

OPUS-RS solution : 033845_14_262_A0.14O OP1411502038869

opus <opus@ngs.noaa.gov>

Tue 9/23/2014 2:08 PM

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

FILE: 033845_14_262_A0.14O OP1411502038869

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
RINEX FILE: 0338262p.14oDATE: September 23, 2014
TIME: 20:07:28 UTCSOFTWARE: rsgps 1.37 RS54.prl 1.99.2 START: 2014/09/19 15:50:00
EPHEMERIS: igr18105.eph [rapid] STOP: 2014/09/19 16:48:15
NAV FILE: brdc2620.14n OBS USED: 4392 / 4680 : 94%
ANT NAME: CHCX90D-OPUS NONE QUALITY IND. 19.06/ 33.55
ARP HEIGHT: 1.8000 NORMALIZED RMS: 0.276

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2014.71693)

X: -1304755.848(m) 0.005(m) -1304756.711(m) 0.005(m)
Y: -4253829.798(m) 0.013(m) -4253828.548(m) 0.013(m)
Z: 4555956.661(m) 0.013(m) 4555956.625(m) 0.013(m)LAT: 45 52 12.12328 0.007(m) 45 52 12.14436 0.007(m)
E LON: 252 56 52.49514 0.004(m) 252 56 52.43990 0.004(m)
W LON: 107 3 7.50486 0.004(m) 107 3 7.56010 0.004(m)
EL HGT: 1052.889(m) 0.018(m) 1052.207(m) 0.018(m)
ORTHO HGT: 1067.730(m) 0.020(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES STATE PLANE COORDINATES

UTM (Zone 13) SPC (2500 MT)

Northing (Y) [meters] 5081655.167 183007.188
Easting (X) [meters] 340731.705 789958.098
Convergence [degrees] -1.47321726 1.79066034
Point Scale 0.99991185 0.99958937
Combined Factor 0.99974683 0.99942440

US NATIONAL GRID DESIGNATOR: 13TCL4073181655(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI3062	BIL5 BILLINGS 5 CORS ARP	N455816.237	W1075947.298	74128.0
DL7728	P051 BILLINGSAPMT2005 CORS ARP	N454823.741	W1083246.070	116300.5
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	118932.7
DG9745	MTEI ENGINC CORS ARP	N454447.035	W1083600.736	121133.6
DI3425	P052 LRRNCHJRDNMT2006 CORS ARP	N472229.026	W1070107.185	167307.2
DL7758	P722 YNPBASSRCHMT2005 CORS ARP	N452725.985	W1093415.586	201615.0
DI2260	P054 TEREKALAKAMT2006 CORS ARP	N455046.833	W1042629.062	202781.4
DM7133	MTLW LEWISTOWN CORS ARP	N470314.929	W1092633.764	225950.8

NEAREST NGS PUBLISHED CONTROL POINT

QV0309	HORSE	N455454.480	W1065802.378	8266.1
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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.