

OPUS-RS solution : 400422230W.14O OP1408472290526

opus <opus@ngs.noaa.gov>

Tue 8/19/2014 12:25 PM

To:John Freetly <John.Freetly@neciusa.com>;

FILE: 400422230W.14O OP1408472290526

NGS OPUS-RS SOLUTION REPORT

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All computed coordinate accuracies are listed as 1-sigma RMS values.

For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: john.freetly@neciusa.com DATE: August 19, 2014
 RINEX FILE: 4004230w.14o TIME: 18:24:41 UTC

SOFTWARE: rsgps 1.37 RS51.prl 1.99.2 START: 2014/08/18 22:37:00
 EPHEMERIS: igr18061.eph [rapid] STOP: 2014/08/18 23:37:25
 NAV FILE: brdc2300.14n OBS USED: 3618 / 3876 : 93%
 ANT NAME: CHCX91R NONE QUALITY IND. 63.38/ 68.04
 ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.291

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.63004)

X: -1370146.610(m) 0.008(m) -1370147.484(m) 0.008(m)
 Y: -4054751.535(m) 0.017(m) -4054750.309(m) 0.017(m)
 Z: 4714757.081(m) 0.021(m) 4714757.070(m) 0.021(m)

LAT: 47 57 31.33248 0.003(m) 47 57 31.35344 0.003(m)
 E LON: 251 19 45.49722 0.005(m) 251 19 45.43840 0.005(m)
 W LON: 108 40 14.50278 0.005(m) 108 40 14.56160 0.005(m)
 EL HGT: 1285.196(m) 0.028(m) 1284.597(m) 0.028(m)
 ORTHO HGT: 1300.412(m) 0.029(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 12) SPC (2500 MT)

Northing (Y) [meters] 5314336.046 412434.015
 Easting (X) [meters] 673889.402 661906.226
 Convergence [degrees] 1.73031828 0.60663994
 Point Scale 0.99997156 0.99952929
 Combined Factor 0.99977017 0.99932799

US NATIONAL GRID DESIGNATOR: 12TXU7388914336(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7731	P053 WHITEWATERMT2007	CORS ARP	N484333.865 W1074331.456	110431.2
DM7133	MTLW LEWISTOWN	CORS ARP	N470314.929 W1092633.764	116195.1
DI3425	P052 LRRNCHJRDNMT2006	CORS ARP	N472229.026 W1070107.185	140054.3
DI2257	P049 ARMINGTON_MT2006	CORS ARP	N472059.850 W1105422.382	181084.0
DI3422	P050 WICKUMRNCHMT2006	CORS ARP	N484834.096 W1111454.296	213100.4
DI3064	BIL6 BILLINGS 6	CORS ARP	N455816.251 W1075948.499	226851.6

NEAREST NGS PUBLISHED CONTROL POINT

Information on nearest mark is not available due to database connectivity issues or has restrictions on when or how it can be published.

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.