

OPUS solution : 018773_14_267_A0.14O OP1411929022967

opus <opus@ngs.noaa.gov>

Sun 9/28/2014 12:34 PM

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

FILE: 018773_14_267_A0.14O OP1411929022967

NGS OPUS SOLUTION REPORT

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All computed coordinate accuracies are listed as peak-to-peak values.

For additional information: <http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>USER: john.freetly@neciusa.com
RINEX FILE: 0187267s.14oDATE: September 28, 2014
TIME: 18:33:36 UTCSOFTWARE: page5 1209.04 master90.pl 022814 START: 2014/09/24 18:27:00
EPHEMERIS: igr18113.eph [rapid] STOP: 2014/09/24 21:29:00
NAV FILE: brdc2670.14n OBS USED: 6434 / 6706 : 96%
ANT NAME: CHCX90D-OPUS NONE # FIXED AMB: 34 / 37 : 92%
ARP HEIGHT: 1.8000 OVERALL RMS: 0.017(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.7310)

X: -1372566.661(m) 0.004(m) -1372567.521(m) 0.004(m)
Y: -4291921.574(m) 0.007(m) -4291920.320(m) 0.007(m)
Z: 4500786.049(m) 0.015(m) 4500786.006(m) 0.015(m)LAT: 45 9 31.91732 0.011(m) 45 9 31.93775 0.011(m)
E LON: 252 15 56.16319 0.004(m) 252 15 56.10821 0.004(m)
W LON: 107 44 3.83681 0.004(m) 107 44 3.89179 0.004(m)
EL HGT: 1369.103(m) 0.015(m) 1368.415(m) 0.015(m)
ORTHO HGT: 1381.475(m) 0.027(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5004236.353 102583.347
Easting (X) [meters] 285084.253 738802.324
Convergence [degrees] -1.93960528 1.29154447
Point Scale 1.00016796 0.99990836
Combined Factor 0.99995332 0.99969377

US NATIONAL GRID DESIGNATOR: 13TBL8508404236(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	69666.1
DI3064	BIL6 BILLINGS 6 CORS ARP	N455816.251	W1075948.499	92594.6
DL7728	P051 BILLINGSAPMT2005 CORS ARP	N454823.741	W1083246.070	95985.6

NEAREST NGS PUBLISHED CONTROL POINT

QV0350	BOZE	N451122.193	W1074112.503	5057.3
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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.