

## OPUS-RS solution : 018697\_14\_253\_A2.14O OP1410798952258

opus &lt;opus@ngs.noaa.gov&gt;

Mon 9/15/2014 10:40 AM

To: John Freetly &lt;John.Freetly@neciusa.com&gt;;

FILE: 018697\_14\_253\_A2.14O OP1410798952258

6011 Warning - OPUS-RS was able to find a set of reference stations  
 6011 with data suitable for use with your dataset. However, your  
 6011 position does not fall within the polygon enclosing these reference  
 6011 stations. This means that the geographic interpolation algorithms  
 6011 performed within OPUS-RS must instead perform extrapolation.  
 6011 Extrapolation, especially if your position is far from the  
 6011 reference stations, is prone to error. Use this solution with  
 6011 caution.

wysh

mtei

bil6

bil5

Your station is 1.0 KM outside the polygon enclosing the reference stations

## 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: September 15, 2014

RINEX FILE: 0186253u.14o

TIME: 16:39:34 UTC

SOFTWARE: rsgps 1.37 RS54.prl 1.99.2      START: 2014/09/10 20:21:25  
 EPHEMERIS: igr18093.eph [rapid]      STOP: 2014/09/10 21:45:35  
 NAV FILE: brdc2530.14n      OBS USED: 3724 / 3876 : 96%  
 ANT NAME: CHCX90D-OPUS NONE      QUALITY IND. 48.79/ 84.02  
 ARP HEIGHT: 1.800      NORMALIZED RMS: 0.272

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000)

IGS08 (EPOCH:2014.69281)

X: -1355396.457(m) 0.005(m)      -1355397.315(m) 0.005(m)  
 Y: -4305041.802(m) 0.006(m)      -4305040.547(m) 0.006(m)  
 Z: 4493258.153(m) 0.008(m)      4493258.109(m) 0.008(m)

LAT: 45 3 52.06880 0.007(m)      45 3 52.08933 0.007(m)  
 E LON: 252 31 26.21291 0.006(m)      252 31 26.15828 0.006(m)  
 W LON: 107 28 33.78709 0.006(m)      107 28 33.84172 0.006(m)  
 EL HGT: 1196.337(m) 0.006(m)      1195.642(m) 0.006(m)  
 ORTHO HGT: 1209.041(m) 0.011(m) [NAVD88 (Computed using GEOID12A)]

UTM COORDINATES      STATE PLANE COORDINATES

	UTM (Zone 13)	SPC (2500 MT )
Northing (Y) [meters]	4993094.150	92587.531
Easting (X) [meters]	305068.233	759379.044
Convergence [degrees]	-1.75335185	1.48052649
Point Scale	1.00006725	0.99996192
Combined Factor	0.99987970	0.99977439

US NATIONAL GRID DESIGNATOR: 13TCK0506893094(NAD 83)

#### BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DM7161	WYSH SHERIDAN CORS ARP	N444801.769	W1070035.715	47067.3
DG9745	MTEI ENGINC CORS ARP	N454447.035	W1083600.736	116161.1
DI3064	BIL6 BILLINGS 6 CORS ARP	N455816.251	W1075948.499	108694.5
DI3062	BIL5 BILLINGS 5 CORS ARP	N455816.237	W1075947.298	108684.4

#### NEAREST NGS PUBLISHED CONTROL POINT

QV0323	POWER	N450320.820	W1072550.446	3696.3
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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.