Data	0.00	0.00	No Data
StDEV	0.19	0.17	No Data	0.19	0.17	No Data
RMSE	0.24	0.18	No Data	0.19	0.17	No Data
Units: (Meter)						

<<<<< Normalized RMSE after bias removal

Bias Treatment Summary	To remove the vertical bias's effect from the elevation,	No Data	the vector/DEM data by	No Data	(Meter)
	To remove the horizontal bias's effect from planimetric E,	Subtract from	the vector EASTING the value	0.145	(Meter)
	To remove the horizontal bias's effect from planimetric N,	Add to	the vector NORTHING the value	0.063	(Meter)

LEGENDS:

Orange Point ID ---> $\Delta > 2 \cdot RMSE$

RED $\Delta E, \Delta N, \Delta H$ ---> $\Delta > 95\%$ of NSSDA

Accuracy Computations (before bias removal):

GSD = 0.3 m

(Meter)

Supported Mapping Scale: 1" = 200' / 1:2,400

Supported Height RMSE according to map scale = 1.50

ASPRS

Horizontal RMSE (E) =	0.24	Passed :))	Max. Allowable RMSE in N =	0.60	(Meter)
Horizontal RMSE (N) =	0.18	Passed :))	Max. Allowable RMSE in E =	0.60	(Meter)
Circular RMSE _r =	0.30	Passed :))	Max. Allowable circular RMSE =	0.85	(Meter)
Vertical RMSE _h =	No Data		Max. Allowable RMSE in Height =	0.50	(Meter)

NSSDA

Horizontal tested at 95% = (1.73xRMSE _e)	0.52	Passed :))	Max. Allowable Horizontal Error at 95% =	1.47	(Meter)
Vertical tested at 95% = (1.96*RMSE _h)	No Data		Max. Allowable Vertical Error at 95% =	0.98	(Meter)

National Maps Accuracy (NMAS)

Horizontal Accuracy at 90% =	0.46	Passed :))	Max. Allowable Horizontal Error at 90% =	2.03	(Meter)
Vertical Accuracy at 90% =	No Data		Max. Allowable Vertical Error at 90% =	0.75	(Meter)

Normalized Accuracy Computations (after bias removal):

ASPRS

Horizontal RMSE (E) =	0.19	Passed :))	Max. Allowable RMSE in N & E =	0.60	(Meter)
Horizontal RMSE (N) =	0.17	Passed :))		0.60	(Meter)
Circular RMSE _r =	0.26	Passed :))	Max. Allowable circular RMSE =	0.85	(Meter)
Vertical RMSE _h =	No Data		Max. Allowable RMSE in Height =	0.50	(Meter)

NSSDA

Horizontal tested at 95% = (1.73xRMSE _e)	0.44	Passed :))	Max. Allowable Horizontal Error at 95% =	1.47	(Meter)
Vertical tested at 95% = (1.96*RMSE _h)	No Data		Max. Allowable Vertical Error at 95% =	0.98	(Meter)

National Maps Accuracy (NMAS)

Horizontal Accuracy at 90% =	0.39	Passed :))	Max. Allowable Horizontal Error at 90% =	2.03	(Meter)
Vertical Accuracy at 90% =	No Data		Max. Allowable Vertical Error at 90% =	0.75	(Meter)

Final Assessment and Justification:

Approved by:

Date: