

OPUS-RS solution : 400422230U.14O OP1408471477346

opus <opus@ngs.noaa.gov>

Tue 8/19/2014 12:08 PM

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

FILE: 400422230U.14O OP1408471477346

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: 4004230u.14o TIME: 18:08:33 UTC

SOFTWARE: rsgps 1.37 RS51.prl 1.99.2 START: 2014/08/18 20:36:15
 EPHEMERIS: igr18061.eph [rapid] STOP: 2014/08/18 21:35:30
 NAV FILE: brdc2300.14n OBS USED: 4186 / 4627 : 90%
 ANT NAME: CHCX91R NONE QUALITY IND. 20.93/ 36.00
 ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.353

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.62981)

X: -1367835.691(m) 0.009(m) -1367836.565(m) 0.009(m)
 Y: -4052925.947(m) 0.018(m) -4052924.721(m) 0.018(m)
 Z: 4716816.637(m) 0.016(m) 4716816.626(m) 0.016(m)

LAT: 47 59 15.33624 0.007(m) 47 59 15.35721 0.007(m)
 E LON: 251 21 2.88568 0.004(m) 251 21 2.82684 0.004(m)
 W LON: 108 38 57.11432 0.004(m) 108 38 57.17316 0.004(m)
 EL HGT: 1162.152(m) 0.025(m) 1161.553(m) 0.025(m)
 ORTHO HGT: 1177.452(m) 0.026(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 12) SPC (2500 MT)

Northing (Y) [meters] 5317595.450 415661.803
 Easting (X) [meters] 675396.198 663475.988
 Convergence [degrees] 1.74708845 0.62236493
 Point Scale 0.99997803 0.99953779
 Combined Factor 0.99979592 0.99935576

US NATIONAL GRID DESIGNATOR: 12TXU7539617595(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DG9749	MTMS MONTANA STATE UNI CORS ARP	N483227.426	W1094111.858	98595.6
DL7731	P053 WHITEWATERMT2007 CORS ARP	N484333.865	W1074331.456	106926.3
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	119777.9
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	140128.1
DI2257	P049 ARMINGTON_MT2006 CORS ARP	N472059.850	W1105422.382	183752.8
DI3422	P050 WICKUMRNCHMT2006 CORS ARP	N484834.096	W1111454.296	213080.0
DI3064	BIL6 BILLINGS 6 CORS ARP	N455816.251	W1075948.499	229617.3

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.