

## OPUS-RS solution : 018773\_14\_261\_A1.14O OP1411502005515

opus <opus@ngs.noaa.gov>

Tue 9/23/2014 1:58 PM

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

FILE: 018773\_14\_261\_A1.14O OP1411502005515

6024

6024 \*\*\*\*\* WARNING \*\*\*\*\*

6024 The Network Quality Indicator for the rover solution  
6024 is less than 1.0. This is often a warning sign that  
6024 one or more of the baselines involving your station were  
6024 weakly determined. You should check other quality indicators,  
6024 such as standard errors. If possible, corroborate  
6024 this position with a solution involving a different time period.

6024 \*\*\*\*\* WARNING \*\*\*\*\*

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6025 \*\*\*\*\* WARNING \*\*\*\*\*

6025 The average Normalized RMS for the rover solution is  
6025 greater than 1.5. This is often a warning sign that  
6025 one or more of the baselines involving your station were  
6025 weakly determined. You should check other quality indicators,  
6025 such as the peak to peak errors. If possible, corroborate  
6025 this position with a solution involving a different time period.

6025 \*\*\*\*\* WARNING \*\*\*\*\*

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6030 \*\*\*\*\* WARNING \*\*\*\*\*

6030 One or both of the standard deviations associated with  
6030 horizontal coordinates is greater than 5 cm, and/or the  
6030 standard deviation associated with the vertical coordinate  
6030 is greater than 10 cm. This means that the vectors used to  
6030 determine your position did not agree as well as expected.  
6030 Often this is the result of problems with the adopted coordinates  
6030 at one or more of the reference stations selected by OPUS-RS.  
6030 If a problem reference station can be identified, it can  
6030 be excluded with the Exclude feature on the OPUS Options  
6030 page.

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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 23, 2014

RINEX FILE: 0187261w.14o

TIME: 19:57:44 UTC

SOFTWARE: rsgps 1.37 RS52.prl 1.99.2      START: 2014/09/18 22:21:45  
 EPHEMERIS: igr18104.eph [rapid]      STOP: 2014/09/18 23:20:45  
 NAV FILE: brdc2610.14n      OBS USED: 1578 / 1956 : 81%  
 ANT NAME: CHCX90D-OPUS NONE      QUALITY IND. 9.48/ 0.33  
 ARP HEIGHT: 1.8000      NORMALIZED RMS: 3.876

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000)      IGS08 (EPOCH:2014.71494)

X: -1334443.883(m) 0.085(m)      -1334444.742(m) 0.085(m)  
 Y: -4302566.834(m) 0.137(m)      -4302565.579(m) 0.137(m)  
 Z: 4501838.469(m) 0.251(m)      4501838.426(m) 0.251(m)

LAT: 45 10 25.79072 0.103(m)      45 10 25.81142 0.103(m)  
 E LON: 252 46 7.28226 0.120(m)      252 46 7.22767 0.120(m)  
 W LON: 107 13 52.71774 0.120(m)      107 13 52.77233 0.120(m)  
 EL HGT: 1199.326(m) 0.253(m)      1198.629(m) 0.253(m)  
 ORTHO HGT: 1213.408(m) 0.253(m) [NAVD88 (Computed using GEOID12A)]

## UTM COORDINATES      STATE PLANE COORDINATES

UTM (Zone 13)      SPC (2500 MT )

Northing (Y) [meters]	5004683.060	105264.124
Easting (X) [meters]	324671.380	778294.532
Convergence [degrees]	-1.58295600	1.65955592
Point Scale	0.99997798	0.99990011
Combined Factor	0.99978999	0.99971213

US NATIONAL GRID DESIGNATOR: 13TCL2467104683(NAD 83)

## BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI3062	BIL5 BILLINGS 5 CORS ARP	N455816.237	W1075947.298	106883.0
DG9745	MTEI ENGINC CORS ARP	N454447.035	W1083600.736	124566.1
DL7758	P722 YNPBASSRCHMT2005 CORS ARP	N452725.985	W1093415.586	186170.4

## NEAREST NGS PUBLISHED CONTROL POINT

QV0414      BEAR      N450830.066 W1070941.881      6536.1

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.